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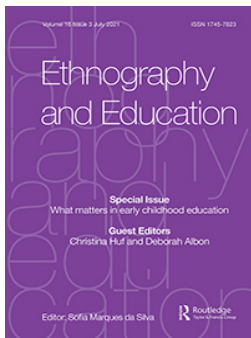
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Watching two-year-olds jump: video method becomes 'haptic'

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ABSTRACT


This article explores emerging findings in a sensory ethnography based in a nursery setting where video data has been co-produced with parents, practitioners and 2-year-old children. The project mobilises Froebel's twin concepts of 'unfoldment' and 'self-activity', reinstating the importance of the sensory-motor register as a form of knowledge production. It maps some interesting affinities between aspects of Froebel's thinking and a Deleuzian philosophy of movement and sensation. Focussing on proprioception as the felt-sense of bodies-in-motion, we discuss a video-based methodology that allows us to experiment with new ways of attending to the actions of 2-year-olds. Slowing the speed of video complicates the ocular conceptions of sight often associated with ethnographic observation. We propose instead practices of *watching* – of attentiveness and kinaesthetic receptiveness, where vision becomes 'haptic'. We confine ourselves here to video data of jumping bodies, making sense of/ with the event of a jump within a philosophy of attention.

KEYWORDS

Sensory-motor; proprioception; slow-motion video; Froebel; unfoldment; self-activity

Introduction

The article explores emerging findings from a sensory ethnography based in a UK nursery setting where video data has been co-produced with parents, practitioners and 2-year-old children. The project works with Froebel's twin concepts of 'unfoldment' and 'self-activity' to reconceptualise a sensory-motor intelligence historically associated with Piaget's developmental stages. In this article, we focus on how video-oriented methodology allows us to experiment with new ways of attending to the sensory-motor dimensions of events involving 2-year-olds. We map some affinities between aspects of Froebel's thinking and a Deleuzian philosophy of movement and sensation, and explore some implications for ethnographic method. Focussing on proprioception as the felt-sense of bodies-in-motion, we show how altering the speed of video complicates ocular conceptions of sight associated with ethnographic observation. We propose instead practices of *watching* – of an attentiveness and kinaesthetic receptiveness, where vision becomes 'haptic'. 'Watching' refuses the rush to categorical judgement that structures observation, and challenges the problematic power relations inherent in the notion of the ethnographic gaze (Columpar 2002).

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We confine ourselves to two short fragments of video data of jumping bodies to make sense of the event of jumping via a methodology of attentiveness. As we explain below, we do not treat jumping as a 'theme' or schema, but rather as a *motif*, one of several that have emerged in our encounters with the video data. 'Motif' retains an etymological relation to 'movement', helping us remain open to what bodies in movement can *do*, while suspending decision and judgement as to what they *mean* within normative frameworks. Watchfulness helps us to sidestep our own cultural and intellectual predispositions to some extent, in order to apprehend children's actions and movements outside of the frameworks that typically render them explicable (for instance as indicators of developmental milestones, or as ethnographic codes).

We do not suggest that the motifs or data events that we discuss below are 'representative' of all children and therefore generalisable across all contexts, nor do we focus on the child as an individual in the usual sense. Rather, we aim to complicate distinctions that are too often implicitly made between general and particular, individual and social, internal and external, behaviour and context, nature and culture. One point at which the (vastly different) orientations of Froebel and Deleuze coincide is the reconceptualisation of the relations between the One and the Many implicit in these binary distinctions. Both thinkers conceive of a cosmos in which everything is ultimately in relation.

The motifs emerging from watching video in slow-motion also provide a glimpse of the occult sociality of children – moments when they come together and break apart according to unspoken accords that seem more like *contagion* than explicit invitation or negotiation. Deleuze and Guattari identify contagion with the logic of the pack: a more-than-human mode of relation that exists alongside, inside and outside the ordered, hierarchical relations of state, law and family. Contagion does not defer to human exceptionalism but involves 'terms that are entirely heterogeneous' (1987, 242). Deleuze and Guattari associate pack logic and the relationality of contagion with 'becoming-animal' (240). This mode of becoming, they argue, is not superseded in the transition to adulthood or the acquisition of more civilised and orderly modes of relating, but rather affords the latter their dynamism and openness to change. The haptic vision afforded by slow-motion video offers the promise, then, of glimpsing interests and alliances in young children that are missed in the adult preoccupation with language, cognition and strictly human sociality.

The video methodology we are developing responds to de Freitas (2016) invitation to adopt an experimental stance to video data and method in educational ethnography. While resisting illusions that research film/video reflects or captures an actuality, we are interested in exploring how film and video can help us to re-think bodies-in-motion, and specifically, the sensory-motor qualities of very young children's responses in both their classroom and their domestic environments. What is interesting here is not to argue for more authentic, or more successful methods, but rather an acknowledgment of how these evolving techniques assemble (children's) bodies in particular ways. Instead, de Freitas proposes that we experiment with new ways of assembling bodies-in-motion and explore the challenge of engaging with the body *in* its state of movement. Focussing our attention on the capacities of what Deleuze calls the non-thinking body, we ask, what is it capable of and how might film help us to learn from it? (Deleuze 1989, 182). We propose that, despite the long association of the visual regime with spectatorship,

surveillance, categorisation and judgement, video technology can be ‘hacked’ in order to allow vision to become ‘haptic’ – a matter of immanent sensing rather than distanced appraisal. In so doing, we modulate the concept of *watching*, drawing out its sense of attentive receptiveness to *difference*, of alertness to small changes in unfolding events of which one is oneself apart.

The article contributes to ethnography’s recent ‘turn’ to materiality, sensation, affect and the more-than-human (e.g. Pink 2015; Ingold and Palsson 2014; Tsing 2015; Kohn 2013). This diverse body of work challenges the dualism of nature *versus* culture, rethinking the relation between mind, body and world as one of productive entanglement, out of which knowledge and action unfold. The concept of *watching* provides ethnographic analysis with access to the materiality and the ‘multisensoriality’ (Pink 2015, xi) of encounters, and demonstrates how sociality is always more-than-human. In particular, the article offers an expanded understanding of ethnography’s central practice, namely participant observation. We concur with Ingold’s (2014, 384) description of participant observation as ‘generous attentiveness’. Watching, as a practice and pedagogy of attention, gives depth and dimension to Ingold’s assertion that participant observation is always a matter of observing ‘from the inside’ (387, emphasis added).

The article also has implications for research and pedagogy in early childhood education. This is a field that has already begun to reconceptualise ethnographic practice in line with posthuman and new materialist thought (e.g. Taylor and Fairchild 2020; Pacini-Ketchabaw, Taylor, and Blaise 2016; Hackett and Rautio 2019). The methodology of watching, as immersive attentiveness to the unfolding dynamics of events involving (here) young children, offers a corrective to an intense scrutiny of adult–child interactions. Watching, in the sense developed here, offers an alternative, or a complement, to the practices of observation and documentation that are central to early years pedagogy and assessment in the UK and elsewhere, by providing insights into what observation ‘from the inside’ looks like and how it can be actualised in early years settings.

The rationale for a sensory ethnography that pays attention to children’s sensory-motor interactions, in particular, is fitting since sensory-motor learning is ordinarily invoked as a critical mode of learning in young children. At the same time, this mode of knowledge production is often rendered imperceptible when located within a progress narrative that casts it as the first stage towards more cognitive and representational forms of knowledge.

The listening-2 research project

The video data discussed here emerged from a project called, *Listening-2: Investigating sensory-motor learning in two-year olds*. The name attempts to mark out our project as one which adopts an expanded form of attentiveness to young children that resists the focus on words and speaking that has accompanied a current political rhetoric around the educational gap. In this article, we re-formulate this notion of an expanded relational listening that is beyond words, towards an investigation of the haptic aspects of our video-based methodology. The familiarity of the term sensory-motor in early childhood development lore testifies to the legacy of Piaget’s (1950) learning theories, for which sensory-motor learning is foundational. Despite this, it carries an ambivalent status as a (progressively) overlooked ‘stage’ of children’s thinking, superseded by abstract and

operational thought. The intention of this project was to ask what Froebel's concepts of *unfoldment* and *self-activity* might offer us as a (re)turn to sense and movement. With Froebel's background in natural history, particularly, in forestry and mineralogy, he incorporates human growth in his wider thinking about growth in animals, plants and even crystals. He describes self-activity as a 'continuous learning, but one at, around, and in life itself' (Froebel, in Wasmuth 2020, 75), where unfoldment is a process of internalising the outer, and externalising the inner (Wasmuth 2020, 65). We contend that such experiential and materially involved 'laws of nature' (Wasmuth 2020, 139) suggest a more-than-human unitary principle that re-vitalises the sensory-motor as a valid form of sensate knowing. A (re)turn to sensation and movement is also characteristic of contemporary posthuman, new materialist and Deleuzian theories (Braidotti 2013; Barad 2007; Deleuze 1994), which have, in turn, influenced early childhood research (Lenz Taguchi 2010; Olsson 2009; Somerville 2016).

Martenscroft Nursery School and Children's Centre, our research site, is an inner-city setting in Manchester that opened in 2000. Located in Hulme, an area that includes socio-economic deprivation, it has a high percentage of families living on low incomes. In a locale characterised by a changing demographic and a growing population, many families are recent migrants, and it is one of the most ethnically diverse wards in Manchester (Bullen 2015). Running against a characterisation of the area as one of poverty and crime, is a counter-narrative of cultural diversity, multilingualism, educational aspiration, and a strong sense of community. The research builds on strong, well-established research relationships between Martenscroft Nursery School and Children's Centre and Manchester Metropolitan University, which have been strengthened with the re-location of the Faculty of Education in 2014, close to the nursery site. Prior to the Listening-2 project, Christina conducted a slow-research ethnography (*The Sensory Nursery*) over three years in the 2-year-old classroom (MacRae 2019a, 2019b, 2020).

In the current project, from November 2019 to March 2020, Christina spent one afternoon/morning every week in the same classroom as a participant. She also spent one afternoon/morning situated in the Nursery corridor where she was able to download film clips to the project computer, as well as chat to parents and exchange or view film clips with them as they dropped off their children. In March visits were suspended because of social distancing restrictions in response to Covid-19. There is no scope here to discuss the implications for the research in detail. However, we can note that one outcome of the first lockdown was that a few parents took a stronger stake in the making, sharing and reflecting on their videos. The jumping film fragment made by Salma (a parent), that we will discuss, is an instance of this. In Salma's case, prior to lockdown she had been interested in filming the ways that her daughter responded to the places in which she was moving through, both on foot as well as on her scooter. When we looked at these films together, we noticed many small ways that Anna created rituals during these navigations, for example; jumping on drain covers, creating skipping patterns in-relation-to the curbstone, as well as creating sung refrains as she did this. Thus, when lockdown started, Salma was very aware of how much Anna revelled in moving responsively to the environment, and so she started to experiment with her daughter by using the furniture as an alternative playground, since they were mainly confined to indoor space. This became a joint endeavour between the two where they

explored different objects and surfaces for Anna to jump on (and off). Salma filmed these jumps in slow-motion and she also experimented with a set of images where she had attached light sensors to Anna's wrists and ankles, filming this in a darkened room to create an experimental series of images that capture the jumping motion as lines of light (data that we plan to write about elsewhere). These changes in the dynamics of the researcher-researched relation are helping us to reconfigure co-production as itself a methodology of folding, that brings all participants inside the research process.

When participating in the nursery activities, Christina used video to occasionally record everyday events in the classroom. Parents were invited, as co-researchers, to watch these videos of their children in the nursery, as well as to contribute film clips of everyday activities of their children at home. When nursery classes were suspended during the lockdown, the archive consisted of a mix of in-class video taken by practitioners, out-of-school video taken by five parents, as well as video of classroom interactions filmed by Christina. During the first lockdown, three parents continued to take films and photos of children for the project. Having two university researchers in this project allowed one of the researchers, Maggie, who was not involved in the daily life of the nursery, to watch the films with a possibly less habituated eye in contrast to Christina, parents, and nursery practitioners.

Written halfway through our project, and while research visits are suspended, this article gives us the opportunity to pause to think about using video (particularly slow-motion video) as a method in a co-produced sensory ethnography. Working with some of the emerging recurring motifs in these film clips we were interested in exploring how they could be understood in-relation-to the Froebelian concept of self-activity and unfoldment. In this article, we focus on only one of these motifs: jumping. Using two video clips where children jump, we explore how a methodology of *watching* these in slow-motion allows us to attend to the body as it moves through space, which also leads us to think about the particular, watchful intentionality of a body that jumps.

Watching as 'seeing without reading'

In attending to sensation and movement in the composition of mundane events, we make our case for developing new or altered concepts for ethnography. Our approach could be seen as an attempt to develop methods of 'seeing without reading', in the words of Deleuze and Guattari (1983), in order to mitigate the problems of 'colonial specularity' (Bhabha 1994, 122) and its collusion in the projects of anthropology. Stewart (1996) notes that the ethnographic code and the social worker's code often deploy similar techniques of surveillance through rendering the lives of others visible (see also MacLure 2013). The eye that attempts to see without reading tries to avoid subjecting participants – human and non-human, virtual and actual – to observation's ambition to comprehend; to circumscribe and bestow meaning. We liken 'seeing without reading' to watching, or watchfulness, as different from the practice of observation. The verb 'to watch' has evolved from the activity of keeping watch – for example, keeping watch on the deck of a ship at night, or keeping watch over the running of an engine room whilst others sleep. Keeping watch is closely tied to time and duration as it demands that for periods of time the watcher surrenders themselves to a state of being alive to their surroundings in order to become acutely attuned to unexpected

movements. This is the wakeful watching of a sentinel (and ‘watch’ and ‘wake’ are etymologically linked), akin to the vigilance of animals that are alert for any movement that may herald danger to them or their group. Such attentive watching is also an important element in young children’s interactions among themselves. Attempts to enter into an ongoing activity, or to summon confederates for a new one, are often preceded by a period of measured watching. Collaborative play often involves subtle and reciprocated watching, as children mirror and modulate one another’s actions and expressions. As we note below, dynamic watching is also significant in the jumping events.

There is an uneasy relationship here between the trans-corporeal sensing that takes place between the watcher and the watched, and the separation of bodies that guarded custody also produces. Thus, while the night watch on a ship or the prison guard in the watch tower might be acutely attuned to vibration and motion through a watching that is sensed at a bodily register, watching also always carries the potential to become a method of panoptic surveillance where other bodies are read, comprehended and invaded. Watching is also inextricably associated with the establishment and maintenance of territories and boundaries, and with alertness to impending ‘trouble’. In Massumi’s (2017) term, it obeys the ‘principle of unrest’, sensing tipping points in the ongoing transformation of events. Mapping this kinship between ‘watching’ and ‘seeing without reading’ as a particular tactic by which to engage with film/video data helps us to grapple with (but not to resolve) this ever-present coloniality of our gaze as adults that look at children. We recognise that we can never claim to be immune from this visibility, even when we try to disturb our ways of seeing.

The Deleuzian notion of seeing without reading imposes an altered concept of vision within ethnographic practices of sensing that are polyvocal and synaesthetic. Several authors have arrived at the notion of *haptic* vision (Marks 2000; Puig de la Bellacasa 2009; Deleuze 2003, 129; see also Massumi 2011) – a form of immanent sensing that has renounced its transcendent position in the attempt to apprehend the abstract forces and intensities that compose events, invoking rather its own ontological participation (Cull 2011) in those unfolding events. Haptic vision works synaesthetically across the boundaries that arbitrarily partition sensing into discrete senses and elevate some to more prominence than others. In Hayward’s term, haptic vision might be a matter of seeing with ‘fingery eyes’ (Hayward 2010). Watching, as a practice of seeing without reading, is a matter of attentively fingering and following the lines and contours of abstract form. Yet, paradoxically, and in resonance with the focus of this paper, it always demands a *jump* from the known to the unknown (Deleuze and Guattari 1983; Stengers 2008).

Slow-motion methodology

Manning states that ‘the sensing body-in-movement also feels time’ (2012, 67). It is this link between vision, movement and duration, which gives the film its sensory register. Film’s ‘multi-sensory orbit’ (Mullarkey 2009, ivx) is produced out of its capacity to animate bodies *in-relation-to* matter over time. Watching film offers us a mode of haptic engagement that confounds the binaries of observation/participation; we register the time-movement of filmed bodies, as Froebel might say; they unfold through action.

Simultaneously, the unfolding body-in-motion that plays out on film infolds in the watcher through a haptic visuality (Marks 2000, 162). For Massumi (2002, 80), an

event (of jumping for instance) ‘folds out of its own event space and into another’, and in doing so it migrates and modulates, ‘changing its nature’ in the process. This haptic vision registers before we are conscious; in Massumi’s words, ‘participation precedes recognition’ (2002, 23). Film hovers in a liminal threshold between conscious and unconscious, it makes us ask what lies between percept and concept and how these are mutually constituted rather than set in opposition to each other. Following Deleuze, Mullarkey (2009) points to film’s perceptual *and* conceptual potential. In this sense, film can become a medium of thought. Film offers a way to address our failure to ‘perceive the thinking presence of the body’ (Cull 2011, 90), however this thinking or rather ‘non-thinking’ (Deleuze 1989, 182) may not be the kind of goal-directed, reflective thinking that we usually associate with cognition.

Film’s plasticity allows alterations in speed which stretch and alter the thresholds of our perception. It is a mode that could make us attend differently to the unfolding of an event, but this attention might not be at the level of the sayable, as necessarily conscious: it may also have a quality of an extra-consciousness (Cull 2011, 87). Because the animation of film/video has the capacity to adhere to the senses, this is not a distanced viewing: it is also able to act on the watching researcher’s (and parental) body beyond their analytic gaze as a form of what Caton calls ‘video sensing data’ (Caton 2019). In Salma’s case (see video fragment below), she spoke of how it had made her slow down when she was with her daughter, Anna, and ‘pay more attention to the different shades and forms of movements Anna performs on a daily basis like jumping around, spinning or pretend playing’. Slow-motion film-watching can amplify this sensing of difference, offering a keener attention to small thresholds of change and perceptible micro-movements. When we are watching film/video, especially when its speed is slowed, we encounter both our body and other bodies as they both register difference and become different; processes of differing that we have ‘in common’ with all things (Deleuze in Cull 2011, 82). This can focus our attention more directly on the dynamics of motion itself, and the shifting space between moving bodies as they respond to each other. It can become a way of attending to children’s lines of movement (Kind and Argent 2017, 89), a liveliness of lines traced through the motion of bodily encounters. This also reminds us the about the relationality at the heart of movement, an ‘implicit relational knowing’ (Stern 2010, 11), where, as Froebel says, force and matter mutually condition each other (2012, 40).

It might be thought that slow-motion recording threatens ‘verisimilitude’ by distorting the relationship between video time and the real time of events. However, we argue that by changing the *threshold of perception*, slowed down video has the potential to amplify moments of contact and change in events that usually pass unnoticed. Mullarkey (2009), after Bergson, notes that all perception is a ‘condensation’ of the unbounded flows and turbulence of reality, allowing us to see certain events only at the cost of suppressing others. Moreover, we make these cuts and condensations according to our own inclinations and interests. Mullarkey notes that films, and modifications to ‘normal perception’, can disclose ‘the ways in which movements and events can often be missed, either by being too slow or too fast. They also show the way *we* can be sped up or slowed down when patiently watching a film that is too fast or too slow for us’ (2009, 149; emphasis added). In an early co-authored article on ‘animating’ classroom ethnography (MacLure et al. 2010, 545), we proposed innovative uses of classroom video for

precisely this purpose – that is, of ‘stirring up the indolence of our ethnographic regard’ by expanding the range of events where something can be seen to ‘happen’. Children, adults and ethnographers may be folded into events that move at different speeds and therefore are imperceptible to one another (see also MacLure 2016). Mullarkey (2008; video 45.56 min) suggests that there is an ethical obligation to honour the events of others

Our event, our time, needs the patience of others, just as their time, their event, needs our patience and respect.

Jumping as motif

It is strange that even when it comes to motor acts, dynamic experiences are most often taken for granted as a part of means-ends operations to accomplish a goal, and thus receive little additional attention (Stern 2010, 10)

As we noted in the introduction, we watched archived film clips from the classroom and donated clips from parents at home, using the concept of *motif* to bring forward sensory-motor activity. Other emerging motifs included: getting inside (buckets, boxes, small spaces); performing as if one had become another person or thing (praying, loading a dishwasher; becoming melted ice); responding to (or creating the conditions for) things falling through the air (including bubbles, sand, snowflakes).

The notion of motifs as ‘emergent’ troubles the idea of *choice* as the sovereign decision of the human interpreter. All researchers make choices about what to focus on in analysing their data, and indeed about what will count as data. Some of these choices are conscious, while others will depend on factors that exceed our conscious awareness. The methodology of watching is an attempt to open ourselves to motifs and tendencies that might be obscured by our own disciplinary habits, standpoints or modes of perception.

While jumping is distinguished from walking as when both feet leave the ground at the same time (and because of its verticality rather than its horizontality), it is not so easy to delineate a jump. At what point does a skip become a jump rather than a spring in your step? There were many kinds of jumps enacted in the project video clips. There were solitary children making single jumps (e.g. from steps or sofas); there were solitary repetitive jumping events (on sofas, in puddles); there were also contagious and collective jumping events when one child’s jumping appeared to infect jumping in other children, for example, in puddles or in response to bubble-blowing. Sometimes jumping seemed to erupt affectively (jumping for joy?), like when Ali attached the final wheel to the car on the whiteboard game, an action that would set the car into motion. Some jumps appeared to be performed or staged very consciously; others were minor movements that were hardly perceptible, or that operated as a background hum.

Jumps do not get much attention in child development research. Walking, like talking, is heralded as a critical milestone in the developmental chronologies of toddlers. There is perhaps an affiliation between walking and talking in the degree to which their linearity becomes complicit with progression. This is unlike jumps, which on the face of it, simply return you to where you were before. However, when we slow down a video of a jumping body and watch the jump at the micro-level, the adage that one’s feet never return to the same spot becomes more tangible. Even when jumping is repeated as a continuous event

when its micro-motions are brought in the threshold of our perceptibility, each jump has a variability of intensity, of direction, of speed, and of co-motion (Massumi 2002, 13) in-relation-to other bodies, including the ground. We notice, moreover, that each jump registers a qualitative shift rather than simply the displacement of a body (Massumi 2017, 8). Bodies are changed and charged in the jump, encountering their own difference through the surge of affective intensities felt, such as pleasure, suspense, vertigo, quelling of agitation, etc. Massumi elaborates that ‘when a body is in motion it does not coincide with itself. It coincides with its own transition: its own variation’ (2002, 3).

Children’s propensities for jumping are reflected by an entertainment industry based on the manufacture of trampolines and bouncy castles, that cater to these compulsions. Yet, while there is a great deal of sports research into jump training for athletes (plyometrics) focussing on the physiology of muscles and how to achieve an optimum explosive force (where increasing the height/length of jumps is critical), research into the muscular momentum of the untrained, but vital, jumps of young children is non-existent. In contrast, there is a very sizeable body of research into the motor development of babies and young children focussing on the development of co-ordinated movement, especially walking (Adolph and Berger 2006). Relatedly, there is a long history of post-Piagetian research that relates motor skills with cognitive, social and perceptual development in young children, pointing to a close relationship between these ‘domains’ in the first three years of life. This tendency to value motor development as underpinning progressive ‘cognitive functions’ (Adolph and Berger 2006) is sometimes used to evidence the foundational importance of motor development in developing higher-order executive function (although there is little evidence to support this relationship in older, more schooled children) (Libertus and Hauf 2017). This body of research, while interested in different domains (cognitive, social and perceptual), firmly approaches them as distinct and separable fields. By remaining focussed on the *experience* of jumping here, we are confining ourselves to an interest in what slow-motion as a method of sensory ethnography might offer us in paying attention instead to the felt-sensation of jumping. We follow Massumi’s interest in a moving body rather than the body as a point in space, as a way to further what Massumi calls the micro-politics of making-matter (2017, 63) so that jumping matters more to us as a significant motif in the data we attend to.

We now turn to two film snippets to discuss in more detail how slow-motion can become a tactic to ‘see’ jumping without ‘reading’ or comprehending it according to our usual habits of bestowing meaning, as outlined above. As we watched the slow-motion videos of jumping we attempted to stop ourselves from explaining *why* jumps happen or *what* they might mean, and instead focussed our attention on the sensation of a jumping body-in-relation to its ecology. The first filmed jump-event that we will discuss was staged to be filmed when a parent (Salma) started to play experimentally with her child Anna during the first Covid-19 induced lockdown. Prior to this lockdown, one of the films that Salma had taken for the research project was of Anna jumping on a bouncy castle. Now restricted to their front room, this film was taken when Salma had placed a mini-trampoline in front of the sofa, and then filmed Anna leaping off the sofa to the trampoline in slow-motion. In the next clip, taken by Christina in the nursery playground, three children are jumping in puddles. In this instance, children have just come outside after lunch on a grey, wet autumn day. Here, we watch feet in an erratic stamping; this stamping then falls into collective rhythmic jumping, but rhythms are then broken as

disputes over puddle territories break out. We use the first clip of the single leap to think about jumping in-relation-to the Froebelian concept of self-activity. In the case of the second clip, we work with the notion of unfoldment. Both these concepts are deployed as a form of ‘attention-training’ (Cull 2011) that help us to see-without-reading.

Jumping as self-action

The first expression of the child is force (Froebel 2012, 6)

In the jumping event, when Anna jumps off a sofa and onto the trampoline, we consider how watching it slowed down has the effect of drawing us in as the propulsive force of limbs-in-motion is amplified. In the 1-minute slow-motion clip, Anna stands on a sofa, positioning her body in preparation for the jump from the sofa to the trampoline directly in front of her. Her attention is focussed on the centre of the trampoline that she is aiming for. After a moment of re-balancing, she crouches into a squat, draws her arms back and leaps upwards, a lifting body then becoming a falling one, to meet the surface of the trampoline. After Salma shared the clip with us, we engaged in a 3-way e-mail exchange where we discussed how watching in slow-motion ushered a loosening of our sense of self in order to ‘attend more closely to our participation in it as a world of perceptual change’ (Cull 2011, 81). In turning our attention to the micro-moments of Anna’s slow-motion jump from the sofa to the trampoline there were many things that struck us. Firstly, that the sofa (as well as the trampoline) might be thought of as what the dancer William Forsythe calls a ‘choreographic object’ (Manning 2012, 92); an object that is an active participant in the jump’s expression. In order for Anna to stand steadily on the sofa, she was having to continually adjust the ways that her weight was distributed through bodily contact. Slow-motion brought these micro-adjustments to our attention. We also discussed the qualities of the sofa; its height, its squishy-ness, its depth, all as qualities that contribute to animating the body into the ‘singular taking form’ (Manning 2012, 92) of the jump.

Secondly, when Salma watched the video she noticed ‘Anna’s reaction as she was carefully calculating with her body how to jump from one bouncy surface to the next’. Salma was interested in how this was ‘shot through some mental arithmetic calculations but also visualisation and body sensing’. This, in turn, led Christina to recall how sometimes in the night when she is feeling around the kitchen table to find a glass, she can switch the light on and then off, and even though it is now dark again her arm/hand is able to locate the glass. This drew our attention, not just to the proprioceptive sensing exchange that is taking place between Anna’s body and the sofa as she stands at the edge of the sofa, but also how this sensation is also being visually gathered into the continuity of movement as a force that is also incipient in the jump that the body is moving towards. Curiously, it is in the slowed down movement we become aware of the speed with which her body absorbs what Massumi calls a ‘double translation of the subject and the object into the body’ (2002, 59). Here one could perhaps talk of the ways that ‘organising self-activity is a rightful expression of matter’ (Massumi 2002, 228). The surfaces of the sofa and the trampoline become folded into the memory of the body as proprioception, translating ‘the exertions and ease of a body’s encounters with objects in a muscular memory of relationality’ (Massumi 2002, 39).

Finally, this makes us think about attention and attunement in-relation-to proprioception. Manning points out that ‘again and again in young childhood we are given instructions that assist us in differentiating our skin from that of the world’ (2016, 114). And yet by attending to minor movements we also glimpse the ever-presence of motion and how it is generated through an ‘experience of the lively continuity and co-composition between body and world’ (Manning 2016, 114). Proprioception becomes significant as an expression of this co-composition, where ‘enfolded in the muscular tactile and visceral sensations of attention are incipient perceptions’ (Massumi 2002, 138). By focussing our attention at a micro-level on relationships of change and movement, we are reminded of our failure to ‘perceive the thinking presence of the body’ (Cull 2011, 90). As Anna’s body is bracing itself for the jump, we both recognise the finely modulated attunement that is taking place within this ecology of the jump (force, body, gravity, sofa, trampoline), and at the same time, our watching awakens *in us* some of this attentional capacity, that we also absorb both viscerally and as a perceptual memory.

Jumping as unfoldment

the human is a carrier of a movement of relational transformation, one that swept it up, and sweeps through it. (Massumi 2017, 8)

Finally, we use the Froebelian concept of ‘unfolding’ together with the notion of the ‘refrain’ in Deleuze and Guattari (1987) to inform our perceptions of the event of collective outdoor jumping in the puddles. In this scenario, we register collective feet that break out into repetitive jumping. Christina started to film when her attention was drawn to the voices, motion and sounds of boots stamping in water that accompanied a small group of children gathering in a string of puddles along a fence. Here, the camera is fixed on the wellington-booted-feet as they respond excitedly to each other and to the water. Puddles are occupied by stamping feet, which attract more booted-feet, further animating the stamping activity. The intensity of stamping rises; feet lifting into the upward curve of the jump, then gravity, weight and force transforming body-in-motion as the greater downward emphatic force of stamping takes charge. This is a charge that is rearticulated back into the upward surge of the next jump. The puddle water splashes higher as it becomes increasingly agitated in response to the accelerating spring and velocity of jumping feet, and the feet themselves also respond with more fervour to this agitation. In both these instances, there are moments where feet fold into the jumping of other feet allowing some rhythms to emerge and grow stronger; there are also antagonistic moments when this confederacy breaks down.

The jumping events here have the quality of *refrains* or *ritornellos*, as described by Deleuze and Guattari (1987). Refrains are built from sonic, optical, bodily, gestural or motor reiterations that begin to organise a space and assemble order out of chaos. Deleuze and Guattari discuss many forms of the refrain, including birdsong, children’s games and musical motifs. The first example they give is the child who sings to comfort himself as he walks in the dark. The song, they write, is ‘like a rough sketch of a ... center in the heart of chaos’ (1987, 311). Refrains are thus territorial; they form a little ‘home’ that may be defended, or, opened out to invite others in (cf.

MacLure 2016). Ultimately the territory disperses and new ones are formed. Deleuze and Guattari emphasise that the refrain is always part of a ‘territorial assemblage’ – a ‘holding together’ of heterogeneous elements’ carved from the milieu (1987, 322). The puddle jumping, then, is an assemblage of elements that have been carved out of the milieu – the sound of splashing water, the felt thud of boots hitting the puddle’s surface, voices raised in exclamation or objection, the uneven texture of asphalt, the sparkle of droplets, etc. It is only in the specifics of their assembly that properties such as sound, light, texture, etc., become qualitative, and rhythm becomes *expressive*: ‘Territorialisation is an act of rhythm that has become *expressive*’, Deleuze and Guattari (1987, 316, emphasis added).

In our watching, we become aware of how impossible it is to delineate transitions between the falling into rhythm and the falling out of rhythm

Yet if we take thresholds to be so many minimal units of consciousness, tiny perceptions are in each instance smaller than the virtual minimum and, in this sense infinitely small. (Deleuze 1989, 101)

The affective tone, or ‘style’ (Deleuze and Guattari 1987, 318), of the feet-in-puddles tells of a shifting relationality between bodies (both human and non-human). In this dynamic unfolding of effect, because everything moves so fast but at such micro-speeds, ‘every perception is hallucinatory because perception has no object’ (Deleuze 1989, 106), and yet at the same time, the feeling of the body and of other bodies is impressed incorporeally on bodies, as well as across bodies.

Concluding thoughts

Perhaps the child skips as he sings, hastens or slows his pace. But the song itself is already a skip: it jumps from chaos to the beginnings of order in chaos and is in danger of breaking apart at any moment. (Deleuze and Guattari 1987, 311)

In this article, we have taken two leaps of faith inspired by Froebel and by Deleuze. The first is that we must believe in bodies as bearing witness to life in this world (and here we include non-human bodies as well as human bodies). For Froebel, self-activity is embodied learning that is always, as already noted, ‘at, around and in life itself’ (Froebel, in Wasmuth 2020, 75). Deleuze writes: ‘We must believe in the body, but as in the germ of life, the seed which splits open the paving stones’(1989, 167).

Secondly, we must align our thinking to be ‘in sympathy’ with movement (Mullarkey 2009, 166); by following movement, we are also following life itself. However, since thinking moves with movement, there is an automatic quality to the thought of the moving body. Movement (in)forms the body through its haptic and proprioceptive material engagements, in a way that recalls what Froebel called ‘inward thought’ (2012, 40). By attempting to watch for the smallest of children’s movements, we begin to glimpse not only how much these small movements do matter, but how they are also a sensate form of knowing.

By taking these two leaps of faith we are committing ourselves to a speculative engagement with the video data, or what Stengers calls ‘a jump that demands trust but offers no warrant’ (2008, 45). This has meant not quite knowing where these will take us, both in our video analysis and in writing this article. In turn, this has raised questions about a

philosophy of the jump that we have only scratched the surface of. Rather than offering an exhaustive list of propositions for ethnographic practice, these leaps of faith, in attending to the smallest units of movement and change, have cut us adrift from the common sense of the linear, progressive and standardising narratives that dominate early childhood about learning and development.

Attentiveness to the dynamics of jumping has also alerted us to what we have called the occult sociality of children. The collective jumping seemed to emerge via relations that were akin to those of *contagion*, as defined by Deleuze and Guattari (1987), coupled with the watchful etiquette of the members of a pack, rather than by explicit negotiation. The haptic vision afforded by slow-motion video helps us to sense dynamics of children's sociality that might otherwise exceed the ambit of our adult gaze.

The concept of haptic vision that we have taken up and mobilised in this article not only helps us to think differently about the sociality of children, and the significance of sensation, movement and materiality in learning and development. It also helps us to look for instances outside of the adult-child dyad or adult-led socialisation practices, to recognise the vitality of children's multi-sensory modes of being and interacting with others.

This methodology of watching has implications for early years education. It offers a critique of adult-child pedagogies that are heavily teacher-led. This is a tendency that has intensified in recent years in the UK and elsewhere under the impetus of 'school readiness' policies (e.g. Bates 2019) that aim to remedy perceived deficits in young children's communication and other skills. We suggest that the rush to intervention risks misrecognising the multi-sensory and embodied dimensions of children's learning and participation in the world. In turn, this has practical implications for the practices of observation and documentation that are prevalent in early years education. In place of documentation that records and evaluates what has already happened, it is possible to envisage a watchful and empathetic pedagogy of attention that takes its lead from children and helps them to amplify or modulate their own actions and capacities.

There are further implications for early child development. The concept of the motif that we have advanced here emphasises that sensory-motor activity is not a phase to be superseded by more abstract or cognitive reasoning, but a dimension of embodied relationality that persists, or insists, in all events. The motif might be contrasted with the concept of *schema*, which is influential in current thinking about child development (Athey 2007). Schemas are patterns of spontaneous repeated behaviour in young children that are considered to provide the grounding for the development of ideas and concepts. While schemas envisage development as a movement 'up' and away from sensory-motor engagement toward higher-order reasoning, motifs retain the trace of sensory, gestural and motor engagement in all acts of sense-making.

The analysis we have developed here also has implications for ethnography, and the directions that this is taking under the influence of the posthuman or materialist 'turns' in theory. It assists us, or obliges us, to re-think some founding principles. Most obviously, it provides an alternative, or supplement, to the core practice of *observation*, that challenges the problematics of power and distance associated with the ethnographic gaze, and with conventional video methods. The practice of slow-motion video 'watching' offers, we suggest, some cautious promise of a decolonising method that attempts to 'see' that which escapes classification and codification in language, and

therefore tries to avoid ‘reading’ others according to dominant systems of meaning. The ontology that we have unfolded here also causes us to think again about conventional oppositions between culture and nature, and the privileging of the former as a specifically human phenomenon. In common with anthropologists of the posthuman such as Tsing (2015), Viveiros de Castro (2014) and Kohn (2013), we understand events as assemblages of human, animal, ideational and inorganic participants – without losing sight of the specifically human significance of those events. In place of, or alongside, hierarchical kinship relations, and the equally hierarchical relationships inherent in the logic of classification, we have identified forms of affective and sensory alliance that are more like relations of contagion. We would argue that these relations are an appropriate focus for ethnographic study.

In conclusion, we return to Ingold’s definition of participant observation as ‘generous attentiveness’ to that which is emerging, rather than a record of what has already happened. We suggest that watching, as attentiveness from ‘within’ to the unfolding dynamics of events, gives methodological substance to Ingold’s image of observation:

It is like pushing the boat out into an as yet unformed world – a world in which things are not ready made but always incipient, on the cusp of continual emergence. Commanded not by the given but by what is on the way to being given, one has to be prepared to wait [...] Indeed, *waiting upon things is precisely what it means to attend to them*. (Ingold 2014, 389)

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