

# **THE 'MORE-THAN-DIGITAL' SCRAPMAP: EXPLORING THE GENERATIVE POSSIBILITIES OF DIGITAL DATA (FROM NATURE ENTANGLEMENT VIA DIGITAL ABSTRACTION TO MATERIAL ARTEFACT).**

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## **Abstract**

Forest school is a practice “which enables children to visit natural sites and engage with nature on a regular basis within the school timetable” (1), and as such is a rich and complex site for qualitative enquiry. Post-human scholars (2,3) have, by repositioning/decentering the human subject, refocused what qualitative researchers ‘do’ with data away from anthropocentric/representationalist methods of enquiry. This onto-epistemological standpoint demands our engagement with critical issues relating to data generation and data analysis. Ellingson and Sotirin (4) summarise contemporary distrust of *data*, sympathising with, but ultimately rejecting notions that negate the concept (or usefulness) of data entirely. Instead, they propose the concept of *data engagement*. In this model data are made (not found), assembled (not collected), dynamic (not complete/static). Drawing on this notion, the present study playfully materializes the idea that data transforms itself into a myriad of potentiality from the moment we engage with it. The process was an affirmative one, generating new ways to view the forest school experience via my own embodiment in the process. The initial data generation drew upon Ingold’s (5) distinction between travelling and wayfaring. Wayfaring as a concept can be applied to my activities as a researcher enmeshed in the forest school space as I followed the children’s activity. Over seven separate visits to the forest school site I tracked my wayfaring around the site using GPS technology. Abstracting the raw data from my GPS watch, the digital lines of travel (representing my muddy, entangled, visceral traipsing through the undergrowth) generated only a clean, linear/synchronic topography of the event. I exported the maps, printed, traced, and embroidered each individual wayfaring route onto a piece of found fabric that now hosted the newly transformed data. Each route was layered on top of another on the scrap fabric like a digital ‘sampler’. Thus I created the more-than-digital scrapmap. The scrapmap presents the transmutation of qualitative researcher engagement with a site from forest path to tactile data, via digital .gpx file, pen, tracing paper and found fabric; becoming an embroidered (re)assemblage. This more-than-digital map shows one way in which human-material entanglements may become material-human artefacts. The scrapmap shows both the lines and negative space temporally and spatially occupied during the research activity. The map communicates new insights about researcher embodiment and the possibilities afforded by playful data engagement.

Keywords: digital, posthuman, material, forest school, generative.

# 1 CONTEXT AND BACKGROUND

This paper is a playful exploration into issues of researcher positionality and the nature of researcher-generated qualitative data which arose from my current doctoral research into forest school. In the UK, the term 'forest school' is widely used to describe long-term outdoor woodland-based education programmes which encourage curiosity and independence, and with an emphasis on learner-initiated learning (6). My overarching doctoral study is a qualitative enquiry which explores the unique experience afforded to children by forest school using a new materialist methodology. New materialism is a broad inter-disciplinary movement which problematizes the historically anthropocentric focus of twentieth century theory (7). It aims to address the perceived theoretical neglect of *matter* and considers ways in which such supposedly inert material stuff (such as the trees, rocks and earth that make up the forest school) may be imbued with both meaning and agency. Theoretically, my forest school study is grounded in the broadly materialist ontologies of posthumanism and post-anthropocentrism (3,8,9). Posthumanism overlaps, informs, and shares some "interpretive elasticity" with post-anthropocentrism (10) as both critique the notion of humanity as a centre of power and a species exception. Posthumanism serves as a broad theoretical framework which disrupts the notion of human exceptionalism (both in nature, and in other spheres) (3). Post-anthropocentrism also issues a challenge to anthropocentric thinking, which may be viewed as humanist in the 'human-supremacist' sense of racist, centrist, sexist etc. (11). Philosopher Rosi Braidotti (8) blends and merges these two movements – posthumanism and post-anthropocentrism – and describes the present era as encompassing both (an era she calls *the posthuman*). Both concepts (although they arise from separate historical lineages) offer overlapping ontological biases which blur the accepted subject-object boundaries and place humans in an ongoing reciprocal dialogue with nature; an integral part, not a different order of being. These concepts offer a novel way to explore children's profound experience of *becoming with* forest school (9). For my doctoral study, this new materialist onto-epistemological standpoint seemed well suited to a study of forest school practice which I had begun to consider in terms of decentered human-nature entanglement.

This ontological worldview gave me an exciting lens through which to re-consider existing educational research approaches to forest school. But it simultaneously raised other problematic questions for me to do with my understanding of *what data is*. In a very positive sense, new materialist approaches to educational research enabled me to look beyond traditional humanist theories of education, play and pedagogy (12). Within the field of early education, the insightful work carried out by early childhood scholar Hillevi Lenz Taguchi (13) has shown me how a new materialist approach to understanding pedagogy can work in practice. Taguchi notes that viewing learning events as a materialized, embodied reality "makes knowing just as much a matter of the body and the material as it is a matter of understanding and thinking through discourse/language" (13). Lenz Taguchi draws upon Barad's concept of intra-activity (14) to explain her model of intra-active pedagogy and the way that this notion transforms our understanding of agency (13). She distinguishes between three different types of 'being'; one which remains faithful to a traditional realist/dualist paradigm ("Being-in-the world"), one which considers constructed discourse as the reality which 'counts' ("Being-in-discourse") and one which explore reality as a multi-agentic entangled interdependence ("Being-of-the world") (13 p.51). It is this latter notion of materially being-of-the world that informed my forest school enquiry. However, rejecting traditional dualistic onto-epistemological notions which conceptually separate the human from the forest had implications for my understanding of my position as a researcher. Within such an ontology, the forest, and the humans within it all operate in mutually entangled agency. And clearly *researcher bodies* are just as much part of the mutual forest school entanglement as children's bodies. Thus, as I drew upon new materialist notions of embodiment, immanence and situatedness to explore the experience of becoming with forest school (9,15), this approach troubled my understanding of researcher positionality and the nature of research data itself. Two elements were thrown into question. Firstly, was the notion of generating meaningful objective data within a new

materialist methodology even a valid one? And secondly, how could I, a researcher working within a context of intra-activity, better understand my role as situated within the research activity?

## 2 METHODOLOGICAL QUESTIONS/SOLUTIONS

Here I set down my initial solutions to these two questions which arose from my interpretation of new materialist methodology.

### 2.1 Some problems with data

My troublesome question was this: was there any point in generating data at all when all data is artificially generated by the researcher (in the sense of being an artefact knowingly derived from an experience rather than any kind of meaningful representation of reality)? I embraced the notion, as defined by Ellingson and Sotirin (4) of doing *data engagement* as a way of resolving some problematic issues arising from the concept of generating objective data (e.g. as evidence for real world phenomena exterior to the researcher (7)) without rejecting the usefulness of data as ‘something to work with’ (in whatever form it takes). I understand the concept of data engagement to entail that *everything I do with data does something to it* because of my own involvement with it. For example, in the forest school I decided what to film, what to note down, who to follow, what was important, and even what day I visited the woods. Ellingson and Sotirin (4) have usefully unpicked contemporary post-positivist distrust of data. Firstly they note that claiming any version of (post) positivist data as ‘proof’ has long been a contentious issue. Social and critical approaches to data generation acknowledge that data cannot be objective but, rather, co-constructed at specific socio-historical moments (4). Even though very few qualitative researchers now make any claims towards pure objectivity/generalisability (8), the fact remains that “the term “data” continues to bear this constraining positivist legacy” (4 p2) as if it were solid pebbles of objective knowledge that may be discovered exterior to the researcher. Ultimately, what binds these post-positivist responses to qualitative data generation together is an implicit ontological subject-object/ researcher-researched separation. But going beyond this divide, the notion of *data engagement* posits that *there is no data before the researcher brings it into being*. In other words, “data are less like pebbles researchers gather on a beach and more like the beach itself” (4 p.9).

And thus the present study draws upon this generative notion that data are made (not found), assembled (not collected), dynamic (not complete/static) (4). “Data are inherently fluid and remain fantastically unstable” (4). Within this model, messy, (re)generative concepts such as remix and sampling create data assemblages connected to, but not directly representative of, the research subject (one that also, one hopes, contains meaning for the people who experience it). As a multi-stepped process of data engagement, the present scrapmap project embodies the idea that data transforms itself into a myriad of potentiality from the moment we engage with it (before, during and after our experience in the field). This data generation process was an affirmative one, which aimed to generate new ways to view the forest school experience (and extend my understanding of my own embodiment in the research process).

### 2.2 Researcher as wayfarer

My second underlying question involved understanding my own role in the research activity. The notion of clearly defined researcher positionality – so endemic to many qualitative research approaches (for example, in traditional ethnography) – also became fuzzy. Was it either hugely important or not worth trying to define at all? If I accepted that I was an integral part of data generation then my steeped involvement in the forest school *becoming* was also a given. And so my positionality was integral to the process and inextricably entangled with the study, yet also impossible to define within a clearly bounded remit. This notion of deep researcher entanglement is becoming prevalent in contexts that aim to acknowledge more-than-human agentic forces. Within, for example, the field of

*childhoodnature*, there are calls for a reconceptualization of what counts as knowledge/data, working within a framework where researchers ‘become within’ the process (16). It is true that I was fully immersed in the process, and yet it also seemed important to document some aspect of my involvement. I decided that my approach to data generation warranted some reflexive analysis, perhaps venturing into methods of auto-ethnography. How did I make my in-the-moment decisions about what to record, what to notice, what to do, where to go? And was there something about the woods space that acted agentially on me as much as it did on the children? Reflecting upon my experience, the nature of our activities during our visits to the wooded space seemed inherently tied to travel around the site. This was not travel in the normal unidirectional fashion, where travelling involves a journey from A to B. Wayfaring (5), rather than travel, was a more accurate description of the activity in the woods space. Tim Ingold’s ideas about the invisible line traced by a wayfaring walk resonated very strongly with my own experience of inhabiting the forest school space, both in terms of making my own in the moment decisions about who to follow and observe, and in terms of watching the children’s activities within the space (5). Ingold sees the line that is produced by the wayfaring walk as being more like a series of join-the-dots, linking one spontaneous moment with another, rather than a true directional line.

“Like the line that goes out for a walk, the path of the wayfarer wends hither and thither, and may even pause here and there before moving on. But it has no beginning or end. While on the trail the wayfarer is always somewhere, yet every ‘somewhere’ is on the way to somewhere else. The inhabited world is a reticulate meshwork of such trails, which is continually being woven as life goes on along them” (5).

I decided to trace my own engagement and subsequent wayfaring line over a series of seven separate visits to the forest school. I did this by wearing my sports watch to generate my own digital line using Global Positioning System (GPS) technology. Playing with digital GPS data is not a new concept (17). It arises from the present posthuman era of chosen surveillance (or lifelogging)(4). The concept of creating digital art was not built into smart watch technology but arose when humans began to think about their movement with/in the terrain and its relationship to the lens of the digital data file. More-than-digital creativity is a human and deliberate response to the ubiquitous digital data lens (and perhaps a natural progeny of the existing body of work which combines cartography and art (18). Familiar with this concept, I decided to apply it to track my researcher involvement with the setting, with the aim of decoding my sequential involvement and recoding it into a tactile material representation of my synchronic entanglement.

### **3 RESEARCH METHOD**

The research setting was a wooded, neglected area within an urban public park, used by two reception classes from a local primary school for weekly forest school sessions during school time. Children in the class were aged four to five years; they were accompanied by a team of educators and parents. Over seven separate visits to the forest school site I tracked my wayfaring around the site using GPS technology. Abstracting the raw data from the GPS watch, the digital lines of travel (representing my muddy, entangled, visceral traipsing through the undergrowth) generated a clean, linear/synchronic topography of each event.



Fig 1.1 A single digital map recorded by my sports watch app from the session 23.03.22

I exported the maps from the sports application, printed onto paper, traced onto dressmaker's paper, then embroidered each individual wayfaring route onto a piece of fabric that I found in my scrap fabric box. I fashioned the scrap fabric into a base map of the woodland site. Each route was layered on top of another on the scrap fabric like a digital embroidery sampler.



Fig 1.2. The process of embroidered route generation.

I wrote myself the following list of digital-material process actions as an *aide memoire*:

1. Walk the map wearing the watch. Turn on when you leave the base camp tarpaulin, turn off when you return back. Then don't think about it in between. At this stage you are recording not making; generating a line as the GPS system makes its digital track.
2. Download the map via Bluetooth which links to the fitness app, which generates a downloadable map.
3. Open the GPS/Ordnance Survey mapping website and upload the file.
4. Download the generated map route and open in Microsoft paint.
5. Print the map route on the same scale as the scrap map fabric.
6. Place the map on the scrapmap.
7. Trace the map route onto dressmakers' paper.
8. Pin the map and sew along the lines. You decide how big the stitches are. Repeat from step 1.



Fig 1.3. The finished 'more-than-digital' scrapmap.

I embroidered all seven GPS tracks; overlaid on a single piece of fabric. In this way I created a more-than-digital map; a material reassembly of the wayfaring decisions I made in the forest, abstracted into digital data, and then reconfigured/recreated as tactile materiality. The resulting creation is not a map in the sense of a representation of the world “imprinted upon the paper surface of the cartographic map, ready-made and complete” (5). Rather, it is an inaccurate portrayal of a messy process, full of accidental and intentional distortions. I began to refer to it as my *scrapmap*. This 'more-than-digital' scrapmap shows one way in which human-material entanglements may become transformed into a material-human artefact.

## 4 RESULTS AND DISCUSSION

Firstly, this somewhat playful engagement with the data revealed aspects of my engagement with the forest site that had hitherto gone unnoticed by me. And, secondly, the process of data transfiguration caused me to interrogate my own understanding of the nature of research data itself. In this section I address each of these issues sequentially.

### 4.1 The process of data engagement

The physical sewing task process caused me to consider again and again how the forest school site, rather than being an inert landscape or backdrop, acted agentially upon me. In other words, the physical setting – the living matter-stuff of bushes, veteran beech trees and muddy patches, as well as the undulations of the sloped site itself – shaped my movements and activities. I was entangled with a very vibrant active place. Specific sites and features caused me to spend extended time in them, and this became materially apparent as I struggled by hand to place stitch upon stitch in the same place on the fabric of the map. The reasons for the *stickiness* of certain areas seemed linked to the way certain spots contained place-specific features which guided our activities (a tree that was particularly good for climbing, a mound of earth where dinosaur bones might be buried, a fallen tree trunk that became a boat). Indeed, some of the places which acted with powerful agency upon both me and the other the forest school participants were literally sticky. For example, there was a large patch of deep mud which was most challenging to cross, and much time was spent there watching the proceedings and helping children to extricate themselves from its gloopy depths. Far from maintaining an objective, bounded stance as a researcher, I was instead a living part of the forest school doings and beings. I responded naturally to the space and the activities therein and my tracks betray a certain chaotic randomness. However there is also a sense to my movements which I perceive as a faithfulness to the integral physical features of the site, and the activities that the site generated. *Here* is the mud patch, *there* we hiked up to the climbing tree. Oddly barren areas where children and adults did not tend to linger are hastily crossed with a quickly stitched line. The area around a dangerous fallen tree was never ventured into and the fabric remains untouched. The agency of the space itself is laid out on the stitched fabric where my finger traces the well-worn patterns of doings and wayfaring. I developed an understanding that, although activities in the woods are child-led and not pre-planned, the forest itself turned out to have some clear ideas about what should happen where. Forest school researchers Harwood and Collier (19) suggest that reconfiguring notions of agency (inherent to the 'material turn')

can highlight “how children encounter and respond to and with the woods” (19, p. 339). They suggest that forest school offers a unique conceptual and physical space for the blurring of boundaries and the “de-centring of humans” as children and adults jointly construct new “matter-meanings” (19, pp. 336–337) within a shared, living space. In this sense, the process of creating the scrapmap revealed new meanings and agency that the forest itself seemed to generate for me as the researcher, too.

## 4.2 Wait, is it still data?

One valid criticism of the scrapmap itself may be that the data portrayed is so far removed from my research experience in the woods as to be virtually meaningless as ‘data’. In partial defence of this accusation, I contend that this study is an exploration of my understanding of a key concept underpinning the debate about the nature of post-positivist data generation (4) i.e. *everything I do with the data (including the initial generation) does something to it*. Thus I consider this project to be a playful metaphor for all researcher engagement with data. Touching the tactile scrapmap, I considered how many layers (human and technological) I was now removed from my visceral, sensory entanglement in the remembered reality of the woods. I was now a long way from my mud-caked boots in the forest – many distortions and inaccuracies had crept in. For example, satellite technology glitches often caused inaccurate data tracks. I knew that I always began my watch in roughly the same place (at the large tarpaulin where the children congregated at the start of each session). Yet, my watch frequently logged me starting in a slightly different place. Subsequently, the transfer of the route from the sports application to the Ordnance Survey map website appeared to lose some of the finer route detail. It also added some extraneous information that I was unaware of at the time, such as total elevation ascent in metres. This seemed to be an oddly mathematical abstraction, only distantly related to my sluggish, tired legs trudging up the muddy hill or, conversely, skating haphazardly down uneven, rutted slopes. Next, I made pragmatic interpretations when drawing the route (‘do I really need to include all these back-and-forth scribbles?’) and sewing embroidery stitches, inevitably losing detail but perhaps making key decisions about what needed to be included and what could usefully be discarded. All that being admitted, does the resulting map still count as research data? I think so, if I accept that all qualitative data engagement is an account of an experience through the very personal lens of the researcher. And if viewed as a metaphor, I contend that engaging in this process (selecting, discarding, distorting, recreating) is what happens to all data to some extent. What, then, is data? I decided that perhaps it must always be viewed as a mere trace (inscribed in a different medium) of something that *was* (at a fixed and never to be revisited moment in space and time).

## 5 CONCLUSIONS

This study materializes the idea that data transforms itself into something else the moment we generate it. The notion aligns with the recent ‘material turn’ in social sciences and education which rejects the idea of a binary subject-object divide. As philosopher physicist Karen Barad notes, even at a sub-atomic level, “we are part of that nature we seek to understand” (2). During this exploratory study I made intentional data transformations, moving from visceral nature entanglement via digital abstraction to the creation of a tactile material artefact. Viewed through a new materialist lens, I confess I am left with a lingering doubt as to whether the digital counts as material or whether digital materiality is a thing. However, the digital was successfully transformed back into physical, and as a result I call my data transformation outcome a ‘more-than-digital’ product. Data was selected, lost, distorted, and recreated in the final piece. However, even after a significant transformational process, such data did provide meaningful insights into my role within a qualitative research context.

Having carried out the ‘more-than-digital’ scrapmap process, I am left with the idea that digital data can be considered as a layer of constructed meaning that sits atop reality. Consider; I can take a walk in the woods during a moment in time and abstract a layer of digital data (which apparently takes up no physical space at all) that seems to overlay my physical travels rather as if a hovering eagle or drone had tracked my haphazard tracks around the forest. The resulting map is a synchronic rather than

chronological representation of my wayfaring choices, or *why I decided to go where I did*. The data file is therefore a digital top layer of meaning. It portrays both the places temporally and spatially occupied by my body during the research activity and also the negative space (i.e. the places where my body did *not* go). Much of the meaning contained in the movement is only vaguely discernible even to me as the erstwhile author of the wayfaring tracks. However, as with all data, my task is then to communicate meaning to others involved with and/or invested in the research context, and the creation of the physical map allowed me to do that. From a personal perspective this process was an affirmative one, generating new ways to view my entanglement with the forest school setting. It seems undeniable that nature itself has a profound agentic effect upon the participants who visit and become with forest school. The agency of nature is fluidly intertwined with our own agency, and this study afforded me an opportunity to explore this concept further and view my intra-actions at a conceptual and literal distance.

In this study I have explored certain methodological issues regarding new materialist researcher positionality, data generation and intra-active entanglement within a research setting. The recent body of work in the field of *childhoodnature* has highlighted the troublesome impact of new materialist conceptual notions upon the role of the researcher and the reframing of methodological enquiry; returning again and again to interrogate “how the... tensions of researcher-researched, and subject-object, and their centering-decentering are engaged” (18 p.230). Here I have suggested that documenting qualitative aspects of researcher involvement during the actual research activity itself may be one way to address some of these tensions. It may be argued that this notion sits on the cusp of two overlapping ideas: defining researcher positionality in qualitative research and the notion of self-as-data (4). Perhaps researchers may continue to draw upon some of the well-established moves made by, for example, autoethnography, to inform researcher positionality in qualitative studies. In this way they can perhaps move decisively beyond the idea of a fixed researcher positionality towards one that dissolves or, at the very least, troubles the boundaries between subject-object and researcher-researched.

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