

## LOCATING MOBILE MEDIA AUDIENCES: IN PLAIN VIEW WITH POKÉMON GO

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### INTRODUCTION

Mobile media audiences have been anticipated for a fair while. Yet they have frustrated their promoters by turning up late, and not quite in the manner predicted. So, the rapturous reception of Pokémon GO in early July 2016 must have seemed like a dream come true. Launched first in the US, Australia, and New Zealand, then Japan some three weeks later, and followed by a wide range of other countries, the Pokémon GO app achieved instant popularity, outstripping sales of other mobile game apps such as *Candy Crush* and *Clash of Clans*, at comparable stages of their careers. Overnight, cities witnessed thousands of gamers and fan congregating in public places, catching Pokémon characters, seeking out Pokéstops, harvesting Poké balls and eggs, training and competing in Pokémon GO gyms, and logging kilometres travelled. As the creator company Niantic spruiked it: “Players can explore the world and play the game while keeping their attention on the people and sites around them. A walk in the park just became more fun. :-)”<sup>1</sup> Regardless of your viewpoint, with Pokémon GO, mobile media audiences had arrived in droves: reconfigured, playful, fanatical, out and about, in your face, and public space. In the midst of the phenomenon, the first question that pops into someone’s head when encountering and observing someone intently using a mobile device tends to be: “are they playing Pokémon GO?”

Media coverage focussed on the dangers to life and limb to and from inattentive and absorbed players, and malevolent bystanders and others hanging out in public spaces. The unfolding reaction of communities at the epicentres of Pokémon GO gaming featured in despatches, where Niantic was petitioned to remove unwanted Pokéstops. Alongside concerned, panicked, and negative coverage came attempts to discuss the positive aspects of the Pokémon GO phenomenon. A British doctor, to give just one commentary, praised the role of Pokémon GO in encouraging children to play outside:

Pokémon Go isn’t marketed as a health app, but players still end up doing a lot of walking. The possibilities for apps to make the streets an active, reclaimed playground in which to have interconnected fun are boundless. Increased physical activity is a tantalising side effect. Game on.<sup>2</sup>

The game has been criticized for its enclosure and privatization of urban spaces, with various commentators decrying Pokémon GO as the epitome of contemporary, commodified digital media culture.<sup>3</sup> These new concerns echo critiques of earlier forms of Pokémon games, such as those popularized via the Nintendo DS console. In her critique of “pocket capitalism,” for instance, Anne Allison views the “play structure and commercial property of Pokémon” as a “fantasyscape that promises an alternative world of connectiveness but in which the logic of play [capturing and domesticating wild monsters, in order to help them capture more monsters] also presumes, and socializes children into, a worldview of accumulation, competition, and consumption very much aligned with the problems of youth in millennial capitalism.”<sup>4</sup>

In less sweeping ways, there has been widespread debate on the revenue models for Pokémon GO, and the ways in which its affordances intermeshed with profits for profitability rely upon sponsored content and places. In particular, the game is premised upon the the data Google has acquired over some years with previous applications, as well as new kinds of data generated by players. In this spirit, geographer Kurt Iveson has argued:

Niantic is now harvesting “geospatial data” about millions of people's movements: about how far they are prepared to travel as part of game play; about the kinds of places they stop during game play; about the groups they travel with; and the connections they make during game play, and much more. So, even gamers who never spend a cent on in-app purchases or promotions are effectively producing information that becomes a commodity owned by Niantic.<sup>5</sup>

Another hot topic of debate has been the efforts by users and developers to modify, hack, and “jailbreak” Pokémon GO, in ways that Niantic does not wish to permit. Shades of Apple’s policy on unauthorized modification of its devices,<sup>6</sup> in mid-August, 2016 Niantic announced a life ban on players who use third-party software to find Pokémon, trick the game’s GPS and falsify location, or use game emulators (via a PC copy).<sup>7</sup> In response, users have vaulted over the confines of Pokémon GO’s lockdown, rejoicing at the breaking news that a new “cheat” requires no jailbreaking. As one tech newsletter put it:

... an increasing number of Pokémon addicts take advantage of all the different Pokémon Go cheats and hacks out there. Don’t worry, we won’t judge you because after all, it’s just a smartphone game. Well, if you don’t mind bending the rules you’re in for a serious treat on Monday morning, because the ultimate Pokemon Go cheat ... is now available with no jailbreak required.<sup>8</sup>

Sooner or later the Pokémon GO craze will abate, modulating and being absorbed into the ongoing environment and repertoire of media. For the mean time, it compellingly poses the question of what do we make of such irruptions of mobile audiences, and what do they signify for broader questions of media and the social?

As a starting point, it is important to recognize that in many ways, it has proven difficult to attract audiences to particular kinds of mobile media explicitly predicated on the affordances and uses of location. Mobile news is a case in point. In the age of the mobile Internet, various kinds of mobile news have proven popular, from text messages, mobile web, and apps that feature on smartphones and tablets.<sup>9</sup>

Mobile news has also affected shifts in the production and consumption of news, and the spaces and places where this occurs.<sup>10</sup> Yet news that deliberately tries to gauge the location of users and customize their news (as part of “hyperlocal” news efforts, for instance), has not yet proven especially popular, though particular small-scale ventures have had some success.<sup>11</sup> Many other bespoke locative media initiatives have attracted attention and audiences; though often not at scale. This is one reason why Pokémon GO is so fascinating. While diffusion is very likely restricted to particular areas, demographics, settings, and activities, where it has been taken up it has seen significant audiences turn to — or return to — mobile devices, in ways that they have not for other kinds of mobile media. At the least there are interesting lessons in Pokémon GO for the state of play of audiences. Also, if we approach it in a sceptical temper, studying the Pokémon GO moment is a rich resource for understanding and framing the present and future stakes of digital media, and media in general.<sup>12</sup>

In this chapter, I wish to demonstrate the benefits of approaching apparently new developments such as Pokémon GO by couching these in a broader thinking through of what mobile means in relation to digital audiences. In particular, I think there is a need to carefully dissect the context in which these kinds of development play out. Firstly then, to provide a context for understanding Pokémon GO, I discuss the emergence of mobile media audiences, and the increasingly prominent role location has played in these formations. In the second part, I turn to the emergence of Pokémon GO, placing into the recent history of mapping, locative media, and augmented reality (AR) technology. Scholarship on mobile AR, especially the work of Tony Liao and Lee Humphreys draws our attention to the stakes in how various interests, including users and powerful corporate actors shape places, tools, and technologies.<sup>13</sup> I carry this inquiry into the third paper of the paper, which examines Pokémon GO against the histories of mobile gaming. Finally, I conclude with some remarks on the discursive, business, technology, and design strategies evident in Niantic’s effort to configure and sustain the phenomenal success of its Pokémon GO launch.

## **DESPERATELY SEEKING MOBILE MEDIA AUDIENCES**

Mobile media audiences have been tricky to pin down. For sometime, *mobile* audiences have been posited in audience research, as a way of conceptualizing the “interactive, multimedia, dispersed, and mobile audiences,”<sup>14</sup> and the ways that such audience engagement and consumption that might transpire and be distributed across different locations (home, shops, work, schools, and public screens); axes and modalities of mobility and immobility (transportation, waiting, recreation, leisure, work, cultural activities); media forms; media platforms; and so on.<sup>15</sup> The *mobilities* that constitute, contextualize, and characterize audiences have been recognized and taken up in various ways, notably in David Morley’s influential 2000 book *Home Territories*,<sup>16</sup> as well as in a wide range of media, communication, and mobilities research.<sup>17</sup> The audiences associated with mobile media — that is, the media tied to cellular mobile telephones and telecommunications networks — partake of both these concepts of *mobile* and *mobilities*.

There’s no doubt that such mobile phones and their successors are a very significant element of contemporary media across the world. In just over a decade, total mobile phone subscriptions have grown from 2.21 billion in 2005 to an

estimated 7.38 billion in 2016.<sup>18</sup> Tellingly, respective share of mobile subscriptions in “developed” versus “developing” world (these are still the statistical categories used by the International Telecommunications Union) has changed dramatically. In 2005, there were some 992,000 subscriptions in the developed world versus 1.21 billion subscriptions in the developing world. Compare these figures to 2016, by which time the part of the world formerly known as developing really had become the mobile-using majority, with some 5.77 billion subscriptions leap-frogging the 1.6 billion subscriptions of counterparts in developed world.<sup>19</sup> There are at least two major qualifications to this picture. Firstly, it is clear that patterns of access to, and affordability, literacy, and use of, mobile technologies, especially advanced technologies remains very different and highly unequal around the world. This is especially the case when we consider the many ways in which Internet has become accessed on mobile devices, software, and networks. Figures show that much of the world’s population experiences significant shortfall. As the International Telecommunications Union (ITU) notes concerning its 2016 figures:

... developing countries now account for the vast majority of Internet users, with 2.5 billion users compared with one billion in developed countries. But Internet penetration rates tell a different story, with 81% in developed countries, compared with 40% in developing countries and 15% in the Least Developed Countries.<sup>20</sup>

Add to which, ITU 2016 estimates indicate that while mobile broadband networks reach 87% of the world’s population, but only 67% of the rural population.<sup>21</sup> Second, the best available research indicates that we lack a good sense of how these issues of inclusion, exclusion, infrastructure, pricing and affordability, disability accessibility, and so on, play out in relation to mobile take-up and gradations and modalities of use (a key threshold of mobile audiences). Internet itself is clearly shifting across a range of devices, platforms, software, and media forms, but the *mobile* element of this is entangled in various dynamics.

Hence Jonathon Donner in his authoritative conceptualization of the “more-mobile Internet” posits the need to understand the “digital repertoires” of users, as they toggle among parts of the transforming media ecologies.<sup>22</sup> From another perspective, Adrian Athique, discussing the mobile media involvement in the increasingly transnational character of online audiences, rightly suggests that “[a]cross this vast canvass, the combination of ‘multimedia’ performance, the ‘many to many’ potentials of networked computing, and the rise of mobile and locative media has engendered a bewildering array of audience configurations that are yet to be adequately described.”<sup>23</sup> The sheer number of mobile devices goes hand in hand with the expansion of mobile media as a platform for a wide array of remediated and new media forms, formats, and technologies, and associated cultures of use and social practices.<sup>24</sup> The definition of mobile media is no longer clear-cut, if it ever was, because mobile phones and telecommunications have been extensively crossing over with a wide range of previous media, Internet, and, increasingly, emerging media as various as sensors, wearable computers, Internet of things, everyday material culture (including clothing, watches, fashion). This continuing evolution and complexity of mobile media goes hand in hand with revisions and inventions of the audiences that belong to, and in many ways, create these technologies.

The study of the mobile elements and inflections of media audiences also depends a great deal on what you think mobile media is, and, in a particular media

environment, what takes your interest. Early on, scholars felt a need to make a case for mobile phone users (like their Internet-wielding counterparts) as audience-like or audience-forming.<sup>25</sup> Thus in their study of mobile phone as fashion statements, James E. Katz and Satomi Sugiyama liken mobile phone users to “audiences of various mass media texts, creating, interpreting, appropriating material, to develop meaningful, personalized, and culturally appropriate new texts.”<sup>26</sup> As the technology and its social coordinates co-evolved, the technology was explicitly recognized as a medium in its own right. The mobile phone also shifted centre-stage into contemporary media, prompting researchers to consider how to place it into media and cultural historical context. For instance, researchers placed mobile media in the broad currents of social transformation especially concerning the relationships between public and private spheres, deeply entwined in the changing distinctions between mass communications and media, on the one hand, and personal systems and forms, on the other hand. Thus Sonia Livingstone draws attention to the rise of personal media, as media goods reduce in price and mobile media — such as the Walkman and mobile phone — become more prevalent. Livingstone sees this as “primarily to do with the social contexts of use rather than the technologies themselves.”<sup>27</sup> She notes that these “social contexts of use are themselves part of a wider reformulation of the relation between public and private,” as in the paradigmatic case of “family television,” and the way in which its “associated hierarchies of gender and generation” are being transformed with households with multiple devices. Another way to proceed is to place histories of mobile phones and their nascent audiences against the *longue durée* of structures of culture, art, space, artefacts as they are imbricated in everyday life. For instance, the first volume explicitly devoted to the subject, Martin Rieser’s 2011 *The Mobile Audience* traces a trajectory across mobile media from media art, and includes studies of audience mobility (and hybridity), public spatiality, creative users, everyday life, and wearable computing.<sup>28</sup> An allied line of inquiry is the recovery and reinterpretation of obscured histories of telephones as media.<sup>29</sup>

Overall, there is a growing research literature on mobile media audiences, in addition to burgeoning scholarship on the mobile component of a wide array of audiences.<sup>30</sup> Location has figured heavily in two closely related areas of this research. Firstly, location has been an important facet of the research in mobile games, explicitly so when it comes urban games and play, and perforce so, in relation to mobile location gaming.<sup>31</sup> Secondly, location has been an inescapable and closely studied aspect of research on location-based technology and media.<sup>32</sup> The research shows the important ways in which location information and media are often very deeply and affectively part of people’s lived experience, attachment to, and construction of place.<sup>33</sup> From the pioneering work of scholars working on mobile games in Asia, in particular, location has been framed in a broader sense. In particular, Larissa Hjorth and Ingrid Richardson have reminded us:

... mobile gaming has many histories subject to intersecting contextual trajectories—socio-linguistic, geographical, technocultural, medium, and platform specific. That is, the definition and constitution of “mobile gaming” depends largely upon one’s historical epoch and cultural region, in terms of broader technological, economic and transnational flows, the collective gaming habits, attitudes and uptake within one’s cultural milieu, and more narrowly upon one’s individual game experiences and preferences within these contexts.<sup>34</sup>

This is especially important in considering the Pokémon GO “moment,” where as it was rolled out the game was presented as an avidly awaited global phenomena. As is often the case, the rollout was staged, hampered by server capacity issues, and challenges in particular markets (the restrictions on mapping functions in South Korea were cited, for example, due to security tensions with North Korea).<sup>35</sup> Here Larissa Hjorth and Dean Chan’s earlier, pioneering work on gaming cultures in the Asia-Pacific region provides a salutary reminder, as they note “many American online games like *EverQuest* would fail at launch in East Asian gaming territories [in the 1990s] due to a failure to recognize and negotiate myriad culturally specific-protocols informing the seemingly ‘neutral’ aspects of local business practices and game play preferences.”<sup>36</sup> The importance of this nuanced geopolitical, transnational, regional, national, intercultural, cross-generational, and translocal framing of locations of audience, with attention paid to these kind of scales of audiences, and their interplay, is something that has been recently emphasized across other areas of media, such as television and Internet.<sup>37</sup> When it comes to the Pokémon GO experience, acknowledging and thinking carefully about location is important, precisely because of the complex terrain of contemporary media audiences. As Tama Leaver and Michele Willson note: “One of the most immediately obvious challenges when talking about the contemporary gaming landscape is how to situate the type of games and game practices being enacted through [the] multiplicity of devices.”<sup>38</sup> Leaver and Willson contend that “[w]hat is undeniable is that social, casual and mobile games in all of their forms are being adopted by increasing numbers of the population, being played in multiple locations and being adopted in multifaceted ways into people’s lives.”<sup>39</sup>

A helpful starting point is provided by Jordan Frith’s theorization of smartphones as media, in which he muses that future media might be characterized by a type of “seamlessness” in which “location awareness will be incorporated into most networked interactions, operating invisibly in the background,”<sup>40</sup> a scenario he invokes with the example of Spike Jonze’s 2013 film *Her*, in which, as Frith nicely puts it, “a man falls in love with a sentient mobile operating system.”<sup>41</sup> Frith imagines a likely future in which “smartphones are even more closely interwoven with everyday interactions and location information is passively present in most interactions with mobile devices.”<sup>42</sup> However, for the present he believes that “people will continue to use their individual location-based services, and physical spaces will continue to be filled with even denser layers of digital spatial information.”<sup>43</sup> For Frith, the continuing situation is that the “most significant social impact of the growth of smartphones as locative media involves the new ways in which the merging of the digital and physical have impacted people’s experience of place.”<sup>44</sup> This is something that mobile games scholar Kyle Moore points out, in his intervention into the early phase of Pokémon GO diffusion:

“The popularity of the game means we need to rethink our engagement with traditional spaces of play and leisure, such as parks and playgrounds, as well as spaces where play has traditionally been seen as subversive — city spaces in general. It’s also important to consider the implications this has for spaces outside the city, for those in rural or suburban spaces, who will have difficulty playing in these familiar spaces, and the impact traveling to play will have on these groups.”<sup>45</sup>

Building on Moore’s prompt, I would argue that while clearly a highly commercial and commodified popular culture form, offered by a striking alliance of three global

media giant, nonetheless Pokémon GO is a significant development for how we understand the social function of media. The distinctiveness of Pokémon GO lies in the way that it brings together a number of elements in the development of digital media, especially mobile and location media, a conjunction I explore in the next parts of the paper.

## MAPPING POKÉMON GO

Pokémon GO draws upon developments and investments mapping, spatialization, and visualization technology spanning decades.<sup>46</sup> Google has been an especially interesting player in this area, as its Google Maps product is what it is best known, and used, for next to its original and enduring search technology.<sup>47</sup> Google's investment and capabilities in location and mapping technology saw the creation of a global dataset that underpins the development of Pokémon GO. Niantic's John Hanke co-founded Keyhole Corp, Mountain View, California, a digital mapping company founded in 2001, which Google acquired in 2004. At the time, Vice President Product Management, Jonathan Rosenberg declared: "With Keyhole, you can fly like a superhero from your computer at home to a street corner somewhere else in the world — or find a local hospital, map a road trip or measure the distance between two points."<sup>48</sup> As Rosenberg put it:

This acquisition gives Google users a powerful new search tool, enabling users to view 3D images of any place on earth as well as tap a rich database of roads, businesses and many other points of interest. Keyhole is a valuable addition to Google's efforts to organize the world's information and make it universally accessible and useful.<sup>49</sup>

As press noted at the time, Keyhole's financial backers included the Central Intelligence Agency (CIA) "venture spatial" unit, as well as Sony Corp and graphics-chip manufacturer Nvidia Corp.<sup>50</sup> Keyhole's military connections attracted widespread interest, underscoring the military-industrial-entertainment complex in Google was increasingly involved: "The three-year-old company made a name for itself during the war in Iraq when news outlets, including CNN, used its maps to 'fly' over the Iraqi landscape and cities to show viewers where battles were being fought."<sup>51</sup> Within a year, Google had integrated Keyhole's service into Google Maps.<sup>52</sup> Hanke headed Google Maps for several years, and when he wished to leave Google was reportedly persuaded by CEO Larry Page to stay, and start up the lab that became Niantic instead.<sup>53</sup> Niantic's first product was the *Field Trip* app,<sup>54</sup> offering users "facts about the places around them — unprompted, without the need to even ask for the information" (as the *New York Times* put it).<sup>55</sup> According to Hanke:

"The idea behind the app was to build something that would help people connect with the real, physical world around them ... It's always running in the background, so it knows where you are and is always looking to see if something interesting is in your immediate physical environment."<sup>56</sup>

*Atlantic* writer Alexis C. Madrigal suggested that "the app is Google's probe into the soft side of augmented reality." Ultimately, having tested the app, she felt its main shortcomings were to do with content: "Google's great with structured data — flight times, baseball box scores — but it's not good with the soft, squishy, wordy stuff."<sup>57</sup> She contended that what was needed was a "new kind of media", of "awesome 'digital notes', out there in the real world," rather than building on legacy print media,

or computer and database media, where “everyone is still fundamentally writing for an audience made up of people who they expect are at their computers or curled up on the couch.”<sup>58</sup> Since these high hopes, the *Field Trip* app has been eclipsed by a variety of applications, not least *Yelp!*, *Foursquare*, and many specific apps providing location-based information and interaction. The deployment of augmented reality (AR) has featured heavily in quite a number of these efforts. In 2009, *Yelp!* released an augmented reality extension called *Monocle*, which briefly was predicted to “murder all other iPhone restaurant apps,”<sup>59</sup> but subsequently faded away. A dedicated and for a time widely used AR application was *Layar*. Liao and Humphreys’ important study of *Layar* discussed the way it allowed users to create their own content, annotations, and representations of space, “using the technology to heighten their connections with their surroundings, changing the augmented representation and meaning of places, and questioning people’s authority to construct place.”<sup>60</sup> These user-driven, proto-democratic possibilities of AR were counterbalanced in Liao and Humphreys’ analysis against the forces of “many powerful and strategic actors”: “As AR’s potential for tactical reproduction and reinterpretation of space is realized, it is possible that strategic forces will seek to reclaim, limit, and possibly censor some of that tactical production.”<sup>61</sup> This is precisely the scenario many fear is playing out with the implementation of AR in *Pokémon GO*. To understand this issue, we need to shift from mapping to mobile games.

## POKÉMON GO’S WORLD OF MOBILE GAMES

More than anything, *Pokémon GO* is a legatee of the traditions of mobile location gaming. Mobile games have a history stretching back to early handset-based and installed games such as the Nokia Snake game. As mobile handsets became increasingly portable, and especially after the advent of consumer Global Positioning Technology (GPS), a distinct strand of location-based mobile games developed. These included *BotFighter*, a mobile location game launched in Sweden in 2001. The development of mobile location gaming also fits into the broader sweep of innovation in locative art, and urban culture, and the specific social configuration and coordination they required. At roughly the same time, we also see the emergence of mobile social networking (“mososo”), with location being used to enable and encourage serendipitous or planned urban encounters between friends, acquaintances, and strangers.<sup>62</sup> Mobile social networking applications were forerunners of a wide range of location-based applications such as *Foursquare*, but also the later “dating” and “hook-up” apps such as *Grindr* and *Tinder*. In different parts of the world, notably East Asia (especially Japan and Korea), and the US, a range of location-based mobile games developed, with a few achieving dedicated, “cult” following, though with only relatively small numbers. After a relatively slow start, due to the limitations of handsets and data capacity speeds of first and second generation mobiles, mobile gaming finally began to rival its console, Internet, and other online gaming counterparts with the advent of smartphones. Here the capabilities of the devices were important, because of the processing power, but also incorporation of sensors, location, multimedia and other technology, as various scholars have noted.<sup>63</sup>

These location-inflected and leveraged mobile technologies and cultures fed into the mobile location game, *Ingress*, by created by Niantic Labs. *Ingress* is a mobile augmented reality “capture the flag” style of game in which players are

assigned to one of two factions, the Enlightenment (green team) and Resistance (blue team). They range across the city, vying to capture “portals.” The portals are associated with a nearby landmark, so players need to travel to that location to secure them. Ingress launched in late 2012, and has a dedicated international player base. Exact figures are difficult to pin down, however Niantic founder John Hanke in his January 2016 “Three Year Impact Report,” claimed 14 million downloads of Ingress, 5.39 million portals created with 729 million visits by players, and 254,184 playing attending live events.<sup>64</sup> In August 2016, Ingress’s Google+ page passed 4.5 million followers. Ingress has generated a body of scholarship in its own right.<sup>65</sup> Erin Stark argues that the game represents an intervention into “everyday mobilities,” because Ingress:

invites individuals to engage with third places by transforming everyday spaces into playful places. Motivated by in-game achievements and community membership, Ingress players diverge from everyday mobilities by reframing familiar locations as hybrid digital–physical landscapes.<sup>66</sup>

Discussing the potential for players to nominate their own “portals,” Stark argues that “Ingress capitalizes upon the extraordinary in the everyday,” with players able to draw attention to “sites, structures and spaces that would otherwise, by virtue of their familiarity or location go unseen” — and thus contributing to “community-led curation of cultural heritage” of vast scope.<sup>67</sup> While supporting such possibilities, Ingress also provided the opportunity for Google to experiment with augmented reality technology in mobile gaming, in tandem with its various other AR and location technology product developments such as Google Glass.

In the same week the corporation reorganized and relaunched its business as Alphabet, Niantic Labs was spun off from Google. Niantic’s announcement and the press and tech blog discussion focussed on the newly independent enterprise taking an “entertainment turn”: “Niantic Labs may be looking to move into the entertainment industry and work more closely with Hollywood.”<sup>68</sup> Three months later, Hanke announced

... we are thrilled to disclose that our mission will be backed by global giants in the game, entertainment and technology sectors. The Pokémon Company, Google and Nintendo are investing up to \$30 million in Niantic, Inc., which includes an initial \$20 million upfront and an additional \$10 million in financing conditioned upon the company achieving certain milestones. We will be using this capital to continue the development of Pokémon GO, to evolve and grow Ingress and its thriving global community, and to build out our realworld gaming platform.<sup>69</sup>

This “entertainment turn” does seem to have worked so far for Niantic and its partners. Certainly, Pokémon GO builds directly on the player community, features, reputation, and, especially, database of Ingress. However, many players have been critical of the shortcomings of Pokémon GO, compared to its much beloved predecessor.

Various Ingress adherents maintain its superiority to Pokémon GO, with player and journalist Beth Winegarner suggesting: “While Pokémon Go is a watered down version of the original Pokemon empire, Ingress has a complicated and social-minded narrative structure.”<sup>70</sup> That Ingress is a much more thoroughly “social” game than Pokémon GO is a theme Winegarner pursues, suggesting that “Ingress ... has

many levels of social cooperation baked into the game,” requiring sustained, complex, ongoing, and cumulative teamwork.”<sup>71</sup> Winegarner also draws attention to the contrasting ethics of care for place that the two games entail. She argues that Pokémon GO’s Poké Stops are based on its predecessor’s concept of portals, however “its players can’t capture, build or maintain them,” whereas Ingress “offers more and richer opportunities for players to feel like caretakers of neighborhood sites.”<sup>72</sup> The topic of exactly how Pokémon GO adapts, depart from, or translates Ingress is generating significant research, and forms part of a larger discussion of game design, game play, narratives, imaginaries, and materialities. However, it is the combination of Ingress (even with some of its more expansive affordances curtailed) with the brand name, fan base, and characters of the immensely popular Pokémon franchise that provides a transformative edge in terms of audience size and reach.<sup>73</sup>

With the Pokémon cachet and inventory, Niantic is able to take mobile locative gaming far beyond the footprint of Ingress to potentially vast global audience. While Nintendo has not featured prominently in the Pokémon GO launch, its entry into the mobile games arena in March 2015 was a hotly discussed issue, and seen as a turning point in the games industry. What is very interesting about the Niantic spin off, and Pokémon launch, is the way that Google turns to two major Japanese corporations, as a way to incubate games. As scholars have discussed, the East Asian region was an early mover in mobile gaming, functioning as a test bed, but, especially in countries like Korea and Japan, establishing the largest and most profitable markets.<sup>74</sup>

What also makes the shift from Ingress to Pokémon GO possible is the belated mass take-up of mobile gaming enabled the transformation in mobile data and software, represented by the emergence of apps and apps stores associated with smart phones and tablets. These new mobile media platforms from 2007 onwards supported the widespread diffusion and popularity of highly successful mobile games in the form of apps, such as *Candy Crush*, *Angry Birds*, and *Clash of Clans*. This was a point of comparison not lost on the apps industry and its pundits, quickly recorded in websites that gave, for instance, “Pokemon Go App Downloads and Revenue in Real Time”, showing “Daily Time Spent in Pokemon GO by Average iOS User, Compared to Top Mobile Apps.”<sup>75</sup> With the popularity of such mobile apps, “casual gaming” arrived as a real force in gaming, that could no longer be ignored or slighted in favour of more “hard-core” or “serious” gaming. These casual mobile games and their associated social practices — easy to play in all sorts of locales, and in short periods of time — paved the way for the reception of Pokémon. Significant audiences have emerged who are accustomed to attractive, relatively simple to play mobile games, with relative straightforward narrative, characters, and game play. Add to which, as Dal Yong Jin points out, the dichotomy between console-based, “hard-core” gamers, and casual, mobile gamers no longer holds: “the dichotomy of console and mobile games based on game genres cannot explain the new trend because mobile gamers also enjoy role playing games on their smartphones.” Thus he argues that:

Enhanced 3D techniques, bigger and better screens, and visual effects developed in recent years have become major dimensions for the growth of mobile role playing games ... Mobile gaming has consequently become the most significant video game sector that many players, either role playing gamers or casual gamers, enjoy.<sup>76</sup>

As a central force in games and culture generally, mobile games also offer a flexible architecture, set of forms, platforms, and, above all, habitus, to support the packaging of different aspects of convergent digital media. This kind of flexibility of mobile games and the power it offers when harnessed by major media giants is an impressive part of the story of Pokémon GO. Yet how we precisely identify its scope and capabilities, as well as limits and potential dangers, is the subject of furious debate.

## **CONCLUSION: THE POWERS AND PERILS OF *POKÉMON GO***

Writing about Pokémon GO at a relatively early time of its adoption and development is fraught with shortcomings. Yet it also provides an irresistible opportunity, because it is such a striking test case of what happens when a digital technology moves beyond the early adopters (such as those of mobile AR technologies in the 2005-2015 period, or locative technology from a longer timeframe of early 2000s until 2015) to go mainstream fast. Rightly so, users, gamers, researchers, urban planners and designers (especially those in city and municipal government), are thinking about the implications for Pokémon GO in terms of rights to the city, and other claims of “spatial justice,”<sup>77</sup> as well as the interventions the game represents into the mediascapes of contemporary culture, networks, and platforms.

In addition, among scholars and public alike, there has been a reflex response to perceive Pokémon GO as precipitating people, especially as publics, to become mobile fixated. Not for the first time, mind you, but in calling contemporary digital audiences back to mobile media, when many had been well habituated to integrating mobiles into their media habits, social practices, and cultural horizons. So research must need follow to pin down the specific coordinates and implications of Pokémon GO, given it is clearly limited in its rollout, takeup, interest, and implications.<sup>78</sup> Niantic itself has played with the unevenness of internationalization of Pokémon GO, with its rules on international availability of characters, and its release of “regional exclusives” (Kangaskhan available solely in Australia and New Zealand, for example).<sup>79</sup> In terms of significance, it probably falls somewhere among the field of original *Pokémon* franchise, *Candy Crush*, and Facebook’s social games (like *Farmville*, for instance) — but it certainly takes locative mobile games mainstream, and, for a time, brings audiences back to their mobile devices and heading outside, with mainstream media avidly reporting developments.

In interpreting Niantic’s efforts to crest the wave of enthusiasm for Pokémon GO, expanding it wider into new markets and deepening its take-up and use in markets where it is already popularly, we can detect a fair bit of juggling of the various moving parts of the phenomenon, and the claims these elements represent against particular constituencies, such as gamer players, business with a geo-location stake in the game, affected communities, investors, software developers, and so on. Here we need to grasp and interrogate Niantic’s effort to create Pokémon GO as a platform. In this endeavour, it is useful to look at the way that another mobile location-based technology, with gaming aspects, has also conjured with different media affordances and discourses. In his study of Foursquare’s strategy deployment and withdrawal from “gamification” talk, Wilken looks at how Foursquare moved over the space of a few years “from a stand-alone mobile social software (check-in based) application to a more overtly commercially focused location platform,” flying a flag to become the “location layer of the Internet.”<sup>80</sup> Wilken finds that: “Attempting to reinvent the company in this way requires the performance of a delicate balancing

act, one that aims to satisfy multiple competing desires and demands with the need for richer end-user-generated data and commercialization opportunities than cannot be achieved through game driven interactions alone.”<sup>81</sup> Rather, Foursquare has to carefully use language, to strategically engage via discourses its various audiences and interest groups comprehend. Wilken’s approach provides a useful way to cut down to size and analyse the grander claims at play in the Pokémon GO moment, that variously feed into affirmative imaginaries of great civil, child and youth participation in life and the city, the dystopia of public space colonized in new, heightened systems of commodification and surveillance, and the market celebration of a new wave of ubiquitous, commercial media supporting fun activity and popular culture.

In his puff piece heralding Pokémon GO, Hanke cautioned against seeing one kind of device as encapsulating the future of online media, instead suggesting that:

At one level you could say that all of it is an outgrowth of the smartphone revolution—tiny powerful processors, amazing displays, sensors of all kinds, robust location and mapping technology—all now made cheap, reliable and ubiquitous. I think we are going to see those basic building blocks refactored into all kinds of new hardware that will be exploited to blur the lines between games, cinema, apps, fitness and even navigation and commerce.<sup>82</sup>

It turns out that Hanke does “bet on things that are more phone-like than PC-like,” musing that the “future of technology will be one where it accompanies us everywhere and is there to enhance, enrich, and sometimes transform our lives on demand.”<sup>83</sup> Thus, while based on mobile locative technology, games, and entertainment media, Pokémon GO also gestures towards other themes of the “connected” and “digital” life discourses of the present conjuncture — especially fitness and health. Contemporary media audiences need to govern themselves, tracking their activity, and monitoring their health, as they entertain themselves, inhabit, occupy, represent, and engage with urban space. Pokémon GO’s capability to record and require distance travelled is a fairly superficial “add on,” rather than a serious point of competition for FitBits, health apps, and other digital health technologies. However, like the discursive, technology, and business strategies of *Foursquare* identified by Wilken, such a balancing act seeks to put Niantic in the box seat for what the future mobile media audiences desire, once the initial fuss dies down.

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## Notes

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- <sup>2</sup> Margaret McCartney, “Game on for Pokémon GO,” *British Medical Journal*, 354 (2016), i4306.
- <sup>3</sup> For instance, in Graham Murdock’s keynote address to the 2016 International Association of Media Communication Research (IAMCR) conference, entitled “Communication and Crisis: Economies, Politics, Ecologies.” For a useful response, see Katherine Howell’s blog post, “Use and Misuse of Digital Cultural Examples: Pokémon GO and the Rijksmuseum Teenagers,” 28 July, 2016, “<http://www.lovelyoldtree.com/examples-digital-culture-misuse/>.”
- <sup>4</sup> Anne Allison, “Pocket Capitalism and Virtual Intimacy: Pokémon as a Symptom of Post-Industrial Youth Culture,” in Anthony Y.H. Fung (ed.), *Asian Popular Culture: The Global (Dis)Continuity* (New York: Routledge, 2013), 200.
- <sup>5</sup> Kurt Iveson, “Pokémon GO and the Business of Free Play,” *The Age*, 4 August, 2015, 19.
- <sup>6</sup> On jail-breaking of mobile technology, see: Adriana Amaral and Rosana Vieira de Souza, “User Resistance and Repurposing: A Look at the iOS “Jailbreaking” Scene in Brazil,” *Selected Papers of Internet Research 14.0*, Denver, USA, 23-26 October, 2013, <http://spir.aoir.org/index.php/spir/article/view/686>; Gerard Goggin, “Ubiquitous Apps: Politics of Openness in Global Mobile Cultures,” *Digital Creativity* 22 (2011): 147-157; Thomas Fox-Brewster, “Of Ma And Malware: Inside China’s iPhone Jailbreaking Industrial Complex,” *Forbes*, 26 June, 2015, <http://www.forbes.com/sites/thomasbrewster/2015/06/26/china-iphone-jailbreak-industry/#3464349b7fa5>.
- <sup>7</sup> Helena Horton, “Pokémon GO Update Means Cheats Get a Life Ban — Here’s How to Avoid Getting Banned,” *The Telegraph*, 15 August, 2015, <http://www.telegraph.co.uk/technology/2016/08/15/pokemon-go-update-means-cheats-get-a-life-ban---heres-how-to-avo/>.
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- <sup>9</sup> Gerard Goggin, “The Intimate Turn of News: Mobile News,” in Graham Meikle and Guy Redden (eds.), *News Online: Transformation and Continuity* (London: Palgrave Macmillan, 2011), 99-114.
- <sup>10</sup> Oscar Westlund, “News Consumption in an Age of Mobile Media: Patterns, People, Place, and Participation,” *Mobile Media & Communication* 3.2 (2015), 151-159.
- <sup>11</sup> See, for instance: Kjetil Vaage Øie, “Sensing the News: User Experiences when Reading Locative News,” *Future Internet* 4.4 (2012), 161-178; Gerard Goggin, Fiona Martin, and Tim Dwyer, “Locative News: Mobile Media, Place Informatics, and Digital News,” *Journalism Studies* 15.2 (2014): 41-59; Brett Oppegaard and Michael

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<sup>13</sup> Tony Liao and Lee Humphreys, "Layar-ed Places: Using Mobile Augmented Reality to Tactically Reengage, Reproduce, and Reappropriate Public Space," *New Media & Society* 17.9 (2015): 1418-1435.

<sup>14</sup> Sonia Livingstone, "Engaging with Media — A Matter of Literacy?," *Communication, Culture & Critique* 1 (2008), 59.

<sup>15</sup> Michel Sorice, *Mobile Audiences: Methodological Problems and New Perspectives in Audience Studies*, Centre for Media and Communication Studies (CMCS) Working Papers (Rome: CMCS, LUISS University); [http://eprints.luiss.it/448/1/CMCSWP\\_0209M.pdf](http://eprints.luiss.it/448/1/CMCSWP_0209M.pdf).

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<sup>17</sup> For example, see: Mimi Sheller and John Urry (eds.), *Tourism Mobilities: Places to Play, Places to Stay* (London and New York: Routledge, 2004); Nick Couldry and Anna (eds), *MediaSpace: Place, Scale and Culture in a Media Age* (London: Routledge, 2004); Peter Adey, " 'May I Have Your Attention': Airport Geographies of Spectatorship, Position, and (im)Mobility," *Environment & Planning D* 25 (2007), 3515-3536; Ole J. Mjøs, *Music, Social Media and Global Mobility: MySpace, Facebook, YouTube* (New York: Routledge, 2012); and, especially, Shaun Moores, *Interpreting Audiences* (London: Sage, 2003), and *Media, Place and Mobility* (Basingstoke, UK: Macmillan, 2012).

<sup>18</sup> International Telecommunications Union (ITU), "Key ICT Indicators for Developed and Developing Countries and the World", 12 July 2016, [http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2016/ITU\\_Key\\_2005-2016\\_ICT\\_data.xls](http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2016/ITU_Key_2005-2016_ICT_data.xls).

<sup>19</sup> ITU, "Key ICT indicators."

<sup>20</sup> "ITU releases 2016 ICT figures: ICT services getting more affordable – but more than half the world's population still not using the Internet," media release, 22 July, 2016, <http://www.itu.int/en/mediacentre/pages/2016-PR30.aspx>.

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<sup>22</sup> Jonathon Donner, *After Access: Inclusion, Development, and A More Mobile Internet* (Cambridge, MA: MIT Press, 2015).

<sup>23</sup> Adrian Athique, *Transnational Audiences: Media Reception on a Global Scale* (Cambridge, UK, and Malden, MA: Polity Press, 2016), 9.

<sup>24</sup> See, for instance: Mizuko Ito, Daisuke Okabe, and Misa Matsuda, eds., *Personal, Portable, Pedestrian, Mobile Phones in Japanese Life* (Cambridge, MA: MIT Press, 2005); Gerard Goggin, *Global Mobile Media* (New York: Routledge, 2011); Larissa Hjorth and Jean Burgess, eds., *Studying Mobile Media: Cultural Technologies, Mobile Communication, and the iPhone* (New York: Routledge, 2012); Barbara

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<sup>25</sup> On users, Sonia Livingstone that those “who use the Internet, mobile phones, digital games, and even those who engage with traditional media (radio, print, and television) via the Internet, are not easily labeled an audience. The term “user” is, it seems, becoming commonplace in ordinary discourse, but this is equally unsatisfactory, for it lacks any direct relation to communication in particular, and it implies an instrumental individualism ...” (“Engaging with Media,” 52).

<sup>26</sup> James E. Katz and Satomi Sugiyama, “Mobile Phones as Fashion Statements: The Co-Creation of Mobile Communication’s Public Meaning,” in Rich Ling and Per E. Pedersen (eds.), *Mobile Communications: Re-Negotiation of the Public Sphere* (London: Springer-Verlag, 2005), 79.

<sup>27</sup> Sonia Livingstone, “New Media, New Audiences?,” *New Media & Society* 1 (1999), 62.

<sup>28</sup> Martin Rieser, ed., *The Mobile Audience: Media Art and Mobile Technologies* (Amsterdam and New York: Rodopi, 2011).

<sup>29</sup> On the histories of telephones as media and their audiences, see: Ithiel de Sola Pool (ed.), *The Social Impact of the Telephone* (Cambridge, MA: MIT Press, 1977); Carolyn Marvin, *When Old Technologies Were New: Thinking about Electric Communication in the Late Nineteenth Century* (New York: Oxford University Press, 1988); Adriana de Souza e Silva, “Art by Telephone: From Static to Mobile Interfaces,” in *The Mobile Audience: Media Art and Mobile Technologies*, ed. Martin Rieser (Amsterdam: Rodopi, 2011), 67-80; Gerard Goggin, “Telephone Media: An Old Story,” in *The Long History of New Media: Technology, Historiography, and Newness in Context*, ed. David W. Park, Nicholas W. Jankowski, and Steve Jones (New York: Peter Lang, 2011), 231-252.

<sup>30</sup> Gerard Goggin, “Going Mobile,” in Virginia Nightingale (ed.), *The Handbook of Media Audiences* (Malden, MA, and Oxford, UK: Wiley-Blackwell, 2011), 128-146.

<sup>31</sup> For example, see: Adriana de Souza e Silva and Daniel M. Sutko (eds), *Digital Cityspaces: Merging Digital and Urban Playspaces* (New York: Peter Lang, 2009); Samuel Tobin, *Portable Play in Everyday Life: The Nintendo NS* (Basingstoke, UK: Palgrave Macmillan, 2013); Sam Hinton and Larissa Hjorth, *Understanding Social Media* (London: Sage, 2013); Larissa Hjorth and Ingrid Richardson, *Gaming in Social, Locative, and Mobile Media* (Basingstoke, UK: Palgrave Macmillan, 2014); Tama Leaver and Michele Willson (eds), *Social, Casual, and Mobile Games: The Changing Gaming Landscape* (London and New York: Bloomsbury, 2016).

<sup>32</sup> For instance, see: Eric Gordon and Adriana de Souza e Silva, *Net Locality: Why Location Matters in a Networked World* (Chichester, UK, and Malden, MA: Wiley-Blackwell, 2011); Adriana de Souza e Silva and Jordan Frith, *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability* (London and New York: Routledge, 2012); Rowan Wilken and Gerard Goggin (eds), *Mobile Technology*

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<sup>33</sup> See, for instance, Didem Özkul, “Location as a Sense of Place: Everyday Life, Mobile, and Spatial Practices in Urban Places,” in de Souza e Silva and Sheller (eds.), *Mobility and Locative Media*, 101-116. Also: Raz Schwartz and Germaine R. Haleboua, “The Spatial Self: Location-Based Identity Performance on Social Media,” *New Media & Society* 17.10 (2015), 1643-1660.

<sup>34</sup> Larissa Hjorth and Ingrid Richardson, “Games of Being Mobile: The Unruly Rise of Mobile Gaming in Japan,” in Dal Yong Jin (ed.), *Mobile Gaming in Asia: Politics, Culture, and Emerging Technologies* (Dordrecht: Springer, 2017), 21.

<sup>35</sup> Makiko Yamazaki, “Developer of Nintendo’s Pokémon GO Aiming for Rollout to 200 Markets Soon,” *Reuters*, 15 July, 2015, <http://www.reuters.com/article/us-nintendo-pokemon-niantic-idUSKCN0ZV0I2>.

<sup>36</sup> Larissa Hjorth and Dean Chan, “Locating the Game: Gaming Cultures In/And the Asia-Pacific,” in Larissa Hjorth and Dean Chan (eds), *Gaming Cultures and Place in Asia-Pacific* (London and New York: Routledge, 2009), 4.

<sup>37</sup> For instance: Anna Cristina Pertierra and Graeme Turner, *Locating Television: Zones of Consumption* (London and New York: Routledge, 2012); Gerard Goggin and Mark McLelland (eds), *Routledge Companion to Global Internet Histories* (New York: Routledge, 2017).

<sup>38</sup> Tama Leaver and Michele Willson, “Social Networks, Casual Games and Mobile Devices: The Shifting Contexts of Gamers and Gaming,” in Leaver and Willson (eds), *Social, Casual and Mobile Games*, 2.

<sup>39</sup> Leaver and Michele Willson, “Social Networks, Casual Games and Mobile Devices,” 3.

<sup>40</sup> Jordan Frith, *Smartphones as Locative Media* (Cambridge: Polity; Hoboken, NJ: Wiley, 2015), 144.

<sup>41</sup> Frith, *Smartphones as Locative Media*, 144.

<sup>42</sup> Frith, *Smartphones as Locative Media*, 145.

<sup>43</sup> Frith, *Smartphones as Locative Media*, 145.

<sup>44</sup> Frith, *Smartphones as Locative Media*, 145.

<sup>45</sup> Kyle Moore, quoted in Luke O’Neill, “Why Augmented Reality in Public Spaces is a Game Changer ... An urban mobile gaming researcher explains what Pokémon Go and Ingress can tell us about augmented reality experiences,” 20 July, 2016, <http://sydney.edu.au/news-opinion/news/2016/07/20/why-augmented-reality-in-public-spaces-is-a-game-changer.html>.

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<sup>47</sup> Ken Hillis, Michael Petit, and Kylie Jarrett, *Google and the Culture of Search* (New York and London: Routledge, 2013).

<sup>48</sup> Google, “Google Acquires Keyhole Corp,” media release, 27 October, 2004, <http://googlepress.blogspot.com.au/2004/10/google-acquires-keyhole-corp.html>.

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<sup>50</sup> *Wall Street Journal*, “Google Acquires Keyhole: Digital-Mapping Software Used by CNN in Iraq War,” *Wall Street Journal*, 27 October, 2004, <http://www.wsj.com/articles/SB109888284313557107>. On Keynote, see an interview with its other founder, Avi Bar-Zeev: Jeremy Crampton, “Keyhole, Google Earth, and 3D Worlds: An Interview with Avi-Bar-Zeev,” *Cartographica*, 43.2 (2008), 85–93.

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<sup>58</sup> Alexis C. Madrigal, “The World is Not Enough.”

<sup>59</sup> John Herrman, “Augmented Reality Yelp Will Murder All Other iPhone Restaurant Apps,” *Gizmodo*, 27 August, 2009, <http://gizmodo.com/5347194/augmented-reality-yelp-will-murder-all-other-iphone-restaurant-apps-my-health>. For a very helpful critical discussion of the differences between a location-based service such as *Yelp!* and the specific augmented reality aspect of *Monocle*, see Liao and Humphreys, “Layar-ed Places.”

<sup>60</sup> Liao and Humphreys, “Layar-ed Places,” 1432.

<sup>61</sup> Liao and Humphreys, “Layar-ed Places,” 1432.

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<sup>63</sup> Frith, *Smartphones as Locative Media*.

<sup>64</sup> John Hanke, "Three Years of Ingress and the Road for Niantic: VR vs. AR and What It Means for Games Like Pokémon GO," *Medium*, 28 January, 2016, <https://medium.com/@johnhanke/three-years-of-ingress-and-the-road-for-niantic-a991a2d6587#.evu82qyoa>.

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<sup>66</sup> Erin Stark, "Playful Places: Uncovering Hidden Heritage with Ingress," in Leaver and Willson (eds), *Social, Casual and Mobile Games*, 150.

<sup>67</sup> Stark, "Playful Places," 161-162.

<sup>68</sup> Claire Groden, "Google's Internal Start-Up Niantic Labs Spins Off," 13 August, 2015, <http://fortune.com/2015/08/13/googles-niantic-labs-spins-off/>. See also: Janko Roettgers, "Google Spins Out Location-Based Game Company Niantic Labs," 12 August, 2015, *Variety*, <http://variety.com/2015/digital/news/google-spins-out-location-based-game-company-niantic-labs-1201569016/>.

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<sup>71</sup> Winegarner, "Forget Pokémon GO."

<sup>72</sup> Winegarner, "Forget Pokémon GO."

<sup>73</sup> See, for instance: Joseph Tobin (ed.), *Pikachu's Global Adventure: The Rise and Fall of Pokémon* (Durham, NC: Duke University Press, 2004). Of interest for their arguments about the potential uses of Pokémon and the ways in which power circulates around it, especially in relation to children and young people, see: Mark Gibson, "The Powers of the Pokémon: Histories of Television, Histories of the Concept of Power," *Media International Australia* 104 (2002): 107-115; David Buckingham and Julian Sefton-Green, "Gotta Catch 'Em All: Structure, Agency and Pedagogy in Children's Media Culture," *Media Culture & Society* 25. 3 (2003), 379-399; Maya Gotz, Dafna Lemish, Hyesung Moon, and Amy Aidman, *Media and the Make-Believe Worlds of Children: When Harry Potter Meets Pokémon in Disneyland* (New York and London: Routledge, 2005); Mimo Ito, "Mobilizing the Imagination in Everyday Play: The Case of Japanese Media Mixes," in Stefan Sonvilla-Weiss (ed.), *Mashup Cultures* (Vienna: Springer, 2010), 79-97; Jason Bainbridge, "'It is a Pokémon World': The Pokémon Franchise and the Environment," *International Journal of Cultural Studies* 17.4 (2014): 398-414.

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<sup>76</sup> Dal Yong Jin, “The Emergence of Asian Mobile Games,” 8.

<sup>77</sup> Edward W. Soja, *Seeking Spatial Justice* (Minneapolis, MN: University of Minnesota Press, 2010).

<sup>78</sup> As well as the model of the excellent Tobin 2004 collection, *Pikachu’s Global Adventure*, and the scholarship on Asian Pacific gaming cultures, pioneered by Hjorth, Chan, Jin, and others, there is also burgeoning work offering international perspectives on location technology, including Rowan Wilken, Gerard Goggin, and Heather Horst (eds), *Location Technologies in International Contexts* (New York: Routledge, 2017).

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<sup>81</sup> Wilken, “The De-Gamification of Foursquare?” 187.

<sup>82</sup> Hanke, “Three Years of Ingress ...”

<sup>83</sup> Hanke, “Three Years of Ingress ...”