Digitising Early Childhood

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Edited by

Lelia Green, Donell Holloway,
Kylie Stevenson and Kelly Jaunzems

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CHAPTER 1

DIGITISING EARLY CHILDHOOD: AN INTRODUCTION

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Although international in its scope and remit, this book arises out of two competitive grants awarded by the Australian Research Council (ARC) to researchers at Edith Cowan University. The first was funded from 2015 and is nearing completion. "DP150104734, Toddlers and tablets: exploring the risks and benefits 0-5s face online" investigates the risks and benefits faced by very young children (aged between birth and five) when they go online. The second grant is still in its early stages. Led by Dr Donell Holloway, "DP180103922, The Internet of Toys: Benefits and risks of connected toys for children" involves a multi-faceted investigation of the "internet of toys", to be discussed further below. Both grants are grounded in seminal work by Holloway and her colleagues. Writing in 2013, with Professors Lelia Green and Sonia Livingstone, Holloway's foundational paper *Zero to Eight. Young Children and their Internet Use* is still widely cited and used. To date, it has been downloaded over 37,000 times from the EU Kids Online website, hosted by the London School of Economics and Political Science (Holloway et al. 2013).

Working with Green and Holloway, on this volume as well as on some of the research that it showcases, Dr Kylie J. Stevenson is an interdisciplinary researcher whose current focus is higher degree by research learning support at ECU. A published poet, Stevenson's research spans children and technology, higher degree by research pedagogy, arts education, and experiences of welfare dependency. Stevenson is primarily concerned with investigating and communicating people's lived experience. She has worked with Green and Holloway on four of their ARC grants as a Research Associate. Kelly Jaunzems is also an integral team member.

Skilled in administration, with a Masters' degree in Occupational Safety and Health (OSH), and a current PhD project in social media and OSH communication, Jaunzems's work as a Research Assistant is a growing part of her role and she has been a Research Assistant on two of Green's ARC grants. Together, the team of Green, Holloway, Stevenson and Jaunzems have powered the gathering and editing of the chapters in this collection.

The book in your hands is far more wide-ranging than the starting points provided by the Australian Research Council support, however, and brings together a wide range of materials which are of increasing value when it comes to examining the changing digital experiences of the youngest members of our societies. Building upon the first Digitising Early Childhood International Conference held in Perth in September 2017, while also including chapters that were submitted in response to a global call for abstracts, this book is the result of an international collaboration across geographical and cultural boundaries, and disciplinary barriers. It includes perspectives from developmental and early childhood education, physiotherapy, media studies, sociology and cultural studies and features authors from the UK, Europe, and Asia, as well as Australia.

Taken together, the papers included in this collection especially illuminate four separate aspects of younger children's lives online, with each section including five different chapters. The first section, Children's Digital Experiences, examines the daily digital experiences of young children. Usually, such a consideration also includes and represents the activities and decisions of children's parents, since parents' attitudes are central to their child's digital experience. Section two, Digitising Educational Settings is a study of how the education and care of children in their early years has been revolutionised and complicated by young children's access to digital technologies. Many parents and educators support young children's engagement with digital technologies because they believe that these experiences are educational. Additionally, there is a sense that much digital content is itself educational, as well as complementing the learning experiences implied in accessing that content. Echoing this perspective, it can be difficult to find online resources and apps for children that are not branded and marketed as conferring educational benefits.

The areas of interest developed in sections one and two, examining both domestic and educational contexts lead into a focus on the child's experience of his or her technological world. The chapters in this section particularly focus on the child's perspectives and feature work with a child-centred remit, as well as capturing the views of caregivers. Section 3, Children's Technological Worlds, investigates the meanings and cultural

content that youngsters create in their more play-based online activities—even if these can also be recognised as educational too. Although generally reflecting children's voluntary activities, these aspects of children's digital lives raise issues for parents, siblings, educators and for children's same-age friends. They offer a new avenue through which young children are socialised into their future roles as digital citizens, and as active agents helping co-develop their own future.

The final section of this book considers the implications of youngsters' digital engagement for Children's Wellbeing Online. Starting with physical and developmental issues, this section considers the impacts and effectiveness of parental surveillance of children's digital activities, and risks in other contexts to children's privacy, datafication and commercialisation. Finally, some consideration is given to the new generation of apps that support the digital parenting of tomorrow's online children. The Conclusion chapter draws the book together, offering some pointers for future research and suggesting the kinds of issues that might be addressed as the field develops, building upon the chapters in this volume.

Turning in detail to the book's first section, Children's Digital Experiences opens with "Very young children online: Media discourse and parental practice". This chapter is an outcome of the Australian Research Council-funded investigation into "toddlers and tablets" and considers the risks and benefits of young children's digital engagement as discussed in the Australian public sphere. The four co-authors Kelly Jaunzems, Dr Donell Holloway, Professor Lelia Green and Dr Kylie Stevenson use their chapter to explore media discourses around children's use of digital touchscreen devices. They analyse relevant newspaper and online reports published during the collection period (April 2015-March 2016), which were subsequently contrasted with parents' own statements about their experiences of supporting young children's digital skills. As the chapter discusses, the findings indicate that legacy media tend to repeat guidelines first formulated in the days of television suggesting that children in their early years should either have no, or very little, touchscreen time (Brown 2011). These messages tend to make parents feel guilty even when their personal experience is that children enjoy a range of benefits arising from different kinds of digital engagement. The work underpinning this chapter also supports an international study involving countries associated with the European Commission-funded DigiLitEY COST Action IS1410 (2015-19) *The Digital Literacy and Multimodal Practices of Young Children*, in which Holloway plays a leading role.

Since the contest between what parents think they should do, and what they often choose to do is so important, Dr Bjorn Nansen's chapter on

"Dispositifs and dispositions in infant mobile media use" also addresses the issue of the disconnect between parents' actual activities and the dominant policy discourse around risk and abstinence. Nansen uses the conceptual framework of the *dispositif* (Foucault 1980) to consider the influences of commercial and educational discourses upon parental decision-making. His analysis investigates the ways in which physical space and expert advice combine to shape and govern the situations that arise in the context of children's use of digital media. Drawing upon a range of qualitative resources, including interviews around children's everyday play practices and social media data addressing young children's digital experiences, Nansen's chapter considers how the *dispositif* is challenged by the everyday dispositions of family life which are constrained by a range of domestic factors. The physical infrastructure constraints include the media available within a domestic context, the device chosen, and its accessibility to family members. These operate alongside such issues as policy guidelines, news media commentary, and the construction and marketing of services and products. The chapter considers how elements such as these both limit and complicate parents' decisions around their young children's mobile media use.

The third chapter in this section, "Media online use by very young children: What do they look for?" moves the focus to Indonesia to examine the kind of content that young children choose to access when they go online. At the same time, researchers Erna Mariana Susilowardhani and Yute Inten Apsari acknowledge that the content available to children often reflects the decision making of their parents. Their research shows that, in Indonesia, young children often like to watch their favourite cartoon movies on YouTube, also using digital devices to access songs and games that have been previously downloaded by adults in their family. Finally, family photographs and videos may be stored on touchscreen devices used by children. Susilowardhani and Apsari make the point that parents' decision making around these content choices, and the ways in which they provide access to digital technologies, are important elements in helping children feel at home in digital environments.

The next chapter moves from the wider issue of child-friendly materials on the internet to the creation of web content using children. Dr Catherine Archer uses her work on "Pre-schooler as brand extension: A tale of Pixie's bows and birthdays" to consider the internet's very young stars. In her case study of child sensation Pixie Curtis, the daughter of celebrity parents and a brand in her own right from an early age, Archer raises the issue of parents' packaging and marketing of children who are barely old enough to make a sentence, let alone provide informed consent to the marketing activities that

surround them. Already a public persona, Pixie is also the face for her own line of hair bows, appropriately titled Pixie's bows. This is clearly one version of what it is to be an internet success story, but Archer's chapter suggests that the packaging of children for digital consumption by online audiences might be somewhat problematic.

The ways in which media respond to and describe the online materials consumed by children is addressed by the final chapter of this section, "The representation of the new in the traditional: New media, children's magazines and digital literacy". Professor Tuğba Asrak Hasdemir and her co-author Mehtap Uyar are interested in media convergence and examine the ways in which traditional media such as magazines for children and their parents also develop an online presence, presenting and discussing children's digital engagement amongst other issues. The two children's magazines examined in the chapter are Turkish, and both have a wide circulation in print and online. The topics of the articles featured in *Öncü Çocuk* (*Pioneering Children*) and *Kumbara* (*Coin Bank*) are recognisable around the world. The researchers found that stories about the benefits of new media were slightly more numerous than stories about its risks, but there were occasions where the coverage of risks might be constructed as supporting a "moral panic". Asrak Hasdemir and Uyar draw attention to the comparatively small amount of content dedicated to supporting the development of children's digital literacy, which helps youngsters develop the tools they need to analyse critically what they see online. Another key issue raised is equity of access to information and communication technologies, and the troubling fact that the digital divide may exacerbate disadvantage in other spheres of children's lives.

Some schools have the capacity to respond to the digital divide by making mobile technologies available to children who don't have digital access at home. Dr Madeleine Dobson's chapter, "Hayley's story: Exploring a junior primary student's relationship with media" opens the second major section of the book: Digitising Educational Settings. In examining 7-year-old Hayley's relationship with digital technologies and the media she consumes, this chapter acts as a bridge that links research about children's informal media use with their digital work at school. In an analogous way, Haley's iPad links her home life and her school life. Hayley's story is located within a research project involving fourteen girls aged between 7 and 13 who attend a primary school in Western Australia. Hayley was the youngest member of this group and is one of three detailed case studies which are all contextualised by Dobson's mixed methods, feminist research project. The chapter aims to paint a holistic picture of Hayley's experiences with media in terms of her everyday life, demonstrating that the relationship

she has with her iPad is a close one and of key importance to Hayley's emerging sense of self. In describing Haley's specific circumstances however, Dobson notes the significant diversity in her research group.

Erna Mariana Susilowardhani and Yute Inten Apsari's second chapter "Introducing digital devices at ICJ Kindergarten: Encouraging new opportunities and responding to students' needs" considers the strategies used by kindergarten teachers to introduce digital media to children in an educational context, when these children might be more used to categorising the devices as entertainment. The educators at ICJ Kindergarten believe it important that students should have equitable access to technologies, building a foundation for future digital competencies. In alignment with the school curriculum, the children are both taught and evaluated on their skill development and technical knowledge, particularly with regards to computer use. These formal educational activities are complemented by other class projects and through engagement with parents. In terms of class activities, the kindergarten teachers might complement the formal lessons by using digital tools to explore a theme that reflects children's lives; in terms of their work with family members, teachers ask parents to complete a "liaison book" that tells family members about what the children learn in their technology lessons. As a result, the school encourages the parents to join forces with kindergarten staff in supporting the children's digital learning and skill development.

Across the world in Denmark, Professor Helle Marie Skovbjerg explores kindergarten children's physical activities in "Playing with a digital swing". The swing's digital enhancement is a sound unit that interacts with the movement of the chain and reflects changes in such dimensions as the speed and height at which the child is swinging. These additional sources of information around swing playtime have encouraged Skovbjerg to explore whether the digital sounds have resulted in changed play activities, particularly the issue of risky versus safe play practices. Skovbjerg's analysis and the feedback provided by the technological swing system indicate that children use the additional information to manage risk and security as part of their playtime. The conclusion she draws is that the digital swing not only supports active play but might also increase children's physical competence, reducing danger by allowing safer risk taking.

Also focused on play, Jo Bird uses her chapter "Considering how children engage with provided technologies in early childhood" to explore one of the key concerns around very young children's access to technology: that it might reduce children's creative and imaginative play. Bird offers the example of highly structured educational apps that allow few options for a child to do anything other than follow a set path provided by app developers.

These fixed products are contrasted with apps that are open-ended and unstructured. The chapter reports upon a study that takes a child's point of view to investigate how children continue to play with digital technologies, customising them to meet the requirements of their creative expression. Bird also considers the value of non-working technologies, particularly devices that are broken or in some other way incapacitated but which children find valuable prompts for their imagination. She concludes that when children play with technology in imaginative rather than restricted ways, their play supports the development of competence and confidence and provides a firm foundation for growth in digital citizenship. Children enjoy exploring new possibilities around technology use even at very young ages.

In "Selecting apps for young learners: What should be considered?", Dr Pauline Roberts advises upon the ways in which adults can evaluate apps to determine which offer most educational benefit to younger learners. Speaking particularly to formal educators, but acknowledging that parents also fulfil this role, Roberts asks what factors should inform decisions around and management of the ways in which young children use these devices. Her chapter outlines a framework to help assess whether an app that is created for a mobile touchscreen device, and which is specifically designed for toddlers, is educational. The framework helps people decide upon appropriate apps for use by very young children and Roberts argues that while this information is especially valuable in educational settings, it is also an important resource to help parents navigate these issues in the home. This important chapter concludes the section of the book that focuses on Digitising Educational Settings.

The chapter that opens the section on Children's Technological Worlds bridges both educational and family settings. The four-person team of Jane Mavoa, Dr Bjorn Nansen, Dr Marcus Carter and Associate Professor Martin Gibbs combine to consider parents' reasons for preferring that their children (aged 3 to 5) do not play digital games. In "Why young children don't play: Parents' accounts of non-engagement with digital games", this team of researchers reflects upon the shift in the public conversation around children and digital media from a consideration of risk and possible harm to a new rights-based focus. Contemporary constructions of gameplay suggest there may be a range of benefits associated with children's interactions with digital media. Using parental responses to a survey seeking information about children who do not play digital games, Mavoa et al. explore negative parental constructions around the incorporation of gaming practices in children's digital activities. They note that some parents view digital games in terms of a pastime that takes children away from "better" kinds of play, potentially adding no value to children's experience or expertise, and

possibly harming children's development. These parental attitudes are contrasted with current educational frameworks operating in Australia which include consideration of digital games as one way in which children can be helped to learn. The authors' conclusion is that the many groups of people who have an interest in supporting the development of children's digital literacies should examine and consider some parents' negative understandings of these issues. Perspectives that inhibit children's access to technological experiences are one indication of the variety of environments in which contemporary children are socialised as future digital citizens.

Dr Kylie Stevenson leads her team of Professor Lelia Green, Dr Donell Holloway and Kelly Jaunzems in zeroing in on one specific case of a pre-schooler's experience with digital culture. "Like mother, like daughter? Unboxing an Etsy childhood" examines online commercial activity, young vlogger fandom and unboxing videos. This family-based study examines the multi-faceted impacts of these influences upon a child who has only recently entered pre-school but has already developed an online persona and her own digital shop for marketing second hand clothes. Freya, as this chapter terms the young child, has a passionate engagement with online culture and the study critiques the argument that children are necessarily passive consumers of a digital culture created elsewhere, or the exploited offspring of adults who have a clear idea of the potential monetisation of child presenters. In contrast to Dr Catherine Archer's case study in this collection, the parents in Stevenson et al.'s family are a long way from exploiting Freya's liking for commercial digital engagement. Although Freya competently creates a range of videos, and has great fun playing with and selling from her online shop, none of these activities is shared in the public sphere. Instead, Freya's parents diligently restrict her online audience to a small circle of family and friends.

The internet of toys is a subset of the internet of things, but particularly designed to be attractive to children who are far too young to understand the privacy-challenging and commercial implications of the digital toys they play with. In their chapter on "Discursive Positions on the Internet of Toys", Professor Lelia Green and Dr Donell Holloway examine a range of constructions which are used to position public debate about these new devices. Acknowledging that these toys can offer uniquely personalised engagement with information and communication technologies that especially suit some young children's learning styles, Green and Holloway critique the different ways in which diverse groups of (mainly) adults position digitally-connected toys. Notably, the views that inform policy rarely include input from children themselves. The discursive positions adopted are tailored to the demands of a competitive public sphere,

including traditional media, corporate entities, regulators, and parents. The analysis offered in this chapter also engages with the European Union's General Data Protection Regulation (GDPR), introduced on 25 May 2018. A disruptor of disruptors, the GDPR seeks to prompt new discussions around data, including that generated by these play-based technologies.

For some children, some of the time, the technological world they enter online can be a worrying space. The following chapter introduces an under-discussed topic for parents to pore over. In "A new online risk? How young children negotiate avatar death in virtual game worlds", Ashley Donkin examines the idea of online death, particularly reflecting on the ways in which children say they handle the death of their avatar in digital gameplay. Donkin's research into the social worlds of children's gameplay indicates that under 8s can find the death of their avatar particularly hard to navigate. Using her work with children aged between 5 and 12, Donkin demonstrates that, in general, the younger a child is, the more they try to avoid playing games where their avatar might die. Where older children are engaged in games which involve survival narratives, and where the death of an avatar is a realistic likelihood, children have developed specific strategies to deal with the impact of this loss. Donkin concludes that avatar death may pose a potential risk to younger children in terms of them negotiating an appropriate emotional response, requiring a level of resilience that they may not yet have developed. While gameplay can offer a range of social benefits, especially when playing online with friends, the risk of young children reacting badly to the death of their avatar might be added to established parental concerns around bullying, griefing, social exclusion, privacy and identity theft.

Reflecting their commitment to understanding the detail of children's experiences in technological worlds, Dr Kylie Stevenson, Kelly Jaunzems, Dr Donell Holloway and Professor Lelia Green use their chapter "Accounting for siblings in family-based research" to examine the fraught issue of sibling-absence in many age-related research projects. Having established that there is little existing literature addressing the impact of siblings upon young children's technology use in naturalistic settings, Stevenson et al. proceed to examine the ethical issues raised by researching the life of a child of any given age when the research design discounts, in significant ways, the impact of siblings who may fall outside the target age group. Arguing for a more holistic view of children's engagement with digital technologies in family contexts, this chapter suggests that siblings are an under-researched aspect of young children's enjoyment of digital media and the development of technological skills and competencies.

What's more, there is every reason to believe that this is an evolving and dynamic research area where the age and number of siblings interact with the relevant technological culture of interest in a complex and multi-faceted way. This perspective is further strengthened via the consideration of four vignettes that are offered as exploratory studies from different age-related research projects, and which underline how siblings are implicated within children's technological worlds. This chapter concludes the Children's Technological Worlds section of the volume and points to how much researchers have yet to learn about the nuances of young children's lives online.

Professor Leon Straker and Dr Juliana Zabatiero open the final section of the book which examines Children's Wellbeing Online. Their chapter "Potential physical implications of mobile touchscreen device use by young children" considers the physical implications of very young children using mobile touchscreen devices. Typically, this activity positions the child user hunched over a technological device, sometimes for a considerable period. Straker and Zabatiero have concerns about this circumstance, both in the unnatural posture encouraged by children's engagement with touchscreen devices and the potential issue of digital technology use replacing more varied physical activity such as running, jumping, dancing and outdoor play. The chapter also references a range of associated wellbeing concerns, from the potential for sleep deprivation to the risk of obesity. Straker and Zabatiero argue that a detailed understanding of the potential health risks associated with digital technology use by very young children can help parents, educators and caregivers to engage with strategies that will prepare their charges to be physically fit and healthy as they take their place in the digital world.

Dr Donell Holloway's research investigating children's digital wellbeing has taken her into a range of different family settings and contexts. The case study considered in her chapter "The Panopticon Kitchen: The Materiality of Parental Surveillance in the Family Home" investigates how some parents feel themselves required to oversee younger children's digital activities in response to concerns around the risks their children might run online. Using de-identified photographs that offer insights into the physical (re-)arrangement of family life to help keep children safe, Holloway draws parallels with a longstanding concern of communication research where technology is implicated in surveillance and control. One family in Holloway's research has set up their kitchen area in such a way that the supervisory adult can see exactly what the children in the household are doing when they are engaging with the internet. In this specific instance, the domestic geography has been configured so that

strategies of surveillance and control are applied to the children's use of information and communication technologies. The adults in this family have used this approach to mitigate children's digital risk, relying on the use of static equipment and mobile devices that are confined to the kitchen area of the home. Thus, in a touchscreen world where children's online access is thought to be much more mobile and flexible, spatial regimes at home are often used to limit and surveil children's internet use.

Do young children have the right to hold and express personal and sometimes controversial opinions online? This is the topic explored in Dr Jane Mummery's and Associate Professor Debbie Rodan's thoughtful chapter "Digitising kids with chooks to supercharge one online activism campaign". Their work describes how an animal welfare activist organisation sought to ensure that fast food restaurant chains would no longer use eggs from caged hens. Animals Australia instigated a social media campaign that encouraged young children to make personal appeals to the fast food industry to free hens from cages so the animals might have better lives. The campaign was successful, but the commercial organisations affected argued that the children who posted their online pleas were exploited by Animals Australia. Considering this proposition, Mummery and Rodan see some qualifying factors that impact upon children's capacities to make authentic pronouncements in these areas, but they ultimately conclude that children need to be accepted as legitimately able to hold and express their own views in digital environments.

In her chapter "What we don't know children do online matters. What we don't know ourselves matters more", Simone Inglis suggests that parental ignorance around their children's digital activities is an important factor when it comes to concerns about children's wellbeing online. Using qualitative interview data from parents and children that allow for linked comparisons, Inglis investigated the significant mismatch between parents' and children's knowledge, education, confidence and concerns regarding the digital realm. She argues that while children may have high levels of skill, they may have low levels of awareness of risks and threats online; and while parents may have high awareness of risks and threats, they may have a low awareness of their children's digital activities. It is possible, argues Inglis, that children are more at risk from their parents' ignorance than they are from their own lack of knowledge about digital environments. Inglis goes on to suggest a range of ways in which parents can improve their mediation skills and helpfully support their children's safe and productive digital engagement.

Dr Kate Orton-Johnson finishes this final section of the book with a chapter that examines the wellbeing of children via the wellbeing of their

parents. "From digital parent to liberated parent? Exploring experiences of digitally mediated parenthood" considers the value of mobile apps that are designed and marketed as a support for new parents in the very early stages of their parenting journey. Orton-Johnson compares the value of the reassurance offered by these apps with the risks that such digital resources and connections may pose in terms of surveillance, privacy, security and commercial exploitation. Using an approach that resonates with Mavoa et al. in Children's Technological Worlds, Orton-Johnson unpacks these fraught debates by investigating the decisions taken by parents who have consciously decided to stop using new-parenting apps. Abstinent parents explained to Orton-Johnson how, for them, the apps offered a complicated mixture of positives and negatives, with the drawbacks outweighing the benefits. They argue that app use increases the risk that parents will feel pressured; that the app sometimes offers unhelpful comparisons; and that the information it provides can trigger a sense of guilt and inadequacy. Orton-Johnson further notes that some of these parents felt that the datafication of parenting practices had negative implications in terms of shaping their relationship with their child.

The volume ends with a brief Conclusion that considers the new information provided in its chapters and the future likely projections for the field. At the centre of much of this research on digitising early childhood is the vision of a child who will grow up to be a happy healthy confident internet user, at home with digital technologies and able to use them for a range of purposes. At the same time, most educators and parents would hope that their children will also able to disconnect from time to time and engaged in unmediated ways with other people, and with the natural environment.

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CHAPTER 2

CHILDREN'S DIGITAL EXPERIENCES

CHAPTER 2.I

VERY YOUNG CHILDREN ONLINE: MEDIA DISCOURSE AND PARENTAL PRACTICE

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Abstract

Between 2015-17, the Australian Research Council awarded funding for a Discovery Project exploring the risks and benefits 0-5s face online. One element of this research was to investigate public discourses around very young children's (0-5) use of touchscreen technologies. Based on analysis of data collected from the public sphere and popular media over a twelve-month period (April 2015 to March 2016), the authors find that Australian parents still express confusion and guilt concerning their very young children's media use. Many news, magazine and blogger commentaries collected were alarmist in tone and did not resonate with parents' experiences of everyday digital life with very young children. Instead of accepting dominant discourses around having "none at all to very little" digital time for under-5s, parents are sharing and developing the practices that work for them, but this does not stop them feeling techno-guilt.

Keywords: *touch screens, young children, parents, techno-guilt, policy*

Introduction and background

Many children born in the past six years have, from a very early age, had access to the intuitive interfaces of touch screen devices such as the iPad (released in 2010). This touch-and-swipe technology can be used in a self-directed manner and at a much younger age than previous point and click, mouse and keyboard, technology allowed. Despite the increasing popularity of touchscreen devices, there is limited general knowledge about the benefits, risks, opportunities and challenges associated with very young children's use of these technologies.

Prior to 2016, most of the academic research available reflected educational perspectives (for example, Danby 2013, 83; Dooley et al. 2015, 30-44; Neumann 2014, 231-239 and Neumann 2016, 61-68), rather than investigating everyday family practices as favoured by media and communications studies. One indication of this lack of media studies information was the increasing take-up of the Holloway, Green and Livingstone 2014 report sponsored by EU Kids Online that had been downloaded 29,752 times as at 13th October 2017 including, for example, over 900 downloads in a month as late as November 2015.

Reflecting this unmet demand for media and communications-driven knowledge about very young children's touchscreen use, the Australian Research Council (ARC) funded Toddlers and Tablets: Exploring the risks and benefits 0-5s face online (2015-17). This ARC research includes a sub-project examining the discursive constructions of very young children's touchscreen use circulating in the public sphere, as well as ethnographic work with twelve Australian families, and six families in the UK. This chapter focuses on media discourses in the public sphere: other papers (Holloway, Green and Stevenson (2015), plus two in review) more centrally reference the ethnographic research.

This chapter explores the culturally contested space within which very young children develop digital literacies. A range of influential voices, including the American Academy of Pediatrics (Brown 2011) have until recently argued that there is no safe level of digital media consumption for under-2s, and that 3-5s should have very limited exposure (Brown, Shifrin and Hill 2015, 54). This restrictive expert advice contrasts with parents' everyday perspectives and practices. Many parents believe that exposure to digital media is vital to their child's development, hoping to support their child's acquisition of the digital skills required to succeed in today's world. Consequently, children's use of digital technologies has become an area where parents risk feeling techno-guilt. The resulting tensions are being played out in the public sphere through parenting blogs, discussion groups

and online media. This paper addresses a research gap by examining that content.

Methodological approach

The conceptual framework used for this paper combines social constructionism (Burr 2003, 1-30) with a co-creation of knowledge (Fong 2005, 41-56) /social learning (Wenger 2000, 225-46) approach, which has links with the "communities of practice" literature (Wenger 1998). Through a critical discourse analysis (CDA) of relevant blogs, articles, parenting sites and news media concerning very young children's use of touchscreen technology, the authors investigate a range of influences that inform parents' views in this area. Based on Fairclough and Wodak (1995), CDA deems discourse "a form of social practice" that takes into account the context within which a discourse is produced, distributed and interpreted, as well as its cultural implications (Du Gay 1997). Discursive constructions of very young children's touchscreen use shape parents' shared understandings about the benefits and risks of 0-5s' digital behaviours.

Working within this context, the research team collected and analysed commentary available in the public sphere from 1 April 2015 to 31 March 2016 to explore popular and contested understandings with regards to 0-5s online. The selected sample was drawn from everyday discussion and commentary within the Australian and New Zealand mediasphere, including popular parenting blogs such as Mamamia and kidspot.com. This data has been interrogated using textual and content (Fairclough 2003, 1-20) analysis to identify the attitudes, rationales and strategies that parents and others claim should influence adults when deciding whether, and in which circumstances, to allow very young children online. Such discussion also addresses the digital activities and content suitable for very young children. A keyword search strategy was used comprising 11 children-related identifiers, and 11 technological terms, with all 22 search criteria related to touchscreen technology in any and all possible combinations. Of the 85 newspaper, magazine and blog articles identified, collected and analysed, 35 (41%) focused solely on the risks associated with young children's screen time, while only 9 (11%) concentrated on the potential benefits afforded to young children.

Specialist commentary within public discourse

As noted previously, the old guidelines developed by the American Association of Pediatrics (AAP) in 2011 (Brown 2011) are widely cited by

both experts and parents. Examples of advice from newspapers, magazines and blogs that echo these perspectives include: "Paediatricians recommend children over 2 have no more than 2 hours of screen time (including television, computers and all other digital devices […, while] children under 2 don't need any screen time" (blog) (Charlton 2016).

Recent updates to the AAP recommendations fit a little better with contemporary family life. These are that children under two years should avoid screen use altogether, apart from video chatting apps such as FaceTime; and, children between 18 months and two years may be introduced to digital media alongside their parents in short episodes. For children aged between two and five years, the AAP recommends no more than one hour per day of screen time (Livingstone 2016), with a leading American paediatrician arguing that: "The impact these mobile devices are having on the development and behaviour of children is still relatively unknown" (newspaper) (Anderson 2016).

Part of the anxiety around these issues stems from the lack of social and cultural experience of 0-5s' digital engagement. It is only since 2010 or so, with the adoption of smartphones and iPads, that very young children have enjoyed immediacy of online access in self-directed ways. Parents have had to use their best judgement with regard to the guidelines from the AAP. Emerging evidence-based guidelines, however, suggest that there is no "one-size-fits-all approach – parents should adjust their strategies to the age, interests and needs of their children" (academic) (Blum-Ross and Livingstone 2016). These guidelines encourage parents to view digital technologies as a resource for children, and suggest that parents who take a restrictive approach, whilst avoiding short-term risks, may also limit the opportunities that their children may enjoy.

Drowning out this nuanced advice is a raft of well-publicised celebrity discourse. Megan Fox (House 2016), for example, condemns young children's use of technology:

> …parents are making a huge mistake by using gadgets as electronic "babysitters" for their kids. "It's actually really bad for their brain development and I'm trying to breed, like, superheroes," she added to People magazine. "I don't want them to get f**ked-up brains". (Megan Fox, cited in blog)

Jamie Oliver is also on the record as strictly limiting screen time for his children (Groskop 2013), while Jennifer Lopez (Kaplan 2015) restricts her children's digital exposure to one day per week:

> … "Sunday Funday", in which her kids can use tablets and play video games just one day a week. "All they want to do is be on these devices all the time. They get to play with it as much as they want that day," she told E! News. "I try to regulate it and then on Sunday, I let them go and I take a nap while they're doing it". (Lopez, cited in blog)

Hugh Jackman has said that he limits screen time to the weekend (Kaplan 2015), whilst David Beckham restricts his kids' online activities. "No more than an hour," he says. "I know that sounds pretty harsh, but I want my boys to be outside playing" (blog) (Lovett 2017). Although celebrity comment is prominent in the public sphere, few parents feel that these celebrities provide realistic models for their own lives (Sugden 2015):

> "Let your kids climb trees. Take the device out of their hand. Play Monopoly!" Winslet says. "You go to a cafe and grown-ups are at one end of the table and children the other, on devices, not looking up. It takes every member of a family to be a member, and there are too many interruptions these days—and devices are a huge interruption."…But we are not all millionaire movie stars, with flexible hours and unlimited dollars for nannies to entertain kids while we work. (Fiona Sugden, Mamamia blogger)

Parental defensiveness is a constant trope of these discourses, but parents resent what they see as unrealistic guidelines divorced from everyday life.

Impact upon parents of relevant public sphere discourses

The warnings about young children using digital technologies echo those of 50 years ago when parents worried that their children's television viewing would cause "square eyes", and that violence on television might make their children aggressive (Roberts and Powell 2014). Such concerns have historically been linked with the introduction of any new communication technology (Marvin 1990) and have been termed "media panics". Today's fears around young children's touchscreen use include concerns around "a child's development, wellbeing, physical health, sleep, emotional intelligence and academic achievement" (newspaper) (Baker 2016), "musculoskeletal disorders" (newspaper) (Akerman 2015), "language, cognitive and social skills" (newspaper) (The Courier Mail 2016), "weakened core muscles, bad posture, unfitness, obesity, junk food and mindless eating" (newspaper) (Carlyle 2016), Some warnings are even harsher however: "Giving babies an iPad to play with is tantamount to child abuse—the equivalent of playing 'Russian roulette' with their development" (blog) (Carlton 2015). Statements such as these, augmented by celebrity commentary, are associated with a

rise in parental "techno-guilt"; "guilt is always there because you question yourself and worry that you are doing the wrong thing" (parent, cited in newspaper) (Sinnerton 2015). Another mother also echoes this: "I worry about the comments suggesting—with varying degrees of politeness—that devices and apps are sending our children to illiteracy hell in a digital handcart. What if those people are right?" (newspaper) (Dredge 2015).

Even while arguing that experts and celebrities should "stop telling us parents we are doing the wrong thing […] We have enough to worry about" (blog) (Vince 2016), parents fail to feel confident about their chosen position. For example, this mother strongly believes her child will grow up in a technology-dependent world but is constantly fearful that she may be doing the wrong thing (Vince 2016):

> My daughter's world will be very different to the one I grew up in. The way she will learn, read and interact with her peers will be done through a technology that wasn't available when I was a baby or in school. Instead of fearing technology, I choose to embrace it. I choose to expose my daughter to it from as early as possible, so that when she grows up and is surrounded by it, it isn't unfamiliar. I want her to embrace the possibilities the future has, not fear them […] But sometimes I worry. I worry that I am somehow failing her by exposing her to technology. I worry because of experts who tell parents like me that we are messing up our children. Destroying their future. (Avi Vince, blog).

Headlines such as "Giving iPads to babies is child abuse, says doctor"(Carlton 2015), and "Experts warn giving your child an iPad to calm a tantrum stunts their development" (Anderson 2016), sensationalise the issue and cause parents to feel anxious and shameful: "it is not good for anyone's wellbeing to be constantly feeling like they're judged or putting all that effort into judging others" (blog) (Sinnerton 2015).

There is a significant disconnect between much expert advice and the opinions expressed by, and practices of, many everyday parents and care-givers. Arguably, in the absence of credible guidance on very young children's engagement, parents have developed their own expertise based on the evidence of daily life and their personal ideas about the benefits, opportunities, risks and challenges of such technology.

Parents' everyday practices and children's everyday activities

The project's parallel ethnographic research demonstrates that parents have general rules around time limits, use and content (Holloway et al. 2015).

Very young children tend to use "family owned" technology rather than a device of their own. This generally results in lending technology to young children and short-term use, rather than long, uninterrupted periods of screen time. Young children also tend to use devices when adults are around (Morris 2016), encouraging co-present use.

Many parents use the respite of allowing children a short burst of digital access to get things done. Looking back, one mum says: "I could hand her my phone so she could soak up the dulcet tones of Peppa Pig and I could get the toilet roll, two-minute noodles and tomato sauce without having to listen to yet another tantrum" (blog) (Anderson 2016). Another says she gave her son the iPad "when he needed quiet time or when she needed to get something done like cook dinner" (Marriner 2015). A third mother describes using her phone as a distraction for her child whilst undergoing a medical procedure: "Without even thinking about it, I pulled out my phone and handed it to my three-year-old to make him happy while that happened" (blog) (Wainwright 2017).

Advocates of young children's use of touchscreens, including neuroscientist Dr Muireann Irish, draw attention to the skills and competencies to be developed: "rather than looking at screen time damaging their brain, we should focus on the incredible capacity a child has to look at the world" (newspaper) (Baker 2016). That fits in with parents' views about possible benefits. Parents are generally quick to say that they tend to buy educational apps, such as those which help with maths, reading, writing and speaking skills, rather than buying games that encourage "passive viewing of, say, cartoons on a screen" (newspaper) (Baker 2016).

Skype or video chat is a further way in which children use digital technology. Utilised to keep in touch with parents who work away, or with distant relatives, these interactions help young children form and maintain familial relationships. One parent, who says they generally discourage screen time adds: "the only exception is when we are Skyping home to Ireland—I view that differently" (newspaper) (Baker 2016).

Recent research suggests that children are able to seamlessly transfer not only this imaginative play, but also the skills learnt on a device, to real life: "for example, if a child can play a game of chess or complete puzzles on a device, they can simply transfer those skills to the 3D object" (newspaper) (McLauchlan 2016). Devices can also be used as a catalyst for physical play. Known as hybrid play, apps and videos can stimulate a child's imagination and encourage active play with toys, situations or characters. The ABC (Rigden 2016) has capitalised on this: