‘Baby-cam’ and researching with infants: Viewer, image and (not) knowing

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Abstract
This article offers a methodological reflection on how ‘baby-cam’ enhanced ethically reflective attitudes in a large-scale research project that set out to research with infants in Australian early childhood education and care settings. By juxtaposing digital images produced by two different digital-camera technologies and drawing on informal conversations with those who have viewed the images, it addresses the question: ‘What might we perceive or sense differently if we look at one filmed event through two different camera technologies, one of which is baby-cam?’ It is proposed that baby-cam-generated digital images may provide participatory researchers with a useful heuristic device in that they can remind researchers of the limits of their own ‘gaze’ and ways of knowing and theorising infants. When utilised in this way, baby-cam may assist infants to move further towards more fully claiming their ‘participant’ stance within early childhood education and care participatory research.

Keywords
Baby-cam, digital images, ethical reflection, infants, Merleau-Ponty, participatory research

Introduction
Participatory research for infants in early childhood education and care (ECEC) settings is often located in utilitarian approaches where infant participation is intertwined with the ideas and practices of knowing and representing infants’ experiences and thought processes (Elwick and Sumsion, 2013b). However, concerns that such approaches may obscure and perpetuate the ever-present realities of power that exist in infancy research (Elwick et al., 2014b; Johansson and Emilson, 2010; Sumsion, 2014) have led to calls for the need to revisit, broaden and deepen conceptualisations of infant participation. Also, the need to re-examine the ‘what’ which should form the focus of methodologies and pedagogies that address infants in ECEC settings has been emphasised (e.g. Bradley et al., 2012; Farquhar and White, 2014).
The challenges emerging from such scholarship include the need for researchers to consider their own involvement in the research process. In particular, researchers are urged to adopt an ethically reflective attitude towards infants by reflecting on the ways in which their own ‘gaze’ diminishes infants and, potentially, limits opportunities for infants to influence conversations arising from research encounters (Elwick et al., 2014a; for similar discussions regarding educational encounters, see Farquhar and White, 2014). This may sound easy. Nonetheless, although attempts to adopt an ethically reflective attitude in research concerning infants are evident, they are not proving straightforward (e.g. Sumsion et al., 2013), particularly when research encounters are mediated by digital-camera images (Elwick and Sumsion, 2013b). This is hardly surprising, given that adopting an ethically reflective attitude towards infants portrayed in digital images represents a significant departure from the more typical analytical stance that has an epistemic focus on knowing individual infants’ experiences. Nevertheless, ongoing advances in digital-camera technologies may afford researchers opportunities to develop a more complex appreciation of the ways in which their own desires and ways of theorising infants influence what they see when watching digital images portraying infants, and their associated responses (for discussion of a similar idea in relation to educational encounters, see White, 2014).

The purpose of this article is to offer a methodological reflection on how one such technology – ‘baby-cam’ (a small digital-camera system comprising a digital camera and sound-recording equipment worn by the infant) – enhanced ethically reflective attitudes in a large-scale research project that set out to investigate how infants experience their lives in Australian centre-based and home-based ECEC settings, from the infants’ ‘own perspectives’ (Sumsion et al., 2008–2011). Important to the researchers involved in the project was the commitment to working in participatory ways with infants, and, in keeping with that intent, a range of methods derived from the Mosaic approach (Clark and Moss, 2001) were used to generate multiple sources of visual, physical and verbal data. In this article, the digital images produced by two of those methods – a tripod-mounted digital camera and baby-cam – are discussed. The images portray moments in one infant’s life in a home-based ECEC setting. By juxtaposing the images produced by the two different technologies and drawing on informal conversations with those who have viewed the images, I address the question: ‘What might we perceive or sense differently if we look at one filmed event through two different camera technologies, one of which is baby-cam?’ I conclude the article by considering implications more broadly for participatory research with infants.

The interpretative approach to understanding the digital images in relation to the proposed question

The word ‘perceive’ is explicitly included in the aforementioned question in order to emphasise that watching digital images portraying infants in ECEC settings is a unique perceptual experience that viewers engage in via their bodies, rather than one they passively have or ‘look onto’ from detached conceptual and theoretical standpoints (Merleau-Ponty, 1968; Sobchack, 1992; Stadler, 2002). When talking about the body, I mean the body as it is lived as both a biological and corporeal phenomenon – a phenomenon that necessarily entails both the body and consciousness in an irreducible ensemble and a social construction shaped, constrained and invented by society (Leavitt and Power, 1997; Merleau-Ponty, 1962; Sobchack, 2004). The perceiving body is also a sensory body (Merleau-Ponty, 1962). Watching digital images portraying infants in ECEC settings involves all of one’s bodily senses – hearing, seeing, touching, smelling and tasting – as they overlap and function together. Indeed, if I attend closely to my own encounter with the digital images that form
the basis of this article, I must acknowledge that the so-called ‘viewing’ of the images is not easily separated from the involvement of my other senses. When, for instance, I perceived the images on the screen, I simultaneously felt the chair beneath me, touching me through my jeans – at times engendering a feeling of restlessness as its textures and undulations intermingled with my body. My skin sensed the air around me, enveloping me in its warmth and permeating the encounter with a certain sense of comfort. The low voices of others in the room, humming in my ears, sometimes made it difficult for me to discern the sounds radiating from the screen. These sounds, too, moved in synchrony with the images I saw.

For Merleau-Ponty (1962, 1968), this immediate perceptual and sensory experience is necessarily one of reciprocity – that is, it takes shape as a carnal interweaving and overlapping of the perceptual-sensory body, other perceptual-sensory bodies, and worldly things and non-things such as cameras, screens, images, textures, lighting, colours and shadows. Consider again the aforementioned moments. When understood as an ongoing interweaving and overlapping of my body, other bodies, and the worldly things and non-things my body opened onto during the ‘viewing’ event, it is difficult to define the chair, the air in the room, the other persons present, the digital images and even the screen on which the images were shown as wholly passive and static things. Indeed, doing so denies their capacity to actively solicit responses from my body and provoke my senses in the ways described – and to actively solicit responses in other viewers’ bodies, as discussed throughout this article. Likewise, defining technology and digital images as static objects denies their capacity to mediate perceptual encounters to such an extent that they transform and affect how viewers experience seeing (Ihde, 1979) – an idea that is also demonstrated throughout this article.

To acknowledge that digital images are both an active and a passive phenomenon with which viewers find themselves reciprocally engaged is to affirm that digital images are always in the process of becoming for a particular viewer, and in the process of being whatever is generated during the viewing event (Elwick and Sumsion, 2013b: 344). With this in mind, it makes sense when conceptualising the approach taken towards understanding digital images to move away from logical and representational explanations of the images (such as what they might mean in terms of infants’ experiences) and towards an approach that emphasises the perceptual-sensory experience created as digital images and viewers ‘come into being’ with one another.

Similar arguments have been made in the visual methodology literature. For example, Pink (2012: 11) suggests that a ‘sensory turn’ has had a significant impact on current conceptualisations of visual research and, by doing so, has led to ‘an acknowledgement of the relationship between the visual and the other senses’. According to Pink (2012: 11), this acknowledgement emphasises the need to consider how such relationality ‘come[s] into play in the ways we create routes to knowledge in our research processes’. Consequently, visual researchers are increasingly adopting multisensory approaches towards understanding digital images by acknowledging the relationship between the visual and the other senses in the methodological frameworks informing their work (Pink, 2012). Along related lines, Martens (2012: 42) emphasises that visual research is best conceived as ‘an embodied and multi-sensory practice’, and thus cannot be productively separated from the ‘practice of looking’ or from researchers’ bodily behaviours, ways of knowing and ‘the use of objects’ (such as technology and digital images). Questions should be asked, for example, about how looking at visual data is located in multisensory embodied engagement, and how researchers’ bodies become skilled through the mediation of technologies used in the research process (Martens, 2012). In this article, the work of Ihde (1979, 2002), which draws on Merleau-Ponty’s work as one source of inspiration, is used to demonstrate an explicit sensitivity to both Pink’s (2012) and Marten’s (2012) ideas by emphasising how viewers’ ‘practices of looking’ at infants are located in multisensory bodily engagement, and how technologies mediate this engagement.
Turning towards the perceptual-sensory experience created as digital images and viewers ‘come into being’ with one another also brings to light what Rose (2012: 263) calls the ‘neglected’ ‘site of audiencing’ – a site she describes as ‘something involving specific social actors engaging with visual materials in specific contexts’. Specifically, it highlights the intersection or the encounter between the ‘site of audiencing’ and the ‘site of the image’ (Rose, 2012: 27) in that attention is on the power of digital images as research artefacts and the perceptual-sensory experiences that unfold as particular viewers watch the images. This focus further challenges the assumption that digital images render an objective account and thus provide an objective truth about infants and their experiences in ECEC. Indeed, Motzkau (2011: 105) proposes that assuming film images contain a singular meaning is problematic in that they can be taken too literally and thus introduce a ‘naive empiricism’ into research. While there are notable exceptions in the ECEC literature concerning the use of head cameras with infants (e.g. Sumsion et al., 2013; White, 2009), Brown et al. (2008) argue that head cameras have principally been used in positivist approaches, in which the images produced have been treated as objective fact and reality.

Hopefully, then, adopting an interpretative approach that considers the intersection between the digital images and the audiences who have viewed and informally commented on them not only assists with answering the question of ‘What might we perceive or sense differently if we look at one filmed event through two different camera technologies, one of which is baby-cam?’, but also may help make evident baby-cam’s capacity to enhance viewers’ sensitivities towards the ways in which their own ‘practices of looking’ potentially diminish infants. Possibly, also, it assists with conveying baby-cam’s capacity to act as a ‘disruptive visual’ method (Holmes and Jones, 2013: 96), which instils in viewers a sense of uncertainty that can temporarily shatter habitual ways of seeing, feeling and theorising infants, leaving viewers’ bodies open to the encounter with a sensitivity and vulnerability perhaps not apparent before. In short, baby-cam-generated images may move viewers towards a more centred experience, of which Dillon (2012) speaks – an experience in which what I, and others, have been calling ‘ethical reflection’ can arise (Elwick et al., 2014a; Sumsion et al., 2013). It is proposed that such moments of ethical reflection may assist infants to move further towards more fully claiming their ‘participant’ stance within ECEC participatory research.

Let us now turn to the digital images that form the basis of this article and, also, to the informal conversations with those who have viewed the images. I begin the following section by providing contextual information regarding the filming and viewing of the images. The informal audience responses to the images generated by the tripod-mounted digital camera are then discussed. These responses are then juxtaposed with the informal audience responses to the baby-cam-generated images. Throughout the section, I consider the question of ‘What might we perceive or sense differently if we look at one filmed event through two different camera technologies, one of which is baby-cam?’

**Introducing the digital images and still frames**

The still frames used in this article were edited from the tripod-camera and baby-cam digital images portraying Sandy, an 11-month-old infant participating in the Infants’ Lives in Childcare (ILC) project (Sumsion et al., 2008–2011). Three other children were present on the day of filming: a boy aged 4 years, 11 months; a boy aged 2 years, 11 months; and a girl aged 2 years, 2 months. The educator and I were also present for the duration of the recording period. The images were recorded under cover in a large shaded and carpeted outdoor area. The educator had designed...
the outdoor area to comprise a range of learning spaces, including a sandpit and digging tools, a water area and objects for pouring and filling, and a large carpeted area on which several smaller play spaces were provided.

To date, the digital images have been shown informally to a number of audiences, including the ILC project research team as part of the data-sharing process in team meetings and, also, to ECEC professionals attending a professional workshop, who work with infants in a variety of ways and are familiar with policies and practices in relation to educating and caring for infants. On each occasion, the images generated by the tripod-mounted digital camera were shown first and the audience asked for their responses. The corresponding baby-cam images were then shown and discussed. The following vignette provides additional contextual information regarding the filming of the images.

**Vignette**

Sandy is wearing a lightweight hat, to which a Velcro headband containing a small lipstick camera is attached, and also a specially designed bib containing the baby-cam sound-recording equipment. The educator is seated on an adult-sized wicker chair. A large plastic toy stegosaurus and a medium-sized cane basket, containing approximately 30 pegs and lying on its side, are located next to the educator’s feet. The younger of the two boys, Justin, is inside the house using the toilet. The other two children are in the nearby sandpit. I am located opposite the educator and behind Sandy. As I turn the baby-cam recording equipment on, Sandy crawls away from me and, looking at the basket, crawls towards it. As she does so, the educator points to the stegosaurus and says to Sandy: ‘Here’s the dinosaur, eating the pegs – yum, yummmm’. Sandy continues crawling towards the basket. Using her right hand, Sandy takes a peg from the basket and places it on the ground. She turns, looks towards the educator and reaches up to her with her right hand (Figure 1(a)). The educator looks towards Sandy, reaches down, picks up a peg from the ground and places it on the stegosaurus’s back. ‘Look’, she says to Sandy. Sandy looks back down towards the basket and continues taking out pegs (Figure 1(c)).

![Figure 1(a)](image1a.png) Sandy reaching towards the educator.  
![Figure 1(b)](image1b.png) Sandy looking towards Justin.  
![Figure 1(c)](image1c.png) Sandy and the basket.
Informal audience responses to the tripod-generated digital images

When the audiences were shown the tripod-generated images, their initial response was mostly silence. Whereas MacLure et al. (2010) optimistically interpreted silence as a positive response to their experimental film, comprising a combination of still and moving images portraying children, I am not so optimistic here. Indeed, it seems more likely that the digital images produced the ‘disengaged lethargy’ that MacLure et al. (2010: 546) suggest is often produced by images generated by fixed cameras. In other words, the images generated by the tripod-mounted camera had limited power to evoke bodily responses in the viewers. When prompted for a response, the viewers tended to adopt the judgemental or denial stance towards the images that MacLure et al. (2010: 547) suggest may work to ‘protect’ viewers from ‘that which [they] could not see or did not want to know’. With very few exceptions, the viewers responded by critiquing the educator’s practice. In particular, many of the ECEC professionals commented on the educator’s position in relation to Sandy and implied they would position themselves differently, by sitting on the floor or by moving around. Many also critiqued the educator’s interactions with Sandy, particularly what some described as her repeated attempts to draw Sandy’s attention away from the pegs in the basket and towards the task of placing the pegs on the stegosaurus’s back. Discussions about ‘best practice’ also emerged as they drew on their personal knowledge and/or theoretical understandings of what constitutes high-quality ECEC practice in order to support their critiques and judgements.

When asked to shift their attention towards the images portraying Sandy, many of the ECEC professionals responded by applying particular meanings to her non-verbal expressions and behaviours, and inferring her thought processes. Specific comments included that Sandy ‘likes to be close to the educator’, ‘feels like she should look at what the educator shows her [the stegosaurus]’, ‘ignores the educator and chooses to play with the “real” object [pegs]’, ‘is an independent explorer’ and ‘is engaged in solitary play’ (Film viewing data, 29 November 2013). Even when asked to consider the difficulties, uncertainties and ethical implications of attempting to know infants’ experiences and thoughts, the visual images did not appear to offer the ECEC professionals any affordances for reconsidering their perceptions, ideas and representations. Interestingly, to date, no viewers have noticed Sandy looking towards Justin when viewing the tripod-generated images, despite it being evident (see Figure 1(b)). This oversight is discussed later in the article, as Sandy’s ‘look’ caused considerable surprise when the audiences later viewed the corresponding baby-cam images.

Ihde’s (1979: 9) notion of ‘sensory–extension–reduction relations’ provides one explanation why the tripod-generated images may have enabled viewers to easily represent and make sense of what they saw. Ihde uses the term ‘sensory–extension–reduction relations’ to explain the transformation of one’s perceptual-sensory experience of otherness, or that which is other to oneself, when encounters are mediated by technology. According to Ihde, we can (and do) experience otherness through technologies. However, for Ihde (1979: 10), this experience is a transformed experience in that it is always differentiated from ‘face-to-face’ or ‘in-the-flesh’ experiences. This transformation, he explains, ‘contains the possibilities … of both a certain extension and amplification of experience and of a reduction and transformation of experience’ (Ihde, 1979: 10). For example, if I were to compare my perceptual-sensory experience of viewing the tripod-generated images of Sandy and the educator to my perceptual-sensory experience of encountering Sandy and the educator ‘in the flesh’, it is clear that the two experiences are not the same. The images generated by the tripod-mounted camera ‘extend’ my perception and senses across objective time and space, thus
enabling me to see and hear Sandy and the educator in times and spaces that are no longer present. When I watch Sandy, as represented in the images, I experience her as an 11-month-old infant, and it is easy to forget that she is now a 5-year-old about to commence school. The images also ‘amplify’ my experience of Sandy and the educator, in that they allow me to perceive and sense things that I did not perceive or sense when filming. For instance, when filming, I did not notice the finer details of the unfolding moments, such as which hand Sandy was using to remove pegs from the basket. Simultaneously, though, my experience of viewing the images is a ‘reduced’ experience when compared with my experience ‘in the flesh’. I cannot communicate with either Sandy or the educator in the ways that I could while filming. Nevertheless, although my experience of viewing the images portraying Sandy and the educator transforms my experience ‘in the flesh’, it does not stand in stark contrast to it. In other words, when I watch Sandy and the educator as portrayed in the images, there is a familiarity with and continuity of my experience of encountering them in the field. Although the audiences referred to in this article have not, to my knowledge, encountered either Sandy or the educator ‘in the flesh’, it is possible that other continuities may have emerged for them as they encountered the images. Indeed, given the ease with which most viewers drew on their personal knowledge, theories and experiences of infants, infancy and ‘best practice’ to form judgements and representations of the educator and Sandy, it seems fair to say that the images reported on here held a familiarity that enabled them to apply meanings easily to what they were perceiving/sensing. In the words of Ihde (1979: 34), ‘a certain continuity with the mundane visible world was retained’, and nothing unexpected came into view. Consequently, the images generated by the tripod-mounted camera did not assist the viewers in perceiving or sensing things in a new light. Thus, in most instances, the viewers felt comfortable with their own perceptions, thoughts and representations of the recorded moments – that is, until they watched the same moments as recorded by the baby-cam.

Informal audience responses to the baby-cam-generated images

The audience reaction to the experience of viewing the corresponding images generated by the baby-cam was invariably one of surprise. Interestingly, and with few exceptions, the viewers were surprised by the same things. Consequently, the informal conversations generated by the images can be grouped into three main foci: Sandy and the educator; Sandy and Justin; and, also, Sandy, the basket and the pegs. A fourth, related focus occurred when the educator watched the images and experienced being caught in the baby-cam’s (Sandy’s?) gaze. In the following subsections, I discuss each point of focus in turn.

Sandy and the educator

As previously noted, almost all of the viewers responded to the tripod-generated images by critiquing and judging the educator’s practice – in particular, her position in relation to Sandy. Once these judgements were voiced, there was little additional discussion or reflection on how the images might inform and/or challenge the viewers’ own practices and ways of being with infants. Likewise, there was little discussion or reflection on how their interpretations and analysis of the images might be influenced by their own habitual ‘practices of looking’. Many of the viewers were quite surprised, therefore, when features that had gone unnoticed (or perhaps been out of the tripod camera’s recording frame) were noted in the baby-cam images. One feature which generated considerable discussion was Sandy’s arm (and hand) as it reached up towards the educator (Figure 2(a)).
Sandy’s action of reaching towards the educator is visible in both the tripod-mounted-camera (Figure 1(a)) and baby-cam images (Figure 2(a)). Yet none of the viewers commented on her action as they watched the tripod-mounted-camera images. Perhaps her action was rendered marginal (or invisible) by the viewers’ current ‘practices of looking’ and perceiving infants and their care and education in ECEC settings. Or, put differently, perhaps her action may have been so continuous with the viewers’ ‘mundane vision’ that it slipped into the background of their ‘visible horizon[s]’ (Ihde, 1979: 34).

As with the tripod-generated images, it is possible to use Ihde’s (1979: 9) notion of ‘sensory–extension–reduction relations’ to reflect on the viewers’ responses to the baby-cam images portraying Sandy’s action of reaching up towards the educator. The fact that many of the viewers commented on the reach of Sandy’s arm, and its length, angle and relative size to the educator, suggests that Sandy’s action was experienced by many of the viewers in an ‘amplified’ way. Whereas, previously, the viewers had immediately applied meanings of intent to Sandy’s actions, they now considered her hands, arms (body), actions and interactions in a whole new light: conversations emerged and transformed from judgement, critique and representation to wonder, intrigue and what might be. Some of the viewers felt, for example, that Sandy’s ‘reaching’ action may not be entirely explainable by developmental principles regarding infants’ thought processes and interpersonal behaviours (why she was reaching and so forth), and therefore the possibility emerged that Sandy, and by extrapolation other infants, might experience their bodies in ways that we are yet to understand. Such an idea suggests that infants’ bodies go beyond the objectified body represented on the pages of ECEC literature – beyond, perhaps, the body that the ECEC professionals discussed here have learnt to see, hear and feel. This idea allows some insight to be gleaned into the ways in which infants’ bodies can be contained by approaches that claim to know what infants are thinking. Indeed, in the conversations described here, it appears that Sandy’s body (as portrayed in the baby-cam images) managed to exceed the boundary of ‘what can be known’ (Farquhar and White, 2014: 823) and, by doing so, entered the ‘space of infinite possibility that was there before the boundary was drawn’ (Wegerif, 2013, cited in Farquhar and White, 2014: 823). The potential of baby-cam images to make visible infants’ capacities to be something

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**Figure 2(a).** Sandy reaching towards the educator.
other than the objectified body with which ECEC professionals appear familiar is emphasised further by the second focus of the viewers’ discussions.

**Sandy and Justin**

The second focus discussed as the audiences viewed and responded to the baby-cam-generated images centred on a moment when Sandy appears to look towards Justin (Figure 2(b)).

![Figure 2(b). Sandy ‘looking’ towards Justin.](image-url)

Just as Sandy’s ‘reaching hand’ is visible in both the tripod-mounted-camera and baby-cam images, so is the ‘look’ (see Figure 1(b)). However, just as none of the viewers commented on Sandy’s ‘reaching hand’ when watching the tripod images, none of the viewers commented on the ‘look’ until they watched the baby-cam images. Indeed, most of the viewers (including myself) were genuinely surprised to realise that Sandy had looked towards Justin during the represented moments – or, at the very least, that Sandy had turned her head towards Justin, as we cannot know for sure that her gaze was upon him. Instead, most of the viewers assumed that Sandy had spent the represented moments playing with the pegs and the basket, and, at times, interacting with the educator. The possibility that other children had influenced Sandy’s actions and behaviours was missed. This oversight may have been influenced by the research and professional literature, which emphasises infant–educator relationships rather than infants’ relationship-building with individual peers and groups of peers (Elwick and Sumsion, 2013a). Also, several of the viewers commented that because Sandy appeared to be playing on her own near the educator – and they were not surprised by this because it aligned with their understandings regarding infants’ stages of play – they had not watched for evidence of relations between Sandy and her peers. In the baby-cam images, however, Justin is ‘amplified’ in such a way that it is difficult not to perceive his presence. For example, the temporality of Sandy’s ‘look’ is ‘amplified’ in such a way that many of the viewers commented that they perceived the length of time that Justin was visible in the baby-cam images as ‘long’, giving them a sense that the relations between Sandy and Justin were much more complex than originally thought. Additionally, this realisation prompted some of the viewers to request a second viewing of both sets of images, so that they could ascertain if they had overlooked a similar temporality elsewhere.

Sandy’s ‘look’ also generated conversations and debate regarding the attribution of intent to infants’ expressions and behaviours. For instance, during one film-viewing event, a number of the viewers represented Sandy’s ‘look’ as an expression of her interest in Justin and, also, her desire to
interact or communicate with him. While this may provide a valid reading of the images – and, indeed, many of the viewers appeared satisfied to attribute this meaning to Sandy’s ‘look’ based on their own understanding of why infants look at others – there were some viewers who voiced their concerns. Their main unease arose from the realisation that the baby-cam images had already challenged many of their earlier interpretations. Because of this, they were concerned that their attempts to attribute intent to Sandy’s ‘look’ might also be lacking and, also, that their attempts might not be appropriate, given that a multiplicity of possible meanings had been highlighted (Film viewing data, 29 November 2013).

The difference of opinion between the viewers regarding the practice of attributing intent to infants’ behaviours and expressions (such as their looking behaviours) suggests that, although watching the baby-cam images challenged many of the viewers’ initial readings of the tripod-generated data, this challenge may not have motivated all of the viewers to move beyond their habitual ‘practices of looking’ at infants. Nevertheless, it appears that the challenge posed by the baby-cam images to the viewers’ initial interpretations was enough to stimulate conversation and debate regarding what can and cannot be known about infants — and, indeed, what observers should be attempting to know about infants. This suggests that baby-cam images may have the potential not only to make visible infants’ capacities to be more than the objectified body with which ECEC professionals are familiar, but also to provoke viewers to question their own ways of objectifying and representing infants’ bodies. This potential is highlighted further by the third focus of the viewers’ discussions.

**Sandy, the basket and the pegs**

The third focus discussed as the audiences viewed the baby-cam images centred on Sandy, the basket and the pegs (Figure 2(c)).

![Image of Sandy, the basket and the pegs](figure2c.jpg)

In contrast to the previously discussed examples, the interior of the basket shown in Figure 2(c) is not visible in the tripod-generated data. In the words of Ihde (1979: 34), ‘[m]undane visibility is displaced by the emergence of an “instrumental intentionality”’ in that ‘a new feature has been brought into the [visible] horizon by using [baby-cam]; and we now see, for instance, where [shadows, undulations and colours] occur [in the basket], which would not have been visible previously’. Just as baby-cam previously extended the viewers’ perceptions by bringing Sandy’s ‘reach’
and ‘look’ into the viewers’ ‘visible horizon[s]’, so too has baby-cam extended the viewers’ perceptions by bringing the interior of the basket into view. However, the difference between this example and the previous examples is that the images showing the interior of the basket provided the viewers with a film-viewing experience that would not have been obtainable by watching the tripod-generated images. Indeed, even if I had positioned the tripod-mounted camera directly behind or beside Sandy as she reached into the basket, it is unlikely that it would have recorded the interior features of the basket in such a nuanced and ‘amplified’ way. Also, although in principle I could have filmed the interior of the basket at a later date, it was not something I considered worthy of intentional focus until after several audiences had watched the baby-cam images. According to Ihde (1979: 35), these variations on the visible, made possible by the technology, ‘often deliver unexpected results, patterns and insights that, precisely because they are radical variants upon human intentionalities, take us into uncharted areas’.

Those ‘uncharted areas’ included discussion about how the different view of the basket and the pegs challenged viewers’ earlier interpretations of the recorded moments. For example, as previously discussed, many of the viewers initially adopted a judgemental stance when watching the tripod images and, thus, mostly paid attention to the educator’s interactions with Sandy (and vice versa). Because of this focus, their interpretations mostly emphasised the quality of interactions between Sandy and the educator, and their perceptions of Sandy’s level of interest in the educator (which many perceived to be high). After seeing the interior of the basket ‘amplified’ in the baby-cam images, however, several of the viewers felt that Sandy may not have been as ‘interested’ in the educator as they first thought. They were particularly concerned that, by focusing their attention so closely on the educator and Sandy, they may not have noticed other, perhaps equally important, features in the images. Many also noted that, like me, they had not previously considered the importance of features such as the depth of the basket, the undulations resulting from the weaving of the wicker, and the play of light on its interior, when observing Sandy’s interactions with it. A lack of focus on observing phenomena such as depth, texture and the play of light is not surprising, given that we tend not to notice them in our everyday experiences (Merleau-Ponty, 1964). However, it is also possible that such responses reflect ‘practices of looking’ that are, perhaps, influenced by viewers’ habitual ways of seeing. According to Merleau-Ponty (1962: 171), ‘to be a body is to be tied to a certain world’ as we live it, see it and experience it. The body is amid the landscape it perceives, and things open up in a visual-spatial perspective relative to the body’s position and attention. It is through the body, therefore, that we learn to acquire a certain style of seeing, or a certain bodily awareness, as we move about and interact with the world. For example, when I am standing, my eyes open onto the world from the height of about six feet. As I move about and interact with the world, things appear to my body in a perspective that is relative to my height, and I come to know and understand my world through living the perspectives my body opens. This suggests that the viewers’ ‘practices of looking’ at digital images perhaps reflect a certain awareness or way of perceiving the world that their own body habitually understands. Possibly, the viewers were not surprised by the basket and the pegs as portrayed in the tripod images because the images remained a ‘familiar domain round’ their body (Merleau-Ponty, 1962: 150). Or, perhaps, like Sandy’s reaching action, the basket and the pegs, as portrayed in the tripod-generated images, may have been so continuous with the viewers’ ‘mundane vision’ that they also slipped into the background of their ‘visible horizon[s]’ (Ihde, 1979: 34). The same cannot be said, though, about the baby-cam images. Indeed, it seems that by providing the viewers with the opportunity to experience the basket and the pegs from a ‘Sandy-like’ bodily spatial perspective, the baby-cam images have enhanced some of the viewers’ awareness of bodily perspectives other than their own. As can be seen from the comments above, this experience was so unsettling for some of the viewers that it prompted them to question their earlier ways of objectifying and representing Sandy’s body.
This insight – that infants, as with all humans, come to know and understand their worlds through living the spatial perspectives their body opens – continued to develop and lead into other ‘uncharted areas’ as the viewers commented on the ‘strangeness of watching the movement of Sandy placing pegs in the basket’ (Film viewing data, 29 November 2013). Because the baby-cam was positioned on the side of Sandy’s head, each tiny movement that she made is visible in the recorded images, and, therefore, they tend to be quite ‘wobbly’ to watch. For some of the viewers, the images generated such a sense of movement that they resulted in a feeling of ‘seasickness’ when watched for too long. For others, experiencing the movement visible in the images made them realise that they had not appreciated the ways in which infants’ experiences of bodily motion might differ to their own experiences. Comments were made, for example, that although they were aware that infants’ experiences of their environments change as their physical skills progress from crawling to walking (indeed, this development and the increasing opportunities afforded by such development are widely discussed in the ECEC literature), they had not considered the motion generated by infants’ bodies as they move around their environments. When coupled with the above realisation that adults and infants may perceive the same ‘things’ differently because of the ways their bodies ‘inhabit space’ (Merleau-Ponty, 1962: 161), many of the viewers further secured their understanding that infants’ living, breathing, ‘phenomenal’ (Merleau-Ponty, 1962: 121) bodies may go beyond the objectified body they thought they knew. These insights were, perhaps, felt most by the educator, as she watched herself portrayed in the baby-cam images. For her, the experience of watching herself represented from a ‘Sandy-like’ point of observation was so disorientating that it not only changed how she perceived and understood infants, but also noticeably impacted on how she lived her professional life with infants.

The effects of being caught in the baby-cam’s (Sandy’s?) gaze

The educator first watched the digital images that have been drawn on in this article on the day they were recorded. As with the other viewers, the educator watched the tripod images first. Her responses, however, were different to those of the other viewers in that her focus was mainly on Sandy rather than her own practice. This was not unexpected, given her close involvement with the project and, thus, her deepened understanding that her practice was not the focus. However, as foreshadowed above, what was unexpected was the intensity of her surprise at perceiving herself on the baby-cam film from a ‘Sandy-like’ point of observation:

It is amazing how big everything is from Sandy’s perspective.[2] Even the other children look big. I look huge. I must look like a giant to her. Look how high up I am. She really has to look up at me. And my legs – all she can see is my legs. I know that I should be down low at Sandy’s level and I thought that I was. But look how high up and far away I am.

I have been really conscious of how I interact with the children, particularly infants. I keep thinking about what I might look like to them and how important it is for me to get closer to their level. I’ve been talking with senior personnel about it and they are very excited … I’m really excited. (Adapted from field notes and video recordings)

It is reasonable to conclude that many of the features encountered by the educator, as she watched the images, were discontinuous with her everyday ‘in-the-flesh’ encounters with Sandy. Notably, the feature that was most discontinuous was her own, educator, body. In other words, what surprised her most was experiencing her ‘professional’ body from a ‘Sandy-like’ point of observation. Furthermore, this way of experiencing her body engendered in her a sense that she was ‘seeing’
herself ‘through the eyes of Sandy’ – and what she ‘saw’ was unexpected. As the comments above demonstrate, she thought that she had been ‘down low’ and interacting with Sandy at her ‘level’, and yet this was not how she experienced herself from a ‘Sandy-like’ point of observation. Instead, she experienced herself as ‘huge’, ‘a giant’, and ‘high up and far away’. Indeed, the disparities between her expectations and what she experienced when watching the images were so vast that they caused her to question her ‘self’ in numerous ways. First, she became more ‘conscious’ of her ways of interacting with children – particularly infants – and this heightened consciousness increased her sensitivity towards how she might appear to infants during her interactions. This, in turn, led her to alter her behaviours and actions towards infants. She was also so moved by her experience of perceiving herself from a ‘Sandy-like’ point of observation that she spoke to ‘senior personnel’ about the issues that the experience raised for her own practice, and the challenges it presented to her understandings of infants’ experiences. While speaking with senior personnel about her experience, she also noted the potential benefits of using baby-cam in similar ways with other educators. In the following concluding section I discuss this self-questioning further and consider its implications more broadly for participatory research with infants.

**Implications for participatory research with infants**

As discussed, for Merleau-Ponty (1962, 1968), perceptual-sensory experience is necessarily an experience of reciprocity – that is, to the perceiving-sensing body no ‘thing’ or person presents itself as wholly passive or static. Instead, there is always a carnal interweaving or overlapping relation between the perceiving-sensing body and that which it perceives. Elsewhere (Elwick and Sumson, 2013b: 343), I have drawn on the ideas of Plato, Arnold Berleant and Lucien Lévy-Bruhl to name the reciprocal relation between ‘diverse ontological type[s]’ – such as cameras, screens, digital images, bodies, and so forth – as participation. I have also drawn on other video data from the ILC project to propose that, although cameras, screens and digital images complicate and obscure participatory relations between viewers and the infants portrayed in digital images, they do not completely eradicate them. The viewers’ responses to the images of Sandy reported here strengthen this proposal. For instance, although Sandy was not physically present as the educator watched the baby-cam images, there seems little doubt that the images enabled the educator to feel as if Sandy’s gaze was upon her. Nevertheless, as flagged earlier, although Merleau-Ponty’s work reminds us that infants are always potentially present and participating in film-mediated research encounters through viewers’ perceptual-sensory experience, viewers’ ‘practices of looking’ can diminish or deny that participation (Elwick and Sumson, 2013b; for discussion of this idea in relation to face-to-face research encounters, see also Elwick et al., 2014a). This returns us to Marten’s (2012) question of how researchers’ or, in this instance, the viewers’ bodies become skilled through the mediation of the technologies used in the research process described here. Indeed, if infant participation in film-mediated research encounters can be denied or diminished through viewers’ ‘practices of looking’, a more relevant question might be: How did the tripod-camera and baby-cam technologies (and related artefacts) skill viewers’ bodies to recognise their own ‘practices of looking’ and ways of knowing and theorising infants? Moreover, if the technologies skilled the viewers’ bodies to recognise the limits of their own gaze, did the renewed attentiveness to their own bodily practices transform their engagement with infants’ bodies?

Based on the viewers’ responses to the tripod-generated images discussed here, it seems fair to comment that the tripod-camera technologies did little in this regard. As noted earlier, the tripod-generated images remained a ‘familiar domain round’ the viewers’ bodies (Merleau-Ponty, 1962: 150), and thus nothing unexpected came into view. There was little need, therefore, for the viewers to consider the limits of their own ‘practices of looking’ and ways of knowing and theorising.
infants (and, indeed, educators). Consequently, the tripod-generated images enabled the viewers’ bodies to ‘block [the] perceptual reciprocity’ (Abram, 1996: 56) that Merleau-Ponty refers to and, by doing so, deny Sandy any sensuous involvement in their perceptual experience. This, in turn, appears to have effectively enabled the viewers to objectify Sandy’s body as a determinate, passive and easily representable ‘infant’ body.

The viewers’ responses to the baby-cam images, however, suggest something quite different. Indeed, it is reasonable to conclude that the baby-cam-generated images impacted the viewers’ bodies in such ways that they temporarily shattered the blockage to ‘perceptual reciprocity’ discussed above, thus potentially allowing the viewers to be drawn into sensuous relations with the images and what they portrayed. Perhaps, then, baby-cam technologies and the generated images skill the viewers’ bodies to engage more fully with the dynamic presence that is Sandy’s body – that is, her body as it exists beyond the conceptualised and developing ‘infant’ body that ‘met their eye’ when watching the tripod-generated images. For some of the viewers, experiencing Sandy’s body as a dynamic presence, via the baby-cam images, heightened their vulnerability to the impact of Sandy’s body on their own body. For example, several of the viewers spoke about how Sandy’s movement around the outdoor area, as recorded on the baby-cam images, affected their own body by engendering feelings of ‘seasickness’ and so forth.

Elsewhere (Elwick et al., 2014a), I and others have drawn on the work of Dillon (2012), who in turn draws on the work of Merleau-Ponty, to propose that a vulnerability to being affected by the infants we observe is of utmost importance in participatory research endeavours. It is through this vulnerability that infants are allowed a dynamic presence within the encounter – a presence through which they may displace researchers’ own sense of self, ‘provoke ethical reflection and afford new ways of “going on”’ (Elwick et al., 2014a: 882). The viewers’ responses to the images of Sandy reported here reinforce these proposals. For instance, as discussed, the viewers’ vulnerability to Sandy’s movement around the outdoor area (as recorded in the images) engendered a feeling of ‘seasickness’ for some. This feeling, in turn, displaced their bodily awareness, or style of seeing, to such an extent that it heightened their sensitivity to bodily perspectives other than their own – a sensitivity that prompted them to ethically reflect on the limitations of their own earlier representations of Sandy’s body. Along similar lines, for the educator discussed here, experiencing her ‘visible body’ (Merleau-Ponty, 1968: 138) through the baby-cam-generated images provided her with an external vision of herself that did not match her assumptions regarding Sandy’s view of her. This realisation not only displaced her own experience of self, but also provoked her to ethically question her ways of being with infants. Ultimately, these ethical reflections transformed her ways of thinking about and acting towards infants in her professional life. Importantly, also, her vulnerability to ‘being observed by Sandy’ generated conversations with other professionals, which, in turn, created possibilities for imagining and re-imagining infants and ECEC practice differently.

Logically, then, baby-cam technologies and the generated digital images may have the capacity to skill most viewers’ bodies to recognise the limits of their own ‘practices of looking’ and ways of knowing and theorising infants. Moreover, this renewed attentiveness, or ethical sensitivity, towards their own bodily practices may transform their engagement with infants’ bodies in ECEC practice. For me, this is the most exciting potentiality of baby-cam – that is, its potential to act as a ‘disruptive visual’ method (Holmes and Jones, 2013: 96) that thrusts viewers into a position of vulnerability, thus allowing the infants’ ‘phenomenal’ (Merleau-Ponty, 1962: 121) body a dynamic, and potentially influencing, presence within the encounter. Put simply, for me, the power of baby-cam technologies does not lie in their capacity to assist researchers to know infants’ realities better.
Instead, the power of baby-cam technologies lies in their capacity to allow infants to interject into researchers’ realities.

The location of baby-cam technologies on infants’ bodies during the recording process also suggests that baby-cam may enable infants to ‘participate’ within research processes by generating their own data, thus ‘showing where and when their experiences occur, with greater freedom’ (Reavey, 2011: 7). Such an idea has already been flagged as contentious (e.g. Sumsion et al., 2011). Much depends on how ‘infant participation’ is conceptualised within the research process. For example, in utilitarian approaches where infant participation is intertwined with ideas and practices of knowing infants’ experiences and thought processes, the images generated by infants wearing baby-cam may be understood as affording infants opportunities to generate ‘what is seen’ (Reavey, 2011: 7), thus, perhaps, shaping the context out of which their experiences and thoughts are ‘known’. If, however, the meanings of ‘infant participation’ are intertwined with notions of the body, perception and multisensory engagement, then, as has been demonstrated throughout this article, infants need to be able to ‘participate’ in ways that go beyond generating ‘what is seen’. Infants also need to be permitted a dynamic presence in the interpretive process. Possibly, baby-cam images may enable infants to achieve this presence, not least because they invite viewers to interpret the images from the bodily spatial ‘position of bearing witness to [infants’] “world-making” rather than acting from the position of detached observer’ (Reavey, 2011: 7). As the examples discussed show, for some viewers, ‘bearing witness’ in this way provokes an experience of vulnerability to the infant ‘participant’ that is not easily avoidable, despite the infant’s physical absence.

What might this mean more broadly for participatory research with infants? Throughout this article, I have drawn on one filmed event to address the question: ‘What might we perceive or sense differently if we look at one filmed event through two different camera technologies, one of which is baby-cam?’ Therefore, it should not be assumed that viewers will experience similar responses to different filmed events. Nevertheless, baby-cam’s capacity to defamiliarise the ‘mundanely visible’ suggests that it is a technology that enhances viewers’ sensitivities towards the ways in which their own ‘gaze’ potentially diminishes infants. Moreover, the variation of the ‘mundanely visible’ made possible by baby-cam can provoke ethical reflection and lead viewers into ‘uncharted areas’. The conversations that emerge as viewers wander through these ‘uncharted areas’ are sometimes contentious and highlight differing opinions and ideas. I propose that this contention and debate is of utmost importance to participatory researchers concerned with researching with infants because it enables the development of a fuller appreciation of infants’ capacities to exceed epistemic boundaries created by ‘adult’ perceptions and ways of knowing. If this is the case, then perhaps baby-cam may provide participatory researchers with a useful heuristic device, in that the generated images can remind researchers of the limits of their own ‘gaze’ and ways of knowing and theorising infants. When utilised in this way, possibly, images generated by baby-cam may assist infants to move further towards more fully claiming their ‘participant’ stance within ECEC participatory research.

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Notes
1. All names have been changed to protect anonymity.
2. The educator used this term to refer to Sandy’s bodily spatial perspective.

References


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