

Location-based gaming apps and the commercialization of locative media

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Location-based games were among the first interventions into urban space that employed locative media for playful behavior aimed at challenging the conventions of public space. They use mobile phones, GPS (Global Positioning System), Bluetooth and WiFi technology and other location-aware technologies and devices to incorporate the physical location of players into the game. Early, pioneering iterations of these games such as *The Beast* (Microsoft 2001), *Bot-Fighters* (It's Alive! 2001–2005) and *PacManhattan* (Frank Lantz 2004) experimented with the ubiquity of mobile and locative media to create games that blended digital gameplay with the physical environment, geography, and everyday locales of urban space. While location-based gaming projects continue to be developed by artists and small communities of players, today they increasingly appear as commercial apps for the iPhone or Android platforms. This shift has transformed location-based games from a niche genre, little known outside artistic circles, and brought them into the mainstream mobile gaming market. The advanced GPS technology and superior graphics of smartphones, combined with digital distribution services like Apple's App Store, provide location-based games with a vastly greater audience of potential players. But this transformation also illustrates how location-based games—once the purview of artists, amateurs, and small commercial outlets—have been adapted into the relatively new value chain of the global app economy. It thus raises broader concerns over the extent to which location-based games have been co-opted by commercial interests and the growing conflation of play and leisure with labor, at the expense of their capacity to challenge the norms and conventions of public life in the city.

In this chapter I examine the theory around location-based games in the context of the emerging “app economy” and the growing commercialization of locative media taking place with the success of the iPhone and Android platforms. I argue that the proliferation of these devices signals a shift in location-based gaming, from its avant-garde origins in the locative art movement of the 2000s to today's growing consumer-driven appropriation of locative media technology. I begin by tracing the origins of location-based gaming within the locative art movement, which situates early location-based gaming projects within a

historical trajectory of avant-garde practices aimed at repurposing the public spaces of the city for play. With the shift toward apps, however, I investigate how location-based games are becoming increasingly commercialized as they seek to compete within the highly competitive, concentrated, and profit-driven mobile games industry. I examine one particular location-based game development studio, Red Robot Labs, and their game *Life is Magic*, released for iOS and Android in early 2013. I argue that the entrance of location-based games into the app economy represents a shift away from their roots in the locative art movement, one which illustrates the growing capture of digital play by the increasingly competitive mobile gaming market.

The origins of location-based gaming

Location-based games emerged in the early 2000s alongside the “locative art” movement, which exploited the growing ubiquity of GPS tracking and locative media devices in order to bring interactive, “new media” art into public space (see de Souza e Silva and Frith 2012; Drakopoulou 2010; Farman 2012; Flanagan 2009; Gordon and de Souza e Silva 2011). Locative art developed at a time when many theorists in urban studies and sociology had, over the previous thirty or so years, been lamenting the “decline” of public life (see Augé 1995; Sennett 2002 [1977]; Sorkin 1992; Virilio 1997 [1984]). While these theorists differed in their views and approaches, their writing shared a common thread. They argued that throughout the twentieth century, the rise of electronic communication technologies had revolutionized domestic life to the detriment of social and public life in the contemporary city. As Varnelis and Friedberg write, “public space became increasingly privatized and virtualized” during the twentieth century, “with networks of individuals being replaced by television broadcast networks, and individuals becoming less and less citizens and more and more consumers” (2008: 18). With the rapid growth in the number of mobile phones in the 1990s, however, mobile technologies were seen as potentially responding to this erosion or “decline” of public life (see de Souza e Silva and Frith 2012; Varnelis and Friedberg 2008; Tuters and Varnelis 2006). Essentially, they brought media technologies and the practices that occurred around them—which had mostly been confined to the home or specific, fixed locations—out into the streets and public spaces of the city. At the same time, however, these technologies were also criticized for disconnecting or distracting their users from the physical environment around them in favor of the private world of their mobile phone screens or portable devices (see Ito 2005; Kluitenberg 2006; Rheingold 2002).

The ability to communicate and share information virtually anywhere, coupled with the prevalence and decreased cost of technologies like GPS, WiFi, smartphones, digital video recording, and handheld gaming, led to new patterns of media consumption and production. But more specifically, they also laid the groundwork for a radical art movement that employed these technologies to mobilize their users to participate in artistic performances and interventions

within urban space. The aim of these projects was to move interactive, digital art from the confines of the gallery and computer screen and into the streets, public spaces, and physical architecture of the city. This movement became known as locative art, following the widespread adoption of the term “locative media” during the Art+Communication Festival in Latvia in 2003 as a descriptor for devices and technologies embedded at or in a particular location (Zeffiro 2012: 251). With the proliferation of mobile media and location-aware devices in the late 1990s and early 2000s, many artists saw locative media as having the potential to reinvigorate interactive art by using it to critique the established conventions and ideologies of public space (see Hemment 2004, 2006; Tutters and Varnelis 2006).

Locative artists sought to repurpose GPS technology from its military and consumer origins as a way of re-engaging its users with public space. They built on a history of public art installations and projects, such as Teri Rueb’s “environmental sound installation” *Trace* (1999), Janet Cardiff’s experimental, site-specific museum “tour guide” *In Real Time* (1999) and Rafael Lozano-Hemmer’s large-scale urban installation *Vectorial Elevation* (1999). These earlier, mostly outdoor interactive projects used custom-made GPS devices, audio headsets, and the internet respectively to experiment with bodies, movement, and technology in physical space. Following on from these experimental installations and exhibitions, locative art projects like *dot.walk* (Wilfried HuJeBek 2002) and *Urban Tapestries* (Proboscis 2002–2008) employed location-based and mobile technologies to allow users to trace their movement through the city and “tag” or annotate the everyday urban environment with text and images. They also often explicitly appropriated the rhetoric and tactics of radical avant-garde groups like the Situationist International and their notion of the *dérive* and psychogeography (Zeffiro 2012: 254). They sought to deliberately critique the growing sense of alienation and disconnection from public life that the Situationists and theorists like Sennett and Virilio argue arose from twentieth-century urban development. According to Tutters and Varnelis,

since its inception ... locative media’s practitioners have claimed an avant-garde position, insisting not only that their work is capable of creating a paradigmatic shift in the art world, but also that it can reconfigure our everyday life as well by renewing our sense of place in the world.

(2006: 358)

Location-based games in particular were at the forefront of this movement. As Drakopoulou writes, “at a time when projects in locative media were experimenting with cartography, location and situated interaction, location-based games were already at the forefront of research, using ideas of geo-mapping, tagging and ad hoc networks” (2010: 63). Like locative art, many location-based games sought to re-engage players with the public spaces of the city, reappropriating everyday urban locales as sites for competitive play and social interaction.

De Souza e Silva and Hjorth (2009) and Flanagan (2009) point out that, like many locative artists, location-based game designers drew on a discourse of radical play in urban space, such as the figure of the *flâneur* and the Situationist practice of the *dérive*; avant-garde groups and movements like the SI, Archigram, and Fluxus; and contemporary urban practices like parkour. Location-based games are seen as building on, and extending, these practices in the era of locative art and pervasive mobile media by bringing digital game play into the streets, parks, buildings, and public spaces of the city. De Souza e Silva and Hjorth (2009: 611) write, “like the *flâneur*/phoneur continuum, the practice of the *dérive* and the parkour, [location-based games] use city spaces as playful spaces.”

Location-based games were typically designed by a small group of amateurs or a commercial developer employing a range of wireless and mobile technologies, such as GPS, Bluetooth, WiFi, Short Messaging Service (SMS), and mobile devices and networks. Early location-based games used mobile phones or specially designed headsets to allow players to share their location with each other and communicate while playing the game. More recent games, though, use the GPS technology embedded in smartphones to map and continually trace players' locations to create more sophisticated game scenarios. The goals of location-based games vary widely: They might be simply to collect virtual items scattered around the city to score points like *Mogi*, *Item Hunt* (Newt Games, 2003–2007) or a cat-and-mouse style game such as *BotFighters* where players hunted each other across the cityscape. But they invariably all blend the virtual world of the game with physical space. Among the earliest and most influential iterations of these games were Alternate Reality Games (ARGs). The most widely known and pioneering ARG is *The Beast*, which was created in 2001 to promote the Steven Spielberg film *A.I. Artificial Intelligence*. It was a kind of viral marketing game that invited players to participate in a plot set in the fictional world of the film and required them to follow cryptic clues through various media to progress through the story. Participants entered the world of the game through a cryptic line on the film's poster, which included a credit for a fictitious “sentient machine therapist.” Curious fans eventually found a phone number for the “therapist,” which turned out to be a recorded message providing just enough information to hook willing participants. As Bolish (2012) explains: “Through websites for fictional political groups, emails from in-film corporation, and phone conversations with characters, the project's creators immersed audiences in a complex game that blurred the line between real life and fiction.”

The Beast subsequently paved the way for more ARGs that claimed to “blur” the physical and virtual worlds. But although some location-based games had their origins in marketing campaigns, many other projects emerged that involved small groups of people creating their own “interventions” into public spaces by appropriating them for play. These projects were conducted more in the vein of the locative art movement, albeit with more of a focus on competition and point-scoring, not unlike multiplayer digital games (de Souza e Silva and Hjorth 2009:

618). One of the best-known examples is *Pacmanhattan*, which is essentially a real-life re-enactment of the classic arcade game *Pac-Man* (Namco 1980) using the streets of New York. One player takes on the role of *Pac-Man*—complete with a themed costume—who must navigate the streets of New York, while four other players are the “ghosts” who must chase and track him down. Each player is directed by a “controller,” who tracks their movement on the game map by GPS and communicates their position and proximity to other players by talking to them on a mobile phone.

Other “real-world” and “hybrid reality” games like *Alien Revolt* (MIND Corporation, 2005–2007), *Big Urban Game (BUG)* (Lantz *et al.* 2003), *Can You See Me Now?* (Blast Theory 2001), *Five Courts* (KMA 2006) and *Uncle Roy All Around You* (Blast Theory 2003) all similarly sought to repurpose everyday locales and public spaces for play.¹ Blast Theory’s work in particular has its roots in theater and performative art (Dias 2012: 9–10), thereby seeking to challenge the distinction between performative art and digital games. Like many artistic performances, interventions, and “happenings” that took place throughout the twentieth century, location-based games seek to appropriate everyday spaces in the city for playful interactions. Location-based games, however, take advantage of the growing ubiquity of mobile communication devices and locative media to engage players of digital games with the environment, objects, and people around them in ways that echo or perhaps “remediate” these earlier art forms and practices (see Flanagan 2009: 197–200).

Location-based games and the rise of the app economy

Location-based games emerged from artistic and commercial projects that reappropriated locative media technologies, as well as experimental marketing campaigns like *The Beast*. Today, however, many location-based games are designed as apps for smartphones with much more accurate and sophisticated inbuilt GPS technology and advanced graphics engines. But more importantly, they are able to be distributed instantaneously to millions of users worldwide through digital distribution services like Apple’s App Store (launched in July 2008) and Google Play for Android (launched in October 2008 as “Android Market” and rebranded in 2012 as Google Play). The rollout of the App Store and Android Market from 2008 onwards led to an explosion of mobile gaming development that transformed the mobile and handheld gaming market. Using development tools such as the iOS Software Development Kit (SDK) for Apple devices or Google’s Android SDK, individual programmers and small teams of game designers are able to create games and upload them as apps on the App Store or Google Play. They can then be downloaded to the device for free or at a cost, with 70 percent of the revenue going to the developers and 30 percent to Apple or Google. These models thus allow less established, independent game designers to market their games to an ever-growing audience of iPhone, iPad and Android users at a

significantly lower cost and shorter development cycle than is possible with the established console gaming market (see Cheng 2012; Feijóo 2012).

The release of the iPhone and Android and their respective app distribution services has similarly provided location-based games with a model that has enabled them to enter the mainstream mobile gaming market. Before the release of these devices, location-based games had no universal technology or platform that allowed them to reach a large audience. They typically utilized ad hoc, purpose-built devices like augmented-reality headsets, GPS-enabled handheld computers and computer scripts that were designed or retooled for a particular project. Otherwise, they simply appropriated a mix of readily available technologies like mobile phones, PDAs, and GPS-enabled devices. In this sense, as Farman (2012: 90–92) observes, location-based games could be described as a form of *bricolage*. Both their designers and their players repurposed already existing technologies for the project, often relying on whatever was available and suitable, or customizing or designing their own tools. In this sense, there was a kind of symbiotic relationship between the design of the game and the material constraints and limitations of the devices used, each informing the other. The devices provided designers and players of the game with certain parameters and limitations, since they were working with already existing technologies reappropriated or refitted according to their needs. But this is the nature of the *bricoleur*: to “make do” with whatever materials are available and adapt or rework them for the purposes of their project.

This bricoleur approach provided early location-based game designers with a mixed sense of freedom and contingency: They relied on self-organized groups of players or small commercial companies to assemble them in each separate city or region. For this reason, early location-based games never accomplished widespread popularity and recognition, nor were they able to generate anywhere near the levels of revenue as other genres of digital (or even mobile) gaming.

Of course, this is not to suggest that no initial location-based gaming projects were able to make a profit off their players. Games like *Mogi*, *Item Hunt* had a paid subscription model where users were charged a monthly fee to participate in the game’s community. Similarly, artists such as Blast Theory were willing to embrace corporate funding and sponsorships to finance their projects (Tuters and Varnelis 2006: 360). Many location-based games also incurred incidental costs through mobile phone usage and SMS charges. In the case of *BotFighters*, which uses SMS to send data between players, the phone bills from players provided the game’s main revenue source, which was shared between the game’s developer, It’s Alive, and Telia, a Swedish network operator (Dodson 2002). But in most cases, I would argue, any profits generated from the game were often merely a way of sustaining the project rather than necessarily to make substantial amounts of money from it. Because of their novel, rudimentary nature, these early projects relied on small groups of dedicated participants to make a profit and remain viable over a longer period of time. Similarly, there was no established model that their designers could rely on to make money and any revenue was likely only a

means of supporting the project. There existed no established, universally accepted model for marketing and distributing location-based games, even though a considerable number of them were commercially funded.

With the release of the iPhone and Android platforms and their accompanying app stores, however, this has changed considerably. There are, of course, still location-based gaming projects being produced in particular cities and regions—some of them publicly funded or self-organized projects, others using the traditional subscription-based model of games like *Mogi*, *Item Hunt*. Most new location-based games, however, are designed as apps that can be purchased or downloaded free through digital distribution services like the App Store. These services provide location-based game designers with the ideal distribution model to sell or upload their game directly to any iPhone or Android device. As a result, location-based games have begun to move beyond their avant-garde, experimental origins and utilize the capabilities of these devices to become a mainstream genre in the mobile gaming market.

Location-based game designers are now able to exploit the much larger audience of users, wider geographic reach and advanced GPS technology and high-end graphics that these devices afford. The penetration of smartphones—the iPhone in particular—into the mobile phone market has been one of the strongest forces enabling location-based games to appeal to a larger number of more diverse and geographically dispersed users. These devices are also typically carried everywhere by their users, meaning that they can be played in shorter, ongoing bursts of gameplay, and thus become more embedded in their everyday movement and lifestyle patterns. This is in stark contrast to the restricted number of players of location-based games like *PacManhattan* and *Mogi*, *Item Hunt* that were confined to particular cities or regions.

Location-based gaming apps remain a niche genre for the iPhone and Android in comparison with far more well-known and commercially successful games like *Angry Birds* (Rovio Interactive 2009). Nonetheless, dozens of location-based gaming apps have been released since the launch of the 3G iPhone in 2008 that have brought established (and some new) location-based game concepts into the mainstream. *Seek 'n Spell* was perhaps the earliest game released for iPhone that incorporated location-based technology as an integral part of the game. It is a spelling game developed by San Francisco-based app developer Dokogeo and released in 2009. In the game, players physically move around to collect virtual letters that are represented on the game screen on their iPhone; ideally, it is meant to be played in a large, open area such as a park or sports arena with several players. Like many early location-based games, the game explicitly emphasizes the fact that players are engaging with each other in physical space: the Google Play description of the game encourages players to “get outside and challenge your mind and body!”² One review of the game prior to its release also praises the novelty of its use of GPS tracking technology, stating that it “will usher in a whole new genre in iPhone games” (Osborne 2009).

It was not until 2011 and 2012, however, that location-based games began to receive more consumer and critical attention. These included the surveillance-themed game *CodeRunner* (Robot Chicken Interactive 2011); *Shadow Cities* (Grey Area 2011), praised in a review by the *New York Times* as “the future of mobile gaming” (Schiesel 2011); the “augmented sound” game *Dimensions* (Reality Jockey 2012); the fitness app *Zombies, Run!* (Six to Start 2012); the mafia themed *Life is Crime* (Red Robot Labs 2012); and *Dokobots* (Dokogeo 2012), designed by the same developers behind *Seek 'n Spell*. Also in 2012, Google released the beta version of their augmented reality multiplayer game for Android devices, *Ingress*, signaling that location-based gaming has perhaps at last become a mainstream, commonplace pastime for smartphone users.

Location-based gaming apps: the next “killer app”?

This shift marks an important stage in the evolution of location-based games, as they are increasingly developed as apps released in the highly competitive mobile gaming market, instead of artistic and commercial experiments on the periphery of the digital games industry. In contrast to early location-based games, which were predominantly documented through artistic and scholarly accounts of the projects, location-based gaming apps have been the subject of reviews and commentary from the videogame and technology industries. In the process, the language used to describe location-based games has become increasingly commercial and business-oriented, focusing on their appeal to consumers and potential to be commercially viable products within the mobile gaming market. An opinion article in the technology blog *Mashable*, “Why location-based gaming is the next killer app,” for instance, discusses the growing number of gaming apps using location-aware technology, advising that “marketers would do well to think about how these integrations can enhance the gaming experience” (Steen 2011). It goes on to claim:

The market is primed for the right game to galvanize interest in experiences that combine the real and virtual worlds. Just as *FarmVille* put social gaming on the map and *Angry Birds* brought attention to mobile gaming in general, we could see a wave of smartphone owners flood the application markets looking for similar experiences. This will present a valuable opportunity to marketers that want to foster emotional connections with their audiences.

The growing emphasis on location-based games as commercial products that “present a valuable opportunity to marketers” signals that they have well and truly entered the mainstream digital games industry—even if they still remain a niche genre within it. As a result, location-based game designers have begun to develop an economic structure and business model that contrasts sharply with

the ad hoc assemblage of artists, amateurs and enthusiasts that created many early location-based games. A number of key game developers have begun to emerge that specialize in designing location-based gaming apps: the aforementioned Dokogeo (*Seek 'n Spell, Dokobots*), Red Robot Labs (*Life is Crime, Life is Magic*), and Grey Area (*Shadow Cities*) studios. The app economy has provided small start-ups like these with a financial model that allows them to compete alongside other mobile game developers for a share of the mobile industry's highly lucrative revenue stream—with varying degrees of success, of course.

But while app distribution services may have laid the foundations for location-based game designers to emerge as viable competitors in the mobile gaming industry, it has also meant that they must adapt to this new market structure. As Feijóo (2012: 86–88) notes, the emergence of new distribution platforms like the App Store and Google Play may have cut the costs of game development and facilitated the rise of small developers catering to the “long tail” of players with products aimed at niche interests. At the same time, though, it has paradoxically led to growing concentration and consolidation among opposing firms, as they seek to compete across multiple platforms and reach ever greater numbers of users.

Among location-based game app developers there have already been signs of this growing competitiveness and push for control over market share. In 2011, Red Robot Labs launched “the world’s first location-based gamer network,” named *R2*. *R2* is a proprietary network that provides designers willing to sign up with Red Robot with a platform to create location-based games using the software and network infrastructure developed by the company. According to a company press release, *R2* gives developers “unique access to its location-based expertise and publishing rights under Robot Labs”; “funding and/or revenue share options”; and access to the same back-end technology they use in their games, without the need for other developers to build location-based game engines from scratch.³ In 2012, the company announced that it has invested US\$2 million in signing up third-party developers to the network, as well as acquiring several small regional game development studios to expand their reach. Doing so allowed them to outsource their production to several smaller studios and, perhaps more importantly, boost their presence on the sales charts by having more games listed under their label (Woguem 2012).

Red Robot’s launch of their *R2* platform for in-house and third-party development of location-based games suggests a growing consolidation and standardization of the genre. In some ways it simply replicates the business model of the traditional videogames industry, whereby one company owns the rights to a type of software called “middleware” (such as a graphics engine) that is then licensed out to smaller developers (Kerr 2006: 91); albeit on a micro-scale. The advantages of app distribution which has enabled location-based games to enter the mainstream market—decreased costs, a direct-to-consumer publishing model, niche products aimed at the “long tail”—are thus being counterbalanced by

economies of scale and growing competition among developers at the bottom of the supply chain.

As a result, some of these once modestly sized independent studios have evolved into formidable corporations, while others are simply swallowed up or attach themselves to the dominant companies' established publishing model in order to subsist. In 2011, for instance, the social gaming company Zynga acquired Area/Code, a New York-based studio co-founded by Kevin Slavin and Frank Lantz, the latter of whom helped design formative location-based and real-world games like *PacManhattan* and *BUG (Big Urban Game)*. As the examples of Red Robot and Zynga illustrate, then, location-based game designers are no longer impervious to the broader market forces of the digital games industry, as they become increasingly recognized by developers and investors as a potentially lucrative business investment.

***Life is Magic*: location-based games and the labor of play**

Not long after heavily investing in their R2 proprietary network and signing up—or acquiring—a number of location-based game design studios, Red Robot released their next major game for iPhone, iPad, and Android, titled *Life is Magic* (2013). It builds on the formula of their 2012 game *Life is Crime*, in which players take on the role of the leader of a criminal gang to commit “virtual crimes” by taking over real estate in their local neighborhood to become “the most notorious criminal where you live.”⁴ In *Life is Magic*, however, the player's local neighborhood appears in the game as a fantasy world inhabited by monsters and characters who provide them with quests, spells, and weapon and armor upgrades. It is perhaps the first location-based game where real, everyday locations are “re-skinned” and rendered by the game's engine as virtual objects: Buildings and houses appear as medieval shops, inns, and towers, while streets and public spaces are depicted as dirt paths and fields. As a result, the game plays much like a standard turn-based fantasy RPG (role-playing game), with the added element that players are interacting with a parallel world that resembles their own, allowing for location-based play.

While *Life is Magic* emulates the design and rhetoric of earlier location-based games, players do not physically interact with the objects, people, and surroundings around them as part of the game. Instead, they engage with them solely through the interface of the game on their device, which consists of a map of their local area rendered through the game's graphics engine. This is also the case for many other location-based gaming apps, including *Life is Crime* and *Shadow Cities*; the latter was one of the first mainstream, popular location-based games released for iPhone (see Schiesel 2011). However, it lasted only three years: the game's sever was closed down late in 2013 and the game was pulled from the Apple Store.⁵ In *Life is Magic*, the player's local region or country appears geographically the same on the game's map as in the “real world,” except that it is

rendered in a cartoonish style and is populated with mountains, forests, and various types of “dungeons” (which players can enter to defeat monsters and level up their character) in place of the usual topography. Major cities also appear as “towers,” which can be captured by challenging the bosses that reside there. In addition to this “regional” level of the map interface, players can also zoom in to their neighborhood (which depicts an area of about four or five city blocks). This level is rendered in more detail: Local shops, buildings and landmarks (complete with their real-world names) serve as the in-game stores and meeting areas where players can acquire quests and items, and information about the game. It always resembles the nearby area the player is located at using GPS information, so if they live outside a town or city they will have to purchase in-game “travel tokens” to take them to a nearby city to be able to access all these features of the game.

Like most RPGs, the goal of *Life is Magic* is to level up your character and earn enough in-game currency that you can acquire new skills and abilities and open up new areas of the game. In the game, this means finding gold which is “dropped” by defeated enemies and is used to purchase new weapons, armor, and healing potions to improve your chances in battle. To upgrade most of your character’s specific skills or spells that are used in battles, though, you need to acquire much rarer “crystals” which are only awarded for more difficult tasks like finishing a quest or defeating the boss of a dungeon; tasks that require a substantial amount of skill and/or time investment. In addition, to enter any of the dungeons required to progress through the game, players need to use “influence,” which is represented by a finite counter that restores slowly over time. Lastly, in the spirit of games like *World of Warcraft*, one can also add other nearby players to one’s “party,” allowing them to help out with difficult fights. While these are other real people who happen to be playing the game in the same neighborhood or city, there is no simultaneous or co-present play involved. Instead, that person’s character simply appears in one’s team and—since battles operate on a turn-based system—one chooses that character’s moves for them when their turn comes, regardless of whether their owner is playing at the same time or not. Likewise, they can use the player’s own character in their game.

Life is Magic builds on the legacy of earlier, experimental location-based games that emerged during the locative art movement by promising to engage players with their local neighborhood or city for playful interaction with one another. But where these games typically involved some level of physical, dynamic, and embodied interaction with the environment around them, *Life is Magic* reduces the location-based element of game play to a banal, abstract interaction between the player and the spaces and people around them. Players do not interact directly with the environment in which they play the game; instead it appears as a virtual map on their phone or tablet screen that merely serves as the template on which the game is played. Players can team up with other nearby players, but they can only do so asynchronously and the only way to communicate with them is by using the game’s inbuilt chat room or by sending trivial “gifts” (usually healing items, weapons, or armor). Players can challenge

each other to real-time battles, but the only purpose of this is scoring points or expanding one's influence in an area; things which are important in the context of the game, but arguably do not create "meaningful" encounters among players outside the virtual world of the game.

In addition to its reductive use of location-based elements in the game, *Life is Magic* operates under a commercial model which encourages players to spend real money on in-game items. While the game is free to download and play, it also allows players to make in-app purchases of items necessary to progress through the game. This feature was first introduced to location-based games in *Shadow Cities*, which also used a "freemium" model to draw players in while deliberately making the game laborious to play without spending real money to level up your character. Similarly, *Life is Magic* is made substantially more difficult and frustrating to play without occasionally spending real money to boost your stock of gold to purchase new healing potions or equipment. Likewise, influence (which is necessary to enter each level of the game's dungeons) is also often depleted after only an hour or so of playing the game and regenerates slowly over time, making it much easier to simply "top it up" for a few dollars in order to keep playing. The most prized items in the game, crystals, are also exceptionally rare; the only way to earn enough to upgrade your character to a reasonable level is by buying them up in large quantities through in-app purchases, unless players are willing to invest hours "grinding" and completing tedious quests to unlock them one at a time. Their cost ranges from AU\$5.49 for 50 crystals to AU\$109.99 (approx. US\$112) for 1,500. Crystals are also necessary to buy "travel tokens" which allow players to warp to other cities around the world; this is essential if the player happens to live in an area with few players or no nearby buildings or landmarks.

As McCrea (2011) points out, the digital distribution model of the app economy has led to a proliferation of cheap, on-the-go mobile games that are often released as free downloads and generate a profit through "microtransactions": a strategy pioneered by social networking games like *FarmVille* (Zynga 2009). As a result, these games are able to generate revenue for their developers by playing on exactly the desire for accomplishment and gratification that makes digital games so compelling. Their players are more often willing to spend real money to send virtual gifts to friends in *FarmVille*, avoid grinding for the materials necessary to progress through the game, or buy power-ups that allow them to pass a particularly challenging level. Microtransactions thus go hand-in-hand with the style of gameplay afforded by mobile games. As McCrea (2012: 393) notes, they are typically played on smartphones whenever their users are able to snatch a moment or two for short but intensive gaming sessions, usually of games like *Angry Birds* or *Jetpack Joyride* (Halfbrick Studios 2011) for casual players.

The incorporation of the "freemium" model into location-based games such as *Life is Magic* and *Shadow Cities* presents these games with a more commercially successful and sustainable revenue stream. But it has also meant that they have been assimilated within the "work as play" ethos that characterizes the contemporary digital games industry. They embody the way in which digital game

play has arguably become a form of increasingly empty, instrumental labor in which players perform repetitive tasks or spend real money to advance in the game, thereby conflating the boundaries between work and play (see Dyer-Witthford and de Peuter 2009; Kücklich 2005; Wark 2007). Dyer-Witthford and de Peuter (2009: 93) argue that

To become a [videogame] player is to plug oneself into a network of techno-human relations, which even as it offers cognitive skills and affective thrills also inserts subjects into a commodity web involving not just the console purchase but that of the subsequent game software, the online subscriptions, the music and video services, and a whole branded identity built around gamer tags, achievement points, and the transfer of avatars, a grid of machinic coordinates engineered to the tolerances of corporate profit.

As location-based games enter into the value chain of the digital games economy through the app market, they too become entangled in this “network of techno-human relations.” In the process, the location-based element of these games, as demonstrated by the gameplay of *Life is Magic*, becomes subordinated to the profit-driven, commercial aspect of the game. Instead of engaging their players with the people and spaces around them, gameplay in *Shadow Cities* and *Life is Magic* takes place entirely at the level of the game’s interface. This interface serves as a net for capturing the labor performed by players—in leveling up their character, progressing through dungeons and acquiring items—and transforming it into a profit for the game’s creators in the form of money spent on in-app purchases, advertising, and users’ data.⁶ This is not to claim that this is a one-way process—undoubtedly players of these games gain a sense of accomplishment and pleasure in the process of playing it. But in contrast to earlier location-based games, where commercial profit was unlikely to impact significantly on gameplay, location-based gaming apps are centered entirely around this commercial logic. They seek to immerse players in the virtual interface of the game and encourage them to spend real money on leveling up their digital avatar, rather than interacting with the physical space in which the game is played.

There are still location-based gaming projects that challenge this commercialization by bringing play into social and physical spaces without being mediated through smartphones and other “closed” devices. A simple example is the web browser game *GeoGuessr*, which places the player in a random location anywhere in the world through Google’s *Street View* interface. They must then explore their surroundings by clicking on the navigational arrows that appear in *Street View* before guessing where they are by clicking on a map of the world; points are awarded based on how close they are to their actual location.⁷ *GeoGuessr* is not strictly location-based in that it does not take into account the player’s location. Nonetheless, the game is a clever inversion of the principle of location-based games: It encourages players to mobilize their knowledge of various cultures, languages, landmarks, and geographies from around the world

to try and guess which country (or even continent) they find themselves in. A more radical example of a recent non-commercial location-based game is *Camover 2013*, which emerged as a response to the growing number of surveillance cameras appearing in Berlin. Participants of the game are awarded points for destroying CCTV cameras around the city and uploading videos of their exploits on the project's website, with bonus points given for especially inventive methods of destruction.⁸

Projects like these illustrate that there still remains a space for location-based games to critique dominant ideologies and assumptions (as well as the laws) of public spaces and everyday urban locales. Nonetheless, the emergence of the app market has brought about a palpable shift in the design of location-based games that is already reshaping the economic structure of the industry and the games currently being produced. On one level, this is a positive development for the creators of these games. It means that they can potentially be exposed to a wider audience of players and generate a greater diversity of engagement with public space through more sophisticated gaming interfaces. But as Red Robot's *R2* network and the growing competition among the various location-based game development studios illustrates, these commercial imperatives have instead begun to push location-based games more toward generic, standardized formats that can be endlessly replicated and reproduced.

As location-based games become increasingly integrated into the mainstream mobile games industry, this becomes the overriding motive of games designed for platforms like the iOS and Android: to produce more sophisticated ways of capturing players' leisure time, money and data at the expense of meaningful interaction with embodied space. But nor does it seem as if this model is necessarily sustainable in the long term. Despite the rhetoric about location-based games being the next "killer app" (Steen 2011), no location-based games have made a significant impact in the mobile games level on the same level as something like *Angry Birds*. And, as mentioned above, *Shadow Cities*—the location-based game app that has received the most critical attention—was closed down after three years. Likewise, as of 2014 it appears that *Life is Magic* has also been closed down; it is no longer available for download on Apple or Google's app stores. The future of location-based games, then, has become entangled within the highly competitive and economically precarious conditions of the app economy that initially catapulted it into the mainstream digital games industry.

Conclusion

In this chapter, I have drawn on the case study of Red Robot Labs' game *Life is Magic*, as well as a range of location-based gaming apps that have been released for the iOS and Android platforms over a number of years, to illustrate the growing commercialization of location-based games in the app economy. Of course, Red Robot is only one location-based game developer currently making games for these platforms, and like any commercial game developer they also have to meet

their investors' and stakeholders' expectations. There also remains the question of whether this process is necessarily a negative development for location-based games; after all, it illustrates a natural progression as location-based games evolve from a niche genre into a recognized, mainstream videogame format. The commercialization of location-based games within the app economy reflects a broader trajectory whereby locative media technologies—once the purview of artists and amateurs—have been subsumed within the corporate infrastructure of technology giants like Apple and Google. As Varnelis (2011) writes:

Locative media remained the stuff of demos and art-technology festivals until 2008 when Apple released the GPS-enabled iPhone 3G. Paradoxically, the mass realization of locative media seems to have taken the wind out of its sails as an art form. Although courses on writing apps proliferate in art and architecture programmes, the promise of locative media seems to remain just that: a promise.

Early location-based games such as *PacManhattan*, *BotFighters*, and *Mogi* were similarly products of their particular “moment”—one characterized by experimentation with and repurposing of novel location-aware devices and technologies that, at the time, had yet to find any widespread commercial or mainstream application. Today, though, the emergence of location-based gaming apps signals a significant shift from early location-based games' emphasis on engagement with public space, which as I have argued is closely aligned with the politics of the locative art movement. All location-based gaming projects must deal with the unique characteristic of the cities in which they take place, and many require a commercial model to profit from their players. In the case of games like Red Robot's *Life is Magic*, however, these issues become mobilized on a much larger scale. These games uncritically appropriate the concept of location-based gaming within the context of the emerging app economy. They often utilize a “freemium” model that focuses gameplay around purchasing in-game content and accomplishing tasks that fit within the game's commercial logic. In turn, this leads location-based gaming toward a greater degree of commodification which privileges the game's technical interface—as a tool for generating profit—over engagement with other players and lived, embodied spaces through the experience of playing the game. As a result, location-based gaming risks becoming simply another generic form of digital gameplay that reflects the growing trend toward commodification and the conflation of work and play currently taking place within the videogame industry more broadly.

Notes

- 1 For a more detailed taxonomy of the various genres and types of location-based games, see de Souza e Silva and Hjorth 2009; Drakopoulou 2010; Montola *et al.* 2009; von Borries *et al.* 2007.

- 2 Source: https://play.google.com/store/apps/details?id=com.retronyms.android.seeknspell_heavy.
- 3 Source: www.marketwire.com/press-release/red-robot-labs-signs-new-3rd-party-developers-to-its-r2-mobile-geo-gaming-platform-1693385.htm.
- 4 Source: <http://redrobot.com/games/life-is-crime/>.
- 5 Source: <http://massively.joystiq.com/2013/09/20/shadow-cities-closing-down-october-7>.
- 6 Indeed, concerns have already been raised over Google's use of data generated by users of their augmented reality game *Ingress*; see Hodson 2012.
- 7 <http://geoguessr.com/>.
- 8 Source: www.theguardian.com/theguardian/shortcuts/2013/jan/25/game-destroy-cctv-cameras-berlin. For the project's website, visit: <http://camover.noblogs.org/>.

References

- Augé, M. (1995) *Non-Places: Introduction to an Anthropology of Supermodernity* (trans. John Howe), New York, NY: Basic Books.
- Bolish, M. (2012) Convergence: Down the rabbit hole with "The Beast," Film Society Lincoln Center, available at: www.filmlinc.com/blog/entry/convergence-down-the-rabbit-hole-with-the-beast.
- Cheng, C. (2012) The system and self-reference of the app economy: The case of Angry Birds, *Westminster Papers in Communication and Culture*, 9(1): 47–66.
- de Souza e Silva, A. and J. Frith (2012) *Mobile Interfaces in Public Spaces: Locational Privacy, Control, and Urban Sociability*, New York, NY/Abingdon: Routledge.
- de Souza e Silva, A. and L. Hjorth (2009) Playful urban spaces: A historical approach to mobile games, *Simulation & Gaming*, 40(5): 602–625.
- Dias, M. (2012) A machine to see with (and reflect upon): Interview with Blast Theory artists Matt Adams and Nick Tandavanitj, *Liminalities: Journal of Performance Studies* 8(1), available at: <http://liminalities.net/8-1/blast-theory.pdf>.
- Dodson, S. (2002) Ready, aim, text, *Guardian*, August 15, available at: www.guardian.co.uk/technology/2002/aug/15/electronicgoods.games.
- Drakopoulou, S. (2010) A moment of experimentation: Spatial practice and representation of space as narrative elements in location-based games, *Aether: Journal of Media Geography*, 5A: 63–76.
- Dyer-Witheford, N. and G. de Peuter (2009) *Games of Empire: Global Capitalism and Video Games*, Minneapolis, MN: University of Minnesota Press.
- Farman, J. (2012) *Mobile Interface Theory: Embodied Space and Locative Media*, Abingdon: Routledge.
- Feijóo, C. (2012) An exploration of the mobile gaming ecosystem from developers' perspective, in P. Zackariasson and T. L. Wilson (eds.), *The Video Game Industry: Formation, Present State, and Future*, New York, NY: Routledge, pp. 76–95.
- Flanagan, M. (2009) *Critical Play: Radical Game Design*, Cambridge, MA: MIT Press.
- Gordon, E. and de Souza e Silva, A. (2011) *Net Locality: Why Location Matters in a Networked World*, Malden, MA: Blackwell.
- Hemment, D. (2004) *The Locative Dystopia*, Nettime, available at: <http://amsterdam.nettime.org/Lists-Archives/nettime-l-0401/msg00021.html>.
- Hemment, D. (2006) Locative arts, *Leonardo*, 39(4): 348–355.
- Hodson, H. (2012) Why Google's ingress is a data gold mine, *New Scientist*, 2893: 19,

- available at: www.newscientist.com/article/mg21628936.200-why-googles-ingress-game-is-a-data-gold-mine.html.
- Ito, M. (2005) Introduction: Portable, personal, pedestrian, in M. Ito, D. Okabe, and M. Matsuda (eds.), *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Cambridge, MA: MIT Press, pp. 1–18.
- Kerr, A. (2006) *The Business and Culture of Digital Games: Gamework/Gameplay*, London: Sage.
- Kluitenberg, E. (2006) The network of waves: Living and acting in a hybrid space, *Open*, 11: 6–16, available at: www.skor.nl/eng/news/item/open-11-hybrid-space-how-wireless-media-are-mobilizing-public-space?single=1.
- Kücklich, J. (2005) Precarious playbour: Modders and the digital games industry, *Fibreculture Journal*, 5, available at: <http://five.fibreculturejournal.org/fcj-025-precarius-playbour-modders-and-the-digital-games-industry>.
- McCrea, C. (2011) We play in public: The nature and context of portable gaming systems, *Convergence*, 17(4): 389–403.
- Montola, M., J. Stenros, and A. Waern (2009) *Pervasive Games: Theory and Design*, Burlington, MA: Morgan Kaufmann.
- Osborne, B. (2009) *Seek 'n Spell to Soon Launch a GPS-Based iPhone Game*, Geek.com, available at: www.geek.com/articles/mobile/seek-n-spell-to-soon-launch-as-gps-based-iphone-game-20090312/.
- Rheingold, H. (2002) *Smart Mobs: The Next Social Revolution*, Cambridge, MA: MIT Press.
- Schiesel, S. (2011) Brave New World that's as familiar as the machine it fights with, *New York Times*, July 16, available at: www.nytimes.com/2011/07/16/arts/video-games/shadow-cities-a-new-iphone-video-game-review.html.
- Sennett, R. (2002 [1977]), *The Fall of Public Man*, London: Penguin Books.
- Sorkin, M. (1992) Introduction: Variations on a theme park, in M. Sorkin (ed.), *Variations on a Theme Park: The New American City and the End of Public Space*, New York, NY: Hill and Wang, pp. xi–xv.
- Steen, G. (2011) Why location-based gaming is the next killer app, *Mashable*, available at: <http://mashable.com/2011/07/24/location-based-gaming/>.
- Tuters, M. and K. Varnelis (2006) Beyond locative media: Giving shape to the internet of things, *Leonardo*, 39(4): 357–363.
- Varnelis, K. (2011) The rise and fall of new media in the art world, *Frieze*, 141, available at: <http://frieze.com/issue/article/down-the-line>.
- Varnelis, K. and A. Friedberg (2008) Place: The networking of public space, in K. Varnelis (ed.), *Networked Publics*, Cambridge, MA: MIT Press, pp. 15–42.
- Virilio, P. (1997 [1984]) The overexposed city, in N. Leach (ed.), *Rethinking Architecture: A reader in Cultural Theory*, New York, NY: Routledge, pp. 381–390.
- Von Borries, F., S. P. Walz, and M. Bottger (eds.) (2007) *Space Time Play: Computer Games, Architecture and Urbanism: The Next Level*, Basel: Birkhauser.
- Wark, M. (2007) *Gamer Theory*, Cambridge, MA: Harvard University Press.
- Woguem, D. (2012) Red Robot Lab upsizes its location-based gaming platform, R2. *Geo Social Games*, available at: <http://geosocialgames.com/red-robot-lab-upsizes-its-mobile-location-based-gaming-platform-r2>.
- Zeffiro, A. (2012) A location of one's own: A genealogy of locative media, *Convergence: The International Journal of Research into New Media Technologies*, 18(3): 249–266.