



Available online at www.sciencedirect.com



Computers and Composition

Computers and Composition 37 (2015) 44-54

www.elsevier.com/locate/compcom

Writing space: Examining the potential of location-based composition

Jordan Frith*

University of North Texas Linguistics & Technical Communication 1155 Union Circle #305298 Denton, TX 76203-5017

Abstract

People use location-aware mobile applications to both produce and organize information. As scholars have noted, digital information is increasingly being organized by physical location. This article examines how new forms of location-based writing represent an important development for composition scholars. Increasingly, people use mobile applications to write about locations, and those texts then appear when other people travel to those locations. This form of location-based composition shows the potential of understanding how texts can impact how people experience physical space. To understand these forms of writing, this article develops a theoretical framework for understanding these texts and then historicizes location-based writing by discussing earlier forms of locative media art. The article then examines the location-based texts found in the mobile application Foursquare to show that instructors can use mobile applications to teach students about attaching texts to the physical places they describe. This article ultimately argues that location-based texts represent a new form of text, a form of text that should be taught in the composition classroom.

© 2015 Elsevier Inc. All rights reserved.

Keywords: Mobile phones; Foursquare; Mobile composition; New media; Location-based services

1. Writing place through mobile composition

Early writing about the Internet often suggested that the digital would overwhelm the physical. A famous MCI commercial discussed the death of distance (Cocca, 2006), Nicholas Negroponte (1995) wrote of bits replacing atoms, and others wrote of the Internet replacing the need for physical movement (Kellerman, 2006). It is now more than 20 years since the development of the World Wide Web, however, and most of us still travel to work, see people face-to-face, and physically travel to visit places. Rather than replace the importance of the physical world, the digital has instead merged with the physical. Increasingly, the digital information we access is organized by physical location, whether on digital maps or through various mobile interfaces. This article discusses how this intertwining of the physical and digital can impact composition by examining a relatively new type of writing: geotagging.

Geotagging refers to pieces of digital information embedded with geographical information that can then be placed on a map of a physical space. People who search for locations on applications like Yelp or check in to locations on applications like Foursquare are presented with those texts, and the texts become a relatively new form of mobile composition that can impact how other people experience a physical space (de Souza e Silva & Frith, 2012). Geotagging

^{*} Tel.: +940 565 4458; fax: +940 369 8652. *E-mail address:* Jordan.Frith@unt.edu

http://dx.doi.org/10.1016/j.compcom.2015.06.001 8755-4615/© 2015 Elsevier Inc. All rights reserved.

45

is not limited to written texts. Pretty much any piece of digital information can be geotagged. For example, many mobile phone cameras include locational metadata in pictures, allowing people to map the locations at which the pictures were taken.

Although scholars have begun exploring potential impacts of location-based writing, mostly through text messaging (Benedeck, 2006; Comas-Quinn, Mardomingo, & Valentine, 2009) or locative media art pieces (Løvlie, 2011; Tuters & Varnellis, 2006), a significant gap remains in the literature. Namely, most projects—such as Anders Sundnes Løvlie's (2011), Christopher Schmidt's (2011), and Anders Fagerjord's (2011)—focus on specialized software and specific in-class assignments. However, in the last half decade, commercial applications have adopted many of the location-based composition elements present in earlier art projects and have now enabled people to more easily contribute to the annotation of physical space. As more and more people adopt location-based services that enable new composition practices, it is important for composition scholars to begin thinking through both how to theorize this new type of writing and how to incorporate it in the writing classroom. This article takes a step in that direction by focusing not on specialized projects, but rather on the types of writing found in the popular mobile application Foursquare.

To better analyze and understand location-based composition practices, this article takes an interdisciplinary approach that draws from media studies, mobile communication literature, composition scholarship, and locative media art. I begin by describing the case study I draw from in this article: an analysis of the mobile application Foursquare, which is a mobile application that now has more than 55 million users (Foursquare, 2015). I first describe the application and the qualitative research I have done with Foursquare users and then explain the theoretical framework in which I situate mobile composition: hybrid space and spatial legibility. In this section, I use examples from locative media art to discuss how these concepts relate to composition. I then turn to an analysis of my Foursquare as a case study not to argue that Foursquare is ideal for the types of location-based composition described in this article, but rather to show there are a variety of freely available, usable applications instructors can draw from in the composition classroom. The example of Foursquare's approach to geotagging shows how composition instructors can teach students about how locational metadata opens up new rhetorical possibilities for mobile social media.

2. Explanation of Foursquare and my methodological approach

Foursquare is a popular location-based social network that encourages people to form social networks similarly to how they form networks on sites like Facebook. People then go to physical locations and check in, sharing their location with the rest of their Foursquare friends. Foursquare users have now checked in over 7 billion times, and that number continues to grow (Foursquare, 2015). The application also features gaming elements that enable people to compete over mayorships and earn badges for going to certain locations. Most importantly for this article, Foursquare enables people to annotate physical space through what are called tips. If someone leaves a tip at a location, anyone who checks in to that location will then see the tip on the screen of their mobile device (see Figure 1), and the number of user-generated tips recently passed 70 million (Foursquare, 2015) and is growing faster than other applications like Yelp (Carr, 2013). Foursquare also features branded accounts people follow, and users receive alerts if they are near a location at which one of these accounts has left a tip. As I discuss, the tips represent ways in which people both "read" and "write" space and point to new possibilities of encouraging collaboration in the construction of hybrid spaces.

I use Foursquare as a case study for multiple reasons. First, I have been researching Foursquare for the past three years, so I have experience to draw from when exploring how Foursquare can be used for innovative forms of mobile annotation. My research has included three years of participant observation in which I used the application frequently and took extensive notes on the tips I accessed when I checked into locations. These notes have given me a fuller understanding of the types of tips people leave at locations, and most importantly for this article, they have allowed me to identify examples that suggest ways in which Foursquare can be used in the composition classroom. I supplemented my participant observation with 36 interviews with Foursquare users conducted between June 2011 and November

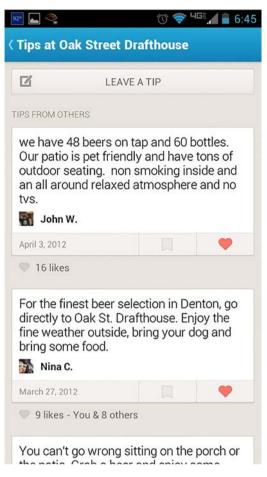


Figure 1. A list of tips at Oak Street Drafthouse in Denton, TX.

2011.¹ For the interview research, I used an iterative grounded theory approach in which I coded data throughout the research and allowed initial codes to shape later interviews.

I drew from theoretical sampling to identify participants. Theoretical sampling is an approach unique to grounded theory, and it involves identifying members of the population who can help the researcher develop a dense theoretical understanding of the phenomenon in question (Charmaz, 2006; Glaser & Strauss, 1967). Consequently, I did not seek out a random or generalizable sample of Foursquare users because I found in early interviews that infrequent users had little to say about the potential social impacts of location-based services. I instead targeted people I defined as frequent Foursquare users (over 100 check ins and had checked in at least once in the previous three days). I began by contacting users who had left tips at locations in Raleigh, and I also used Twitter to identify participants who made their Foursquare check-ins public. I also asked participants to refer me to friends who met my definition of a frequent user, which is how I found 14 of my participants. Although my goal was not to draw from a random, generalizable sample, I did interview people from multiple regions of the country, including 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)..

¹ I received IRB approval for my interviews. I have changed the names of participants for the purpose of this article. The only names that are not changed are of Dwayne and Elaine (4sqlovestory) and Chris (the photographer in Cincinnati). I received explicit permission to use their real names. I chose to use their real names because it would be difficult to describe their Foursquare usage in a way that would not have made them easily identifiable.

My interviews covered a wide range of topics, including coordination practices, privacy concerns, and spatial annotation. In this paper, I use the data I gathered from participants about how they used tips to supplement my analysis. It is important to stress that I do not intend the quotes I use to be representative of all my participants' experiences. Just as I highlight tips that I believe show the potential of Foursquare as a mobile composition tool, I detail interview responses that show concrete examples of people either contributing interesting forms of information or drawing from existing location-based tips to alter their experience of a physical space. Although I use certain examples in this study, it is important to note that 32 of the 36 people I interviewed reported frequently drawing from Foursquare tips while using the application.

The second reason I used Foursquare as a case study is because it is one of the most popular mobile applications that enable location-based composition. Foursquare was released in March 2009 and now has more than 55 million users who have checked in over 7 billion times (Foursquare, 2015). The application's popularity is important for understanding the potential impact of location-based texts. If we think of these texts as a digital layer intertwined with physical space, then it certainly matters how dense that layer is, and Foursquare now features over 70 million user-generated tips (Foursquare, 2015). Because Foursquare has so many users, most places people check into in urban centers and, increasingly, non-urban centers feature multiple texts that share at least cursory experiences others have had with a place. The sheer number of tips found in popular locations presents the opportunity to engage with differing opinions of a place while also identifying interesting ways in which students can contribute to the quickly growing layer of location-based digital information accessed through the application.

Before analyzing the data I gathered from my use of the application and my interviews, I first explain my theoretical framework in the next section. My framework offers a theoretical understanding of how we can understand the ways in which location-based composition can impact experiences of physical space. After detailing my framework, I then describe my data to provide concrete examples of how these theories work in practice.

3. Hybridity and legibility

Applications that draw from the location-aware capabilities of mobile phones are called location-based services (LBS). The information LBS draw from includes locational metadata that allows the information to be mapped. As Adriana de Souza e Silva (2006) argued, the increasing prevalence of location-based digital information has helped contribute to the proliferation of what she called *hybrid spaces*. A hybrid space is a space that merges social connections, digital information, and physical space. The use of location-based mobile applications like Foursquare, Yelp, Socialight, or Urbanspoon shows a concrete example of hybrid space because they enfold the context of the digital with the context of the physical, and people's physical location determines the information they are able to access (de Souza e Silva & Sutko, 2011). The enfolding of the digital and physical shows that in hybrid spaces physical location is key, which is a marked difference between hybrid spaces and the ways people related to space with earlier mobile technologies like the Walkman and the iPod. With an iPod, the song people play does not depend on where they are located physically; the same applies to text messages or a voice calls.

Hybrid space was not the first concept that addressed how the merging of digital and physical information could affect how people relate to space. de Souza e Silva differentiated her concept from Lev Manovich's (2006) concept of *augmented space* and Paul Milgram and Herman Colquhoun's (1999) concept of *mixed reality*. Both of these concepts represented the merging of physical space and digital information, but unlike hybrid spaces, they did not feature the social as an important factor and so were not as pertinent to my analysis of socially generated location-based texts. In hybrid spaces, people often connect with one another by producing their own content. Consequently, people using mobile applications like Foursquare or Socialight move through hybrid spaces because they can produce information and access information created by other users (Humphreys & Liao, 2011). This differentiates these social applications from locative media art pieces such as Janet Cardiff's (2005) Audio Walks; Teri Rueb's (2005) *Itinerant*; and Jeff Knowlton, Naomi Spellman, and Jeremy Hight's (n.d.) *34N 118W* that make people go to certain locations to follow a narrative designed by the artists. These art pieces were important predecessors to today's mobile applications, but they did not contribute to the creation of hybrid spaces because the location-based narratives people follow were designed solely by artists and could not be altered or contributed to by people participating in the projects.

The social is key here because it signals a shift in how people use mobile interfaces to negotiate space by partially democratizing both consumption and production. Through popular mobile applications like Foursquare or more participatory locative media art projects such as *Rider Spoke* (Blast Theory, 2015) and *Urban Tapestries* (Proboscis, 2005) that encourage participants to upload personal experiences, people are able to contribute to the information that makes up hybrid spaces. For the person using the application, the information is part of the experience of that space, refuting the imagined cyberspace/physical space dichotomy (Lemos, 2010). Just as someone may use graffiti to "mark" a space, people can now contribute geotagged texts that remain embedded in that physical location and accessible to other people using the same mobile application (Humphreys & Liao, 2011; Løvlie, 2011).

The *textopia* project Løvlie (2011) wrote about in *Computers and Composition* is an example of how hybrid spaces relate to composition. The *textopia* project was a locative literary reader that asked participants—both amateur and professional writers—to upload texts to a wiki-based map. People could then experience the texts as they moved through the locations to which texts were attached. Løvlie called this a "new form of text" (2011, p. 247), a form of text that was spatially embedded and intended to both shift how people understood the spaces they moved through and the texts they composed. People who participated in *textopia* moved through a "real world augmented with a textual layer" (2011, p. 246) and could participate in the creation of that textual layer by contributing texts to the project. *textopia* clearly showed why the concept of hybrid space should matter for composition scholars. In projects such as *textopia*, people interacted simultaneously with the physical, digital, and social, and the digital and social were comprised of texts.

These hybrid spaces created through projects such as *textopia* also contribute to new ways in which surrounding space can be made legible, an important point for understanding how location-based composition can impact how people relate to their surrounding space. Writing about legibility and urban design, John Montgomery (1998) defined 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).

Joanna Brewer and Paul Dourish (2008) noted that the legibility of spaces concerns how they "can be read and understood as conveying particular sorts of messages" (p. 971), and they argued that mobile technologies could increase the legibility of spaces because the technologies could reveal new messages, patterns, and types of knowledge about a space. For example, tips left through Foursquare or other mobile annotation applications like Yelp increase legibility by providing a new way in which information about a location can be revealed.

Building on this idea, de Souza e Silva and Jordan Frith (2014) argued that "the act of embedding location-based information leads to a new way of narrating urban spaces" (p. 42). They argued that while there have always been informational markers in physical space, "when people start contributing to create the information that is attached to locations, they actively create the links among these locations... people are then transformed from readers into writers of urban spaces" (2014, p. 45). In other words, they are able to contribute to spatial legibility by uploading texts that can alter how others "read" that space. The concept of "writing" and "reading" urban space closely resembles Jason Farman's (2012) arguments about experiences of embodiment when using location-aware technologies and points to the importance of these applications from a composition perspective. People are increasingly able to contribute texts that play a significant role in how hybrid spaces are experienced and how spaces reveal themselves to people.

Both hybrid space and spatial legibility as previously discussed focus on the idea that digital information has become intertwined with physical space, enabling new ways for people to construct experiences of physical spaces. The layering of information in physical space is not new. Many of our physical spaces are filled with different types of information, ranging from street signs to bumper stickers on parked cars. However, what makes these forms of location-based composition a new type of text is the ability for people to permanently contribute to the layers of information present in these physical spaces. The mobile interface becomes a screen through which people gather information about the spaces through which they move, and because these spaces are hybrid and filled with socially produced information, people have new possibilities to add to the social construction of physical space. This layering of the digital, physical, and social relates directly back to composition because so much of this information is textual. People "write" these spaces in new ways and draw from new rhetorical potentials of these spatial texts to shape experiences of hybrid spaces.

Location-based composition, however, should be theorized as a new form of text not only because it is participatory but also because it can encourage us to rethink the possibilities of mobile media. Mobile media, ranging from the book to the iPod, typically encourages individualistic behavior that has often been viewed as distracting people from their physical surroundings (de Souza e Silva & Frith, 2012). Someone reading a book typically does not share that book with other people, nor does the narrative of the novel depend upon the physical location in which it is read.

49

Location-based composition, on the other hand, allows us to move past the view of mobile media as individualistic and distracting. Through the creation of hybrid spaces, people interact with texts produced by other people who have also moved through that physical space, and importantly, the texts often only makes sense when tied to the physical location. The ways location-based composition opens up new opportunities for composition that can both connect people to others and connect them to their surroundings, in contrast to mobile media forms such as books or newspapers, show why location-based texts open up new rhetorical possibilities for composition scholars.

4. Examples of location-based composition

This section focuses on examples of tips I have identified in my ongoing research on Foursquare. To best categorize these examples, I break my discussion into two separate sections. The first explicitly engages with the types of tips left by other users, particularly focusing on the interesting cases of a photographer in Cincinnati and the 4sqlovestory account. The second section then moves on to Foursquare accounts run by major brands such as The History Channel. I show how The History Channel in particular shows how applications like Foursquare can be used to annotate physical space and affect the ways people view the spaces they move through.

4.1. Tips and the sharing of experience

The majority of Foursquare tips are either some form of a review of a location or advice such as what to order at a restaurant. These tips are not significantly different from what one may find in review applications like Yelp or Urbanspoon. However, merely viewing tips as reviews misses much of the richness that makes up the mobile annotations of Foursquare. For example, my research participants commented on a wide variety of tips they had found useful, ranging from the best places to stand in a music venue to which car on a DC metro line tends to be the last to get crowded. In addition, two of my participants told me they found a place to smoke at an airport by logging into Foursquare and going through the airport's tips, and another participant used Foursquare tips to find the bathroom in the Minneapolis airport where former Senator Larry Craig allegedly solicited a man for sex. Some of these tips were playful, and some were informational in nature, but they all showed how tips people read could work as a digital layer that augmented the information present in a location. They also suggested how these types of composition contributed to the collective annotation of physical space in the ways they made intimate knowledge of a location accessible to other people.

Building on the idea of collectively sharing personal experience and knowledge of a location, the tips my research participants wrote and many of the more interesting tips I noted in my observations often contained information people would have no way of knowing if they did not use Foursquare. For example, the following quote concerned Dolores—a food writer—sharing information she had about restaurants with other Foursquare users:

Me: Ok, what kind of places do you write tips for?

Dolores (29, Washington, DC): Oh... mainly for specific dishes. Uhm... let's see if there's something to avoid, or if there's a particular trick that I learned.

Me: What kind of trick?

Dolores: Like something that's off the menu. There's this restaurant here in DC that has this phenomenal dessert that isn't on the menu. I think other people should know. It's not like a total secret. More of an open secret that those kinds of dishes are on the menu.

In this quote, Dolores discussed writing tips that told people about dishes they were otherwise unlikely to find out about. Other participants reported leaving similar tips. For example, Jed (26, Charlotte) left tips for other vegans about vegan deserts his two favorite restaurants have but did not list on the menu; Claudia made a habit of leaving tips about specialty drinks certain bartenders make that were not advertised. Others left more playful tips at their friends' work, telling people to ask for their friend by name and bring up some personal event. These are all examples of people writing about experiences in a way designed to share information about a location with other Foursquare users. They wrote space as a way to affect how other people read that space, whether they were writing about a secret cake or a friend who worked at a bar.

Another, more exceptional example of one of my participants writing about his experiences to alter the legibility of locations came from Chris, who is an amateur photographer in Cincinnati. Chris created a list of the best places to photograph in Cincinnati that now has hundreds of followers. He used tips to give people who check in detailed instructions about the best angles and times to take photographs at these sites. People following his list of locations to photograph could go to those locations and then rely on his tips as a way to capture images in ways they would likely not have been able to do because they were unfamiliar with that location. As Chris told me, he viewed these tips as "encouraging a different way of seeing," a way of seeing that was inextricably tied to the locations at which the tips were read.

A different example of socially produced spatial annotation is the Foursquare account 4sqlovestory. In the summer of 2010, one of my interview participants—Dwayne—relocated to a suburb of Atlanta. Dwayne had been using Foursquare extensively before his move, and he decided to see if he could contact anyone through Foursquare because he did not know anyone in his new home. To do that, he began friend requesting people who checked in to the gym he went to everyday. On June 20th, 2011 a woman named Elaine accepted his request, and he asked her if she wanted to be Facebook friends so they could chat about the area. She accepted, and they began conversing through Facebook and following each other's check-ins on Foursquare. On July 18th, he saw they were both checked in to the gym and they met in person for the first time. They immediately hit it off and had their first date on July 23. Almost two years later, they are still together.

Dwayne and Elaine each maintain their individual Foursquare accounts, but any time they go somewhere together they also check in on the 4sqlovestory account. The account now has over 2000 followers, and it includes a list of tips anyone can see that works as a spatial history of their relationship (e.g. "Turner Field: [8/28/10] Elaine takes Dwayne to his very first Atlanta Braves baseball game! Talk about strikeouts - Hudson rang up 13 Ks in route to the 12-3 victory over the Marlins! Boy is this stadium beautiful!"). The spatial annotations told the story of their relationship through physical location, pointing to another way in which location-based composition could be used to share experiences of spaces. This example also shows the intimate relationship between physical location and memory and points to potential ways in which these applications can be incorporated in the classroom to encourage people to share experiences in a more collaborative, open project than the more specialized examples of *Urban Tapestries* (Proboscis, 2005) or *Rider Spoke* (Blast Theory, 2015).

These examples show that location-based platforms like Foursquare allow people to share their experiences in new ways, and those experiences can have an effect on how other people "read" a location. Not all tips, however, come from other individual Foursquare users. In my observational data and in my interviews, I found that some of the most popular annotations came from companies that created Foursquare accounts and wrote tips about locations. The next section details branded tips and discusses how my participants used these branded campaigns to explore the city and increase the legibility of locations they visited.

4.2. Branded spaces

The branded campaign that had the most impact on my participants was the History Channel Foursquare account, so I will describe that in detail to give the reader an idea of how these campaigns work. The History Channel has a Foursquare account that people can follow (as of June 2015 the account has 830,770 followers). Because these accounts are listed as "celebrity" accounts, people can follow them like on Twitter without being "friends" with the account. Then, if they check in anywhere at which the account has left a tip (The History Channel account has currently left over 1000 tips) that tip appears as soon as the person checks in. The tips will often suggest other historical sites that are linked to the site to which the person is currently checked in, and they give people historical information about the location and tell them specific things to go find. For example, Foursquare users at the Monument Terrace in Lynchburg, VA who follow the History Channel immediately see the following tip when they check in: "In memory of approx. 1,100 Confederate soldiers buried at UVA; 4 bronze tablets carry the names of soldiers buried at the cemetery with 17 blank spaces on the tablets representing unknown soldiers." The fact that the History Channel has left a tip at a location validates that location as historical in some people's eyes, and some people enjoy following the tips to find things they otherwise would have missed:

Leo (34, Atlanta, GA): The History channel had a tip when they first rolled out their original historian US based badge, they had several places and tips in Atlanta, and one of them was this Magnolia tree at the east in the

middle of the old baseball park in Atlanta, and that tree still exists even though the baseball park is long gone, and I had heard about that thing for a while. But because of that history channel tip, I knew exactly where it was now and had to look it up on Foursquare. I was like, ok, I'll go check it out. I'd been working towards that badge [The official History Channel badge] anyways, and I'd been in Atlanta 20 years and had never actually seen the tree, and so that branded campaign modified my behavior to go do that.

The History Channel is not the only company that uses Foursquare to share information through tips. Another of my research participants—Fitz (31, Raleigh, NC)—followed a number of television networks that left tips telling people about movies or television shows that were shot at specific locations. Josiah (29, New York City, NY) followed MoMA and the *New York Times* to see the tips they left at locations around New York City. There are currently hundreds of brand pages on Foursquare that people follow for specific information, ranging from hyperlocal news information to information about tourism. These accounts share information with people they would not have otherwise had, and just as a close friend's tip means more than a stranger's, a tip from a company one trusts means far more to many people than the average Foursquare tip.

5. Location-based services and the composition classroom

The concept of "writing" space represents what Løvlie (2011) called a "new form of text" (p. 247). As I mentioned earlier, these location-based texts actually have a history that ranges back more than a decade to the early days of locative media art. Importantly, however, the difference between projects like Løvlie's textopia and applications like Foursquare is participation. Writing about the textopia project, Løvlie (2011) pointed out that "The main obstacle has turned out to be participation—not to make participation *possible*, but to actually make it happen" (p. 252). Foursquare has built the participation model already and now has over 55 million users who have checked in over 7 billion times (Foursquare, 2015). Even far outside major metropolitan areas, popular locations feature a variety of tips from a variety of people. These tips, of course, are not evenly distributed amongst all users. While no research exists, it is likely that Foursquare follows something close to the 1% rule of Internet culture that argues few members of virtual communities actually contribute content (Arthur, 2006). For example, as of June 2013 210,818 unique Foursquare users had checked in to the DFW International Airport; however, only 1,663 people had left tips. These numbers suggest that, just like with many other virtual communities, far more people benefit from these types of mobile composition than actually contribute. However, this disparity between lurking and contributing suggests yet another reason to use applications like Foursquare in composition classrooms and encourage students to become active participants in the communities in which they participate. Ultimately, Foursquare is free, usable, and available to anyone who has one of the major smartphone operating systems. Instructors who chose to use an application like Foursquare in the classroom could do so while devoting a minimal amount of time to teaching how to use the application to encourage spatial annotation.

The question remains, however, as to what the benefits are of encouraging students to contribute to the collective annotation of physical space. Discussing this question, Christopher Schmidt (2011) pointed out that these applications that map texts focus "much-needed attention back on the rhetoric of place" (p. 304). Tim Morton (2007) noted that rhetoric used to have a variety of terms for place, but place has gradually lost its position of prominence in the teaching of rhetoric. However, as Eric Gordon and de Souza e Silva (2011) pointed out, the digital information we interact with is increasingly being organized around physical location. People are increasingly annotating physical space and displaying information using mapping interfaces, and many of the Horizon Report's "technologies to watch for" (New Media Consortium, 2012) center around location, including location-based gaming and augmented reality. Consequently, it will be important for composition scholars to begin exploring how to encourage students to begin thinking through the types of spatial writing that are becoming increasingly prominent when interacting with digital media.

Applications like Foursquare, Yelp, Socialight, and many more represent a new form of composition, a new form of location-based rhetoric with the types of potential I examined in the previous section. Encouraging students to engage in projects such as annotating the history of a college campus through geotagging in a way similar to the History Channel Foursquare account, sharing personal memories of places around town, or collectively composing a spatial narrative with their classmates can expose students to new types of writing. As the discussion of my Foursquare interviews shows, people have already begun exploring the interesting types of information with which they can "tag" physical locations. Some of the information, such as the photographer who encouraged different ways of seeing, point to the

potential for innovative ways in which we can use location-based applications to explore the relationships between texts and the places they describe.

As a thought experiment, I want to briefly discuss a simple assignment composition scholars could use in the classroom. The instructor could ask the students to create Foursquare accounts (which is possible without smartphones) or choose to create one account and provide all the students with the login information. The students could then do research about different buildings on the college campus, looking for things like the building date, important events that occurred at the building, interesting stories concerning the building, or a history of the different departments that had been housed there. They could then geotag those pieces of information so that other people who checked in to those buildings would be presented with a brief history of the place. These texts would then become part of the social layer comprising the hybrid space of Foursquare users and also provide students with a deeper understanding of the potentials of location-based composition. Importantly, they would be able to see how these geotagged texts operated differently than if the same information was compiled in a Word document. As Farman (2012) wrote about traditional written histories, "While a document might chronicle a community's history, it simultaneously wrests that history from the group space" (p. 119). Location-based composition, on the other hand, does not divorce the description from the thing being described. The textual description, or history in this example, becomes a part of the thing being described and opens up new rhetorical potential for mobile composition.

Of course, the acknowledgment that location-based texts can alter experiences of places also raises the question of what happens when places feature multiple geotagged texts. Roughly 56% of American adults owned smartphones in June, 2013 (Smith, 2013), and 75% of all smartphone users used some kind of location-based service (Zickuhr, 2012). Some locations now have hundreds of Foursquare tips, which leads to the dense social and digital layers that we will see more and more of in our contemporary hybrid spaces. Instructors using Foursquare can address the issue of multiple texts in a few ways. For one, the way tips are presented on Foursquare is related to the application's social networking function. If I check in to a place, I will immediately see tips left by my Foursquare friends or branded accounts that I follow. These tips are pushed to the front of the tips list, and the way this algorithm works can be important for class assignments because instructors can encourage students to "friend" their classmates, and the class's geotags will become prominent pieces of the social layer of these hybrid spaces. The other way that Foursquare chooses to display some tips ahead of others is through the "like" function. Tips that receive more likes from other users gain prominence, offering students a chance to understand how certain types of text may receive more attention from other Foursquare users. For example, the image below shows tips at DFW International Airport. The first tip was from American Express because I followed the account. The second tip had the most likes of all the tips and would have been displayed first if I did not follow American Express (see Figure 2). By teaching students about how some texts gain prominence while others get pushed out of view, instructors can use examples of location-based composition to point out how the history of places is always polyvocal, but certain voices may dominate others.

After all, all public spaces are rhetorically constructed. As Carole Blair (1999) and others have detailed in the growing body of literature on the rhetoric of place (Dickinson, Blair, & Ott, 2010), it is often people in positions of power who shape how these places are read and experienced (Lefebvre, 1991). By encouraging students to collaboratively construct layers of spatial annotation, we can begin to think through the new ways people can contribute to the rhetorical construction of the spaces through which we move. Doing so will not only encourage students to reflect upon the construction of place, but also give them experience with a new form of digital media writing that will be increasingly important as more and more people adopt smartphone technology and location-based mobile applications.

6. Conclusion

To detail the potential of location-based composition, this article provided a theoretical framework drawn from mobile communication literature and a case study of the popular mobile application Foursquare. While I focused on Foursquare in this article, there are other mobile applications, such as Socialight (Humphreys & Liao, 2011), that also provide platforms for location-based composition. Through an understanding of the theories of hybrid space and spatial legibility, we are better able to understand how these forms of composition represent the merging of digital information and physical space and how they can impact the ways people "read" and "write" physical space. As the Foursquare examples suggested, the ways people "write" space through the application suggest interesting new projects instructors can draw from to teach students about the intimate relationship between texts and the locations they describe.

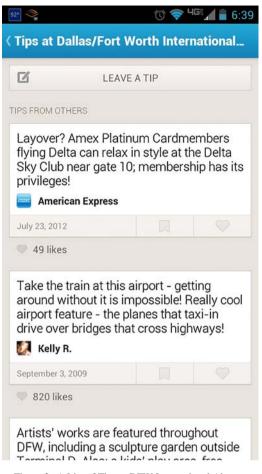


Figure 2. A List of Tips at DFW International Airport.

Jordan Frith is an assistant professor of Linguistics and Technical Communication at the University of North Texas. His research focuses on mobile technologies and social media, with a specific focus on location-based social networks. He is coauthor of the book *Mobile Interfaces in Public Spaces* and has published in a variety of interdisciplinary journals.

References

- Benedeck, Andras. (2006). New vistas of learning in the mobile age. In Kristof Nyiri (Ed.), *Mobile understanding: The epistemology of ubiquitous communication* (pp. 121–132). Vienna, Austria: Passagen Verlag.
- Blair, Carole. (1999). Contemporary U.S. memorial sites as exemplars of rhetoric's materiality. In Jack Selzer, & Sharon Crowley (Eds.), *Rhetorical Bodies* (pp. 16–57). Madison, WI: University of Wisconsin Press.

Blast Theory. (2015). Rider spoke. Retrieved from https://www.blasttheory.co.uk/projects/rider-spoke/

Brewer, Joanna, & Dourish, Paul. (2008). Storied spaces: Cultural accounts of mobility, technology, and environmental knowing. *International Journal of Human-Computer Studies*, 66(12), 963–976.

Cardiff, Janet. (2005). Her long black hair: An audio walk in Central Park. Retrieved from http://phiffer.org/hlbh/

- Carr, Austin (2013). Foursquare's tips growing faster than Yelp's reviews. Fast Company. Retrieved from http://www.fastcompany.com/3015168/ foursquares-tips-growing-faster-than-yelps-reviews
- Cocca, Craig. (2006, June 9). No more there (Anna Paquin commercial from 1994). [Video file]. Retrieved from: http://www.youtube.com/watch?v=nJhRPBJPoO0
- Comas-Quinn, Anna, Mardomingo, Raquel, & Valentine, Chris. (2009). Mobile blogs in language learning: Making the most of informal and situated learning opportunities. *ReCALL*, 21(1), 96–112.

de Souza e Silva, Adriana. (2006). From cyber to hybrid: Mobile technologies as interfaces of hybrid spaces. Space and Culture, 3, 261-278.

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

- de Souza e Silva, Adriana, & Frith, Jordan. (2014). Re-narrating the city through the presentation of location. In Jason Farman (Ed.), *The mobile story: Narrative practices with locative technologies* (pp. 34–50). New York, NY: Routledge.
- de Souza e Silva, Adriana, & Sutko, Dan. (2011). Theorizing locative technologies through philosophies of the virtual. *Communication Theory*, 21(1), 23–42.
- Dickinson, Greg, Blair, Carole, & Ott, Brian. (2010). Places of public memory: The rhetoric of museums and memorials. Tuscaloosa, AL: University of Alabama Press.
- Dourish, Paul, & Bell, Genevieve. (2011). Divining a digital future. Cambridge, MA: MIT Press.
- Foursquare. (2015). About us. Retrieved from https://foursquare.com/about/.
- Fagerjord, Anders. (2011). Between place and interface: Designing situated sound for the iPhone. Computers and Composition, 28(3), 255–263.
- Farman, Jason. (2012). Mobile interface theory. New York, NY: Routledge.
- Gordon, Eric, & de Souza e Silva, Adriana. (2011). *Network locality: How digital networks create a culture of location*. Boston, MA: Blackwell Publishers.
- Humphreys, Lee, & Liao, Tony. (2011). Mobile geotagging: Reexamining our interactions with Urban Space. Journal of Computer Mediated Communication, 16, 407–423.
- Kellerman, Aharon. (2006). Personal mobilities. London, UK: Routledge.
- Knowlton, Jeff; Spellman, Naomi. & Hight, Jeremy. (n.d.). 34 north 118 west: Mining the urban landscape. Retrieved from <u>http://34n118w.net/34N/</u>Lefebvre, Henri. (1991). The Production of Space. Malden, MA: Blackwell Publishers.
- Lemos, Andre. (2010). Post-mass media functions, locative media, and informational territories: New ways of thinking about territory, place, and mobility in contemporary society. *Space and Culture*, 13(4), 403–420.
- Løvlie, Anders Sundnes. (2011). Annotative locative media and G-P-S: Granularity, participation, and serendipity. *Computers and Composition*, 28(3), 246–254.
- Manovich, Lev. (2006). The poetics of augmented space. Visual Communication, 5(2), 219-242.
- Milgram, Paul, & Colquhoun, Herman. (1999). A taxonomy of real and virtual world display integration. In Yuichi Ohta, & Hideyuki Tamura (Eds.), Mixed reality: Merging real and virtual worlds (pp. 5–28). New York, NY: Springer.
- Montgomery, John. (1998). Making a city: Urbanity, vitality, and urban design. Journal of Urban Design, 3(1), 93-116.
- Morton, Tim. (2007). Ecology without nature: Rethinking environmental aesthetics. Cambridge, MA: Harvard University Press.
- Negroponte, Nicholas. (1995). Being digital. New York, NY: Vintage Books.
- New Media Consortium. (2012). *Horizon Report* > 2013 *Higher Education Edition*. Retrieved from <u>http://www.nmc.org/pdf/</u>2013-horizon-report-HE.pdf
- Proboscis. (2005). Urban tapestries. Retrieved from http://research.urbantapestries.net/
- Rueb, Teri. (2005). Itinerant: A site specific sound installation in Boston Common. Retrieved from http://archive.turbulence.org/Works/ itinerant/index.htm
- Schmidt, Christopher. (2011). The new media writer as cartographer. Computers and Composition, 28(4), 303-314.
- Tuters, Marc, & Varnellis, Kazys. (2006). Beyond locative media: Giving shape to the internet of things. Leonardo, 39(4), 357–363.
- Zickuhr, Kathryn. (2012). Three-quarters of smartphone owners use location-based services. *Pew Internet and American Life*. Retrieved from http://www.pewinternet.org/2012/05/11/three-quarters-of-smartphone-owners-use-location-based-services/