Introduction

It is now commonplace for babies to begin their lives inhabiting media environments characterised by the presence, distribution, and mobility of digital devices and screens. Such arrangements can be traced, in part, to the birth of a new regime of mobile and touchscreen media beginning with the release of the iPhone in 2007 and the iPad in 2010, which stimulated a surge in household media consumption, underpinned by broadband and wireless Internet infrastructures. Research into these conditions of ambient mediation at the beginnings of life, however, is currently dominated by medical and educational literature, largely removed from media studies approaches that seek to understand the everyday contexts of babies using media. Putting aside discourses of promise or peril familiar to researchers of children’s media (Buckingham; Postman), this paper draws on ongoing research in both domestic and social media settings exploring infants’ everyday encounters and entanglements with mobile media and communication technologies.

The paper identifies the ways infants’ mobile communication is assembled and distributed through touchscreen interfaces, proxy parent users, and commercial software sorting. It argues that within these interfacial, intermediary, and interactive contexts, we can conceptualise infants’ communicative agency through an emerging repertoire of techniques: accidental, assisted and automated. This assemblage of infant communication recognises that children no longer live with but in media (Deuze), which underscores the impossibility of a path of media resistance found in medical discourses of ‘exposure’ and restriction, and instead points to the need for critical and ethical responses to these immanent conditions of infant media life.

Background and Approach

Infants, understandably, have largely been excluded from analyses of mobile mediality given their historically limited engagement with or capacity to use mobile media. Yet, this situation is undergoing change as mobile devices become increasingly prominent in children’s homes (OfCom; Rideout), and as touchscreen interfaces lower thresholds of usability (Buckleitner; Hourcade et al.). The dominant frameworks within research addressing infants and media continue to resonate with long running and widely circulated debates in the study of children and mass media (Wartella and Robb), responding in contradictory ways to what is seen as an ever-increasing ‘technologization of childhood’ (McPake, Plowman and Stephen). Education research centres on digital literacy, emphasising the potential of mobile computing for these future digital learners, labourers, and citizens (McPake, Plowman and Stephen). Alternatively, health research largely positions mobile media within the rubric of ‘screen time’ inherited from older broadcast models, with paediatric groups continuing to caution parents about the dangers of infants’ ‘exposure’ to electronic screens (Strasburger and Hogan), without differentiating between screen types or activities. In turn, a range of digital media channels seek to propel or profit from infant media culture, with a number of review sites, YouTube channels and tech blogs promoting or surveying the latest gadgets and apps for babies.

Within media studies, research is beginning to analyse the practices, conceptions and implications of digital interfaces and content for younger children. Studies are, for example, quantifying the devices, activities, and time spent by young children with mobile devices (Ofcom; Rideout), reviewing the design and marketing of children’s mobile
application software products (e.g. Shuler), analysing digital content shared about babies on social media platforms (Kumar & Schoenebeck; Morris), and exploring emerging interactive spaces and technologies shaping young children’s ‘postdigital’ play (Giddings; Jayemanne, Nansen and Apperley). This paper extends this growing area of research by focusing specifically on infants’ early encounters, contexts, and configurations of mobile mediality, offering some preliminary analysis of an emerging repertoire of mobile communication techniques: accidental, assisted, and automated. That is, through infants playing with devices and accidentally activating them; through others such as parents assisting use; and through software features in applications that help to automate interaction.

This analysis draws from an ongoing research project exploring young children’s mobile and interactive media use in domestic settings, which is employing ethnographic techniques including household technology tours and interviews, as well as participant observation and demonstrations of infant media interaction. To date 19 families, with 31 children aged between 0 and 5, located in Melbourne, Australia have participated. These participating families are largely homogeneous and privileged; though are a sample of relatively early and heavy adopters that reveal emerging qualities about young children’s changing media environments and encounters. This approach builds on established traditions of media and ethnographic research on technology consumption and use within domestic spaces (e.g. Mackay and Ivey; Silverstone and Hirsch), but turns to the digital media encountered by infants, the geographies and routines of these encounters, and how families mediate these encounters within the contexts of home life. This paper offers some preliminary findings from this research, drawing mostly from discussions with parents about their babies’ use of digital, mobile, and touchscreen media.

In this larger project, the domestic and family research is accompanied by the collection of online data focused on the cultural context of, and content shared about, infants’ mobile media use. In this paper I report on social media analysis of publicly shared images tagged with #babyselfie queried from Instagram’s API. I viewed all publicly shared images on Instagram tagged with #babyselfie, and collected the associated captions, comments, hashtags, and metadata, over a period of 48 hours in October 2014, resulting in a dataset of 324 posts. Clearly, using this data for research purposes raises ethical issues about privacy and consent given the posts are being used in an unintended context from which they were originally shared; something that is further complicated by the research focus on young children. These issues, in which the ease of extracting online data using digital methods research (Rogers), needs to be both minimised and balanced against the value of the research aims and outcomes (Highfield and Leaver). To minimise risks, captions and comments cited in this paper have been de-identified; whilst the value of this data lies in complementing and contextualising the more ethnographically informed research, despite perceptions of incompatibility, through analysis of the wider cultural and mediated networks in which babies’ digital lives are now shared and represented.

This field of cultural production also includes analysis of examples of children’s software products from mobile app stores that support baby image capture and sharing, and in particular in this paper discussion of the My Baby Selfie app from the iTunes App Store and the Baby Selfie app from the Google Play store. The rationale for drawing on these multiple sources of data within the larger project is to locate young children’s digital entanglements within the diverse places, platforms and politics in which they unfold. This research scope is limited by the constraints of this short paper, however different sources of data are drawn upon here in order to identify, compare, and contextualise the emerging themes of accidental, assisted, and automated.

**Accidental Media Use**

The domestication and aggregation of mobile media in the home, principally laptops, mobile phones and tablet computers has established polymediated environments in which infants are increasingly surrounded by mobile media; in which they often observe their
parents using mobile devices; and in which the flashing of screens unsurprisingly draws their attention. Living within these ambient media environments, then, infants often observe, find and reach for mobile devices:

on the iPad or whatever, then what's actually happening in front of them, then naturally they'll gravitate towards it.

These media encounters are animated by touchscreens interfaces that are responsive to the gestural actions of infants. Conversely, touchscreen interfaces drive attempts to swipe legacy media screens. Underscoring the nomenclature of ‘natural user interfaces’ within the design and manufacturer communities, screens lighting up through touch prompts interest, interaction, and even habituation through gestural interaction, especially swiping:

It's funny because when she was younger she would go up the T.V. and she would try swiping to turn the channel.

They can grab it and start playing with it. It just shows that it's so much part of their world ... to swipe something.

Despite demonstrable capacities of infants to interact with mobile screens, discussions with parents revealed that accidental forms of media engagement were a more regular consequence of these ambient contexts, interfacial affordances and early encounters with mobile media. It was not uncommon for infants to accidentally swipe and activate applications, to temporarily lock the screen, or even to dial contacts:

He didn't know the password, and he just kept locking it ... find it disabled for 15 minutes.

If I've got that on YouTube, they can quite quickly get on to some you know [video] ... by pressing ... and they don't do it on purpose, they're just pushing random buttons.

He does Skype calls! I think he recognizes their image, the icon. Then just taps it and ...

Similarly, in the analysis of publicly shared images on Instagram tagged with #babyselfie, there were instances in which it appeared infants had accidentally taken photos with the cameraphone based on the image content, photo framing or descriptions in the caption. Many of these photos showed a baby with an arm in view reaching towards the phone in a classic trope of a selfie image; others were poorly framed shots showing parts of baby faces too close to the camera lens suggesting they accidentally took the photograph; whilst most definitive was many instances in which the caption of the image posted by parents directly attributed the photographic production to an infant:

Isabella's first #babysuffie She actually pushed the button herself!

My little man loves taking selfies lol

Whilst, then, the research identified many instances in which infants accidentally engaged in mobile media use, sometimes managing to communicate with an unsuspecting
interlocutor, it is important to acknowledge such encounters could not have emerged without the enabling infrastructure of ambient media contexts and touchscreen interfaces, nor observed without studying this infrastructure utilising materially-oriented ethnographic perspectives (Star). Significantly, too, was the intermediary role played by parents. With parents acting as intermediaries in household environments or as proxy users in posting content on their behalf, multiple forms of assisted infant communication were identified.

**Assisted Media Use**

Assisted communication emerged from discussions with parents about the ways, routines, and rationale for making mobile media available to their children. These sometimes revolved around keeping their child engaged whilst they were travelling as a family – part of what has been described as the pass-back effect – but were more frequently discussed in terms of sharing and showing digital content, especially family photographs, and in facilitating infant mediated communication with relatives abroad:

they love scrolling through my photos on my iPhone ...

We quite often just have them [on Skype] ... have the computers in there while we're having dinner ... the laptop will be there, opened up at one end of the table with the family here and there will be my sister having breakfast with her family in Ireland ...

These forms of parental mediated communication did not, however, simply situate or construct infants as passive recipients of their parents’ desires to make media content available or their efforts to establish communication with extended family members. Instead, the research revealed that infants were often active participants in these processes, pushing for access to devices, digital content, and mediated communication. These distributed relations of agency were expressed through infants verbal requests and gestural urging; through the ways parents initiated use by, for example, unlocking a device, preparing software, or loading an application, but then handed them over to infants to play, explore or communicate; and through wider networks of relations in which others including siblings, acted as proxies or had a say in the kinds of media infants used:

she can do it, once I've unlocked ... even, even with iView, once I'm on iView she can pick her own show and then go to the channel she wants to go to.

We had my son’s birthday and there were some photos, some footage of us singing happy birthday and the little one just wants to watch it over and over again. She thinks it's fantastic watching herself.

He [sibling] becomes like a proxy user ... with the second one ... they don't even need the agency because of their sibling.

Similarly, the assisted communication emerging from the analysis of #babyselfie images on Instagram revealed that parents were not simply determining infant media use, but often acting as proxies on their behalf.

#Selfie obsessed baby. Seriously though. He won't stop. Insists on pressing the button and everything. He sees my phone and points
and says "Pic? Pic?" I've created a monster lol.

In sharing this digital content on social networks, parents were acting as intermediaries in the communication of their children’s digital images. Clearly they were determining the platforms and networks where these images were published online, yet the production of these images was more uncertain, with accidental self-portraits taken by infants suggesting they played a key role in the circuits of digital photography distribution (van Dijck).

Automated Media Use

The production, archiving, circulation and reception of these images speaks to larger assemblages of media in which software protocols and algorithms are increasingly embedded in and help to configure everyday life (e.g. Chun; Gillespie), including young children’s media lives (Ito). Here, software automates process of sorting and shaping information, and in doing so both empowers and governs forms of infant media conduct. The final theme emerging from the research, then, is the identification of automated forms of infant mobile media use enabled through software applications and algorithmic operations.

Automated techniques of interaction emerged as part of the repertoire of infant mobile medially and communication through observations and discussions during the family research, and through surveying commercial software applications. Within family discussions, parents spoke about the ways digital databases and applications facilitated infant exploration and navigation. These included photo galleries stored on mobile devices, as well as children’s Internet television services such as the Australian Broadcasting Corporation’s catch-up online TV service, iView, which are visually organised and easily scrollable. In addition, algorithmic functions for sorting, recommending and autoplay on the video-sharing platform YouTube meant that infants were often automatically delivered an ongoing stream of content:

They just keep watching it [YouTube]. So it leads on form the other thing. Which is pretty amazing, that's pretty interactive.

Yeah, but the kids like, like if they've watched a YouTube clip now, they'll know to look down the next column to see what they want to play next ... you get suggestions there so.

Forms of automated communication specifically addressing infants was also located in examples of children’s software products from mobile app stores: the My Baby Selfie app from the iTunes App Store and the Baby Selfie app from the Google Play store. These applications are designed to support baby image capture and sharing, promising to “allow your baby to take a photo of him himself [sic]” (Giudicelli), based on automated software features that use sounds and images to capture a babies attention and touch sensors to activate image capture and storage. In one sense, these applications may appear to empower infants to participate in the production of digital content, namely selfies, yet they also clearly distribute this agency with and through mobile media and digital software. Moreover, they imply forms of conduct, expectations and imperatives around the possibilities of infant presence in a participatory digital culture.

Immanent Ethic and Critique

Digital participation typically assumes a degree of individual agency in deciding what to share, post, or communicate that is not typically available to infants. The emerging communicative practices of infants detailed above suggests that infants are increasingly
connecting, however this communicative agency is distributed amongst a network of ambient devices, user-friendly interfaces, proxy users, and software sorting. Such distributions reflect conditions Deuze has noted, that we do not live with but in media. He argues this ubiquity, habituation, and embodiment of media and communication technologies pervade and constitute our lives becoming effectively invisible, negating the possibility of an outside from which resistance can be mounted. Whilst, resistance remains a solution promoted in medical discourses and paediatric advice proposing no 'screen time' for children aged below two (Strasburger and Hogan), Deuze’s thesis suggests this is ontologically futile and instead we should strive for a more immanent relation that seeks to modulate choices and actions from within our media life: finding “creative ways to wield the awesome communication power of media both ethically and aesthetically” (“Unseen” 367).

An immanent ethics and a critical aesthetics of infant mediated life can be located in examples of cultural production and everyday parental practice addressing the arrangements of infant mobile media and communication discussed above. For example, an article in the Guardian, ‘Toddlers pose a serious risk to smartphones and tablets’ parodies moral panics around children’s exposure to media by noting that media devices are at greater risk of physical damage from children handling them, whilst a design project from the Eindhoven Academy – called New Born Fame – built from soft toys shaped like social media logos, motion and touch sensors that activate image capture (much like babyselfie apps), but with automated social media sharing, critically interrogates the ways infants are increasingly bound-up with the networked and algorithmic regimes of our computational culture. Finally, parents in this research revealed that they carefully considered the ethics of media in their children’s lives by organising everyday media practices that balanced dwelling with new, old, and non media forms, and by curating their digitally mediated interactions and archives with an awareness they were custodians of their children’s digital memories (Garde-Hansen et al.). I suggest these examples work from an immanent ethical and critical position in order to make visible and operate from within the conditions of infant media life.

Rather than seeking to deny or avoid the diversity of encounters infants have with and through mobile media in their everyday lives, this analysis has explored the ways infants are increasingly configured as users of mobile media and communication technologies, identifying an emerging repertoire of infant mobile communication techniques. The emerging practices of infant mobile communication outlined here are intertwined with contemporary household media environments, and assembled through accidental, assisted, and automated relations of living with mobile media. Moreover, such entanglements of use are both represented and discursively reconfigured through multiple channels, contexts, and networks of public mediation. Together, these diverse contexts and forms of conduct have implications for both studying and understanding the ways babies are emerging as active participants and interpellated subjects within a continually expanding digital culture.

Acknowledgments

This research was supported with funding from the Australian Research Council (ARC) Discovery Early Career Researcher Award (DE130100735). I would like to express my appreciation to the children and families involved in this study for their generous contribution of time and experiences.

References


