The digitisation of children's public play spaces

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Introduction – children and public space

Children's presence in and movement through public spaces has declined in many parts of the developed world (e.g. Garrard, 2009; Hillman et al., 1991), with public play often reduced to designated 'safe spaces' such as playgrounds (Valentine, 1997). This circumscription of children's participation in public space aligns with broader cultural shifts in the construction of childhood and the governance of their play (Malone, 2008), which is attributed to a wide range of factors associated with urban living, from changes to built environments, to parental concerns about safety, to evolving child media practices.

The question of how digital media technologies and practices are increasingly entwined with public playgrounds and children's urban play practices is the focus of this chapter. The digitisation of playgrounds fits within a broader trajectory of communicative cities research seeking to understand how the embedding of digital media and networked communication infrastructures in urban spaces are reconfiguring the experiences and meanings associated with various spaces of public life (McQuire, 2016) – here the public life of the playground.

In contemporary discourse, the positive associations of public play in the playground is often contrasted with solitary and sedentary behaviours associated with digital screens that is often referred to as the 'screen time' debate. Here, outdoor play often enters the discussion as a way of getting children away from the screen. Yet, such binary constructions are blurred through the steady digitisation of children's public play spaces. This is happening through the

widespread and often incidental use of personal mobile devices in and around children's public play spaces, *and* via more deliberate design interventions that aim to embed or augment children's play spaces with digital sensors, interfaces, and software applications.

This chapter explores the collision of digital technology and children's public play spaces, as part of the broader trajectories of the communicative city in which the historical distinctions between the digital and the non-digital are blurred through mobile, locative, and ambient urban media. The chapter begins by situating the digitisation of playgrounds in relation to the broader digitisation of public space, and the blurring of boundaries of digital and non-digital play in children's domestic space (Giddings, 2014; Nansen et al., 2019). Through these contexts, we further develop the concept of postdigital play (Jayemanne et al., 2016), and apply it to an analysis of two recent examples of interactive play designs that aim to augment children's public play spaces: *HybridPlay*, and *Disney Fairy Trails*.

These examples of postdigital play are analysed in terms of their functionality, representation, and online reception, revealing potential transformations in social practices associated with children public play spaces. Operating within a broader trajectory of communicative cities and urban space that is characterised by the blurring of discrete spaces of sociality or modes of communication, the digitisation of children's public spaces has the potential to reconfigure children's play practices and experiences in ways that challenge historical and cultural values associated with public spaces, digital technologies, and children's play.

Digitising public play spaces

The digitisation of children's public space is, in common with many other social contexts, predominantly occurring through the widespread and often incidental use of personal mobile

devices that occurs around children's public play. This digitisation of children's public play spaces, enabled by developments in mobile device ubiquity and connectivity, operates within broader arrangements of mobile and intimate parental surveillance (Leaver, 2017). Yet, there is little research explicitly investigating how mobile devices are used in children's public play spaces. More broadly, research explores the role of mobile technologies in mediating children's mobility and movement in public space, often emphasising the surveillance capacities of communications technologies and how they reinforce parental fears and anxieties (e.g. Malone, 2007). Other research is more ambivalent, highlighting how the affordances for surveillance are countered by the importance of mobile devices for alleviating parental concerns, as well as extending children's public geographies and spatial mobilities (e.g. Nansen et al., 2017; Pain et al., 2005).

Complementing this focus on the child is a growing body of research emphasising the social and health risks associated with *parental* phone distraction. Observational data of families eating together at fast food restaurants suggests that children experience adults' phone distraction as emotionally distancing and consequently compete for their attention (Radesky et al., 2014). Research addressing the impact of mobile phones on adult-child relationships in playgrounds by Hiniker et al. (2015), emphasises the potentially negative consequences in terms of distraction, social distance, safety, and behaviour modelling from parents. This research by Hiniker at al. (2015) highlights how adults' phone use while caring for children in playgrounds is displacing more child-centred social and physical interaction; yet, these conclusions do not sufficiently recognise the embedded use of mobile media in which these devices operate as part of the infrastructure of social relationships and communication, including their use as part of more child-centred interactions, experiences, and play through applications ranging from videos, photos, games, and video chat. Nevertheless, the research orients us to the dominant discourses shaping how mobile devices

are commonly understood to detrimentally impact on children's experiences of public spaces and social interactions.

To understand how digital technologies are reconfiguring playgrounds and children's play therein, mobile phones must be considered within a broader ecology of urban media as part of the communicative cities landscape involving technical infrastructures, devices, networks (Wi-Fi, NFC), software applications, and increasingly a world of inter-connected things, referred to as the Internet of Things (IoT). While mobile technologies have "profound implications" for "our perception of space" in a general sense (de Souza e Silva, 2013, p. 118), in relation to the playground, the intensification of digital media in the city challenges everyday use and understanding of play in these sites. Existing research has fruitfully explored the reappropriation of the city for playful purposes through location-based games and social media (Leorke, 2018). Yet, as mobile devices and the accompanying media ecology reinscribe play and playfulness within everyday urban spaces, the question of how such digitisation impacts on environments that have been specifically set aside for the play activities of children has not yet been addressed.

The concern of this chapter is to resituate these processes of digitisation in the contexts of specific place-based qualities of the public playground. Public playgrounds, which grew in number and popularity in the early 20th century in response to the street as the default public space of children's play making way for the car, were from their origins associated with children's safe outdoor recreation and physical health (Frost, 2012). Over time, the public playground familiar to us today, comprised of standardised commercial play equipment in fenced or segregated areas of public parks, emerged as the dominant form (Erickson, 2011). Despite historical movements and differences in the politics and designs of playgrounds, including more unfinished adventure playgrounds (Shier, 1984), or more child-focused participatory playground designs (Whitzman et al., 2009), or the development of

private, indoor, or commercial play centres that commodify play, these spaces nevertheless

share a common goal: to foster children engaging in active, safe, and physical play. Given the

history of the playground as a site set aside for the explicit purpose of children's active, safe,

and social play, this chapter asks what is at stake for children's play culture (Factor, 2004),

in terms of the ways children's play in these spaces is understood and enacted, when these

spaces are embedded with increasingly dense ecologies of digital media infrastructures and

practices?

In contemporary debates on childhood, playgrounds often serve as the antithesis of

screens, and yet mobile media operate to spatially extend existing parental concerns about

'screen time' (Haddon, 2013). Playgrounds are thus positioned as a 'natural' resource for

parents or guardians who believe their children need time away from screens because they

are spending too much time engaged with media. The penetration of mobile media

infrastructures into playgrounds disrupts this understanding of the playground as a site that is

'unmediated' by technological media. Restricting children's use of mobile devices in such

spaces, however, overlooks the ways public spaces like playgrounds are already connected to

a wider mobile media infrastructure, and the ways that existing mobile phone use among

parents and other supervising adults remediates the playground.

For example, sites in public parks, including children's playgrounds are incorporated

into the digital infrastructure of the digital app game *Pokémon GO* (Niantic, 2016). For the

everyday spaces of the city, the augmented layering of the *Pokémon GO* app maps digital

infrastructure onto physical space. This layering transforms often banal and familiar

surroundings, creating new opportunities for and politics of ambient social play (Apperley &

Moore, 2019; Hjorth & Richardson, 2017). In spaces set aside for children's play *Pokemon

GO* can create an unwelcome intrusion. In the weeks after its release the rapid uptake of the

app meant that public spaces with access to key game infrastructure (known as Pokestops and

Pokegyms) were often crowded with players. In Tampere's Pikku Kakkonen, a large public playground near the city centre, the impact of the hordes of players entering the park to access the three Pokestops located there was felt profoundly by families using the facilities.[1] The Visit Tampere website retains a warning for *Pokémon GO* players: "Poke Stops at Pikku Kakkonen playground are inside the playground but you can get to them going around the park – you don't have to go in disturbing kids' play."[2] The installation of augmented ambient play to everyday urban space, which reconfigures the environment into a 'playground' for mobile device users comes into conflict with the perceived values of play that are embedded and enacted in a discrete playground location.

It would be reductive to treat digital media as simply intruding on or negating play, as mobile media and devices can also encourage creative forms of play. Children's public spaces, including their street cultures and playground play, have always been sites of mediation in which playful practices borrow from cultural and media resources, such as stories and characters, to shape play activities (Factor, 2004; Opie & Opie, 1969). Mobile media extend these traditions with, for example, children integrating media-based Pokémon play resources such as animations, collectable card games and videogames into the structure of their spatial practices and daily routines, effectively remaking their homes, local shops, and neighbourhoods as interwoven with the Pokémon universe (Horton, 2012). Giddings (2014, 2017) argues for understanding this mediated play as form of 'distributed imagination' that is both technosocial and collectively realised, drawing seamlessly on both physical environments and imaginative interpretations. Play thus actively recruits materials from the mediated worlds of children whether or not media technologies are old or new, absent or present.

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[1] https://www.tamperelainen.fi/blogi/420027-pokemon-pelaajat-pois-pikku-kakkosen-puistosta
[2] https://visittampere.fi/en/articles/hottest-pokemon-tips-in-tampere/

Postdigital play

The digital augmentation of children's playgrounds and public play spaces is only one example of a larger trajectory of digitised spaces of play. Augmentation has affected the reimagining and transformation of numerous mundane sites from family homes to city streets. Yet, in the playground, the messy hybridity of digitally augmented space raises important questions for the current and future uses of playgrounds, parks and other dedicated play spaces. As environments associated with specific cultural and historical values of play, seams of unsettled affect are opened up within the digitisation of playground.

The steady accretion and dispersal of media, including gaming technologies, throughout home environments has already created dense household ecologies of media. These ecologies have become further intensified through emerging technologies in which computation and play spread beyond the screen through internet-connected toys. In game studies, this has been described as a 'postdigital' phase of play, wherein play is no longer a singular activity contained by one digital device at a time (Giddings, 2014; Jayemanne et al., 2016). Broadly, the postdigital describes a moment when "the historical distinction between the digital and the non-digital becomes increasingly blurred...[and] computation is part of the texture of life itself which can be walked around, touched, manipulated and interacted with in a number of ways and means" (Berry, 2014, n.p.). In terms of gaming, this notion connects neatly with changing infrastructures, devices, software, and connectivity, creating ecologies of digital games that are at once analogue and digital, virtual and actual, technical and affective, narrative and playful.

In a postdigital environment, play multiplies across digital infrastructures and environments, and media companies are thus incentivised to broaden their interface

'envelopes' (Ash, 2015) to capture increasingly unruly and transgressive forms of digital/physical play. Examples of such commercial products, seeking to recapture play practices that spread beyond the screen include a range of what have been referred to in game studies literature as Hybrid Playful products (Tyni et al., 2013), and include well known commercial products like *Disney Infinity* (Avalanche Software 2013) and Nintendo's *Amiibo* figurines (Nansen et al., 2019). These products incorporate tangible elements such as figurines into the screen-based play space utilising communication protocols, near-field communications and RFID tags to connect the physical and the digital. In doing so, products like *Amiibo* not only solicit playful practices that cut across physical objects and digital spaces, but operate to envelop children in Nintendo's ecosystem and the increasing datafication of play, enabled through the software affordances of the figurines which are capable of storing data corresponding to personal game experience and progress.

These games and playful devices are part of a broader reconfiguration of material and digital elements in computers that are increasingly mobile, 'pervasive', 'locative', 'augmented' and 'mixed' (Montola, 2011), and which are often described through the language of the 'Internet of Things' (van Kranenburg, 2007), and its toy-based variant, the Internet of Toys (Holloway & Green, 2016). They can, however, also be characterised as part of a broader regime of postdigitality, in terms of gaming that is continuous with the digital, yet that also exceeds the digital through conditions that are technical, historical, aesthetic, and affective (Berry, 2014; Schinkel, 2014).

As postdigital games that reimagine domestic media by extending digital play beyond the screen, the extensive patterns of player bodies and data they capture represent what has been characterised as an 'aesthetics of recruitment' (Jayemanne et al., 2016), in that they enrol and assemble diverse play practices, spaces, and data in novel but often unstable arrangements. In doing so, they extend and intensify trends identified in digital homes

research, which reveal how mobile devices and infrastructures in homes blur what were previously distinct and dedicated spaces (such as bedrooms) or times (such as family meals), to become sites of potentially continuous digital mediation (Nansen et al., 2009). These remediated spaces, as with digital play products within the playgrounds of the communicative city discussed below, are accompanied by contradictory forms of reception: some celebrating possibilities for new kinds of digitised social interaction, whilst others repeat concerns noted in health literature cited above about the erosion of family interaction and relationships.

Just as we are seeing digital transformations in domestic spaces, the emergence of interactive playgrounds reflects some broader movements occurring within the landscape of the communicative city, which exceed the reductive concept of a 'smart city.' Here, the combined media ecology of mobile devices, and location-based technologies or services are often used to illustrate how the smart city can be harnessed for playful purposes (Leorke, 2018). The development of playful ways to augment public spaces with digital technologies has been promoted through the playable cities movement, which began in Bristol an effort to bring art, technology and culture together through interaction design projects to enable playful digital layering or interactions with places around the city.[3] Playable cities can include more structured gameplay, such as the augmented-reality massively-multiplayer online location-based game *Ingress*, which connects to a longer history of locative media and play (Moore, 2015), to more temporary and experimental projects, such as embedding urban furniture with affordances for digital annotation or communication (Nansen et al., 2014).

These examples of communicative cities and urban space speak to a broader trajectory of blurring of the historical distinction between the digital and the non-digital. Such postdigitalities, however, potentially open up new points of affective disjuncture, disruption, *and* disillusion. Whilst there are clearly endeavours to reimagine and reshape public spaces

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[3] https://www.playablecity.com/cities/bristol/

through playful interactions or communication, the implications of the digitisation of children's public play spaces such as playgrounds, which are already associated with specific values of play, remains under-explored. How are postdigital imaginaries, products, and practices received in terms of the social practices, meanings, and values associated with the functions of children's playgrounds, and what role if any should digital devices play in these spaces? Two examples of augmented and interactive play technologies, *HybridPlay* and *Disney Fairy Trails*, are analysed below in terms of their functionality, representation, and online reception to explore how these often-contradictory sensibilities unfold in relation to the configuration of and meanings associated with children's public play spaces. These sensibilities, as we elaborate in the following section, sometimes reinforce, sometimes remediate, and sometimes reject the dominant discursive framing of children's public play spaces or children's digital media.

Case Studies of digitally augmented children's play spaces

In addition to the use of mobile phones in mediating children's public spaces and experiences, there are more deliberate design interventions emerging that aim to embed or augment children's play spaces with digital sensors, interfaces, and software applications. Here, the potential of the Internet of Things operates in combination with a logic of technology innovation in imagining and designing 'interactive playgrounds' (Poppe et al., 2014), to transform children's physical play spaces and activities. Digitally-augmenting children's play spaces is imagined in these contexts as a way to provide more engaging, entertaining, and immersive play experiences, whilst also promoting physical activity, social interaction, or inclusion. An example of an interactive playground project is the 'Interactive Slide', a large inflatable slide augmented with an interactive camera-projector that acts as an

image projection screen, whilst the projector includes motion detection sensors to transform the slide into an interactive surface (Soler-Adillon & Parés, 2009). The Interactive Slide, then, becomes a platform for games-designers to develop different applications and experiences. An initial application was the Virtual Mosaic, a Tetris-inspired game that projected coloured falling squares onto the interactive surface of the slide, which could then be touched or moved or even scattered by sliding down the slide.

Examples of physically embedding sensors into play equipment and play spaces remain, at this point, a rare occurrence, mostly existing as lab-based prototypes rather than real-world applications owing to issues of cost but also durability, vandalism, and maintenance. There are, however, emerging interaction design prototypes, as well as software-based products that take advantage of smart phone affordances such as location-based functions, in-built sensors such as accelerometers, near-field communications such a Bluetooth, and the possibilities of connecting mobile devices to a range of peripheral hardware. These offer opportunities for augmenting play spaces without requiring the complete redesign of play equipment or infrastructure.

Disney Fairies Trail

In 2015, Walt Disney Company (Australia) partnered with the Royal Botanic Gardens in Sydney and Melbourne to develop and install the *Disney Fairies Trail* experience (the Creative Shop), an augmented-reality application that allowed children to find, collect, and fly fairies such as Tinkerbelle and her friends from the *Disney Fairies* movie franchise in a number of public parks. The downloadable app worked on internet-connected mobile devices and geo-location technology, and guided by a digital map on the mobile screen children searched for fairies in the gardens, which appeared as animated characters overlaid on physical places, with the augmented reality content activated by the app receiving push

notification from beacon technology on the location of the user within the gardens and their proximity to each fairy hiding place (see figure 1).

Figure 1: Screenshot of The Disney Fairies Trail mobile application (source: The Creative Shop, app designer and developer)

The *Disney Fairies Trail* experience was launched as a temporary installation as part of a school holiday program of events, using a commercial entertainment brand to promote engagement with and education about the natural environment. As a commercial partnership between an entertainment company and a public not-for profit institution responsible for botanical conservation and education, the full title of the installation, The *Disney Fairies Trail: Magic in our Natural World*, speaks to the multiple hybridities of the application: public-private, commercial-educational, digital-physical, mobile-located, natural-magical, which were at one elided and celebrated in the marketing representations:

> *The Disney Fairy Trail showed thousands of children the true magic of our natural world. The partnership reinforced brand recognition and values while fulfilling key social responsibility and education objectives for the Walt Disney Company in Australia.*
> (The Australian Botanical Garden, www.australianbotanicgarden.com.au/)

Public responses from posts, comments, threads, and content shared using keywords and hashtags (e.g. #disneyfairytrails) across the web and social media platforms including, Instagram, Pinterest, Facebook, and Twitter were analysed in order to gauge the public response to this digitisation of children's public space. Apart from promotional material from

the corporate developers, designers, sponsors and parks, there was surprisingly little public communication about this mobile app and its digitised experience of public place. This research only looked at public communication online, and so did not include private communication on messaging applications or social media networks. Given this was overt commercial intervention into a public space, which not only branded that space with Disney characters, but layered a digital infrastructure with the capacity for capturing data on children's play practices, it was surprising that there was little public discussion about the commodification of public space, or datafication of children's play. In addition, as an explicit digital remediation of what is otherwise a natural, if constructed, physical setting, and the commercial claims to be supporting children's curiosity, engagement, and learning about the natural environment were somewhat murky and tenuous, there was surprisingly little volume or intensity of negative reaction to this application.

Instead, most of the public posts and discussion revolved around enjoyment, with images of the app and experience shared on Instagram, or conversations anticipating and planning when to go and who to take, especially as an activity to entertain children during the school holidays, and suggesting the experience to friends:

How cute

The kids would love this

We are planning to go, so definitely would love to join you!

(public Facebook posts)

Critical reactions to the fairy trail AR app revolved round much more prosaic complaints, and in particular difficulties getting the application to load or function properly, along with other less relevant complaints such as the poor quality of coffee available at the site:

It won't let me download the app on my iPad stupid thing

Yeah I had probs with mine at first but the guy in the office had a troubleshooting

sheet! Just had to fiddle with some settings…

That would have been helpful!! We were with people who had a working app so we

just looked at the fairies through that.

(public Facebook posts)

In considering how this digitisation of public space was received in terms of social values and sentiments associated with either public parks or with digital devices, the analysis of public online comments revealed virtually no sense of this hybridising as unsettling, as transformative, as exceptional, or as corrosive. Instead, it was seemingly accepted as a novel but relatively familiar piece of entertainment, and a holiday activity aligned with the experience of the everyday. In many ways, this is probably not surprising given the context and functionality: this was a temporary application that is reminiscent of many contemporary museum and gallery exhibitions; it was deployed as a mobile application involving commercial content and technical features familiar to many parents of young children using mobile devices such as iPads and iPhones; and it was installed within a public park for only a brief period in a manner that was not visually obtrusive or physically damaging. In many ways, then, this digitisation was not significant enough to challenge cultural sensibilities associated with children's parks, play, or use of digital media.

HybridPlay

HybridPlay, a crowd-funded app, is more directly oriented at reconfiguring the ways public playgrounds are used and conceived. *HybridPlay* (lalalab), which began as an art project

called HybridPlayground in 2008 (http://www.lalalab.org/hybrid-playground/) is a mobile

gaming system that incorporates sensor hardware with a smartphone game platform (for

history of design and technical description see: Diaz et al., 2016). The hardware is a sensor

clip made of rubber with inbuilt sensors, including accelerometers, gyroscopes, and

proximity sensors, which is designed to be attached to different pieces of playground

equipment (see figure 2). The clip wirelessly connects to a smartphone to incorporate

movement from the sensor as a physical game mechanic within mobile app games and the

digital play space of the screen. An example of a *HybridPlay* game is *Space Kids*, which uses

the sensor attached to swings or a seesaw in order to physically control an astronaut character

on screen navigating in and through space. Designed and developed by a team of Spanish

new media artists, designers, and programmers, *HybridPlay* is informed by the philosophy of

the open-source movement – it is a gaming platform powered by Arduino open-hardware

enabling other games developers to build or customise games that incorporate the different

sensors into new digital game designs.

Figure 2: HybridPlay sensor clip (Copyright HybridPLAY Clara Boj & Diego Diaz 2015)

HybridPlay is, then, explicitly designed for children's public playground use; it not only

depends upon the presence of and interaction with various pieces of popular playground

equipment, but in attaching them to a digital game experience clearly reimagines their

functions, affordances, and meanings. The tagline, "A new way to play: *HybridPlay*

transforms playgrounds into video games" is literal: playgrounds are transformed into an

element of the digital gaming ecology when the sensor clip is attached to play equipment.

And by requiring that children play on physical playground equipment to control actions in a

digital game space, the playground becomes a control interface much like a joystick (see figure 3).

Figure 3: HybridPlay design scenario (Copyright HybridPLAY Clara Boj & Diego Diaz 2015)

The current status of *HybridPlay* is uncertain. It was launched on a crowd-funding site but did not reach its funding goal and the campaign is now closed (https://www.indiegogo.com/projects/hybridplay-engaging-fitness-gaming-on-playgrounds#/). Whilst the product website is still live, it appears that it never went into production. This may be related to the product promotion and marketing representation of the application, which so directly targeted and reshaped the use and meaning of playgrounds. As a kind of gamification, it was informed by an ideology of digital gameplay as radically and positively transformative that could overcome the sedentary effects of digital games by combining their playful attraction with the benefits of physical activity – sometimes referred to as exertion gaming (see Mueller et al., 2011) – whilst simultaneously drawing on the benefits of digital games for communication and teamwork by transplanting these dimensions into playground spaces:

> *HYBRIDPLAY is a new, revolutionary inclusive fitness game device for you and your children to engage in physical activity by playing video games outdoors. Too many phones and tablets. Video games are a fun and enriching tool, but we can go a step further and make games not only mentally, but physically engaging, while bringing kids and adults together outdoors. HYBRIDPLAY combines the best of digital and physical play, enhancing the playground by making it inclusive for all abilities, and*

bringing back children's excitement for the outdoors. It is the ultimate inclusive

fitness game system for kids and adults! Join us for engaging outdoor fitness and play

now!

(HybridPlay, https://www.indiegogo.com/projects/hybridplay-engaging-fitness-

gaming-on-playgrounds#/story

In trying to combine the attractions and benefits of both digital and physical experiences, and

address health concerns about digital play by implying that digisiting public spaces would

enhance their attraction – essentially suggesting that if you can't get children off the iPad,

take the iPad into the playground! – *HybridPlay* implicitly made claims that challenged social

norms, values, and sensibilities associated with the configuration and understanding of

children's play, and in particular normative assumptions about what kinds of play activities

should be undertaken in places such as playgrounds.

To investigate the public response to this deliberate and direct attempt to reshape the

meanings and values associated with children playgrounds, as in the *Disney Fairies Trail*

application, we analysed public comments and conversation threads from online spaces –

though given the history of this technology these were less from social media platforms and

instead more commonly found below the line on news and tech journalism articles, as well as

blogs and crowdfunding sites. Much like the *Disney Fairies Trail*, there was not a great

volume of public discussion about *HybridPlay,* but in contrast the responses available were

much more visibly critical. And these public critiques were more clearly aligned with

received discourses about both public playgrounds and digital media, with most concerned

about the potential of digital play to migrate its negative qualities, such as distraction,

sedentary behaviour, or anti-social dynamics into and then corrupt the positive qualities of

playgrounds for free and physically active play (despite the claims of the product developers or mechanics of the system contradicting such pronouncements):

> *This is an absolutely awful ill-conceived application of digital technology. Proponents of the 'Internet of Things' concept have gems like a sensor to tell you when your coffee mug is empty with an app to send a text message. Put the phone down and look in your mug! Same thing here. No Kickstarter needed. Just kick this bad idea to the curb.*

> *for goodness sakes just let children play... don't get them addicted to computer games in the playground.*

> *Like the kids are going to do any physical activity, when they have a gaming device in their hands. Here is a idea for you, lock boxes on the playground for phones/games that only open after a hour passes.*

> (comments posted to tech blog articles)

These affective critiques not only centred on the inherently positive values of physical play and public spaces, and the contrasting inherently negative values associated with digital devices and innovation, but also extended to encompass broader notions about the corrosive trajectories of children's play cultures dominated by digital media, and risk-aversion regulation:

Maybe we should consider letting kids get hurt now and then to teach them the world is a dangerous place. Let them jump out of swings let them meet random children and play with them. Merry Go Rounds just aren't any fun when you are not going fast enough that you have to hang on.

yo dawg i heard you like to play while you play so we put a tv on all the outside toys so your shut-in kids will want to go the fuck outside once in a while.

(comments posted to tech blog articles)

The sense of incompatibility between public parks and digital play evidenced in these online reactions and comments to *HybridPlay* is revealing in ways not apparent in the *Disney Fairies Trail* application. Again, however, this is not surprising given the context and functionality of the application. Rather than a temporary and peripheral exhibition, *HybridPlay* was imagined and represented as a direct restructuring of and transformation in children's public play spaces; something that aimed to radically reshape the experience of the playground, the kinds of play engaged in within these spaces, and consequently how the meanings of such spaces would be understood.

Here, the digitisation of the space was adapting and innovating with sensors and IoT connectivity in a way that more profoundly reimagined what a playground could and should be. And this reimagining jarred with longstanding ideas and deeply-held sensibilities about the role of public play and parks – sensibilities shaped by personal and cultural histories of association, memory, and experience that are deeply ingrained and largely uninterrogated until they are opened up by seams of the postdigital that re-arrange previously distinct technologies and practices of play. This digitisation of children's public play spaces resonates

with rearrangements already well underway – though still unresolved – in domestic spaces noted above. Although the examples discussed are only temporary or incomplete, in their use of mobile devices and applications they render visible the paradox that these spaces are already digitally-mediated through everyday mobile media infrastructures, devices, and practices, and in turn they register the ongoing potential for both change and contestation within specific sites of communicative cities and digitised public spaces.

Conclusion

This chapter has explored how children's contemporary public play spaces, such as playgrounds and parks, are increasingly subjected to forms of digitisation. This digitisation is occurring through the widespread and often incidental use of personal mobile devices around children's public play, and via more deliberate design interventions that aim to embed or augment children's play spaces with digital infrastructures, sensors, and interfaces. The chapter located this digitisation in reference to the broader contexts, conceptualisations, and contradictions surrounding digital play and public space, and the analysis was refracted through two recent examples of augmented and interactive play technologies: *HybridPlay*, a smartphone game that wirelessly connects to a sensor-equipped clip to transform playground equipment into gaming interfaces; and *Disney Fairy Trails*, an augmented reality app leveraging Disney's Fairies franchise designed to produce a 'magical' outdoor fairy hunt in public gardens.

These examples were analysed in terms of their functionality, representation, and online reception to explore the often-contradictory sensibilities attached to the reconfiguration and reimagining of children's public play spaces. There is more work to be done, beyond the scope of this chapter, analysing the implications of these technologies for

their capacities to capture personal data, and what this datafication of children and play means for the encroachment of commercial activity into public spaces such as playgrounds through digital infrastructures or applications.

Nevertheless, at the level of social spatial experience, this chapter highlighted how within a broader trajectory of communicative cities and urban space characterised by the blurring of discrete spaces of sociality or modes of communication, the messy arrangements of postdigital playgrounds reveal emerging seams of affective disjuncture *and* disillusion. Seams, that on the one hand expressed the logic and imperatives of technological innovation and development to spread and try to solve perceived problems, and on the other hand that expressed how such postdigital imaginaries, products, and practices are received in terms of cultural values and personal sensibilities associated with public spaces, digital technologies, and children's play.

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