

EUROPEAN JOURNAL OF

Article

Ambient and soft play: Play, labour and the digital in evervdav life

European Journal of Cultural Studies 2018, Vol. 21(1) 3-12 © The Author(s) 2017 Reprints and permissions: sagepub.co.uk/journalsPermissions.nav DOI: 10.1177/1367549417705606 journals.sagepub.com/home/ecs



Larissa Hjorth

RMIT University, Australia

Abstract

This is the editor's introduction for the Special Issue on digital creativity, play and labour in everyday life (SIDigiplay).

Keywords

Creativity, digital media, everyday life, mobile media, play

The labours of life: entanglements between play, labour and data

In the middle months of 2016, augmented reality (AR) mobile game *Pokémon Go*, went viral across many urban locations globally. News media responded with an onslaught of articles encompassing a variety of perspectives (and moralizing), including wellbeing (i.e. exercising is good for mental wellbeing issues) and the social dimensions of games (highlighting that games are fundamentally social) to the more dark debates around 'phoneur' safety, surveillance and risk. While these debates are far from new, what Pokémon Go represented was a ludified perfect storm of play, power and data imbrication (Andrejevic et al., 2015; boyd and Crawford, 2011).

Understanding the phenomenon of *Pokémon Go* requires us to attend to broader historical, cultural and social dimensions of media, play and labour. As games scholar Miguel Sicart (2014) observes, contemporary media could be characterized as playful. And yet this requires an unpacking of the social, cultural and historical elements of play and its changing relationship to labour. Here, labour can take many forms – social, emotional and creative to name a few. Understanding the role of play – as a cultural probe,

Corresponding author:

Larissa Hjorth, RMIT University, GPO Box 2467, Melbourne, VIC 3001, Australia.

Email: Larissa.Hjorth@rmit.edu.au

set of practices and mode of inquiry – necessitates framing it in terms of broader ludified trends (Frissen et al., 2015) while also extrapolating it from other contemporary tendencies like gamification, that is, 'application of game-like elements into non-entertainment applications' (Mäyrä, 2017). As games scholar Frans Mäyrä observes, ludification brings together play and the playful as an integral part of contemporary everyday life.

As play and the digital become increasingly intertwined, practices in and around labour and leisure need redefinition. For some scholars such as T.L. Taylor (2013), the movement towards the casualization of labour is accompanied by processes around commercialization and professionalization of leisure. Taylor uses the example of ESports whereby expert players play professionally. For scholars, such as Julian Kücklich (2005), much of the social, creative and emotional labour of amateur players around computer modding of games – from which the games companies profit – is done for free. He calls this ambivalently exploiting (and yet for some empowering) practice playbour.

This Special Issue of *European Journal of Cultural Studies* seeks to address some of the ways in which new types of labour and play are emerging around digital data. This issue seeks to bring into conversation the divergent and convergent debates occurring across games studies and media studies within a cultural studies context. While interdisciplinary in nature, cultural studies approaches provide a robust lens especially for understanding power relations within these changing practices. Drawing upon empirically grounded and theoretically informed analyses of phenomena such as everyday game practices in the home to feminist readings of the quantified self (QS) movement, this Special Issue recalibrates how play and digital labour are operationalized within everyday life.

The everyday has long been a site for exploring and exposing naturalized power relations in cultural studies (Highmore, 2001, 2010; Morris, 1998). With mobile media becoming synonymous with the Internet and an embedded part of everyday (Goggin, 2006), this requires developing more robust and interdisciplinary approaches that understand mobile media practice as an imbrication of multiple online and offline spaces while also requiring us to reexamine notions of engagement and attention within dynamic environments. Taking on a variety of approaches, the papers in this Special Issue analyse how existing everyday practices reinvent mobile media as well as how 'apps culture' – or the commodification of lifestyle through 'applification' – is shaping, and being shaped by, existing practices and labour.

Through the rubric of *ambient* and *soft play*, this Special Issue brings together interdisciplinary approaches and theorizations around digital media to outline some new ways for understanding this phenomenon. As a site for multiple forms of creativity, play and labour, mobile media has been key in the uptake of the QS movement (Lupton, 2014), ludification (Frissen et al., 2015) and gamification (Deterding et al., 2011). These practices, embedded within mobile media culture, are as much informed by the *local* as they are *global*. From body measuring devices such as fitbits and apps to measure sleep, one could argue that everyday life is being colonized by Big Data (Crawford et al., 2015). However, in practice, we see a diversity of resistances and subversions that suggest that not all of life is quantifiable (Lupton, 2014; Neff and Nafus, 2016). In order to understand these contesting practices outlined by the articles, this introduction provides a few ways in which we might conceptualize this terrain through the following rubrics: ludified playbour, playing with data and the self, ambient and soft play and texture of play.

Ludified playbour: beyond gamification

Debate continues as to whether contemporary digital culture has been characterized as 'playful' (Frissen et al., 2015; Sicart, 2014), 'ludified' (Mäyrä, 2014; Raessens, 2012) or 'gamified' (Detering and Walz, 2015). Within game studies, there is a clear demarcation about the significance of the ludified as distinct to the dilution of games in the form of mainstream gamification. The key objection to gamification is that it takes 'game-like' attributes and takes them out of context (away from gameplay). Game studies has been concerned with framing contemporary movements of games into the mainstream through rubrics such as 'ludification' or the 'playful'. What constitutes play is subject to various factors such as cultural, social and historical factors (Sutton-Smith, 1997). Increasingly play has been defined as an important part of creativity and innovation within the creative industries. But play has its dark side too (Schechner, 2002; Schechner and Schuman, 1976). Play can often involve eliciting responses as well as reinforcing power relations.

Moreover, play involves various forms of labour. As aforementioned Kücklich's notion of playbour identified, we need to conceptualize play in digital environments as part of labour – especially the multiple forms of often-tacit gendered practices such as emotional and social labour (Gregg, 2011; Jarrett, 2015; Qiu et al., 2014). As Kücklich noted, players invested much social, creative and cultural capital into computer modification (modding), which then game companies were able to transform into financial capital. In short, players were doing some of the labour for companies which then companies capitalized upon. At the time of Kücklich's writing, gamification – that is, the building in the social and rewarding aspects of games into software – was still undiscovered. But by 2010, venture capitalists saw the promise of gamifying software design (Mangalindan, 2010) with researchers such as Deterding observing the appropriation of game-like design elements to non-game contexts (Deterding et al., 2011).

The conversations between the critiques of labour and the creativity of playful media have often been divisive with researchers arguing for the subversion of play (Flanagan, 2009; Sicart, 2014) or the exploitation of users/players (Scholz, 2012). However, in everyday life, these divisions are more blurry and ambivalent, and it is this grey area that this Special Issue seeks to explore. How can the playfulness characterizing so much of contemporary media be used to push against the design features of gamification? How do players subvert and queer the design and technology? And how can this play and playbour be used to rethink the QS?

Playing with data and the self: Big Data and the QS

The growth in a ludification of culture (Frissen et al., 2015) can be paralleled with the rise in Big Data. Movements such as 'Quantified Self' (QS) have sought to take control of the data trails through self-tracking exploration to see what alternative stories data can tell. The Quantified Self – or QS – was founded by Gary Wolf and Kevin Kelly (see Wolf, 2010) in *Wired* magazine. For Wolf (2010), the QS movement could operate as a mirror to the data so that individuals could reflect, analyse and gain insights. As Gina Neff and Dawn Nafus (2016) note, the term 'QS' is often used in the general public as the exact opposite of what the QS community are trying to achieve (p. 31) – that is, the

QS community see data as having 'a social life. It is both personal and political at the same time' (Neff and Nafus, 2016: 38). As Neff and Nafus (2016) observe:

Whether we intentionally self-track, or are tracked with or without our consent, our personal data – often of the most intimate and private nature – connects us to wider social systems. Our data contains a virtual, if partial, version of the self – a 'data double' living on servers around the world. When it travels, a part of us does, too. In this way, our data has a social life. It is both personal and political at the same time. (p. 37)

For some, QS is about bringing creative forms of labour and pleasure to read technology and industry (Neff, 2012; Scholz, 2012). According to Nafus and Sherman (2014), 'QS movement is best understood as a kind of soft resistance' (p. 1791). They note:

By making themselves into people who do not fit the category, QSers appropriate Big Data's attention to granular patterns, but resist the categories that are built into devices and into the market for data ... QS resists *through* its softness ... QS politics are not defiant toward the dominance of Big Data – they are instead in dialogue with it and reliant on it. This means, of course, that the movement does not escape the wider biopolitics of late capitalism that rely on radical individualism to drive consumption as a dominant mode of expression and to elide structural inequalities by framing all actions in terms of personal 'choice'. (Nafus and Sherman, 2014: 1791–1793)

Within the realm of gameplay, data have always played a key role both officially and unofficially. Players play with, against, and through data. Throughout the rhythms of play and the playful, data – as with labour – are textured and sculpted in different ways. This practice brings power relations to the forefront. Against the algorithms of gamification and simplification of QS debates, playing can teach us a lot about how we can 'mess' with data and how data can be perceived as already messy. To understand play is to focus upon nuanced practices – activities that are constituted by different ways of seeing and feeling. Players and playing can add to the ways in which we understand the social as imbricated within the life of data and vice versa.

Since 2010, the significance of Big Data, and the response to it in the form of QS movement, has been unmistakeable. As danah boyd and Kate Crawford (2011) note, many of the debates around Big Data need to acknowledge that no matter how 'big', the data are always subjective. Data questions are riddled by the searchers' own perception and are thus inherently human in their scope. Moreover, they argue the need for transparency and access to the ways in which the algorithms shape definitions of society. As ethnographers Laura Watts and Dawn Nafus (2013) argue, Big Data need to be imagined as more than just algorithms collected by 'the cloud'. Rather, 'Data Stories speak, not of clouds, but of transformations: in things, in energy, and in experience'.

According to Nafus and Jamie Sherman (2014) 'Big Data is not always about big institutions; it is also about subjectivities' (p. 1786). The rise of Big Data algorithms go hand in hand with the rise in tracking media – encapsulated by mobile wearables. For Lee Humphreys, this phenomenon can be characterized by users seeking to increasingly catalogue and document their life digitally. However, with mobile social

networks incorporating and broadcasting personal and locational information of users (Humphreys, 2011), this creates new issues around surveillance, privacy and control. She argues that we need to understand the qualified, rather than quantified, self (Humphreys, in press). As Humphreys (2013) argues, there are various forms of surveillance:

In addition to the traditional notion of surveillance, characterized by its non-transparency by an authority such as the government, three other kinds of surveillance have been identified in the literature: voluntary panopticon, lateral surveillance, and self-surveillance. (n.p)

Voluntary panopticon, or voluntary submission to corporate surveillance, is what Whitaker (1999) calls the 'participatory panopticon'. Lateral surveillance is the non-transparent monitoring of citizens by one another (Andrejevic, 2006). With the rise of social media, new forms of lateral surveillance such as 'social surveillance' (Marwick, 2012) – or mutual surveillance and monitoring – can be found. The last kind of surveillance is self-surveillance. According to Meyrowitz (2007), this is 'the ways in which people record themselves (or invite others to do so) for potential replaying in other times and places' (p. 1). For Deborah Lupton, the mobile apps emerging in and around the QS are creating new types of coercion and surveillance. Here, Lupton (2014) focuses upon the tension between corporate and self-surveillance.

Mark Andrejevic (2013) has argued that rather than users being concerned with *privacy*, it is the *lack of control* of the information by third parties that concerns them most. Defined by the oversupply of information, or 'infoglut', Andrejevic discusses the problems with connecting 'wide-ranging sense-making strategies for an era of information overload', 'Big Data' and the new forms of control they enable. For Cheney-Lippold (2011), the electronically generated data have also become internalized through 'soft biopolitics' self-management. Thinking through these ideas in terms of play requires us to recalibrate play as a series of textures and rhythms best depicted as ambient or soft.

Ambient and soft play

As Scholz (2012) observes, digital labour is riddled with paradoxes whereby the Internet can be understood as both a *playground* and *factory*. These paradoxes are amplified within contemporary media's inherent playfulness (Sicart, 2014) and the attendant playbour practices. Play can be deployed as a site of resistance, but it can also, through its 'softness' be unable to escape the logic of what some have called neoliberalism. This phenomenon requires us to reexamine definitions of play, especially in the face of gamification, Big Data and the QS. As noted by Hjorth and Richardson (2014), 'ambient play contextualizes the game within broader processes of sociality and embodied media practices, and is essential to the corporeality of play whereby play in, and outside, the game space reflects broader cultural nuances and phenomena' (p. 60).

Ambience is often used to describe sound and music but has also been used in computing and science. As a noun, it specifically refers to a style of music with electronic textures and no consistent beat that is used to create a mood or feeling, but more generally the term describes the diffuse atmosphere of a place (Prendergast,

2000). In short, ambience is about the texture of context, emotion and affect. There are many features of gameplay that are ambient – most explicitly the soundtracks that play a pivotal role in developing the mood, genre and emotional clues for the player.

For Malcolm McCullough (2013), the rise of ubiquitous media in and around the city has resulted in the need for us to rediscover our surroundings. He calls this need 'ambient', that is, with the increasing tendency of information superabundance through devices such as smartphones we need to think about the space in and around the smartphone rather than just focusing on the device. He argues that understanding attention as ambient can lead to new types of shared cultural resources and social curation akin to a type of common that moves in and out of the digital and the everyday.

A number of theorists have noted the significance of playful and creative practices in contemporary culture, and the close relation between such practices and mobile media devices. Chughtai and Myers (2014), for example, suggest that Huizinga's ludic perspective 'can be used as a framework to help understand everyday practice' in terms of the way play often resides in the 'betwixt and between' of quotidian life, and that people's use of technology today frequently involves playful interaction, both communicative and creative. Similarly, Kerr (2006) identifies play as a 'key concept for understanding the interaction of users with new media' (p. 69), while Frissen et al. (2015) claim that 'digital technologies in general have an inherent ludic dimension' (p. 10) that is intimately linked to their capacity for connectivity, interactivity, participation, virtuality and the sharing of creative content. Indeed, they argue, the ubiquity of digital and networked media effectively prefigures our perceptions, experiences and practices in a 'playful way' (Frissen et al., 2015: 36).

While all media interfaces could be said to be part of the 'collective playful media landscape' (Frissen et al., 2015: 29), it is the mobile media device that exhibits and affords a capacity for play that can be carried around with us, thereby embedding playfulness in the interstices of everyday life wherever we happen to be. For De Lange (2015), play is enacted on, with and through the mobile, as an increasingly illimitable platform that elicits playful communication and creativity. In Sicart's (2014) terms, mobile play happens in a 'tangled world of people, things, spaces and cultures' (p. 6).

To understand the paradox of 'softness' as defined by Cheney-Lippold (2011), we need to see how it has been applied elsewhere. 'Soft power', a term coined by Joseph Nye (2004), refers to the power a nation-state can exert through such tools as technology and ideology. Soft power operates through coercion rather than force and is much more slippery as a force to illustrate. In the context of this Special Issue, I would like to use the nomenclature of soft play – in combination with ambient play – to outline the complex and ambivalent entanglement between play and creative/emotional labour. Through the lens of ambient and soft play, we explore how media moves in and out of the rhythms and intimacies of everyday life. Here, we can find subversion and queering of apps, at the same time as we see the soft power of design to reshape experiences. Here, play needs to be understood as an inherently paradoxical experience – an undulating landscape of resistance and submission, creative and unimaginative practices.

Textures of play: paradoxes of play in the everyday

In the various articles making up this Special Issue, the paradoxes are explored for both their capitulation and resistance at micro, meso and macro levels. These paradoxes can be understood as textures that imbricate different modes of labour in and around the digital. We begin with Ana-Sofia Elias and Rosalind Gill in their feminist critique of the power relations in and around the rise of mobile app culture. Here, we can think about how the rise of mobile apps is applifying (or commodifying) lifestyle. In this paper, Elias and Gill bring together debates from postfeminist and neoliberal sensibility in contemporary culture and the proliferation of processes of self-tracking in the digital age as part of the QS movement. Informed by Foucauldian ideas, this paper seeks to uncover the ways in which modes of power are enlisted.

The next two articles take us into the playful practices in and around the home. First is Ingrid Richardson and Brendan Keogh's phenomenological study into the various soft forces and practices in the domestic playful media use. Through case studies conducted in two capital cities in Australia, Richardson and Keogh argue for mobile games as background games. Here, we are reminded of McCullough's call for understanding the ambient in order to reexamine the attention economy. Second, Sarah Pink, Larissa Hjorth, Heather Horst, Josh Nettheim and Jolynna Sinanan's article takes a more ethnographic approach to mapping the soft play emerging in Australian homes. This paper utilizes the notion of ambient play to think through the complex entanglement between play and creative/emotional labour. Through the lens of ambient play, we explore how media moves in and out of the rhythms and intimacies of everyday life.

Next, we move onto Susana Tosca and Isabel Froes' study into children's playful use of mobile media like tablets whereby they argue that going 'against' the design of the apps is an important part of the educational process. Drawing on data from empirical studies with small children (5- to 8-year-olds) using tablets for play and in educational settings in Denmark and Japan, they explore the way children resist and subvert the expected use of the various applications, in order to invent their own forms of interactions.

Following on from this cross-cultural study on playful tinkering, Sybille Lammes, Emma Fraser and Clancy Willmott take an auto-ethnographic approach to understanding the Apple Watch. In Lammes et al.'s article, we are reminded that these technologies must be contextualized within the broader acquisition of new media as outlined by the domestication (Silverstone) and media archaeology (Parikka and Huhtamo) approaches. As they argue, geographic positioning system (GPS)-enabled smart-watches and smartbands invite us to redefine our quotidian environments as laborious playgrounds where leisure activities are redefined in terms of work and quantifiable data. Furthermore, they encourage us to share such hybrid practices as spatial stories through social media, thus propagating them as lifestyle.

We conclude with a case study of mobile media app use in Spain in which Amparo Lásen calls for a recalibration of the attendant forms of intimacy. As Lásen argues these digital practices play a key role in the enactment of the urban mood and ambiance — a phenomenon she dubs 'portable urbanism'. Through the two case studies of mobile phones as portable sound systems and sharing-taking selfies, Lásen highlights the complex articulation between mobility and attachment that moves across spatial, emotional and social practice.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/ or publication of this article: This Special Issue and the attendant workshop (June 2015) at RMIT Europe (Barcelona) were funded by the Australian Research Council Discovery grant, *Games of Being Mobile*, and COST IS1202 *Dynamics of Virtual Labour*.

References

Andrejevic M (2006) Surveillance in the digital enclosure. *The Communication Review* 10(4): 295–317.

Andrejevic M (2013) Infoglut. New York: Routledge.

boyd d and Crawford K (2011) Six provocations for Big Data. Available at: $http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1926431$

Andrejevic M, Hearn A and Kennedy H (2015) Cultural studies of data mining: Introduction. *European Journal of Cultural Studies* 18(4-5): 379–394.

Cheney-Lippold J (2011) A new algorithmic identity: Soft biopolitics and the modulation of control. *Theory, Culture & Society* 28: 164–181.

Chughtai H and Myers MD (2014) A Ludic perspective on everyday practices: Evidence from ethnographic fieldwork. In: *Twentieth Americas conference on information systems*, Savannah, GA, 7–9 August.

Crawford (2014) 'Circuits of Labour: A Labour Theory of the iPhone Era', Triple C Journal. http://www.triple-c.at/index.php/tripleC/article/viewFile/540/606

Crawford K, Lingel J and Karppi T (2015) Our metrics, ourselves: A hundred years of self-tracking from the weight scale to the wrist wearable device. *European Journal of Cultural Studies* 18(4–5): 479–496.

De Lange M 2015 The playful city: Using play and games to foster citizen participation. In *Social Technologies and Collective Intelligence*, Vilnius: Mykolas Romeris University, pp.426–434.

Deterding S, Dixon D, Khlaed R, et al. (2011) From game design elements to gamefulness: Defining 'gamification'. In: *Proceedings of the 15th international academic Mindtrek conference*, Tampere, 28–30 September, pp.9–15. New York: ACM.

Detering S and Walz S (2015) The Gameful World. Cambridge, MA: MIT Press.

Flanagan M (2009) Critical Play. Cambridge, MA: MIT Press.

Frissen V, Lammes S, de Lange M, et al. (2015) *Playful Identities: The Ludification of Digital Media Cultures*. Amsterdam: Amsterdam University Press.

Goggin G (2006) Cell Phone Culture. New York: Routledge

Gregg M (2011) Work's Intimacy. London: Polity.

Highmore B (ed.) (2001) Everyday Life and Cultural Theory: An Introduction. New York: Routledge.

Highmore B (2010) Ordinary Lives: Studies in the Everyday. New York: Routledge

Hjorth L and Richardson I (2014) *Gaming in Social, Locative and Mobile Media*. London: Palgrave Macmillan.

Humphreys L (2011) Who's watching whom? A study of interactive technology and surveillance. *Journal of Communication* 61: 575–595.

Humphreys L (2013) Mobile social networks and surveillance: Users' perspectives. In: Jansson A and Christensen M (eds) Media, Surveillance, and Identity: A Social Perspective. New York: Peter Lang, pp.109–126.

Humphreys L (in press) *The Qualified Self: Social Media & the Accounting of Everyday Life.* Cambridge, MA: MIT Press.

Jarrett K (2015) Feminism, Labour and Digital Media: The Digital Housewife. New York and London: Routledge

- Kerr A (2006) The Business and Culture of Digital Games. London: Sage.
- Kücklich J (2005) Precarious playbour: Modders and the digital games industry. *Fibreculture*. Available at: http://five.fibreculturejournal.org/fcj-025-precarious-playbour-modders-and-the-digital-games-industry/
- Lupton D (2014) Self-tracking cultures: Towards a sociology of personal informatics. In: Proceedings of the 26th Australian computer-human interaction conference on designing futures: The future of design, Sydney, NSW, Australia, 2–5 December, pp.77–86. New York: ACM.
- McCullough M (2013) Ambient Commons: Attention in the Age of Embodied Information. Cambridge, MA: MIT Press.
- Mangalindan JP (2010) Play to win: The game-based economy. *Forbes*, 3 September. Available at: http://fortune.com/2010/09/03/play-to-win-the-game-based-economy/
- Marwick A (2012) The public domain: Social surveillance in everyday life. *Surveillance & Society*. Available at: http://library.queensu.ca/ojs/index.php/surveillance-and-society/article/viewFile/pub dom/pub dom
- Mäyrä F (2017) Pokémon GO: Entering the Ludic Society. *Mobile Media & Communication Journal* 5(1): 47–50
- Meyrowitz J (2007) Watching us being watched: State, corporate, and citizen surveillance. Paper presented at the symposium the end of television? Its impact on the world (so far), Annenberg School for Communication, University of Pennsylvania, Philadelphia, PA, 17–18 February.
- Morris M (1998) Banality in cultural studies. *Discourse: Journal for Theoretical Studies in Media and Culture* 10(2): 1. Available at: http://digitalcommons.wayne.edu/discourse/vol10/iss2/1
- Nafus D and Sherman J (2014) This one does not go up to 11: The quantified self movement as an alternative Big Data practice. *International Journal of Communication* 8: 1784–1794. Available at: http://ijoc.org/index.php/ijoc/article/viewFile/2170/1157
- Neff G (2012) Venture Capital: Work and the Burden of Risk in Innovative Industries. Cambridge, MA: MIT Press.
- Neff G and Nafus D (2016) Self-Tracking. Cambridge, MA: MIT Press.
- Nye, Joseph (2004) Soft Power: The Means to Success in World Politics. New York: Public Affairs.
- Prendergast MJ (2000) The Ambient Century: From Mahler to Trance: The Evolution of Sound in the Electronic Age. London: Bloomsbury.
- Qui J, Gregg M and Crawford K (2014) Circuits of labour: A labour theory of the iPhone era. *Triple C Journal*. Available at: http://www.triple-c.at/index.php/tripleC/article/viewFile/540/606
- Raessens J (2012) *Homo Ludens 2.0. The Ludic Turn in Media Theory*. Utrecht: Utrecht University. Schechner R (2002) *Performance Studies An Introduction*. Oxon: Routledge.
- Schechner R and Schuman M (1976) Ritual, Play, and Performance: Readings in the Social Sciences/Theatre. Oxford: Routledge.
- Scholz T (ed.) (2012) Digital Labour: The Internet as Playground and Factory. New York: Routledge.
- Scholz, Trebor (ed) (2013) Digital Labor: The Internet as Playground and Factory. New York, NY: Routledge
- Sicart M (2014) Play Matters. Cambridge, MA: MIT Press.
- Sutton-Smith B (1997) *The Ambiguity of Play*. London: Routledge.
- Taylor TL (2013) Raising the Stakes. Cambridge, MA: MIT Press.
- Wolf G (2010) The data driven life. New York Times, 28 April 2010.

Watts L and Nafus D (2013) *Data Stories*. Orkney: Sand14/Brae Editions. Available at: http://sand14.com/data-stories/

Whitaker R (1999) *The End of Privacy: How Total Surveillance is Becoming a Reality*. New York: New Press.

Biographical note

Larissa Hjorth is an artist, digital ethnographer, Distinguished Professor and director of the Design & Creative Practice ECP platform at RMIT University. Hjorth studies the socio-cultural dimensions of mobile media and play in the Asia-Pacific region. In particular, Hjorth's work focuses upon intergenerational, interdisciplinary, collaborative and cross-cultural approaches.