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What is This?

Turning life into a game: Foursquare, gamification, and personal mobility

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Abstract

Location-based mobile games (LBMGs) are games that people play while moving through physical spaces. Research has shown that they can impact individuals' experience of their surrounding space and their mobility decisions. Extending that research, this article looks at the gaming elements of the location-based social network (LBSN) Foursquare, analyzing how Foursquare's gaming elements can impact people's mobility decisions. Through an analysis of qualitative interviews, the goal of this study is to draw from the concepts of hybrid space, spatial legibility, and gamification to show how Foursquare's gaming elements can add a playful layer to physical spaces and discuss the impacts of the application designers' goal of turning "life into a game."

Introduction

In March, 2009 the mobile application Foursquare was released at the annual South by Southwest festival. Foursquare is an example of a location-based social network (LBSN). LBSNs are mobile applications that enable people to form social networks and share their location with friends. Unlike other LBSNs like Latitude and Loopt, however, Foursquare also features gaming elements that have played a role in the application's success. Foursquare's user base continues to grow, and the application now has over 25 million users ("About Foursquare," 2012).

Foursquare is designed to "turn life into a game" by rewarding people with mayorships and badges for going to physical locations (Crowley, 2010). By rewarding people for exploring new locations or returning to locations, Foursquare is designed to influence individuals' behaviors by adding digital gaming elements to physical space. The addition

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of digital gaming elements to experiences of physical space makes Foursquare, in part, an example of what is called a location-based mobile game (LBMG). LBMGs are applications that are typically accessed through mobile devices and encourage people to do things like "fight" with other nearby players (Sotamaa, 2002) or collect digital objects strewn throughout the city (Licoppe & Inada, 2006). However, Foursquare differs from other LBMGs because its gaming elements operate as an encouragement for people to engage in non-gaming behaviors like going to bars and historical sites rather than traditional gaming behaviors like hunting for objects or fighting with other players. In this way, Foursquare is an example of gamification (Mckenzie, 2011), in which gaming elements are added to non-gaming context to encourage people to behave in certain ways (Deterding, Dixon, Khaled, & Nacke, 2011).

The goal of this article is to describe and analyze individuals' practices when engaging with Foursquare's gaming elements, with a particular focus on how people may make mobility decisions because of their Foursquare usage. My focus will be on two specific gaming elements: Foursquare's mayorships and badges. Foursquare also features a point system, but I do not cover points in detail for two reasons: (a) my interviews suggested that points had a less significant impact on behaviors than mayorships and badges, and (b) more recent versions of the Foursquare application have de-emphasized the importance of the points leaderboard. Examining the gaming practices of Foursquare users is important because these practices are an example of how people can use mobile technologies to augment their experience of physical space and movement. There is a growing body of literature that examines the impacts of location-based applications on personal mobility, but this study approaches the issue differently by reporting on a qualitative analysis of 36 interviews performed with frequent Foursquare users. Other published work, including Humphreys' (2007, 2010) work with Dodgeball users and Licoppe and Inada's (2006, 2009) work with Mogi users, has qualitatively analyzed the impacts of location-based services on individuals' mobility choices. However, Foursquare works differently from these earlier applications by focusing on rewarding people for exploring new locations and also turning locations into objects that can be collected and competed over (Gazzard, 2011). Consequently, this article contributes to the literature on mobile media and mobility in the way it explains through qualitative analysis just what types of behaviors the addition of gaming elements can encourage.

I begin by establishing the conceptual framework I use to analyze my data and frame my discussion section. My conceptual framework consists of two related sections. The first discusses the concepts of hybrid space and spatial legibility. The second examines literature on LBMGs with a specific focus on how these games impact players' mobility. I then discuss the methods I used in this study before moving on to my findings and my discussion. My goal is to build on extant LBMG literature to show that the engagement with location-based gaming elements can shape where people choose to go and why they choose to go there.

Hybrid spaces and legibility

The increasing prevalence of location-based digital information has helped contribute to the proliferation of what de Souza e Silva (2006) calls "hybrid spaces." Hybrid spaces

are spaces that merge social connections, digital information, and physical space. As de Souza e Silva (2006) writes, "The possibility of an 'always-on' connection when one moves through a city transforms our experience of space by enfolding remote contexts inside the present context" (de Souza e Silva, 2006, p. 262). The use of location-aware mobile applications like Foursquare shows a concrete example of hybrid space because they enfold the context of the digital within the context of the physical, and a person's physical location determines the information one is able to access (de Souza e Silva & Sutko, 2011). This shows that in hybrid spaces, physical location is key. Physical location has always played a role in mobile communication, especially regarding infrastructural concerns that dictate whether or not someone can even get a cell signal. However, as long as someone could maintain a signal, the space from which they send a text message or make a call does not often significantly shape that message. An SMS reads the same whether it is sent from New York City or London. In hybrid spaces, if someone pulls up a list of places to check in to on Foursquare or nearby restaurants on Yelp, the list they see is determined by their surroundings (de Souza e Silva & Sutko, 2011). The ways in which information shifts as one moves from location to location is one of the key elements that change when the spaces people move through become hybrid spaces.

De Souza e Silva's concept of hybrid spaces is important for this analysis of Foursquare for multiple reasons. For one, her concept views the digital and physical as interconnected rather than separate, which is important for understanding the ludic layer of Foursquare's gaming information that I discuss in more detail in the next section. In addition, Foursquare is a location-based social network (LBSN), and de Souza e Silva and Frith (2010) argue that with LBSNs the "formation of the networks occur in hybrid spaces" (p. 491) that can potentially impact individuals' personal mobility.

A related concept that further details how information in hybrid spaces can impact mobility and experiences of physical space is the concept of spatial legibility. Writing about legibility and urban design, Montgomery (1998) defines legibility as "the degree to which the different elements of the city (defined as paths, edges, districts, nodes and landmarks) are organized into a coherent and recognizable pattern" (p. 100). This recognizable pattern is important for all spaces, and one of the uses of location-aware mobile technologies is to make those patterns more visible and easier to navigate. In other words, the "relevance of legibility lies primarily in the way that digital technologies can render the everyday world legible in new ways" by "making the invisible visible" (Dourish & Bell, 2011, pp. 193, 195).

In hybrid spaces, the addition of digital information means that spaces can be revealed to people in new ways. Brewer and Dourish (2008) note that the legibility of spaces concerns how they "can be read and understood as conveying particular sorts of messages" (p. 971), and they argue that mobile technologies can increase the legibility of spaces because they can reveal new messages, patterns, and types of knowledge about a space. In other words, mobile technologies can alter the way spaces are seen through the ways individuals access new types of digital spatial information. As Dourish and Bell (2011) write, "Information technologies, particularly those of mobile networking and positioning, become a new lens through which the spatialities of urban space can be viewed" (p. 120), and those new spatialities include the ludic layer of physical spaces that are accessed by people who use the variety of LBMGs that I discuss in the next section.

Location-based mobile games (LBMGs)

LBMGs are games that take place in public spaces and are typically accessed through location-aware mobile devices. Likely the first LBMG was Botfighters, which worked through SMS (Sotamaa, 2002), but most later LBMGs combined GPS capabilities and mobile internet connections. Research on LBMGs is fairly extensive, containing analyses of specific games like Mogi (Licoppe & Guillot, 2006; Licoppe & Inada, 2006, 2009) and Alien Revolt (de Souza e Silva, 2008), educational uses of LBMGs (de Souza e Silva & Sutko, 2009), and theoretical and historical approaches to understanding LBMGs (de Souza e Silva, 2009; de Souza e Silva & Hjorth, 2009; de Souza e Silva & Sutko, 2008; Gazzard, 2011; Hjorth, 2011a; Richardson, 2010).

Much of this research suggests that the gaming elements of LBMGs can affect how people relate to physical space. Writing about LBMGs, de Souza e Silva and Hjorth (2009) argue that they impart a digital ludic layer over physical space, turning physical spaces into playful spaces. Gazzard (2011) argues that LBMGs and augmented reality are "reworking our understanding of the spaces and places around us" through the ways they encourage players to map information and engage with maps of physical spaces (p. 417), and Hjorth (2011b) discusses "the possibilities for mobile gaming to teach us new ways of experiencing place upon various levels" (p. 357). Finally, in an analysis that closely echoes de Souza e Silva's (2006) discussion of hybrid spaces, Richardson (2011) argues that the ontology of LBMGs complicates the physical/virtual dichotomy in the ways they merge the digital with the physical.

Other research on LBMGs draws from a more qualitative approach. In a series of articles, Licoppe and colleagues (Licoppe & Guillot, 2006; Licoppe & Inada, 2006, 2009) report on a case study of the Japanese LBMG Mogi, and one of these articles shows how the gaming elements can affect the ways players make decisions about their personal mobility (Licoppe & Inada, 2006). In Mogi, players sought out digital objects that were layered throughout Tokyo and competed with other players who also attempted to collect the objects. Licoppe and Inada (2006) report that some players chose not to take public transportation because it would interfere with their internet connection and take them out of the game, choosing alternate paths through the city instead. In addition, a newspaper article discussing the early LBMG Botfighters featured interviews with players who reported going to new parts of the city to hunt down other players ("Mobile killers," 2001, July 15). The act of traveling to new locations specifically because of gameplay closely resembles the behaviors encouraged in Geocaching, popularized in the early 2000s (Gordon, 2009). Geocaching can be thought of as an important predecessor to LBMGs, and Geocaching players are provided with the GPS coordinates of physical objects, and the players then explore new locations to collect the objects to add to their collection.

Foursquare owes a design debt to earlier LBMGs, and particularly important for this article is how some of the research discussed above shows how and why people engaging with this playful, digital layer of information can make different mobility choices. Writing about Foursquare, Gazzard (2011) argues that the "emphasis of Foursquare is on collecting places," which as I discuss, is different from LBMGs like Mogi and Alien Revolt. Foursquare's game elements typically, though not always, focus more on what

are typically non-gaming activities rather than game elements that are outside of individuals' everyday behaviors. In other words, whereas an LBMG like Mogi encourages people to collect digital objects throughout the city, Foursquare rewards people for activities such as going to bars, checking in with friends, and finding a new Mexican restaurant. Even many of the badges that do work similarly to the collecting of digital objects found in LBMGs like Mogi still often focus on people performing mundane activities such as going to certain categories of restaurants or checking in at a University. Unlike the other LBMGs discussed above, Foursquare relies on a model commonly referred to as gamification. Gamification has been defined as the "use of game design elements in non-game contexts" (Deterding, Dixon, et al., 2011, p. 9) and is currently in vogue in design communities (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011). Projects have explored gamification in non-gaming contexts ranging from personal energy consumption ("Joulebug," 2012) to library book returns (Schmidt, 2011). As Mckenzie (2011) writes, "gamification has currently become a hot topic in the area of location-based mobile applications" (n. p.), and Foursquare is one of the most successful examples of such an application.

   Foursquare is an example of gamification because people "play" Foursquare in what are often considered non-gaming contexts. For example, they can win the mayorship of their office or their favorite bar, or they can earn badges for going to certain categories of restaurants. Going to work, a bar, or a restaurant is not often considered a "playful" act, but Foursquare is designed to make these activities playful by rewarding people with mayorships and badges. Through the reward mechanism, the gamification elements of Foursquare are designed to encourage behavior in the real world (Crowley, 2010).

Methods

The data I draw from in this article comes from 36 interviews I performed with frequent Foursquare users. The interviews ranged from 25–90 minutes and covered a number of areas, including sociability, gaming, spatial search, and privacy. The section of my interviews most germane to this article concerned questions I asked my participants about how they use Foursquare's gaming elements and whether they altered their mobility because of the gaming elements. My research pool included 16 women and 20 men. Four of my research participants were college students, and two of my older participants were retired. All of my other participants were employed, with 16 of them being employed in social media/marketing-related positions. My participants all live in the United States, and my participant pool includes individuals from cities in the Northeast (Washington, DC; Boston, MA; New York, NY; Arlington, VA), the Southeast (Raleigh, NC; Chapel Hill, NC; Charlotte, NC; Atlanta, GA; Kennesaw, GA; St. Augustine, FL), the Midwest (Chicago, IL; Cincinnati, OH; Indianapolis, IN), and the Pacific Northwest (Seattle, WA; Portland, OR; Central Washington state). To identify participants, I used a theoretical sampling procedure detailed by Charmaz (2006) in which I targeted individuals who could help me develop a dense understanding of the impacts of Foursquare usage. I targeted people who are frequent users of the application, which I defined as people who had over 100 check-ins and had checked in at least once in the previous three days. I found people by identifying individuals who frequently left tips at locations in Raleigh,

NC; New York City, NY; and Atlanta, GA and contacting them through Twitter. I then asked early participants to refer me to people they knew who could help with my research, which is how I found 14 of my participants. I interviewed my participants face to face when possible, but I also interviewed 17 people using Skype and 3 people using phone with no video. I did not notice an appreciable difference between the face to face and Skype/phone interviews.

Throughout my data collection, I used a grounded theory approach (Charmaz, 2006; Glaser & Strauss, 1967). After I performed a few early interviews, I transcribed the interviews and engaged in an open coding procedure of that early data. I also wrote extensive memos and created holistic vignettes of each of my participants to help me organize my data. The open coding procedure and memo-ing shaped later interviews, and I coded data throughout the data collection process. Throughout the back and forth of interviewing and coding, I organized my data into categories and eventually grouped categories based on thematic similarities. My coding included multiple themes that emerged from my data that focused on issues such as privacy, sociability, spatial search, memory, and gaming. For the purpose of this article, I detail two categories that arose in my data that focus on individuals' experiences with the gaming elements of Foursquare.

My research was also supplemented by three years of participant observation as an active Foursquare user. My personal experiences with the application provided background that shaped the interview questions I asked and my data analysis. I also used my Foursquare account to contact people to participate in my study. In the next section, I focus mostly on my participants' answers, but some of the background I provide about the application is also drawn from my experience as a Foursquare user.

Findings

The following two sections detail the usage practices of my participants. I broke down my analysis into two categories to analyze how my participants' practices were influenced by their engagement with mayorships and badges.

Digital ownership

Every venue that has had someone check in at least twice has a Foursquare mayor. People earn mayorships by being the Foursquare user who has checked in the most times at a venue in the last 60 days. Because mayorships are awarded to whoever has the most check-ins, they often switch hands frequently as more people check in to that venue and Foursquare becomes more popular. Most of my participants were competitive about earning and maintaining certain mayorships. While there is often no actual reward for these mayorships besides prestige, the reward of winning the mayorship affected where my participants chose to go and how frequently they would check in.

Mayorships are a gaming element that rewards repeat visits rather than novelty and exploration. Some of my participants took a great deal of pride in being the mayor of their favorite restaurant, bar, or neighborhood, and when they lose a mayorship they often end up checking in more frequently to retake the mayorship. Most people I interviewed had been using Foursquare for a year and a half or longer, and as early adopters,

many of them were mayors of a large number of locations because not many other people were checking in. As more people began checking in, most of my participants lost many of their mayorships but often still maintained a few mayorships they viewed as important. As the quote below shows, people can also become defensive over mayorships, and they occasionally accuse others of cheating when they feel their mayorship was taken through what they consider "illegitimate" means:

> Molly (28, Raleigh, NC): Ok, for a long time I had a Super Mayor, meaning I was mayor of over 200 places, and this was back when I was unemployed and used to be out all the time. And I got all my mayorships at the time. Then I started working and didn't have time and kept it up for a little bit, but lost a lot of them. And then people, well, I think I've had the Raleigh Times one off and on for 5 or 6 months, and it's the same person who is always after it. I kind of feel like he cheats and just checks in from his office.
> Me: You could check in from your office too, right?
> Molly: Yeah, but I wouldn't do that. I do find though, that I get really competitive about it and go to Raleigh Times a lot. So I was there last night and I'm coming tonight.
> Me: To get your mayorship back?
> Molly: The thing is, if I check in multiple times a day it doesn't count. But … if I go for lunch or something and end up drinking here at night, I'll wait until after midnight so I can check in and have it count for a different day.

The quote above shows that some people do put significant effort into maintaining certain mayorships and that battles over certain locations can be quite intense. Accusations of cheating were fairly common in my interviews, and one participant told me she had engaged in cheating to earn a mayorship at a library:

> Amelia (26, Chapel Hill, North Carolina): I have. I've actually checked in to the library when I was driving by because that was a place where I was really close to being the mayor but I wasn't. And you know, I was driving by and I started checking in because I was so close already. So yeah, I do really care about becoming the mayor.

Most of the time, however, competitions over mayorships were friendly and spurred my participants to go back to that location and use Foursquare more frequently. For example, Dolores (29, Washington, DC) lost the mayorship to her neighborhood and it caused her to check in more frequently. She then lost the mayorship to two of her favorite locations and went out of her way to go back to those locations to retake the mayorships. Sam (62, Central Washington State) would choose a location at which he is competing for a mayorship if he was undecided among a few different locations. Even in situations in which my participants had only been to a location once, the reward of winning a mayorship could encourage them to return. For example, Danny (26, Raleigh, NC) returned to a Pho restaurant the next day because he received an alert that he was only one check-in away from winning the mayorship. No one had ever checked in to the Pho restaurant, so he was

not competing with other Foursquare users, but he was still able to add the mayorship as an award on his Foursquare profile and that reward influenced his behavior.

In these examples, the pursuit of mayorships affected how my participants chose where to go. While "mayorship wars" had an effect on how my participants viewed their surrounding space and made mobility decisions, mayorship competitions are also often social as well. Because mayorships reward repeat visits, my participants often knew whom they competed with for the mayorship. For example, two people competing over a local bar will likely have met each other because they are both regulars at that bar. Leo (34, Atlanta, GA) frequented bars in his neighborhood and the people he competed with over mayorships are all his friends who live in that neighborhood and go to those bars. These mayorship wars become a friendly competition among friends and reward repeat visits to a location. Leo and his friends often returned to a specific bar primarily because they were competing over a mayorship.

In conclusion, the pursuit of mayorships did affect my participants' mobility choices by encouraging them to return to locations at which they had already been. This encouraged my participants to become familiar faces at nearby establishments rather than explore new locations to add to their list of Foursquare check-ins. In the next category, I examine Foursquare badges, which are a Foursquare game element that often had the opposite impact on my participants' mobility choices.

Rewards for mobility

The first time people use Foursquare they immediately receive a Newbie badge celebrating their first check-in. They then receive badges celebrating their 10th check-in, their 25th check-in, and their 50th check-in. These badges are designed as an inducement to encourage people to use Foursquare. Even though people do not win anything concrete, my data shows that earning the badge is often enough reward in itself to encourage behaviors.

Many badges require people to go to certain categories of locations. For example, people earn the Greasy Spoon badge after they check in to five different diners, the Jet Setter badge for five check-ins at airports, and so on.[1] Other badges are city-specific, meaning they can only be earned when people go to certain locations in specific cities or at specific events. For example, there are many badges that can only be earned at the SxSW festival in Austin, Texas.

My data suggests that my participants often engaged in specific behaviors to earn these badges. My participants expressed a fondness for earning badges, mostly because of the enjoyment that comes from collecting and performing tasks. Because of the prize of the badge, many of my participants would go well out of their way to explore just to get badges, especially while traveling somewhere new. This is what is called a "badge hunt," and it involves wandering around a city to check in at locations required to get that city-specific badge. For example, one of my participants detailed a night he spent wandering around San Francisco to find three bars he needed to check in to earn the Socialite badge, which can only be earned by going to three marked venues in New York or San Francisco. Another participant spent a week in Pennsylvania visiting his girlfriend's family and ended up driving two hours to a small town that was offering a Pennsylvania

tourism badge. As these examples and the quote below show, the desire to collect badges can play a significant role in encouraging users to explore new places:

> Mike (36, New York City, NY) I was in Chicago on business and I got off early the second day. My coworker and I decided to try and get as many badges as we could. We went all over Chicago just to get badges, and it was fun and a cool way to find places I'd never go to. I think we ended up getting like six badges in a couple hours.

Others participants rely heavily on branded badge campaigns as a way to explore a city to collect badges. Branded badges are badges sponsored and designed by specific companies or institutions. For example, New York's Museum of Modern Art provides badges to people who visit certain galleries, and multiple participants told me stories of wandering through New York City to find those galleries and earn the badge. The History Channel, Bravo, MTV, and a number of other television networks also offer badges people can collect by going to certain locations. The desire to follow Foursquare accounts such as the History Channel and Brio and go on badge hunts was the main reason one of my participants decided to use Foursquare in the first place. He is a history buff and told me that branded badge campaigns have often determined where he goes when he visits someplace new. In the quote below, he recounts one of these instances:

> Leo (34, Atlanta, GA): Now I will say that because of branded campaigns that involve badges I have made a modified behavioral pattern. One example would be when I was, it was during black history month in February, and there was a brand new badge around that, I'm pretty sure Brio sponsored it, or something like that. So I pulled up their page and saw that they had tips in Atlanta or something like that, and I was driving through Birmingham, and I hadn't earned the badge yet, and there were a few places nearby I could go to on that list, so I pulled up Foursquare, found them, and ended up going to a specific museum and park, pulling off the highway, and I got the badge. It changed my way through town and I went to this museum that I never would have thought of going to driving through that town. But that branded piece of information changed my behavior, right? I have a lot of different examples of things like that. The History channel had a tip when they first rolled out their original historian US based badge that I listed to as well.

The examples of people changing their mobility patterns to go out of their way to collect badges show how the desire to collect can influence behavior. While it is possible to collect badges without actually traveling to locations (Halegoua, Leavitt, & Gray, 2012), for my participants the delight comes from actually exploring a physical space to earn a badge and being able to go back and look where they earned the badge.

Ultimately, the badges people earn may come as a surprise, or they may be consciously sought after. When they are sought after, they become an example of how people can be encouraged to explore their surrounding space in pursuit of earning a badge. By turning the act of moving from location to location into an act of collecting, the application can turn a night on the town into a game with a goal to achieve. In this way, the design of the application allows people to see the spaces of the city as a game board to move across, with only certain locations as the pieces one needs to "win" the game and earn the badge.

Discussion

Mobile technologies have often been viewed as detracting from the importance of physical space (Bull, 2000; Gergen, 2002). However, location-based services that use the mobile internet and location-aware capabilities are designed around the importance of physical space (de Souza e Silva & Frith, 2012). As my data analysis shows, people can use location-based applications like Foursquare to alter how they interact with their surrounding space. These applications do so because individuals interact with a digital layer of information that, in a sense, becomes inseparable from their experience of the physical, contributing to the formation of hybrid spaces (de Souza e Silva, 2006).

Foursquare's gaming elements are an example of the digital information that contributes to hybrid spaces. The gaming information becomes a ludic layer overlaid on the physical space that can turn going to a bar or searching for a historic site into a playful experience, similar to how LBMGs like Mogi or Alien Revolt could turn movement through the city into a type of play (de Souza e Silva & Hjorth, 2009). As Gazzard (2011) argues and as my data suggest, interactions with the gaming elements of Foursquare are not so much about the entirety of physical space. In a sense, for the Foursquare user the paths between locations do not matter all that much. What matters is the end destination, which becomes a mayorship to be competed over or a badge to collect.

As I showed in the previous section, the merging of digital gaming information with physical location in these hybrid spaces can impact individuals' mobility decisions. This occurs because of the ways that the ludic layer of Foursquare can impact spatial legibility. Spatial legibility refers to the different ways that spaces can be "read," and as Dourish and Bell (2011) note, location-aware mobile technologies can become a lens through which individuals "read" their surrounding space. In my interview data, the gaming elements discussed above did impact legibility. For many of the people I interviewed, the addition of gaming elements to their experience of space did alter the lens through which they viewed their surroundings. A local bar can be read as a prize to be won; a new Mexican restaurant can become a location to be collected to achieve the Level 2 Hot Tamale badge; a nearby town can be the last piece one needs to collect to earn a tourism badge. As Dourish and Bell (2011) write, the "relevance of legibility lies primarily in the way that digital technologies can render the everyday world legible in new ways" (p. 193). My data show that Foursquare can render the everyday world legible in new ways, primarily by rendering physical locations as digital objects to be collected and competed over.

As I discussed earlier, Licoppe and Inada's (2006) research on Mogi has shown how players can make choices about where to go based on their interactions with the game. The same has been shown to be true of Botfighters and Geocaching (Gordon, 2009; Sotamaa, 2002). As de Souza e Silva and Hjorth (2009) have argued, these LBMGs complicate the traditional gaming concept of the "magic circle" because they blur the lines between when individuals are interacting in a gaming environment and when they are interacting in a "serious" environment. Foursquare also represents the dissolution of the traditional separation between "playful" and "serious" because the gamification of the application rewards people for activities like going to bars and exploring historical sites. The ways in which my participants reported altering their mobility and

engaging with these gaming elements has implications for location-based social media in general. The addition of gamification elements can not only encourage people to travel to certain locations, it can also spur and reward usage. This is an important point because, unlike LBMGs like Botfighters or Geocaching, Foursquare is also a social networking application people use to share their location with friends. By adding gaming elements to a social networking environment, many of Foursquare's gaming rewards can potentially become an integral part of how people perform identity through the application. For example, the desire to collect badges and mayorships can also be thought of as a desire to project a certain image to others (de Souza e Silva & Frith, 2012). In the way the application draws from gamification to "turn life into a game," Foursquare can both encourage mobility and provide new ways to construct identity through location-sharing.

Gamification is a growing area of research (Deterding, Dixon, et al., 2011; Mckenzie, 2011) that certainly has its detractors (Bogost, 2011). What my research suggests is that at least in the context of location-based mobile gaming, adding gamification elements to everyday life can encourage behaviors in the physical world. Almost all of my research participants had made decisions at some point about where to go based on the gamification elements in Foursquare. Those decisions often seemed rather minor (e.g. going to one bar over another to win a mayorship or choosing a Barbecue restaurant to earn a badge), but it is still important to note that the addition of this digital, ludic information to experiences of physical space can affect not only how individuals see their surrounding space but also how they choose to navigate it. Of course, as de Souza e Silva and Frith (2012; Frith, 2012) argue, many of the practices encouraged by applications like Foursquare are geared towards turning hybrid spaces into spaces of consumption. As I explained in my findings section, most of the mayorships my participants competed over were attached to commercial locations. The encouragement to return to these locations can be viewed as using the digital layer of hybrid spaces to encourage consumption, which is made even clearer when locations offer special discounts to Foursquare mayors. The branded badges I discussed that focused on historical sites still represent commercial interests. In addition, Foursquare also shows how consumption plays a role in identity management in interesting ways. For example, Danny added a Pho restaurant to his list of mayorships, which broadcasts a certain type of culinary consumption to the rest of his Foursquare network. Others, like Amelia, fought to earn the mayorship to a university library, which broadcasts a different form of identity management through the reward of a mayorship. While encouraging people to check in to a library or historical site may be viewed as significantly different from encouraging people to check in to a bar or restaurant, my data shows that these types of gamification elements can be used for prosocial or consumptive encouragements. Consequently, research on gamification and mobile applications must be careful in analyzing the types of behaviors the application encourages.

Finally, it is important to note that gamification elements in Foursquare are ultimately designed to encourage people to check in and provide Foursquare with more data the designers can use as a revenue stream. For example, Foursquare has begun to market itself as a spatial search application, and its spatial search model is based on harvesting people's personal data. Gazzard (2011) writes that this commercialization "removes

some of the playful qualities of the platform, and instead embeds it into a global marketing tool, questioning the concept of Foursquare as a mobile gaming application" (p. 410). Gazzard's criticism is similar to criticism from the locative media art community that attacked certain artists for using commercial sponsorship in their work (Galloway, 2009). While it is important to remain critical of how mobile applications encourage use as a way to monetize the product, I believe it is also important to not position "global marketing tool" and "mobile gaming application" as mutually exclusive positions. To limit the idea of a mobile game to non-commercial applications is to basically limit the reach of mobile gaming to people who participate in experimental, art-based gaming projects that typically only take place in large cities. We should certainly remain critical of how mobile applications make money off people who use their products, but we must do so in a way that recognizes that commercial products can be valuable objects of analysis from a mobile communication perspective.

Conclusion

This article drew from a conceptual framework that involved hybrid spaces, spatial legibility, and location-based mobile gaming to analyze the usage practices of people who interact with Foursquare's gamification elements. I showed through an analysis of 36 interviews with frequent Foursquare users that the decision to pursue mayorships and badges can impact how individuals relate to their surrounding spaces and make decisions about where to go. The pursuit of these elements can turn everyday activities into a playful experience.

While this analysis focused on a specific mobile application, my findings may also apply outside of the context of Foursquare. With the increasing adoption of smartphone technology, there is a growing number of mobile applications that use mobile gaming elements. Many of these applications, such as MyTown and Shadow Cities, are LBMGs that are somewhat similar to LBMGs like Mogi. Other mobile applications, such as Joulebug, instead add gaming elements to various non-gaming contexts. Future research should explore how the gaming elements of a variety of mobile applications can be used to influence behaviors, and research should also examine how mobile gaming may be used differently by different populations. As research has shown (Massey, 1994), personal mobility often implicates issues of gender. Gender becomes particularly important when examining how women may use location-based social media differently because of issues of privacy and surveillance. While my data did not reveal significant differences between how women and men interacted with Foursquare's gaming elements, I did find that women did develop certain privacy tactics, such as only checking in when leaving a location, that let them interact with Foursquare as a game while maintaining a sense of privacy. Future research should examine this issue in more depth and possibly do comparative analyses of how gendered mobility affects mobile gaming. With the increasing adoption of mobile applications, it will become more and more important to understand how the "life as a game" dynamics actually play out in user practices. By analyzing how Foursquare impacts individuals' mobility choices, this article was a step in that direction and contributes to the growing body of academic research on the potential social impacts of location-based mobile applications.

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Note

1. For a full list of the badges that can be earned on Foursquare, go to http://www.4squarebadges. com/Foursquarebadge-list/

References

About Foursquare. (2012). *Foursquare*. Retrieved from https://foursquare.com/about/

Bogost, I. (2011). Gamification is bullshit. *The Atlantic*. Retrieved from http://www.theatlantic. com/technology/archive/2011/08/gamification-is-bullshit/243338/

Brewer, J., & Dourish, P. (2008). Storied spaces: Cultural accounts of mobility, technology, and environmental knowing. *International Journal of Human-Computer Studies*, *66*(12), 963–976. doi: 10.1016/j.ijhcs.2008.03.003

Bull, M. (2000). *Sounding out the city: Personal stereos and the management of everyday life*. Oxford, UK: Berg.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London, UK: Sage Publications.

Crowley, D. (2010). Interview with Dennis Crowley of Foursquare – turning life into a game. *Intruders-Inside Innovation*. Retrieved from http://intruders.tv/en-tech/interview-with-dennis-crowley-of-foursquare-turning-life-into-a-game/

de Souza e Silva, A. (2006). From cyber to hybrid: Mobile technologies as interfaces of hybrid spaces. *Space and Culture*, *3*, 261–278. doi: 10.1177/1206331206289022

de Souza e Silva, A. (2008). Alien revolt: A case-study of the first location-based mobile game in Brazil. *IEEE Technology and Society Magazine*, *27*(1), 18–28.

de Souza e Silva, A. (2009). Hybrid reality and location-based gaming: Redefining mobility and game spaces in urban environments. *Simulation & Gaming*, *40*(3), 404–424. doi: 10.1177/1046878108314643

de Souza e Silva, A., & Frith, J. (2010). Locative mobile social networks: Mapping communication and location in urban spaces. *Mobilities*, *5*(4), 485–505. doi: 10.1080/17450101.2010.510332

de Souza e Silva, A., & Frith, J. (2012). *Mobile interfaces in public spaces: Locational privacy, control and urban sociability*. New York, NY: Routledge.

de Souza e Silva, A., & Hjorth, L. (2009). Playful urban spaces: A historical approach to mobile games. *Simulation and Gaming*, *40*(5), 602–625. doi: 10.1177/1046878109333723

de Souza e Silva, A., & Sutko, D. (2011). Theorizing locative technologies through philosophies of the virtual. *Communication Theory*, *21*(1), 23–42. doi: 10.1111/j.1468–2885.2010.01374.x

de Souza e Silva, A., & Sutko, D. M. (2008). Playing life and living play: How hybrid reality games reframe space, play, and the ordinary. *Critical Studies in Media Communication*, *25*(5), 447–465. doi: 10.1080/15295030802468081

de Souza e Silva, A., & Sutko, D. M. (Eds.). (2009). *Digital cityscapes: Merging digital and urban playspaces*. New York, NY: Peter Lang.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). *From game design elements to gamefulness: Defining "gamification"*. Paper presented at the Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments, Tampere, Finland.

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011). *Gamification. Using game-design elements in non-gaming contexts*. Paper presented at the Proceedings of the 2011

annual conference extended abstracts on Human factors in computing systems, Vancouver, BC, Canada.

Dourish, P., & Bell, G. (2011). *Divining a digital future*. Cambridge, MA: MIT Press.

Frith, J. (2012). Splintered space: The smartphone as the screen to the city. *Mobilities*, *7*(1), 131–149. doi: 10.1080/17450101.2012.631815

Galloway, A. (2009). *A brief history of the future of urban computing and locative media*. Doctor of Philosophy, Carleton University, Ottawa.

Gazzard, A. (2011). Location, location, location: Collecting space and place in mobile media. *Convergence: The International Journal of Research into New Media Technologies, 17*, 405–417. doi: 10.1177/1354856511414344

Gergen, K. (2002). The challenge of absent presence. InJ. Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 227–241). New York, NY: Cambridge University Press.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.

Gordon, E. (2009). Redefining the local: The distinction between located information and local knowledge in location-based games. In A. De Souza e Silva & D. Sutko (Eds.), *Digital cityscapes: Merging digital and urban playspaces* (pp. 21–36). New York: Peter Lang.

Halegoua, G., Leavitt, A., & Gray, M. (2012). *Jumping for fun? Negotiating mobility and the geopolitics of Foursquare*. Paper presented at the Local and Mobile Conference, Raleigh, NC.

Hjorth, L. (2011a). *Games and gaming: An introduction to new media*. New York, NY: Berg.

Hjorth, L. (2011b). Mobile@game cultures: The place of urban mobile gaming. *Convergence: The International Journal of Research into New Media Technologies*, *17*(4), 357–371. doi: 10.1177/1354856511414342

Humphreys, L. (2007). Mobile social networks and social practice: A case study of Dodgeball. *Journal of Computer-Mediated Communication*, *13*(1). Retrieved from http://jcmc.indiana.edu/vol13/issue1/humphreys.html

Humphreys, L. (2010). Mobile social networks and urban public space. *New Media & Society*, *12*, 763–778. doi: 10.1177/1461444809349578

Joulebug. (2012) Retrieved August 15, 2012, from http://joulebug.com/

Licoppe, C., & Guillot, R. (2006). ICTs and the engineering of encounters: A case study of the development of a mobile game based on the geolocation of terminals. In J. Urry & M. Sheller (Eds.), *Mobile technologies of the city* (pp. 152–176). New York: Routledge.

Licoppe, C., & Inada, Y. (2006). Emergent uses of a multiplayer location-aware mobile game: The interactional consequences of mediated encounters. *Mobilities*, *1*(1), 39.

Licoppe, C., & Inada, Y. (2009). Mediated co-proximity and its dangers in a location-aware community: A case of stalking. In A. de Souza e Silva & D. M. Sutko (Eds.), *Digital cityscapes: Merging digital and urban playspaces* (pp. 100–128). New York: Peter Lang.

Massey, D. (1994). *Place, space, and gender*. Minneapolis, MN: University of Minnesota Press.

Mckenzie, G. (2011). *Gamification and location-based services (vision statement for the cognitive engineering for mobile gis workshop)*. Paper presented at the Conference on Computer Science and Information Technology, Bangalore, India.

Mobile killers. (2001, July 15). *Sunday Herald Sun*, p. 89.

Montgomery, J. (1998). Making a city: Urbanity, vitality, and urban design. *Journal of Urban Design*, *3*(1), 93–116. doi: 10.1080/13574809808724418

Richardson, I. (2010). Ludic mobilities: The corporealities of mobile gaming. *Mobilities*, *5*(4), 431–447. doi: 10.1080/17450101.2010.510329

Richardson, I. (2011). The hybrid ontology of mobile gaming. *Convergence: The International Journal of Research into New Media Technologies*, *17*(4), 419–430. doi: 10.1177/1354856511414797

Schmidt, A. (2011). Lemontree, the library game. *Walking Paper*. Retrieved from http://www.walkingpaper.org/4398

Sotamaa, O. (2002). *All the world's a Botfighters stage: Notes on location-based multiuser gaming*. Paper presented at the Computer Games and Digital Cultures Conference, Tampere, Finland.

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