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ON METHODOLOGICAL ACCOUNTS OF IMPROVISATION AND “MAKING WITH” IN SCIENCE AND MUSIC

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ABSTRACT

Donna Haraway calls us to create new ideas and new ways of thinking, and new kinds of stories to think with, because the old ones are failing to address the most pressing issues of our time. Such a shift relies on different concepts of what these terms mean, and creating new tools, concepts and ways of being with people, materials and environments. This chapter thinks with Haraway to explore how doing research differently in one research project (exploring teaching as an improvisatory act with music student teachers) has enabled the researcher to develop different stories about research, the role of a researcher and ultimately the role of a teacher. It challenges three interrelated assumptions about educational research and practice: the dominance of humanism, the linearity of process and the dominance of the linguistic. In their place, it explores research as improvisation, as *making with* materials, senses and forms. It considers how we can shift from a humanist, abstracted epistemology to a flattened onto-epistemology which focuses attention on being, on the entanglements of humans and materials, and on a pluralist knowing arising from all the senses.

Keywords: data, Haraway, improvisation, linear research, linguistic turn, methodology, post-humanism, research process, the senses in research, theme and variation

INTRODUCTION

It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with ... It matters what stories make worlds, what worlds make stories. (Haraway, 2016: 12)

Central to Haraway’s writings is the call to action that we need new ideas and new ways of thinking, and new kinds of stories to think with, because the old ones are failing to address the most pressing issues of our time. Such a shift relies on different concepts of what these terms mean, and creating new tools, concepts and ways of being with people, materials and environments. Haraway implores with us to re-see not only our practices and ways of living, but also how we can make with arts, science and social science methodologies together in new forms of research. She explores research practices which she describes as “art science activist worldings” (2016: 78), arguing that current research practices (with particular reference to “laboratory models of contemporary scientific practices”) (2016: 64) fail us and what we need to do.

This chapter thinks with Haraway, to explore how doing research differently in my own research project (exploring teaching as an improvisatory act with music student teachers) has enabled me to develop different stories about my research, my role as researcher and ultimately how I perceive my role as a teacher.

WHAT DOES “DOING” RESEARCH MEAN?

Over the last five years of my project I have been frequently asked, both within and beyond academia, how my research is going. This question is phrased in a number of ways including “Have you got all of your data now?”, “Have you got a good group of participants?”, “What methodology are you using?”, “Have you got good stuff coming from the data?”, or “How’s the writing up going?” These questions often lead to me giving a vague and unsatisfactory response. These questions are not difficult, they are not unfair, but they do cause me problems because of the assumptions they contain, rooted as they are in the educational research paradigms arising from the social sciences, which have dominated our field, with particular assumptions about terms such as data, researcher, analysis and methodology.

The critiques of these research practices, coming most significantly from post-humanist literature (which in turn has developed from and with feminist literature, complexity theory and new materialism) gives us the opportunity to “change the story” (Haraway, 2016: 40) and, in doing so, change the relationships between subjects, knowledge and research. This changing of the story affords us the possibility of re-seeing, re-feeling and re-thinking assumptions and practices in teaching, and in my case in music education. While critique of such assumptions and practices is well developed, it is only through changing the story that differences are made and explored, providing a way forward into the new, rather than just reflecting on and critiquing the present. Post-humanism, as a force for making difference, is a complex constellation of ideas, authors and theories, which as Taylor states “is resolutely interdisciplinary, post-disciplinary, transdisciplinary and anti-disciplinary” (2016: 7). Central to its momentum is its critique of educational research practices as a point of departure from the well-trodden story that currently exists in education. This current story of educational research and practice is grounded by three interrelated assumptions – the dominance of humanism, the linearity of process and the dominance of the linguistic – which we must now begin to challenge.

Humanist Assumptions About Research and Practice

As Haraway asks, “What happens when human exceptionalism and bounded individualism, those old saws of Western philosophy and political economics, become unthinkable in the best sciences, whether natural or social?” (2016: 29–30). Such a focus on humans and human-to-human relationships at the expense of all others is, as Taylor highlights, an outcome of the Western Enlightenment which, “via colonialism and science, generated a version of humanism grounded in the separation of, and domination by, a smallish section of ‘mankind’ from/of the ‘rest of’ nature, humanity, and nonhuman ‘others’” (2016: 8). In this form, humanism is associated with particular forms of knowing, an epistemology which positions thinking as separate from bodies, nature and culture, and talks of singular truths and facts. This form of knowing is divided into disciplinary fields and is subject to disciplinary ways of being and researching. In music education this is exemplified in situations where knowledge *about* music is given higher value than other forms of knowing and is perceived as transferred from one human brain to another. As van der Schyff argues, quoting Bowman (2004), where music education relies on a cognitive, humanist assumption of training young people into being able to “accurately reproduce the pre-given relationships or ‘meanings’ ... it obscures music’s ‘participatory, enactive, embodied character’ as well as its great pedagogical capacity to ‘highlight the co-origination of body, mind, and culture’” (van der Schyff, 2015: 79–80)

While new materialism, and subsequently post-humanism, concepts which are elaborated in earlier chapters of this book (see for example, chapters 1 and 2, 5 and 10 amongst others) challenges these binaries of knowledge between us–them, culture–nature and human–

animal, and feminism and arts-based research has developed notions of pluralist ways of knowing, humanist assumptions still dominate current understandings of what it means to do research. Accordingly, reporting on human thoughts and actions is hierarchically elevated and the mind of the researcher, and knowledge within it, is considered of most prominent importance. This is seen in the questions I am asked, where it is assumed that I am “reporting” on human responses and actions, where there is one truth that I am uncovering, with a separation between myself and the data which has been “collected”. These are mirrored in the conversations I have had as a teacher where musical knowledge is considered bounded, separate and packaged for students to absorb. “The” knowledge is considered to be fixed and unchanged from their interaction with it and therefore the same for everyone.

Assumptions About Linearity in Research and Practice

Another set of assumptions exist in the questions asked of me, that the process of research is linear. Of particular challenge for a long time was the question of what methodology I have chosen. The difficulties of this question are highlighted by Weaver and Snaza (2017), who argue against what they term “methodocentrism”, which they argue is “the belief that predetermined research methods are the determining factor in the validity and importance of educational research” (2017: 1055). They argue that choosing a methodology in advance, thus creating a linear pathway through a research project, “disenables research from taking account of problems and non-human actants that are presumed to be of no importance or value in existing social science research methodologies” (2017: 1055). It is this very ability to be responsive in-the-moment, to be response-able to problems and arising relationships, which Haraway talks of as “staying with the trouble” (Haraway, 2016: 1). Instead, goal-directed, teleological approaches to research and teaching are so embedded in our practices “that it has become conventional, reductionist, hegemonic, and sometimes oppressive and has lost its radical possibilities” (St Pierre, 2011: 613). This is clearly seen in linear views of learning and progress in our education system, where intentions and expected outcomes create a linear journey between two fixed points, not knowing or knowing only a little, and knowing or knowing more. Unexpected outcomes, or outcomes that do not align with the curriculum (whether within or beyond a subject), are often “lost”, although it is exactly in this difference that possibilities exist. This loss of radical possibility is what Haraway is referring to in her call for us to change the story, where we risk the story always being the same if we stick to our current ways of being researchers and teachers.

Linguistic Dominance in Research and Practice

Qualitative research practices in education continue to be regulated by representational forms of thinking, writing and doing, stemming from what is commonly referred to as the “linguistic turn” in which words and language are used to represent others’ lived experiences. This again is mirrored in pedagogical practices where knowledge which is declarative, state-able, transferable and measurable dominates teaching. In music this has had a profound effect where writing about music, demonstrating verbal or written understanding, is of greater value to the system than “doing”, as summarised by the headline “School music lessons: Not enough music” (BBC, 2012) based on a report by the English education inspectorate on 200 school music departments. In these lessons, musical knowledge was being “represented” but not always experienced. This representational view of knowledge also pervades research practices. As Maclure states, representation is an important part of research, and this critique is not to completely remove “representationalism”, but it is to recognise what she describes as a “pervasive representationalism that has rendered material realities inaccessible behind the

linguistic or discourse systems that purportedly construct or ‘represent’ them” (2013: 659). The key feature of such representationalism is a view of the researcher as someone who is able, through their own thinking capacities, to categorise and make judgements about others, ensuring truth is revealed and the resulting knowledge is fixed, transferable and abstracted. Fundamental to how this plays out in research is the view of what data is, what it looks like, and how it is to be interacted with. Assumptions that data is written, captured on paper, static once it has been collected, and separated from the researcher still shape expectations of what researchers do.

To rebalance the linguistic turn, post-humanism further develops the notion of the body and senses as central to understanding. This is described by Taguchi:

This process of transcorporeal engagements, involving other bodily faculties than the mind, constitutes a rethinking of the very act of thinking that goes beyond the idea of reflexivity and interpretation as inner mental activities in the separate mind of the researcher. (2012: 267)

This shifts attention away from the interpretation of words and meanings and towards a re-balancing of the role of other senses in research and teaching, towards a knowing-in-being (Barad, 2007: 185) rather than knowing as represented through words. As Barad states, “We don’t obtain knowledge by standing outside of the world; we know because we are part *of* the world” (2007: 185). This re-positions the researcher and teacher as living in and with the learning, not judging and assessing from the side-lines.

While these three critiques of research are well developed in some post-qualitative research¹) circles, they have particular resonance with the question “What does ‘doing’ STEAM research mean?” While a grammatically clumsy question, the doing is essential in reconfiguring research to be response-able to the demands of a changing environment, as stated by Haraway in her call to “make kin in lines of inventive connection as a practice of learning to live and die well with each other in a thick present” (2016: 1). This is reflected by Taylor’s argument that post-humanism “invites us (humans) to undo the current ways of doing – and then imagine, invent and do the doing differently” (2016: 6), undoing binaries that have dominated research practices (e.g. theory–practice, body–mind, self–other, emotion–reason, human–nature) and “producing instead multiple and heterogeneous knowledge pathways that are radically generative for educational research” (2016: 7).

This creates a shift from epistemology (with its humanist focus and abstracted views of knowledge) to a flattened onto-epistemology which focuses attention on the being, the entanglements of humans and materials and a pluralist knowing arising from all the senses. This is where STEAM research and pedagogic practices can be seen as “joining in” with a world in which science and arts ways of being are already inherently entangled, where to artificially pull them apart, as previous incarnations of research practices have, is to stop ourselves being response-able to all that we are joining in with. The question then becomes what such research “doings” look, sound and feel like, recognising they will be different for each project undertaken.

STEAM RESEARCH AS “MAKING WITH”

¹ Post-qualitative research is a term first used by St Pierre (2011) to describe research practices that were beginning to reject and challenge the qualitative methodologies which were dominated by a humanist focus.

To change the stories we think and do research and practice with, particularly those with a humanist, linear and linguistic disposition, I have begun within my research project to think with the idea of “research as making with”. This is an idea in the making itself, not a fully formed, fixed concept but one that is in motion (Taylor, 2016: 20). At the centre of this developing position is my own exploration of what it means “to make”, which is also central to my doctoral project.

The distinction here between making and making with is significant. Making with is a making of relationships across and between matter; it is always inventing as a dynamic response. It is a making which is rooted not in a telling of past events, representing and interpreting, but staying in the present, exploring how the materials and relationships make with me at this moment in time. This is not a making of imposing ideas or a plan onto matter (Ingold, 2013a) but allowing ideas to surface between us (humans and materials) and stay, rather than being pushed aside as not important. It is embodied, a making with the hands, eyes and ears, and is a creative act which draws on pluralist ways of knowing and being.

This changes the story of research, meaning that it “cannot be ‘about’ something or someone”, and “cannot be done or carried out” (Taylor, 2016: 20). Instead it is a performative view of research which “may only be activated, enacted, instantiated so that it strives to set in motion a ‘cacophonous ecology’” (Taylor, 2016: 20). The ecology of my project involves not only the people, materials and interactions of the research but also the histories we all bring to each other, the lives we are living and the interactions we have beyond. This decomposes the idea of a project being a container, and contained; instead it is a living, ever-expanding entangled act. It is here that the synergy with improvisation is apparent, where “The spider spinning its web or the musician launching into the melody ‘hazards an improvisation’ ... [where] to improvise is to join with the world or meld with it” (Ingold, 2011: 83–84). This is not a making whereby form is imposed, where the researcher decides on a methodology in advance and applies it, and it is not a making where matter is considered to be static or fixed, where research materials, whether conversations, videos, literature or my writing fragments, are an inert backdrop to the thinking and knowing, but instead is a making which “intervenes in worldly processes that are already going on ... adding his own impetus to the forces and energies in play” (Ingold, 2011: 20–21).

This improvising, making as we go, joining in and inventing, is what Haraway (2016) terms “ongoingness”, which not only changes the narrative of research, but also changes the story as to who and what a researcher is. It changes the temporality of “doing” and how material thinking is co-constituted with/in the matter itself. It repositions researchers as “makers”, entangled in and with the materials, ideas, bodies and concepts of the project. It is a story of response-ability to the ever-changing entanglements of the research and of what Ingold terms “knowing from the inside” (2013a: 3), learning *with* not about, moving learning forward, not learning *from*, therefore creating an impetus to transform, not document (2013a: 3, 13).

IMPROVISING TOGETHER

The illustrative examples used in this chapter are part of my doctoral project exploring the idea of teaching as an improvisatory act with music student teachers. Improvisation is defined broadly, including verbal, physical, material and sound responses. The project has developed with eight music student teachers in the last year of their teacher education course and their course leader. Although situated within a music education context due to the group, some of the activities and the disciplinary environments we met in, and the project’s ideas, processes, teaching and research practices, literature and interactions with others (both human and non-human) is transdisciplinary. This was not obvious at the outset of the project but has developed during and in response to it.

At the core of the project's activities were two workshops in which we explored concepts of improvising and experiences of improvising, and improvised together, after which we spent three months playing with the notion of teaching as an improvisatory act via e-communications and in a final conversation and workshop. Central to these activities was the notion of "living" the research, where even in the planning stages of the project I was aware that I did not want to contain the research to on-course experiences, but to keep it responsive to whatever and wherever the group found synergies.

It was through these activities and the living of the ideas that we collectively put "bodies, things and concepts ... in[to] motion" (Taylor, 2016: 20). It was in this process of "making with" bodies, things and concepts, where everything was open to change and challenge and where all of us were taking the project with us into our lives beyond our time together, that the notion of making with became central to the project. This is explored in the rest of this chapter, focusing on making with materials, bodies, methodology and forms.

Making with Materials

Prior to the workshops in which we improvised with different materials and each other I had conceived of improvisation as a "way of being" with others and as a dynamic form of knowledge creation. What I had not fully appreciated was the way the materials of the improvisations would exert themselves into the project. Doing different types of improvisation with the research group and reading around post-humanist views of matter have led (and continue to lead) to an appreciation of just how much matter matters, and a gradual reconceptualisation of the role of matter as an "active participant in the world's becoming" (Barad, 2007: 136). To appreciate the significant role materials have made has involved me in deliberately "playing" with them, and the learning they have made.

The French word for play ("jeu") is broader than the English word "play", in that it encompasses the play of children, the act and manner of playing an instrument, and also the idea of there being room to manoeuvre (i.e. there is a little play in the steering wheel). To play with the research materials (whether playing like a child, playing them instrumentally or seeing the room for manoeuvre they create) involves multiple processes of doing, seeing each, as Archer and Kelen (2014) describe, as an opportunity to "encounter reality", as the "means by which we find ourselves and find each other beyond the noise of distraction" (Archer & Kelen, 2014: 200). The sequences of photographs below, taken from the videos of the workshops, are included as an exploration of making with materials both with the research group (through the playdough and instrument improvisation experiences in the workshops) and into my own processes of working with the research materials.



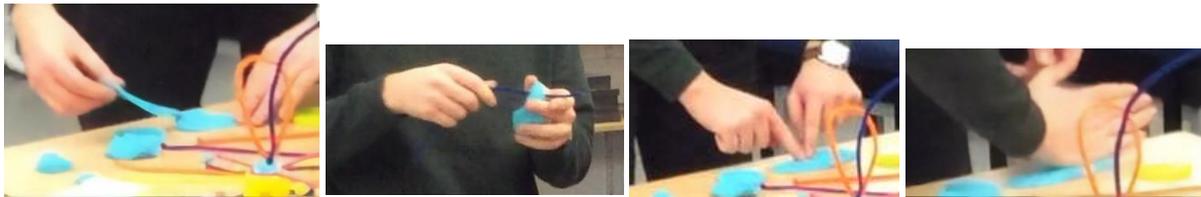
Figure 17.1: Go for it or hesitate?

This photo (figure 17.1) was taken prior to the group establishing an explicit shared view about what product they were aiming to make. I wrote the following notes as I watched the video:

*Rolling, squashing, making a ball, making a sausage, flattening out ...
Careful and slow or quick and rhythmic ...
Whole hand or just the tips of fingers
Smell, feeling, laughing ...
Comfortable, uncomfortable ...*

When the photo was alongside Taylor’s (2016: 20) quotation “bodies, things and concepts ... in motion”, I wrote:

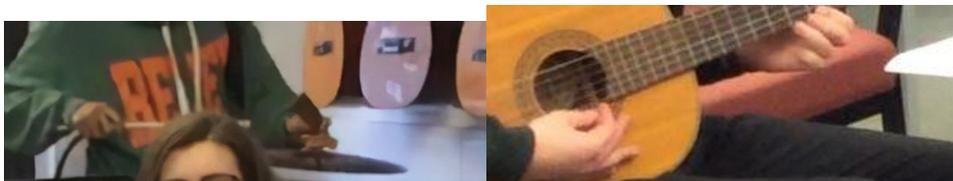
Playing as activating the concept of improvising. Re-acquainting themselves with the material. Re-exploring previous ways of making with the materials, knowing the material will respond (many of the group made shapes they’d made in the past such as balls and sausages). Why the hesitation in making the materials move?



Figures 17.2: Material thinking.

My notes in response to the playing sequence (figure 17.2):

At first, seeing this as him exploring the materials for their potential, their affordances. Re-seeing this as the way in which the materials allow him to play, responding to his hand shapes, the pressures and pulls that he applies. Seeing the physical responses he makes to the shapes and weights, that the materials make and the role of the contact between surfaces (skin, playdough, table, pipe cleaner).



Figures 17.3: Trying it out and “noodling”.

I took these notes in response to two brief moments of exploration (figures 17.3): “Taking a few seconds to explore, done so quickly others in the room may not have noticed, done in private with the material, done quietly and with reduced physical movements.”

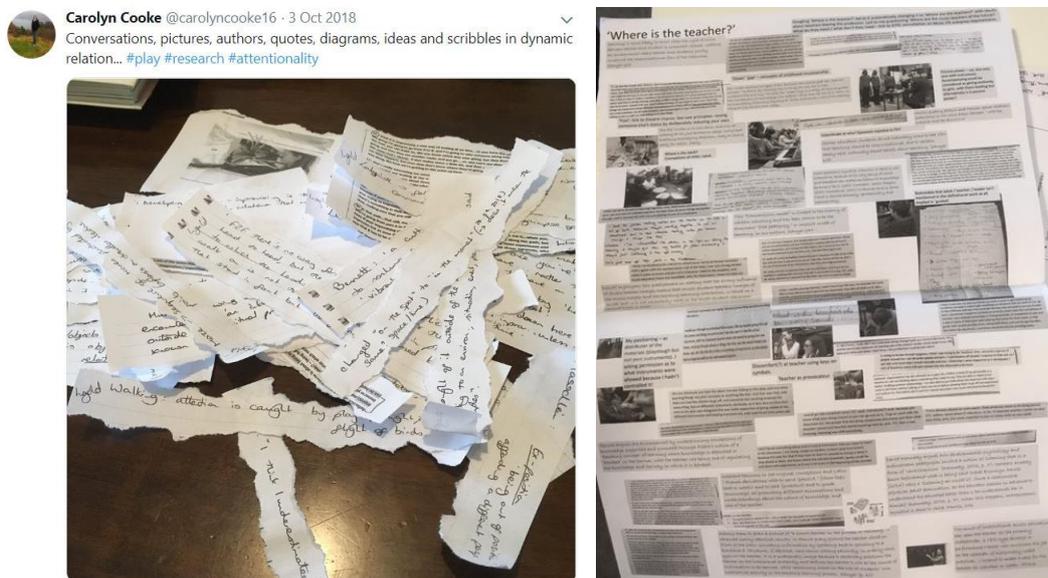
My notes continued:

“a purposeful purposelessness or a purposeless play. This play ... is an affirmation of life – not an attempt to bring order out of chaos nor to suggest improvements in creation, but simply a way of waking up to the very life we’re living ...” (Cage, quoted in Hill, 2018: 59).

A moment of “waking up” the body, the matter, the senses.

These photos are not being used as static representations of what happened at that time but have now become active materials which I play with. They ceased to be something to support the developing of ideas around improvisation and became *the* development in and of themselves. My notes are a performative space in which I see and re-see, allowing me to play with the pictures, ideas and my thinking. To play, following what is happening rather than imposing a fixed process onto the materials, involves attending to the materials, not to arrive at a particular perspective about what they mean but to “displac[e] one’s gaze so that we are ‘(t)here’ and the ‘(t)here’ can present itself to us in its evidence and command us” (Masschelein, 2010: 44–45). Displacing one’s gaze away from the humanist, linear, linguistic and away from immediate judgements and responses is not a one-step process, but a cycling of playful explorations which keep judgements suspended and perceptions dynamic.

Playing as a way of displacement involves not only making with the research materials in themselves, but making and re-making them in relationship with other materials (Figures 17.4). Making with the materials in relationship with different literatures, different materials from other parts of the project and my own experiences allows me to encounter the materials in different ways. Sorting, shifting, putting together, inserting something different, organising in lines, circles, piles or webs all involves a dynamic playfulness and a resistance to “fixing” meanings, akin to what Ruck and Mannion call “messy situational mapping” (2019: 12).



Figures 17.4: Playing with my research materials

The experience of playing with the research materials is not one-sided, where I play with them but they remain at a distance from me; rather in the process of making with them, I am engaged in what Haraway (2016) calls “making kin”. It is not cyclical, inward-looking processing without purpose. Instead, making kin, as Niccolini, Zarabadi and Ringrose (2018) describe, is “an active and mobile process of encounter which acknowledges and responds to what is

carried (the fraught histories, damages, traumas and inequalities) and the risky connections inherent in such work” (2018: 336). Haraway herself argues that critical to making kin are the words “resignified, repopulated, and reinhabited” (2016: 216–217), where making with materials creates new ways of thinking, being and living.

Making with Senses

As a maker makes with materials, playing to their possibilities and their potentials, a maker also makes with their senses as they experience the encounter. This is not a making with senses in which they are considered in isolation, each telling us something different, “sliced up along sensory pathways by which they access it” (Ingold, 2013b: 320) but a complete bodily “inhabiting” in which we commit ourselves to fully joining in with the world (Ingold, 2014). Murriss, drawing on Davies, talks of such encounters as “an intensity. A becoming that takes you outside the habitual practices of the already known” (Murriss, 2016: 11). This moves us significantly beyond the idea of the “bounded” teacher, planning and delivering something static and fixed, to instead “inhabiting” and “encountering” the learning *with* the children.

This involves being attentive to how the senses make and create. Masschelein defines attention as related to care, being at, being present, listening to, going along with and implying a “kind of waiting ... [as related] to the [French] verb attendre” (Masschelein, 2010: 48). In my project this has involved making with senses in the workshops with the music student teachers and their course leader, and also making with my own sensorial responses in the project. Avoiding a representative and interpretivist stance means recognising the impact of the senses in the research group’s experiences of improvising, noting their recordings of sensorial reactions (of which there were many) and noting the moments in the workshops and conversations which were particularly sensorially charged, but not in an attempt to explain them or categorise them, but as a way into making with them.



Figures 17.5: Touching ... slowly.

My notes in response to the touching moment (17.5):

“To touch threatens bodily boundaries opening up different corporeal ontologies.” “To touch is the opening of one body to another” (Springgay, 2018). When else do we bring hands, arms, skin together in playing instruments? Maybe in a piano duet? Otherwise our improvising, although musically together, is physically separate?

The sequence of movement and sound from which these two still pictures are taken capture the slowing of time and the hesitant, awkward pauses which these two students took to explore the bringing together of their bodies, cymbals and therefore sounds. Relative to the creation of

sounds that was going on around them, this sequence, which lasted for 8 seconds, was a highly charged sensorial moment as I looked on. Instead of reporting on the hesitation of the players as something separated from myself, I felt their awkwardness, their slow incremental movements towards each other and saw their facial reactions as side by side they gradually moved closer to each other. Allowing my own sensorial response, which was also making with the students and materials at the time, to be foregrounded is to trouble the sensorial hierarchy that has dominated educational research (that of sight) and to hold up the multisensorial world as a site of huge productive potential, making us re-see, attend differently, and make new ways of thinking.

At a later point, long after the workshop, I was reading Springgay's (2018) account of touch and immediately brought it together with these pictures, and a re-watching of the video in my messy mapping in PowerPoint (see Figure 17.9). The re-living of the moments in relationship with Springgay was to allow the sensorial responses noted at the time, and those experienced at this point to make with me, making me slow down and experience again, from a different place, allowing me to be attentional to a different view, and make a different set of questions than just reporting on and documenting what had occurred. This was not out of an attendance to categorisation and frequency, as many other research processes would do, but through a process of noticing what Maclure (2013) describes as "glow".

Maclure describes "glow moments" in her own work as being those which "generate sensations resonating in the body as well as the brain" (2013: 661) and which she further elaborates as when

connections start to fire up: the conversation gets faster and more animated as we begin to recall other incidents and details in the project classrooms, our own childhood experiences, films or artwork that we have seen, articles that we have read. (Maclure, 2013: 661)

In my project such glow moments have occurred in much the same way as Maclure, forming the basis of themes which I have kept as a working document, refusing to fix them into existence and recognising that they continue to develop and respond to the project's material-sensorial experiences. However, they are not "moments" or "fragments", but are more distributed, where affective noticing leads to webs of associated materials and experiences from across the research project being joined together. Therefore, the term "theme" in this project is not a representation of a concept, but is, in musical terms, a complex web of melodic motifs, harmonies, rhythms, textures and timbres.

MAKING WITH METHODOLOGY

Elgar's *Engima variations*, the silhouetted cut-outs of trees in a craft shop window or playing with my son seem a strange answer to the question "What methodology are you using?" but the process of methodology in my project has been exactly that, a process, which has and is still developing in response to (or with) my lived experiences. I had not read Weaver and Snaza's (2017) critique of "methodocentrism" until quite far on in the project or read about methodologies as always "becoming" or "being methodologically in the mess" (Taylor, 2016: 17). I had, like most doctoral students, been through course processes which had required me to state my methodology and write about it in advance of "data collection". Even at my progress review in year 3 of my part-time studies I had written about a hybrid methodology bringing together arts-based research with critical reflective practices as I could not fully commit to something "off the shelf". While this felt uncomfortable at the time, as I felt I had not managed to present my project clearly and concisely in the expected format, I began to realise the

potential of this situation once I had begun reading post-humanist literature and in particular Lather’s notion of “methodology-to-come” (2013: 635), which is contingent on being response-able to what the project’s experiences make.

Therefore, instead of imposing a methodology onto the project in advance, this project’s methodologies have developed (and continue to develop) in parallel with the research experiences. As Ingold argues, this is about following “forces and flows of materials that bring the form of the work into being” (2013b: 317).

This has involved attentionality (Ingold, 2013b: 306) to what occurs along the way. This is not always easy, where intentions (driven by course procedures, time limitations and expected thesis structures) can easily overwhelm attentionality. To pay attention has not been about ignoring the original intentions of my methodological approach, ignoring the past histories and assumptions that I brought to the project, but instead taking time and making space(s) to make with what was occurring as a result.

I wrote in my notes:

The pictures I chose for the “hot responses” were chosen to help define improvisation as something broader than their assumptions of improv as jazz. I had conceived it as an experience to inform discussions and thinking once we went into the 3-month “living the research” phase. But actually, their responses have completely flipped my thinking – particularly the comments about hands, and hands together. That one comment is making me see and think about hands everywhere I look. Hands in their musical and playdough improv., use of hands in their initial conversations last month, how [my kids] use their hands together ...

After this note, I started paying attention to hands, revisiting the initial conversations I had had with the group and attending to just how important the students’ hands were in making “space objects” (Johnstone, 1979) as they made conversation with me (figures 17.6). This was not initially part of my stated methodology; it is something that developed *with* the materials in the process.



Figures 17.6: Tromboning, clarinetting and guitarizing.

This in turn made me more attentive to the physical, influencing how I continue to “make with” ideas the students have set in motion. “It’s about being right in there with the kids.” This quotation, from a transcript of a final conversation, on first hearing was not that significant, but in light of the focus on the physicality of improvising has led to me making with it, exploring what this statement might mean from a physical perspective, bodies, hands, proximity, drawing heavily on my experiences of play with my children and my experiences of teaching that were occurring concurrently with the project at this point.

Designing methodology in this way, as “joining in with” and paying attention to what is being made, changes the idea of a research project from a container to “collective-producing systems that do not have self-defined spatial or temporal boundaries ... [and] are evolutionary and have the potential for surprising change” (Dempster, cited in Haraway 2016: 61). It challenges what “counts” as important and what is allowed to weave itself into the research

and therefore I have begun to think less with the term methodology and more with the term “form”.

Making with Form

From quite an early stage in my project I searched for a form, trialling writing out possible chapter titles, sequencing different parts of my “to be thesis” and proposing structures. As Ingold (2013a) notes, we are used to thinking of making as a project, which starts with an idea already conceived as to what the outcome will look like. Instead Ingold (2013b) quotes the artist Paul Klee in arguing for a re-seeing of form as a result of “a process of genesis and growth that give[s] rise to forms in the world we inhabit”, with form as “movement, action [and] ... life” (Klee, quoted in Ingold, 2013b: 312). Form in Klee’s sense is the setting up of the conditions which allow joining in to occur, where form becomes living.

As an educator working in systems bounded by intentions, success criteria and standardised practices and processes, adopting a view of form as something to make with, something to vary and develop, was a tension within the project for a long while. I was aware that during the project my planning for the workshops and conversations I had with the research group became less and less formal, leaving more spaces, gaps and pauses for the group to explore. This was noted by the group as one of the key difficulties in thinking about improvisation in the school classroom, where structures and pressures of time (whether individual lesson time or the pressure to “fit in the learning” for assessments) was a barrier to them having space and time to allow forms to develop. This was a tension we all felt – a balance between intention and attention, between form and freedom to recognise moments where forms were not productive or supportive, or where they gave impetus to paying attention to a different range of issues.

It was playing with terminology associated with improvising in music and listening to the radio (Elgar’s *Enigma variations*) that made me attentive to theme and variation as being about this balance, and ultimately leading to me making with this form in my project. Randall-Page (2015) describes theme and variation as being “two sides of the same coin” where without the “underlying, ordering principles” of the theme there would be “undifferentiated chaos”, while no variation would lead to stasis and “endless monotony” (Randall-Page 2015). While Randall-Page is making this point in relation to nature, where theme and variation is a central principle of evolutionary development, he also sees the same process as underpinning evolutions in society and culture, stating that it is theme and variation “combined, the relationship between them [which] produces creativity both in the natural world and in art” (Randall-Page, 2015).

In contrast to some methodologies which could be seen as systematic and imposed onto the research materials, making with theme and variation as a form promotes movement and action, where the materials themselves make the form. Just as a composer might choose to work and develop new material from a harmony, rhythm or motif in a musical theme, making a new and different piece from it, research as making with form is similar. As Ingold states, “The movement of making does not lie in the relation between one thing and another ... but in a movement orthogonal to this relation” (2013b: 319). This is about seeing the dynamism, the openings, and the possibilities created in the interactions, how different classes, materials, contexts and ideas correspond, making something new. It is what is created at the juncture, which is not the sum of the relationship but the difference which is created as a result. This difference-driven making aligns with what some post-humanist researchers have termed diffractive research practices. Lather (2016), drawing on Rifkin and Taguchi, describes diffraction as “engagement towards a thinking otherwise ... [where] a new kind of object comes to attention: an object pulled out of shape by its framings and, equally importantly,

framings pulled out of shape by the object” (Lather, 2016: 126). It is a way of making difference important where, as Taylor argues, it offers a more creative form of methodology “which opens ways of undoing traditional, humanist epistemic codes so we may do, present and write research differently” (2013: 692). However, as Lather (2016: 126) points out, this fundamentally challenges what it means to be a researcher.

BEING A “MAKER”

Changing the stories we do research with is to change *how we are* in research to escape from “majoritarian norms, subject positions, and habits of mind and practice” (Taguchi, 2012: 276). In this project I am acutely aware that making these shifts is not easy, often catching myself approaching or doing things with a humanist, linear or linguistic approach (figure 17.7).



Figure 17.7: Facilitating or making?

My notes:

I was making with the research group in conversations but when it came to the physical making with the playdough and instruments, I sat and observed. Why did I do this? I wasn't learning with the materials and intra-actions but trying to understand and interpret. Maybe my teacher ways of being, in this room, with student teachers overrode my attention to the making!

It is tempting to create a story here of not having engaged with post-humanist literature's challenges to terms such as researcher and data at this point and that I have now made this shift, but this is too simplistic. I find myself constantly having to fight myself and the pull of existing stories about research. The attraction of thinking about research as making, and therefore researcher as maker, is that it immediately changes how I am, what I see as my role, and the intra-actions I have with the project. I am making with materials, experiences, feelings, literature and ideas. I am creating, exploring and knowing-in-being. This involves being minoritarian (Taguchi, 2012) by “understanding the body as a space of transit, a series of open-ended systems in interaction with the material-discursive ‘environment’” (Taguchi, 2012: 265), in which I interfere with the materials and ideas, and they interfere with me.

Making is not always an easy process. There are moments of tension, uncertainty and times where it would be easier and quicker to fall back into well-trodden ways of working, but these are the moments that can prove most productive and creative. As Springgay states, “thinking-making-doing asks us to consider how knowledge and learning are co-composed frictionally and through touching encounters” (2018:60), where it is the interferences, the tensions, the friction that require makers to work with and create. Writing this chapter has given me an idea of how to respond to those questions I get asked about my research: “Have you got

all of your data now?”, “Have you got a good group of participants?”, “What methodology are you using?”, “Have you got good stuff coming from the data?”, “How’s the writing up going?”
I am making progress!

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