

GAMES OF BEING MOBILE

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Games of Being Mobile: Australian Research Council Discovery Project Report

RMIT University
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Acknowledgement of country

RMIT University acknowledges the Wurundjeri people of the Kulin Nations as the traditional owners of the land on which the University stands. RMIT University respectfully recognises Elders both past and present. We also acknowledge the traditional custodians of lands across Australia where we conduct business, their Elders, Ancestors, cultures and heritage.

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Executive Summary

In 2018 worldwide game revenue reached \$138 billion, and mobile game revenue now accounts for nearly \$70 billion of this—that is, over half—and this market share is predicted to grow.¹ The bulk of this mobile game revenue—80% or \$55 billion—comes from smartphone related apps. Today, almost 2.4 billion people play mobile games, with the Asia-Pacific region making up over half of the Global Games Market.² Some studies suggest that mobile gamers are most often the primary decision makers in the home.³ The mobile augmented reality (AR) game *Pokémon GO* highlights the increasing popularity of mobile games; the game's total revenue is over \$1 billion, and it generates around \$4 million daily.⁴ While the popularity of *Pokémon GO* might be in decline, the game has now taken on new uses—like being played by elderly people to ameliorate against social isolation and a sedentary lifestyle. The power of mobile games as not just billion dollar economic drivers, but as vehicles for intergenerational connection, enhanced literacies and digital health cannot be underestimated, as evidenced by our study.

The *Games of Being Mobile* project followed nearly sixty households over three years (2013–2016) in five of Australia's capital cities: Melbourne, Perth, Adelaide, Sydney and Brisbane. It is the **first national survey of mobile games**. Our ethnographic project sought to put mobile games in context: *socially, intergenerationally and culturally*. Using ethnography allowed us deep insights into *motivations, practices and perceptions*.

Our study aimed to contextualise mobile games as part of broader practices of play, both in the home and extending out into neighbourhoods, urban public spaces and online networks. We explored domestic and public contexts over time. We observed play in and around platforms and devices. We listened to stories across the generations to understand multiple forms of literacy and social connection.

This study sought to take *mobile games seriously* as they expand across different public and private settings in ways that are social, ecological and even political. As mobile games move across *different genres, platforms, practices and contexts*, they become ever-present in our everyday lives, and for many of us, an important means of experiencing and navigating a digitally saturated world. They are also, significantly, conduits of what we call *ambient play*—a term that conveys how games and playful media practices have come to pervade much of our social and communicative terrain, both domestic and urban.



Figure 1: Understanding haptic (touch) screens and mobile games.

¹ New Zoo (2019) *Global Games Market Report*, <https://newzoo.com/insights/articles/newzoo-cuts-global-games-forecast-for-2018-to-134-9-billion/>

² This statistic is set to be challenged by the licence freezing of Chinese market. See New Zoo report (ibid).

³ Influencer market hub (2019) *Mobile Gaming Statistics*, <https://influencermarketinghub.com/mobile-gaming-statistics/>

⁴ Mansoor, I. (2019) "Pokémon GO Revenue and Usage Statistics," *Business of Apps*, 10 May 2019, <https://www.businessofapps.com/data/pokemon-go-statistics/>

EMERGENT FUTURES FOR MOBILE GAMING RESEARCH

We see a number of emerging fields for the future of mobile gaming research, particularly in terms of the *changing demographics of players*. With global population shifts and a dramatic increase in ageing societies, for example, who plays becomes a key issue. As mobile games become increasingly haptic (touch-based) and multisensorial, they simultaneously become more accessible as playful interfaces for diverse and vulnerable agencies, including older adults and players with disabilities.

In our fieldwork we have also seen time and again how mobile gaming is embedded within the history of *mobile media use as a fundamentally social practice*—even when playing alone we often do so in response to a particular social context. This suggests that when we consider the future potential of mobile play, we embrace the divergent forms of sociality that it enables. Play is about creativity and innovation, a key skill for future workforces. Social play is at the core of the *past, present and future* of mobile games.

In our fieldwork over three years, we witnessed several emergent areas for mobile gaming research. Mobile games are:

1. A key mode of social play (both networked and co-located)
2. Allowing for different learning styles and neurodiversity
3. A vehicle for play across generations
4. At the intersection of playful human-animal relations
5. Recalibrating urban spaces (and our experience of them)
6. Reconfiguring domestic space (and our being-with-others at home)
7. Attuning future workforce skills around play and creativity

Understanding the complexity of this phenomenon cannot be done by Big Data and quantitative methods. Indeed, addressing these soft skills (i.e. creativity and play being key workforce attributes of the future) requires deploying *human-centred, ethnographic and co-design techniques* that provide situated and nuanced understandings of mobile games in practice across different platforms, contexts, spaces and relations. As gamification (game-like techniques applied to non-game contexts) and serious games (games for educational, health and social care contexts) become more prevalent, mobile games will play a powerful role in creative development, literacy, accessibility and implementation.





Play is about creativity and innovation, a key skill for future workforces. Social play is at the core of the *past, present* and *future* of mobile games.

Introduction

Accounting for half of the \$138 billion Global Game Market, mobile games are now serious drivers in not only economic realms.¹ Indeed their social and cultural impact cannot be underestimated. And yet, to date there has been no longitudinal cross-generational studies that take mobile games seriously in everyday life. This study seeks to address this oversight by conducting the **first national survey of mobile games in Australian households**.

The *Games of Being Mobile* project followed nearly **sixty households over three years** (2013–2016) in five of Australia’s capital cities: Melbourne, Perth, Adelaide, Sydney and Brisbane. Our ethnographic project sought to put mobile games in context: *socially, intergenerationally and culturally*. Using ethnography allowed us deep insights into *motivations, practices and perceptions*.

Our study aimed to contextualise mobile games as part of broader practices of play, sociality and contemporary media literacy, both in the home and extending out into neighbourhoods, urban public spaces and online networks. We explored domestic and public contexts over time. We explored play in and around platforms and devices. We listened to stories across the generations to understand multiple forms of literacy and social connection. This report summarises some key findings.



¹ New Zoo (2019) *Global Games Market Report*, <https://newzoo.com/insights/articles/newzoo-cuts-global-games-forecast-for-2018-to-134-9-billion/>



Using ethnography allowed us deep insights into *motivations*, *practices* and *perceptions*.

Background

With the increasing ubiquity of web-capable smartphones and tablets, app-based ecologies and trends towards gamification—that is, the use of games and playful apps to boost consumption of products and services—mobile games are now an intrinsic part of twenty-first century popular culture.

In 2018 worldwide game revenue reached just under \$138 billion, and the Asia-Pacific comprises almost half of this market; China makes up around 25% of the total market spend, and Chinese technology companies such as Tencent have been key players in this revenue space. Mobile game revenue now accounts for \$70 billion of global game revenue—that is, over half—and this market share is predicted to grow. Nearly 2.4 billion people play mobile games, and seventy-three percent of all mobile app revenue from iOS and Android devices is specific to games.¹

The mobile augmented reality (AR) game *Pokémon GO* highlights this trend; with 5 million DAU (daily active users), the game has been downloaded 650 million times, and in the US it's on over 10% of Apple and Android devices. In its first month, *Pokémon GO* generated more revenue than any other mobile game to date (\$207 million), and at its peak in late 2016 was played by over 45 million people. As of mid-2019, it is still the top-grossing iPhone app, capturing an 84% market share of all location-based games (measured by downloads).² The game has amassed \$1 billion in total revenue and still generates \$4 million daily; it has reportedly been the subject of Facebook and Instagram posts, comments or shares over 1 billion times; over 110 million friend connections have been made through the game.³

Not all mobile games have enjoyed the success of *Pokémon GO* or *Angry Birds*, yet mobile gaming has provided many designers and programmers—and, consequently, players—with more flexibility and innovation around game genres, gameplay, and the aesthetics and affordances of game environments. Across the expanding variety of platforms, media, contexts, and modes of presence, mobile games are being played by a growing number of people in a range of contexts: young and old, male and female, individuals, families, and social groups, at home, on the move, at work. Our project considered mobile gaming across all manifestations—from discrete offline casual games to location-based, mixed reality, cross-platform, and urban games, and more recently, the array of downloadable playful and social applications for the touch screen smartphone and hand-held tablet or iPad.



¹ <https://influencermarketinghub.com/mobile-gaming-statistics/>

² Mansoor, I. (2019) "Pokémon GO Revenue and Usage Statistics," *Business of Apps*, 10 May 2019, <https://www.businessofapps.com/data/pokemon-go-statistics/>;

³ Smith, C. (2019) "115 Incredible Pokémon Go Statistics and facts (2019)," *VGS*, <https://videogamesstats.com/pokemon-go-statistics-facts/>.



The method [tactile digital ethnography] explores what people's tactile, haptic and often tacit gestures can tell us about their playful mobile media practices.

Methods

ETHNOGRAPHIC METHODS: UNDERSTANDING GAMES IN CONTEXT

Conducting an ethnography of mobile games and play means visiting homes and public contexts with participants numerous times in order to grasp mobile media practices as part of the dynamic process of living. In particular, we used a method known as “tactile digital ethnography” which begins by focusing on and recording people’s gestural movements as they re-enact and talk through their mobile media use. The method explores what people’s tactile, haptic and often tacit gestures can tell us about their playful mobile media practices.⁴ How do people perceive their mobile game use, how do they explain their sensory experiences, and what does the body “remember” and habitualise?

We also used video re-enactments and media “walkthroughs” as a way of capturing participants’ experience of mobile media and gameplay. Video re-enactment involves *in situ* observation and audiovisual recording of “go-alongs” (following participants as they re-enact and narrate their media use). In this process, participants “perform” and reflect upon a habitual activity; in our case, they were asked to open frequently used games and apps, and play or use them *where* and *how* they would usually do so (e.g. in their bedroom or family room), while responding to questions or providing ongoing commentary of their activity.

Like tactile digital ethnography, this mode of observation and recording enabled us to elicit tacit body memories and routines as participants deliberately reflect upon their activities and movements. Technology or media “walkthroughs” required participants to take us on a guided tour of their household media, explaining where devices are commonly placed in the home, and why, and whether they are for shared or individual use (and in each case, when, where and how).



Over three years we gathered visual and textual data from our households, following our participants in 60 domiciles across five of Australia’s capital cities, tracking changes in their media habits and attitudes. We intentionally recruited households that engaged in diverse kinds and patterns of mobile gaming—from prolific use to limited or no use. Covering this broad spectrum of practice and attitudes allowed us to trace some of the complex ways mobile games have become integral to forms of intimacy, communication and social interaction. Some of our findings surprised us, such as the active involvement of pets in household media play.

⁴ See Pink S, J Sinanan, L Hjorth and H Horst (2016) Tactile digital ethnography: researching mobile media through the hand. *Mobile Media & Communication*: 1-15. DOI: 10.1177/2050157915619958. Accessed on 6th February 2016.

Our ethnographic approach, while foundationally informed by materialist and sensory analyses of everyday media use, also emerged as a particular “take” on digital ethnography, or the study of situated digital, mobile, and networked media use in everyday life. As advocates of this approach argue, there is no one technique, but rather the methodology is innovative or “mixed”, transdisciplinary, empirical, contextual, and cross-cultural.

Typically, digital ethnography focuses on how our engagement with digital media and technological interfaces shapes how we think, act and communicate in daily life.⁵ As we suggest along with other researchers, it need not always be media-centric in its analysis of the way digital interfaces inform—and are often informed by—everyday practices. This is particularly true of mobile media use and mobile gaming, as such activities often occur in the gaps or resting points, as we go about our daily routines. In many ways, our haptic-based research deliberately counters the dominance of audiovisual approaches in the study of contemporary media.

Ethnographers of digital media have also argued that we need to adapt to and explore their “ontological diversity”, which for us meant acknowledging the many digital *and* material effects of mobile media use.⁶ Such an approach makes no distinction between online and offline engagement, recognizing that sensory, material and digital “stuff” are interwoven in the often messy construction and experience of space, place, knowing, and being in the contemporary world. In this view, ethnographies of online, mobile and digital media cannot focus solely on the online and the digital, but must also capture the material, social, and embodied experiences within and alongside them.

Ethnographic research seeks deep interpretations of everyday practices, and insists that researchers must be empirically and contextually informed. That is, the often unintentional, creative, ad-hoc usage of media can only be gleaned from the critical observation of *actual* practices. Through careful observation and critical interpretation of body habits, gestures, and participant narratives, we can “reveal” our ways of being-with-media. Often, the observation and interpretation of mobile media use is a kind of “researching through the hands”, as the way users touch and handle their mobile devices is intrinsic to their affective or emotional experience of the interface and the way it functions.⁷

As others have noted⁸, media ethnographers have usefully turned to phenomenology and James J. Gibson’s concept of affordance to unravel “the constraining and enabling material possibilities of media.”⁹ Gibson’s ecological notion of *affordance* describes the intricate relationship between bodies and the environment as a kind of partnership, inviting us to consider how our media use is folded into this relationship, and how we experience the world not through but *with* media interfaces.¹⁰ Recent applications of body phenomenology¹¹—an approach that maintains the fundamental importance of sensory perception and embodied knowledge—have provided rich analyses of body-media routines as they differ across cultures and contexts. In this way, we can see how our sensory experiences are “continually shifting and culturally variable”, shaped by the intersection of social mores and collective habits, technological mediation and the built environment.¹²

In our ethnographic work, we apply these insights to the interpretation of mobile media in specific life-contexts. We ask: How are the routines of bodily movement and social interaction within the home modified by mobile media user-practices? How do mobile interfaces and ambient play affect the experience of “being in touch”—of immediacy, proximity, distance and togetherness within domestic space and in public? And how do haptic screens provide different experiences of the body to be highlighted? As part of our ethnographic work, the role of haptic play became crucial as we developed our methods to capture these often tacit forms of the knowing body.

⁵ See Pink, S, H Horst, J Postill, L Hjorth, T Lewis and J Tacchi (2015) *Digital Ethnography: Principles and Practice*. London: Sage.

⁶ Evans, L (2015) *Locative Social Media: Place in the Digital Age*. Basingstoke; Hampshire: Palgrave Macmillan.

⁷ Pink et al., *Tactile digital ethnography*, 2.

⁸ Horst, H, L Hjorth and J Tacchi (2012) Rethinking Ethnography: An Introduction. *Media International Australia* 145: 86-93.; Pink S (2015) Approaching Media Through the Senses: Between Experience and Representation, *Media International Australia*, February 2015, no. 154: 5-14; Richardson, Ingrid, and Brendan Keogh. 2018. “Waiting to play: The labour of background games.” *European Journal of Cultural Studies* 21, no. 1: 13–25 doi:10.1177/1367549417705603; Moores, S (2012) *Media, place and mobility*. Basingstoke: Palgrave Macmillan.

⁹ Horst H, L Hjorth and J Tacchi (2012) Rethinking Ethnography: An Introduction. *Media International Australia* 145: 86-93.

¹⁰ See Gibson, James. 1979. *The ecological approach to visual perception*. Boston, MA: Houghton Mifflin.

¹¹ Ihde D (2012) *Experimental Phenomenology: Multistabilities*, 2nd edition. Albany: SUNY Press.

¹² Paterson, M (2009) Haptic Geographies: ethnography, haptic knowledges and sensuous dispositions. *Progress in Human Geography* 33 (6): 766-88.



“...“hanging out” in *Minecraft* can make “hanging out” physically more playful, creative and social.”

A few voices from the field

As the **first national survey of mobile games in Australia**, *Games of Being Mobile* sought to put mobile games into context: *socially, intergenerationally and culturally*. We deployed ethnographic methods over three years to allow us to glean deep insights into motivations, practices and perceptions.

Here are a few findings and stories from the field...



AMBIENT PLAY

As spaces become increasingly mediated by various screens, understanding the ambient ways players move in and out of screen and non-digital worlds is crucial for gaining insight into household practices and perceptions.

Like many homes around the world, the Madison's household in Melbourne (Australia) is playful in many different ways. Some areas of the household are hubs for social activity and media use, while other spaces are more quiet and contemplative. The emotional fabric of the household follows certain rhythms of play across the spatial organisation of the lounge, computer room and bedrooms.

In the communal space of the lounge room, diverse play practices move across a range of different devices—Wii, PlayStation, iPads and iPhones. 13-year-old Trish and her cat Bonnie are playing Cat Fishing on the iPad together; Trish's attention moves from the screen, to Bonnie, to a conversation with her parents and back to the screen. Her focus oscillates between engagement and distraction, with sociality—both human and non-human—at the centre of all the activity.

This is a typical scene of mobile game play—it is an intergenerational and more-than-human kind of sociality and play that moves ambiently across different modes of engagement, screen and non-screen. The Madison household contains many stories of play and playfulness. While some of the play activities are more specifically associated with games, other practices are more subtly playful. All involve forms of ambient play, as they are dispersed across contexts, spaces and interfaces.



CREATIVE WORLD-BUILDING: PLAYFUL, COLLABORATIVE AND SOCIAL SKILLS

As discussion around automation takes centre stage in workforces of the future, skills like digital literacy, creativity and play will be key drivers.

In our fieldwork in homes, we found “old” mobile games like *Minecraft* being used to foster intergenerational and creative world-building. On a typical Saturday afternoon in an Adelaide suburban home we find two sisters, Eileen (age 8) and Chloe (age 10) with a neighbourhood friend, Amy (age 10), sitting on the lounge talking and playing *Minecraft* together. Across the haptic iPad screens, multisensorial engagements emerge that involve a range of lived experiences, skillsets and tactile ways of knowing. The sisters chat about school, friends and their gameplay; here, as at other junctures of their domestic life, *Minecraft* moves ambiently from the foreground to background and back again, weaving through the rhythms and routines of everyday life practices as the girls traverse digital, sensorial and material worlds.

As the girls commented, “hanging out” in *Minecraft* can make “hanging out” physically more playful, creative and social. They often enact a kind of reflexive narrativization of their gameplay, constructing, co-curating and performing their own stories around the game. As they work through creative solutions, their banter often involves elements of co-design and emergent storytelling as a form of social play. Their talk mimics a *Let’s Play* video on YouTube, a new form of media entertainment where gamers record and narrate their gameplay. Many LP YouTube channels featuring *Minecraft* enable new ways of sharing, performing and narrating the spectacle of play.



INTERGENERATIONAL CONNECTION

As we move towards increasingly ageing populations, the importance of intergenerational connection and play for sustainable futures will become pivotal.

In our study, mobile games provided a playful, innovative and creative way for the generations to bond and socialise. Let's take, for example, the Brown family in Sydney, consisting of grandmother Amanda, adult daughter Sophie and her five-year-old child Amy. Amy loves playing on her iPad with her mother and grandmother. She especially loves creative art apps that make drawing "more fun" with the use of sound and colours. 60-year-old Amanda loves the "brain training" apps on her iPad—especially *Scrabble*, *Lumosity*, *Elevate* and *Wordscapes*.

Amanda and Sophie used to play *Scrabble* when Sophie was growing up; now, the whole family will sometimes play the game on the iPad in the evening, utilising the app's Pass N' Play mode. Playing *Scrabble* is a social and fun way of encouraging Amy to start spelling words, fostering intergenerational learning and bringing the family together.





As we move towards increasingly ageing populations, the importance of intergenerational connection and play for sustainable futures will become pivotal.

Conclusions

Mobile games are played by (almost) everyone, (almost) everywhere. To effectively understand and interpret these practices we need transdisciplinary approaches that coalesce games, media and mobile communication studies, affect theory, geography, urban studies, philosophy and phenomenology—the list goes on. The diverse agencies of mobile media users and players, and the multiple modalities of play, cut across equally diverse fields of inquiry. As we face a challenging future, it is our hope that the power of mobile games and playful practices can fuel innovative forms of care, mindful engagement and ethical sociality. In the often-over-hyped convergence of technology with future imaginaries, we might instead re-fashion some of our more familiar and habitual forms of mobile play as possible strategies for understanding and creating better ways of being in the world.

Mobile games and mobile play oscillate ambiently from background to foreground, and this experience often involves a heightened and more palpable spectrum of *feeling*—our engagement is intimate, both haptically and affectively. We touch others through the interface, connecting through networks and experiencing a sense of social proprioception¹³; the mobile interface is an extension of our eyes, ears, hands *and* our social and emotional selves. Understanding and articulating the many feelings associated with mobile media use and mobile play requires complex methods to unpack these experiences—and more work is needed in this area.

Mobile gaming presents a convergence of locative, social, and mobile media; it is a lens through which we can see the changing nature of mobility, play, and communication as it moves through broader sociocultural, technological, and economic dynamics. Within the various assemblages of mobile gaming, we see new types of intimacy and communicative practice emerging around gameplay, new ways in which co-present forms of play and place-making are enacted while on the move, and the dynamic and ongoing transformation of the mobile screen as a portal that seamlessly insinuates games and cultural play into our everyday lives.

Mobile games afford both ambient and located social connection, and so can be used to counteract the emotional and physical isolation experienced by many people—young and old—in playful and innovative ways. They can facilitate connections between younger and older generations through an interface that has mutual significance and enjoyment for both, creating the possibility for social change. They move across public and private spaces in ways that can usefully link informal and formal systems and routines of care, especially as we move towards ageing societies.

Mobile games also provide us with ways to understand the complex relationality between humans and our companion species, as we form intimate bonds through playful interaction, and share sensory and affective modes of perception and proprioception. In an age of Big Data and gamification, and an associated focus on the quantitative and utilitarian aspects of technology, the sensory intimacy and ambient sociality of mobile games and playful apps force us to attend to the complex tapestry of media use, and the corresponding ethnographic and interpretive adaptability required of researchers.

¹³ Farman, J. (2012). *Mobile Interface Theory: Embodied Space and Locative Media*. New York: Routledge.



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Creative Outcomes: Toolkits, Apps, Exhibitions

SOCIALLY-ENGAGED ART PLAY: THE ART OF PLAY EXHIBITION

As part of knowledge dissemination and as a way of reaching new audiences, we made a socially-engaged exhibition entitled *The Art of Play* (2016) at CCP (Melbourne) that coalesced game and play techniques through an installation combining Lego and *Minecraft*.

Audience members were invited to create their own “encounter”—that is, play with the Lego and make their own thing. They were then asked to photograph it and upload to Instagram with #theartofplay. The encounters were then printed out and pinned onto the wall.

Over the time of the exhibition the encounters filled the wall—transforming audience into player into artist.



SOCIAL PLAY: WORKSHOPS

Play is a source of culture, a form of expression, and a creative way of engaging with the world. It is a crucial human ability for adaptation and expression.

Along with the socially-engaged art play in the exhibition space, we also ran a series of workshops that sought to engage education groups to codesign their own social play toolkits.

In particular, the workshops asked participants to reflect on their digital play and how it connected to non-digital play.

We set the workshops up in three different contexts—the gallery, urban public space and classroom—to reflect on the various forms of performative spaces and play.



THE SOCIAL PLAY TOOLKIT

In collaboration with our research partners (schools, galleries and Young and Well Cooperative Research Centre in 2017) and young people, we developed a *Social Play Toolkit* that encourages social play and game literacies in the classroom.

Exploring socially-engaged gameplay and creativity across digital and material contexts, these tools are freely downloadable as a PDF for use in a variety of Primary School learning environments.

<https://dcp-ecp.com/projects/social-play-tool-kit>



DESIGN & PLAY: EXHIBITION, WORKSHOP, SPECIAL ISSUE

Design & Play exhibition (RMIT Design Hub, 2016), <http://designhub.rmit.edu.au/exhibitions-programs/designandplay>.

The exhibition was visited by over 3000 people over two weeks and featured in an article in *The Saturday Age* by Ray Edgar.

We ran a workshop on haptic play with key international scholars during the exhibition which then became a special issue of *Convergence journal* (<https://journals.sagepub.com/doi/pdf/10.1177/1354856518815275>)



TIMeR APP

TIMeR is an in-development Augmented Reality audio-walk set on the RMIT campus exploring the multiple, multisensorial and contested modes of making place, TIMeR features stories of land, river and sky with Boonwurrung elder N'Arweet Carolyn Briggs.

Participants will be transformed into wayfarers as they move across the RMIT campus to uncover alternate cartographies, bringing new insights to familiar routes.

TIMeR is produced by DCP post-doc Dr Hugh Davies, in collaboration with Associate Professor Olivia Guntarik, Boonwurrung elder N'Arweet Carolyn Briggs and VC Research Fellow Dr Troy Innocent.

The project is developed with collaboration from Professor Mark McMillan (DPVC, Indigenous Engagement and Education), and the Ngarara Willim Centre, Elders in Residence.

The TIMeR prototype is available to download and play from: www.rmittimer.net



Outcomes: Publications

We deployed ethnographic and creative practice methods and modes of knowledge exchange and research translation to engage different audiences from academic to general public. Outcomes included 5 co-authored books, 9 book chapters, 12 journal articles, 2 PhD completions and various non-traditional outputs like a social play toolkit with Young & Well CRC, 3 exhibitions at key national venues (Centre for Contemporary Photography, RMIT Design Hub and RMIT Gallery), an indigenous ways of knowing game and press articles in *The Age* and *The Conversation*.

TRADITIONAL OUTPUTS

PhD COMPLETIONS

- William Balmford (2018) *Playing With Steam: An ethnographic enquiry into Melbourne household gaming*. Diss. RMIT University.
- Joshua Wong (2019) *Aspirational Well-being and Digital Media: Southeast Asian international students' use of digital media and their pursuit of the good life in Melbourne, Australia*. Diss. RMIT University.

BOOKS

- L. Hjorth, Harris, A., Jungnickel, K. and G. Coombs (2019) *Creative Practice Ethnographies*. London: Rowman & Little.
- Hjorth, L. and I. Richardson (2019) *Ambient Play*. Cambridge, MA: MIT Press.
- Hjorth, L. and S. Hinton (2018/9) *Understanding Social Media*. London: Sage
- Hjorth, L., I. Richardson, W. Balmford, and H. Davies (forthcoming) *Understanding Minecraft: At the intersection of Games, Education and Creativity*. London: Palgrave
- Hjorth, L. and I. Richardson (forthcoming) *Games & Gaming Cultures*. London: Sage.

ANTHOLOGIES

- Hjorth, L., de Souza e Silva, A. and K. Lanson (eds) (2019) *The Routledge Companion to Mobile Art*. NY: Routledge.
- Hjorth, L., Horst, H., Galloway, A. and G. Bell (2016) *The Routledge Companion to Digital Ethnography*. NY: Routledge.
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BOOK CHAPTERS

- Hjorth, L. and Richardson, I. (2019, forthcoming) 'Ambient Play: Understanding Mobile Games in Everyday Life,' in R. Ling et. al. (eds) *Oxford Handbook of Mobile Communication, Culture and Information*, Oxford.
- Richardson, I. (2019, forthcoming) 'Urban Gaming: Mobile Media, Spatial Practices and Everyday Play,' in Z. Krajina and D. Stevenson (eds) *The Routledge Companion to Urban Media and Communication*, Routledge.
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