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FROZEN FUTURES: USING GLACIAL ARCHAEOLOGY TO THINK THROUGH VALUES OF PRESERVATION IN DRAWING IN THE CONTEXT OF CLIMATE CHANGE

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This article uses the context of glacial archaeology as a provocation to drawing. It repurposes Julie Cruikshank's question 'Are glaciers good to think with?' (Cruikshank, 2012) to ask: is glacial archaeology good to think about drawing? It asks what the material intelligence of drawing might offer for articulating precarious balance of absence and presence engendered by the global climate emergency? Conversely, how might thinking through this lens enrich understanding of values of preservation in drawing in the context of the Anthropocene? These questions are approached through a case study of *Emergency* a drawing research project developed around archaeology studied at Sion History Museum, Switzerland. The research responds to calls to engage methodologies of the arts (Carey et al. 2016) 'to encompass the moral, spiritual, aesthetic and affective' dimensions of climate change (Castree et al. 2014). The article begins with the rationale for the research drawing, followed by a summary of the Emergency project, ending with reflection upon the outcomes and wider implications and opportunities for drawing research.

Introduction

This article explores the contingency within the materiality of drawing as a tool for thinking through complex and nuanced issues of climate crisis. More specifically it uses the context of glacial archaeology as a lens through which to probe ideas about drawing in relation to preservation and what it means to leave a mark. The article asks: How can drawing, with its values of contingency, materiality, trace, offer means of exploring nuances of climate emergency? If drawing is another kind of language, then what can this language say that others can't? Conversely, what can thinking through the context of glacial archaeology bring to understanding drawing?

The argument builds on thinking from the environmental humanities and practice-based research through a case study of the *Emergency* research project using drawing with glacial archaeology in the European Alps. The archaeology acts as a focal point for distilling ideas about drawing, stretching and testing them through application in the studio and fieldwork. Observations arising from this practical work are then used to unsettle established tenets about the drawn mark.

The argument is structured in three sections. Firstly, it establishes the premises for the linking drawing with glacial archaeology, outlining the context, the need for this study and the potential that drawing has to contribute to interdisciplinary debates. This is followed by a report on the Emergency project. The article concludes with reflection on the implications for drawing, future directions and broader applications and opportunities for drawing as research tool.

Thinking through glaciers: research rationale

The motivation to bring drawing into dialogue with the phenomenon of glacial archaeology is to use a convergence of two disciplines as a catalyst for thinking through precarity. Drawing, with its values of preservation, trace and marking have much to contribute to interdisciplinary thinking on threatened environments. Drawing as a means of making is conceptually aligned with the fragile, the tentative, the contingent and unseen. Technically it is also associated with provisionality and erasure. When made on paper, drawings are materially lightweight and environmentally sensitive to light, heat, moisture. These conceptual technical and material values embody many of the same concerns associated with the challenges of glacial archaeology – the precarity, dangers of heat and light, revelation through erasure and loss. The provocation of glacial archaeology to drawing is its potential to act as a lens to unsettle and question these established disciplinary values in the context of a world that is changing so rapidly in the timeframe of lived experience. Crucially, in the contemporary context of reappraising established ideas around conservation and sustainability (Alaimo, 2015, pp. 169-70), it feels pressing and timely to question these tenets in drawing to and revisit its established values of preservation.

It has been 20 years since Julie Cruikshank asked 'Are glaciers good to think with?' (Cruikshank, 2012). This question framed Cruikshank's anthropological work in the Canadian northwest through which she convincingly demonstrated how different communities gain environmental knowledge, exposing gulfs in belief systems, hierarchies of knowledge and overlooked wisdom. Cruikshank's influential research opened up channels of thinking outside established empirical models and demonstrated the potential for knowledge gained outside of scientific method to contribute to an enhanced understanding of the natural world (Cruikshank 2005).

I contend that a similar opportunity might be created for drawing by repurposing Cruikshank's question: is glacial archaeology good to think about drawing? In what follows, I will argue that it is. I reflect on what opportunities it presents for drawing research and conversely how drawing has the potential to contribute to interdisciplinary scholarship around themes of environmental catastrophe. In doing so, it is a timely return to Steve Garner's call for drawing research to look beyond disciplinary borders and forge connections with other areas of lived experience (Garner, 2008, p 13). While drawing research has matured significantly since Garner made this call to arms, his argument is increasingly pertinent if drawing research is to look beyond the studio window and play its role in addressing complex global issues.

What is glacial archaeology and what does it offer to drawing?

Glacial archaeology is a field that has recently developed to study of artefacts emerging from frozen landscapes as the ice in which they are preserved melts (Curdy & Nicod, 2020; Pilø et.al., 2021). While these glacial finds provide important archaeological knowledge about the past, this knowledge comes at the cost of environmental change as the glaciers in which they have been encased are now melting at unprecedented rates. This archaeology is exceptionally rare and valuable. For instance, Mesolithic finds, are usually limited to stone artefacts; in glaciated and permafrost environments, fugitive materials such as leather, textile and organic matter from this period are also preserved (Corenillson, 2022). However, once exposed to air, they rapidly deteriorate, meaning there is a very limited period in which they can be found and preserved (Gubler, 2019). Furthermore, unlike terrestrial archaeology, which typically follows an orderly time-based stratigraphy, ice is disorderly and unpredictable. Depending on their movement, glaciers – or more accurately ice patches– can throw up artefacts from 50, 500 or even 5000 years making it harder to date and identify finds. Archaeologist Regula Gubler summarises the challenges:

The melting of glaciers and ice patches in the Alps in recent decades is both a blessing and a curse for archaeology. The release of the archaeological artefacts from their frozen contexts repeatedly opens a window into the past. However, these windows are only open for a short time. Once the fragile objects are exposed to the elements, wooden and leather objects decompose quickly. Moreover, many ice patches will probably disappear completely in the next few years or decades. (Gubler 2019).

This situation troubles straightforward equation of ice melt with loss and requires a more nuanced non-binary thinking about loss and change, and the relationship between human non-human agencies, nature and culture.

This context presents a compelling conceptual framework that inverts our attention, focusing not what is lost (the ice) but what appears, offering potential to add nuance to simplified narratives of ecological change. Like a drawing of negative space, thinking about glacial archaeology requires us to view the world backwards for a moment, to upend our thinking about catastrophe, a word which itself means 'to be turned over'. It reminds us, as Rebecca Solnit observes, that 'inside the word 'emergency' is 'emerge'; from an emergency, new things come forth' (Solnit, 2016, p 13). So what is considered here is how drawing, with its processes of erasure, negative space, negotiation of absent and present, might be well adapted for examining and communicating this precarious balance of the lost and found.

But before looking in detail at drawing, it is important to look at the context of glacial melt to establish why using drawing in this way might be necessary.

The slippery meanings of ice: why is this research needed?

The trouble with climate change, is that it can't be seen. It is not an object that can be grasped or held up and examined (Morton, 2018:22). As Andri Snær Magnússon eloquently frames it, climate change is like a black hole, known but not seen (Magnússon, 2020, p 7). We need to find ways to look around it.

These writers and others make clear the urgent need to find ways to visualize, make tangible climate crisis and its longer term trace as the 'Anthropocene'. For instance, while most people equate glacial ablation with climate shift, the effects of melt are not necessarily felt or witnessed at first hand, nor are they easily reconciled with our everyday life. Glaciated environments are too often characterised as remote and 'other' and depicted as such in art and literature.¹

More broadly, the iconography of melting glaciers is used as generic symbol for 'climate change'. Scholarship has highlighted that this use often misses many of the nuanced and culturally specific impacts of melt; warming environments are bringing about socio-cultural changes to language, modes of transport, livelihoods (Jackson, 2019, p 9; Carey et. al. 2016).

Furthermore, too commonly we equate glacier and ice. And while frozen water makes up a large part of glacial mass, there are also minerals, rocks, debris swept up in their mass. A glacier might be better conceived as an entanglement; a grouping of relations between entities acting on each other, rock, sediment, water, weather, organics, animal and human debris; a 'constellation of life' (Burbandt, 2017, p 137). Glacial archaeology presents us with visible entanglement of human presence within the geological sphere and reminds us that icebound mountain areas were not always remote.

In short, there is need for more effective ways of articulating the complex challenges engendered by global heating in relation to glaciers and this is where drawing enters the scene, as creative research has been identified as having an important role. Mark Carey and his colleagues have written on the need to engage methodologies of the arts to

articulate new narratives of human-glacier relationships by approaching ice through feeling and affect, emotional response, sense of place, the personal and the intimate, kinship and family rather than through the attributes and characteristics of the dominant, masculinist scientific glaciology (Carey et. al. 2016, p 785).

As geographer Noel Castree and co-authors put it:

other forms of knowledge, discourse and under-standing [beyond natural sciences] must be properly acknowledged, precisely because they both affect, and are affected by, science and technology. These forms range beyond the cognitive to encompass the moral, spiritual, aesthetic and affective. (Castree et al. 2014, p 765)

¹ Take for example, the cool, angular mountains in a Lawren Harris's painting or in the words of writer Peter Mattheison: 'Snow mountains, more than sea or sky, serve as a mirror to ones own true being, utterly still, a void, an Emptiness without life...' (Mattheison, 1989:162). Legacies of romanticism and the sublime linger in depictions of ice clad peaks as awe inspiring 'elsewheres' devoid of human presence.

As other authors explore elsewhere, drawing as a process of making involves an embodied and sensory approach, entangling what is seen and what is felt (Crowther, 2017:116; Casey, 2018: 238). Data, matter, emotion can be conflated in the journey from eye to brain to hand and back again. It enmeshes within it cognitive, moral, affective dimensions, and can hold different ideas in dialogue, without resolution.

I argue that this befits drawing as a tool for critical examination of complexities where narratives are not straightforward – what Donna Haraway would call ‘staying with the trouble’ (Haraway, 2016, p 1). In other words, working within a context that presents seemingly irreconcilable ideas and working through these. In what follows, drawing, in both the making and viewing experience, is a material encounter. I conjecture that this encounter can be a means of staying with something that is difficult and intractable as a space for thinking through phenomena that doesn’t easily fall in to binary positions. It is this material encounter between presence and absence that I want to focus on now, turning to the *Emergency* project. While drawing enfolds seemingly contradictory values of both permanence and contingency as theoretical tenets, it is less easy to reconcile them in a material artefact. The *Emergency* project explored how this might be achieved and what opportunities that offers.

The *Emergency* project

The *Emergency* project was initiated in 2019 following two research visits to examine glacial archaeology in the Valais History Museum in Sion, Switzerland. Artefacts from the European alps were gathered for an exhibition *Vetiges en Peril* curated by Pierre-Yves Nicod at the Museum.²

The artifacts in the exhibition included shoes from different eras, tools, combs, knives. A 17th century pistol was also among the artefacts. The objects present a strange homely assortment of oddments, some ancient and rare, others that appeared as if they might be at home on the shelves of a particularly fusty junk shop. In the exhibition, artefacts were laid out displayed in cases. One particularly rare and ancient shoe fragment encased in its own atmospherically controlled display case within a vitrine. Readings were checked on a regular basis to ensure its stability. As noted above, once released from the ice, these objects become endangered.

In addition to these identifiable objects from the more recent past, are strange misshapen wooden forms. Nicod explains that many of these are enigmas. It’s not known what they were, only that they were made by human hand. As the curator explained, these artefacts can emerge unexpectedly and are often discovered by non-specialists – hikers, climbers in the mountains for other reasons (Curdy & Nicod 2020, p 497).³ This sense of unexpected apparition, the material vulnerability once exposed, of being contingent on atmospheric conditions for survival, echo with tenets in drawing (as noted above). The research objective was to build on these qualities in drawing to find methods of drawing that reflected the material and conceptual conditions of the artefacts.

The methodology consisted of intensive collections-based studies, supported by discussion with Nicod, followed by material trials in the studio. Collection research involved slow careful studies of the artefacts attempting to delineate their details and get a sense of their materiality behind their glass cases.

² Mémoire de Glace Vestiges en Péril , Musée d’histoire, Sion, 6 October 2018- 3 March 2019.

³ The cantons of Valais and Bern have recently targeted public awareness campaigns to alert the public to the possibility of finds and communicate best practice in the event of a find. See Gubler (2019).

Drawing was deployed as a form of material touching, resting the eye on the artefact in lieu of a forbidden hand, imprinting the sensation of encountering these artefacts in the mind, and on the page to be recalled later.⁴ Following this initial data gathering, analysis through tests and trials in the studio, was used to identify a way to use materials to embody the conundrums of these artefacts, i.e. the fact that they are revealed through loss, a sense of jumbled layering with other time periods, a vulnerability to loss. The outcome was two groups of works, discussed below.

The *Emergency* drawings

The first body of work is a series drawings each 120 x 150cm. They are made by creating two large, thin sheets of waxed paper by carefully joining smaller sheets together. They are so thin that they are almost transparent, like looking through misted glass. One sheet is laid flat on to a large studio table. Then, using a stick of watersoluble graphite, particles are shaved off onto the surface of the paper, leaving a dusty residue. Occasionally an addition of water, or pressure helps manipulate an image, taking on the form of one of the glacial artefacts. The graphite dusts is built up, creating thicker piles of dust in the areas of the drawing that require most shadow. As it progresses and the image takes shape in vulnerable unfixed 'marks', or 'pre-marks'— the arranged pigment that will become marks.

The next stage involves trapping this layered dust between the two paper skins. The second sheet is laid carefully over the first, using air currents to help it settle into place. The movement of down draft disturbs the particles, they puff outwards slightly, a diffused mark, as if the image, the particulate of its matter, is visibly, eroding seeping into its surroundings.

Finally, heat is applied. The drawings are to be made (and by 'made' I mean become fixed) with heat, as graphite is suspended in place between these two skins. Running a hot iron over the surface fuses the skins together, trapping the image inside, encasing it. The resultant surface takes on a reflective sheen with craquelure reminiscent of ice. The soluble graphite becomes liquid in the molten wax and in places pools, bubbles and becomes dark. Pigment is fused with wax. Together they form the image, under the agency of heat.

Lifted from the table and hung in space, the object appears trapped. The image floats there. A fly in amber. The darkness and tonal values of the drawing suggest an illusory solidity - the objects peer out of the page as if hidden behind it (Figure1). But there is no behind. Only the wafer-thin surface. When several drawings are layered over one another other, the lower layers become hazy, like shadows of something out of reach. As if buried deeper. The drawings enact a fanciful stratigraphy. Imagining the jumble of objects layered in the ice. Bound together in relationships that shift over time. Unlike terrestrial burials, a glacier is not at rest. It is an icy river, pulled by the forces of gravity and erosion.

⁴ For more on this method see Andrew Causey (2017), *Drawn to See Drawing as an Ethnographic Method*, Toronto: University of Toronto Press. p. 56, 140.



FIGURE 1 EMERGENCY DRAWINGS LAYERED AND HANGING IN SPACE

The composition of these layered drawings is also contingent. The sheets can be layered up interchangeably. Different objects coming to the fore, as if jostling for attention at the surface. There is perhaps no one single drawing here. The drawing is the relationship between the parts, the arrangement temporarily composed. This openness can be found in the material make-up of the individual sheets. Fixed by heat, suspended in the page. It is only the melting of the wax that holds the pigment in place to make an image, to make the shift from matter to drawing. But this is an unstable support. Wax, like ice, melts. The drawing remains subject to environmental forces – heat from the sun, domestic heating devices, light. Subjected to heat, wax, like ice, will return to its molten state. The drawings are only temporarily held. When heated, the sheets will become unstuck, the graphite become liquid in the molten wax, allowing it to run and pool, or smear away as the support disintegrates, a graphic and material equivalent of the glacial archaeology.

This sense of vulnerability to damage is accentuated in its gallery display. While the layered hanging suggests a limbo, of being poised between one state and another, on the floor beneath these lies mass of other drawings crumpled up into a three-dimensional topography covering the gallery floor (Figure 2). The form at once evokes mountainous terrain and icy crevasses. The crumpled paper also recalls discarded waste, the screwed-up paper ball tossed away. The crumpling is a counter intuitive step to take in drawing, after spending hours of time and care in its production. The crumpled ball is a visual signifier of the unwanted and discarded, deliberately used in the drawing to gently probe values of finish and care. Does something on the verge of loss become more coveted? Would it matter if the drawing were to be destroyed all together?



FIGURE 2 EMERGENCY DRAWING GALLERY VIEW

This line of thinking led to the second phase of the research in which drawings were made to be exposed to the heat of the alpine sun. By repositioning the drawings as artefacts designed to be melted, they could become experiments to be performed. The premise becomes a hypothesis to be actively tested. Under what conditions will the drawings melt? How hot need the sun be? Could the drawings even measure melt, be a material marker, evidence of the heat of the sun acting upon matter? It was this critical questioning of the work, shaking it out of its comfortable museum and studio-based environment, that prompted a series of experiments that set out to test the premise that the drawings would melt. The second phase was to see what would happen to these drawings when exposed to the heat of the alpine sun close to some of the glaciers from which the objects had been found.

Impermanent markers

To test the premise of this process, to put theory into practice, in early summer 2022 a field trip was arranged to take the drawings to glacial sites. The Val d'Herens, south east of Sion, was selected for its location in the Valais region, near where the archaeology was studied in the museum and close to the sites of some of the finds (Curdy & Nicod, 2020, p 498). The valley has been carved by glaciers, one once reached the village which was my base. (It's now several kilometres away).

Experimental sites were set up each day for three days in a different location, proximate to one of these glaciers. Once in situ the drawings – smaller portable versions– were unpacked, unfurled, laid out, offering their surface to the sun for a period of several hours over the day (Figure 3).



FIGURE 3 EXPOSING DRAWINGS TO THE SUN

The time and location were recorded. The drawings were documented at regular intervals, observing the degree of melt. Two different types of drawing were tested. The trapped graphite ones, as described above (Figures 1, 2 & 3) and ones where the drawing is scored into the waxed surface leaving incised marks (Figures 4 & 5).

Of the first, the graphite drawings became hot, pliable and fluid but total disappearance was not their fate. The wax has become liquid in places, partially dissolving the watersoluble graphite, again, just as it did when the image was first fused together. But now under heat it is free to move and pool. The integrity of the surface is also under threat – the paper sheets held together by the melting and setting of wax begin to come unstuck as the wax returns to a molten state.



FIGURE 4 SCORED WAX DRAWING BEFORE EXPOSURE



FIGURE 5 SCORED WAX DRAWING AFTER EXPOSURE

Of the second type (Figure 4), the wax (laid down thicker than the first type) does not so much bubble but become warmly viscous. As it does so, the pale white lines of the incised marks soften, become less distinct as the increasingly molten wax wicks back into the paper fibres, healing the white scars of incision, returning to the smooth, freshly melted surface. After two hours, the drawing is becoming hard to discern. More visible in some areas than others, where the drawing has shaded itself (Figure 5).

Outcomes

Prior to carrying out this experiment, the drawings acted symbolically – the idea that they would melt if heated evoked in the mind a sense of precarity with an affinity to the glacial artefacts depicted. A gentle poetics of analogy. However, here on this rough moraine these increasingly tattered skins of drawings embodied something else. This vision of destruction was neither dramatic nor poetic. These ugly husks evoke none of the poetry of destruction. The process is not exciting or dramatic, it is slow, subtle and, even, a bit boring. However, what these have become, are the embodied witnesses of destruction itself. The value in these (ex)drawings is in the process of their undoing they have recorded the conditions of the environment. The marks – or the degree of erasure - they bear are the marks of being subjected to a specific temperature, over a recorded amount of time. As such, this process offer drawing as a type of litmus test, a tool to be used in the service of research, capable of generating data about environments in which they are exposed.

Drawn out of melt: Summary of findings and implications for drawing research

To summarise these findings, in both groups of work the drawings embody the conditions of the archaeology, there is a sense of it in the work – the layering, an aesthetic of fragility, a sense of being poised, or in limbo, waiting for something to happen, form of the overlooked or discarded. This operates in different ways in the two works. The gallery-based work is slower – it appears to freeze a moment, pictures it and presents it. On the other hand, the landscape experiments are visibly changing over time, actually instantiating the ideas proposed by the gallery work. However, both works, whether changing fast or slow, confront the viewer with an encounter that reflects material and temporal vulnerability.

While the drawings do pictorially depict the objects, they go beyond image replication. They convey a sense of not just what the artefacts look like, but what it feels like to view them, to encounter something on the cusp of disappearance. They offer an 'aesthetic empathy' with the subject (Crowther, 2017, p 28). This experience involves an attraction at the same time as a cautionary pulling away from the danger (of damaging the work). These polar positions mirror the tension between appearance and disappearance, of being present but also pointing towards what is absent. The work 'says' all this through materials and visual experience. That the tensions can mutually exist in the same picture plane. It is as Philip Rawson says:

under the stimulus of a good drawing, we are able to retake possession of those areas of our own real experience which normally lie unused and forgotten, and so see the forms of realities that nothing else can show us (Rawson, 1979, p 27).

And herein perhaps lies the value of drawing for other fields of research: its ability to enfold the 'spiritual affective dimensions' along with empirical data. To distil information and represent it in a manner that enables binaries to co-exist. Reflecting on the value of creative writing in approaching challenges of the Anthropocene, David Farrier observes:

poetry can compress vast acreages of meaning into a small compass or perform the kind of bold linkages that it would take reams of academic argument to plot; it can widen the aperture of our gaze or deposit us on the brink of transformation (Farrier, 2019, p 4).

The same can be said for drawing.

Farrier goes on to claim that poetry ‘can model an Anthropocentric perspective in which our sense of relationship and proximity (and from this our ethics) is stretched and tested against the Anthropocene’s warping effects’ (Farrier, 2019, p 4). This sense of relationship and intimacy is important, because that’s one of the things I want to claim here for drawing. Displaying the works creates an embodied encounter which has affect upon us, which creates meaning. In doing so it offers a response to the calls outlined above to find new ways of communicating glacial melt (Carey, 2016, p 785; Castree, 2014, pp 765). It is not so much revealing that which has been forgotten, as in the Rawson quote, but a reminder of the proximity of trouble. A direct encounter brought close, made intimate. In the case of these *Emergency* drawings this sense of intimacy is perhaps made more apparent, for what is depicted here is not the grand glaciers of the polar north, or a vast wilderness out of human reach, it is objects of daily life – shoes, combs, umbrella- bringing the trouble closer to home, reminding us that ‘nature’ and our destabilising effects are not ‘out there’ but a category to which we belong and have responsibility toward. In doing so, such approaches might counter concerns about communications of glacial melt ‘if people do or see themselves in the story, then they are not part of the story’ (Jackson, 2019, p 14).

The inclusion of these identifiably human artefacts, their visual prominence in the work, also reminds us of human entanglement in what might otherwise been seen as natural processes. They look a slightly awkward intrusion. But the awkwardness is useful. The use of uncomfortable juxtaposition can alert us to realities that may have otherwise slipped below our attention. Such awkward intrusions have the capacity to diminish illusions of comfortable stability (Bould 2021, p 25) and ask us to look again.

Which brings us back to 'staying' with'. For Harraway 'staying' might be unpleasant – it’s a process that doesn’t lead to easy resolution. And it is now worth quoting Harraway more fully to appreciate what this might mean:

In urgent times, many of us are tempted to address trouble in terms of making an imagined future safe, or stopping something from happening that looms in the future, of clearing away the present and the past in order to make futures for coming generations. Staying with the trouble does not require such as relationship to time called the future. In fact, staying with the trouble requires learning to be truly present, not as a vanishing pivot between awful or Edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings (Harraway, 2016:1)

Developing awareness through ‘staying with’ is not about tidying things up and securing them for the future, it is a reminder to be in the present. Beholding a drawing is an encounter, a way to notice latent troubles, of seeing differently, to become attentive to our changing world through new lenses that might reveal what Bould terms ‘the anthropocene unconscious’ (Bould, 2021). In the case of the *Emergency* project, drawing has been used as a tool to foster alertness to the changing appearances when we shift our focus from loss to what emerges in its place.

Having established a case for what drawing has to offer interdisciplinary thinking, I now end this article by reflecting on what drawing through the context of glacial archaeology has offered for drawing research, specifically how it offers new perspectives on values of preservation in drawing in the context of the Anthropocene.

To conclude: some reflections on what this means for drawing research

Drawing is well established as a means for preserving fragile ecologies, both in the past and present (Casey & Davies, 2020).⁵ Values of preservation are deeply embedded in the practice and values of drawing. Deanna Petherbridge alluding to drawing 'preserving pale ghosts of ideas from slipping away' (Petherbridge, 2010, p 49), Louise Bourgeois talking about her feather thoughts pinned down by drawings (Bernadac & Wye, 1999, p 73). John Ruskin promotes drawing as a tool 'to preserve something like a true image of beautiful things that pass away, or which you must yourself leave' (Ruskin, 1997, p 16). Indeed, Ruskin's use of drawing to notice and record changing environments has seen him acknowledged as an early voice for ecological awareness.

While drawing is a mode of capture of the ephemeral, it goes beyond this. Paul Crowther notes that while a photograph represents an 'arrested moment of something's visual existence', drawings 'embody the moment by being physically made' (Crowther, 2017, p 116; Casey and Davies 2020, p203). In that sense it is placed in an almost unique position. Drawing is a reflexive practice, the tool of recording and the record itself, the witness and the witnessed. Moreover, the record, once made, preserves the observed and the observer's encounter – the records of its own making. It reveals not just what was seen, but how it felt to encounter it. Within this then is enfolded a performative dimension, the making of the drawing as a measurement of a moment of witnessing, enabling a viewer to get insight into that experience.

What the *Emergency* drawings propose, is that if the above argument is true of marking, then so too might a viewer read un-marking or erasure in a drawing and witness the disappearance of marks. While in the gallery the *Emergency* drawings allude to this threat, the drawings exposed to the sun take this literally. These melted drawings then bear witness to the forces that led to their undoing. The drawings record the trace of their passage in the residue that becomes the 'ex-drawing'. In doing so, the act of 'anti-preservation', the undoing of these carefully wrought images (which have taken considerable time and care to make), transforms loss to revelation. While the drawing is lost, the scars of its disappearance, might have value as records of a specific and particular environmental encounter. The 'catastrophe' (of the destroyed drawing) turns out not to be catastrophic; true to its etymology it is more a turning over of expectations, drawing into question the value of the art object, the extent to which it should be protected, highlighting questions about why we preserve things and what we deem to be precious.

The *Emergency* project opens an opportunity to reflect on the permanence of the drawn mark more broadly. Looked at through geological time, or even through a timescale beyond the window of our short lives, most marks and drawings are transitory and ephemeral. They will not leave their mark in the stratigraphic records. More likely left are the emissions created by the daily commute to studio. Seen like

⁵ E.g. Margaret Mee in the Amazon or Adela Breton's studies of archaeology of Chichen Itza, Laura Oldfield-Ford capturing urban decay, Emma Stibbon's work in the polar regions.

this, all marks are in the process of disappearing. Viewed like this, the drawn mark is a less permanent record. It can be a witness to change. Preservation is a time-limited feature, a comfortable conceit. 'Mark' now sounds too indelible a word, the more febrile sounding 'trace' seems perhaps more fitted to purpose. Consequently, it seems timely to reconceptualize and expand drawing's values of preservation, framing this less as capture, more of 'staying with': a process of being co-present with shifting forces and entities in the world. In the context of ecological changes this strikes me as even more important – a useful means of sensing and living with change.

So, yes, glacial archaeology has provided a good lens to think about drawing. It has led to the proposition that the drawn mark is never permanent as such but a stating of presence in time and space. One that moves along in time and space, marking its passage as it goes. What the *Emergency* drawings seek to draw attention to is this state of contingency, to open it up as a space for thinking, for dwelling with that which might be difficult or unknown. What these drawings call attention to in their material qualities is the capacity for the drawn mark to be both fixed and contingent. By contingent, I mean it has a particular mobility, travelling towards either presence or absence. The making of melting drawings highlights a capacity latent in drawing to make visible and corporeal this sense of flux and think differently about those instances of loss that may in fact be simply change. Approaching drawing from this perspective, offers the drawing researcher useful tools and terminology for working with challenges of change both in human and deeper timescales.

References

- Alaimo, S., (2016). *Exposed: Environmental Politics and Pleasures in Posthuman Times*, Minneapolis, University of Minnesota Press.
- Bernadac, M.L., Wye, D. (1999), *Louise Bourgeois Pensées Plumes*, Paris: Centre Pompidou.
- Bould, M. (2021). *The Anthropocene Unconscious: Climate Catastrophe Culture*, London: Verso Books.
- Burbandt, Nils (2017). 'Haunted Geologies: Spirits, stones, and the necropolitics of the anthropocene' in Tsing, A., Swanson, H., Gan, E. and Burbandt, N. (eds.) *Arts of Living on a Damaged Planet*, Minneapolis: University of Minnesota Press, 121-141.
- Carey, M., Jackson, M., Antonello, A. and Rushing, J. (2016) 'Glaciers, gender, and science: A feminist glaciology framework for global environmental change research' in *Progress in Human Geography* 40. 770-793.
- Casey, S. (2018). What do drawing and painting really mean? The phenomenology of image and gesture, *Journal of Visual Art Practice*, 17:2-3, 238-240. DOI: [10.1080/14702029.2017.1366693](https://doi.org/10.1080/14702029.2017.1366693)
- Casey, S. and Davies, G. (2020) *Drawing Investigations in Science Culture and Environment*, London: Bloomsbury.
- Castree, N, Adams WM, Barry J, Brockington D, Bu'scher B, Corbera E, Demeritt D, Duffy R, Felt U, Neves K, Newell P, Pellizzoni L, Rigby K, Robbins P, Robin L, Rose, DB., Ross, A., Schlosberg D., Sorlin S., West, P., Whitehead, M., and Wynne B (2014) 'Changing the intellectual climate' in *Nature Climate Change* 4. 763–768.
- Casey, A. (2017) *Drawn to See Drawing as an Ethnographic Method*, Toronto: University of Toronto Press.

- Cornelission, M. (2019) "'Bergeis". Rock crystal from the Alps in the Mesolithic' on Institute for the Culture of the Alps. Available online at: <https://www.kulturen-der-alpen.ch/en/bitte-in-englisch-uebersetzen-bergeis>. [Accessed 01/07/22].
- Crowther, P. (2017) *What do Drawing and Painting Really Mean?: A Phenomenology of Image and Gesture*, London: Routledge.
- Cruikshank, J. (2005). *Do Glaciers Listen: Local Knowledge, Colonial Encounters and Social Imagination*, Seattle: UBC Press.
- Cruikshank, J. (2012). 'Are Glaciers Good to Think With? Recognising Indigenous Environmental Knowledge', *Anthropological Forum* 22: 3, 239–250.
- Curdy, P. and Nicod, P-Y., (2020) 'An Enigmatic Iron Age Wooden Artefact Discovered on the Col Collon (3068m a.s. l., evolène, ct. Valais/ch)', *Archäologisches Korrespondenzblatt Jahrgang 50:4*, Mainz: Römisch-Germanischen Zentralmuseums pp.497-512. English Translation Clive Bridger.
- Farrier, D. (2019). *Anthropocene Poetics*, Minneapolis: University of Minnesota Press.
- Garner, S. (2008). *Introduction. Writing on Drawing: Essays on Drawing Practice and Research*, Bristol: Intellect Books.
- Gubler, R. (2019). *Archaeology of the Schnidejoch* Translated by Andrew Lawrence. Bern: Service archéologique du canton de Berne.
- Harraway, D. (2016). *Staying with the Trouble*, Durham & London: Duke University Press.
- Jackson, M. (2019). *The Secret Lives of Glaciers*, Brattleboro, Vermont: Green Writers Press.
- Magnusson, A. (2020). *On Time and Water*, London: Profile Books.
- Mattheison, P. (1989). *The Snow Leopard*, London: Harvil.
- Morton, T. (2018) *Thinking Ecologically*, London: Pelican.
- Patrizio, A. (2019). *The Ecological Eye: Assembling an Ecocritical Art History*, Manchester: Manchester University Press.
- Perec, G. (1999) *Species of Space and Other Pieces* ed. John Sturrock, London: Penguin.
- Petherbridge, D. (2013) *The Primacy of Drawing Histories and Theories of Practice*, Newhaven & London: Yale University Press.
- Pilø, L., Finstad, E., Wammer, E.U., Post-Melbye, J.R., Rømer, A.H., Andersen ØR, & Barrett, J.H. (2022). 'On a Mountain High: Finding and Documenting Glacial Archaeological Sites During the Anthropocene', *Journal of Field Archaeology* 47:3. 149-163.
- Rawson, P. (1979) *Seeing Through Drawing*, London: BBC
- Ruskin, J. (1997) *The Elements of Drawing*, New York: Watson-Guption Publications.
- Solnit, R. (2016) *Hope in The Dark*, London: Cannongate The Cannons.