

**Expanding Participation in locative media *among and about*
Latinos/as in Austin, Texas**

Cláudia Cristina da Silva

Tese de Doutoramento em Media Digitais

Fevereiro, 2016

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Fevereiro, 2016

Dissertation submitted in accordance with the requirements for the degree of Doctor of Philosophy in Digital Media under scientific supervision of Professor Joseph Straubhaar and Professor António Granado

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DECLARAÇÕES

Declaro que esta Dissertação é o resultado da minha investigação pessoal e independente. O seu conteúdo é original e todas as fontes consultadas estão devidamente mencionadas no texto, nas notas e na bibliografia.

A candidata,

Claudia Cristina da Silva

Lisboa, 5 de fevereiro de 2016

Declaro que esta Dissertação se encontra em condições de ser apreciada pelo júri a designar.

O (A) orientador (a),

Lisboa, 5 de fevereiro de 2016

**For my parents Pedro Augusto da Silva and Maria Auxiliadora da Silva (in memorian),
who gave me the gift of life**

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ABSTRACT

Throughout the last decade, mobile and location-based media has been an emerging subject in a growing and interdisciplinary body of research: ubiquitous computing, pervasive computing, urban studies and media studies, and the fusion of the last two: media geography. Until now, studies of locative media have predominantly focused on the experiences of high-end and techy-savvy users. Companies and designers continue to design applications for those who are already familiar with the online world and have the right skills to take fully advantage of GPS-enabled phones.

This dissertation shifts this focus to investigate participation in the general use of locative media and, specifically, in the production of locative storytelling by focusing on Latino, low-income and low-end smartphone users. Access to mobile technologies is no longer an issue for this group, as they are heavy users of smartphones. In fact, Latinos/as have been considered the audience of the future in regards to digital media in the United States. Furthermore, Latinos/as are leading the trend in mobile ownership, adopting smartphones at a higher rate than any other demographic group.

Despite all this evidence, research about Latinos and locative media is scarce. Within this context, this dissertation addresses the broad question of **“how locative media may foster awareness about local history, of unknown or forgotten information, and social events *among* and *about* Latinos/as in a place that faces historical spatial segregation.”** The goal behind this approach was to investigate how the Latino community that is concentrated in a specific geographical area of Austin is represented spatially to the outside as in Austin, Texas. Hence, this work envisaged bringing outsiders into the reality of Latinos/as living in a historically segregated area mainly to create awareness about the legacy of segregation in Austin. In order to test this approach, two groups of users were selected to practice and reflect on locative media in relation to Latino/as segregated community. The group corresponding to *among* Latinos (*insiders*) are resident immigrant Latino parents in Dove Springs – a neighborhood in Southeast Austin. Specifically, this group consists of participants of the digital inclusion program TechComunidad provided by the non-profit River City Youth Foundation (RCYF) in 2013. The group corresponding to the *about* Latinos (*outsiders*) are undergraduate students of “Mapping Latino Culture in

East Austin” course, offered by the Radio, Television and Film department at The University of Texas at Austin. A pilot study was conducted with Latinas girls through the non-profit Latinitas. The pilot study generated results and lessons that enriched the research, contributing to reframing this work and also to the body of literature about locative media and storytelling.

In regards to participation, it was found that the problem is not smartphone ownership, which had been an issue for earlier locative media projects, but an awareness of their locative capabilities, how to use them, how to gain skills to create content with them, and how to make software easy to use. The findings of this study suggest that there should be more investment in the production of locative content/information, which increases the understanding users have of their locality and enhances their knowledge of the place they live. One recommendation for future empirical research with these communities is to invest in introductory classes on local history and also in fieldtrips in order to increase local knowledge. However, it seems like a romantic idea to think that people will use locative applications solely to learn about the place where they live. In this sense, the findings of this work suggest that locative storytelling applications need to be woven into everyday needs, being integrated into people’s everyday activities, in order to increase their sense of place and belonging.

KEYWORDS: Latinos, low-income, smartphones, locative media, locative storytelling, Austin, Texas, Historypin, college students, girls, Latinitas, River City Youth Foundation

RESUMO

Ao longo da última década, os media móveis baseados em geolocalização têm sido um campo de estudo emergente dentro de um corpo interdisciplinar de pesquisa: computação ubíqua, computação pervasiva, estudos urbanos e estudos de media, ou a fusão dos dois últimos: *media geography*. No entanto, até ao presente momento, os estudos de medias locativos têm sido centrados predominantemente nas experiências de utilizadores de smartphones experientes e com um largo conhecimento sobre media digitais. As empresas de tecnologia e designers continuam a criar aplicativos para utilizadores que já estão familiarizados com o mundo on-line e já possuidores das habilidades requeridas para usufruir dos serviços possibilitados por dispositivos móveis digitais incorporados com GPS, como smartphones e tablets.

Esta tese desvia a atenção desse segmento de pesquisa para investigar a participação no uso geral dos medias locativos e, especificamente, na produção de narrativa locativa, pela comunidade Latina/hispânica, de baixo rendimento, e utilizadores de smartphones *low-end*. Diferente do cenário de há cinco anos atrás, o acesso às tecnologias móveis já não é uma limitação para este grupo demográfico, afinal grande parte da população considerada hispânica já é utilizadora de smartphones. Ainda mais significativo, hispânicos têm sido considerados o público do futuro no que diz respeito ao uso de media digitais nos Estados Unidos, em comparação com a população geral desse país. Além disso, hispânicos têm liderado a aquisição de dispositivos móveis, adotando os smartphones a uma velocidade maior do que qualquer outro grupo demográfico.

Apesar de todas essas evidências, a investigação académica sobre Latinos e medias locativos é escassa. Dentro deste contexto, esta tese tem como pergunta de investigação: Como os media locativos podem promover a conscientização sobre a história local, de informações desconhecidas ou esquecidas, e factos sociais *among* (*entre*) e *among* (*sobre*) hispânicos, em um lugar que enfrenta segregação espacial histórica? O objetivo, por trás desta abordagem, é investigar como a comunidade hispânica, concentrada em uma área geográfica específica de Austin, são representadas espacialmente para o seu exterior, em sua localidade. Assim, este trabalho teve como objetivo empírico trazer residentes de fora desta determinada área geográfica para visitar lugares que tivessem que ver com a realidade cultural e histórica dos hispânicos. Essa área geográfica, a qual me refiro, é historicamente

segregada. O propósito desse deslocamento de pessoas foi criar consciência sobre o legado da segregação em Austin.

A fim de testar esta abordagem, foram selecionados dois grupos de utilizadores para usarem os medias locativos e refletirem sobre esta nova prática mediática, em relação à comunidade hispânica e o legado gerado pela segregação espacial em Austin. O grupo correspondente ao *among* (entre) consiste em imigrantes residentes em um bairro localizado no sudeste de Austin. Especificamente, esse grupo é formado por participantes do programa de inclusão digital TechComunidad fornecido no final de 2013 pela organização sem fins lucrativos River City Youth Foundation (RCYF). O grupo que corresponde ao *about* (outsiders) são de alunos de licenciatura da disciplina "Mapeamento da Cultura Latina no lado Este de Austin", oferecida pelo departamento de Rádio, Televisão e Cinema da Universidade do Texas em Austin. Um estudo piloto também foi realizado com crianças latinas através da organização sem fins lucrativos Latinitas. O estudo piloto gerou resultados e lições que enriqueceram a pesquisa.

No que diz respeito à participação, verificou-se que o problema cada vez mais comum não é o acesso ao smartphone, mas sim a posse de conhecimento sobre as próprias capacidades locativas desse dispositivo. Por exemplo, como um utilizado deve usá-lo ao seu próprio favor, como ganhar habilidades para criar conteúdo através do smartphone, e como usar aplicativos móveis.

Os resultados deste presente estudo sugerem que deve haver mais investimento na produção de conteúdo locativo, porque o processo de criar conteúdos locativos aumenta o entendimento dos utilizadores sobre a sua localidade e melhora o seu conhecimento local sobre o lugar em que vivem.

Uma recomendação para investigações futuras com essas comunidades menos privilegiadas, é investir em aulas introdutórias sobre a história local e também possibilitar visitas a determinados lugares, a fim de aumentar o conhecimento local do grupo. No entanto, parece ser determinismo tecnológico afirmar que as pessoas vão usar aplicativos locativos apenas para aprender sobre o lugar onde vivem. Neste sentido, as conclusões deste trabalho sugerem que aplicativos móveis focados na narrativa sobre lugares precisam levar em consideração as necessidades diárias dos

utilizadores, visando uma integração às atividades cotidianas dos utilizadores de smartphones.

PALAVRAS-CHAVE: Hispânicos, baixo-rendimentos, telemóveis, medias locativos, storytelling locativo, Austin, Texas, estudantes de licenciatura, crianças, River City Youth Foundation, Latinitas

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INTRODUCTION

This dissertation explores the production and effects of locative storytelling practice *among* and *about* Latinos¹/as. The process of crafting stories and geotagging was part of a city case study that aimed to analyze to which extent locative media may foster the reduction of the self-perpetuating cycle of spatial segregation that many Latinos/as face in the United States, particularly in the South. “Locative media refers to any form of media – ranging from in-car GPS displays to RFID tags – that feature location awareness” (Frith, 2015, p.2). By using these location technologies, such as smartphones, users are provided with information about their surroundings and with the opportunity to gain a better understanding about places around them.

With this in mind, this work is a qualitative, exploratory case study of how expanding participation in the production of locative storytelling (with a focus on memory, local history and local knowledge) and the practice of geotagging - the ability to link a word, phrase, or image to a particular physical location using a standard geographic reference system such as GPS - may increase sense of place *among* and *about* Latinos/as, helping them to better integrate in the locality where they live. *Among* refers to locative media produced by Latino/a residents in a neighborhood located in an informal segregated area and *about* refers to locative media produced about segregated Latino areas by college students, who are mostly Latinos/as but not necessarily residents of the traditional segregated area. Both groups, as participants of this study, were encouraged to produce locative storytelling, but while the *among* group were encouraged to write/think about the neighborhood where they live, the *about* group were assigned to visit certain locations, outside their areas of residence, in the historical segregated area, namely East Austin.

These two categories (*among* and *about*) emerged throughout the inductive research process, as this project drew on grounded theory (Glaser & Straus, 1967), and thus used an iterative approach to data collection and analysis. Therefore, those categories emerged during my observations while doing fieldwork. In regards to that, it is also important to clarify that while there is a great deal of research on the Latino/a representation in the media (Beltran, 2002; Berg, 2009), these two categories

¹ Latino and Hispanic are used interchangeably in this dissertation.

presented in this dissertation refer to how the Latino culture is represented spatially in locative media platforms.

As will be explained further, all case studies conducted in this study had an educational component or were carried out in an educational context. Taking this into account, this study approaches locative media through its branches of storytelling (Lens, 2007) and location-based learning, which refers to bringing learning to real contexts in the physical world (see Clough, 2010; Hwang, Shi, & Chu, 2010; FitzGerald, 2012; Martin, 2009).

Within this context, and following the trends in locative media literature (Frith, 2015), the concept that ties all the threads of this dissertation together is the physical place. Place is the source for the locative stories and is the central notion that justifies the use of locative media in this study because I draw on notions that sense of place is linked to the “rooted and health self” (Convery, Corsane, and Davis, 2012, p. 2). This dissertation is grounded in the concept of sense of place, which stems from the field of geography and has been largely applied to mobile media and locative media (see Wilken and Goggin, 2012). Sense of place can be defined as the “meanings, attitudes, and perceptions that people ascribe to a place, usually conveyed in a way that portrays that place as a unique object of human belonging or attachment” (Long, 2010, p. 4). In other words, sense of place refers to the subjective and emotional attachments people have to place (Convery, Corsane, and Davis, 2012; Agnew, 1987).

For the purpose of this dissertation, locative media is problematized as one contemporary indicator of social and digital exclusion from representation and participation in Internet based networks. This study focuses on Austin, located in central Texas, where the absence of the Latinos/as in the sphere of locative media platforms represents a contemporary form of segregation. While segregation is usually described as a separation within physical and geographical space, in this dissertation, segregation is conceptualized from the standpoint of “hybrid space”, a key concept that is adopted as a theoretical framework for this study. Hybrid space, proposed by the locative media scholar Adriana de Souza e Silva (2006), is the merging of the physical and digital spaces. In other words, hybrid space is the refusal to separate the physical place from the location-based digital information that describes it. Drawing from this notion of spatial hybridity, this study will argue that

the perpetuation of segregation in Austin goes way beyond the physical separation, generating an up-to-date segregation of the hybrid space, as locative media overlays the physical world with a virtual layer of digital information.

This study also draws on Frith (2015) who, along with the scholar Adriana de Souza e Silva, proposes the concept of “splintered space” which combines digital divide with a related concept called “differential mobility” that refers to how accessing transportation technologies is differentially distributed amongst groups of people. Since smartphones and location-based services combine the Internet with physical mobility, Frith calls attention to who gets to experience the convergence of digital and the physical. As such, Frith (2015) also calls on researchers to study how this will affect people who either do not have the technologies or the skills to take advantage of smartphones and location-based services.

Considering that this study deals with a demographic group that might have access to mobile and locative technologies but not the skills to take fully advantage of them, this dissertation addresses the following framing question: how does locative media elevates awareness of local history, of unknown or forgotten information, and events among and about Latinos/as in a place that faces historical spatial segregation? With this in mind, this dissertation has as a central goal to create awareness about the locality where Austin residents live, through training and teaching.

Along with that, the goals are: a) to explore to what extent locative media may increase sense of place *among* Latinos and *about* Latinos who live in areas which have a recent history of segregation; b) to increase participation in locative media, c) to better understand how locative media may help to attenuate the effects of the segregation of the hybrid space, d) to understand how location-based media may engage Latinos/as producers of locative storytelling with their memories and knowledge of their locality, e) to bridge the digital divide by teaching people how to use mobile media and to gain mobile skills in order to increase participation in locative media, and (f) to analyze to what extent locative media could help undergraduate students to grasp spatial segregation and its effects on the Latino culture in Austin.

As it was briefly mentioned above, this dissertation addresses these issues by providing workshops to three separate groups regarding the use of locative media in

their communities, which served as case studies for the purposes of this research. First, a pilot study was conducted, in which I taught Latina girls aged 9 to 14 about locative media and encouraged them to create a locative story in partnership with a local non-profit organization called Latinitas. It was found that their definitions of important places were very private and personal, like their room; unlike the two main case studies, access to mobile technologies was a major issue here. Most of the young girls did not have smartphones.

Second, in partnership with the non-profit organization River City Youth Foundation, I worked with less advantaged Latinos/as adults residing in an informally segregated area of Austin, a low-income neighborhood called Dove Springs. The workshop was part of a digital inclusion program called TechComunidad, in which the majority of participants were women. This case study was highly significant because Dove Springs was void of digital information, such as the lack of user-generated content as well as geotagged content on the map of Austin. The adults participants were able to identify places and stories about their community, but needed quite a bit of assistance with developing narration.

Third, the concept of locative media was exposed to 28 undergraduate students - of which half of the class were Latinos/as - in a context of a course called "Mapping Latino Culture in East Austin" at the University of Texas at Austin, in which the students were assigned to explore the environment in the historically segregated parts of the city, specifically East Austin, and produce locative stories about certain locations. The goal was to expose undergraduate students to a geographical area that is quite marginalized and stigmatized in the city. By exploring the physical location of the area, I expected the students to better grasp the spatial segregation of Austin while simultaneously grasping the concept of locative media. It was found that the students were quite surprised with the history of the city, and several of them came to the conclusion that they have been neglectful in learning about the local history of the places where they have lived. Ultimately, this case study had an additional goal: to understand to what extent locative media may help students to better grasp the content provided in the classroom, which was material on the Latino Culture in East Austin. Herein, the concept of location-based learning was fundamental to help set up the contributions of this research.

Latinitas strayed a bit from the goal of this study because they were not based on a certain location, and due to their age, they were not able to explore/visit places to write about. However, I still learned quite a bit from the pilot study and will discuss findings in regards to Latinitas, mainly about the relevance of locative storytelling to create awareness about sense of place and locality. The cases with TechComunidad participants and college students are the backbone of this study, because the two different case studies deal with specific geographical areas of Austin, which is more coherent with the research goals of this work.

It is also important to elucidate that these cases are not meant to be compared to one another. On the contrary, the goal for each case study was to foster participation, another key concept in this dissertation, in the production of locative stories *among* and *about* Latinos/as residents. Moreover, the aim was to close empirical and knowledge gaps by producing valuable historical and contemporary stories, taking meaningful photos on Latina/o Austin, and geotagging the stories on the digital map of Austin.

Finally, the purpose of having the two main case studies, one with the adult residents in the informally segregated area of Austin and the other with college students, was to open a two-way exchange of locative information both *among* the residents of the historical segregated area of Austin and *about* them by relative outsiders, in which memory was unearthed and local history experienced. By opening a new road for the exchange of location-based digital information in Austin and geolocating it on the map of the city, this study pursues a better understanding of how we tell stories about places and how our use of maps may help us to make sense of the stories around us.

Motivation and Problem Statement: Historical Segregated Spaces

The scope of this dissertation was defined by a couple of interrelated issues. First, my motivation was led by my first explorations of two cases: Monmouthpedia²,

² Monmouthpedia is a collaborative project linking the [Wikipedia](#) and the town of Monmouth in South Wales. The project uses QRpedia QRcodes to provide multilingual smartphone access to Wikipedia articles covering notable subjects in Monmouth, such as places, people, artefacts, flora and fauna.

in South Wales, and the employment of QRcodes in several buildings in Manor³, Texas. Monmouthpedia as well as Manor dealt with local information and local knowledge digitally attached to physical places. Interestingly enough, another similarity is the fact that Manor also used Wikipedia articles to embed its QRcodes. Also, both cases aimed to engage the community in the production of local content and use historical content to tag specific locations. After visiting both towns and conducting informal interviews with local residents and stakeholders, I concluded that the challenge in those locative media projects was to engage the local community in the production of content. After all, it was striking to note that a significant majority of creators of content (local knowledge) for Monmouthpedia were outsiders, not physically present in Monmouth (2012, Interview with Roger Bamkin, chair of Wikimedia UK). Another crucial point learned during my exploratory visit to Monmouthpedia, is the misleading assumption that locals know everything about their locality. Roger Bamkin (2012, Interview with Roger Bamkin) points out how a lot of people think “Oh, of course I know about that [landmark, locality, place] but then when they read the article (e.g. by scanning a QRcode) and then they think “oh no, I didn’t”. In fact, during my visit in Monmouth I talked to passers-by and many of them said, “I am a local, I am not interested in that... It is more important for a tourist because I already know what it is all about.” Drawing on this empirical experience, and on the literature (Løvlie, 2011), the expansion of participation in the production of locative storytelling and content among local residents seemed urgent within the context of locative media.

Second, the research on mobile media and locative media on Latinos/as is scant. This gap has become wider even though Latinos/as have been considered, by the 2014 Nielsen's report on "The Digital Consumer", as the audience of the future in regards to digital media. In this context, according to this 2014 report, Latinos/as are leading the trend in mobile ownership, adopting smartphones at a higher rate than any other demographic group. According to the report, the result is that 72% of Latinos own smartphones which is higher than the average in the U.S. Along these lines, it

³ Dustin Haisler, the former assistant City Manager in Manor, was the person responsible for the deployment of QRcodes in Manor, a small in the metropolitan area of Austin. Dustin deployed 24 QRcodes on buildings, historical sites, and police cars, between 2007 and 2009. Some of the QRcodes were historical items, like things featured in movies or things that were relevant to the city of Manor. Some were just physical infrastructure that people called about all the time, like what does this do, or how much does that cost. Although the project became well known in the United States, being heralded as innovative initiative, those QRcodes were taken down in 2011 and the project failed.

was found that in this study that the problem is not smartphone ownership, which had been an issue for earlier locative media projects (Willis, Corino, & Martin, 2012; Løvlie, 2011), but an awareness of their locative capabilities, how to use them, how to gain skills to create content with them, and how to find easy to use software.

Austin was chosen as a research setting, because the research question was linked to the fact that the Latino population in Austin and in the U.S. is increasing, but still often living in at least somewhat segregated spaces. Due to this trend, it is significant to focus on this demographic, as it will provide a glimpse into the future use of media in this country. The most recent U.S. census found that 35.1% of the population in Austin is Hispanic, and 17% of the population in the U.S. is Latino (U.S. Census Bureau, 2010). Latinos/as are also the largest ethnic group in Texas public schools, surpassing non-Hispanic whites. In fact, according to the AISD (Austin Independent School District) website (www.austinisd.org/about-us), over 60% of students enrolled in the elementary schools of AISD are Hispanic. Even more supportive of our demographic choice are the estimates by the Time Labs that the racial and ethnic makeup of Texas today – with a Hispanic population of 38% of the population - resembles what the United States is expected to look like in 2060 when roughly a third of population will be Hispanic and less than half the population will be white (Wilson, 2015). This demographic group, however, remains in a disadvantaged position, and the cities and communities where they live remain impoverished. This is a serious problem as recent research has found that place is fundamental to achieve upward income mobility (Ellis, 2015; Chetty, Hendren, and Katz, 2015).

In Austin, the social disadvantage of Latinos/as is at least partially a result of Austin's history of legal segregation of African-Americans from 1928 through the 1970s, and de facto segregation of Latinos; that was only 45 years ago. Currently, this legacy affects both African-Americans and Latinos/as, who are still largely informally segregated in run-down neighborhoods, as will be shown throughout this dissertation. This historical legacy created a segregated space, which in turn generated isolated neighborhoods that are poor in digital locational information because its residents are not part of the landscape of the privileged group of producers of digital content (Bruns, 2008; Stephens, 2012). This problem was amplified by the recent arrival of more Latino immigrants in the last 20 years and their concentration in the historically segregated areas of the East and Southeast sides of town – “where schools are

noticeably worse than those on the West, and largely ‘white’ side of the city” (Straubhaar, Tufekci, Spence, and Rojas, 2012, p. 7).

While the East side is facing several issues with recent and rapidly increasing gentrification, the Southeast is still isolated and has been described as a *food desert*⁴ (it is often two miles to the nearest large grocery store), with problems of obesity and poor education. In comparison to the other geographical areas of Austin, I observed that the area suffers from a lack of digital information about Austin, including user-generated content (UGC), Wikipedia articles, geotagged content on the mobile and digital maps of Austin. One may also argue that the area is also a "media desert", which means that there are not many sources of local information about this area. This is not surprising because most of the residents in this area face digital inequality both in terms of access and the digital skills to produce such materials (Straubhaar et al, 2012). This lack of digital presence is an immense gap in the production of user-generated content in this area of Austin. While the segregation in Austin was imposed by a zoning ordinance in 1928, segregation of Latinos/as in the U.S. may also happen informally, as Suro (1998, p.6) reminds us, “Latinos, like most other immigrants, tend to cluster together” forming what are called *barrios* (neighborhood in Spanish). In most *barrios*, Latinos live separated from others residents by custom, language, and preference. Furthermore, those *barrios* are primarily populated with poor and working-class Latinos, and many newly arrived immigrants settle there. Another important term for *barrios* is “ethnic enclaves”, which are defined as urban areas where “poor immigrants tend to settle” with other immigrants from their home country (Matsaganis, Katz and Ball-Rokeach, 2011). This reality resonates with the Austin context as Latinos/as concentrate in areas of historical segregation as the comparative map below (Figure 1) shows. This relates to the common immigrant problem of living in enclaves which may provide cultural support and cohesion, but isolates immigrants from the majority population. In Suro words: “they are surrounded by a city but are not part of it” (Suro, 1998, p. 6).

Drawing these threads together, this study is targeted at Latinos/as as an effort to fill a knowledge lacuna in studies on mobile media and locative media related to

⁴ According to the American Nutrition Association (ANA), food desert “are defined as parts of the country vapid of fresh fruit, vegetables, and other healthful whole foods, usually found in impoverished areas. This is largely due to a lack of grocery stores, farmers’ markets, and healthy food providers.”

this demographic group while exploring the possibilities of integrating the Latino population into their locality through locative storytelling. As mentioned before, a central aim of this work is to create awareness about their locality by encouraging Austin residents to visit certain places in the historical segregated area of East Austin, to produce locative stories, and to geotag them on the map of Austin.

What has been done to solve the lack of awareness about Latinos/as in Austin?

Many of the initiatives to solve the effects of segregation in the city have been focused on the digital inclusion of the residents in these geographical areas of Austin. Straubhaar (2012) and a group of his students at the University of Texas at Austin carried out an extensive ten-year research project about the digital divide in Austin. This project became a broader inquiry into Austin’s historical transformation from a segregated city into a technopolis, “a city whose economy focuses on recent technological and industries” (Straubhaar, Tufekci, Spence, and Rojas, 2012, p. 2). I draw on their research to explain the gap in the knowledge that this current doctoral project tried to fill in.

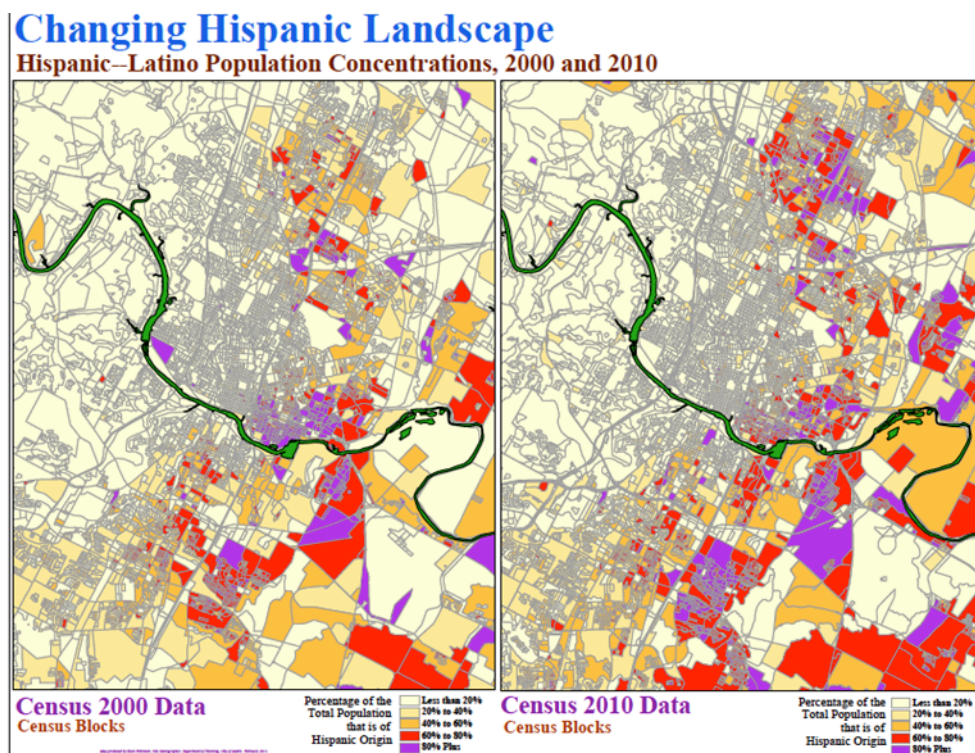


Figure 1. Changing Hispanic Landscape Map, Courtesy Austin City Office of Demography, 2012.

Local initiatives in Austin that are more closely related to the purpose of this dissertation are projects like *The Tejano Walking Trail*, which is a public initiative to create a public awareness and appreciation of Latino or Tejano culture in Austin. The trail is 4.95 miles long and takes about 2 ½ hours to walk. The trail documents changes that started in Austin, in the 1920s, with the formal segregation of Black Austinites and informal segregation of Latinos in a new 1928 city plan (Straubhaar, Spence, Tufekci, & Lentz, 2012). The Tejano Walking Trail was used as a source of locations for the case study with university students undertaken in this dissertation.

The concern of this research with historical preservation of Latino culture in the East side, or in informally segregated geographical areas, is also shared with other groups. A New York Times article written by Maclaggan (2014) showed how a non-profit organization called “The African American Cultural Heritage District” is working to preserve historical sites in East Austin, as the Black population is shrinking in Austin. Also, public institutions in Austin like the Carver Library and Museum have been promoting African American heritage in East Austin.

Within this context, locative media provide this study with useful conceptual frameworks and tools to approach the issue of segregation of the hybrid space in a local context, as I will explain in detail in the next section.

Why Locative media?

The use of locative media seemed to be one appropriate way to deal with the reality of segregated space, because it includes practices that are useful to increase people’s sense of place, such as geotagging of content and bringing people back from the virtual world to the physical place. It also enables the layering of the city with situated stories, which can potentially bring smartphone users together in the physical spaces to understand context. In addition to that, locative media “opens a new sense of interaction with space, with layers of information pre-existing in a space, of measurement and movement and with a new ways to make a narrative that exists and works with the actual physical environment, be it city or open spaces,” as says the locative media artist Jeremy Hight in an interview to site cont3xt.net (Hight, 2006; see

also Gordon and de Souza e Silva, 2011; de Souza e Silva and Frith, 2012; Farman, 2012; Farman, 2014, Frith, 2015). As Løvlie (2011) - based on Russel's (1999) headmap Manifesto – states locative media enables us to annotate the world with “invisible notes attached to spaces, places, people and things” (p.4). Thus, for Løvlie, graffiti seems outdated, “instead of sneaking around at night to scribble a message on the wall of a public building” (p.246), one can post the same content (audiovisual or textual) online and tag it to that wall or thing with their mobile phone. This possibility, recognized as geotagging, along with other emerging tools within locative media (tracing, tracking, mapping, barcoding), have triggered a number of questions in different fields, such as architecture (Greenfield & Shepard, 2007; Aurigi & De Cindio, 2008; Foth, 2009), cultural and sociological issues (Gordon & De Souza & Silva, 2011), literature (Løvlie, 2011), anthropology and ubiquitous computing (Dourish & Bell, 2011). However, common concerns that weave all these fields together are related to issues of mobility, or in other words, the practice of moving around the cities and understanding the environment.

Furthermore, through the use of mobile applications for smartphones, locative media enables us to bring digital media and stories to specific locations through storytelling (Farman, 2014). Additionally, these stories are digitally attached to places, enabling other people to have access to them at that location. Potentially, locative media may help people better understand the singularities of certain places. The purpose of the production of storytelling is helpful in two ways: 1) to create awareness about local history that may be forgotten and also by producing recent history; and 2) digitally attaching all those stories to places, enabling other people to consume them when they happen to be at the location.

In this sense, once residents are encouraged to think about the surroundings and places that are meaningful for them, to visit those places, and to produce stories based on memory, local knowledge, local history, and places are given voices (Wilken & Goggin, 2012). This way, this dissertation analyzes the potential of increasing participation in the production of locative storytelling, as there is not enough awareness of place and local history *among* and *about* Latinos.

Why expanding participation?

As Gordon & de Souza e Silva (2011) point out, “we no longer ‘enter’ the web; we carry it with us. We access it via mobile, mapping, and location-aware technologies” (p.172). If some people do not participate in this hybrid space, the lack of access and participation may create the feeling they do not exist within this digital sphere of life, a kind of digital segregation. As locative media practices and tools become more prominent to navigate public spaces and to learn about places, a new digital divide emerges. As Frith (2015) argues, applications have already created certain benefits that are available only to people with location-based services (e.g.: Uber). However, the digital divide may be seen in a different perspective within mobile media users, as even disadvantaged communities as Latinos/as are leading mobile ownership in the US, as it was mentioned earlier.

What may be taking place is more aligned with what Jenkins (2006) calls the participation gap, which is not a matter of simply having access to the technology but also having the skills and knowledge to know what to do with it. That said, it seems relevant to expand participation. To close or at least to narrow this gap, participation is addressed from the concept of user-generated content (UGC) and Web 2.0 as a form of fostering democratization and empowerment (Bruns, 2008; Benkler, 2006; Chung, 2007; Shirky, 2008) but also at the intersection of UGC and geographic information (Goodchild, 2009). With this in mind, our ultimate goal is to expand participation *among* Latinos and *about* Latinos in locative media. In doing so, I will be addressing the concept of participation as user-generated content with a focus on locative media.

While some of the research on locative media was conducted with already tech-savvy users (see Humphreys & Liao, 2011) or highly-educated people, including migrants (see Kim and Lingel, 2012), this research tries to fill a gap in the knowledge by engaging low-income, first generation Latinos (through TechComunidad), and recent mobile-Internet users in the production of locative content. As Frith (2015) points out several times in his book about locative media, “most of the information found in location-based services like Yelp, Urbanspoon, and Instagram is user-generated content” (p. 48). In addition, he states, “the user-generated content can then

impact mobility choices of someone else using the application to find new places and make wayfindings decisions” (p. 48). In the case of this dissertation, if a disempowered community lacks the skills to produce this content, they may end up isolated in terms of information. The practice of creating locative storytelling may help them to analyze their locality and to enable their space to become hybrid space, which is overlaid with digital information and enables future passers-by to understand the locality better. This is another reason to focus on the expansion of participation among Latinos/as in the production of locative storytelling.

With this mind, in the next chapter, we propose a historical background to explain the relevance of doing research on locative media. Overall, this dissertation is grounded in the concept of locative media as a reproduction of the ancient and fundamental principals of understanding median through maps. By understanding the purpose of locative media, we stress the significance of this study regardless of the frailty of mobile technologies.

Organization of the dissertation

This dissertation is organized as follows. The first chapter will be divided into three parts, covering the following: 1) The field and its branches, in which I will provide a background about locative media; 2) Conceptual Frameworks, in which the relationship between places and space in combination with mobile storytelling will be explored; and 3) Context of the Research, in which I will also provide background about Austin and the history of segregation in Austin. The context of the case studies will be also explained in this section. Chapter 2 will cover the qualitative set of methods this dissertation used for the data collection and will also explain data sources. Results will be presented in the chapter 3 and will be organized by case. Chapter 4 will be dedicated to the discussion of the main findings. The dissertation will end with Chapter 5, in which conclusion, limitations and future research will be presented.

CHAPTER 1 – LITERATURE REVIEW

This chapter is divided into three parts: 1) the field and its branches, 2) conceptual frameworks and 3) context of research. Before moving ahead, it is fundamental to explain that due to the exploratory and interdisciplinary nature of this study, this literature review is characterized by dispersed concepts and is not unified by a single theory that works as framework for the entire study. In the first part, I will provide a brief background about the field of mobile media, define what locative media is by historicizing it, and show how our ancient need to understand information through places is fundamental. In the second part, I will distillate the central concepts that are the basis of this work. In this sense, this dissertation engages with several different concepts: "hybrid space" and "splintered space," linked together to become "spatial segregation". Furthermore, I will discuss notions of place and space, and consequently the sense of place. In addition to that, in the second part, I will explore the concept of participation and user-generated content, including how it is important to increase participation among Latinos/as in locative media. In the third part, I will provide context about the backdrop of this work: the history of racial segregation in Austin and its effects through the present. The goal of this organization is to make my ideas available in a perusable form to guide my readers into the methods section.

Part I: The field and its Branches. From Mobile Media to Locative Media

In order to understand the field of locative media, first, one needs to turn to the field of mobile media, from which locative media derives. In this matter, there is a growing body of research that has investigated the spreading and impact of mobile phones in contemporary society. I point out some aspects that have been most discussed in the literature. I have identified three lines of approaches in the literature about mobile media. First, the research on mobile media has a very specific demographics framework, most often focusing on young people, as they provide a glimpse of the future (Castells, Fernandez-Ardevol, Qiu & Sey, 2007; Ling & Campbell, 2011). Second, several scholars argue that the mobile phone can have

deleterious effects on social cohesion and engagement in the public sphere, provoking what many authors refers as telecocooning, social cocooning or social molecuration (Humphreys, 2010; Goggin & Crawford, 2011; Gordon & de Sousa e Silva, 2011; Wilken, 2010). In other words, these researchers argue that people tend to socialize with others with the same interests. Third, mobile phone use implicates changes in our sense of time and space (Castells et al., 2007; Kellerman, 2006). In the subsequent sections, more details will be provided for each of these three strands.

1.1. Youth and mobile media

By studying a specific age group, researchers seek to understand a particular behaviour of a specific system of values and beliefs in society. Focused on young people, Castells and his colleagues (2007), in the book *Mobile Communication and Society*, conducted cross-border research in four regions: the United States, Africa, Latin America and the Asian Pacific. Castells et al studied young people using mobile phones in terms of culture. Those researchers argue that, “there is a youth culture that finds in mobile communication an adequate form of expression and reinforcement” (Castells et al, 2011, p. 128).

Briefly, Castells et al. summarize their findings as follows: 1) Young people across the world are quick to adopt and appropriate mobile technologies; 2) Mobile-phone usage is transforming youth cultures around the world via two interconnected processes; 3) The mobile youth culture, as a new set of values and attitudes that informs practice among the younger generations, is a typical networked culture; 4) Mobile culture in many countries, such as those in the Asian Pacific, is characterized by a strong consumerist tendency; 5) With the diffusion of technology, the mobile phone has become a central device in the construction of young people’s individual identity; 6) A new collective identity with global relevance is emerging from the mobile youth culture. (e.g. shared language, such as SMS codes).

On the other hand, some scholars criticize the way young people have been approached in the field of mobile media or even the way young people use mobile media (Turkle, 2011). For example, Goggin & Crawford (2011, p. 256) pose the question “who is young?” arguing that the distinction between youth and adults is

nowadays blurred. As they put it, “adults are not immune to dramatic change in a twenty-first century environment where work is less stable, economic markets more precarious, and identities and skills require regular updating” (ibid, p. 258). Furthermore, Goggin & Crawford (2011) argue that in many countries, young people live with their family in their twenties, thirties, and even into their forties, which blurs the traditional distinction of adolescent and adult. These authors explain that “youth” appear in two ways in the literature: youth as a *developmental narrative* and youth as a *cultural phenomenon*. While the first category is related to how mobile phone use is affecting how human beings grow and develop, in the second “youth” is analysed as a “set of cultural markers, conditioned by social norms and the precise qualities of place” (ibid, p. 261). Moreover, the authors argue that the approach of youth takes place in a stage between childhood and adulthood when enormous changes occur and individuals gradually become independent beings. They conclude that research highlights the mobile phone as important artefact that helps young people to develop a sense of self within strong peer networks.

Taking that into account, it is important to say that this work does not focus necessarily on an age group, although the work provides insights into age groups, as young and old adults as well as children played a role in this research. However, by providing background on the type of research that has been conducted so far, it is easier to situate where this work is located within the existing literature.

1.2. Social Insularity/ social molecularization/ mobile cocooning

A related aspect very well discussed in the field of mobile media is the assumption that communities were more cohesive before the adoption of mobile phones (Rosen, 2004; see also Bauman, 2000; Wellman, 2002). Mobile phones, however, may strengthen some relations by increasing constant communication (greetings and repetitive expressions of affection). Nevertheless, they also may also lead to the weakening of communal ties beyond the most intimate group of close friends, what Ichiyo Habuchi describes as “tele-cocooning”, the production of social identities in small, insular social groups through mobile communications (Ito & Okabe, 2005).

Similarly, other researchers, such as Lee Humphreys (2010) reinforce the idea of insular social groups. In her case study of the mobile social network Dodgeball (precursor of Foursquare), she found that that service created “social insularity”, which means that people tend to relate only to people similar to themselves in public spaces. She also found that the application was not used to facilitate social interaction in public spaces, but instead was utilized to avoid sociality in urban public spaces. While users have met new people through Dodgeball, these people tend to be demographically similar to them hence facilitating ‘social molecularization’. This phenomenon is also named as mobile cocooning, which means that these apps filter and pre-select demographically compatible people for face-to-face encounters. Mobile cocooning is deemed negative, because it undermines the qualities and benefits of the social diversity and heterogeneity in urban environments (Bilandzic & Foth, 2011).

1.3. Detachment from the Physical World

Another assumption, among some scholars, is that mobile phones detach people from the physical world and complicate their relationship with the public space (Hatuka & Toch, 2014; Turkle, 2011). However, in the scope of locative media, there are some researchers who refute this line of thinking. For example, de Souza e Silva & Frith (2012) argue, that people have always used mobile technologies “as ways of framing their interactions with their surroundings space” (e.g.: books in trains, newspapers, walkman) “but not necessarily through a withdrawal from it” (ibid, p. 15). In fact, Gordon & de Souza e Silva (2011), in their book about locative media, state “the notion that the web and mobile technologies disconnect us from physical spaces is less and less convincing” (p. 173).

In another work, de Souza e Silva & Frith (2012) point out that location-aware technologies encourages the use of the mobile phone as a medium that allows for diverse types of connections to local spaces and local people. Moreover, these authors argue that mobiles and other portable media (e.g.: books, iPods) do not necessarily remove people from physical space but rather provide users with a filter that help them select and control with whom and what they want to interact with in public spaces, like old media such as books or newspapers allowed people to do the same.

They conceptualize mobile phones as “interfaces that mediate user’s interactions with public spaces” which help users to have the *blasé* attitude studied by the sociologist George Simmel, which is “a psychological filter and a way of managing and controlling our interactions with the city” (ibid, p.6). With this in mind, these authors argue that the need to avoid interactions with strangers in public spaces is not caused by mobile technologies such as smartphones, but it is rather a strategy humans developed to filter overstimulation in big cities.

1.4. Time and Space

According to several scholars, mobile phones offer the user the possibility of being in a specific place and doing a specific activity while socializing with others situated in another place or time. In a similar sense, this device is “characterized by its ability to switch from work to sociability and to entertainment in the same time and space” (Castells et al. 2007, p. 110). While working, one can also socialize with family, spouses, and friends through the mobile phone.

For Castells et al. (2007), the dynamics of the network society has shown the emergence of new forms or processes of space and time. The “space of flows” is not related to any place, “but to the relationships constructed in and around the network processing the specific flows of communication” (p. 171). As Castells et al. (2007) put it, the “space of flows is the material organization of simultaneous social interaction at a distance by networking communication, with the technological support of telecommunications, interactive communication systems, and fast transportations technologies” (Castells et al., 2007, p. 171). In addition to that, these authors argue that diffusion of mobile communication technology contributes to the spread of the “space of flows” and timeless as the structure of our everyday life. These researchers believe that “place” continues to exist in this "space of flows", but as “points of convergence in communication networks created and recreated by people’s purposes” (ibid: p.172). The space of flows also can be understood as new space “that is local and global at the same time” (ibid, p. 174).

Castells et al. (2007) also proposes the concept of “rendezvousing” which refers to the informal, geographical coordination of small groups of friends, family

and teammates that takes place in the physical world. This phenomenon is widely described in the literature under other names. Ling and Haddon (2003) use the term “micro-coordination.” The concept is related to the “freedom of contact” provided by the mobile phone. It allows people to free themselves from the place-based context of their interactions, shifting their frame of reference to the communication itself.

Briefly, this section showed a few themes that have relevance in the mobile media research. This scenario sets the context to introduce the field of locative media, which will be explained in the next sections.

1.5. The roots and branches of locative media

This current research is mainly informed by theories and concepts coming from different fields, such as humanist geography, in regards to the concept of place (Cresswell, 1998; Massey, 1994; Tuan, 1977), mobile media (as discussed in the previous pages) and locative media (Farman, 2012; Farman, 2013; Frith, 2015; Gordon & De Souza e Silva, 2011), media and communications, and production of digital information by users (Bruns, 2011). However, in order to understand the relevance of this dissertation, it is crucial to start with a historical explanation of locative media. By stressing the fact that locative features are something almost intrinsic to media, this work has provided support to this study’s goal of increasing participation in locative media. Therefore, using a historical analogy, I will discuss the evidence that locative media is a part of a process of remediation (Bolter & Grusin, 2000). Then, I proceed to review the literature about the branches of locative media in which the scope of this dissertation is situated.

1.5.1. Historicizing our need to understand information through maps

The need to tie information to location and maps is far from new (Farman, 2014). It seems clear from the literature that the role of location as a source of information, in the digital culture and mobile technologies has been among the factors that promoted the revival of the concept of “place” as both a repository and a trigger

for information delivery (Farman, 2012; Farman, 2014; Gordon & De Souza e Silva, 2011; Wilken & Goggin, 2012). In this sense, this dissertation argues that the fundamental notion of using maps to understand information is found even before the conceptualization of media, as we presently know it. This argument is based on the work of the French scholar Jean Pierre Vittu (1994) who stated that readers from the late 17th and early 18th centuries perceived news like a maze without the ability to consult maps (Vittu, 1994). Other studies have found that in order to solve the lack of locational information in news articles, maps or geographical guides were specifically printed to help newspaper readers (Kenny, 2004), which suggests that the principles of location-based media began at that time. Maps could be sold in the form of an atlas or by individual page. Usually, readers could buy maps from newspaper sellers, or they could find them hanging at the front of bookstores specialized in geography alongside the clock tower in Paris [Quai de l'Horloge] (Vittu, 1994). It is worth noting those maps were not necessarily used as navigation devices as they are today. In the 1600s, atlas included illustrated pictures of places along with detailed map areas; the illustrations depicted cities, towns, and ports alongside detailed two-dimensional top-down plans of various places in Europe (Gazzard, 2012). In this sense, it is tempting to say that “maps” functioned as a graphical supplement to newspapers, which readers could use to tie the stories and happenings to the locations where they occurred (Silva, 2014). This practice of using maps to understand information locally and overseas was repeated across the centuries, as can be seen in the images below taken in the 20th century.



Figure 2. Map in Paris. Source: parisenimages.fr

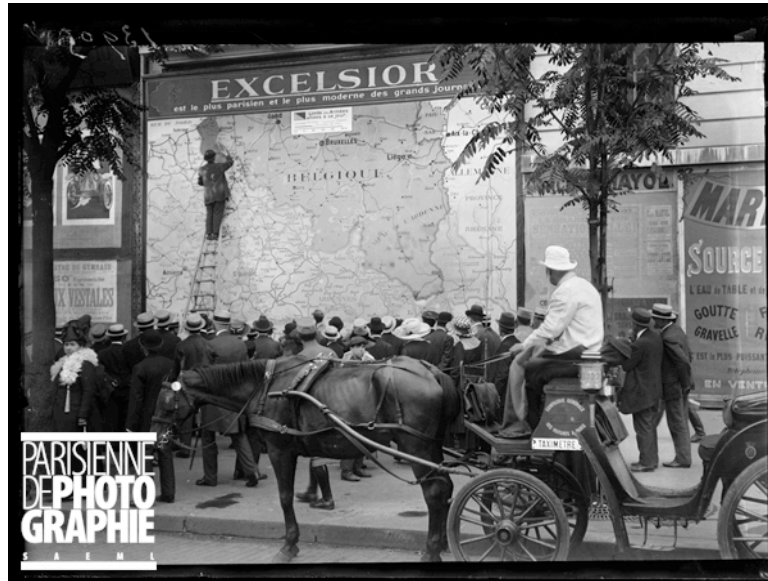


Figure 3. Map in Paris. Source: parisenimages.fr

On these images above, on the Figure 2, a man on the ground updates a map, and then on the Figure 3, the same man climbs a ladder to complete his action. It is striking that there is a crowd of people standing and waiting for him to finish in order to learn the latest events about the First World War. According to the website “Paris en Images” – from which these photographs were taken - the former newspaper Excelsior gave this map to the Parisians in late August 1917. Thus, they could have a better understanding of the latest war news by visualizing them on the map. If we think of how maps are becoming banal and handy today, these images become much more powerful for their historical weight, and for their depiction of the eagerness to understand events and localize them in the world. In fact, there is a long tradition of research in the 1980’s providing evidence that maps enhance the comprehension of a story. For example, Freundsuh and Sharma (1995) cites a number of studies along these lines:

Studies by Gilmartin (1982; 1986), Gilamartin and Patton (1984), and Kirby, Jurisich, and Moore (1984) found that when maps and diagrams were included in a text, subjects recalled significantly more information about the story than did a control group that was not given

any maps. In two other studies, Kirby (1985) and Moore, Scevak, and Kirby (1987) found that training subjects how to use maps more strategically while Reading stories, significantly enhanced the comprehension of both the spatial and non-spatial components of the story. The importance of pictures and maps in literature has also been suggested by Balchin (1977) and Patton and Ryckman (1991, p. 44).

This relevance of maps for understanding information is also supported by more recent and seminal work on locative media by Gordon and de Souza e Silva (2011). These authors provide key evidence that maps could become a universal interface from which to access information. Drawing on Vittu (1994) and Kenny (2004), I have argued elsewhere (Silva, 2014) that this phenomenon is leveraged with mobile digital applications, such as Foursquare and Fieldtrip. Although there was already GIS digital mapping, the widespread digitalization of maps to users was accelerated by the launch of Google Maps in 2005 and its API (Application Programming Interface) a few months later. Scholars have discussed the fact that the geographical knowledge gained through digital charting is not only transforming mapping but also communication broadly. With the release of the API, the web was inundated with Google Maps *mashups* (ibid).

This historical analogy between the present and past centuries lies not specifically on the aspect of location itself but on the ways narrative was tied to places and the fundamental need to understand information through maps. Current definitions of locative media are restricted to “media of communication bound to a location” (Wilken, 2012, p. 2). The Norwegian scholars Nyre, Bjørnstad, Tessem, and Øie (2012) make the distinction between local news and locative news.

For them, while local news is only location-oriented, locative news is location-dependent. This distinction reveals how locative media only works on location. Thus, location is crucial to understand this field of study. In fact, locative media is about how the interplay between digital information, location, people, and location-based information influence the way we access and interact with digital information, mainly in urban space. Therefore, the historical analogy that is drawn in this dissertation is based on the fact that locative media is largely associated with the incorporation of

GPS on mobile phones (Frith, 2015; Gordon and de Souza e Silva, 2011), and that the field of locative media is concerned with people's sense of place and space (Farman, 2012; Wilken & Goggin, 2012). In this way, this dissertation argues that, since its birth, media has been related to locational information, mapping, and concepts of place and space, as explained by the use of maps to understand information in the 17th century (Silva, 2014). Again, it is important to provide this overall picture in order to set up the fundamental basis of this research: how we tell stories about places and use maps to help us make the sense of these stories and the world around us.

Looking through a historical lens, this dissertation suggests that rather than being a technological novelty, locative media evolves through a process of remediation by reproducing the fundamental traces of historical and current readership behavior, from analog information to digital mobile locative applications (Silva, 2014). As Bolter & Grusin (1999) conceptualized, remediation is a “defining characteristic of digital media” (p. 45), which means that novel digital media reproduces/remixes as well as hypermediates characteristics and principles of analog and old media. Once we assume that location-based technologies applied to local information may be a process of remediation, we may better understand the effects of this innovation on people's lives.

The association of locative media with old media is well explored in this field of study. McCullough (2008), for example, has drawn a parallel between locative media and ancient inscriptions in buildings or monuments. For this scholar, the fact that locative media permits digital tagging (e.g.: QR Codes, see Farman, 2012) of the physical world is not especially new, but rather a sort of digital graffiti. Also, Galloway and Ward (2006) have connected the parallels between archaeology and locative media. For these authors, both fields establish and value context and take part in the collection of cultural artifacts. Along the same lines, Ritchie (2013 – pp. 53-78) also stresses that tying a narrative to a location is nothing new, given loco-meditative works (literary works that reflect and/or mediate on a specific location), installation art, and public history installations. In some locations, a plaque tells a story of a place and of the history of meaningful architectural features. What is new, explains the author, is the fact that locative narratives combine the digitally mediated with the spatially/environmentally mediated, therefore blurring the boundary between the virtual and physical worlds.

Farman (2014) also investigates the history of locative media or what he calls “site-specific storytelling.” He argues that people have attempted to tie stories to places for as long as tales have existed. He draws on McCullough (2008) who has described two kinds of site-specific stories: “durable inscriptions – such as those carved into stone or into the side of a building – and “ephemeral” inscriptions like graffiti, banners, and billboards” (p. 6). In addition, Farman (2014) discusses how these two forms of site-specific storytelling - named by McCullough “urban markup” – demonstrate the power dynamics and hierarchies involved in who is allowed to tell the story of a space. Those with economic wealth tend to be the ones who are able to place durable inscriptions throughout a city, while graffiti, a sort of ephemeral locative media, tends to be created by those without power. Farman's point of view is interesting because it reminds us that more research is needed to understand and foster the production of locative stories among underserved communities.

The theoretical foundations of this dissertation also lie in the fact that locative media apps also transport readers to other times by providing historical information about places. Building or highway markers helped inform people in the pre-digital era. The “reading” of places is still usually done on the spot. As Farman (2014) reminds us, “there is a value in standing at the site where an event took place; far more than simply reading about an event, being in the place where that event happened offers experiential value that’s gives us a deeper sense of the story and the ways that story affects that meaning of the place” (p. 7). Information consumers of the 21st century are now able to receive local information or consume storytelling in real time and space where the events actually happened, allowing them to experience events or visualize stories pinned on virtual maps, by binding information to a specific location through digital mobile technologies (Gordon & de Souza e Silva, 2011; Wilken, 2012).

For the purpose of this work, history along with memory is important avenue of thinking. As Basso (1996) highlights, “places served humankind as durable symbols of distant events and as indispensable aids for remembering and imagining them” (p. 7). In this sense, this study take on this as a departure point to encourage local communities to produce stories based on the recent past or memories about meaningful places.

The historical parallel between the 21st century and the 16th and 17th centuries, delineated in this dissertation, is critical to build the foundation of this work in order to translate the relevance of doing research in locative media and explaining the usefulness of history for its concept as a whole. Furthermore, by doing this, I bid to escape of technological determinism by acknowledging the evolving process of media. Hence, this research is an attempt to better understand the evolving process of locative media with focus on the production of locative storytelling in the shaping of local history and local memories for locative apps. Also, as in the 17th and 18th centuries, when the distinction between history and news was not absolute (Kenny, 2004) and “relative recent events were sometimes called ‘newly historical’” (Atwood & De Beer, 2001), today history plays a critical role in the production of information for locative projects (Hight, 2013; Pavlik & Bridges, 2013).

By unearthing the fundamental roots of locative media, the relevance of this dissertation is stressed for future generations of storytellers that might reproduce the same needs of our ancestors to understand information by localizing it on maps with the aid and easiness of digital media. This theoretical/historical association also materializes the intellectual contribution of this dissertation for society and research community. By bringing these earlier forms of locative media to the forefront, I hope to demonstrate the key concern of this dissertation: the production of locative stories and the overlaying of maps through the lived experience of space and places. This historical approach is the bedrock for this work, because digital media technologies are very fleeting. Even though the application studied in this dissertation may fade into inexistence or the technologies of location may change, the core social and cultural practices of understanding information through location and maps will continue to apply to future generations of technology. Thus, as location continues to grow as an information source and location-based applications take over the mobile landscape, it is necessary to understand the historical context of our relationship with location and geography. That said, in the next subsection, some earlier locative media works will be presented.

1.6.The first projects in locative media

Locative media projects have been around for while, but most early initiatives were born in the field of media arts. In this section, some of the earliest locative media projects are presented, highlighting the institutions or artists who developed them. One early type of locative media was the audio walk, linked to locations by GPS. Audio walks were one of the first attempts to digitally attach information to locations. One of the first GPS-enabled audio walks was Knowton, Hight, and Spellman's 34 North 118 West (Gordon & de Souza e Silva, 2011, p. 47). Named after the geographical coordinates of the city of Los Angeles, the project invited participants to uncover narratives about Los Angeles's history as they navigated through the city's downtown. Equipped with GPS-enabled Tablet PCs and headphones, participants heard stories about the places they were moving through, triggered by their location.

The first two well-known locative media projects were Urban Tapestries, developed in 2002, by the UK-based art group proboscis (see Galloway, 2008) and Yellow Arrow. Urban Tapestries allowed participants to attach geographical coordinates to stories, pictures, sounds, and video and upload them to a server, embedding social knowledge into the fabric of the city. According to de Souza e Silva & Frith (2014), Urban Tapestries was "perhaps" the first mobile annotation project. In their words, "the real innovation of Urban Tapestries was to develop a location-aware platform that challenged the common top-down approach of location-based experiences at that time" (p.45). In other words, the project relied on the participation of its users to create content, which is in line with the approach of this dissertation.

As Galloway (2008) wrote in her dissertation about locative media and urban computing, Urban Tapestries, along with other location-based services analyzed in her work, "were valuable only in so far as they tied 'meaning to a place'... The emphasis on public participation, and ground-up media creation and sharing, is also crucial..." (p. 237). Also, as Galloway highlights, Urban Tapestries was self-described as a "research endeavor", not technological product development. This research follows this line of thinking by focusing and fostering participation from the ground-up, with the difference of choosing a specific demographic group.

The second well-known project was Yellow Arrow, created in 2004. Users had to order yellow arrow stickers and shirts from the website (each marked with a unique code) and place or wear them throughout the city. Once placed or worn, users

would send an SMS or access the website to annotate the unique code of the sticker or shirt. Once annotated, the message associated with the code of the sticker or shirt could be changed many times. So when users came across a yellow arrow in the city, they needed only to call the number on the arrow and dial the unique code to access the message. As Gordon and De Souza e Silva (2011) reminds us, those projects pioneered the development of commercial mobile annotation applications (e.g.: Foursquare).

Despite some common origins in these kinds of projects, Gordon and De Souza e Silva (2011) point out that artists and for-profit companies have different motivations; while the first tend to “subvert established practices” and challenge accepted interpretations and uses of space, for-profit companies tend to monetize them, commodifying space (p. 52). In this sense, these scholars recognize that there is nothing exceptionally special about any of these applications, but together they point to a significant trend in using mobile phones as urban annotation tools. The authors conceptualize mobile phones as “writing utensils” that facilitate interactions and cultivate a rich nature of maps and spaces.

Although these authors have noted this trend, I have noticed that these locative media technologies are not reaching widespread use, and in fact, many attempts at monetizing GPS and location-based social networks faded into inexistence (e.g.: Gowalla, EveryBlock). It is undeniable that the shut down of these applications points also to a difficulty of getting commercial location-based applications to become widely popular. In fact, a 2011 survey with 437 US smartphone users, the company White Horse (Reese & Beckland, 2011) generated four key findings: 1) Location-based services have not yet reached the tipping point, 2) the chief barriers today are a lack of clear benefit and privacy fears, 3) Users are mostly young, active contributors to social networks, and 4) marketers will need to create and test new geolocation experiences that are not generic but relevant to a particular brand and audience. One approach to overcome the difficulties of getting people interested in locative media has been hyperlocalism, which means content focused on neighborhoods or residential blocks where people would be more likely to have a common interest and a willingness to share information about their local scene. News media also began to think that one way to revive interest in news and involve citizen journalists would be to create services for hyperlocal journalism.

Everyblock was one of the earliest entrants in the hyperlocal scenario. This service started as a newsfeed (relying only on public data) of a neighborhood, in 2007, but after being acquired by MSNBC, in 2009, it presented itself as “a platform for discussion around neighborhood news” in which the role of user-generated content was key. Basically, Everyblock mixed a collection of news, photos, crime statistics, and government data for each city block that it covered with contributions from users in 16 major cities in the US. Everyblock allowed users to sign up on the website or mobile app and to post comments to their neighbors in the city. It obtained content by crawling websites of government departments, references to city locations in a subset of online media, local services including deals, meetups and real estate, and photos on third-party sites tagged with locations in the city. Most discussions on Everyblock revolve around local information and events posted by users.

In the literature, Everyblock has been mentioned as an example of location-based media (Schmitz Weiss, 2013; Nyre et al, 2012), usually in opposition to the location-based social network Foursquare. For instance, Foursquare has been described as a competitor for local news or Everyblock’s hyperlocal service (Nyre et al, 2012). Adam Greenfield selected 11 apps that best represent serendipity in a city, including Everyblock and Foursquare (Danzico, 2010). Clark (2010) also cited Foursquare and Everyblock (among other examples) as tools for attaching information to places. Everyblock was considered to be a location-based media because in 2011, Everyblock released a mobile application that took into consideration the user’s physical position (Øie, 2013), in which users could customize maps. However, the service, that was active in 16 cities in the U.S., was shut down suddenly in 2013. Vivian Schiller, senior vice president and chief digital officer of NBC News said that the reason for closure was the struggle to find a profitable business model (Sonderman, 2013).

In this section, I have tried to briefly show some of the early projects in locative media. Some of them were arts projects and others were attempts to commercialize locative media. However, users did not adopt them widely enough for them to survive. Despite not being a concern of this dissertation, the slow adoption of technologies of location is deemed a practical problem to be solved or at least to be grasped in order to propose new trajectories, new frameworks, or new design goals in locative media.

1.7. Locative Media and a few of its branches

This section defines the branches of locative media in this dissertation, which are storytelling, location-based learning and geotagging. This is important because it helps us to determine the contributions of this study and also the scope of locative media field within this research.

1.7.1. Mobile Storytelling

Mobile, location-aware, narrative systems are being applied to a range of areas including tour guides, educational tools, games, and interactive fiction. GPS-enabled phones and tablets have given rise to a new form of storytelling attached to places. This practice is understood by some as a category within the broad scope of locative media. For example, Ronald Lenz (2008) includes “storytelling” in his typology of locative media, although the author acknowledges that storytelling can easily be understood also as a characteristic of a locative media project as whole. Lenz’ argument makes sense because, in general, locative media projects deal with stories of places and people, in sound, text, or images (Farman, 2012; Farman, 2014; Gordon & de Souza e Silva, 2011). Thus, one may argue that the practice of storytelling is inherent to the nature of locative media, whether it is gaming or social networks. In fact, most of the projects on storytelling are concerned mainly with social and educational aspects, allowing people to share experiences and stories, to train their writing and self-expression skills, and to use and explore digital technologies. In addition, some scholars analyze the potential of location-aware narratives in terms of immersion (see Nisi, 2008; Karapanos, Barreto, Nisi & Niforatos, 2012); those stories are always a blend between the physical/material world and the virtual space, which has been described in this dissertation as “hybrid space”, as it will be explained in the second part of this chapter. The iLand project, a location-aware multimedia story, for example, was run in Funchal, Madeira (Portugal) by Dionisio, Nisi, & Leeuwen (2010) to encourage engagement of the audience with Funchal and its traditional stories. However, unlike this dissertation, the stories were

produced by the research team and not by the participants in the study. iLand projects were focused on how outsiders and locals were receiving the stories in the location where those tales were digitally attached through GPS-enabled devices.

The only book published specifically on the subject of mobile storytelling to date is "The Mobile Story: Narrative Practices with Locative Technologies" by Jason Farman (2014). This book is relevant for this dissertation because it links mobile storytelling to a larger history of attaching narratives to specific places, which is consistent with our fundamental explanation of the human need to understand information through maps and consequently to places. Farman (2014) discusses without necessarily agreeing how mobile media are disconnecting us from the real and genuine interactions with our loved ones and with the places we move through. This assumption is well discussed in the field of mobile media because some scholars argue that communities were more cohesive before the adoption of mobile phones (Rosen, 2004; see also Bauman, 2000; Wellman, 2002).

However, as Farman (2014) argues, mobile media storytelling projects demonstrate that in contrast, "that someone can be staring at a mobile device and be more deeply connected to the space and to others in that space than other people might perceive" (ibid, p. 6). Along these lines, de Souza e Silva & Frith (2012) also argue that mobiles and other portable media (e.g.: books, iPods) do not necessarily remove people from physical space, but rather provide users with a filter that helps them select and control with whom and what they want to interact with in public spaces. This dissertation draws on these studies to support the line of thinking that locative media increase people's sense of place.

Farman (2014) points out that readers of location-based stories can stand at a location, access the stories about that site, and gain a deep connection to that space (and the various histories of that space). This author summarizes the point of view of his book by stating: "not everyone staring into a smartphone is disconnected from his or her surroundings and from other people in those spaces" (p. 6). Farman's book touches on the specificities of mobile storytelling such as the possibility of layering single space with multiple stories. It also addresses various projects that take the mobile device out of the realm of the everyday insert it into practices that reimagine our relationship to technology, place, and our own sense of self in the spaces through which we move.

Similarly to this dissertation, Brett Oppegaard & Dene Grigar (2014) relate history and mobile storytelling. For these authors, “historic sites inherently attempt to connect story and place, for without that tether, such sites have no clearly recognizable spatial or physical purpose, and therefore the community has no logical reason to devote space and resources to maintain them. In Western culture, at least, such a place provides a tangible link to the past, and the historical storytelling makes explicit what is implicitly embedded in the local landscape” (p.21).

Another interesting point that these authors bring up is the need to find the adequate terminology to define these practices of telling stories about places through mobile phones. In their words, “After a decade of exposure to mobile phones, we still are not even sure what to call this phenomenon of storytelling with these devices. Mobile storytelling? Ambient storytelling? Geostories? Interreality? Mixed reality? Locative narrative? Ubiquitous media?” This is, in fact, a concern that this dissertation shares, because the locative stories produced in this dissertation are produced *for* mobile phones but not necessarily *on* mobile phones. Oppegaard & Grigar (2014) define mobile media storytelling as “a mode of storytelling that blends digital media on mobile devices with physical environments.” However, this dissertation focuses on the production of locative stories written on desktop computers because of the length of the stories, and the inherent difficulty of typing long stories on the tiny keyboards of a smartphone. That is why I opted for the term “locative storytelling” because it incorporates the idea of locative, which refers to the field of locative media without necessarily meaning stories produced on mobile phones while on the go. Because this study is focused on the production rather than the consumption of storytelling, the most appropriate term is “locative storytelling”.

In the project developed by Oppegaard & Grigar (2014), the Fort Vancouver Mobile, users are led through the storyline to actual places. They are shown the images on their mobile devices, such as a painting of Native Americans on the banks of the Columbia River near their camp. By comparison, it is important to say that this dissertation engages participants in the production of history or memory about places where they had been but not necessarily when they are there. In other words, the stories were not required to be produced in the place where the user happens to be.

Along these lines, this dissertation shares the goals of earlier (before the launch of GPS-enabled phones) locative media projects such as Murrur, established

in Toronto in 2003, which was a documentary oral history project that records stories and memories about specific geographic locations. Murmur collected and made accessible people's personal histories and anecdotes about the places in their neighborhoods that are important to them. In each of those locations, the project installed a [murmur] sign with a telephone number on it that anyone could call with a mobile phone to listen to that story while standing in that exact spot, and engaging in the physical experience of being right where the story takes place.

Some stories suggest that the listener walk around, following a certain path through a place, while other allow a person to wander with both their feet and their gaze. The interesting aspect of Murmur project for this dissertation is the fact that it offers history from the ground up, told by the voices that are often overlooked when the stories of cities are told. As is stated on the website of the project, "we know about the skyscrapers, sports stadiums and landmarks but Murmur looks for the intimate, neighborhood-level voices that tell day-to-day stories that make up a city. Once heard, these stories can change the way people think about that place and the city at large. "Murmur encourages all members of a community to participate and contribute, so the "voice of [murmur] reflects the diverse voices of the neighborhood" (<http://murmurtoronto.ca/about.php>). The aim of Murmur was to collect and share stories, which have been kept in the memories of residents that make up the city's identity. Thus, ultimately, Murmur unearths an archive out onto the streets.

This layering of the city with situated people's stories are understood by some scholars as a possible way to bring people together in the physical spaces through virtual applications, materializing in the physical place the theories of hybrid space conceptualized by de Souza e Silva (2006) - explained in the detail in the part II of this chapter. Brett Oppegaard & Dene Grigar (2014) suggest that the experience of exploring spatially placed multimedia could be one of the ways mobile technology can start to bring people physically together in the same space. These authors cite the work of Michael Epstein as a pioneer in mobile narrative. Epstein (2009) argues that as cell phones with multimedia playback and location-sensing technologies (GPS) become more ubiquitous, storytelling in public spaces delivered via mobile devices is emerging as a genre of its own. The author conceptualizes those locative stories as "terratives" or "terrestrial narrative," which are "stories told on mobile devices in tandem with real places" (p. 1). The author still defines "terratives" as a unique

storytelling format in that they allow audiences to perform and get physically involved in story playback.

Epstein (2009) raises important questions about the social impact of location-based narratives. This mobile scholar suggests “in general, more media will be developed using public places as stages for dramas and platforms for involving visitors in local issues” (p. 4). The most interesting point of Epstein’s piece is the proposition that “social issues will not be confined to the fleeting glimpses from moving vehicles or the city desk in in the local paper, but will become readily accessible as a narrative overlay on the maps we constantly consult for driving, dining, and orientation” (p. 4). This rationale reinforces the need to understand information through maps.

As other studies have noted, the experience of a place has to do with different factors associated with a place, such as memories, social circles, and people (Özkul & Gauntlett, 2014). Özkul & Gauntlett conducted a study in 2012 involving thirty-eight participants from London. They showed the participants a geographical map of London and asked them to think of key memories or activities and plot them on a map. These authors substantiate to a line of thinking theory well regarded by other scholars (Gordon & de Souza e Silva, 2011; Farman, 2012) that storytelling overlaid on maps helps users make meaning of the world around them. The historical analogy, between locative media and the need to sell newspapers along with maps, used in the beginning of this chapter reinforces the notion of maps as a powerful communication medium. The map is not only a device for navigation, but becomes an interface, which can be used by users to create geotagged stories of their own lives.

In line with this dissertation, Özkul & Gauntlett (2014) relate memory, identity, locative media, and mobile technologies. In their words, “mobile technologies clearly have the potential to affect this process of memory and meaning making, as they offer new ways to store and share information and reflections” (p. 114). For them, those technologies enable individuals to share memories with family, friends, and the outside world, “and do contribute to the presentation of self-identity to others” (ibid).

This piece is in line with many studies in locative media, reinforcing the idea that places “even if they are ordinary and taken for granted by some people, can

acquire a special meaning not only through social events that took place there but also with associations that we recall from books, from other people's stories, movies, and media in general" (p.114). Interestingly enough, Özkul & Gauntlett (2014) also found that some participants in their study marked places on their maps as the site of traumatic or upsetting experiences – usually with dark colors. As Özkul & Gauntlett (2014) analyze, it reminds us that individual meanings are not always sweet, charming, or cause for warm nostalgia.

Most of the projects related to location-based storytelling are restricted to research experiments or arts projects. Neighborhoods Narratives (NN), for example, situates itself within the scope of location-aware art and media Technologies (Iverson, Sanders, Fishcart, & Vitiello, 2008). NN is part of an ongoing series of site based socially engaged initiatives, and as such, it shares a collaborative pedagogy with other location-based media programs such as Social Tapestries, a project sponsored by the Proboscis organization in the U.K. Social Tapestries describes itself as “exploring the potential benefits and costs of local knowledge mapping and sharing,” what they have termed “the public authoring of social knowledge”(ibid, p. 10).

NN uses alternative technologies, basic mobile recording devices, online open source tools such as blogging, and Google Maps along with analog resources such as sketch maps to produce context rich stories that portray the world, city, or neighborhood. NN, in fact, was developed in the context of an introductory locative media course that opens up situated storytelling- stories tied closely to the environment. By engaging with the neighborhood as social practice, the work extends beyond the traditional classroom, creating an interdisciplinary curriculum that links the Philadelphia main campus of Temple University with its international campuses in London, Tokyo and Rome.

Although this dissertation does not include media arts in its scope, Neighborhoods Narratives is related to this work, because it was also undertaken in the context of a classroom. Their goal was to create a set of connected annotations about a specific city neighborhood. Similar to this present dissertation, NN does not use sophisticated technology and “asks students to conceptually understand some of the processes of the mediated city such as negotiating geographic, political, ideological spaces and reconsidering the issues that they deal with in everyday life (Iverson, Sanders, Fishcart, & Vitiello, 2008, p. 11). Similarly to this dissertation, the

NN project provides an experimental learning environment of Neighborhood Narratives. Beyond the local focus, NN is international in scope, being piloted in Philadelphia, Tokyo, London, Rome, and New York so far. As the author states, “the goal of engaging with this location data and/ or site specific installations is to tease out new awareness and appreciation of place and space” (Iverson, Sanders, Fishcart, & Vitiello, 2008, p. 13).

Iverson et al. (2008) point out the relationship between place and space (see part II of this chapter) by giving an example of how New Yorkers deal with the constant changing landscape. “You have become a New Yorker once you have the urge to point out a place and say, ‘that used to be...’ The ‘that used to be...’ that every New Yorker expresses is part of the inerasable past that is being built over, it is an expression of memory of a piece of their home and consequently a piece of their identities that is gone but not forgotten... The urge to tell others what used to be is an attempt to reassert one’s identity and the home they had carved out of the city”(ibid, p. 20).

Beyond those projects, there are exemplary mobile media works that use participatory methods and storytelling. A good example is Mobile Voices (“VozMob” <http://vozmob.net>), which is an ongoing media project that defines itself as “a platform for immigrant and/or low-wage workers in Los Angeles to create stories about their lives and communities directly from cell phones. VozMob appropriates technology to create power in communities and achieve greater participation in the digital public sphere.” Mobile Voices is grounded in a Communication for Social Change approach and, thus far, uses action research methodology and techniques to develop this mobile storytelling platform. They provided workshops, considered by them a popular communication methodology, in which they discussed technology, privacy issues, and evaluation as well as hands-on design and training on the use of mobile phones for digital storytelling.

Bar, Brough, Costanza-Chock, Gonzalez, Wallis, and Garces (2009, p. 6), researchers and participants in the Mobile Voices project, engaged with three research areas: Information and Communication Technology for Development (ICT4D), Communication for Social Change (CFSC), and Participatory Design and Research. Their work is important for the basis of this dissertation because it helps us to define the lines of approach. Their participatory learning goals are: Media Literacy (Mobile

Voices empowers workers to voice their own narratives about themselves and their community, thus becoming citizen journalists); Technology Literacy (immigrants learn to choose phones and plans that fit their budget and needs and also master the phone's features); and News forms of Public Participation (Mobile Voices can foster civic engagement and collective action).

1.7.2. Mobile Storytelling and children

The majority of studies about mobile storytelling are about applications that enable adult users to produce multimedia stories on the go, exploring the potential of mobile phones for real-time, *in situ* experience. But there are a few studies that focus on children and mobile media, mobile storytelling, or locative media. Because there is insufficient research into locative media/narrative and children, this dissertation uses studies from geography, education, and psychology as sources. Thus, this research is by nature interdisciplinary.

The scholars Jones, Williams, & Fleuriot (2003) conducted a research project called 'A New Sense of Place' in order to understand how "wearable" and "mobile" technologies might be applied to help children (re-) engage with urban spaces. This research team has raised important concerns. The first is the "apparent crisis in the spatialities of childhood brought about by the increasing confinement and control of children in many environments, particularly urban environments" (p. 167). These authors also mention other studies that support the notion that children are restricted in their homes and bedrooms.

Another concern is the relationship between childhood and technology and its relationship with space. Scholars associate the saturation of childhood by technology with their physical and geographical confinement (Jones, Williams, and Fleuriot, 2003). In other words, since children can no longer explore the world outdoors, they end up being left with the enjoyment of technology indoors. This situation might be more complex regarding the financial restrictions of low-income or underserved kids, because they tend to have less social capital. The issue here is that children are restricted from moving through and using the wider, ordinary, everyday landscapes around their homes and in the areas where they live.

Another advantage of increasing the participation of children with locative media is that it might enhance their sense of geography or spatial skills. The geography scholar Scott M. Friendschuh & Madhu Sharma (1995), from the department of Human Development and Family Studies, both from the University of Minnesota, studied geographical content in popular children's story books, such as the presence of locative terms in the stories (e.g.: in, under, near, dar, through, front, and back). In this matter, "locative" means descriptors of space. These scholars have brought to our attention how children (and adults for that matter) are geographically and spatially illiterate – from orienting oneself in the environment and finding one's way from place A to place B, to using maps to discover location, estimate distances, and plan routes. One strategy to alleviate this problem, this author argues, is to introduce geographic concepts to children early in the school curriculum and to integrate those concepts with other natural and social-science curriculums throughout the learning period. However, this author states that this might not be enough, because it omits the pre-school aged population, a development period during which most of the spatial/geographic concepts are acquired, and it might be more efficient to integrate the spatial concepts into everyday life skills. Friendschuh & Sharma (1995) found that children's books are "relatively void of references to geographic spaces, and are narrow in their regional and global perspectives" (p. 47). In conclusion to their work, these scholars ask: "What could we do to shift the content of children's books to include, in addition to what is already available, a more prominent geographical view?" (p. 47). The authors offer more than a couple of solutions: a) being interested in children's literature, b) being aware of what books are being read and promoted, and c) more involvement of geographers in the creation and production of children's literature. Taking into account the geographies of media (see Adams, 2009), fostering the creation of locative storytelling among Latinos/as children not only may benefit their spatial skills as it may improve their sense of place. In this matter, the expansion of participation from ground-up becomes essential to fill the void of references to geographical spaces in children's books. In fact, a recent report released in June 2015, by Pearson, provides evidence that "three in five students have used tablets or smartphones to do their school work during the school year" (see Poll, 2015). This piece of data indicates a potential to explore the possibilities of locative storytelling among children. Recent articles published in press in 2015 have also showed that the use of tablets and smartphone in K-12 has risen (Cavanagh, 2015).

Drawing on Johnson (1987), Freundsuh & Sharma (1995) suggest that knowledge acquisition relies heavily on spatial structures for comprehension – suggesting a fundamental relationship between space and the acquisition of knowledge (p. 40). Again, locative media may have a great potential to enhance children’s acquisition of knowledge in the process of creating locative storytelling. This enhancement may be a result of the process of creating stories that are based on places as the creators are requested to reflect on *place*.

Freundsuh (1995) and Potter (2008) approached locative media even before the spread of smartphones. What is interesting about their work is the fact they value the interplay of spatial information, storytelling, and children’s understanding of these two concepts without focusing necessarily on the technology. That said, it is important to remember that although this dissertation addresses locative and mobile technologies, the production of locative storytelling were not strict onto digital mobile technologies, such as smartphones and tablets. Participants created their stories in laptops computers and geotagged them also on the same devices.

1.7.3. Mobile geotagging

This research lies on several aspects of mobile storytelling such as overlaying a map of a certain place with personal stories or local history. Beyond that, the practice of digitally attaching a piece of information to a place also falls under what is called in the literature “geotagging”. While tagging, “the ability to annotate online material or digital objects” with keywords was a common practice in the participatory Web; geotagging is the ability to link a word, phrase, or image to a particular physical location using a standard geographic reference system such as GPS. If this is done with a smartphone, the name is “mobile geotagging” (Humphreys & Liao, 2011). Goodchild (2007), an expert in geographical information, defines “geotag” as “standardized code that can be inserted into information in order to note its appropriate geographic location” (p. 216).

Humphreys & Liao (2011) analyzes mobile geotagging as a social practice, in the sense of “the everyday lived experience of and movement through space” (p. 407). The authors give as an example of geotagging the website Flickr.com, which

enables the user to link an online photo to the physical location in which it was taken. They analyze a location-based messaging service called Socialight, based in New York City that allows users to leave “sticky notes” or messages in particular locations for people in their network. The point of intersection of their work with other studies in locative media is the combination of online and offline information that happens when geospatial data is added to online content. In this sense, the authors focus on how users of Socialight understand and layer information onto the physical world to share with their online social networks. Socialight alerted users if they were near a location where someone in their network had left a “sticky note.” Humphreys and Liao (2011) consider the service a social media platform.

Humphreys and Liao (2011) found two relevant themes in their study with Socialight users: communication about place and communication through place. Communication about place helps to build social familiarity with urban place through Socialight, while communication through place allows users to create place-based narratives and to narrate their identities with Socialight. The second theme is of relevance because Humphreys and Liao name it “place-based storytelling” and “self-presentation through place.” For example, Humphreys & Liao (2011) argue that a member might leave sticky notes throughout a particular neighborhood to tell a story that occurred at various places in that neighborhood or to utilize the place as a means of communicating something about them that goes beyond the descriptive characteristics of a place. In the last case, the authors conceptualize the communication as occurring *through* place.

Interestingly enough, one of the participants of Humphreys and Liao’s study said that they would give advice to new users to tell stories about their childhoods, which are not long enough to compose a biography, but are tied to place. These authors also used psychology studies to analyze the cathartic experience of telling stories of sorrow and pain. Social psychologists, they say, have found that narratives are a helpful way of coming to terms with life experiences (McAdams, 1996, Pennebaker, 1997). Because these narratives are tied to locations, it grounds theories in the physicality of place. On Socialight, place becomes the means through which stories are both told and read.

1.7.4. Location-based learning

Along with mobile storytelling and geotagging, the third field-branch relevant to this dissertation is the merging of locative media with learning. It is relevant to cover this part of the literature in locative media because the case studies undertaken in this dissertation contemplate learning environments and learning opportunities about local history, local knowledge, and local environment as whole. The research that associates locative media with learning is generated from different perspectives and fields, such as education, geography, or media studies.

Mobile learning, location-based learning, or context-aware ubiquitous learning are some of the terminologies used to define opportunities of learning provided in the real context of the physical world through GPS-enabled phones (see Clough, 2010; Hwang et al, 2010; FitzGerald, 2012). Despite the plethora of terms, these terminologies are tied by the common feature of using locative technologies for learning. Those terms are also connected by locative media concepts, such as place and space, as they foster an experience in the physical world, in a certain context outside the classroom for students. Thus, a common goal of location-based learning researchers is to create a range of learning activities aimed at engaging students with their immediate physical environment. Most of the time this “environment” is outdoors (Rogers, Price, Fitzpatrick, Fleck, Harris, Smith, ..., & Thompsom, 2004; Randell, Phelps, & Rogers, 2003; Rogers & Price, 2008) but it may be also indoors, such as in museums (Vavoula, Sharples, Rudman, Meek, Lonsdale, 2009) or the combination of both (Rogers, Price, Randell, Fraser, Weal, & Fitzpatrick, 2005).

“Mobile learning” is usually used to refer to the inclusion of mobile phones in the classroom, even before the spread of smartphones (see Grasso & Roselli 2005; Cabrera, Frutos, Stoica, Avouris, Dimitria-dis, Fiotakis, & Liveri, 2005; Hsi & Fait, 2005; Mullholand, Collins & Zdrahal, 2010; Papadimitriou, Komis, Tselios, & Avouris, 2006), while “location-based learning” started to be used after the widespread adoption of smartphones for learning (Heimonen, T., Turunen, M., Kangas, S., Pallos, T., Pekkala, P., Saarinen, S., ... & Raisamo, R. 2013; FitzGerald, 2012; Brown, D. J., McHugh, D., Standen, P., Evett, L., Shopland, N., & Battersby,

S., 2011; Chou & Chanlin, 2014). In this study, therefore, I will use "location-based learning" to refer to the process of discussing a theme in the classroom and assigning students to go outdoors and explore the physical environment.

Conceptually, the scholarship on location-based learning is shaped by the questioning of formal education, or put in a better way, it is presented as an alternative/complement to formal learning. Livingstone (2007) defines formal learning as involving “the presence of a teacher-someone presumed to have greater knowledge – and a learner to be instructed by said teacher” (p.3). On the other hand, Livingstone (2007) defines informal learning as “forms of intentional learning in which we engage either individually or collectively without direct reliance on a teacher or mentor and an externally-organized curriculum...” (p.3), for example, when visitors engage with geolocated information in a self-directed and self-managed manner. However, the distinction between the two is pretty fluid, since they may be considered as “a continuum with interplay and overlap between different learning activities” (Livingstone, 2007, p. 3).

In fact, while there are studies focused only on informal learning (Clough, 2010), others bridge formal and informal learning, as we will show now. Fitzgerald (2012), for example, explores the creation of user-generated content for locative apps with learning purposes. Fitzgerald (2012) explains an activity in which students, after visiting locations and creating content about the visited sites, reflected on their experience in a classroom setting. This way, exploration outdoors merged with formal guidance indoors. Vavoula et al. (2009) also provide an example of this merging. They created a mobile phone service called Myartspace, allowing students to gather information during school field trips which is automatically sent to a website, where they can view, share and present it, back in the classroom or at home. Vavoula et al. (2009) found that the service was effective in enabling students to gather information in a museum and then allowing them to reflect on it in the classroom. The authors point out that the activity allows students freedom to explore the environment within the constraints of pre-existing learning aims.

Along the same lines, Heimonen et al. (2013), in the creation of location-based learning tool called Seek’N’Share, suggest that “creating location-based mobile learning experiences also involves activities required for creating the learning content and providing ways for the learners to capture their learning outcomes and share and

discuss them while back indoors” (p. 1). Heimonen et al. (2013) tested an earlier version of Seek’N’Share with schoolchildren. Using an assignment about local history, the learner’s goal was to visit several points of interest to learn about the landmarks, record media content of the present day environment, and to construct a presentation that contains items of interest during exploration. Based on these studies on location-based learning, this paper is interested in exploring a bridge between formal and informal learning.

The criticism of formal education is also found in other studies about the integration of mobile phones and learning. Sharples (2000), for instance, argues that it is not “feasible to equip learners at school, college or university with all the knowledge and skills they need to prosper throughout their lifetimes” (p.178). Thus, mobile phones are presented as one way to encourage the “always-learning” mode. Also, Martin (2009), who developed an augmented reality game for an outdoor Summer camp, points out that most of educational research focuses on classroom-based learning. The author argues that by connecting learning with physical place, one taps into “embodied pedagogies of sensation in experiences – not with bodies, but as sensing and moving bodies, with cultural understandings mediating conscious experiences” (p. 287). In this paper, we draw on the assumption that locative technology and locative media as a whole situates learners with the here-and-now of specific places of learning rather than generic spaces of classroom.

Similar to these projects, Chou and Chanlin (2014) integrate Augmented Reality (AR) into smartphones to create a stimulating learning experience at a university in northern Taiwan. Chou and Chanlin (2014) explore how an AR mobile touring system was developed and evaluated among users. The study explores (a) students’ experiences using the functions provided by AR mobile touring system, (b) students’ satisfaction with location-based learning, and (c) the effectiveness of using the tool for learning. The application was based on navigation on the university campus and overlaid digital information on the buildings of campus. Chou and Chanlin’s findings were in line with previous research providing evidence that students appreciate the exploration of various functions embedded in AR for location-based learning (Lee, 2012; Novak, Wang & Callaghan, 2012). In Chou and Chanlin’s words: “students perceived high levels of personal satisfaction with the experiences of

both real-time interaction and self-guided navigation in the campus touring system (p.365).

Barak and Ziv (2013) describe “Wandering”, a location-based service that encourages students to leave the four walls of their classroom and wander around, while exploring new information and interacting with the environment and each other. Similar to Chou and Chanlin (2014), Barak and Ziv found that students were positively motivated to use Wandering not only as part of their learning assignment, but also to contribute to the community. An interesting finding of Barak and Ziv’s study was that teamwork is significant to this type of activity.

Also, Raessens (2007) analyzes a game that was designed to teach children the medieval history in Amsterdam. The author found that the use of smartphones, GPS, and Internet had a positive impact on the digital literacy on pupil’s digital media literacy, mainly through the creation of image and sound.

Despite these studies being conducted in different fields, the common aspect is the fact of delivering location-based information based on student’s location and enhancing their experience of the physical world through learning. And a common result is that students who use location-based tools perform better than students who did not use them (Hwang et al., 2010), or engage better with their surroundings (Naismith, Sharples, & Ting, 2005; Heimonen et al., 2013). This will help us to understand the effects of our case study with college students and also to interpret our results in regards to them.

Part II. Conceptual Frameworks

As explained in the opening of this chapter, this second part of the literature review will be dedicated to the conceptual framework of this research. Thus, I will distillate the central concepts that are the basis of this work, such as "hybrid space" and "splintered space" and link them with "spatial segregation". Furthermore, notions of place and space, and consequently of sense of place, will be discussed. In addition to that, I will explore the concept of participation and user-generated content and the relevance of increasing participation among Latinos/as in locative media.

1.8. Conceptual Framework 1: From cyberspace to hybrid space and splintered space

The scholar Adriana de Souza e Silva (2006) proposes the concept of hybrid space because, as she argues, cyberspace is no longer an appropriate term to talk about the changes of socialization brought by the use of smartphones in the urban space. As de Souza e Silva (2006) explains, “the concept of cyberspace applied to the Internet was responsible first for our view of physical and digital as disconnected spaces, second for our emphasis on the nodes of the networks instead of its spatial structure, and finally for the utopian view of the future in which social spaces would emerge mostly online” (p. 273). Mobile phones disrupt this view as they bring Internet connection to physical spaces. De Souza e Silva (2006) explains the need for a different perspective: “the concept of hybrid spaces arises to supply a gap opened when the Internet became mobile and when communities previously formed in cyberspace could be found in urban (hybrid) spaces” (p. 273). This scholar defines the hybrid space as “conceptual space created by the merging of borders between physical and digital spaces, because of the use of mobile technologies as social devices” (p. 265).

An interesting aspect of the hybrid space concept is that rather than thinking about immersion (e.g. feeling of entering the Internet or being in cyberspace) or identity creation in virtual worlds, users may be more concerned about how their smartphones help them in physical space and places through location awareness (e.g. learn historical information, add to local memory or find services, such as looking at the nearest gas station or postal office). Thus, “hybrid space occurs when one no longer needs to go out of physical space to get in touch with digital environments” (de Souza e Silva, 2006, p. 264). Unlike many scholars (Gergen, 2002; Plant, 2001; Puro, 2002) who argue that mobile phones detach people from physical and public spaces, de Souza e Silva (2006) argues that, “in the hybrid-space logic, cell phones do not take users out of physical space” (p. 270). Following Castells’ “space of flows”, de Souza e Silva (2006) considers “space” as a concept produced and embedded by social practices in which the support infrastructure is composed of a network of

mobile technologies. She also draws on Lefebvre (1991) who defines social space as a social product rather than as preexisting physical space.

In his 2015 book, the locative and mobile media scholar Jordan Frith, who also draws on the concept of hybrid space (de Souza e Silva, 2006), explains that this concept is useful for understanding the social impacts of smartphones as locative media. Frith (2015) explains that hybrid spaces help conceptualize what happens as the Internet leaves the desktop and moves out into the physical world. In his words:

Hybrid spaces are not just places affected by the location-based information of the mobile Internet; hybrid spaces are also spaces that show how physical place shapes the meaning of mobile Internet. In a hybrid space, the physical location determines the information one receives, just as the location-based information influences how people move through and make decisions about their physical space. The smartphone screen then becomes a way for people to mediate their experience of space and movement by accessing spatial information (ibid, p. 23)

Frith (2015) also reminds us that hybrid space is not the only concept that addresses digital location-based information as intertwined with physical space. Lev Manovich's (2006) concept of augmented reality and Rob Kitchin and Martin Dodge's (2011) concept of code/space also "provide similar analyses of the ways in which digital information is increasingly shaping how people experience physical world" (p. 147). In his 2015 book, when examining the future of locative media, Frith presents the correlation between the increasing adoption of locative media and digital inequality as a concern for future research in locative media. Rather than use demographic numbers (which populations own smartphones and which do not), Frith (2015) discusses how hybrid spaces may raise new issues of access and digital literacy.

By drawing on de Souza e Silva (2006), Frith says the hybrid spaces are not determined by technology and technological production, but are the outcome of social interactions and social production, although the author recognizes that without access

to the right technologies, there is no access to hybrid space. The key point of Frith's argument is that without access to the hybrid space, "space remains unchanged for the millions of people for whom the additional digital information embedded in the physical space may as well not exist" (Frith, 2012, p.133).

The author highlights that different types of unequal access are not simply a matter of access to smartphones or not. Smartphone ownership is increasing rapidly worldwide and, as mentioned earlier in this dissertation, minority groups such as Latinos lead mobile ownership in the US. Frith's main concern is with the types of digital literacy that will be necessary to understand the potential of location-based services to augment experiences of place. Frith (2015) calls attention to those groups or communities excluded from the new experiences of space. For this author, "the danger is that new issues of literacy are being introduced to public spaces, and as locative media becomes more important to navigating contemporary public spaces, those issues could have serious consequences" (p.139)

Departing from the concept of hybrid space, Frith (2012) proposes the concept of "splintered space," which is a combination of the concept of "differential mobility" and the "digital divide. "Differential mobility" refers to how people move through space (e.g. cities) and to how mobility is a resource distributed unequally among social groups. Frith (2012) points out the difference between someone driving a car to work with someone taking a city bus. As the author continues, the difference between these two types of mobility is the qualitative nature of mobility and how much control individuals have over their experiences while mobile (Frith, 2012, p. 134).

The term "splintered space" was derived from the book *Splintered Urbanism* by Graham & Marvin (2001), which refers to the many ways the infrastructure of urban areas splinters access to services and mobility (paid fast-lanes, privatized skywalks, restricted access to places). For Frith (2012), a new form of splintered urbanism is the "divide between those who have access to hybrid spaces and those who do not" (p. 137). A good example applied to the context of Austin would be the use of the Real Time Capital Metro (public transportation company) mobile application, which enables bus riders to visualize the location of the scheduled bus on the map while it moves on real-time, thus decreasing waiting times. Because Austin is considered a car-oriented city for most of the residents, one may assume that most of the people who commute on the bus in Austin are low-income individuals who may

be excluded from the hybrid space of Real Time Capital Metro, which would be very useful in making their bus rides more predictable and efficient.

Thus, the service only reaches a select subset of people. Capital Metro also serves its riders by supplying a QRcode at every bus stop -- also part of the hybrid space. The smartphone user can scan the code and find out schedules and timing for buses at that location. This example shows how the City of Austin may already be attempting to deal with issues of inclusion and exclusion of hybrid space, but we wonder how many bus riders know how to use the QRcodes. Frith (2012) states that those “who have access to mobile technologies are able to experience mobility in a qualitatively different way than those who do not. With the spread of smartphone technologies, this divide will only widen as the technological elite are able to occupy new forms of hybrid spaces” (ibid, p.134). The author argues that in the early stages of development of hybrid space, issues of differential mobility and exclusion must be critically examined.

Frith (2012) considered hybrid space as the merging of: 1) a space augmented by digital information, 2) the mobility of the users, and 3) the socially constructed nature of digital information. In this sense, the author believes hybrid space raises concerns about how we move through space. For example, while there might be a group of people who move through “malleable, personalized, and digitally infused streets, other groups might experience streets that remain as impersonal as ever” (p. 146).

This impersonality of space becomes even more prevalent when one talks about a segregated space. There are a couple of interrelated issues that complicate the splintered space. First, segregated spaces typically deal with a drought of digital information, as the inhabitants do not own the skills and knowledge to produce digital user-generated content. Second, when location information regarding the segregated space is available, it is often produced by an outsider; indeed, the production of storytelling tends to be more *about* than *among*. After all, the inhabitants of that segregated space *a priori* do not have the knowledge to access it. This scenario leads to hybrid spatial segregation, deepening the effects of historical segregation.

By tying these concepts together, it is important to remember that it is not within the scope of this dissertation to analyze segregation per se, albeit this is an

important issue from which we depart to establish the relevance and contribution of this work. Rather, the topic of segregation serves as a backdrop that helps to set up the research context of this study and the relevance of locative media. Furthermore, we are aware that there is a distinction between segregation and concentration of ethnic groups (Johnston, Poulsen, and Forrest, 2014). While *segregation* implies a pattern *imposed* by others, as segregation of African-Americans was in Austin, in 1928, through the exercise of economic, social, cultural and political power, *concentration* implies *choice* by the involved (p. 14). Johnston, Poulsen, and Forrest (2014) discuss the definition of segregation proposed by the Oxford English Dictionary: “the separation or isolation of a portion of a community or a body of persons from the rest.” That said, it is important to clarify that in this dissertation, I deal with the history of formal *segregation* in East Austin and *concentration* in Southeast Austin, because the latter was not formally segregated as was the East side of the city.

Spatial segregation leads to the segregation of hybrid space

The connection between segregation and hybrid space is created by the concept of “where” which is at the core of locative media. As Johnston, Poulsen, and Forrest (2014) point out, segregation matters because “where you live matters to your future” (p. 14). These authors make the point that “where” matters because “where” determines how people learn attitudes and behaviors patterns, because those things derive from socialization and mobilization through social networks. Johnston, Poulsen, and Forrest (2014) argue that this dynamic is spatially structured with a focus on local neighborhoods.

Similarly, a recent study by Harvard economists Raj Chetty and Nathaniel Hendren (2015) explores how community can influence a child’s future income. The authors found that a child’s chances of stepping out of poverty can improve depending on *where* they are raised. It is clear that for a segregated space this situation is even more complex, as racial segregation, mainly for blacks, is “part of a vicious cycle wherein spatial isolation increases the odds of being poor, and this in turn leads to deteriorating neighborhood resources, such as schools, which hamper the ability of future generations to escape adverse economic circumstances” (Wright,

Ellis, and Holloway, 2014, p. 115). One may argue against this rationale by saying that with the diffusion of social networking websites and mobile apps, people are able to extend their social ties and social capital (Ellison, Steinfield, and Lampe, 2007); however, if many inhabitants in segregated spaces are excluded from the hybrid space, they are less likely to expand their social networks through digital channels. Additionally, as Straubhaar et al (2012) found in Austin, digital exclusion still tends to follow the historical lines of racial segregation.

In addition, Cresswell (2008), when talking about place, makes a point that complexifies the notion of "where" and physical place. For this author, the relationship of humans with place becomes more complicated as a third dimension is added: the interaction between material place and the rise of a digital landscape. This author discusses how the mediated place and the 'real' place are interlinked.

These examples show how physical place is important in shaping one's identity and even more important in how place can determine the future of a child. As in a hybrid space, the physical location determines the information one receives, just as the location-based information influences how people move through and make decisions about their physical space. Hybrid space is a useful concept to understand how locative media may help to alleviate the effects of historical segregation. After all, smartphones as locative media (Frith, 2015) may help residents to learn historical information, local memory, or services in the place where they live and also elsewhere. Again, this study is focused on the *production* of stories, rather than the *consumption* of storytelling on the fly.

1.9. Conceptual Framework 2: Place and Space

Place and Space are central concepts in the literature about locative media. Several mobile and locative media scholars build on human and cultural geography research to understand the impact of smartphones in how we socially interact in urban spaces (Wilken & Goggin, 2012; Frith, 2015). After all, while versions of cyberspace on the computer could happen anywhere, locative media available on our smartphones are place-specific (Cresswell, 2008, p. 138). This study then embraces these notions, as they are fundamental to this work, because they

provide us with conceptual tools to understand how Latinos/as dealing with the effects of historical segregation may better understand the space and place where they live through locative storytelling. In this sense, it is important to have as a departure point the distinction between place and space, which is the leading idea of all scholars who touch on this topic. For the human geographer Tuan (1977), "space" is more abstract than "place." While space is related to room, size, and time, place is related to meaning. As this author puts it: "space is transformed into place as it acquires definition and meaning" (p. 136) or "place itself offered little outside the human bond" (p. 140). Another interesting notion about place is that it is not scale specific; it can be small as a table and as large as the Earth (Cresswell, 1998).

While Cresswell (2008) says that a place has a sense of place because it is imbued with meaning, Massey (1994) argues that 'places have no single sense of place which everyone shares' (p. 151). Massey explains that people's routes between here and the rest of the world vary enormously. Moreover, the central idea of Massey's argument is based on the notion of "time-space compression," which "refers to movement and communication across space, to the geographical stretching-out of social relations, and to our experience of all this" (Massey, 1994, p. 144). Drawing on this notion, Massey raises the question of "how, in the context of all these socially varied-time-space changes do we think about 'places?'" In an era when it is argued, local communities seem to be increasingly broken up, when you can go abroad and find the same shops, the music as at home, or eat your favorite foreign-holiday food at a restaurant down the road- and when everyone has a different experience of all this - how then we think about locality?" (p. 151).

The interesting point of Massey (1994) that is key for this dissertation is the idea that the time- space compression "has produced a feeling of disorientation, a sense of fragmentation of local cultures and a loss, in its deepest meaning, of a sense of place" (p. 162). Even more striking for the purpose of this work is also the notion that as "the local high street is invaded by cultures and capitals from the world over; few areas remain where the majority of industry is locally owned" (p. 162). The notion of local is much more complex in our contemporary and plural society, as immigrants also become part of the discussion of place and mobility (what is ours? what is theirs?) and locality becomes networked (Gordon & de Souza e Silva, 2011).

In addition, Massey (1994) also argues, "what gives a place its specificity is not some long internalized history but the fact that it is constructed out of a particular constellation of social relations" (p. 169). Thus, in Massey's vision, the identity of a place is much more open and provisional. Similarly, for Agnew (1987), place is a setting for interaction, nevertheless, place is also location. Agnew argues that there are three elements of place: locale, or place as a setting for social interaction; location, or place located in geographical space; and sense of place, or attachment between people and place.

As Massey (1994), Agnew (1987) states that modern communication and transportation allowed social interaction to take place between locations. Shelley (2003), who commented the work of Agnew (1987), highlights how "an Internet chat room, consisting of people from throughout the world with some shared interest, is a much more meaningful venue for social interaction for many persons than is as set of people who happen to reside in the same neighborhood, parish or territorially defined political unit" (p. 606).

After straying to the discussion of what place is, we may go back to the distinction between space and place, as there is massive confusion about the two concepts. For Agnew (1987), while space is the 'top-down' impact of institutional schemes of spatial organization and representation, place is the 'bottom-up' representation of the actions of ordinary people.

Malpas (1999) also contributes to the distinction of place and space. He argues that place is not a concept that can be severed from notions of extension and spatiality. The author turns to the etymology of the word to clarify it. 'Place', with related terms in other European languages such as the German 'Platz', the French 'place,' and the Italian, 'piazza,' derives from the classical Latin *platea* meaning 'broad way' or 'open space'. In addition to this etymological background, it is also insightful to compare the usage of the word "place" in English with Portuguese, the mother language of the researcher. Portuguese speakers use "*lugar*" (place) to refer to a venue that only indicates a location. However, in English the meaning of *place* may be extended to "home" conveying a notion of familiarity and emotional attachment. For example, one may say "let's get together at my place," which conveys the notion of *place*, and everyone understands it as an invitation to go to a private and homey location. In order to understand this comparison, we may take into account that

"location" refers to fixed geographical coordinates, while place has to do with emotional attachments with a location. de Souza e Silva & Frith (2012) exemplifies the difference by saying that "heaven and hell are places, but cannot be located" (p. 10).

In addition, Malpas (1999) says that place cannot be divorced from space, just as space cannot be divorced from time. The author says: "space can be taken to mean simply 'room' or extension, whether physical or non-physical. In this respect, 'space' seems to be tied, first and foremost, to a quite general notion of dimensionality" (p. 23). The author also explores the notion of space as "temporal duration" as well as "atemporal physical extension", as "one can talk of a 'space of time' or 'a space in one's schedule to mean simply an interval of time" (p. 23).

Mobile Technology and Place

In 2012, Rowan Wilken and Gerard Goggin published a book with a collection of essays about mobile technologies and the conceptualization of place. The scholars explain that because these technologies are closely related to mobility, there has been a constant interest in the relationship between mobile technologies and particular places (e.g., the space occupied by an individual while they use a device) and place in general. In addition to that, the authors also state that "reliance on place have only deepened," as more mobile applications focus on location, mapping, and sensor technologies.

Wilken and Goggin (2012) point out that the "interactions between mobile technologies and place are little understood, despite the recent renewal of interest in related questions of location and geography in fields such as media and communications, cultural studies, and sociology" (p. 4). Furthermore, Wilken & Goggin (2012) talk about a "geographical turn" in media studies, which they say have direct implications for thinking about how we engage with mobile media. After all, as they point out, "place is an obvious feature of mobile communication, most obviously because communication is occurring in different locales than it did previously" (p. 13) with landlines telephones.

For their book, these authors looked at the relationship between place and mobile media and had as a premise that "place is considered fundamental to the construction of our life histories and what it means to be human, while mobiles now form an intrinsic part of the daily lives and habits of billions of people worldwide - and for the manifold ways that they mutually inform and shape each other" (Wilken & Goggin, 2012, p. 18).

Everything we have said so far is about place being the core of locative storytelling. Place is then an important concept for this dissertation because it helps us to understand the trend of digitally setting/ attaching stories to places. Dourish and Bell (2011: p. 126, 127), basing their work on Keith Basso's (1988, 1996) studies, analyze the tradition of Native Americans to connect physical spaces to cultural values. In Native American culture, the landscape is strongly connected to the stories told about it. Those stories are traditionally told as practical and moral lessons. In regards to Basso's work, what is interesting to highlight is the example of Native Americans in how they use landscape to reinforce their stories.

In these settings, the physical world becomes a platform to embed stories. Walter Benjamin in his 1986 book "Reflections: Essays, aphorism, autobiographical writing," understands places as more than glass and stone. For him, places are repositories for personal memories. Moving through a city, physical structures and landscapes trigger memories of past events and people, but more than that, the visual observation of those particular places triggers the imagination and emotion created through the interpretation of those memories. Due to location-based media these memories can now be broadcast through the channels of local knowledge.

Information about places is a common theme in the broad field of locative media as location-based applications, such as Foursquare (or Trulia, UrbanSpoon, Yelp), reveal the layers of digital information that cover the physical world. Places and entire cities are augmented with information embedded in places (Aurigi & Cindio, 2008; Foth, 2009). Here, a parallel can be drawn between the physical world with computer terminology by citing Farman (2012) that "landscapes have become information interfaces much like the graphical user interface of a computer screen...where the data of all types can reside, from the quotidian rankings of various restaurants to the mobile mapping of crisis zones after a major natural disaster" (p. 43). Thus, the practice of being in places in the physical world gains value once users

experience the spatiality of the information *through* and *about* places (Humphreys & Liao, 2011).

This is becoming so developed that designers and architects have worked to merge the hidden stories in architectural forms (Danzico, 2010) due to the ubiquity of mobile phones. Therefore, mobile phones become a kind of digital dowsing rod to “read” layers of information in the physical world, while one moves in/around a space.

1.10. Conceptual Framework 3: The role of local information in the era of Netlocality

In order to understand the process of participation (as it will be explained further in this chapter) in the creation of locative stories and locative media as a whole, we need first to delve into the concept of “local.” As a main conceptual spine, this dissertation draws on the seminal work of Gordon & de Souza e Silva (2011), in which the authors propose the concept of *net locality*. The scholars have as a premise that we live in an era when virtually everything is located or locatable. Based on that, Gordon & de Souza e Silva (2011) raised the questions of what happens to individuals and what societies can do with the affordances of this location-awareness. Net locality is about a transition that will fundamentally alter what means to be local in a globalizing world. These authors argue that the web has merged with our physical spaces and that it is transforming our everyday interactions with the world and each other, being the new organizing logic of the web as well as physical location. The authors believe that what is being organized is not just information, but the physical world that contains it.

Also central to the concept of net locality is the notion of the compression of scale, which means that one may turn to the consumption of information on a number of fronts “from browsing the web to attending a local neighborhood meeting, to using an augmented reality application to see, in a slightly new light, the street you have walked down a hundred times before” (ibid, p. 3). Thus, these scholars state that geography becomes the organizational logic of the web, and location determines what kind of information people are able to see on search engines sites, for example. For

the purpose of this study, it is crucial to understand how people relate to local information and how it might affect the way they perceive their locality. Unlike many studies about locative media that are focused on tourism and visitors to places enhanced by locative media (Bilandzic, Foth & de Luca, 2008), this dissertation deals with residents.

In this work, *local information* is used in the sense of any information that is geographically related to a certain locality or city, with a focus on local history, local memory, and local knowledge. A broad term such as *local information* was chosen in order to avoid titles such as “news,” a controversial and questionable concept in the current times (Poindexter, 2012). Due to the lack of specific literature on “local information” with the meaning we use in this work, this study draws on studies on local media, local journalism, community media/journalism, in order to understand how local information impacts residents of a certain locality.

In regards to locative media studies that deal with creating information for outsiders, Bilandzic et al. (2008) developed an application called *Cityflocks*. The goal was to provide newcomers to the city with local information. In fact, other scholars argue that the local concept is one of the main benefits of user-generated content within the scope of geographical information. One example is Goodchild, who states that, “the most important value of user-generated geographic information may lie in what it can tell us about local activities... that go unnoticed by the world’s media, about life at local level” (2007, p. 220). Along with Goodchild, there is considerable research that relates the value of local knowledge to location-based media, especially with place-based information (see Gordon, 2009; Ludforf, P.J., Priedhorsky, R., Reily, K., Terveen, L., 2007). Gordon (2009) describes how network locality is transforming the social practices of locating things/people and being located by them, and how this individual phenomenon can enable the necessarily collective conditions of local knowledge, by using the case of geocaching, a worldwide game that enable people to hide things in physical space and mark their GPS (global positioning system) coordinates to others to find. This author argues, “as the geospatial grows, the focus on local knowledge will become increasingly important” (p. 34). This scholar suggests that local knowledge within networks is not dependent not only on geographical space but also on network locality – “the experience of interacting with located data within the perceived infinity of global access” (ibid, p. 22). As the author

states: “dispersed groups of people can share place-based knowledge – consider diasporic populations that, through stories, continue to connect with a ‘homeland’. In this sense, what is local or considered home is not necessarily geographically proximate” (p. 24).

Ludford et al. (2007) explores how technologies of location offer new methods for capturing local knowledge and making it available to those who seek it. These scholars point out how people need local place information, such as visitors asking for places to buy souvenirs or longtime residents looking for information when their lives change. This concept is key for this dissertation, because some of our participants are immigrants struggling to adapt to their new landscape of information.

On the other hand, there are other scholars who highlight how the concept of local is often woven into the “marketing” of location-based apps. For instance, Kelley (2014) argues that there is a promise of “persistent access to some form of insider socio-spatial insight about place” (p. 17). Overall, this author argues, that “regardless of the growing ubiquity of smart mobile devices in urban space, participation in geosocial media does not imply that new information is more reflective of the local condition”(p. 18).

There is a continuous discourse that those location-based information apps enable one to always be a local or to discover a locality through the lens of a local. However, an increasing number of scholars challenge the assumption that data produced by locative and geosocial apps are necessarily local. Dodge & Kitchin (2013), for example, make us to realize that many locative stories are considered “local” because they have been told by users about particular sites in space, but “there is no way to know, for certain, the connection between users and the geographies where they actively produce geosocial information.”

Along the same lines, Hecht & Gergle (2010) challenge the localness of participation in repositories of user-generated content (UGC) with geospatial components. These authors found 50% of Flickr users contribute local information on average, and over 45 percent of Flickr photos are local to the photographer. In this sense, they conclude that, “an important theoretical direction that must be investigated involves the importance of UGC repositories as sources of place information. The degree to which these repositories are defined by locals versus outsiders is an

important question in this respect” (p. 232). In fact, this is a great concern for which further research is needed. After all, in the era of globalization, residents may well live in networks, perhaps often more knowledgeable about events overseas than about those where they actually live.

Paula Levine (2014) in her chapter “On Common Ground” reminds us “there is also a potential for mobile and locative media to change one’s relationship to a place by introducing distant events or circumstances onto local spaces and making events that are happening elsewhere highly relevant to the immediate, local space” (p. 143). By drawing from the psychological concept of "cognitive dissonance," Levine (2014) proposes "spatial dissonance," which means the "experience of two contradictory spaces (or ideas about a space)" (p. 144). As Levine (2014) explains, "cognitive dissonance describes a state of mind that arises when two contradictory ideas must be held in mind, for example when information that is presented stands in conflict with strongly held beliefs" (p. 148). Some theories suggest that "we attempt to move away from this state of contradiction by turning away from the new information presented to return to the safety and familiarity of beliefs we previously held" (ibid). Levine (2014) argues that this conflict may also be applied to the ways we think about our relationships with space and place. Although Levine refers to the juxtaposition of spaces by, for example, overlaying certain locations of Baghdad on the map of San Francisco, her concept of spatial dissonance applies to how some participants decided to geotag their stories as they did something similar. An example is overlaying a local map with events that are happening elsewhere in the world. Levine (2014) writes that locative media can collapse geographies to mix *here* with *there*:

By narrating pathways among the geospatial-temporal gaps, participants forge links between familiar places and their relationships to events, locations, and circumstances that normally lie outside of the local borders. Like traveling in unfamiliar countries, these experiences can be opportunities to form new cross-cultural, historical, conceptual, or theoretical connections between local and global (p. 144).

Part of Levine's argument is also the notion that place happens to be local and global at the same time, which is reinforced by the concept of net locality proposed by Gordon & de Souza Silva (2011).

In the UK, for example, the preoccupation with the world beyond the local is anchored in daily experience: the gap year; the web-based materials; transnational publishers; the growing proportion of students from other countries; the proliferation of international exchanges; and conferences (Aldridge, 2007). However, Aldridge also states: “for the majority, then, life is local” (p. 7). If this is true and the majority of people live locally, how do they relate to their locality, what kind of local information is important to them? Aldridge (2007) provides an answer for this question based on research conducted in the UK that has found that much of people’s desire for news of the locality is driven by these practical and material concerns.

1.11. Conceptual Framework 4: Participation in locative media

Participation is constantly addressed in locative media projects (see Bio Mapping, Neighborhood Narratives, Urban Tapestries, Textopia), because many of the arts projects encourage participation, mainly in the production of storytelling and narratives. Participation is approached in different ways by researchers in the field of locative media, but many scholars agree that “participation” in terms of producing content and using mobile applications is key for these sorts of projects, even though the ways to engage citizens remains obscure (Bruns & Humphreys, 2010; Løvlie, 2011; Miller, 2013). Biomapping, for example, is a community-mapping project in which over the last four years more than fifteen hundred people have participated. In the context of regular, local workshops and consultations, participants are wired up with an innovative device which records the wearer’s Galvanic Skin Response (GSR), which is a simple indicator of the emotional arousal in conjunction with their geographical location. People re-explore their local area by walking their neighborhood with the device and on their return, a map is created which visualized points of high and low arousal (biomapping.net).

That said, it seems very relevant to invest in increasing the participation of underserved groups, such as Latinos/as, in the hybrid space. For the purpose of this

dissertation, "participation" is woven together with the concept of user-generated content (UGC) and Web 2.0. Although the latter term is controversial, as some scholars may argue (Keen, 2007), it is unavoidable to use it in this dissertation, because Web 2.0 is entangled with participatory culture (Jenkins, 2009) or with related terms such as "Prodsusage" proposed by Bruns (2008). As others scholars have pointed out, there is a set of concepts that have been used to describe the digital knowledge production in Western economies: peer production, free software, creative commons, feeds, blogs, cloud computing, social networking, mash-ups, torrents, tags, tweets, and wikis. Despite the different meaning among them, all these terms constitute the era of participation as opposed to broadcast and consumption.

Participation, in this dissertation, is approached in two ways: 1) in the general use of locative media, and 2) in the production of locative storytelling.

User-Generated Content and Participation

It is interesting to note that most of the research on UGC relates to the relationship between citizen journalism/participatory journalism and mainstream media in the scope of online media. Without doubt, this is an interesting point of discussion for this dissertation; after all, past research has provided evidence that location-based media is not yet well integrated into practices of mainstream media, at least in the scope of news organizations (Schmitz Weiss, 2013). Thus, location-based media is still restricted to artistic and participatory initiatives. Taking this into account, it is important to stress that even though this work draws on the existing literature on UGC, some lines of thinking may not apply into location-based media, considering that the duality UGC versus mainstream media is not within the scope of this dissertation. It is also important to clarify that although several researchers relate UGC with political knowledge and political participation (Östman, 2012; Dylko, I. and McCluskey, M, 2012; Dylko, 2014), this dissertation does not address "participation" in the sense of deliberative democracy or political involvement. Rather, this work is interested in the intersection of the production of user-generated content with locative media in a way that reflects our concern of the

segregation of the hybrid space and specifically, the production of locative storytelling.

In this sense, there are a few works that contemplate this combination. FitzGerald (2012), for instance, explores how the emerging trends of the Web 2.0 with location information may be used to provide informal learning opportunities and to improve the creation of UGC within the scope of location-based media. This author aimed to develop a set of guidelines for the creation of content. Along the same lines, Hamilton (2009) combines practices of locative media (experiential mapping and geo-spatial annotation) with aspects of online participatory culture.

This dissertation draws on the optimistic academic rhetoric and assumption that the provision of interactive features and solicitations of user-generated content (UGC) foster empowerment and democratization (e.g.: Benkler, 2006; Chung, 2007; Gillmor, 2004; Shirky, 2008). However, despite this dissertation defending participation as being a positive outcome, I recognize that several scholars have arguably a dystopian view of “participation,” in the context of UGC, as exploitation. Petersen (2008), for example, paraphrases the publisher and coiner of the Web 2.0 Tim O’Reilly, by saying that the “architecture of participation,” also coined by Reilly, sometimes turns into “architecture of exploitation.” Petersen (2008) exemplifies two different strategies within the architecture of exploitation that capitalism can benefit from: 1) Through a distributed architecture of participation, companies can piggyback on user-generated content by archiving it and making interfaces or using strategies such as Google’s AdSense program. 2) Designing platforms for user-generated content, such as Youtube, Flickr, Myspace and Facebook.

In this same line of thinking, Jönsson and Örnebring (2011) question if UGC is an authentic empowering tool or gives a pseudo sense of participation by analyzing newspapers in the UK and Sweden. What it is interesting for the scope of this dissertation, and from which I draw, is the fact that the authors examine the media-reader relationship by looking at (1) degree of participation, i.e., how much effort is required of audience members in order to participate; and (2) type of content, i.e., the content being produced primarily private or public in character and if public, is it primarily information-oriented or primarily entertainment-oriented? The authors suggest that participation and involvement are not binary categories, where people either participate or do not participate because there are a number of online tools for

participation and interaction available. As they point out, “some of them require extensive prior knowledge to use (e.g. open source programming project management software), others require virtually no knowledge (e.g. making comments on a blog), some virtually demand that audience members become active producers (e.g. wikis), other make very few demands on audience members (e.g. online polls), and so on.”

Jönsson and Örnebring (2011) make a distinction between features that require a low level of participation and that address audience members as consumers; a medium level participation and that address audience members as prosumers; and finally, features that require a high level of participation and that address audience members as producers. This categorization is based on Örnebring (2008), Thurman (2008), and Hermida & Thurman (2008). For this dissertation, participants are approached as producers, as they have to actively compose stories and geotag them. In other words, the degree of participation required for this study refers to the writing of a story about a place which may include visiting a place to take a picture, recalling memories, and collecting historical or current information about the place.

In terms of type of content, Jönsson and Örnebring (2011) saw three primary possibilities that users can create: information-oriented content, entertainment/popular culture-oriented content, and personal/social/expressive-oriented content. Their research showed that online newspapers in Sweden and the United Kingdom do allow for citizens/readers to participate and be a more active part in the mediated public sphere, but that users are mostly empowered to create popular culture-oriented content and personal/everyday life oriented content rather than news/informational content. For this dissertation, content have to reflect the memories, history, or stories of a certain location. Thus, the type of content can be historical or contemporary, as long it is about a place.

Considering that the literature tends to contrast UGC to mainstream media, Jönson and Örnebring (2011) conclude that UGC could represent new opportunities for representation and recognition for groups outside the mainstream, but currently does not. Furthermore, they argue that UGC represents both an empowerment of citizens and an “interactive illusion.”

Another common theme in the literature of UGC and participation on the Web is what factors motivate or constitute rewards for participants in these social

computing systems. Many of these concerns are raised in an attempt to understand how to increase participation. Some of this research has found that non-monetary reasons motivate users to produce content such as gaining attention (Huberman, Romero, and Wu, 2009), building reputation and status (Ling, Beenen, Ludford, Wang, Chang, Li,... & Kraut, 2005) or virtual points (Nam, Ackerman, & Adamic, 2009; Yang, Ackerman, & Adamic, 2011).

For the relevance of this research, Ghosh (2012) points out that several UGC sites failed, either immediately or eventually, for lack of contributions. He states that there are two characteristics of UGC: participation is voluntary, and even after having decided to participate, contributors can decide how much effort to put into their contributions, which affects the quality of the output they produce.

Dodge & Kitchin (2013) state that the reason why people participate is to “connect socially, communicative meaningfully, and contribute collectively” (p. 20). These authors also raise the question of how one can ensure that the model of UGC is sustainable. Will participants continue to produce content next week, next month, and next year? Moreover, there also concerns over the unpredictability of crowds, their narrow demographic profile, the quality and consistency of content and metadata created across diversely skilled/motivated individuals, and how to provide documented degrees of reliability and generate a sense of trustworthiness.

The participation in locative media, however, is usually explored among people who are already inclined to adopt new technologies or who are already tech-savvy. Some researchers, for example, conducted a qualitative study about mobile geotagging in which all participants worked in social and interactive media (Humphreys and Liao, 2011). Fostering participation in locative media projects *among* and *about* underserved communities, such as Latinos/as, is fundamental because it might generate a different set of outcomes in comparison to past research on locative media conducted in the US. Thus, we may better understand the particularities of a population that leads the smartphone ownership in the US. First, it might diminish the segregation of the hybrid space. Second, I draw on Frith (2015), who by discussing the impact of hybrid space and splintered space, argues that “what is often lost in discourse about these new understandings of space are questions of who gets to experience this convergence of the digital and the physical” (Frith, 2012,

p.131). In this sense, as stated above, most of the research on locative media is focused on early adopters, which is reasonable given the novelty of the field.

It is important, however, to follow the widespread adoption of smartphones. In a recent report, PricewaterhouseCoopers estimates that, by 2019, a majority of active mobile connections in the world will be on smartphones, and it is also important to focus on the increasing of participation in less advantaged groups. Frith (2015) also argues: "as hybrid spaces become more prominent and more people add to the digital layer of spatial information, researchers and designers need to consider how this will affect people who either do not have the technologies or the skills to take advantage of smartphones and location-based services" (p. 138). This dissertation shares the same concern with Frith (2015); thus, this work takes the premise a step further and fosters participation *among* people, in this case Latinos/as in Austin, who *a priori* do not have the skills to overlay the physical world with digital information. The way "participation" is approached here not only addresses *among* but also *about* Latinos. It is not only relevant to understand the effects of "who gets to experience the convergence of the digital and physical" (among) but also to raise awareness of their reality (about). Third, past research has demonstrated that online participation is beneficial and leads to increased level of social cohesion and collective action, even in disadvantaged local communities (Hampton, 2010).

Participation Gap

In their book about locative media, Gordon & de Souza e Silva (2011) argues that location awareness is factoring into community life in different ways - "everything from mass protests to neighbors communicating with each other online to people engaging with government services" (p. 106). These authors also point to "a trend in local life cities" in which people are using the affordance of net localities to improve their communities. Along these lines, and by drawing on Castells (2009)'s statement: "power is exercised not by exclusion from the networks, but by the imposition of the rules of inclusion" (p. 43), the authors argue that there is an even greater social need for the distribution of online communication to be equitable (p. 111). This dissertation agrees with these scholars when they explain that digital divide

is not just a matter of access being provided to a certain population but to provide knowledge and foster participation. In fact, they draw on Jenkins (2006) who states that there is a participation gap, which reflects the notion that it is not just a matter of simply having the technology but knowing what to do it. Jenkins et al. (2006) defines participation gap as “the unequal access to the opportunities, experiences, skills, and knowledge that will prepare youth for full participation in the world of tomorrow” (p.3). Although the definition targets youth, this participation gap is applicable to other age groups as well. The scholar Jen Schradie (2011), in her study about the production of online content, found that there is a class-based digital production, even among people who are online. Useful for this dissertation, this author uses a “digital production framework,” in which she defines “production of online content” as “digital creation for anyone with an Internet connection to view (or hear), not just for one’s social network” (p.150).

Past research have shown that due to the widespread adoption of Internet-enabled mobile devices, digital divides based on access are no longer significant as they once were (DiMaggio, Hargittai, Celeste, and Shafer, 2004; Schradie, 2011). As will be shown throughout this dissertation, the basic access gap has been narrowed because mobile devices are less expensive than home computers and offer contact-free, month-to-month subscriptions that can provide families with Internet access. Mobile devices, however, have limited capability to produce and edit content due to limited Internet access and hardware limitations (e.g. tiny keyboard). However, the aforementioned “modes of engagement” often require a computer and quality Internet access.

That said, while research shows that 84% of Americans adults use the Internet, (Perrin & Duggan, 2015), the ‘participation gap’ is growing, which means that people, mainly youth, have access to technology yet do not participate in equally and meaningful ways. In fact, about 20 years ago (DiMaggio, Hargittai, Celeste and Shafer, 2004), the great fear was that the digital divide would leave Black and Latino youth disconnected from the social, education, and civic opportunities the Internet affords. In this sense, past research focused on black and Latino populations, mainly youth. For example, (Watkins, 2011) has called attention to this “participation gap.” Watkins (2011) argues that “investigations of the digital lives of Black and Latino youth must focus less on the access gap and more on the “participation gap” (p. 2) as

the most urgent questions today are less about access and more about the context and quality. Thus, the promotion of a more equitable future requires the acquisition of skills that enable significant modes of participation, such as the production and creation of content.

User-generated content and geographic information

Within the literature of UGC, there is a new field of research that is related to location-based media, which is called “geographic user-generated content.” More specifically, Michael Goodchild, from the field of geography, termed the collaboration of users to create maps or any geographical information as “volunteered geographic information (VGI)” (see Goodchild, 2007). As examples, the author cites Wikimapia and Flirck. Goodchild (2007) touches upon concerns that this dissertation shares such as “Why is it that citizen who have no obvious incentive are willing to spend large amounts of time creating the content of VGI sites? What kinds of people are more likely to participate, and what drives them to be accurate (or inaccurate)?” (p. 219).

Another term that may be linked to the notion of participation addressed in this dissertation is “geosocial,” which refers to applications that integrate location and social networking and enable public participation in the production of datasets that “reveal patterns of individual perception, interaction, and experience in space” (Kelley, 2011). More specifically, geosocial data consist of point locations that have been created and tagged by participants who have been created short statements about their perceptions and/or experiences, such as location-based social networks Foursquare, Gowalla, and Brightkite (Kelley, 2011).

In an article, Kelley (2014) discusses the geosocial media and the production/consumption of the local. The author uses “geosocial” to signify those apps which are socially-oriented and designed to perform little else than the two relatively simple tasks of enabling users to (1) produce information about their experiences, perceptions, or interactions at any given location in space, and (2) query and consume information about a particular location (or region) in space. The author concludes that essentially geosocial apps facilitate the production, sharing, and

consumption of digital information that is reflective of the sociospatial dimension of urban space.

The interesting point that Kelley (2014) brings up is that geosocial information is concentrated in those places with high population and vibrant commercial activity, and thus it is less likely that one would encounter clusters of geosocial information in rural or suburban landscapes. The authors argues that “instead, in those places where the production of user-generated content is less pronounced, information accessible via locative services is dominated by sponsored content such as coupons and real estate listings” (ibid, p. 16). In terms of participation, Kelley (2014) explains that to accomplish the task of crowdsourcing sociospatial information, geosocial apps offer the same range of functions that characterize the social media landscape. Users maintain a profile that contains a variable amount of personal information, are able to join group of friends, and can usually connect their geosocial activity to other social media accounts through intermediary scripts. Additionally, geoweb is another descriptor for the convergence of geography and the interactive/participatory/generative Internet (see Baudry, 2008; Elwood & Leszczynski, 2011; Haklay, Singleton & Parker, 2008). Finally, neogeography refers to the practice of creating maps for the masses, something enabled by the participatory tools of the so-called Web 2.0 (see Goodchild, 2009; Kelley, 2011).

Similar to Kelley’s concern, Stephens (2012) analyzed in her dissertation “From Geo-social to Geo-local: the flows and biases of volunteered geographic information” analyzes how unevenly information is produced, obtained, analyzed and displayed on the Internet. Her dissertation is from geography field and not specifically on locative media, however, it is pertinent to review this work because it relates to user-generated information that enables annotations of local and geographic content. Stephens builds on the fact that user-generated content is uneven with a small percentage of contributors generating the majority of content. Stephens (2012) reminds us that while many assumed that Web 2.0 would usher in information democracy, this has been unrealized as user-generated content is uneven with a small percentage of contributors generating the majority of content. According to her, the content is primarily generated by individuals in the United States and Western Europe, which puts the democratic nature of user-generated content in doubt. Thus, the democratic nature of user-generated content is in doubt when the content

generators are a homogenous few that do not represent the users of the content they generate. Although this situation might have changed with the widespread adoption of Facebook around the world, in regards to the production of location-based information, this gap may be deepen as not many people are familiar with the concept of attaching stories to places yet.

Similar to these other scholars, Axel Bruns (2008) also points out this gap in an era that he calls *Produusage*, when the consumer becomes a producer. He states that, so far, much of the activity in the *produusage* sector is driven largely by enthusiasts, contributing when motivated enough to do so. For Bruns (2008), this is an indication of a new form of digital divide: “a divide between those already tuned in to the produusage process (for example, software designers, niche knowledge enthusiasts, and other with an itch to scratch) and those not yet motivated to participate, as well as a divide between those who already have the skills and capacities to large-scale, hierarchically organized, meritocratic collaborative content creation communities, and those for whom participation in such environment remains an apparently insurmountable challenge” (p. 338).

Along the same lines, Bruns & Humphreys (2010) discuss in their paper the project edgeX. The project was designed to enable a regional community to share creative content of relevance to local users in a variety of formats (text, photos, audio, video), using tools to engender a very specific hyperlocal form of content creation and sharing. Bruns and Humphreys found, in their study, how engaging community groups beyond already active high-level amateur and Pro-Am creative practitioners have proved slow and difficult. Another challenge, according to their study, is to sustain that engagement over time. Two key factors, according to these scholars, explain this. Firstly, they were working with people who do not as a matter of course use new media technologies to communicate within their community and who have not incorporated the Internet into their general communication ecology. Secondly, different people and groups combine their use of telephones, mobile phones, mail, email, and face-to-face communication in different ways, which make the site failed as communication and collaboration tool.

Bruns & Humphreys (2010) also concluded that in order to build local community identity and to strength community ties, projects need groups of people to adopt it, rather than individuals. In their words: “the integration of an online

communication tool into an existent ecology of communication strategies in offline groups can be achieved, given the right contexts, but it not assured of success” (p. 31). One solution for this problem might be harnessing existing groups and networks to populate the site/platform/app and generating critical mass in order to be sustainable (ibid, p.31). This is key for the scope of location-based applications, as many applications such as the location-based social network Gowalla or the Everyblock have been shut down, and locative storytelling projects face difficulties to gather participation over time (Løvlie, 2011).

Bruns & Humphreys (2010) argue that in a media ecology in which an online presence is playing a more and more central role, communities which are not significantly active on web-based platforms for creative participation and cultural exchange will be rendered more and more invisible, disconnected from the key channels of grassroots cultural activity; this is an issue specifically for traditionally disadvantaged rural and regional communities as well as for socioeconomically underprivileged groups (ibid, p.32).

Based on this literature review, it seems that there are at least two ways to engage participants with the creation of locative content: 1) to recruit participants who are smartphone users already to facilitate the process, and 2) to foster emotional attachment to a certain locality, which seems to be crucial for the engagement of citizens of local issues in general.

Løvlie (2011) developed the “Textopia” project in the scope of electronic literature. His idea was to cover the physical world/hybrid space with text, enabling anyone walking through a city to access many points of a “spatial hypertext”. As a conceptual design, he proposed the acronym-pun “G-P-S”, which refers to the Global Positioning System, but he uses it to refer to the keywords Granularity (e.g.: length of texts), Participation, and Serendipity (discovery). From the acronym, the author highlighted how “participation” is key for the sustainability of textopia, because users can annotate the space as they want, increasing the number of annotated places and consequently possibilities of serendipity. Løvlie points out two initiatives to facilitate contributions from users: 1) setting the system up as a wiki where any user can contribute; 2) arranging creative writing competitions and writing games in order to build a social framework for participation. Lovlie’s approach to participation is not

concerned with the quality of content but is preoccupied with getting participants/users involved with locative media.

Despite the relevance of participation for these projects, it seems to be an obstacle hard to be overcome. Løvlie found that the main problem was not to make participation possible but to actually make it happen. As he states, this is an issue, because those projects are strongly “dependent on scale for its value, much like social networks and other participatory online projects: the more participation that takes place and the more people that are involved, the more useful and valuable the resource will become, and the greater motivation for others to participate as well” (Løvlie, 2011, p. 252, 253).

Some of Løvlie’s findings regarding barriers to participation are outdated and are no longer a concern for current studies on locative media, such as “the technological fragmentation in mobile platforms” which means the diversity of operating systems (IOS, Android, Symbian), and access to location-aware devices (smartphones and tablets). Today, there are so many applications for both of the most used operating systems (IOS, Android). However, we still share Løvlie’s (2011) concern about participation.

Like Løvlie (2011), Hamilton (2009) proposes a convergence of some locative media practices with online participatory culture and social network service to support the creation of online communities of place. This author suggests that the convergence will facilitate the geographic contextual display of creative content, social networking, and co-production of locative media. Those convergent applications, the author explains, “must not acknowledge the contexts of production in media display but also support collaboration that is contingent on geographical proximity, bonds formed through local community contexts, and a shared connection to the land” (p. 93).

Hamilton (2009) argues that locative media includes two practices that are useful to the project of extending participatory culture to support communities of place. The first is geo-spatial annotation, which involves tagging site-specific content (image, sound, text) with spatial (lat/lon) co-ordinates. The second is experiential mapping or geotracing. This author created a prototype called OurPlace: 3G to 3D, which focused on supporting the upload and display of geographically contextual

content, the production of a shared archive, and the facilitation of the co-production of creative content. OurPlace has been designed to support regional communities to participate in content creation and to upload, archive, and exhibit in a geographical context through a map and point cloud in a web interface. One of the conclusions of this author is that the design of applications to support the formation of geographically contextual communities with a shared connection to the land needs a different approach. “They must not only support the expression of shared interests and contexts, they must provide activities that are meaningful to the context of the group” (ibid, p. 396).

Willis, Corino & Martin (2012) developed a neighborhood locative media toolkit in order to foster participation and engagement. This project was situated in Devonport, a neighborhood of Plymouth, UK, and does not reflect the reality of the US, where access to location-sensitive smartphones and GPS signal are not a concern. However, it is still important to cite these findings to situate this research in the broad field of locative media. It also shows that participation in locative media has been a concern of past studies.

Willis et al. (2012) did not develop a single app or platform. They took a technology narrative approach based around the idea of a toolkit. Their goal is not presenting a technological solution but a pallet of location-based technologies that can be adapted and molded to suit a neighborhood’s need. The toolkit include a mobile format app, a web-based game format (the integration with an existing web platform), an embedded format (QRcodes embedded in place) and a sharing format (iPad with all four options together with a camera). Each of these options were designed and developed by an interdisciplinary group of architecture and digital arts students from the University of Plymouth. The researchers conducted two workshops with schoolchildren from the community. The project had the following goals:

- mapping change in the environment;
- making sense of and characterizing the built environment in their neighborhood as a shared process;
- allowing for a gathering and making sense of opinions in the place;
- recording and capturing responses and comments on what others have said or done or thought;

-giving the possibility for people to make decisions about characteristics, change or development in the built environment in-situ;

-capturing the existing view of place.

As was mentioned before, Willis et al. (2012) listed a number of barriers for participation, some in line with Løvlie findings: 1) It is hard to mobilize and appreciate the local community's reading, interpretation and inner-knowledge of place. The authors explain that this barrier is bigger in disadvantaged communities "where locals are not used to having a voice, so that locals simply do not understand why they are being asked to engage, and why their opinion matters" (p. 76). 2) People do not have internet-enabled, location-sensitive smartphones. 3) People are not familiar with downloading and using apps. There is a poor network/ GPS signal in the place where you want to access information. 4) Communicating instructions and background about a project over a mobile interface are difficult to make entirely self-explanatory.

Except the following barrier: "it is hard to mobilize and appreciate the local community's reading, interpretation and inner-knowledge of place" (Willis et al., 2012, p. 76), the list aforementioned is likely to be outdated in a good part of the world. After all, it was already found that the adoption of smartphones is increasing even among low-income communities, and actually smartphones adoption is more widespread in the US among poor and minority people than other countries, as it has been showed in this work.

In addition to those studies, the literature review shows that researchers have attempted to explore locative media tools to foster engagement. In a more prospective way, Miller (2013) poses the questions of what LBS (Location Based Services) will be like in the year 2030 and if LBS will be better for humanity in 2030. He associated the social disruptive effects of mobile phones and instant access predicted by Rheingold with the convergence of LBS and social media. Miller (2013) believes that this convergence will be similarly disruptive. Miller points out that although it is not possible to predict the social use of technology, researchers can maximize positive outcomes by shaping their development and preparing our institutions and social processes.

With this in mind, the author discusses the possibility that the fusion of LBS and social media would solve the problem of collective actions failures. He cites the example of mobility and the bad outcomes of the extreme and individual use of cars: congestion, loss of community and damaged environment.

One solution to collective action failure is cooperative behavior, which the author argues could be enabled by LBS platforms. However, the author poses the question will people cooperate if given the appropriate locational information and tools? Therefore, he considers it a challenge for developing LBS tools that “facilitate cooperative behavior beyond sharing and simple cooperation.” Despite not using “engagement” in the same sense I use in this dissertation, Miller’s study provides a positive account of how locative media may enhance people’s lives in the long-term if users start using it for their benefit.

Kabisch (2011) also criticizes the way current locative media projects involve participants. He states that many attempts at participatory locative media simply enlist participants as objects of the resulting representations, displaying their physical location, bio-indicators, or digital traces of actions they have undertaken. Kabisch (2011) argues that rather than mere participation; participants should play a central role “in the construction of geographic narrative.” He suggests that giving the participants broader latitude for how they share narratives and facilitating *in situ* collaboration can engage participants in on a deeper level, making them authors and not simply objects. Kabisch (2011) also suggests that the most useful technique to really get ideas flowing about place was a visit to the location.

Part III – Context of the Research

This part of the chapter will briefly cover issues related to the context in which this research was conducted, including the history of segregation in Austin, the its effects, gentrification, and will also relate the context of the three cases studies that will be studied in this dissertation. The goal of this section is to provide context to the reader not familiarized with Austin history and the specific details of the place, where this study was undertaken. Thus, this part will start with the history of segregation in

Austin, and it will end with a description of the context in which the case studies were conducted.

1.12. The History of Segregation in Austin

The geotagged information overlaid on the map of Austin is uneven as the entire city is affected by its legacy of segregation. Segregation was imposed in Austin in 1928. In February 1927, the Texas legislature passed a law providing Texas cities with the power to create their own ordinances to separate the white and the “Negro.” However, this law was overturned by the Texas Court of Appeals, which prompted the City of Austin’s planning commission to contract the Dallas engineering firm Koch & Fowler to develop a master plan for the city. This was the first planning initiative for Austin since the city’s founding in 1839. In this section, I draw on Andrew Busch (2013) who did his dissertation about the history of segregation in Austin.

As Spence, Straubhaar, Tufekci, Cho and Graber (2012) relate, the goal of the master plan was to anticipate growth and guide policymaking in regards to land use, public works, education, zoning, transportation, and parks and boulevards. Additionally, the plan was “an effort to maintain the nonindustrial, non-urban qualities that characterized Austin in the city’s residential districts on the Westside” (Busch, 2013, p. 981). Having this goal of keeping downtown and West Austin as pastoral as possible “meant relocating residents and industries that did not fit the city’s desired image; thus, the initial purpose of the city’s Eastside, at the time relatively integrated space, was to hide undesirable but necessary components of the city’s fabric as well as racial minorities” (ibid). In this manner, the 1928 zoning plan pushed African Americans into East Austin by denying them access to resources in Central or West Austin and exclusively locating resources like libraries and schools for them in the eastern part of the city (Spence, Straubhaar, Tufekci, Cho and Graber, 2012).

Before the master plan, from 1910 through the 1920s, African Americans were scattered all over the city with a concentration along the eastern side of downtown, while Mexican American households were concentrated in the neighborhoods in the

southwest of downtown (Spence, Straubhaar, Tufekci, Cho and Graber, 2012; Winkie, 2014). However, by 1932, almost all African Americans were relocated to the designated Eastside location, including the African American school in the neighborhood called Wheatsville, which had been operating for sixty years (Busch, 2013). By that time, the Mexican American population had grown considerably as people were pushed north out of Mexico by the Mexican Revolution of 1910-1920 (Spence, Straubhaar, Tufekci, Cho & Graber, 2012).

Although Latino segregation was not in the plan, the vast majority of Austin's Mexican-American Population was pushed into the neighborhood just south of the African American one. In fact, the City of Austin built the first public housing units in the United States, Santa Rita Courts, which housed only Latinos. Although Latinos remain dispersed throughout areas in South Austin and on the outskirts of the city, very few lived in white West Austin, after 1940 or so. Moreover, the city cut African Americans and increasingly Latinos off from the centers of Austin's collective pride and memory. Barton Springs Pool, the city's recreational centerpiece and increasingly a symbol of Austin's environmental movement, remained segregated well into the 1960s, as did Austin's early system of streetcars and later buses. As Busch (2013) explains, "de facto segregation developed in shopping districts, movies theaters, and most other public areas, consistent with urban life in the American South during the Jim Crow era" (p. 982).

This segregation had consistent effects on the people who were living the Eastside of Austin. As Busch (2013) writes, the Eastside was consistently subject to poorer, more dangerous living conditions, had less access to jobs and education, and was generally not considered part of mainstream economic, political, or social discourse in Austin. Interestingly enough, Busch (2013) adds to the scenario the historical piece that all sidewalks in Austin were privately funded until 1969. As of 1958, only forty-five percent of Austin's surface streets were paved; a higher percentage of streets were unpaved in South and East Austin where concentrations of minorities existed. Furthermore, the residents in the East side had to deal with municipal negligence or, even more extreme, with the lack of the consideration. For example, when the University of Texas let out for summer, many of the city's bus routes stopped running, which obviously had deleterious effects on residents without access to automobiles (ibid). "During the 1950s at Brackenridge Hospital, the closest

hospital to East Austin, white nurses were not required to care for black patients, who could easily be left unattended suffering from any kind of medical condition. Black doctors were not allowed to practice at the hospital” (Busch, 2013, p. 983).

As a result, Busch (2013) continues, approximately two-thirds of all juvenile delinquency cases in Austin occurred in the central eastern neighborhoods, despite the fact that the area comprised less than 25% percent of the city’s population. Upwards of 75% of major crimes (aggravated assault, murder, rape, robbery) were reported in central East Austin. Often, clear cases of white-on-black violence were dismissed by police, or victims were purposely deemed unreliable. The area made the vast majority of calls to the police, indicating a high rate of minor crime and other daily municipal problems. Central eastern neighborhoods also saw a rate of tuberculosis far greater than the rest of Austin, perhaps owing to a severe lack of health care professionals on the Eastside and legalized discriminatory practices among physicians in other áreas (Busch, 2013).

Part of the process of urban renewal that was initiated in 1953 (Busch, 2013) was the construction of the highway IH 35, which “institutionalized the symbolic and actual barrier between East and West Austin” (p. 986). The IH 35 was built over the East Avenue, which for decades was the line of racial demarcation between Anglo West Austin and minority East Austin. The IH 35 was completed in 1962, reinscribing a physical and mental landscape of segregation “on central Austin in a much more brutal and impassable form” (Busch, 2013). East Avenue, Andrew Busch explains, was a wide parkway with a naturally landscaped center and multiple cross streets connecting east and west. “Residents on either side could enjoy the parkway and also easily view the other side” (p. 986).

Although desegregation efforts began in certain fields, such as access to libraries in the 1950s, residential segregation in Austin persisted till 1970. However, as Spence, Straubhaar, Tufekci, Cho & Graber (2012) state “efforts by federal desegregation orders in the 1950s-1990s did not change the structures of de facto segregation “ (p. 59). In fact, crucial areas such as education, economic values of homes, and technology access and knowledge remain segregated. Along the same lines, it is important to stress that these issues are replicated today in the neighborhoods of East and Southeast Austin. Furthermore, a 2015 Martin Prosperity Institute study titled “Segregated City” and authored by Richard Florida and Charlotta

Mellander, states that Austin is one of the ten most economically segregated in the United States. Therefore, the effects of historical segregation in Austin persist and deserve attention. In the next section, I will explain briefly how this history of segregation resonates in the contemporary landscape of Austin.

1.13. The new spatial orientations of Austin

By 2000, real estate gentrification began to open the Eastside first to students and then to young, affluent white residents. However, a new spatial concentration of newcomer immigrants has occurred in Southeast Austin, mainly in the neighborhood called Dove Springs, which is bound by the following roads: Ben White, William Cannon, Pleasant Valley and the highway Interstate 35. According to “Turning the Corner⁵,” a year-long series of stories about Dove Springs produced by the public radio KUT, the area was originally a predominantly middle-class suburb. But after the closure of nearby Bergstrom Air Force Base in the 1990's, Dove Springs became a community marked by juvenile gang violence, drugs and poverty.

Unlike the Eastside area, the Southeast is far from gentrification. In an interview with KUT, Margaret Valenti, a senior planner with the City of Austin, says that the area does not have groceries stores, a movie theater nearby, or coffee shops. (Diaz, 2014). She concludes that Dove Springs does not have the type of things that make neighborhoods desirable. Dove Springs is, for example, the only neighborhood in Austin where you can find a parole office – which is one of the reasons more parolees end up in Southeast Austin than any other neighborhood (Diaz, 2014).

According to KUT (Diaz, 2014), while some of that crime has dissipated, Dove Springs still has one of the highest reported crime rates in Travis County. This is not surprising as the area inherited remnants of segregation, and the relationship between low educational achievement and criminal activity (Ehrlich, 1975; Moretti, 2005) has been show by many studies.

⁵ See Dove Springs: Turning the Corner (2014). <http://kut.org/topic/dove-springs-turning-corner>

Rundberg

The other area of the city of Austin that has been undergoing struggle and experiencing a new concentration of immigrants has been in the Rundberg area.

The majority of Rundberg area residents work in construction or other trades, retail stores, and restaurants, and the median income is just over \$21,000 (Harmon, 2013). Rents are mostly in the \$400 to \$750 per month range, according to census figures. Teich said waves of refugees began moving into the Rundberg area starting in the 1970s as Vietnamese fled their war-torn country. Bosnians and Serbs arrived in the 1990s after conflict erupted in their homeland. Now, refugees from Iraq and Afghanistan and war-ravaged African nations are joining the area's large immigrant population (Harmon, 2013).

1.14. Immigrants and media

The literature on immigrants and locative media is scant, even though there is an extensive amount of research on how immigrants use mobile devices (Burrell & Anderson, 2008; Wallis, 2013; Johnson, 2013; Chib, Malik, Aricat and Kadir, 2014; Tazanu, 2015). There is also a line of research, which investigates how migrants relate to media. Ball-Rokeach, Katz and Matsaganis (2011), for example, provide a great resource about ethnic media, which are “local media, usually small, locally situated productions that serve a particular neighborhood”, usually for immigrants. Immigrants with limited English language proficiency are more likely to connect with ethnic media outlets, as it may help them to find jobs and understand their rights (p. 60, 61).

In fact, these authors provide a distinction that is important to this work. First, they define a *migrant* “as any person who moves from one country to live in another one” (p. 52). There are different types of migrants. There are “temporary movers,” traditionally called *sojourners*, such as students that go abroad for a “gap year” or very short term economic migrants, and “are not likely to feel that they really need to learn their new environment because they will be going home soon” (p. 52). For this reason, they tend to consume media related to their home country news and

events. On the other hand, *immigrants* are “permanent movers” and “are motivated to make conscious and unconscious changes in their behaviors, media connections, commitments and relationships” (p. 52). This distinction might have been blurred due to the advent of digital mobile media, because smartphone users are much more likely to be in contact with family, friends, and also events in their home country, and also communicate through social networking websites. This distinction between *sojourners* and *immigrants*, however, help us to define the lines of action of this dissertation, as the demographic group of this work falls under the delineation of “immigrants.” Although the concern of this dissertation is not explicitly about immigration, it is important to recognize that the context of Latinos/as in Austin is imbued with struggles related to immigration life.

What is interesting for the purpose of this dissertation is that Matsaganis, Katz, Ball-Rokeach (2010) found that “residents reported higher levels of belonging to their community when newspaper told stories about that community in addition to home country news” (p. 59). The authors also distinguish two kinds of news and event consumption. Immigrants might consume news from their home countries to feel updated and feel connected with their home countries (*connective function*) or they might consume news about the place they currently live to learn more and settle in (*orientation function*).

As this dissertation is also investigating how people understand locality through locative storytelling, these concepts shed light on how people such as Latinos/as immigrants deal with media in general. While these authors consider that might be difficult for low-income residents to connect to each other through the Internet due to the fact that Internet penetration among immigrants in the U.S. is still low, they point out that residents in many communities belong to local organizations, such as “soccer leagues, church groups, and political associations”(p. 214). In this sense, Matsaganis, Katz & Ball-Rokeach (2010) point out that these organizations can be important places for residents to bond and share community news and solve problems. In their words, “community organizations help residents to invest in and integrate into their local community through activities and events that help promote the feelings and behaviors that express community belonging” (p. 214). Moreover, in their research in Los Angeles in a community of immigrants, these authors found that “residents in communities with strong storytelling networks report more feelings and

behaviors of neighborhood belonging, higher collective efficacy, and more political participation” (p. 216). Interestingly enough, residents in the Chinese-origin community, which has the lowest level of geo-ethnic content in their local media, ranked home country news as most important and also reported the lowest level of belonging to their local community in Los Angeles. Although this is not directly related to locative storytelling, we can relate to it as past research has shown that locative storytelling enhances feeling of attachment to a certain place (Farman, 2014).

Background on the diaspora: A broad view of Latino immigration

Lucila Vargas (2009) also looked at the intersection of migration, media and Latinos/as. For her study, she focused on first-and-second-immigrant generation Latina teens that live in the “New Latino South,” one of the areas of the United States where Latina/o settlement is very recent. This author explains that the term “Latino/a” “comes with many perils because it renders invisible some crucial intragroup differences” (p. 2), but as the author points out, it is important to remember that we use the term as all-inclusive category that identifies the rough 53 million of Hispanic/Spanish speakers in the United States, who are from or descendants of immigrants from Latin America and the Caribbean. Furthermore, Vargas (2009) states that along with national origin or descent, language usage has been a prevailing factor to investigate media use among Latinos/as, such as television viewing that is usually divided into two categories: Spanish-language television versus English-language television.

In terms of background on the diaspora, the author points out that the relationship between the United States and Latin America and the Caribbean has been a crucial aspect in the growth of the Latina/o population. Vargas (2009) supports her argument by citing a number of interrelated historical facts that contributed to Latino/a immigration into the United States, such as the annexation of half of the Mexican territory, in the 1850s. The author points out that in Texas, California, and New Mexico, Spanish and Mexican settlement preceded the arrival of Anglos. With the re-drawing of the border between Mexico and the United States, many Mexicans became US residents. In addition, the annexation of Puerto Rico, in 1917, contributed

to the fact that many Latinos/as became US citizens, and several began migrating to New York. Vargas (2009) continues by saying that during the post - World War II period this migration increased, and by 1960, Puerto Ricans were the second-largest Latina/o group after Mexican Americans.

Another factor that increased the Latino immigration into the US was a boost in the economy driven by international competition and technological innovation. “As the U.S. labor market started to change and by 1960 it developed a great need for ‘labor made cheap’” (Vargas, 2009, p. 19). As a result, by 1990, Latinas and Latinos were concentrated in the states close to the U.S.-Mexican border (Arizona, California, Colorado, Nevada, New Mexico, and Texas), and in certain areas of Florida, Illinois (For Latino immigration in Chicago see Cruz, 2007), New Jersey, New York, and the District of Columbia.

1.15. Latinos/as and Media

A report released by consumer and media research firm Scarborough Research in 2009 - and showed in an article published by Nielsen website - demonstrated that Hispanic Internet users are 21% more likely to download digital content than the average adult online (Nielsen, 2009, March 23). In addition to that, according to the digital media research firm e-marketer, US Hispanics are among the demographic groups with the highest adoption rate of tablet devices, which shows that this demographic group is using mobile devices to connect to the Internet and to communicate (e-marketer, 2011, December 9). In fact, one more recent survey conducted, in 2014, by Nielsen's on "The Digital Consumer" in the US, shows that Latinos in the US are the audience of the future (Nielsen, 2014). As the Nielsen report also showed, some of the things US Latinos are engaged with -- far more than the country's general audience -- include using gaming consoles, watching videos on the internet, subscribing to and using a mobile video service, and owning smartphones. Furthermore, Nielsen also found that Latinos are leading the trend in mobile ownership. According to the report, Latinos in the US are adopting smartphones "at a higher rate than any other demographic group" (Nielsen, 2014, p. 12). Nearly three

quarters (72 percent) of Latinos own smartphones, which is close to 10 percent higher than the average in the U.S.

Despite the strong evidence provided above, research on Latinos and media, specially locative media, is surprisingly still scant, but there are a few studies that cover this subject matter. For example, Wilkin & Ball-Rokeach (2006) look at the importance of health storytelling in Los Angeles Latino media. Similarly, Clayman, Manganello, Viswanath, Hesse & Arora (2010) investigate if Hispanics who are less comfortable speaking English differ from Hispanics who are comfortable speaking English with respect to trust in health information sources and media use.

In addition to the literature on Latinos/as and media, Albarran and Hutton (2009) undertook a cross-cultural study about young Latinos/as use of mobile phones, in several Latin American countries but also including the United States. These authors explain the relevance of doing research on this demographic in the US by highlighting that the US is the second largest Spanish-speaking in the world behind Mexico, but ahead of Colombia, Spain and Argentina. I reinforce this statement by providing current data by the US Census Bureau population, which estimates as of July 1, 2013, that there are roughly 54 million Hispanics living in the United States, representing approximately 17% of the US total population, making people of Hispanic origin the nation's largest ethnic or race minority.

Albarran and Hutton (2009) examined the various characteristics of Latinos and their use of technology. His study found that across all six countries "the mobile phone was only found to be preferred technology among one of the forced choice items, and that only applied to the U.S. sample" (p. 104). The item was "to share social information with friends," and while respondents in the US ranked the mobile phone first, the five American country samples all ranked "face to face" as the first among the three choices provided.

Moreover, a 2014 report entitled "Latino Media Gap: a report on the state of Latinos in U.S. media" provides more support to the notion that Latinos are not only avid media consumers, they have made important contributions to the film and television industries, and currently as digital communicators and online content creators (Negrón-Muntaner, 2014). One of the important findings for the purpose of this dissertation is that as Latinos/as continue to be shut out of traditional media, their

creativity is migrating to the Internet. This report states: “of the top 50 single-focused YouTube channels with the most subscribers, 18% are produced by and/or feature U.S. Latino content creators. And even with little support, some of the most important new media innovators, such as transmedia pioneer Jeff Gomez, are Latinos” (p.3). Moreover, this report concludes that while Latino presence in mainstream media remains extremely low, Latinos demonstrate growing consumer power and advocacy through expanded use of the Internet and digital tools. Even more relevant for the purpose of this dissertation is the result that Latinos/as are innovating in media content and storytelling forms. That said, in the next section, the case studies conducted in this research, which situate within the large context of Latinos/as and media, will be presented.

1.16. Context of cases studies

Latinitas

According to the website laslatinitas.com, Latinitas is a non-profit organization that has aimed to “empower young Latinas through the teaching of media and technology” (Latinitas website) since 2002, when it was founded. Before going further, it is important to say that I use “empowerment” in this dissertation in the very strict sense of the word provided by the Oxford dictionary of Human geography: “A permanent increase in the capacities of relatively poor or marginalized individuals, households, and communities to shape their own live” (Castree, Rogers, & Kitchin, 2013, p. 126). Empowerment is usually associated with community development, giving control to vulnerable groups in society and shifting power from service providers to service users (Taylor, 1999). In this study, “empowerment” means the training of disadvantaged communities to produce locative stories and geotag them.

Unlike RCYF, Latinitas is not neighborhood-based and operates in different parts of Austin, its outskirts, as well as in other cities in Texas. The organization became well known as a citizen journalism project in the Austin community. Cunningham, Custard, Straubhaar, Spence, Graber & Letalien (2009) say that one of the goals of Latinitas is to address the low level of representation of Latinos/as in position power in newsrooms. Moreover, among other goals, the organization aims to

provide a creative outlet for girls to express themselves, learn about their culture and discover their voice.

Latinitas provides journalism and digital media production skills to young Latinas aged from 9 to 18. It also offers a range of community-based services for this demographic group, including after-school clubs, mentoring, and summer camps. Girls receive training in a range of journalism skills, such as interviewing and writing, and are encouraged to provide content for the online magazine, Latinitas, which is targeted toward Latina youth and published in both Spanish and English.

The first after-school program, called Club Latinitas, was started at Martin Middle School located in East Austin in 2003. Since 2003, Club Latinitas has expanded to high schools and elementary schools in the greater Austin area, and has expanded beyond Austin to El Paso and the Rio Grande Valley. While girls, in general, face a loss of self-esteem during adolescence (see Nolen-Hoeksema & Girgus, 1994), Latinitas focuses on the particular struggle that Latina youth face in adolescence. As stated in their website, young Latinas are the largest group of minority girls and represent the fastest growing youth population; alarming trends show they have the highest high school dropout rate (see Zambrana & Zoppi, 2002), attempted suicide rate and teen pregnancy rate. By creating an online space dedicated for Latina youth and providing them with mentors and role models, Latinitas aims to increase their confidence and abilities. Also, by providing the girls with journalism skills and training, they have options to pursue career opportunities.

Taking into account the goals of this organization and also their willingness to partner with this research by providing facilities, context (a summer camp with selected participants), and devices (computers and scanners), I wanted to work with Latinitas to have an opportunity to study how the girls might use locative media to produce locative stories.

River City Youth Foundation (Among Latinos)

One of the case studies was conducted in partnership with the non-profit organization called River City Youth Foundation (RCYF), which is based in Dove Springs, a neighborhood in Southeast Austin. According to a report written by RCYF,

this non-profit serves only the population of the zip code 78744, which was estimated between 2008-2012 to have 43,452 residents, of which 14,170 were children and youth between the ages of 0-17. According to the same written report (River City Youth Foundation, 2015), based on data from American Community Survey (ACS) of 2008-2012, of the total 43,452 population of Dove Springs, 76.7% were Hispanics of any race. Of the total 43,452 persons, 29.6% were foreign born, with 97.3% of the foreign born from Latin and Central America (includes Mexico) (see also The Austin Chronicle webpage⁶, April, 11, 2015).

The Dove Springs area is one of the lower income areas in Austin. A study by the University of Texas School of Architecture showed that the overall median income in the Dove Springs area was \$43,375 (from the 2000 Census), which was well below the city average of \$54,091 (McCray, Bedford, Calhoun, 2010). The area with the lowest median family income (\$30,174) was in the wedge between Pleasant Valley Road and Nuckols Crossing. That area has 67-98% of its occupants as renters. The next lowest area (\$30,714 - \$37,127) was in a central triangle just south of Stassney Lane and east of Pleasant Valley Road.

Parents and guardians in low-income areas usually have a lower education level than parents in middle and high-income levels. Of 24,183 adults 25 years of age and over, 20.85% reached less than the 9th grade level, 15.84% reached high school grades between 9-12 but did not graduate, states the report written by RCYF based on data from American Community Survey (ACS) of 2008-2012. Lower educated parents are not able to prepare their children to be ready for school when they enter pre-kindergarten (pre-K) or kindergarten. Consequently, those children fall behind in their academic levels (River City Youth Foundation, 2015). Some pre-kindergarten Hispanic children have not learned English well enough to communicate with English monolingual teachers, and this makes their learning progress more difficult. Another challenge is the fact that many students in the area of Austin move between schools in the middle of the school year, as their parents move to another part of the city because they can't find affordable housing or because they lose their jobs. In addition to the problem of minority children being ill prepared to enter their formal elementary education, there is a problem of overcrowded schools in the Dove Springs area (River City Youth Foundation, 2015).

⁶ <http://www.austinchronicle.com/news/2014-04-11/dove-springs-a-demographic-snapshot/>

In the Texas Education Agency's 2014 Accountability ratings, Mendez Middle School, the only middle school in Southeast Austin and third in Austin in terms of most students enrolled, did not meet the standards required by the state, being rated "Improvement Required." At Mendez, 36.2% of the students are ELL (English Language Learners), which shows the difficulties of many Hispanic students to cope with the language learning and to grasp with content at the same time (River City Youth Foundation, 2015).

TechComunidad

In 2012, RCYF created the program TechComunidad with the goal of empowering parents through digital technology. The general goal of TechComunidad is to close an educational gap in Dove Springs by empowering parents in this community who lack technology access and the basic computer skills to guide their children's education from pre-K to college and career. Oné Musel-Gilley, founder of TechComunidad, states that the ultimate goals of this digital inclusion program is 1) for parents to have complete mastery of email and 2) for parents to know how to utilize search engines. Musel-Gilley realized that RCYF needed to educate parents about technology. It was particularly important for her to target those families that didn't know how to turn on a computer. Musel-Gilley's priority is to build children's education for increased skills. Parents can partake in this program by either coming to sessions in the morning or in the evenings for 2 hours each week. These sessions may last about 6 weeks or 8 weeks, as the time frame contingent on many factors such as weather, holidays, and the learning curve.

At the end of the training, parents have to take a final exam, indicating that they have mastery over basic technology skills, which includes using an online search engine, utilizing an email account, and using the cloud to store files. The parents are required to attend a graduation ceremony where they are given a computing device with Internet access capability. In the past years it was a tablet, and since 2014. It has been a Samsung Chromebook, a computer based on an operating system by Google that works only with Internet connection and is based on the concept of cloud computing.

To partake in the program, parents need to be selected and approved through a two-step process: the completion of an application and a face-to-face interview. The criteria to be selected are to be a resident in the 78744 zipcode and to be a parent of children from 5 to 17. There is an exception for grandparents who live together with their grandchildren and are their caregivers. They cannot have a computer at home. However, the majorities of these parents have smartphones and use Internet on their mobile devices. Most of these parents have email and Facebook on their smartphones, although several might not remember their passwords and are unable to access their emails in computers.

TechComunidad program is a suitable context for the conduct of research on mobile and locative media, because this group of parents is very mobile phone-oriented. For example, throughout the classes, several parents said they had never seen a Facebook page on the computer. One parent wanted to see the Facebook icon on her desktop area, because she is used to seeing it on her smartphone screen. She was told then that Facebook page on the computer was a website and not an actual application. This example illustrates how this group of users is using Internet and social media on mobiles without really grasping the differences of basic concepts that are necessary for computer use. Several other parents acquired smartphones or tablets as they were taking TechComunidad training.

Mapping Latino Culture in East Austin (About Latinos)

This case study was undertaken in the context of Joseph Straubhaar's undergraduate Radio-Television-Film course Mapping Latino Culture in East Austin at the University of Texas in the Spring 2014. The class had the total of 28 students enrolled, from which half of students were Latinos/as (14 students). The course had as a goal to provide the students with a better understanding of media issues about traditional, ethnic and digital media use, social inclusion efforts in Austin, and migration from Latin America, Asia and elsewhere to the US in both theoretical and concrete local terms. I worked on this case study with Professor Straubhaar, who was planning on discussing the history of segregation in Austin through maps and was looking for innovative ways to map aspects of Latino culture in Austin.

CHAPTER 2. METHODOLOGY

This chapter explains the methods and procedures of the pilot study and two main case studies with an ethnographic approach to offline participant observation. Special attention is given to the selection of the research participants (data sources), and how my relationship with them evolved over time. As in past dissertations on locative media (Galloway, 2008; Erickson, 2008), this work follows a traditional qualitative, inductive path that couples interviews and artifact data with a theoretical frame to establish an explanation of empirical phenomenon.

As Humphreys and Liao (2011) mention, performing research on digital media can be quite challenging because the technologies are evolving extremely fast and several mobile applications are very fleeting. As Frith (2015) highlights while writing a book about locative media, "mobile applications can change in between drafts of chapters" (p. 131) because as Google can change its maps apps or other popular applications may be simply shut down (e.g.: Gowalla, EveryBlock). Additionally, studying locative media presents a number of methodological challenges. Despite being widespread, the concept of locative media is far from being familiar for the average user. As such, it is no surprise that there is not an established method of studying locative media applications as this interdisciplinary field is just emerging. Scholars are beginning to question the best way to study location technologies. For example, Bilandzic and Foth, (2011, p. 68) who focused on the design of locative media projects, question how one may approach investigations of the messy everydayness and spatial experience methodologically. Then, based on other researchers, these authors suggest that "as computer technology spreads from the desktop to people's everyday environments", it is important to understand specific contexts, local aspects and socio-cultural contexts. In order to achieve that understanding, they suggest that ethnography is a "powerful tool for understanding, describing and capturing social and cultural phenomena and contextual settings, hence informing the overall role which technology might or should play at the site of interest" (ibid: p. 68). In fact, there are many studies in the field of locative media that take ethnographic approaches or more broadly qualitative methods, such as interviews and participant observations (see Humphreys, 2010; Humphreys & Liao, 2011; Foth,

2009). Galloway (2008), for example, in her dissertation on locative media and urban computing, innovated research methods by proposing what she called "research blogging" - the posting of fieldnotes online and producing new sets of data with comments. She considers blogging as a way of participant observation, as she analyzes the authorship, identity and academic authority through her blog.

Research on locative media tends to be *theoretical in nature* among social scientists and characterized as *empirical* among designers, architects, computer scientists or interdisciplinary groups. In order to gain empirical insight into the research question, this study takes the approach of a qualitative case study combined with ethnography techniques such as participant observation and interviews, in three different contexts and groups (TechComunidad, Undergraduate course, and Latinitas), therefore considered a multiple-case study. But it is important to clarify that those cases cannot be considered replications, because the procedures and contexts are highly distinct from each other.

According to Yin (1989), the case study's unique strength is its ability to deal with a full variety of evidence—documents, artifacts, interviews, and observations, and participant-observation as well. In this sense, this dissertation has different components, including the teaching process, the observation of the scene, the observation of what kind of questions the participants ask, and the learning process about locative media in a classroom. Furthermore, these case studies are also composed of text, such as the locative stories produced by the participants and geotagged on the map.

Case study as a method is also the preferred strategy when the investigator has little control over events and when the focus is on a contemporary phenomenon within a real-life context. This case study falls under "exploratory case study" (Yin, 1989, p. 17). Yin determines the best strategies based on the type of research questions. He explains that some type of "what" questions is exploratory when the goal is to develop pertinent hypotheses and propositions for further investigation.

With this in mind, it is very important to stress that it is not an intention of this work to generalize into populations, but rather to explore and to indicate pathways to further research. After all, case studies are generalizable to theoretical propositions and not to populations or universes. Yin (1989) defines a case study as "an empirical

inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used” (p. 23).

It is also important to clarify that this study did not have a set of propositions or hypotheses. As Yin (1989) provides support to this choice, “some studies may have a legitimate reason for not having any propositions. This is the condition – which exists in experiments, surveys, and the other strategies alike- in which a topic is the subject of “exploration” (p. 30). Thus, the current work is essentially exploratory, having as a broad goal the understanding of how people grasp the concept of locative media and how locative storytelling may help alleviate the effects of historical segregation and the consequent segregation of the hybrid space *among* and *about* Latinos/as. In the next section, the digital tool that was used to do the geotagging and collect the locative stories will be explained.

2.1. Historypin: Choosing a tool to tell locative stories and geotagging

Historypin was chosen for this dissertation because it is a social mapping website and also a mobile application – available for iOS and Android operating systems – that allows users to pin images, video, and audio clips to Google Maps (Miller, K.C., 2013). Users can include a story about each image and other metadata. It also enables the user to create a channel/profile, where you can manage and customize your content and page. The versatility of Historypin facilitates the work and uploading of contents, either on the fly from a smartphone or working at a desktop computer. Users are also able to see, on the map, stories that are near to them through location disclosure. I draw upon Chilcott (2013) who analyzed Historypin, among a couple of other two applications, as easy-to-use digital tools to engage both creators and end users in shared digital content and curated experiences relating to place and community. Chilcott (2013) argues that Historypin offers an alternative way to address digital inclusion within disadvantaged communities, by connecting people and place in new ways through digital technology.

Rather than being used by individuals, Historypin is being massively adopted by a number of academic, cultural and historical institutions to host historical image

collections. The Historypin interface allows the uploading of digital content and includes metadata elements, such as: title, date, geographic location and a general description field. For the purpose of this study, Historypin was chosen because of its integration of location-based data into the user interface on the website and mobile application.

The website was beta-launched in June 2010 and was created by “We Are What We Do,” a not-for-profit company supported by Google, and the global launch was in July 2011. In October 2014, this non-profit organization changed its name into "Shift." The application was developed during the beta phase. Historypin was tested through a series of test activities in schools and neighborhoods all over the UK. The team partnered with over 100 libraries, archives and museums, which allowed them to add the first bulk of content.

Interestingly enough, on its blog, Historypin team explains that the website and app were created to help “people to come together from across different generations, cultures and places, around the history of their families and neighborhoods, improving personal relations and building stronger communities⁷.” The purpose of this dissertation is in line with the goal of the organization, because I have worked with different generational groups, which give us a broad perspective of efficiency of the website and app. Despite not being our primary objective, in the results chapter, results will be provided about the usability and functionality of Historypin as a location-based application as a whole, because some of our participants were spontaneously reactive and critical of the mobile application and website.

It is worth noting that the few academic studies I found on Historypin are focused on the website rather than on the mobile application. In this work, we explore both formats: website and mobile app. Since location information is well anchored on one’s location, it is crucial for this study to understand how users understand the usage of a locative tool while on the go. Actually, Bagget & Gibbs (2014) point out that the uniqueness of Historypin lies in its locative capability. These authors explain how by “using locational information, collection administrators can “pin” archival images to a digital map that also has street-view capability, allowing users to switch

⁷ See <https://www.historypin.org/faq/>

between current and historical views of neighborhoods, buildings, and locations. Other features include the ability to curate digital exhibits, display content in a slideshow, and use the mapping feature to create walking tours” (p.15).

It is also important to explain that even though Historypin has been used mainly as a tool for archival or old images (Bagget & Gibbs, 2014; Harkema & Nygren, 2012), this study used this application beyond historical images. Due to the ease of use of Historypin, the application was very suitable for the purpose of understanding how local communities may be engaged with the production of locative stories. Furthermore, the mobile application supports both Android and IOS operating systems, which facilitates and broadens the possibilities of any smartphone user to use it. Historypin is categorized by past studies as a “social media” platform that may increase access to digital archives and collections of these libraries (ibid). In fact, Historypin is a common case study for studies about libraries, because of its “relative popularity among academic libraries” (Bagget & Gibbs, 2014, p. 15)

Historypin is also mentioned in the literature as a tool that enables mobile experiences that combine visual realities, present and past, live and recorded, in the sense that the application allows users to have modern photographs that can be inserted in appropriate places against the video background provided by the phone’s camera. This juxtaposition can be effective in helping the user to contrast the past and the present. With Historypin, the user can align the historical photograph with the video scene that is shown in the phone. Besides, one may then use a slide to make the historical image more or less opaque. As other locative media tools, this is a striking way to understand historical change – a way to see the past in the present.

By locative stories, this dissertation means any story that is about a physical location and is digitally attached to a physical place through technologies of location such as GPS-enabled phones. Therefore, Historypin is used as a broad locative information tool, despite its identity as a platform for history or archives. Historypin was created to close a generational gap. As Armstrong (2012) explains, the Historypin team wanted to create a tool that could help young and older generations to spend time together. They thought that “talking about photos” was a great starting point for conversations and for bringing people together. In this sense, Armstrong also mentions memory as an important aspect of Historypin, since old photographs are largely used as a memory trigger. This author says that Historypin has been a

"catalyst" for online and offline collaborations since its launch. Historypin works with several partners such as schools, communities, museums, archives and libraries.

Before choosing Historypin for this study, I looked at several other applications, such as crowdmap/Ushahidi, local wiki, and Broadcaster. I also talked to the journalism professor Amy Weiss Schmitz – at San Diego University- and Cindy Royal, – then at Texas State University – who have tried some of these apps with their students. After doing the research, I concluded that Historypin would be the easiest platform for participants. Although some researchers consider the low awareness of Historypin a drawback, the application has a user-friendly interface, and a very little learning curve for pinning. For the purpose of this study, a project page was created on Historypin called “Mapping Austin Memories”. By sharing a gmail account with all participants of the project, any participant in this study could access the channel and upload/geotag the locative stories (text plus picture) to Historypin. The page is available to any person to access:

<http://www.historypin.com/channels/view/47908/#!photos/list/>

2.2. Data Sources

In order to investigate locative media within the context of spatial segregation in the hybrid space *among* and *about* Latinos/as, the first empirical step to undertake this research project was an attempt to partner with different organizations and institutions that serve underserved communities, mainly African-Americans and Latinos/as, in Austin. My advisor and I reached out to a museum, two libraries, a newspaper, and two non-profit organizations. The partners of this research were chosen based on previous knowledge and previous contact with individuals related to the organizations. It is also important to stress that the goal was to engage institutions that deal with minorities or underserved communities, as this study was concerned with the segregation of the hybrid space caused by racial segregation. Hence, I will start by describing the process with the two organizations that partnered with this study, and then I will proceed to explain the other attempts of partnering.

On April 10, 2013, my supervisor and I met with Laura Donnelly Gonzalez, the founder of the non-profit organization Latinitas, and former program coordinator

Samantha Lopez. Over an hour-long conversation, we presented our ideas and research goals, and discussed the possibility of a partnership. We also talked about general goals of the organization. For example, Latinitas aims to guide Latinas girls to go to college. They mentioned the increasing number of girls dropping out of schools as compared to boys, issues of rape, and pregnancy. They also mentioned how the girls are shy and are in the process of discovering themselves, and how they express themselves through the Latinitas blog. During our meeting, one of the Latinitas' staff said: "They do not know what they are good at." I understood that one of the goals of the institution was to help the students to develop a sense of identity. Furthermore, Laura Donnelly Gonzalez expressed concern with Latinas' writing skills, since many of these girls struggle with bilingual activities and need to trust their language skills, as usually they speak Spanish at home and are educated in English at school.

The meeting with Latinitas's director and program coordinator resulted in two outcomes for involvement: after-school programs and a weeklong summer camp during a session called "Media is Power" to take place in June 2013. The camp was planned for teenage girls, and the training about locative media to the purpose of this research would be integrated in the after-school program and summer camp, as I will explain in detail later on in this chapter.

A second partner to come onboard was the non-profit organization River City Youth Foundation (RCYF). Having previously volunteered at RCYF in 2012, we reconnected with the Director Mona Gonzalez and Program Coordinator Oné Musel-Gilley. Afterwards, I met with Oné on May 23 2013 to talk about the details about the partnership. The fieldwork, however, at the organization only started in the beginning of October 2013, when the organization allowed me to be one of their instructors for the TechComunidad program and teach adults about mobile and locative media aiming to have as final outcome a locative story produced by the participants. I will explain further details of this partnership later in this chapter.

We also tried to partner with Huston Tillutson University, a historically Black university. For this purpose, we met with Professor Carol L. Adams Means. We hoped to diversify the demographics and work with African-Americans through an institution. Our proposal intended to work alongside students in an English course to run the same workshop about locative media and the production of locative storytelling about memory and history. This professor was the only contact we had at

that university. Unfortunately, the professor, who is retired and still working at the university, did not have the resources or time to partner with this research project.

A separate attempt at a partnership was with a public library. The idea was to undertake a pilot study in the teen lab, where children spend the afternoon undertaking tasks in computers. We wanted to encourage them to produce locative stories and upload them to the map of Austin. For example, in one trial session, I showed them on a paper world map of Brazil where I was from. I explained that there are ways to digitally attach information to places. Most of the attendants were boys around 9, 10 year-old. They paid attention to what I was saying but they got distracted very quickly.

Only two kids seemed to have knowledge about smartphones and tablets. When they were exploring the map on Historypin, it was clear that they tended to look for the country or city they are originally from. One of them searched for Cuba and another for a small town in Texas. Interestingly enough, a 10 years-old boy searched for Russia. When I asked him why he was curious for Russia, he said that the game he plays is set in Russia. He was astonished to having found Russia and even more astonished with the size of Russia as he said: “Russia is much bigger than United States”.

These observations are here just to illustrate the potential of the partnership with the library, however, while working with them, I encountered several problems. First, the Internet at this institution was very slow and we had trouble to have the Historypin website loaded. As a result, several kids got distracted and some of them were not even able to navigate on the site. In fact, some kids complaint and said out loud that they liked the games better than Historypin.

I got back to this teen lab for a second time, and the boy who searched for Russia said that he “watched” Historypin at home, which reinforce the potential of the group to eventually to produce locative stories and geotag them on the map of Austin. Although those preliminary observations indicated the teen lab a fertile place to do research, there were several institutional barriers that would make difficult to publish the results of the research. The person who was the mediator with the institution said that was not possible to have a permission to conduct research from the institution. For this reason, it was not possible to continue the project at this public library.

We also attempted to partner with a separate public library located in East Austin. After meeting with the Managing librarian, he introduced two projects with which we could eventually partner. One of the projects involved a middle school teacher who was working on an oral history project and the other one was the "The Tejano Walking Trail", which ended up being included as a location source in one of the case studies. This trail is 4.95 miles long and includes schools, libraries, churches, residences and historic homes related to the Latino culture in Austin. The East Cesar Chavez Neighborhood Planning Team created the trail. Although the conversation with the Managing library was fruitful and generated other meetings (e.g.: with Tejano Walking Trail), the partnership with this institution was not accomplished, because it required resources, such as time, that I was not able to have at that time.

The author and her advisor in Austin also met with Social Media Editor of the local newspaper in Austin, the Austin Statesman. We presented the project to the social media editor as a possibility of involving the community to use their archives to produce locative stories and attach them to the map of Austin. The idea was to help to publicize the interface of the project, get participants who had stories with local knowledge to share. The newspaper would benefit by drawing in young new readers. Issues such as copywriting and integrity of information were raised by the editor, which prevented us from partnering with them. Questions such as: How much are we giving away for free?

The social media editor also asked to see a prototype, but at that time we did not have one. She also said that she was not the right person to make a decision about that partnership. We stated our goals were to create an archive of news stories, digitize them and attach them to places (photos, historical reports, articles), reinforce collective memory. This partnership would be an attempt to tie concepts of locative media to local and community journalism. However, we did not see a means, at least at that point, to set the partnership with them.

One of my last meetings was with Gloria Espitia, who serves as the Mexican-American Community Archivist at the Austin History Center. She was very resistant to the research project about locative media, since she considers smartphones a threat to social interaction. In fact, she said she did not have a smartphone herself and rather than using phone she preferred talking to people in person. This statement reflects how she reacted to this study, which was presented to her as a possibility of creating

history from scratch to be visualized on digital mobile devices and maps by underserved communities. To argue in favor of this research study, I mentioned to her local ongoing projects such as Tejano Walking Trail and she raised questions such as: Who is going to these places? Who is going to benefit? The archivist did not show much interest in partnering with this research project because she was very skeptical about the technology and also about the validation of local history produced by ordinary people. As a result, this study did not have Austin History Center as a partner.

From these attempts, two organizations accepted to collaborate with this project: Latinitas and River City Youth Foundation (RCYF), which both work with Latinos/as demographics in Austin, Texas. Although we learn several lessons on the work with Latinitas, the work with them functioned as a pilot study that guided us and helped us to reframe the entire research. After working with Latinitas, which spaced out having activities in Austin and also in Round Rock, we decided to focus on the geographical area of Austin and also to areas that face the legacy of historical segregation. This change was made, because we found it more appropriate to our research objectives to study locative media in just one locality. That is why a third setting was added to this study. As I considered the population who lived in areas that faced formal or informal segregation the "among", as it was explained in the Introduction, I added the "about" which consists of undergraduate students of the course called 'Mapping Latino Culture in East Austin', at The University of Texas at Austin. This choice was taken in order to create a theoretical bifurcation that allows us to analyse the impact of locative storytelling *among* and *about* Latinos/as.

Again, just for clarification, it is important to say that *among* refers to Latino/a residents in a neighborhood located in an informally segregated area and *about* refers to the college students, who were mostly Latinos/as but not resident in the traditionally segregated area. Both groups, as participants of this study, were encouraged to produce locative storytelling, but while the *among* group were encouraged to write/think about the neighborhood where they live, the *about* group were assigned to leave their areas of residence to visit certain locations in the historical segregated area.

2.3. Data Collection

As a data collection tool, I conducted a workshop and provided training throughout the cases (as will be explained in detail in each case section). Afterwards, I used the type of the interview that Yin (1989) defines as “focused interview”, in which a respondent is interviewed for a short period of time – an hour, for example, and even though the interviews may remain open-ended, the interviewer is more likely to be following a certain set of questions. Some of the questions asked were: 1. Tell me about your typical day and how you move around the city (transportation)? How does your family commute? 2. Have you lived always in the same place? 3. How important is local knowledge about your neighborhood and the city for you? 4. How do you learn about local places, its background and what goes on there? With these questions, I intended to understand how participants understand place, mobility patterns in order to gauge if they had any previous knowledge about the historical segregated areas of the city. Interviews were recorded in digital audio formats. After that they were fully transcribed. Following transcription, each interview was coded with an individual label.

Another strategy used in this study was participant-observation, as Yin (1989) explains, it is when the investigator is not merely a passive observer, but takes a variety of roles within a case study and may actually participate in the events being studied. Yin lists a number of advantages in this technique: to gain access to events or groups that are otherwise inaccessible to scientific investigation, the ability to perceive reality from the viewpoint of someone “inside” the case study rather than external to it, and the other opportunities for data collection that arise as the investigator has the ability to manipulate events or situations. One of the flaws of this technique that Yin indicates is the fact that the participant role may simply require too much attention relative to the observer role. “Thus, the participant observer may not have sufficient time to take notes or to raise questions about events from different perspectives, as a good observer might” (ibid, p. 93, 94). In this context, I was providing training while also being a participant-observant with Latinitas and River City Youth Foundation, and within the scope of the undergraduate course I was more of an observant. I intervened a few times to present some locative media projects as

examples, but it is important to stress that I did not teach in the undergraduate course, where one of the case studies was conducted.

Along with participation observation, another collection data tool was the practice of taking fieldnotes, a technique well known among ethnographers. Ethnography field research involves the study of groups of people as they go about their everyday lives. As the ethnographer enters into a social setting and gets to know people involved in it, the researcher records in regular, systematic ways what she observes and learns while participating in the daily life of others (Emerson, Fretz, and Shaw, 2011). The main point of fieldnotes is that the researcher is involved in the context, and as she observes how people respond to events as they happen, one also experiences the events and circumstances that give rise to them. Ultimately, the act of writing fieldnotes is not so much a matter of passively copying down the "facts" about the events. As Emerson, Fretz, and Shaw (2011) point out, writing fieldnotes involves active process of interpretation and sense-making: noting and writing down some things as "significant," noting but ignoring other as "not significant," and even missing other possibly significant things altogether. As a result, similar (even the "same") events can be described for different purposes, with different sensitivities and concerns. In this sense, fieldnotes were taken during the pilot study with Latinitas and also during the other two case studies.

After establishing the research setting for this dissertation, as it was explained in the "Data Source" section, the final step was to formally articulate the research plan and the dates to provide the workshop training for the participants. To ensure ethical procedures, this dissertation requested and received approval by the Institutional Review Board at The University of Texas at Austin. TechComunidad parents who were interviewed also signed an informed consent in Spanish. I started running the workshops in the Summer of 2013, first with Latinitas, and then with River City Youth Foundation. The training with the college students was undertaken during the Spring 2014.

2.4. Data analysis

Interview transcripts, field notes, quizzes responses, and also informal interviews of the two main cases were read several times to identify themes and categories. More specifically, for the data analysis I used an "inductive approach" which means that this study did not have a set of theories to test whether the data was consistent with prior assumptions or hypotheses, as the "deductive approach" implies. Rather, the intent was to allow theory or concepts to emerge from the data (Thomas, 2006), applying grounded theory techniques (Glaser & Strauss, 1967). However, the data analysis was guided by the research objectives of this dissertation and transcripts were coded by the author of this study. First, several themes were identified and then grouped together in a few categories that were described in the results chapter under each case study.

After explaining the data collection and data analysis, the next section will be divided into the following subsections: 1) Latinitas, 2) River City Youth Foundation and 3) unde graduation course, in which I will explain in detail the methods and procedures of each case.

First fieldwork and procedures: Pilot Study with Latinitas

The fieldstudy with Latinitas happened in two phases: 1) A four day workshop during a summer camp with girls range aging from 9 to 16 years-old, in which participant observation was conducted; 2) a training conducted with middle-school students during an after-school program, in which participant observation was also carried out. For the purpose of this study, the researcher did not act as a conventional teacher in these workshops, but as a sort of focus group mediator. In other words, at first, the researcher did not provide the participants with details about the technology or the application that was taken as a case study. Rather than providing the participants with guidelines, the goal was to expose them to the concept of locative media: GPS, smartphones, tablets and technologies of location as a whole and observe their reactions and responses to them. I took this approach because I wanted to

observe the natural and spontaneous reactions of the participants to the technology and possibilities, without imposing any preconceived ideas or definitions, a situation that resembles a focus group. Throughout the classes, as the participants reacted by making questions, I provided more information.

Phase I Summer Camp

First day. In the last week of June 2013, which began on June 25, I conducted the first set of workshop sessions about locative media in partnership with Latinitas. Throughout four days, we discussed basic concepts about smartphones, maps, GPS and stories about places with nine girls ranging from 10 to 14 years old. The classes were held at El Buen Samaritano, an East Austin institution that provides assistance to Latino families in Austin, Texas, where Latinitas was organizing its summer camp. On July 25th 2013, I had the first day of the session with Latinitas. I arrived at the location, El Buen Samaritano, one hour and 30 minutes ahead of time. My session was scheduled for 3pm. However, the facilitator asked me to start the session earlier because the guest speaker that was supposed to give a talk was late. Nine girls showed up. The age ranged from 9 to 14. I started by introducing myself: “My name is Cláudia Silva, I am a PhD student of Digital Media and journalism at UT. Does anyone know what is a PhD?” Three students raised their hands. One responded saying that was a degree you pursue after receiving a Master degree. I also said that I am from Brazil and asked if anyone knew in which continent was Brazil located? One of the students responded that was in South America. After that, I showed where I was from on the map of Brazil. I pinned my picture to my hometown and explained to them that throughout the week we would do an activity like pinning a photo on a map but digitally on the computer on the application called Historypin. I said that: “We are going to learn about smartphones and what they can do. We will also learn about how to tell and write stories about places and how to locate them on the map of Austin.”

Considering that one of the goals of the workshop was to enhance their sense of place and geography, I found important to start the workshop with an analog map in order to illustrate the concept of location-based media and to explain the relevance of location. In fact, at one of the informal meetings I had with the former Latinitas' program coordinator, she said that would be very interesting for the girls to have a better sense of place in a global way. "They do not have an idea of travelling. By understanding geography and history of the world, they can start thinking about going to study somewhere else", Samantha Lopez said (Personal interview, May 22, 2013). The author also pinned her own picture on the city where she was born on the map. After this introduction, the participants were split into pairs and were asked to interview each other about their names and parent's nationality.

After introducing myself, in order to gauge how the participants understand the concept of "place," they were split into pairs and were asked to interview each other. I gave them a list of questions. A key question was: "What is your favorite place?" This brief survey and discussion was important because it helped me to understand their choices of places to write about. The girls were also asked if they had smartphones, which mobile applications they use most, and about the differences about a smartphone and a tablet.

Again, all these background questions were really important to grasp how well those kids would understand the concept of locative media and locative stories. With this in mind, I also asked them to tell me three things one can do with a smartphone. On this very first day, I exemplified the concept of place-based stories by showing a locative story I wrote about the house where I was born and raised in Brazil. The story I wrote conveyed a strong sense of place by describing the architectural features of the house and street plus my emotional memory of it combined with a strong personal event in my life that happened there: the death of my mother.

I also showed the picture of that house pinned on the map of my hometown on Historypin. Afterwards, I asked them to read the story I authored out loud. I asked them who likes to read out loud. I was impressed because several participants raised their hands. In general, those girls were not shy. I projected the text and gave them two copies on paper. Everyone had a chance to read a piece of the story. I did not see any reaction during the reading about the text. They were pretty concentrated on the reading.

On the second day I talked to the program coordinator of Latinitas about the possibility of taking the participants into a fieldtrip, but she told me that would not be possible. I had to come up with a quick alternative for the production of stories and pictures, thus I asked them to bring pictures that they had already at home and write about their memories based on their photos. Those pictures had to represent a story that they would have to write down, and upload to Historypin, the website and mobile application we were exploring over the four days.

Second day. I started the second day by asking the participants if they remembered what we had discussed on the previous day. They mentioned “smartphone”, they said that a smartphone was like a computer and they also mentioned GPS. I asked them what was a GPS. They come up with great answers: “it gives you the location”, it is a “navigation system”, and “it locates you on the map”, what showed that they grasped the concepts we talked about in the first day. On this second day, I handed out to them a glossary with keywords we would use over the workshop, including GPS and locative media. I told them that over the week we would use those terms on the glossary constantly.

I also asked them to ask their peers the following questions: age, name, “what technology do they use at home?” What was journalism for them (since the summer camp was about media and Latinitas focuses on citizen journalism), and “What was their favorite place?” By asking these questions, I wanted to understand their educational background, and also to capture their "raw" sense of place. After that, I asked them to access Historypin website and explore it on the laptop provided by Latinitas. Afterwards, the participants were given time to explore the mobile application of Historypin on the researcher’s iPad. Although Latinitas did not have digital mobile devices for each participant, I took my personal iPad for the class and each student spent some time exploring Historypin mobile app on it.

The goal was to expose them to the GPS capabilities of the application and observe if they notice the difference between the website and the application. Each participant was given five minutes to explore the application. After completing this task, I asked them to write about the differences between the website and the app, and also about what they had seen on Historypin. While they were exploring Historypin, I asked them to see the pictures they had brought. Many of them brought personal pictures; a few photos were blurred and had low graphical quality. I said that I would

discuss with them about the pictures in the next day. The drawback of this activity was the fact that we had only one tablet to work with nine girls. Since we did not have mobile devices to provide for the participants, it was hard to have them working on the mobile device for enough time, which would perhaps have changed their perspective on the mobile application.

Third day. On the third day, I asked the participants to sign in the Mapping Austin Memories channel on Historypin and explore it. I explained to them that we would share our content on that channel. Not surprisingly, several participants had trouble to navigate on the web interface of Historypin and requested assistance. Some did not scroll down the page and did not see the channel. The older participants were more willing to explore and find out more about the content on the channel. Some of them asked me if they needed to read the explanation of the channel. I said yes.

While they were exploring the channel, I talked to each student individually about the pictures they had brought. Many of them did their homework and were proud of that. I asked them why they brought the picture, if they had a story to tell about that picture and why. They told me the stories. Even though the photos did not convey information about a place, I found the locative stories that they triggered quite interesting. I said to all of them to go ahead and start writing their stories. When asked if they wanted to share their pictures on Historypin, four girls were not sure. A 10 year-old girl called her mother to ask if she was okay with that, since her mother was also on the picture. Thus, they started writing the stories on the third day and I asked them to finish on the next day, which would be the last day of the training.

Fourth day. The last day of the workshop was basically writing and editing. One of the Latinitas's facilitators of the workshop scanned the pictures to make the uploading to Historypin faster. Some of the students had their pictures on their phones. One of them, an older participant, had proactively uploaded a picture and geotagged it at her home through Historypin. In order to motivate the other participants, I showed the picture she had pinned on Historypin and explained to them that one of the girls had already uploaded her picture. At the end, almost all participants in the class uploaded their pictures and geotagged them.

Phase 2 After-school program

The third phase of the partnership with Latinitas was an after-school program at Hernandez Middle School in Round Rock, a city within the Greater Austin, Texas metropolitan area. The program started on October 2nd 2013, and we had sessions on October 9th, 16th, 23th, and the last training was on November 6th, a total of five classes spanning over five weeks. During these days, I had about an hour to work with the girls about locative media and locative stories.

The training was on every Wednesday, between 4:50pm and 5:45pm. The participants were middle school students ranging from 11 to 13 years. However, it was hard if not impossible to have a committed group of students, because there was nothing that obligated them to attend this after-school program. Thus, we were not able to have a loyal group to work with from the beginning through the end of the training. Unlike the other two previous trainings, this one was much more fluid and based on improvisation.

On the first day, five girls showed up, but we were not able to access Historypin due to school restrictions to social media websites. This limitation went on in the next sessions, which made very difficult to explore the concept of locative media website with the group. Still on the first day, the two club leaders, who were assisting me during the training, tried to contact the school technical staff to fix the problem, but they were not able to do that on time. For this reason, I had to improvise. I noticed that the computers of the lab where we were had Google Earth installed. Thus, as I did with the participants over the summer camp I split them into pairs and asked them to interview each other. With those interviews I was trying to understand how I would introduce the concept of locative media with them. So, it was really important to find out if they had smartphones to explore Historypin by themselves at home, as homework.

After interviewing each other, they were asked to show their houses on Google Earth. They were pretty knowledgeable about the software and had no problem or questions at all about using it. Some of them recognized the houses of their colleagues.

In the second session, less than five girls showed up, so I read with them the locative story about my house (see Appendix I and II) as an example of a locative story geotagged on the site and mobile application of Historypin. As the girls read the article out loud I noticed that they lacked maturity or concentration in comparison to the summer camp girls. They laughed at the word “breast” and had trouble to continue reading the article. On this second session, we still could not have access to Historypin website on the computers, because the application was blocked. On this day, we also went through the glossary with terms such as: GPS, locative media. They were familiar with all of these terms and what is interesting is that they also tried to guess what locative media was, which shows their typical inclination to learn.

What was different in this third phase in comparison to the other two, was that I asked the girls to write about places in their neighborhood, but over time I realized none of the girls wanted to write about places in their neighborhood because they did not know much about the place where they live or because they did not have emotional connection to it. So, I told them that they could write about other places.

A participant had trouble in getting help from her mother to help her to find a picture. She told with a very frustrated voice that she tried over the entire week to get the attention of her mother, but she worked all day long and was tired after work and wanted to watch *telenovelas*. This participant said she wanted to be a writer and seemed eager to accomplish the task despite the non-support of her family. As a strategy I sat down with her and drew an outline of her story.

On the fourth session, only one girl showed up. This participant had started writing a story in the last session but saved the story in a computer from a different room. She said she wanted to write about her grandparent’s house in Laredo, because that is where she had more memories, rather than choosing a place in Round Rock, where she lives.

The fourth session was the next to last class, so I anticipated that we would not be able to upload the stories on the last session. This lack of attendance might have happened because the school had a special activity going on that day for Halloween. Several students were doing different activities and we ran into some of the girls in the corridors that missed the *Latinitas* session and told us that they were attending other activities in the school.

Despite being very unsteady, this third phase was very exploratory in the sense that we concluded that locative media have a great potential to help kids to understand the geography of the place where they live or to increase their sense of place, as I will discuss in the detail in the next chapter.

2.4.1. Limitations

The workshop was challenging for many reasons: the complexity of the subject versus the short time to convey it for the girls, taking into account their age. Moreover, we did not have either smartphones or tablets for the participants to use, which is crucial for the goals of this research. The original idea for the trainings was to ask the participants to produce a local story about a place in Austin and take a picture of the respective place. However, I understood in the first day that that would not be possible, because of their limitations regarding their age and the short time we had. Memory and old pictures then became an alternative I had to fall back on. Ultimately, this study was better taken as a pilot study that helped us to frame the research more in terms of context, such as the way we are putting it: *among* and *about* Latinos/as.

Second Fieldwork and procedures: River City Youth Foundation

Unlike the fieldwork with Latinitas, which was more based on participant-observation, this case study combined more techniques of ethnography such as participant observation, fieldnotes, informal and in-depth interviews. This case study also involved a steady one-month and half workshop, focusing on the production of locative stories by lower income, less educated, largely Spanish-speaking only Hispanic migrants, mostly women, in Austin, Texas. The participants were invited to write stories about places in Dove Springs, which could be based on personal memory, recent historical events, or current facts. They were encouraged to write and take pictures of places with which they had strong connections. In order to do so, I collaborated with the neighborhood-based non-profit organization called River City Youth Foundation (RCYF). It was explained in the previous chapter.

The case study was carried out specifically within the scope and timeframe of TechComunidad in 2013, a program that began in March 2012 with a kick-off event that has since then engaged hundreds of pre-selected high-need parents and youth for digital learning day. The program includes Spanish language-only training for parents and STEM-based computer skills development for youth. The program continues with a series of mandatory follow-up TechComunidad training days. The TechComunidad Kick-Off event is essential and required to be accepted in the digital inclusion program, as parents are given a certificate at the end of the day for completion. The kick-off day training is used as a springboard for what is to come for parents in the following weeks. Families that wish to be involved have to prove that they are below a certain income level, and have relatively little access to computers or Internet technology.

Oné Musel-Gilley, the founder of TechComunidad program and Public Relations of RCYF has once said in an informal interview that they need to select the "poor of the poorest" for TechComunidad. The general goal of the TechComunidad is to close an educational gap in Dove Springs by empowering parents in this community who lack technology access and the basic computer skills to guide their children's education from pre-K to college and career.

RCYF was chosen as a partner, among other reasons, because of the originality of the TechComunidad program, which besides offering both parent education and technology training with a cultural approach, participants are granted with digital mobile devices (e.g.: tablets in 2012, 2013, and chromebooks in 2014, 2015) aiming to immediately improve their participants lives and of their community. In this sense, the aspect of investing in mobile media to bridge the digital divide showed itself as a great research opportunity to explore locative media, the segregation of the hybrid space among underserved communities. In fact, the organization allowed me to add a great deal of content in the training about mobile media and locative media, in order to teach these parents how to take advantage of a smartphone, as I will explain in the section "procedures" further.

In order to provide more background about the TechComunidad program, it is important to say that the training addresses basic terminology about Internet (e.g.: browser, search engines, difference between Internet and Web). TechComunidad also required participants to create an email, learn basics about Microsoft Word, and learn

how to use mobile technologies (e.g.: applications and how to download them). Oné Musel-Gilley says that the ultimate goals of TechComunidad are: 1) for parents to have complete mastery of email and 2) for parents to know how to utilize search engines. TechComunidad also puts a lot of energy into broader parent education about how to help their children and have better prospects for work and social inclusion.

The training also addresses real needs such as understanding how the U.S. educational system works, how to find scholarships for college students, how to access the Parent Connect program of the AISD (Austin Independent School District) in order to communicate with the school's teachers and track kids' homework, and how to find health-related information. In an informal interview conducted by the researcher on June 22 2013, Oné Musel-Gilley said that although RCYF has been providing technology training with a structured computer lab on site for nearly two decades, TechComunidad has marked a new focus for the organization on parent technology training, Wi-Fi access, and family learning.

RCYF agreed to let me to use the last 15 minutes of a two hours TechComunidad training, to introduce the participants to the concept of locative media and to teach them how to write locative stories focused on places and memories in Dove Springs. The fieldstudy started with an "Orientation Script for TechComunidad Training" on September 30, 2013. RCYF's main facility in Dove Springs is where the classes took place and the first author trained the participants along with two more instructors, employees of the organization. The workshop had two shifts: morning and evenings. In total, the classes had 12 participants: four in the morning group and eight in the evening one.

The two instructors and the researcher, all fluent Spanish speakers, conducted the technology training entirely in Spanish. Regarding the mobile and locative part of the course, or in other words, the research setting of this study, participants were first introduced to tablets and smartphones as tools to enhance everyday life. In order to do that, the researcher showed examples of mobile applications that enable one to use camera to do things beyond taking pictures, such as CamScanner, HeartBeat Instant Rate, and QRcodes readers. They were also showed about how "location" has been used in applications, such as Foursquare, Trulia, UrbanSpoon. Afterwards, in a second session, I showed them my own channel on the application Historypin and an

example of a locative story geotagged by me on the map of the city where I was born (see Appendix I and II). Thus, the concept of place-based stories was introduced to the participants. Furthermore, I discussed with the participants the pros and cons of sharing location on their phones, and also privacy concerns. Overall, the participants were taught how to turn on or of their location disclosure request on their smartphones.

Most of the participants were women. Out of 12, only two were men. The classes were two hours long and introduced participants to mobile/locative media during the last 10-20 minutes of each class. At the end of the training, I was able to create a three-hour class, one for the morning group and one for the evening group, to teach students about locative media and instruct them how to create a locative story. When not teaching, I was providing assistance to the participants as a volunteer. The participants were parents who had been granted in 2012 with tablets by RCYF and had been trained during the one-day event called TechComunidad.

For the workshop, we used mainly two devices: laptops and tablets, owned by RCYF. Participants also used their own smartphones to look at or download applications, and send photos via email, to accomplish tasks.

Since its launch in 2012, TechComunidad has been focused on the spread and diffusion of digital mobile devices such as tablets. It is interesting, however, to note that the program parents did not use the tablets they were granted with. Based on a household survey undertaken by RCYF in Summer 2013, 70% of the parents who were given tablets in 2012 said that they had never used the device they were given. However, their children did. These parents were the participants of the workshop about locative media/locative storytelling that was taught by the researcher in 2013 for the purpose of this research. Perhaps one of the reasons they did not use the device was the fact that it was a tablet called Coby Kyros, supported by Android operating system, but without a Playstore, the application in which Android users download applications. The fact that the parents were not able to download new apps may have complicated or limited the daily use of the tablet.

The participants were invited to write stories about places in Dove Springs. These stories could be based on personal memory, recent historical events, or current facts. They were encouraged to write and take or retrieve photos of places with which

they had strong connections. Rather than focusing on the quality of user-generated content, the goal of the training was to encourage the production of locative content and incite value of the stories among disadvantaged people - in this case lower income, less educated, largely Spanish-speaking only Hispanic migrants, mostly women - would have access to cutting-edge technologies and the opportunity of having individual mentorship to benefit fully from those technologies to their everyday lives. It is important to stress that our goal with training was to expose low-income Latino/a communities to locative media and locative storytelling, and observe their impressions about those new mobile technologies and ways of storytelling to increase their sense of place.

Only the participants, who were able to write, take a picture of a place, upload and geotag their stories on the map of Austin were interviewed. I chose to interview only the participants who were able to accomplish the final task, because I draw on Lindlof & Taylor (2010) who suggest that “a researcher should recruit particular persons for interviews because they have had experiences that are vital to our research questions or because they possess specific kinds of knowledge, or because the stories they have to tell” (p. 111). That said, five women, one man, and one couple, ranging in age from 34 to 64, participated in the training. Except for one, all the interviews were conducted in Spanish by the author. As mentioned before, these interviews were semi-structured and focused on how participants understand places, how they learn about them, the overall experience of writing a story, and the usage of mobile devices to learn about local knowledge.

Third Fieldwork and procedures: Mapping Latino Culture in East Austin

This case study was undertaken in the context of Prof. Straubhaar’s undergraduate Radio-Television-Film course "Mapping Latino Culture in East Austin" at the University of Texas in the Spring 2014. The course had as a goal to provide the students with a better understanding of media issues about traditional, ethnic and digital media use, social inclusion efforts in Austin, and migration from Latin America, Asia and elsewhere to the U.S. in both theoretical and concrete local terms.

Having this as a goal, this research was divided into different steps: First, the students learned about Austin from reading about the history of segregation in the city, and from looking at visualizations on maps with information overlaid that illustrated how segregation was produced over time.

Second, the students were assigned to read several articles and documents about locative media. After that, on February 18 2014, we introduced the concept of locative media with the students in class, in which we discussed the plethora of terminologies such as: locative storytelling, location-based games, location-based services, location-based social networks, privacy concerns and possible benefits of location technologies. Since we assumed that the students were not familiar with the concept, we expected that the lecture would introduce more value in the task of creating locative stories and instill curiosity in exploring other location-based applications. In this context, the students had to do readings at home and respond to quizzes about what they read in the first 10 minutes of each class.

Third, the students learned how to use Historypin, set up the account and use "Mapping Austin memories", an account on Historypin we created for the project. Fourth, the students were assigned to create three different locative stories, which we called "pins" - as shown in the rubric below. The first pin, which was focused on The Tejano Walking Trail, was mostly designed to get the students accustomed to Historypin before they were asked to go off and do their own research. The Walking Trail's sites were already mapped out, and were available in paper brochures or online. This first pin did not much require too much of the students in terms of content, because they could copy and paste what the brochure said about the sites with an original photo they took onto Historypin. This was also designed to benefit the Tejano Walking Trail initiative by mapping their sites onto a locative media site. That said, the goal here was to encourage students to visit the sites in the existing Walking Trail, which are in the Latino area of East Austin. They also had to create one historical pin and one modern pin of their own choice.

After the accomplishment of these tasks, fourteen students, half of the class, were encouraged to be interviewed about their experience of using a locative application to tell a story about a place and receive extra-credit in the class. The semi-structured interview was about how participants understand place, if they consume

local information, how they understand locative media, how they learn about local places, and finally how they move around a city.

Mapping Austin Memories: Historypin project

Name: _____

Pin #1: Tejano Trail

_____ out of 2 points

Based on completion of the pin according to assignment requirements (photo posted, information about the site available through trail information provided).

Pin # 2: Contemporary

_____ out of 2 points

Based on completion of the pin according to assignment requirements (photo of the site, accurate info provided, relevant to contemporary Austin).

_____ out of 1 point

Based on writing quality (grammar, logic, style, etc.).

_____ out of 1 point

Based on creativity and stylistic quality of the subject matter (was the pin interesting, engaging, or original? Was the subject matter substantial?)

Pin # 3: Historical

_____ out of 2 points

Based on completion of the pin according to assignment requirements (photo of the

site, accurate info provided, relevant to the history of Austin).

_____ out of 1 point

Based on writing quality (grammar, logic, style, etc.).

_____ out of 1 point

Based on creativity and stylistic quality of the subject matter (was the pin

interesting, engaging, or original? Was the subject matter substantial?)

Total:

_____ out of 10 points

Grading the assignment

Each student was required to visit, observe, photograph and describe several sites important in Latino or African American culture in Austin, using Historypin, a Google Maps-based locative culture and history mapping site or app. Historypin was an easy-to-use tool that students used to upload their locative stories. This was be 15% of the total grade. The quizzes, which throughout the classes we called "pins" were also graded. After producing a story with a picture, the students had to upload the stories to Historypin.

To accomplish the first pin, we used as an initial source of locations the map of the public initiative Tejano Walking Trail, which is an attempt to create a greater

public awareness and valuation of Latino or Tejano culture in Austin. Thus, the trail highlights changes that started in Austin in the 1920s, with formal segregation of Black Austinites and informal segregation of Latinos in a new city plan in 1928 (Straubhaar, Spence, Tufekci, & Lentz, 2012).

Instructors chose assigning students to visit locations and to write locative stories related to Latino heritage and cultures. This was an approach to help us to understand the outcomes of locative media and locative storytelling in diminishing the effects of the segregation of the hybrid space. This case study also aimed to understand to what extent residents have knowledge about their locality and how locative media may help them to connect with the place where they live via history. One of the practical merits of this case study is to have encouraged college students to walk in a culture that is quite car-oriented. The course's goal matched with this research, because it aimed to engage the students with parts of the city they were not familiar with, and where disadvantage people live and they do not. This is why I framed this case study as covering the "*about*" side of Latinos/as in Austin.

That said, one of the central goals of this case study was to highlight and create awareness, among the college students, of the geography of segregation in Austin via locative storytelling with a focus on history of Latinos at the East side of Austin. I worked on this with Professor Joseph Straubhaar, who was planning on discussing the history of segregation in Austin through maps and was looking for innovative ways to map aspects of Latino culture in Austin. By doing this, our aim was to inquire how the students perceive locative media, how they perceive the locality where they live, and how local information plays a role in their involvement with the locality. In order to investigate the research questions, I analyze qualitatively the experience of the students being exposed to the locative media technologies for the first time and creating locative storytelling.

Although it was not our primary goal, this study also functioned as a tester of the public initiative Tejano Walking Trail to preserve history and cultural heritage. The East Cesar Chavez Neighborhood Tejano Healthy Walking Trail is 4.95 miles long and takes about 2 ½ hours to walk. The locations included schools, libraries, churches, residences, and historic homes. The trail was created by the East Cesar Chavez Neighborhood Planning Team and funded by the City of Austin's Neighborhood Enhancement Fund, with the aid of 30 volunteers. There are two trails.

The Trail of Tejano Music Legends, created by the Austin Latino Music Association, points out music legends from the 40s and 50s. The second route is the Tejano Healthy Walking Trail, which includes historic structures like the Austin National Fish Hatchery. The National Parks Service has designated both trails as national recreation trails.

The Tejano Walking Trail is an attempt to create a greater public awareness and valuation of Latino or Tejano culture in Austin. It builds on changes that started in Austin in the 1920s, with formal segregation of Black Austinites and informal segregation of Latinos in a new city plan in 1928 (Straubhaar, et al, 2012), as explained in the first chapter of this dissertation.

The students were required to visit the locations of the Tejano Walking Trail (see Figure 4), take photos of the site, write stories about those locations, and put them up on Historypin. To some degree, the case study with this class was an attempt to test the perceptions of the students and also of digitalizing the locations proposed on the map of the Tejano Walking Trail.

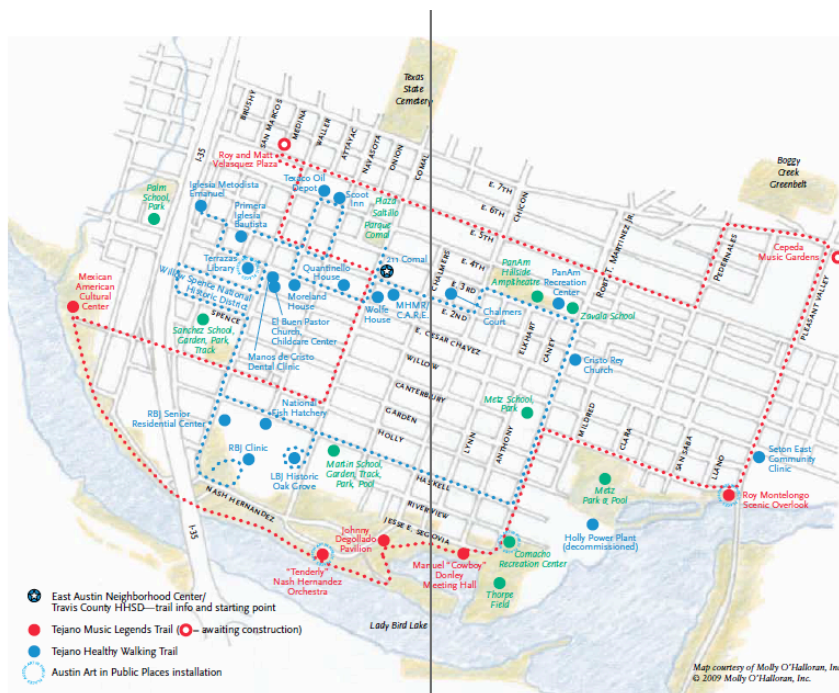


Figure 4. Screenshot of the Tejano Walking Trail Map Booklet

The work involved learning the history of segregation in Austin through maps, thus demonstrating the usefulness of mapping, and an introduction to locative media concepts, showing the students similar projects of locative storytelling and memory in classroom.

CHAPTER 3. RESULTS

This chapter presents the results of the pilot study with *Latinitas* and of the two main case studies: first with adults from the digital inclusion program *TechComunidad* provided by the organization River City Youth Foundation; and then second with undergraduate students in the course “Mapping Latino Culture in East Austin,” at the University of Texas at Austin. The goal is to answer the broad question of **how locative media may elevate awareness of local history, of unknown or forgotten information, and events *among* and *about* Latinos/as in a place that faces historical spatial segregation?**

At this point, it is also important to remember that my main goal is to create awareness about the locality where Austin residents live through locative media and locative storytelling. That said, the results may determine whether my goals were achieved or even achievable: a) to explore to what extent locative media may increase sense of place *among* Latinos and *about* Latinos who live in areas which have a recent history of segregation, b) to increase participation in locative media, c) to better understand how locative media may help to attenuate the effects of segregation and consequently the segregation of the hybrid space, d) to understand how location-based media may engage Latinos as producers of locative storytelling using their memories and knowledge of their locality, e) to bridge the digital divide by teaching people how to use mobile media and to gain mobile skills in order to increase participation in locative media, (f) to analyze to what extent locative media could help undergraduate students to grasp the topic of spatial segregation and its effects on the Latino Culture in Austin, and (g) the efficiency of the application used.

3.1. Pilot study with *Latinitas*: exploring the potential of locative media and locative stories with young girls at *Latinitas*

The aim of the pilot study was to understand how young Latina girls (children, adolescents) understand locative media and their locality. The overall goal here is to unfold the potential of these technologies and to gauge the potential of young girls as

producers of locative stories, as part of aiming to increase participation among Latinas in locative media. This section presents the results of a two-phase study combined with ethnographic techniques such as participant observation, fieldnotes, and discussion. For data, I also used the locative stories that participants produced during the training I provided. Hence, in this case study, I explored the concept of locative media through Historypin. I will divide the results in two phases: the first occurred in a summer camp provided by the non-profit Latinitas; and the second phase happened in an after-school program in a middle school in Round Rock, a city within the Greater Austin Metropolitan Area. The results will be articulated with the previous theories and tendencies presented in the literature review and systematically expanded through the qualitative insights that build on the data collected using semi-structured interviews, fieldnotes, as well as on the textual data collected from the participants throughout the training.

First phase

In this phase, there were nine participants ranging from 10 to 14 years-old and all born in the United States, but their parents were from different places, such as Mexico, Honduras, Ecuador, and the US (Wisconsin, Oklahoma, Chicago). Thus, these kids were mostly second-generation, because at least one of their parents was not born in the United States.

In response to the question of what was their favourite place, they responded “Texas”, “school”, “my house”, “my grandma’s place”, “Illinois”, “Mexico”, “El Buen Samaritano.” Thus, their understanding of place was diverse, ranging from understanding of geographical divisions such as states and countries to more emotional conceptualizations such as “house” or very specific places like “El Buen Samaritano” (the institution where the workshop was held). This finding is interesting to our discussion of place and sense of place because, as Cresswell (2008) explains, place is not scale specific; “it can be small as a setting at a table and as large as the Earth” (p. 134). To this extent, their choice of a favorite place was often focused on the notion of the state where they currently live, which reflect a shared sense of place or, often at a smaller scale, their grandma's place, which conveys a private meaning.

In terms of access to the primary base of locative media, the smartphone, few of them had that basic access. Out of nine children, only three had smartphones, while some other participants did not know what a smartphone was conceptually. One of the girls did not know the word “smartphone,” but she had an iPod. The differences between tablets and smartphones were also explored. Some of the participants responded they were the same, with the difference that with an iPad you cannot make calls. Because the participants were saying it out loud, a 10 year-old participant who uses an iPad at home said that you could make calls with iPad through applications, such as Skype.

Still exploring the concept of a smartphone, they were asked in the first sessions of the workshop what they could do with a smartphone. Some responses were: look for the weather forecast, make and watch videos, watch news, play games, take pictures. When asked about which apps they use most in their everyday lives, not surprisingly most of them said Instagram, Youtube, Buzzing and games. Only one participant said that she uses her parents’ tablet for “chat, movies, games, and sometimes for homework.” It is interesting to note that even though most of these kids did not have smartphones or GPS-enabled devices to produce locative media, they have knowledge about them and were aware of their capabilities.

When exploring the Historypin website on the laptops provided by Latinitas, the first thing they looked at was the map interface itself. Many of them used the option on the site of Historypin, the button “satellite view” to visualize places they were looking at, so they could have a bird view of the location. Interestingly enough, the first place they searched for was their houses, thus most of those places important to them were their residences. A participant asked me if Historypin had Google maps. I explained to this participant that Historypin actually used Google maps as an interface. Another girl, after listening to my response, said, “*it looked like it,*” which showed that she realized the connection with Google maps. Several girls looked for their houses, schools or places where they had been before. A participant, for example, was looking at the map of New York on Historypin. Over the course of the workshop, she happily mentioned that she went there many times, and that they were remarkable trips.

During this activity, I noticed that most participants were unable to navigate away from the map. However, the older participants, a 12 year-old and 14 year-old

girl were exploring the website as whole, looking at collections and pins on the map of the whole world. After observing this, I asked them to look for pins close to their houses. Many of them found their houses on the map; however, none of them found a pin left around their houses, which reveals a potential to fill the area with locative stories and geotagging. They noticed that the areas around their houses were empty of information.

One of the participants proactively created an account on Historypin during the class. Other participants felt motivated by that student, and in fact, several commented in the classroom for everybody to hear: “now, I want to have an account on Historypin.” By exploring the pins in Austin, a 12 year-old participant found a pin left by Latinitas. I asked her if she had created it. Her answer was negative, but she responded that she found the pin by browsing on the map of Austin on Historypin. By hearing this conversation, other girls became interested in seeing the pin and asked how she had found the pin. She responded by saying that was on the map of Austin. The girls mocked her, as they insinuated that that information was obvious. During this time, I was walking around the classroom and talking to the participants to see what they were doing on Historypin.

While exploring Historypin, a participant asked me why there were pictures on the map. I explained to her that they were pictures of places with stories. This question was striking, because it gave an opportunity to explain the concept of attaching digital information to maps. The question revealed that the participants were not familiar with the concept of maps overlaid with information yet. As I explained elsewhere in this dissertation, I was hoping for this kind of question in order to explain the concept of locative media to them based on their own observations and questions, as I exposed them to the concept of attaching digital storytelling to places through geotagging.

Although we did not have digital mobile devices for each participant, I took my personal iPad to class, and each student spent some time exploring the Historypin mobile app on it. I asked them to look for and write down the differences between the website and the app. Based on their notes, I concluded that they did not notice that the mobile device recognizes your location through GPS and gives information about your surroundings on the map. Only one participant realized that; she wrote, “The computer Historypin doesn’t show you where you are, and the ipad one does. The

ipad was easier to move than the computer. I think the ipad is better because you can take it wherever you go.”

I assume that this participant concluded this because she was already familiar with iPads, because her parents have one at home. When she was using the iPad in class, I also chatted with her about the location aspect of the mobile application. She was astonished when she realized the iPad recognized our location and showed it on the map. The conversation also helped her to understand the application fully. Unlike this student, most of the participants preferred the website to the mobile app.

Part of the workshop was to teach the girls how to upload a photo and a story to Historypin. In order to accomplish the task of uploading a photo to Historypin along their written stories, several participants brought pictures not featuring places or building façades, as I had assigned them to do, but instead brought personal portraits featuring siblings, friends, or relatives in a certain social environment. One student, however, brought a picture showing the outside of the building of her elementary school, which was more coherent with what I had assigned them to do.

In the next section, I will present the main themes that emerged in the first phase of the field study with Latinitas children over a summer camp in 2013. The analysis was based on their stories and also on observant participation.

3.1.1. Notion of place and locality fostered by locative storytelling

What is interesting to highlight in this case study with Latinitas is that 12 year-olds and 14 year-olds, from the first phase of the case study, grasped the concept better than the younger children like the 10 year-old, and one of them, the 14 year-old, put her locality into perspective by comparing it to other place overseas. As a conclusion, one may say that, in general, kids under 12 have not yet developed enough of a sense of place to explore the notions of locative media yet. Interestingly enough, one participant ended up writing about a couch as a “place” which pushes the boundaries of what one might think about how location-based media engage producers with their memories and knowledge of their locality. Triggered to write about a place that was meaningful for her, she chose to write about her grandmother’s

house located in Honduras; however, the girl focused on the couch of her grandma's place. Thus, although she geotagged the house and not the couch, the couch is also portrayed in her story as a place that triggers sense of belonging. Again, as Cresswell (2008) points out, place can be understood on a very small scale. Even a chair may have a sense of place as somebody assigns meaning to it (e.g.: a chair where your dad sat when reading stories to you as a child).

I had asked all the participants in the summer camp to write about a place in Austin, but this particular participant, for example, could only think of somewhere geographically far away but close emotionally. She could not think of any other place than her grandma's house. It is quite striking to think that she used the "couch" at her grandmother's house as an object that modified the meaning of "home." In her story entitled "Home is with family" (Figure 5) she wrote:

The couch that they are sitting (or in my mom's case, leaning) on is the same couch that my niece used as a sandbox and stuffed her toys in. This couch is also where my dad, my brother, and my cousin sat together, rooting for the Honduras soccer team. The couch in my home, in Austin Texas, in the United States, is cold, dark, and leathery, whereas this couch (from the picture) is soft, bright, and warm. While my parents and my dog sit on the couch at my American home, to watch a movie or play a game, the family in Honduras sits on the couch to bond; to make memories; and to live in the moment where we are not from different worlds, but from different streets.

This participant geotagged her story on the map of Honduras because the picture was taken there, and despite mentioning her house in the United States in the story, her memory was tied to that house and to that couch. On one hand, one could think that she is disengaged from her locality where she lives, but on the other hand, one may say that the opportunity of experiencing a different cultural setting allowed her to see her culture differently and how the ways of bonding are different. By looking at what is distant and apparently exempt of trouble, conflict, or boredom, she understands and reflects on the couch potato culture in the United States.

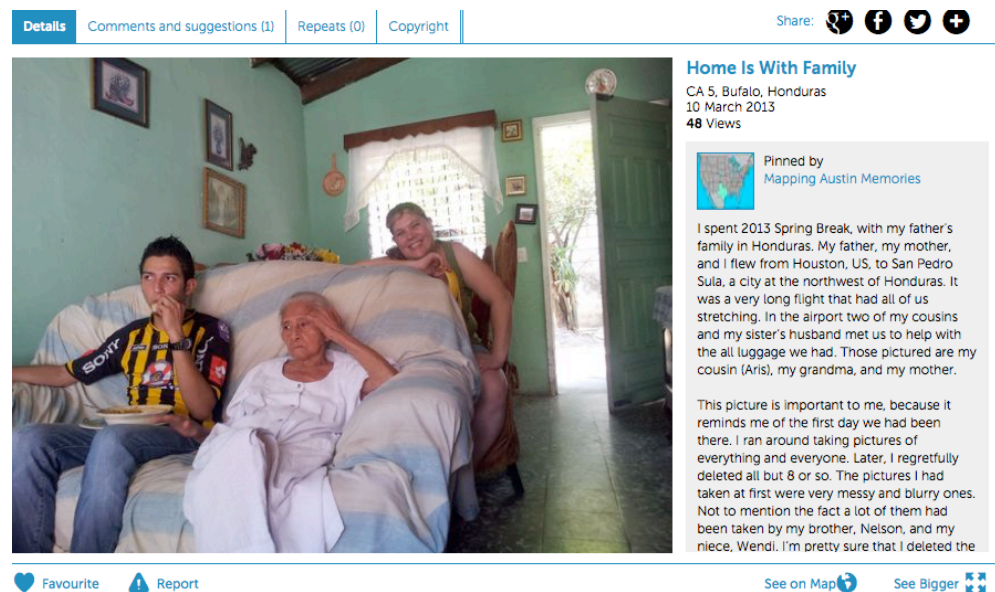


Figure 5. Historypin Screenshot Home is with Family

The image (Figure 5) shows the couch she wrote about. The photograph shows also her cousin, her grandma, and mother.

She also wrote:

My grandmother's house is old, stuffed with useless boxes and bugs, and it sits quietly in the shadow of a mountain. It holds memories and wisps of a previous life. It stands tall and sturdy. **It stands as my second home.** Though it is far away, I long for the days I had. Over those days my family and I could laugh and cheer and be together.

I highlight the fact that she considered a distant place as her ‘second home’ due to an intense meaning she attributes to that place well located “in the shadow on a mountain” by her on the map (see figure 6) in a green area. As the title of her locative story suggests home is not determined by a location, but by an emotional tie with family.

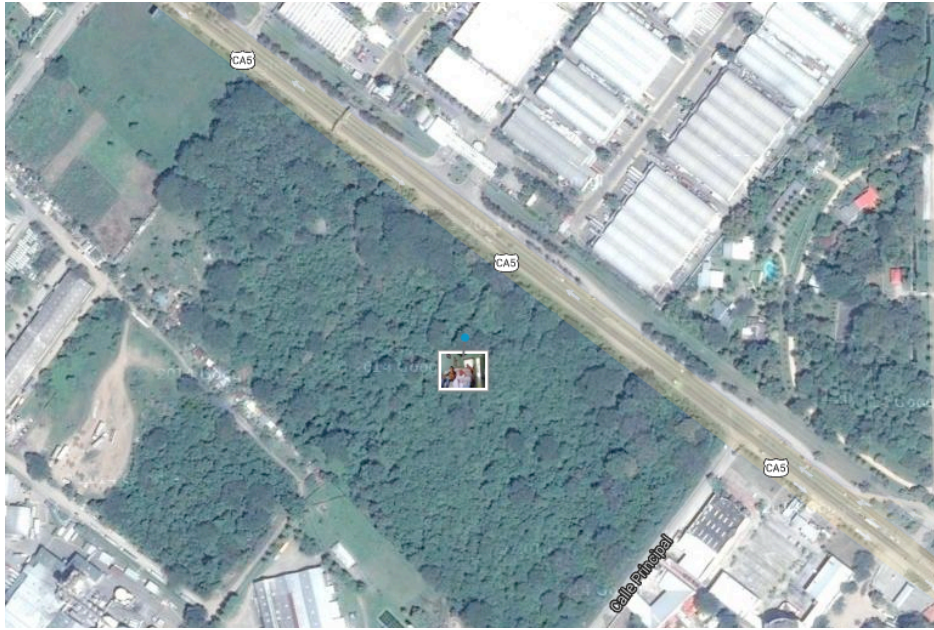


Figure 6. Historypin Screenshot Home is with Family (Satellite view)

As Levine (2014, p. 143) reminds us, “there is also a potential for mobile and locative media to change one’s relationship to a place by introducing distant events or circumstances onto local spaces and making events that are happening elsewhere highly relevant to the immediate, local space.” In this sense, this participant engaged with their locality by reflecting on the experience of going to her grandma’s house in Honduras.

Another participant also did not choose a place in Austin to write about. Rather than writing about a place, she narrates the process of getting to a place, an amusement park in San Antonio, a city close to Austin. She pinned the picture to her destination, but her text conveys the idea of an event - a fieldtrip. Her memory was based on the idea of mobility, of leaving her home or her city and going somewhere else to experience something different. She actually ends her story before she explores the place itself. The image below shows the picture she took on her fieldtrip, the same one she used as a memory trigger to write her story.



Figure 7. Historypin Screenshot A Bad Day to go to Six Flags Fiesta

While the other two previous participants chose to write about a place that is geographically far away, another one chose to write about her school located in Austin. This participant was one of the girls from the first phase who grasped the concept of location-based media pretty well. She brought a picture (see figure 8) of the façade of her school. and she chose it because it holds a strong memory that changed her life. As she wrote:

This Kindergarten is very important to me because when I was about to turn six, the biggest event of my life happened there. It was near the beginning of the school year when my arm got paralyzed. I was diagnosed with either West Nile or Polio but I had not realized it at first.

This locative story helped her to make a meaning of her school, situate herself in the present, and realize how she overcame all her struggles and how that place is also part of her identity.

This school is memorable because many things happened there: my arm, my first school dance, and also it was the place where I had my first parade. All in all, I had a quite good time at Summitt and so many memories are still with me. Some people think that this school is a bit odd being made of red bricks and a bright blue roof, but I think that makes it sort of unique. The schools playground is very fun with separate playgrounds for the big and little kids and has a small track that is a good size to do exercise but not overdoing it. Summitt is very big with many portables.

The image is the screenshot of her story on Historypin website. It shows the picture she used as a memory trigger of her school and also part of the story geotagged on the map of Austin.

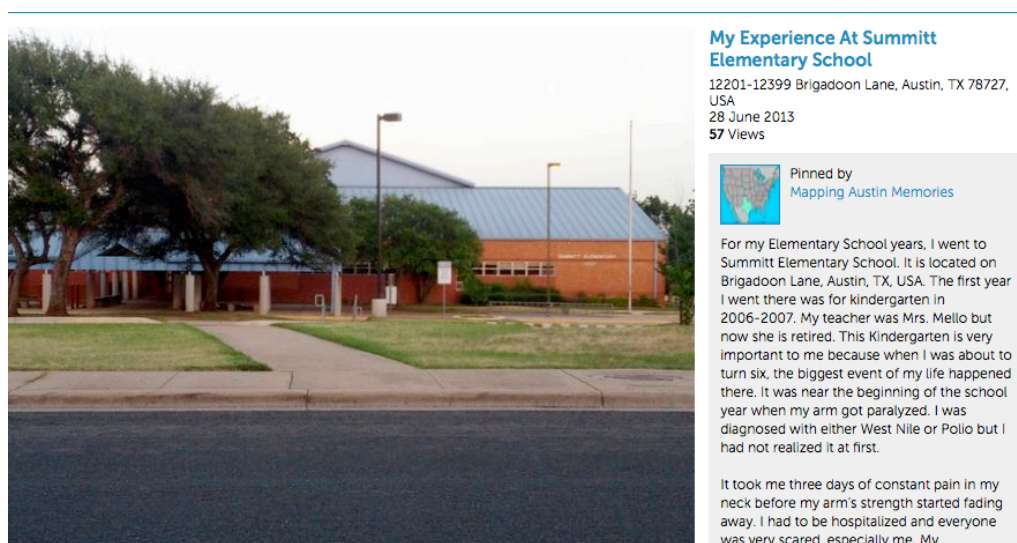


Figure 8. Historypin Screenshot My Experience at Summit Elementary School

Another participant, an 11 year-old, chose her locative story based on the memory of the celebration of her tenth birthday. In her story, she says that was the first time she went to the mall with her best friends. So, she pinned her story on the mall. She wrote:

I love the mall because it always smells like soft pretzels. It also always has cool clothes and my favorite store is Hot Topic. I will never forget this day because it was my first time I went to the mall with my best friends. After that we all went to my house to have pizza and open presents. That was my best birthday I had ever had in my life.

The image below (figure 9) shows the screenshot of her story on Historypin website.

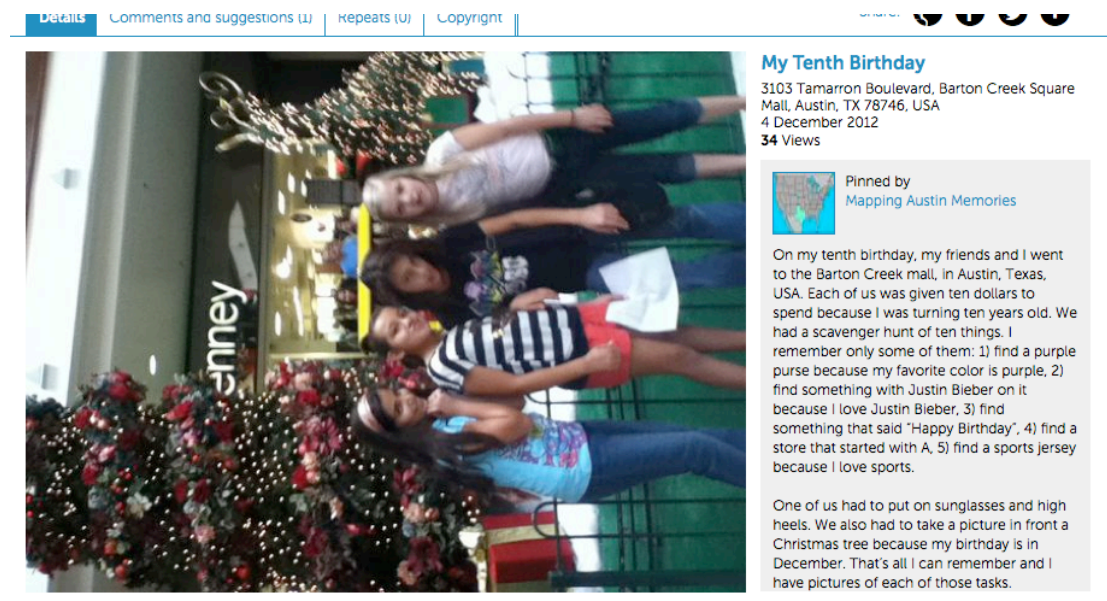


Figure 9. Historypin Screenshot My Tenth Birthday

The last story was written by a 10 year-old about the place where the training was held: El Buen Samaritano, an institution that helps Latino and other families in Central Texas. She considered the place her favorite.



Figure 10. Historypin Screenshot El Buen Samaritano is my favorite

She wrote:

My connection with El Buen Samaritano is really special because they help me to learn more things than I already know. I have been coming here since I was two years old. They teach me really cool stuff also because of that I learn a lot of things in fun ways. That is why I love coming here is like my second HOME!!!

This excerpt shows that her sense of place is rooted to an emotional meaning that prompts her to call an institution her second home. Similarly, the participant who pinned her story in Honduras also called her grandmother’s house a second home, but in this case, the location in fact corresponds to a house, and it is a place where family gathers. For the 10 year-old girl, El Buen Samaritano is a place where she stays while her mother is working. In other words, staying at El Buen Samaritano means staying temporarily apart from her family. However, on the other hand, she benefits from the activities and learning process.

As other studies have discussed, locative and mobile media have the great potential to affect the process of memory and the creation of meaning, as they offer

new ways to store and to share information and reflections. They also offer new ways to present self-identity to others. As other studies have noted, the experience of a place has to do with different factors, such as memories associated with a place, social circles, and people with whom we have traveled to a place (Ozkul & Gauntlet, 2014, p.).

3.1.2. Impressions about Historypin

After being asked in class, a few participants sent emails to me about their impressions about the application and website because we did not have enough time to finish the task over the class. I was interested in learning what caught the attention of the girls in the application and also what they understood from the concept of locative media through Historypin. An interesting fact is that only the older participants of the training were able to provide a reasonable and comprehensive response, which makes me conclude that kids around 10 and 11 are too young for this kind of activity. Their responses were quite positive and expressed desire to continue using the app. It is also interesting that one participant associated the app with traveling spontaneously.

History Pin is a program (I don't know if you'd call it that...) where one can take a picture or scan a picture to upload and pin to a location. One can search a location and find previous pins, having been uploaded by others. It can explain the history or the stories experienced by others or what the building itself went through. Perhaps when exploring and traveling worldwide- it can help one understands the beauty of the life the world around them. The application is not as spread out or visually detailed as the website appears. I think the website is very interesting and quite complex. I look forward to sharing my experiences and the world from my eyes with everyone else.

One participant showed that she explored the website quite well and that she learned about history from it. Her comment shows how Historypin has a strong educational aspect and also how one can learn and experience history attached to location without necessarily being on the location. She also highlights the fact that she saw Austin “in the old days,” which might have given her a sense of change over time.

What I saw on historypin was how Austin looked like back in the old days, the Berlin wall before it was destroyed and the Taylor Dr. Pepper bottling company. The differences between the app and the website were that on the website, you could go search by keyword and address/town/state/country, etc also they had projects while the app didn't. They both used search by date. On the app you can only search by city or town. I learned a little bit about what happened in Berlin, Germany when the wall was still there. I also learned about the Olympics though out the years. I want to have an account on historypin now, after seeing old pictures with a story behind/ about them.

From analysing their responses, it is clear that they prefer the website to the app, which provides us with insights about the usage of learning about places on the go. Historypin seemed to be a great tool to use in classroom, but the mobile application is not considered well-designed to use on the fly yet.

In the next section, I will present the results of the second phase of the fieldstudy with Latinitas children, over the after school program in a middle school, in Fall 2013.

Second phase

In regards to the Latinitas after-school program in the middle school in Round Rock, none of the participants there had smartphones but they were familiar with the technology. Also, even though most of the girls did not have access to smartphones or

tablets, they were pretty familiar with the definition of smartphones and with Google Earth. None of the girls were able to upload or geotag a story, for reasons I will explain below. Some of them wrote the stories but were unable to take the pictures; therefore they were not able to geotag the stories on the map, since Historypin requires a picture to pin on the map. Thus, the results of this phase are mainly about the process of creating stories about places.

During the training, I asked them to write about places in their neighborhood that was meaningful for them. These girls from the after-school program at Hernandez School, in Round Rock, had trouble in writing about the neighborhood where they live, as they were asked for this research project. The former Latinitas program coordinator Samantha Lopez anticipated this finding. In an informal meeting with her in a coffee shop in 2013, in which we discussed the workshop plan for the after-school program; Samantha commented that the girls at this age do not have a great sense of place. In her words: “they still see the world very small. It might be hard to these kids to choose a place because they just have been to their house and malls.” Samantha said that it would be great if they could see that the world is big in order to extend their options in the future. In her opinion, the locative media workshop could help them to “realize that they do not have to stay in Austin the rest of their lives. They can study in other places,” possibly abroad.

However, it is interesting to analyze the words of Samantha based on the reactions of the girls to writing stories about places of the locality where they live, because they showed some level of disconnection with their locality. For example, one of the participants, a Mexican descendent wanted to write about places in Mexico. She said she did not feel any deep connection with places in the US. She wanted to use a story she had already written about her grandparent’s haunted house, which is located in Mexico.

Another participant wrote also about her grandparents’s house in Round Rock. She struggled to find a photo of the house. She sent an email to her father asking if he could take a picture of the house. He did so and sent it to her but the picture was too dark and she brought also the picture printed in paper. Since we did not have resources to scan the picture at school, it was hard to upload the content to History Pin. It seems that at this phase of life, adolescents have their sense of place rooted to their family’s house or a very sense of private place. It shows how important locative

media may be as part of a formative goal to increase their sense of space and place. When asked if they had a favorite place (without distinguishing between public or private), most of them said their favorite place was their bedroom, which reinforces our notion. Actually, many of them wanted to write about other far away places, instead of their neighborhood.

One of the main findings of this case study is based on the fact that I had to disclose personal stories as a strategy to build rapport and engage the girls with their own stories. A key example: one of the students was not able to bring a picture of the family or anything because she did not have support from her family. The participant was a 12 year old who said she lived with her mother and father. She claimed she tried to talk to her mom many times during the week before the training, but “she got home late, was always tired, and just wanted to watch soap opera”. This girl mentioned several times during the training she had the dream of becoming a writer but was struggling with the lack of support from her family to accomplish the assignment for this research. Thus, I had to work individually with this adolescent and share my own personal stories in order to help her to think about past events and memories, and feel confident to tell me about them. By doing that, we were able to come up with an outline for her story. I was trying to help her remember some memory that was crucial to her development, something that she would remember for her entire life and that she could associate to a place. She had to think also that she would need a picture to illustrate the memory and attach it to a location on the map. That is the way she started her story: “When I was nine I never understood the **concept of having to move to Texas** because we didn’t have money.” And this is the way she finished:

As I grew older other things that I considered bad started happening. My birthday didn’t have enough presents, my grandpa died, many family members started to get arrested. **I blamed this all on moving to Texas. Before we moved to Texas no one died or got arrested and I had enough presents. The feeling of all of this overwhelmed me.**

The two excerpts above show how this 12 year-old girl associated the move from Florida, where she used to live, to Texas, with a succession of losses. The place where she currently lives was stigmatized by this memory, which very likely troubles her connection with Texas and consequently with her locality, which is a serious problem. Locative media may undo this psychological node by providing these users with other stories that might help them to connect better with their locality. The case study with Latinitas suggest that is necessary some degree of psychological and emotional stimulation to draw out stories related to place and physical locations.

3.1.3. Summary

The study with Latinitas was taken as a pilot for different reasons, but I learned many lessons from that.

- 1) We did not work with the idea of a specific space imbued with history and legacy, but the findings suggest that the activity of producing locative storytelling helped them uncover sense of place, understanding the meaning of their locality. What is interesting to highlight is the fact we did not use much technology to work on the concept of locative media. I learned, however, that for future projects, it seems to be more efficient to work with a specific geographical area or specific context for the sake of locative storytelling, at least, for the purpose of this dissertation, because it enables us to understand better the specificities of the locality and the potentialities of locative media. There are two ways to see it. The fact that I did not give a list of places to the participants enabled me to have a better sense of their sense of place and how they make meaning of it. This is an advantage of not having a specific location or predetermined places. On the other hand, the girls did not develop a sense of place, as the parents of TechComunidad training (see next section) did.
- 2) Second generation Latinas kids studied in this case were hesitant to write about places in their locality, which led me to think

that if I had given them a list of places in their locality to write about the results would have been more in line with our goals. For this reason, this pilot study led me to reframe the entire research project in terms of *among* and *about* Latinos.

- 3) The process of storytelling about places was a great way to work issues of identity and understanding meaning of place for second generation Latinas girls, as the writing process fosters reflection about the place where they live, which helped them to understand better the locality, where they live.
- 4) However, for the youngest kids, access to mobile technology is still an issue.
- 5) In terms of conveying the history of legacy of segregation and to work with a specific theme like that, it would be better to have an introductory class about the topic.
- 6) A strategy to increase participation in the production of locative stories among Latinos is to work with kids, as they provide a glimpse into the future. As the pilot study showed, second generation Latinas girls need to develop a better sense of place and locative storytelling could help them to achieve that.

3.2. TechComunidad: Exploring the potential of locative media and locative stories in a low-income community

The second phase of my research explores the role of the production of locative stories among residents of a low-income neighborhood in southeast Austin. In order to do so, I collaborated with the non-profit organization called River City Youth Foundation (RCYF), based in Dove Springs. RCYF has the central goal of empowering children and youth through education and technology and guiding them to college. In order to increase the chances of achieving their central goal, RCYF, in 2010, created the program TechComunidad to empower parents as well. TechComunidad aims to close an educational gap in Dove Springs by empowering

parents in this community who lack access to technology and the basic computer skills to guide their children's education from pre-K to college and career. The program aims to close the divide by providing participants with a device, which could be a tablet, as in 2012 and 2013, or a chromebook (a computer designed to function while connected to the Internet, with applications and data being stored in the cloud) as in 2014 or 2015. The device giveaway is a great motivation for parents to finish the TechComunidad training, because they are required to pass a final exam and also to meet the attendance criteria to be given the device.

This case study's results are restricted to the context of the program TechComunidad, to which I had permission from the organization to run the workshop about locative media. For this reason, it is important to stress that no research was conducted in any other program provided by RCYF, at least for the purpose of this dissertation. Towards this end, this work uses a case study approach combined with ethnography techniques, such as participant observation and interviews. This case study focuses on the production of locative stories. Before presenting the results, I will provide narratives/profiles based on the interviews and observations of the participants who were willing to finish their stories and geotag them through Historypin.

Narratives

I was able to include training about locative media, local narratives, and Historypin in one season of TechComunidad training. Although 12 adults participated in the 2013 TechComunidad training, only six individual participants and one couple (husband and wife) were able to finish their stories and geotag them on the map of Austin. These six individuals and the couple were interviewed in the end of the practice. In this section, I will present the results based on their responses and also on observations I made throughout the process. I will describe their profiles individually, creating a narrative about the interviewees and highlighting the main points of the interviews conducted with them and also of their stories that they created and geotagged on the map of Austin. But before moving on, it is important to remember that this case study reflects our concern with "*among* Latinos." All TechComunidad

participants are residents of Dove Springs, an area in Austin that is informally segregated or, in other words, is a *barrio* or a hispanic enclave. With these narratives, we are trying to explore to what extent these Dove Springs residents know the city well, if they consume local information, and how the process of creating storytelling and geotagging could raise awareness about their locality.

Overall, it was very challenging to encourage the participants to write their stories. Beyond their lack of digital skills to operate their smartphones or laptops, several of them had literacy constraints. Some of them, for example, had trouble writing the name of their neighborhood: Dove Springs. So, as with some from the Latinitas participants, I had to do quite a bit of individual coaching about how to write a narrative, enabling them to complete some kind of personal or neighborhood story. Next, I will present brief profiles of the participants of this case study in order to provide context about their lives and routines.

A) Gisela

Unlike most of the participants, Gisela is one of the few of TechComunidad parents interviewed for this project who moves around the city by bus, because she does not have a car. In 2013, when she was interviewed, she was 39 and had lived in Austin for six years. She said she gets up everyday around 5:30 am to prepare breakfast for her and for her son. She highlighted that she watches TV news every morning. Before she started watching TV news, she used to use a mobile application to get news. She had owned a smartphone for two years by the time of the interview. However, because her phone was old and slow due to excess memory, she deleted several applications, including the news app. When asked about how she learned about places, she mentioned that she uses her phone to learn about directions if she has an appointment. As she says “checo en el mapa y ubico la dirección y lo pongo en lo mapa, y miro al capital metro” or (“I check the map, I search for a location, and use the capital metro”). Maricela mentioned that after learning about QRcodes in the locative media workshop, she downloaded a QRcode reader application to learn about the bus schedule because, as it was said earlier in this study, the bus stops in Austin have QRcodes with timetable information. When asked if she uses her smartphone to explore new and unknown places, she says no. It is interesting to note that she looks

only for places she needs to go to meet her immediate needs. In her words: “No tengo necesidad de ir a lugares que no conozco.” (“I have no need to go to places that I do not know”). “Conozco muchos lugares en Dove Springs pero no hay esta conexión” or (“I know many places in Dove Springs but there is no connection with them.”)

This lack of exploration of the place where they live shows how these users are familiar with these technologies of location but do not grasp the concept of learning about places in a serendipitous way. Besides, she considers that there are no interesting places in Dove Springs. She does not have a computer at home, and the only access she has to the Internet is on her phone. The writing process for her was considered “very difficult” because she had to deal with the lack of information in and about the area. The place she chose to write about had no online information, and together with the researcher she decided to change the topic and write something more personal.

Gisela wrote about the house where she lives in Dove Springs. She tried to convey in her story the difficulties of moving to an unfamiliar place and how important is to have someone to help one to settle down. However, what was interesting to analyze was the entire process of selection of the topic. Throughout the training, I attempted to convey the concept of places having hidden stories and encouraged participants to look around the places where they live and search for stories about places. Following this instruction, at first Gisela tried to write a story about a place close to her house which in her words looked like the construction of a new school. Maricela tried to look for information online, and she could not find anything about the place. With help from one of the instructors, she also used Google earth to see the place. She said the image was not updated, and she could find absolutely nothing about the location. Maricela ended up going to the location to take pictures and ask about the place. She found out that the place was a bus terminal of AISD (Austin Independent School District). From the experience, Gisela learned a couple of things: 1) she realized how difficult was to find online information about places in Dove Springs, and 2) she realized that was not easy to find information about the place through the people who actually work there. For this reason, she changed the topic of her locative story.

Gisela struggled throughout the class to learn the basics of using a computer during the TechComunidad training, and at the end of the workshop, she still


struggled to use the mouse, and to copy and paste. The images below show the story geotagged and its satellite view on Historypin.



Figure 11. Historypin Screenshot My Sweet Home (Satellite view)

Details
Comments and suggestions (0)
Repeats (0)
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My Sweet Home in William Cannon Rd - Dove Springs Neighborhood

2302 East William Cannon Drive, Austin, TX 78744, USA
 13 November 2013
 19 Views

Pinned by Mapping Austin Memories

When you are taking the decision of moving to a new city, where you do not have any family or you do not know a lot of people, is important to have at least someone to help you to settle down. When I moved to Austin from Houston, in January of 2007, a good friend of mine hosted me. My friend used to live in the southeast of Austin, in this neighborhood called Dove Springs. I guess I still live here because I had the chance to stay in my friend's house when I first moved to Austin.

I live currently with my son on the William Cannon Dr. Street, in a complex of apartments. Every morning, my neighbor says "hello" to me. There are nice people living here. Despite of not being recognized as a

[Favourite](#)
 [Report](#)

[See on Map](#)
[See Bigger](#)

Figure 12. Historypin Screenshot My Sweet Home

B) Francisca

Francisca is a 64 year-old, and despite her age she still has children in school. She is very active in the community and is constantly receiving calls from people asking for support. She is enthusiastic, energetic, and willing to learn new things. Francisca worked 26 years at Motorola in the United States, and then after many years, she moved to Austin, where she has been living for over 20 years. She has always had a car and is pretty mobile. Until two years ago, Francisca did not feel comfortable speaking English despite all the years she has lived in the United States.

After acquiring a smartphone, she says she feels more confident speaking and writing in English and calls her smartphone her "*maestro*" or teacher in English, because she uses Google translator and also the voice commander. She explains that her smartphone is set up in English and if she does not pronounce the words well in English, the voice commander does not work, which forces her to practice and improve her English pronunciation. Before the locative media training at TechComunidad, Francisca did not know how to upload pictures from her phone to the Internet. When asked if she uses her phone to explore places, Francisca said yes and that her son shows her distant places, such as touristic cities, where she would like to go one day. Francisca consumes news; she likes watching CNN news or Fox, but when it comes to news about Dove Springs, she says she does not find much news about her locality.


In the process of creating her story, she said she never thought she would be able to write a story. Francisca preferred to write her story in English. She said she did not want to write a story about her childhood memories because she prefers to write positive things, and her memories are very sad. Francisca ended up writing two short stories, one about a project which she had to turn a run-down field into a soccer field for the community in Dove Springs, as a way to fight obesity and encourage the practice of sports. She wrote the story in first person explaining her motivation to pursue the project.

She also wrote and geotagged a short story about the flooding that wrecked havoc in the community in 2013. To achieve the latter, she had a lot of help from me because she wanted to write the story in English. The text is a short article about the flooding. What was more important for Francisca was to geotag the picture of a house which had a fallen-in roof. Francisca, along with many others, were devastated with the effects of the flooding and wanted to create awareness about the community.

As an active member in the community, Francisca, takes part in a lot of activities in the Houston Elementary school, located in Dove Springs, as she considers this place her second home. As she says in Spanish "Me siento como en mi casa, me siento muy feliz aquí" ("I feel like at home, I feel very happy here.") Following are two images, one about a flooded house and another about the field she helped redevelop.

Details
Comments and suggestions (0)
Repeats (0)
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Flooding on Onion Creek - Dove Springs Neighborhood

3312 South Pleasant Valley Road, Austin, TX 78741, USA
31 October 2013
26 Views


Pinned by Mapping Austin Memories

On the morning of October 31 2013, the intense raining in Austin Texas caused a flooding on the South Pleasant Valley Road, destroying many houses and causing many losses. The flooding took lives of five residents. According to one of the Dove Springs residents, 15 years ago a flooding affected this community as well. Some local residents thought that would never happen again. That is why, some of them never moved out. Many local organizations, such as River City Youth Foundation, Life Saver, and Recreation Center received donations to help out the community. The latter provided also shelter for some of the residents who lost their houses.

Figure 13. Historypin Screenshot Flooding on Onion Creek

Details
Comments and suggestions (0)
Repeats (0)
Copyright

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Renovación del Parque Houston

5409 Ponciana Drive, Austin, TX 78744, USA
1 December 2013
66 Views

Pinned by Mapping Austin Memories

En 2013, yo empecé un proyecto para eliminar el aspecto abandonado del Parque Houston, cual hoy así se ve, en la escuela Houston, ubicada en 5409 Ponciana Drive, como poden confirmar en lo mapa. La mejor manera de mantener a nuestros hijos ocupados es con ejercicio, por eso es que tuve esta idea de arreglar este parque, para fútbol (soccer). El parque Houston está ubicado en lo mismo lugar que la escuela, fundada en 1976. Durante el día es usado por la escuela y estudiantes y por la noche es abierto a toda la comunidad. Y no contaba ni con un bote de basura, hasta el mes de Agosto de 2013, cuando Parks & Recreation vinieron a instalas 2 botes de basura.

En Enero de 2013, en una junta con Marathon

Favourite
 Report

See on Map
See Bigger

Figure 14. Historypin Screenshot Renovación del Parque Houston

C) Gabriela

In 2013, Gabriela had been living in Austin eight years. She gets up very early in the morning to prepare and take her children to school. If she does not have a ride, she usually walks her kids to school. Gabriela is Francisca's friend and also spends time at Houston Elementary school to do several activities (e.g. zumba) and work as volunteer for the school events. At the time the interview was conducted, in 2013, she had three kids enrolled in that school. Gisela does not move around Austin very much, spending most of her time in Dove Springs, unless her husband who works travelling is in town. In her words: "Yo conozco el necesario, para ir a la tienda, a la clinica, cosas así. Museo, estas cosas así no conozco" ("I know what is necessary, like going to stores, clinic, things like that. Museums, things like that I do not know.") Gabriela had owned a smartphone for three years, but after the TechComunidad training, she started using her smartphone more to access information. However, she does not use her phone to learn more about places in Austin. Instead, whenever she needs to find out about a place or some service, she asks a friend.

For Gabriela, the best way to keep up with the information flow in the community in Dove Springs is to be involved with the schools. She says that most of the information she gets about Dove Springs' events or happenings are through the school's social interactions. As she says, "cuando uno no está involucrado en la escuela, no sabe nada" ("when you are not involved in school, he knows nothing.")

Gabriela uses her smartphone to help her kids with homework, for translation purposes, and also to look for directions. Gabriela said that her biggest take-away from the locative media training was to understand that the smartphone is more than a phone. She mentioned a TV commercial that at the time she could not understand. In the ad, a woman takes a picture of a check with the phone. An elderly woman, perhaps her grandmother in the commercial, looks at her confused and asks her if she wants to frame the picture of the check. The commercial was made by the bank Wells Fargo. Gabriela said she commented on the commercial to her husband, but he could not understand it either. After the training, Gabriela understood that the smartphone applications can be used to scan things and send them via email. Before the training, despite having a smartphone, Gabriela did not know how to send or receive emails.

The following photo by Gabriela shows her story geotagged on the map of Austin. Her story was titled “El Cambio de Mi Vida” or, in English, “The change of my life” and reveals the difficulties of settling in unfamiliar place and the cultural differences that she had to struggle with in the beginning.

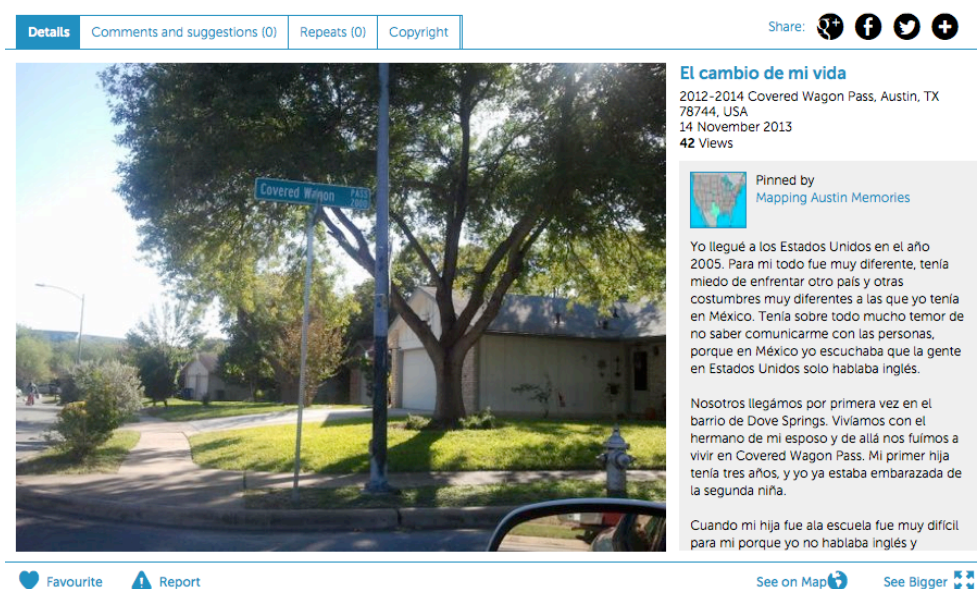


Figure 15. Historypin Screenshot El Cambio de Mi Vida

D) José and Maria (couple)

This couple attended TechComunidad training together, but Maria dropped out eventually, because she was having a hard time keeping up with classes because she was illiterate. However, in an attempt to motivate his wife to learn how to write and read, and also to learn new things, José wrote two stories, one for him and one for her. Out of the two, José mainly responded in the interview. At the time he was 39 years-old, while Maria was 34. A typical day for José starts very early in the morning. He leaves home at 6:30am and goes back home around 7pm. José and Maria have two cars so that Maria has a car to take their children to school. José has lived in Austin over 17 years and Maria, 13 years. They lived 11 years in the Eastside, in what had been the former African-American and Latino ghetto, but moved further to southeast Austin because they bought a house there.

During the training, José also bought an iPad for their oldest daughter to do homework. In fact, José used his iPad to write his locative story during the intervals between jobs because he works in construction. José uses his smartphone to look for directions, including to find places with better gas prices. Maria also has a smartphone, but she does not use it much because she does not know how to read. However, she does play games on it and when she has trouble, she asks her children for assistance. José also uses the iPad he bought for his daughter. After the training, he said that now he can type things faster on the tablet because he has learned how to use more fingers. The following is Jose's story about his life in the US.

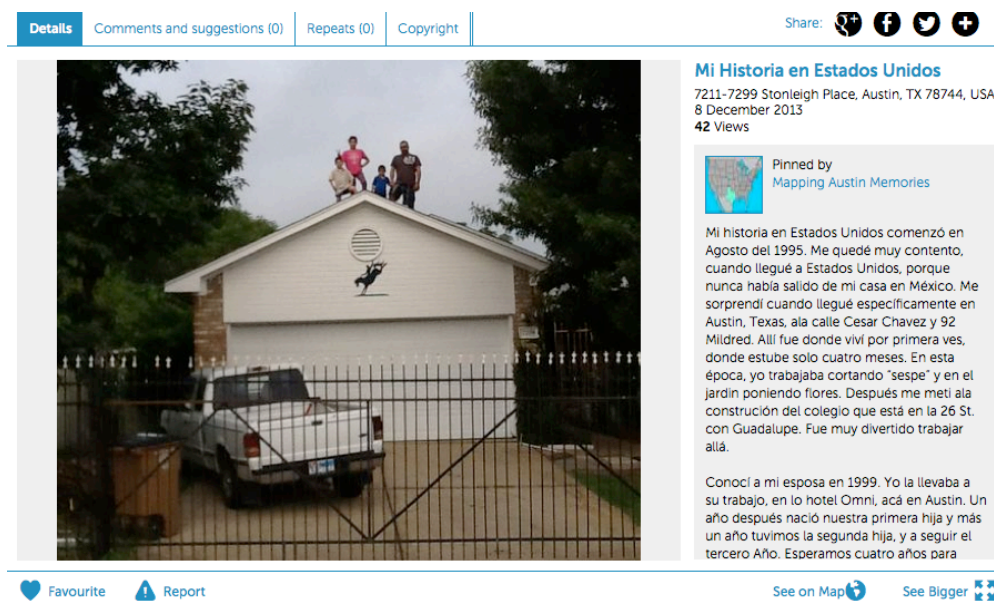


Figure 16. . Historypin Screenshot Mi Historia en Estados Unidos

E) Francisco

Francisco, 44 years-old, was the most active in the 2013 TechComunidad training. He moved from Ecuador to the United States when he was 4 years-old and had lived in Austin for 20 years by 2013. Even though he speaks Spanish, he does not know how to write in Spanish. For this reason, he wrote his story in English. A typical day for him starts on his smartphone, checking out his day schedule and to-do list. He gets information about the community at the community recreation center, and through schools and public libraries in the area.

Despite their family having two cars, they prefer to stay in the Dove Springs area or southeast Austin when they go out to restaurants to avoid traffic. He uses the

phone to get directions but not to discover new places like restaurants. Francisco has a laptop at home which works like a stationary desktop connected to the router for use by the entire family and an iPad, which it is more for his personal use and work.

Francisco has had a smartphone for three years, but he did not know how to use it until the training in 2013. He did not know that a smartphone had a GPS, calendars, apps, and whether or not they were free. His son gave him his first smartphone, but for a long time he used it just to make calls.

Francisco was the only student who spontaneously created a personal profile on the Historypin website. He was amazed by the fact that one can create his/her own personal biography or history and put it online. He created a Historypin profile because he was envisioning taking pictures of the places where he grew up in New York and geotagging them on the map and uploading them to his page on Historypin.

Francisco wrote about the dual language program of Perez Elementary school that teaches students in English and Spanish simultaneously and about his experience of having children being educated in English and Spanish at the same time. The image below shows his story geotagged on Historypin's site.

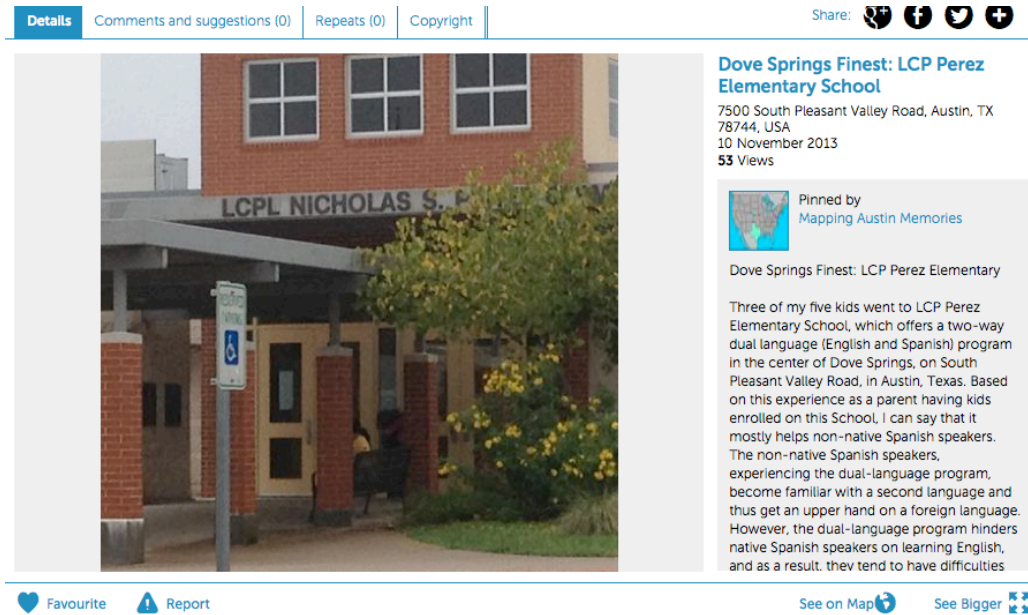


Figure 17. Historypin Screenshot Dove Springs: LCP Perez Elementary School

F) Magdalena

Magdalena is Francisco's wife, but they participated in the TechComunidad training in different shifts. Francisco was in the morning group, and Magdalena was in the evening group. She was 34 in 2013, and she had lived in Austin for 11 years. She also drives around and takes her kids to school. Despite having a part-time job, she also takes care of the house. She finds important to know the place where she lives, if it is safe, and if there are places to play with her children, like recreational areas. For an information source in the community, she uses the recreational center and social media. She is also active in community events, as she is involved with organizations that are focused on helping the community of Dove Springs with fundraising.

Magdalena found the process of creating the locative story very difficult because she did not know how to use the computer. Although she has a smartphone, she does not take fully advantage of it.

In regards to the process of writing a story, Magdalena had never written one before. The process helped her to have a better sense of place, as she realized how poor the area where she lives is. In her words: "Yo me he dado cuenta que no había

ninguna foto [geotagged] en este lugar" ("I've noticed that there was no photo [geotagged] in this place.")

Due to the flooding that happened in Dove Springs, Magdalena started putting the dots together and realized how underserved the community was. That was the springboard that motivated her to participate in this research project. Here is a screenshot of her story about the flood in her neighborhood pinned on the map through Historypin.

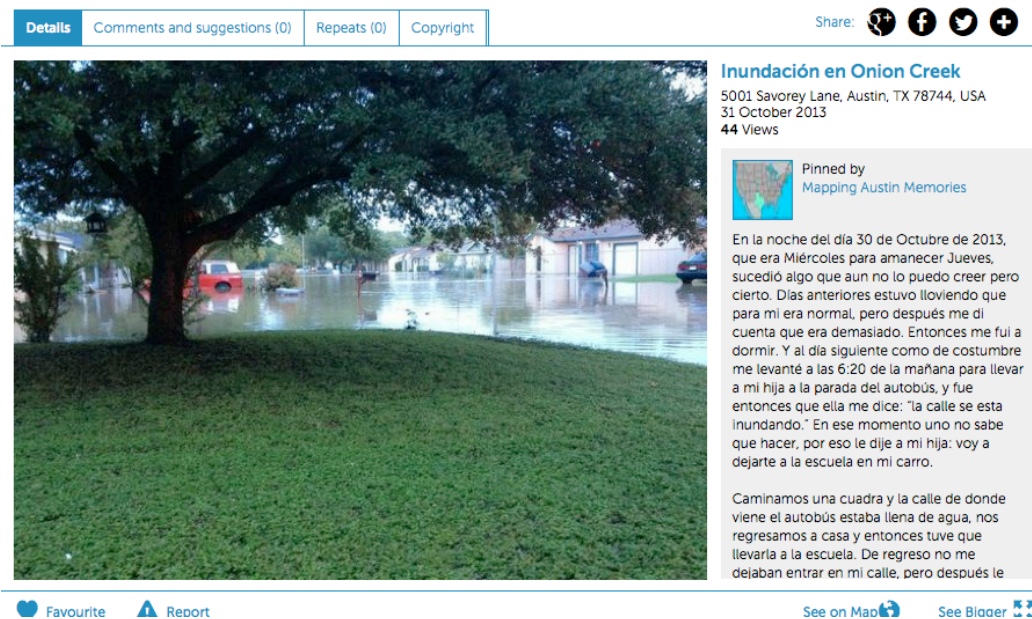


Figure 18. Historypin Screenshot Inundación en Onion Creek

G) Maria

Maria was 38 years-old and had a part time job in a cafeteria at one of the schools in the neighborhood. Usually, she wakes up around 6am to prepare lunch for her husband and son. She also drives a car and had been in Austin for 18 years. Interestingly enough, she also receives information about the community through the school and through interactions with other parents at the school. Maria does not cook for her family on Sundays, so they go out to a restaurant to eat lunch. This parent mentioned this in her interview because she said that is when she could use smartphones to look for information about restaurants. At the beginning, Maria did not know what to write about, but throughout the classes, she realized would be good ide ato write about the organization, where they were receiving the training. Maria

talked to Mona Gonzalez, the founder and director of River City Youth Organization. She also took a Picture (see Figure 19) of the organization to upload to Historypin. Here is her story about her experience with RCYF.

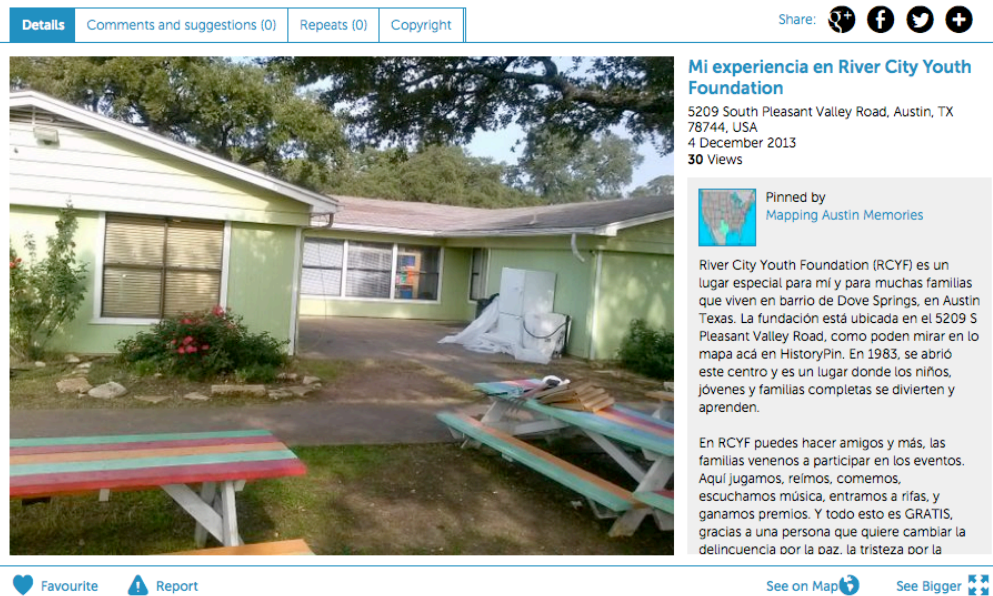


Figure 19. Historypin Screenshot Mi Experiencia en River City Youth Foundation

In this section, the interviewees and also producers of the stories geotagged were presented. The narratives tried to convey how they move around Austin, how they get local information, and their daily routines. The goal of the narratives was to provide more context about the results that will be described and discussed in the following section.

3.2.1. Overall results - TechComunidad

The TechComunidad training generated nine locative stories that were digitally overlaid on the neighborhood of Dove Springs on the Austin map through the website/mobile application Historypin. These stories were published on the Historypin page created for this project entitled “Mapping Austin Memories,” and participants did not sign the stories, keeping them anonymous. Six stories were written in Spanish and three in English. Almost all stories were written on a laptop computer at RCYF, even though the participants used their own smartphones to take

pictures. All stories were written in the first person. They included topics about memories of moving to the United States and adapting to Austin, opinions about the dual language program school in Dove Springs, and experiences of facing a tragic flood, of leading a community project to turn a park into a soccer field, and of learning at RCYF. Taking into account our objectives, in the next section I will describe the themes that emerged from the data.

3.2.1.1. Increasing participation through cultural legacy, family history, and women

Regarding the goal of increasing participation, I found a couple of factors that may motivate Latinos/as to get involved in the production of locative storytelling. One possible way to increase participation *among* Latinos/as with the production of locative storytelling is to portray the activity as an opportunity to invest in cultural and family heritage, and memory. Several participants who were able to geotag their stories mentioned that they felt accomplished for having done something that their children be proud of in the future when they become adults.

In fact, legacy was a motivation factor for some of them to finish their stories. An interesting example of genuine motivation is the case of José who wrote the story on his own iPad at his work while taking breaks, which reveals his high level of commitment to accomplish the task. José said that the accomplishment of the task was important for him because he wanted to have something to show his children when they grow up. In addition, participants acknowledged that in the beginning they did not see a value in the concept of writing stories about places. José, for instance, admitted that he was confused when the concept was introduced in the context of a computing class. In fact, he asked himself: “*historia para que?*” (“story for what?”). However, over time, the participants developed their own values and concepts about the project. Several other participants mentioned in the interview that was important to leave something as a legacy for their children.

José understood the value of recording family history attached to places, and since he started the training, he has been taking a picture of one of his little sons hugging a tree. His project is to document over time the growth of his little son

compared to the size of the tree that is also growing in his front yard. This participant understood that recording a personal history is a way to connect family to the pride of past. Also, he has been living in the US for 17 years, and he thinks he will spend his old age in this country. For this reason, he believes that it would be valuable to show his grandsons the history of their family in Texas. The notion of leaving a legacy for children or grandchildren is frequently connected to pride, and other several participants mentioned this as a value.

Unlike what past research has shown (Stephens, 2012), this current study also found that it is easier to increase participation or, at least, to attract more interest in the production of locative storytelling among Latina women than Latino men in the low-income community studied in this dissertation. This is not only because they have more spare time than their male spouses, who have long work shifts or work outside Austin, but also because they are very involved with schools, which are sources of information about the community. Another factor is that they showed themselves very willing to acquire new skills and locative technologies.

I noted that women in this community are dedicated to self improvement and manifest that through involvement with schools, which play a strong role in this community as a delivery of local information. These residents in Dove Springs community live very locally, isolated in their neighborhood, but nevertheless, do not know much about their locality. This is a very striking finding that might provide opportunities for the development of locative mobile applications for low-income and immigrant communities. This set of results led us to think that it is critical to receive institutional support from schools and non-profits to undertake locative media projects in this area of Austin.

There are still, however, many barriers to reach a constant level of high participation in the production of locative storytelling about the locality where the participants live. Jönsson and Örnebring (2010) define "high participation" as "those features where users are allowed to produce content even when not actively solicited" (p. 132). So, in this sense, these participants still have to get familiar with smartphones' capabilities to produce content unsolicited.

In line with previous studies about locative storytelling (Willis et al, 2012; Løvlie, 2011), the first barrier to produce locative stories that was encountered was

the lack of local knowledge or the knowledge of local history about places in Dove Springs. Participants did not produce stories necessarily about events that happened in places in the neighborhood, but rather some of them produced lifelong memories, which may be considered personal history. Interestingly enough, some of the participants geotagged their stories to their houses where they currently live in Dove Springs or nearby.

The second barrier was access to computers. The goal of the training was to engage the participants in the production of in-depth locative stories and also to provide them with mobile skills to enable them to participate in the hybrid space. Several participants could not finish the stories in the convenience of their houses because they did not own a computer. Access to mobile technology was not enough, because the tiny keyboard's did not enable them to type articles, a common limitation with mobile stories, which is well-discussed in the mobile journalism literature (see Koponen & Väättäjä, 2009).

The third barrier was writing skills or literacy skills, which were also a major obstacle to mobilize the TechComunidad participants to create locative stories. Besides dealing with learning about new technologies and devices, some participants mentioned that they also struggled with the writing, although the classes were given in Spanish, and they were allowed to write their stories in their native language. It is interesting to note that to date there are not many studies or experiments with locative media and writing. Most of the locative media projects to date are focused on audio or visuals.

Also, several participants mentioned that the locative story was their first story written in their entire lives. One of the oldest of participants said:

porque yo nunca habia escrito una historia y ahora pienso que no va a ser tan dificil de volver escribir otro tipo de historia, talvez necesito mas practica para subir o bajar fotos y en eso necesito de ayuda. (Because I had never written a story before, now I think that it is not going to be as difficult the next time to write another kind of story. I might need more practice in uploading and downloading photos. In that, I need help.)

The example above shows the level of difficulty that truly disadvantaged people are going to face in using locative media to create and share stories as producers. They have had little or no experience in writing or written storytelling. They also did not know how to use the technologies, particularly those of photo uploading or simple computing skills such as "copy and paste." This indicates that a variety of kinds of teaching and mentoring are going to be required to integrate this population into the hybrid space, which favors the kind of integrated literacy, educational, and technological program that RCYF is doing, but will require also specific intervention to work with locative tools beyond its integrated basic curriculum. These barriers led us to conclude that individual mentorship is key to foster participation in the production of locative stories in the context of low-income community. In order to foster the accomplishment of the tasks, I had to build rapport and engage with participants not only as a group but also as individuals. This degree of involvement was crucial, because I had to ask the participants if I could go to their houses to help them with the writing and computer tasks. Rapport, therefore, was fundamental to develop a mentorship and encourage the participants to finish the Historypin project. Obviously, this finding is not so surprising since "rapport" has been considered essential to any kind of collaborative work (Kember, 1997). I built rapport with participants by disclosing a very personal and intimate story about the house where I was born and raised. Throughout the training, several participants mentioned that somehow they had similar stories. This sense of empathy was essential for some of the participants to accomplish the task.

On the other hand, the fact that many participants said that this was their first story written about their lives reveals how writing may be a powerful factor of motivation to those participants. As past studies in psychotherapy have showed, confronting deeply personal issues through writing "has been found to promote physical health, subjective well-being, and selective adaptive behaviors" (Pennebaker, 1997, p. 162). In this sense, our findings suggests that combining cultural legacy with creating a story of their own may be a powerful framework to include in locative storytelling apps for Latinos/as in underserved communities.

Overall, these findings reveal two important aspects of fostering participation in the creation of locative content among Latinos/as in underserved communities.

First, there are some strong cultural aspects, such as pride for the accomplishments of their people. As previous studies have shown, “pride is a defining characteristic of Latino culture” (Leonardi, 2003, p. 163; see Gracia, 2000; Morales, 2002). Another cultural aspect of Latinos is the high value placed on familial relationships (Leonardi, 2003), and this value is why participants connected the pride of accomplishing the goal of producing content with their children. Second, social psychologists (McAdams, 1996) have found that narratives helped to shape identity, and in the case of adults in middle age and after, they start defining themselves in terms of those things, people, and ideas they generate and leave behind or in Erickson’s (1968) famous words: “I am what survives me” (McAdams, 1996). In light of this, locative stories for those participants were understood as way of extending their selves and rooting them to places where they live through location-based technology. In this sense, the training was successful in conveying knowledge about the hybrid space, but much more needs to be done to enable low-income Latino/as to produce content about themselves or the area where they live.

3.2.1.2 Place, sense of place, and locality

The spatial aspect of locative stories and also the research that was required to write the stories helped participants think about the place where they live. During the interviews but also throughout my observations in the field, several participants mentioned that they did not know much about the community and the neighborhood where they live, even though they have lived there long enough to know it well (see years of residence on the table below) and despite having means to move around the city: just two interviewed participants said they did not have a car. The participants seemed to have a sense of place, because they pursued bonding through social interactions and social events in the communities, but this sense of place does not seem to be enough to produce a strong sense of belonging to locality. However, the research about the space that is required to produce a locative storytelling piece may play a strong role in deepening meaning about place.

In this way, a great example of how some participants changed their point of view in regards to the place where they live from the beginning of the training until

the end is the case of Magdalena. She was one of the participants who was refusing to write the story. When the training was ending, a devastating flood swept through the community and caused the death of five residents. Shocked by the reality of the event, Magdalena decided to geotag the picture of her flooded lawn and share her experience of witnessing the flood. She said that, after the flooding, she understood that she lived in *un barrio pobre*, in “a poor neighborhood.” She associated the effects of the flooding and the lack of infrastructure of this area of Austin with the lack of digital information that we had discussed during the training. This participant mentioned in the interview that she understood why this area did not have any pictures on the Austin map in Historypin. This was a major driving force in her decision to write a story. In her words:

At first, I thought that was not interesting [production of a locative story] ... I realized there is no picture to this place [attached to the map of Austin on Historypin] ... because this community ... and I have been said that community is quite forgotten, here people are like the third ... this ...how do you say that? There is no money, a poor neighborhood, this community is very low society, I've noticed ... and there are still many people who have not noticed, it is a poor neighborhood⁸.

By geotagging the space where she lives, Magdalena layered the physical space with her personal history and also of the community’s history, providing information and potentializing the hybrid space. Early locative media projects like Murmur offered history from the ground up, told by voices that are often overlooked when the stories of cities are told (see murmurtoronto.ca). Once told and heard, these stories can change the way people, including the author of the story, think about that place and the city at large. Magdalena also understood her own position in that place,

⁸ In Spanish: “Al principio yo pensé que no fuera interesante [production of a story]... Yo he me dado cuenta que no había ninguna foto para este lugar [attached to the map of Austin on HistoryPin]...porque esta comunidad... han dicho y pienso también que és una comunidad olvidada, que aquí las personas no... son como de la tercera... este... como se dice esto? Que non tiene dinero, un barrio pobre, que esta comunidad es muy baja para la alta sociedad, esto que me he dado cuenta...y todavía hay mucha gente que no se ha dado cuenta que es un barrio pobre...”

as a resident who has the identity shaped by what others say about the place where she lives with her family.

As Magdalena found, the process of producing locative stories can reveal how the lack of digital information about the neighborhood is prevalent. Another participant wanted to produce a story about a new outlet on the road where she used to live. She was surprised she could not find any sort of information online about the construction of the new outlet. She also looked on Google Maps and could not find any information about the place she wanted to write about. These findings point to the fact that low-income communities are neglected in the matter of the production of digital content. It reinforces the need to provide individual mentorship for this population to enable them to fill their own geographical space with locative stories.

Other participants were surprised that the technology allows one to learn about the history of Texas or places while on the go. One of the male participants, a 44 year-old said:

It made me think that there is stuff out there that you are missing. I used to like to go on a road trip, I am not promoting Historypin, but two years ago I went on a road trip to New York. If I had known Historypin back in the day or something, not only Historypin, but something similar to that, I could have said [while travelling] “lets check it that out.”

Most of these families are patriarchal, which means that the men play the role of provider and move around places in the city much more than the women. Most of the female participants in this study tend to spend most of the time in their neighborhood to avoid traffic or because they consider they do not have enough time to go to distant places. For this reason, it might be less likely to those users to use locative apps because they do not move much around the city. After all, locative media applications aim to leverage mobility of technology to encourage use, while people are on the go in their everyday lives (Humphreys, 2007).

Thus, those families might be potential producers of locative storytelling, because they live very locally. However, these findings also suggest that they might

not be heavy potential consumers of locative stories, certainly not as early adopters. On the other hand, although those participants live largely isolated in their neighborhoods, some of them have a shallow sense of local knowledge. Several participants had trouble choosing the topics for their locative stories because they said they did not know much about any local places. There is a paradox here, because local knowledge would be very valuable to the women interviewed, as it already is to the men, but they do not move around enough to acquire very extensive local knowledge.

These findings suggest that the men use the mobile phone to coordinate with work and family more than the women. With the exception of one 64 year-old female participant, the other five women, when asked to describe a typical day, said that they get up very early to prepare breakfast for the family, mainly for the kids before taking them to school. The women also undertake domestic (e.g.: cleaning) tasks during the day and pick up their children at school. The two men interviewed highlighted their work as a domain where locative technology was useful. Unlike all the women interviewed, one of the male interviewees said he started his day on his smartphone looking at his schedule.

This study also suggests that schools in this neighborhood function as a hub of local information delivery. When asked about how they search for local information about their neighborhood or Austin, several participants mentioned the relevance of the schools in Dove Springs to learn about events and information and to get involved in the community. Two participants were highly involved with the events at one elementary school. One of the women interviewed said that she sometimes even stays at the school after dropping off her kids. Another participant mentioned how she learned about the computing classes provided by RCYF through her son's teacher. Many but not all of the parents are involved with schools, where their kids are enrolled.

One of the most active and talkative participants of the classes, a 64 year-old female, said she feels like the school is her second home even though she does not have kids there. In her words: "...es mi casa [Houston Elementary School] porque hablo con uno, con otro..." ("It [the school] is my home because I speak with several people there.") Another participant with four kids emphasized this idea by saying that if one does not go to school, one does not learn about what is happening in the community.

This aspect of living in the neighborhood is relevant because it reveals possible institutional arrangements to increase local knowledge and participation in locative content production. If the school plays the role of local information provider, it might be to their interest to have a group of local residents producing locative information. Three interviews were conducted at a school in Dove Springs because the RCYF did not have any available rooms due to a remodeling project. The interviews were facilitated by a 64 years-old female participant who is highly involved with the school and with the community of Dove Springs as a whole.

This insight about the school as a local information source points to the need for a more productive and holistic locative media project. It may be crucial to partner not only with non-profit organizations but also with schools located in the neighborhood, which might boost participation among the parents, because of their heavy involvement with the school. The collaboration would potentially make the project more sustainable and increase the likelihood of people producing content. Thus, the school was a central location feature in this study. Two participants wrote stories about schools and more would have chosen the same place as a topic if the researcher had not tried to diversify the places of the stories.

Despite the fact that most participants did not use the tablets they were granted by the TechComunidad program, they still undertake many tasks on mobile phones every day. The two men mentioned that they bought iPads. While one bought a tablet for his oldest daughter to do homework, another one bought one to help him with work tasks. They both highlighted the portability of the device as the factor that maintained their interest in their use of the items.

Our findings show that despite not having computers at home, those individuals might be able to produce locative content on their own in the long run, when they feel confident enough to do so. The limitation to technology access does not seem to be an issue in this case. However, if they want to write extended pieces like they did for the purpose of this dissertation, they would probably need a computer or a wireless keyboard for their mobile devices for easier writing. In a parallel study by the author and others, several boys involved with RCYF said they mostly used the Internet on their phones, but when they needed to write something for homework, they used public access computers at a city library branch in Dove Springs.

(Interviews collected by the class described in the third case study, which have not yet been published).

Table 1 Table of interviewees after TechComunidad training – Fictional names

Interviewee	Age	Country of origin	Car ownership	Residence in Austin(years)
José/Maria (Couple)	39 /34	Mexico	Yes	17/13
Gisela	34	Mexico	yes	8
Francisca	64	Mexico	yes	20
Maria	38	Mexico	yes	18
Magdalena	34	Mexico	yes	11
Francisco	44	Equator	yes	20
Herlinda	39	Mexico	No	6

3.3. Exploring the potential of locative media and locative stories among undergraduate college students

This section explores the role of locative media and locative stories among college students, aiming to approach and better understand the reality *about* Latinos/as. The concept of locative media was exposed to 28 undergraduate students - of which half of the class were Latinos/as - in a context of a course called “Mapping Latino Culture in East Austin” at the University of Texas at Austin, in which the students were assigned to explore the environment in the historically segregated parts of the city, specifically East Austin, and produce locative stories about certain locations. The goal was to expose undergraduate students to a geographical area that is quite marginalized and stigmatized in the city. By exploring the physical location of the area, I expected the students to better grasp the spatial segregation of Austin while simultaneously grasping the concept of locative media. By being assigned to produce

locative stories, those college students had the opportunity of experiencing the city in a different way, by visiting a location to produce the locative story.

As a result, most of them noticed things they had not seen before, even near their houses. In this act of visiting places, the location was crucial to explore the urban space in a new way, because several undergraduate students acknowledged that they do not explore the city much. In their responses, the students highly valued the experience of visiting a location. It is interesting to note that many students were surprised that they could not find a lot of pins on the Austin map on Historypin. They were expecting the application to be more widely used across Austin. By analyzing the transcripts of interviews the students did, fieldnotes from discussions with them, and their responses to quizzes about these assignments in class, three big broad themes emerged, as follows in the next section.

3.3.1. Gaining local knowledge by exploring the physical space

Participants marked the experience of visiting a location as special and valuable. One of the students highlighted in the quiz that the experience was valuable because she visited Martin Middle School, which was one of the first interracial schools in Austin. Throughout the classes, mainly during discussions of the quiz, students mentioned how surprised they were with the amount of segregation that is still present in Austin and that works against the interests of African Americans and Latinos/as. This surprise was initially sparked by the readings and visualizations of maps in the classroom. However, the main result in this case study revolves around the exploration of the physical environment in Austin and the experience of visiting a certain location to produce locative stories about local history and memory.

The students truly enjoyed the assignment, and the process that required them to produce storytelling was pretty effective in conveying the knowledge about the historical legacy of segregation in Austin. Past studies that merged formal and informal learning found that visits to certain locations, such as museums, appear to consolidate and reinforce previous knowledge and understanding discussed in the classroom, rather than fostering new knowledge (Vavoula, Sharples, Rudman, Meek, Lonsdale, 2009). However, the participants in this study tried to make the experience

of visiting pre-determined locations outside the classroom enjoyable. Thus, some of the participants took girlfriends or their dogs with them, turning the assignment of producing a locative story into a stroll throughout the Tejano Walking Trail. (Students were assigned to create a story about a location on a walking trail in Austin focused on Latino history.)

Also, beyond having an enjoyable experience, students in this study indeed acquired new knowledge beyond what they learned in the classroom. Some of them realized that some of the pre-defined locations of the Tejano Walking Trail no longer existed and that its history was not being preserved very well. In other instances, by visiting the location, students understood the effects of segregation, gentrification, or general changes in the urban space, mainly in East Austin, which was the area discussed in the course. One of the participants, a 24 year-old woman, for example, was frustrated because she could not find the location chosen for her assignment listed on the Tejano Walking Trail map. This participant wanted to write a story about a “community garden” in East Austin, and she was struck and amazed at the same time by the fact that after looking for the place, she realized that it no longer existed. For her, it was a practical example of the topics discussed in class and how East Austin is going through changes with gentrification. She explains:

It was really interesting because it really made me think about things we talked in class, how there is the big issue of people being pushed out their homes. For example, I went to another place that used to be a community garden, and the garden isn't there anymore. And ironically, what was built there was condos, so I was like: we were just talking about that, how these people's homes are being knocked down and they are building these expensive condos, I was like: Oh, my goodness, this is already happening!

The text below shows what the Tejano Walking trail booklet says about the location (“El Jardin Alegre, 1801 E. 2nd Street) that this participant tried to write about:

El Jardin Alegre (the Happy Garden) was established in 1996 on the site of a vacant weed-infested lot that was rife with illegal activity. The land was transformed into a positive space through the creation of a community garden, where neighbors grow food together and build community. The garden features 40 10' x 12' plots, which are available for a small rental free to residents from the surrounding neighborhood and beyond.

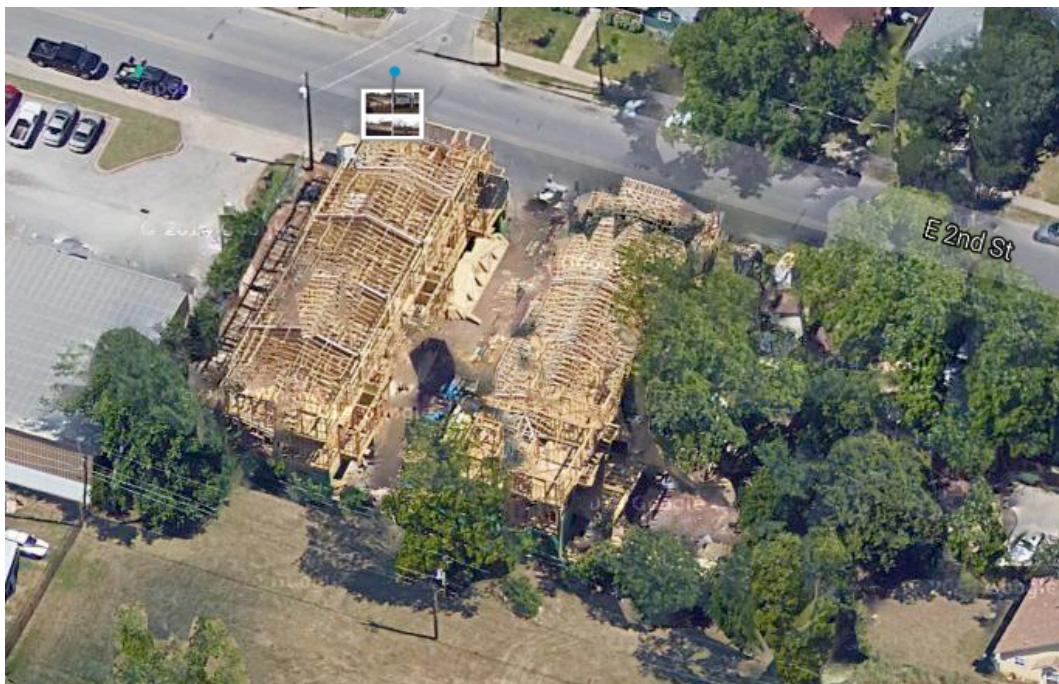


Figure 20. Historypin Screenshot What was once El Jardin Alegre (Satellite view)

This participant ended up producing a locative story, a narrative archaeology, based on what the location used to be (Hight, 2011). In her own words: "I talked about how they are trying to build condos, pushing out people out of their homes, taxes are getting higher, and that was sad the garden was gone." The assignment of visiting locations allowed enough space for the students to be surprised with their own discoveries about the geography of East Austin. By comparing the content learned in the classroom with the experience in a real context, this student deepened her understanding of place and of the effects of segregation. By geotagging this locative story, she contributed to the digital overlaying of the city about Latino/a stories or context and also to the creation of a historical digital archive of their history. The

screenshots below illustrate this story. The satellite image (Figure 20) shows the ongoing construction of the condo.

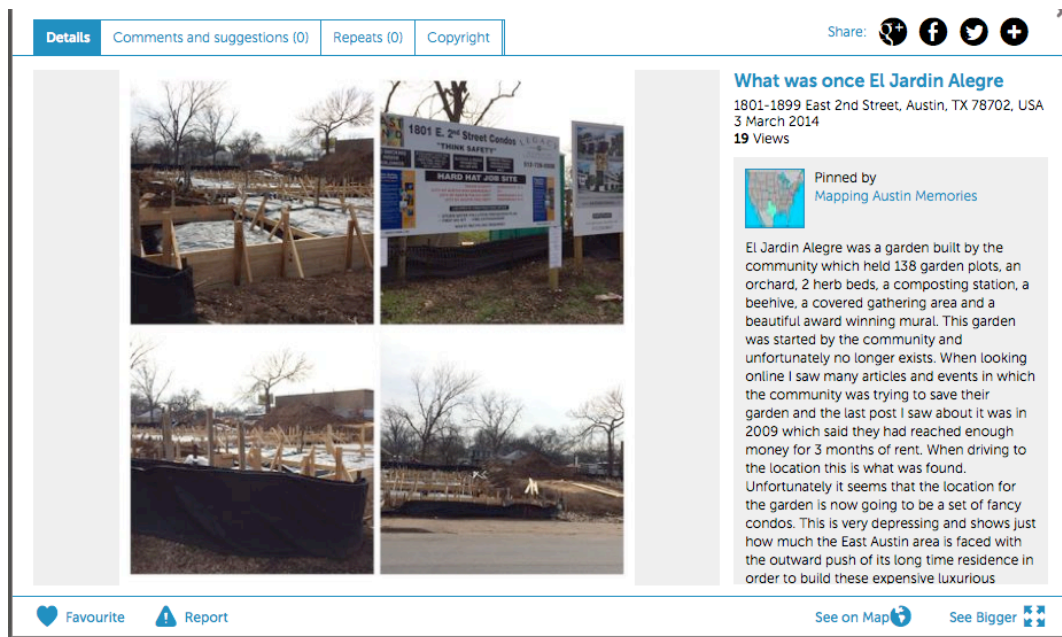


Figure 21. Historypin Screenshot What was once El Jardin Alegre

The lack of knowledge about the locality was also prevalent in the participants' responses. One of them said:

One of the things I think I took from the class the most it was the fact... I live at East Austin and I had not absolute idea about the history behind of how the city became, I knew that the city was gentrified, if I wanna to get super fancy organic stuff, West Austin, and not East Austin, and I did not realize how far it was, and the comparison, we were talking about, how Google Fiber is focused on the West Austin and not so much East Austin, the disparities between the two sides, the historical perspective.

This respondent (Maria) produced one of her three pins about the statue of Martin Luther King on campus. She said she learned that the statue is facing east on purpose in order to welcome UT Austin students from the East. Her story conveys the local knowledge that she acquired through her activities on campus. Her locative

story also conveys a curiosity factor over the fact that the sculpture is the only feature on campus that is under 24-hours surveillance due to the backlash over the statue's installment. In one of her quizz responses, she said:

The Historypin assignment allowed me to look different parts of the city and see how they have evolved to fit or fight the way Austin climate has changed. Doing the statues of Cesar Chavez and MLK (Martin Luther King) got me to look further into the history, which I knew little about. It was also nice to be able to explore a different side of Austin.



Figure 22. Historypin Screenshot Historypin Screenshot Cesar Chavez Statue

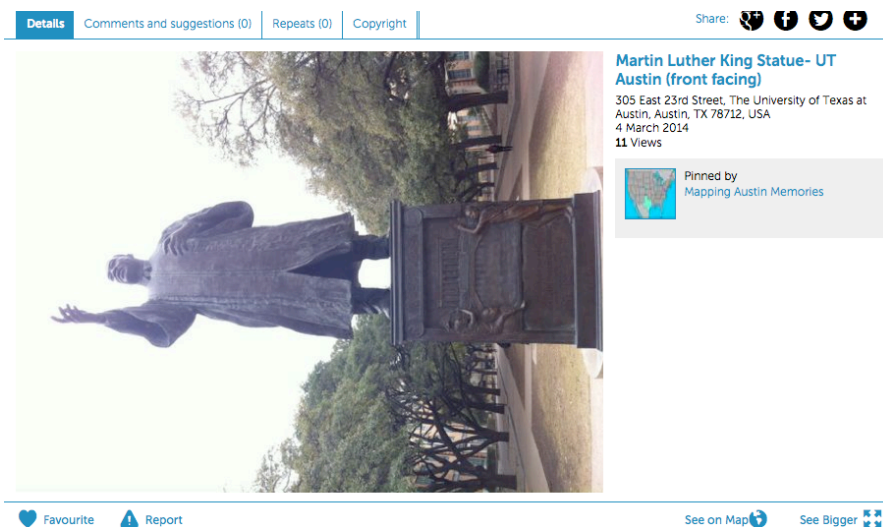


Figure 23. Historypin Screenshot Historypin Screenshot Martin Luther King Statue.

What is interesting about our findings is that most of the students were surprised about the history of segregation in Austin and about its legacy and effects in contemporary society. Obviously, these students live in Austin for only a short period of time (see table in the end of this section), and one could argue that this is why they do not know much about local history. However, this does not seem to be accurate because several students mentioned they regret not knowing more about their hometown where they lived most of their lives. Only one of the interviewees was from Austin, as the table below shows. Unlike the other students interviewed in the class, this local participant was aware of the segregation in East Austin, but she realized she did not know much about Austin's history.

The other students also responded that they were not familiar with Austin nor with their hometown. In general, all the students I observed in one of the discussions in class seemed genuinely interested in finding out more about the history of the cities where they had lived and the places they passed by or frequented. Additionally, during other discussions, I observed that they enjoyed the assignment when they were asked to go out, research, and take pictures of places, but they were frustrated with the technology or with the capacity of Historypin itself, as will be discussed later in this chapter.

For the students, locative apps such as Historypin are strongly associated with tourism. Through conversations with participants, it seems that they are more inclined to learn about history when they are travelling. The participant who was born and raised in Austin said that she did not realize how unique Austin was till she moved away. She also said:

I do not know... When I took the class and we did the Historypin project was really fulfilling, it was really nice to learn, because I went to Boston, there is this thing called Freedom Trail⁹ and it goes around Boston and there is more history in Boston, the founding fathers, and basically each stop of the walk it would explain the first, or the first

⁹ The **Freedom Trail** is a 2.5-mile-long (4.0 km) red (mostly brick) path through downtown Boston, Massachusetts, that leads to 16 significant historic sites. The trail was originally conceived by local journalist William Schofield, who since 1951 had promoted the idea of a pedestrian trail to link together important local landmarks.

school, or whatever, and I had realized I had never done it in Austin, what was old and what was new...

Another participant, originally from Dallas but has been an Austin resident for over seven years (see the table 2), also expressed some sense of regret about his lack of local or historical knowledge about his hometown. This respondent commented he wished he had taken an opportunity to know the place where he was from better. In his opinion, people take their hometowns for granted by saying “I know where I live” because they have lived there long enough. This participant is also critical about how shallow people’s knowledge about Austin, conceptualizing the city as a brand that college students consume while they live there. In his words:

Yes, Austin is great, it is a brand, it is all that... ACL, South by Southwest, it is the party, it is hot, it is sixth street, and the college students they live here for while and then when they are done they will go back to their cities where their families are, not that is a bad thing... It is just like, Austin is cool, technovelist, there are jobs here... I think if something like this [Historypin] takes off, something more like Facebook, it would be awesome, because it would be much more educational...

One of the students, who is from Mexico, said that rather than using locative apps such as Historypin in Austin, she would be interested in using this kind of locative media service or storytelling tool in her country. She said:

You know Claudia... I would like to do that in my home country, I do not know why ... I love Austin, but if I will do that in Guanajuato, places that are closer to me, that there is history I am interested in, it is not that I am not interested in Austin, but I am much more interested in Guanajuato. Yes, when I talk to my family, for example my grandma is from Hidalgo, if I wanna know where exactly she lives, it would be extremely interesting, at least, that for me whenever I want it, I guess it is emotional connection to it.

It is interesting to note that this participant highlighted in one of her quiz responses that she had never visited East Austin before her visit during the course assignment for this study. In regards to the assignment, she said that “as a Latina, it was quite informative.” Even from this academic statement, I cannot assume that she is disengaged from Austin, because she has not explored the city as a whole yet. She is still in the process of discovering the city, and for this reason, she might not have yet developed strong sense of place in Austin.

All these findings show how locative media may play a role in educational environments and the potential for use of those applications in class to convey knowledge in the physical environment. As a strategy, those applications may be released or targeted to students or to activities related to students.

None of the students interviewed in the classroom had knowledge about locative media. A few of them had heard about Foursquare, but did not know about the concept of attaching digital information to places. All of them reported that it was beneficial to be exposed to these types of technologies and, through their use, to be made to think about the space where they live.

Interestingly enough, participants also associated the act of walking with learning about places. One respondent, for example, who had lived abroad in Guatemala said that she learned much more about her surroundings there than in Austin for three main reasons: 1) She was walking everywhere instead of driving a car or riding a bus. 2) She did not have a smartphone with her. For this reason, she considered she had less distraction and consequently, was more grounded to the physical world, and 3) everything was new in that environment.

Another participant who is originally from Houston said that in Austin she feels more connected to people, because she walks more often, while in her hometown, she is always driving around to get to places. She believes that in Austin there is more of a sense of community because it is easier to run into people and also to see them more often. Although Austin is not a city designed for walkers, these students may have the positive perception that walking is a common behavior in Austin because they live among students who tend to walk more or exercise around the places where they live, usually close to campus.

Most participants related local knowledge with daily needs, history, and events. One of the participants, for example, said that because she did not have local knowledge about Austin, she ended up living in an inappropriate neighborhood with her three and half year-old son. She said: “I got stuck in West Campus, which is crazy party, all day, all night, literally from Monday through Sunday. It is insane...”

It is interesting to highlight that the college students learn about local news through word-of-mouth, and they also learn about local knowledge through strong social ties. One participant said that:

I know good places slash cheap places to eat, fun, a lot of green belts, I learned a lot of that, going to a lot of places, but also hearing from friends, their experiences; my older brother... When I started going out, a lot of people like West 6st, a whole street of bars, I am bit shy when it comes to strangers, so I do not like I very much. There are some other cool places, but I mainly learn it through my brother. He is four years older than me, so he has been going out for years, so he can tell me each places [are good].

Another example from a different participant also reveals how local knowledge is transmitted by social ties. This case is interesting because the student, instead of visiting and writing about a place that is related to Latinos or East Austin, wrote about a store next to her residence. As she says:

I get most of my local knowledge from my next door neighbor who owns a business (it was one of my pins, it's Avenue B Grocery) and is always talking to customers so he's first-hand with the community; and he likes to gossip so he tells me everything. So I get my updates from him-and then the Austin Chronicle I do for events and things. But there's always so much, it's a little bit overwhelming.

It is interesting to note that it is quite prevalent in the interviewees' responses that they think they do not consume local news. When inquired about the consumption of local information, they usually say they do not consume it. However, later on in the conversation, they often re-elaborate their responses saying that they learn about a locality through their friends or through social network websites, mainly through word-of-mouth. Like the participants quoted above, other respondents noted that they learned about things on their neighborhoods through word-of-mouth, For example:

It is not always good, later on you hear the stories, never through news, word-of-mouth, usually workers who work at the complex they tell you what actually happens a little bit more, just because you get their first-hand... I guess, it is emotional, it would be a bit dryer to get (local information) through TV show or something...

Another participant, who is from Austin, said: "I feel like I learn a lot news through word-of-mouth and a lot of people. I think Facebook has changed a lot, most people post news items, reviews and stuff, it is easy to find, a lot of people from Austin post things that are interesting." And similarly, another participant said:

But also last question you asked me, normally I don't know a lot about local news, and my family in California or even my grandma in Texas, they'll know before. Like whenever the car happened at SXSW they all were calling me, and I was like asleep and I didn't even know. They always know, and they'll be like "watch out for flooding!" and I'll be like "what is happening?" So a lot of times I get my information like way far away in other states.

The finding that college students do not really look for local news is controversial, but past research has shown that Millenials generation (Born 1983-1999) in the US do not have much interest in the news (Poindexter, 2012). For the

purpose of this study, this slice of data indicates that it is difficult for these students to connect or deepen the relationship with the locality where they live.

3.3.2. Local history associated with other activities

One of the students, who responded only to the quiz and did not volunteer for the interview, concluded that people often take history for granted and that “location” (building, architecture, etc) is often overlooked. In addition, several participants said that history by itself was considered not enough to engage the users with their surroundings through locative media. One common response from the participants is that to make locative apps based on history appealing, the historical information needs to be incorporated into other services. For instance, one participant suggested incorporating it into applications with tracking (e.g.: RunKeeper, Nike + Running, MapRun). She conceptualizes her idea this way:

...people have used applications like running path, how you have run, it could use, trace how far you are, you would have historical information, it would pop up on your screen, you run four miles, and then you looked up, on your run you have passed the Martin Luther King statue, it would be like a trail, but with a different component, the working out component of it, because that would appeal I guess to a second group of people, not just people who are into history, but also like working out...

Another participant had a similar insight and suggested “to tie the historical aspect to something else” in order to attract people to it. She explains:

People are looking for restaurants, one of the apps I use is the Urban Spoon... so if you have something like Urban Spoon but with history... like a little section, it appeals to other people, maybe the

restaurant does not catch an eye, but maybe if you learn about the history of the restaurants.

The participant quoted above believes it is hard to get people to use Historypin or other applications related only to history, unless the user is really interested in history. In terms of using the mobile app, it is interesting to note that students were more preoccupied in having an enjoyable time when visiting the locations. One of the participants said that he preferred to produce the content at home at his computer because he wanted to enjoy the ride with his girlfriend. He went to explore the places on the Tejano Walking Trail by bike. He said, “Sometimes in the use you can’t really see the screen really [because of the daylight]. I did not wanna spend more time on that... I just wanted to hang out with whom I was with, and then go back to my home study... to process the information there.” This participant did not attribute his frustration to the technology itself, but said he did not feel compelled to produce content while on the go, at least the writing portion. This participant used the smartphone to take a picture of the location, as the others students did. Another college student, when asked if he would use it on his daily basis, said he would do so only if the application was coherent with his daily needs. “We are so consumer-oriented here in America. What is going to be for me right now? I am driving to my place, I do not know if I will learn about the history all the time, but something I would do... that would be entertaining, he commented. He suggested that he would use it in the format of audio stories “like a playlist, almost something you can play, when I have to click to find stories about that, so if I am going in a road trip with my friends, and then you can see stories, I would use that...” Similar to this suggestion, one of the students, who responded to the quizzes in classroom, said that would be useful to see the musical genres and examples that are typical of a particular area. By doing that, one could bring auditory dimension to history.

3.3.3. The use of location technology and the potential of producing locative stories

Even though the students found the course quite enjoyable and the locative media project effective to convey a sense of place and grasp the concept, when asked if they would use this kind of service on a daily basis to produce locative stories, several said “probably not.” Some respondents were not very positive because they thought the technology was too new and not widely in use. A surprising finding was that some students said that they prefer to discover physical places without the aid of smartphones, which is counterintuitive, at least within the locative media literature. There was a high sense of frustration with the application and website chosen for this study. I also found that many students had trouble using the mobile application. The feeling of annoyance with the mobile application spread in the classroom and prevented other students from even trying or downloading Historypin mobile application. Many others concluded that they would no longer use the application after getting the assignment done. Glitches were found, such as crashing and the impossibility of rotating a picture. One participant who downloaded the app felt frustrated afterwards. For her, the app seemed different from the website’s application. In her words:

Yes, actually I used the app but I tried to upload the picture, but kept closing on me, it was not useful, I think the layout of Historypin is not the same as the website, even the colors, they seem different apps, different interface, I felt the app, ok; ‘we made the app, but you can’t really use it’, the app was not really helpful.

This participant was not really happy with the website either. She did not like the fact that an exact date was required for the picture. She had an old picture to pin, and she was not sure about the exact date to put. In comparison with the website, this respondent said that the mobile app has a better option for date insertion, but that the app kept closing on her when she tried to finish the task through the mobile phone. Similarly, many other participants said that the app crashed or kept closing on them.,

Other participants suggested that the application could allow the users to insert only the year instead of days and months: “Maybe the option to put the year only or maybe the option somewhere between the months, I feel like that was more helpful if I was on the website as well.” Many participants complained that the app requires the participants to add too many details and makes navigation difficult. One participant for example, said:

I would change the little things, how to have the exact location, the box check, the picture has be a certain size to go up and... the privacy, there are so many little things. I would cut a lot of things, easy enough as a Facebook... how you want your settings, if it was easier I would use it more.

Another aspect of the app that annoyed the participants was the fact that the app did not enable the user to upload more than one picture at a time. A respondent said “I feel like to really get the idea of a place like a landmark, you need more than just like a photo.” Overall, the participants enjoyed the experience of visiting a location but were very frustrated with the mobile application. These findings will be discussed in detail in the next chapter.

Table 2 interviewees Undergraduate course Mapping Latino Culture in East Austin (fictional names)

Interviewee	Age	Country of origin/city/state	Car ownership	Residence in Austin (years)	Latinos/as
Marilyn	22	SanAntonio	Yes	3	Yes
Rachel	20	Aptos, CA	Yes	2	No
Michael	20	Grapevine, TX	no	3	No
Mayelin	20	Houston	yes	2	No
Richard	22	Eagle, Texas	yes	4	No
Lorena	-	Mexico City	No	-	Yes
Danielle	19	Louisiana	yes	Less than a year	No
Rubi	-	San Antonio	-	5	Yes
Lauren	21	El Paso	no	3	Yes
Kika	22	Mexico	no	4	Yes
Ana	24	Colombia	No	Less than a year	Yes
Jaime	24	Dallas	No	7	No
Eleonora	22	Austin	Yes	22	No

CHAPTER 4. DISCUSSION

This dissertation addresses the broad question of **“how locative media may foster awareness about local history, unknown or forgotten information, and social events *among* and *about* Latinos/as in a place that faces historical spatial segregation.”** The goal behind this approach was to investigate how the Latino community is represented spatially to itself and to the outside in Austin, Texas. Hence, this work envisaged bringing outsiders into the reality of Latinos/as living in a historically segregated area mainly to create awareness about the legacy of segregation in Austin. In order to test our approach, two groups of users were selected to practice and reflect on locative media in relation to Latino/as segregated community. The group corresponding to *among* (*insiders*) are resident immigrant parents in Dove Springs – a neighborhood in Southeast Austin. Specifically, this group consists of participants of the digital inclusion program TechComunidad provided by the non-profit River City Youth Foundation (RCYF), a partner in this research, in 2013, when the workshop with TechComunidad participants was conducted. Furthermore, this group (and where they live in Austin) is highly underrepresented in terms of the locative storytelling, geotagged information, and digital information available online as a whole.

The group corresponding to the *about* (*outsiders*) are undergraduate students of the “Mapping Latino Culture in East Austin” course offered by the Radio, Television and Film department at The University of Texas at Austin. These two case studies are the backbone of this dissertation. Before embarking on the full-fledged studies, I conducted a pilot study with Latina girls through the non-profit Latinitas. Nevertheless, the preliminary pilot study generated results and lessons that enriched the research, contributing to reframing this work and also to the body of literature about locative media and storytelling. This approach allowed us to create a two-way view about the landscape of Latinos/as. On one side, Latino/a immigrants were able to craft stories and geotag them in the space where they live. On the other side, college students visited the historically segregated areas where Latinos and African-Americans have lived. Both points of view were addressed via the concept and

practice of locative media, understood here as “media of communication bound to a location” (Wilken, 2012, p. 2).

Therefore, this dissertation contributes to the field of locative media and locative storytelling by highlighting the contemporary struggles of a demographic group that is increasing in mobile ownership in the United States but that is constantly overlooked and underrepresented. In this way, it is important to remember that this study was an attempt to close a gap in the literature about Latinos/as within mobile and locative media scope. After all, despite the increasing use of mobile devices and digital media in the US *among* Latinos and the emerging body of literature on mobile media and digital media, research that approaches both realities is almost non-existent. On the other hand, it is important to clarify that the stories produced for this study were not developed on smartphones or tablets. Rather, the study was focused on the *process* of creating locative storytelling, which made this research different from other locative media studies such as the analysis presented by Farman (2014) about mobile storytelling specifically on smartphones.

The three case studies, including the pilot, are very different in scope; after all, the work with RCYF is neighborhood-based and thus geographically bound, and the TechComunidad program serves adults. Latinitas is not geographically limited and serves female children and adolescents across several parts of Austin. The case study with undergraduate students was tied to a formal curriculum, classroom content and learning goals. Furthermore, the three groups differ from one another in terms of institutional goals. TechComunidad participants were being trained to learn technology skills and to guide their kids to college, while Latinitas children and youth were being trained to learn media and technology at an early age, envisioning the long term achievement of college (club leaders at Latinitas were often college students who had the goal of being an example for those children). In another setting, undergraduate course assignments were envisioned to get the students to physically visit and write about parts of the city they were not previously familiar with.

Both non-profit organizations agreed to collaborate with the researcher because the project shared their goal of providing technology skills to Latinos/as. The third case study strays slightly from the other two because the college students had access to technology and cultural capital but still needed some training and introduction to the concepts of locative media, as all of them acknowledged they were

not familiar with the notion of attaching digital stories to places within the field of locative media.

All these variations are recognized, but the three studies are still connected through their research goals, approach, and use of Latino/a memory, culture, and history in Austin. The common finding that is drawn from all cases is that although most participants in this study have access to digital mobile devices (smartphones or tablets), they are going through what is mentioned in the literature as a “participation gap” (Jenkins et al, 2006; Watkins, 2012; Vickery, 2014). It is relevant to recall that participation was approached in this study as user-generated content (UGC), and the challenge was to understand how to foster the production of locative storytelling among and about Latinos/as.

Thus, in the context of this study, this participation gap is clear when the area where TechComunidad participants live, in a Latino enclave, is devoid of digital information. However, when it comes to low-income children as those of Latinitas, as Vickery (2014) points out, “we must be cautious to dismiss too quickly the importance of access” (p. 91), after all, Latino and low-income children, as I have found in this research, still struggle to have access to smartphones. In fact, this finding is supported by past research that has shown that “young people have unequal access to technology and participate in different ways” (Vickery, 2014, p. 91). In terms of locative media, the “participation gap” refers to the inequality to access, but even more in the full use of the capabilities of GPS-enabled phones and mapping to tell stories, to use location-based services, and also to utilize geotagging as a way of digitally attaching personal stories, memories, and history to places. In a less technological way, both the Latinas children and the immigrant parents also lacked the cultural capital (Bourdieu, 1984) required to think through space, place and how to tell a story.

Thus, one way to close this gap in the realm of locative media, the findings suggest, is to invest in and introduce locative media in the classroom to educate residents about their locality. It can be done by schools, colleges, and non-profits. Throughout the process of producing content - either local history or local memory -- the participants thought more about the place where they live and became increasingly aware of their surroundings. The latter is in line with past research because (Galloway, 2008; Gordon & de Souza e Silva, 2011) it found that early

locative media projects such as Urban Tapestries users reported experiencing changes in how they viewed the urban environment and the “other” within it.

Also, despite differences among the case studies, there is one similar result across the research that can be summarized and analyzed as follows: most of the participants said that they did not know much about Austin or the place where they live. Some may try to explain this finding by arguing that the majority of these participants were not born in Austin or have not lived in the city long enough to possess historical knowledge or local knowledge. However, the findings of this study indicate that time of residence does not necessarily equal extensive local knowledge, as the college students said they regretted not knowing more about their hometowns. Hence, this dissertation suggests that local residents do not possess as much knowledge about the locality where they live as they would like or as they are expected to know. This finding is relevant because it reveals an opportunity to explore locative media for more than just tourism and reinforces the need to invest in the promotion of locative storytelling, aiming to improve a sense of belonging and sense of place.

After this brief discussion, and in order to answer the research questions (RQs) posed by this dissertation, in the next sections, I will address the goals of this study one by one, as expressed by the subheadings, and discuss them in relation to past studies.

4.1. To what extent the creation of locative storytelling may increase a sense of place *among* and *about* Latinos

Unlike other studies about the intersection of locative media and storytelling (Farman, 2014) or the changes to the perception of place caused by mobile technologies (Wilken & Goggin, 2012), this research does not view mobile phones as the preferred medium to produce locative stories. Perhaps this was due to the use of Historypin, whose mobile app did not permit either less educated users or even college student users to easily upload pictures, compose and upload stories to go with them. Nevertheless, all stories produced for this research are now available in the

hybrid space for mobile users to take advantage of them. After all, Historypin is also a mobile application available for IOS and Android phones.

Locative media, in this research work, was addressed as information connected to space and place and tied to location through geotagging or GPS. Thus, this study was focused on the *process of participation* rather than on the use of mobiles per se, or quality of the final product -- the mobile story itself. This *process* involved the attendance of a workshop in which I introduced locative media concepts, such as how one may use smartphones to “read” the world, e.g. to scan QRcodes and learn about the next arrival time of the next bus or using a map with overlaid stories to learn about places. The *process* required some participants to visit locations, to take pictures of places, to research the history or places (e.g. the case study with college students), or to simply search their own memory in order to find stories that would give meaning about the place in question (e.g. the case study with TechComunidad parents and Latinitas).

It was during this process that a certain sense of place was revealed. As Wilken & Goggin (2012) have pointed out, place is key to the construction of life histories and what it means to be human. Learning from Basso (1996), I also understood how landscape served to reinforce the stories of Latinos/as and consequently their connections to the places in which they currently reside. TechComunidad parents may have access to the hybrid space, as most of them own smartphones and can potentially use their devices to have a better sense of place. However, the results of this study have shown that those parents have a superficial sense of place, as some of them had trouble understanding the dynamics of the place where they live and even struggle to write the name of their neighborhood. The inability to write the name of the locality where they live reveals the lack of geographical awareness that this community face, and how know little they know about the history of place.

Furthermore, TechComunidad parents and other Latino/a residents in the area of Dove Springs in Austin do not usually explore new places to spend leisure time and produce pleasant memories. This is a problem as it diminishes their chance of improving their relationship with the place where they live and enhancing their social capital. Obviously, there are social constraints that prevent this group from exploring the place where they live fully. Many parents work long work shifts or have multiple

Jobs, out of economic necessity. Another barrier to place exploration is the fact that several women rely on their husbands to have leisure time. Most drive, but many do not feel comfortable exploring the city or even their own neighborhood.

On the other hand, the process of telling stories about places enabled them to unearth not only the history of the place itself, but also their own histories -- what part of their lives they have constructed so far in the place. The activity of creating stories about places, and geotagging them on the map, provoked reflection and promoted a sense of ownership of the place where they live. Through this process, sense of place was achieved through the production of meaning.

In fact, one of the most interesting findings of this study was to understand the process of myself as a researcher sharing a personal story with TechComunidad parents and Latinitas children (see Appendix I and II), which enabled me to build rapport with them. In the case of Latinitas, the sharing was especially important to assist them in unearthing their own stories, helping them to develop a better sense of place, and expanding their own identity through places. These children, mostly second-generation Latinas, had trouble writing about places in their locality, which led me to conclude that they had a poor sense of place or local knowledge. Several children said that their favorite place was their bedroom, and others wanted to write about malls, grandparents' houses, or about their own houses, but never about places outdoors. The relevance of teaching children about space and place may be reinforced by a metaphor provided by Basso (1996) who did an ethnographic study about how Western Apache Native Americans transmit wisdom about place through storytelling and place-names, while also transferring moral values. In other words, geographical locations have moral significance. In regards to Apache children, if they do not know the stories of what has happened to certain places, they may have social problems in the community where they live. This may happen because the historical tales tied to places convey guidelines for dealing "responsibly and amicably with other people." Thus, children who lack knowledge about the narratives are more likely to act in ways that run counter to Apache social norms (Basso, 1996). The Apache children have to learn how to associate places and their names with historical tales in order to learn those social guidelines. By anchoring the findings of this study in this metaphor, this dissertation argues that it is crucial for children of immigrants to learn about the history of place where they live or to produce happy/positive memories about their

locality by relating it to their cultural heritage. This result has implications for locative storytelling applications that can be designed to aid the teaching about places in a classroom or even for the design of learning programs, such as after-school curriculum.

The act of creating a story helped the Latinitas children have a better understanding of the place where they live and also raised awareness about their culture in the United States. For example, the girl who wrote about her grandmother's couch in Honduras did so by reflecting on the couch in her house in Texas, building to a story about the loss of social connection to her larger family. Being able to make this kind of connection is powerful and has implications in the future of these children, as recent research has found that place is key for children's future income mobility (Chetty and Hendren, 2015). By understanding the singularities of the space where they live, these children may learn moral or cultural values similarly to Apache children in order to overcome possible challenges and social struggles. One problem, which the comparison with the Apache reveals, and which this research has not really had the capacity to address, is that many of the people involved in this study are relatively recent immigrants to the U.S., or at least to Austin, who do not seem very attached to it as a place. Many of the stories, particularly by the children of Latinitas, showed that they longed for earlier places where they felt more attached. Even some of the RCYF parents do not seem to have fully attached to Austin as a place with long-term meaning for them. This is one limitation of this study.

Another outcome of this locative media activity with children and adolescents is that by enabling this age group to produce locative stories and to digitally geotag them, this study contributes empirically to increase participation among Latinos/as and also to populate the hybrid space with the voice of the unheard. As children and youth provide a glimpse of the future, it is fundamental to expand participation among them.

The poor sense of place of most children was reflected by their struggle to produce locative stories about their neighborhood or about the locality where they live. This struggle may have occurred because these children do not find the places where they live attractive or fun, or they have not developed happy memories in those places. This insight is in line with previous studies on children and their relation to urban space and how their sense of place is often restricted to private spaces. Jones et

al. (2003) conducted a research project called "A New Sense of Place" in England in order to understand how "wearable" and "mobile" technologies might be applied to help children (re-) engage with urban spaces. Jones et al.'s research sheds light on the findings of this study, as they argue that children are facing an "apparent crisis in the spatialities of childhood brought about by the increasing confinement and control of children in many environments, particularly urban environments" (Jones et al., 2003, p. 167). They also mention other studies that support the notion that children are restricted to their bedrooms. Although their study was conducted in England, one may say that the United States is similar, particularly in low-income neighborhoods where parents are afraid of letting their kids play in the streets. The findings of this study support that hypothesis, as was showed in the results chapter that several Latinitas' children's favorite places were their bedroom or indoors environments, such as their house or grandparents house. Those places may be considered safe for them.

In other words, because children can no longer explore the world outdoors, they end up being left to enjoy technology indoors. The issue is that children are restricted from having an ability to move through and use the wider, ordinary, everyday landscapes around their houses and in the areas where they live. A way to approach this problem, in the context of locative media trainings, is to promote fieldtrips to local places, to provide historical background, and to ask children to interview local residents in order to become more familiar with the locality. This is because, as explained previously in this dissertation, Latinitas children used photographs as a memory aid to write their locative stories instead of visiting places, as the college students did. Although the act of producing a story made them reflect on their locality, the outcomes could have been different if they had been taken on a fieldtrip to places outdoors in the neighborhood where they live for example.

Another revealing finding was the places that the children chose to write about. It seems the locations they chose are closely related to identity formation. Thus, this study suggests that locative storytelling for kids also help them to create identity. The psychologist McAdams (1996), who analyzed how a story changes over time, argues however that children are not actively creating identity, and they are under what he calls a "pre-narrative era." Experiences in family, school, church, and neighborhood provide narrative material that may impact them in the long term. The pre-narrative era may explain how several of the younger children chose places that

are closely related to their family such as a grandparent's home and school. Nevertheless, places in their neighborhoods were definitely not a choice for them. For this reason, a fieldtrip in their neighborhood could have sparked their curiosity to increase their sense of belonging and sense of place.

Unlike the case studies with *Latinitas* girls and *TechComunidad* parents, college students visited locations related to Latino culture, which changed their experience, because they produced happy memories, filled with discovery of the place. These positive memories helped them to have a better sense of place in Austin as a whole and also to understand the spatial differences within neighborhoods. This aspect of having a positive experience in a place was prevalent in college students' response and therefore seems to be a way to foster sense of place through the creation of locative stories. One aspect of this process for the college students was that they were visiting places that exemplified issues that they studied about, so they probably had both some greater degree of curiosity and a greater knowledge of the context of the place.

The same benefits of the storytelling process apply to the participants of the digital inclusion program *TechComunidad*. Among *TechComunidad* parents, the most compelling activity of the practice of locative storytelling was to enable them to inscribe their own place-value in a space that is at the same time familiar and unknown to them. By providing this experience to Latino/a parents in Dove Springs, I accomplished the goal of filling ungeotagged space, while enhancing a sense of belonging for these parents. By writing the stories, they are compelled to make sense of their existence in a specific geographical area that is often portrayed as poor, foreign, and containing a high crime rate.

It has implications for immigration studies as the *process* of creating locative storytelling helped immigrants have a better sense of belonging and integration. Obviously, I recognize that the timeframe of this study was very short, and the sample was quite small. However, the findings indicate that enabling parents to assign their own values to place helps them to create a sense of ownership of it, or at least to understand or establish an emotional connection with the place where they live. For example, a *TechComunidad* participant wrote about his struggle of moving to the United States, and he geotagged his story to his house, hoping that his children could read it in the future and feel proud of him. In doing this, this parent is crafting

meaning through the practice of creating a story about an important place for him. Through geotagging, he is extending the dimension of his story into space and also projecting his sense of place to future generations. Unlike other studies about geotagging that analyze user behavior (Humphreys & Liao, 2011), this study focuses on the *process* because participants were not users of locative applications per se. The locative media training was a first step to initiate them into the practice of telling stories about places and digitally attaching them to places. In other words, it was a first step to expand participation among them, as I will discuss in the next subsection.

4.2. How to increase participation *among* and *about* Latinos

The empirical goal of this dissertation research was to expand participation *among* and *about* Latinos/as in the general use of locative media and, specifically, in the creation of locative storytelling because participation is fundamental for the creation of locative media projects. Participation also incorporates questions of how to involve people, how to motivate them, and which barriers prevent people from participating. Thus, the idea and process of participation was taken as a first step to understand how locative media could help Latinos/as to better understand their locality and have a better sense of place. However, I understood that before fostering the production of content, this group of participants had to be trained on how to create locative content, and thus, I had to foster participation from the ground up. In order to compliment this participation, I also had to encourage other participants to write *about* Latino culture through places in Austin. Also, the final outcome of increasing participation *among* Latinos/as in the production of locative storytelling is generating more equality in terms of geotagged information.

In this sense, this study was successful in enabling low-income Latinos/as to upload their stories to the hybrid space. The biggest achievement was to empower Latinos/as of different ages to share their stories about places. In addition, it is important to stress that the majority of the participants in this study were women. This result is highlighted as a special achievement because past research has shown that it is difficult to attract the participation of women in user-generated content (Stephens,

2012). As explained in the previous chapter, I noted that the women in the community of Dove Springs have a sharp desire for self-improvement and manifest that through their involvement with schools. The schools in Dove Springs play a strong role in delivering local information and empowering these women to change the course of their family's future.

Another common theme explored in the literature of UGC and participation on the web is determining what factors motivate or reward participants in an attempt to understand how to increase participation. Some of this research has found that non-monetary reasons motivate users to produce content such as attention (Huberman, Romero & Wu, 2009), reputation, status, and virtual points (Nam, Ackerman & Adamic, 2009; Yang, Ackerman & Adamic 2011). This dissertation research found that a possible way for increasing participation *among* Latinos/as in the production of locative storytelling is to frame the project as aiming to achieve cultural and familial heritage and stories based on memory. As such, several participants who were able to geotag their stories mentioned that they felt accomplished for having done something that their children could take pride in when they become adults. This is in line with other communicational studies on Latinos/as and media. In order to understand how Latinos/as use media and new technologies, Leonardi (2010) argues that it is fundamental to understand their cultural characteristics. Leonardi (2010) states that Latinos have a developed sense of pride and place a high value on *simpatía*, behaviors that promote smooth and harmonious relationships. In this sense, Latinos/as, according to Leonardi (2010), perceived technologies such as cell phones, computers, and the Internet in terms of how each technology promoted their own cultural value.

Similarly, I found that several participants from the digital inclusion program TechComunidad felt empowered mainly from the idea of leaving something written for others as heritage. I found support in psychology studies that explain that middle-aged adults come to realize that "I am what survives me" (McAdams, 1996). These studies argue that their identities may become the stories that will survive them. When I apply this concept to locative stories, I can expand this notion by including "place" as an element that embeds change over time, enabling the creators of content to keep track of their identities by attaching content to a certain location over time. Moreover, the participants strongly related the action of writing and digitally attaching a picture

and story to a place forever to the idea of cultural heritage, which is also associated with identity development (McAdams, 1996).

These findings have implications for designing other storytelling projects with Latinos/as in the scope of locative media, involving matters of space and place, and also for the design of mobile/locative applications aimed at this demographic group. After all, it can be inefficient to try to engage participants, especially low-income smartphone users, just for the sake of producing stories. Considering that most of these participants struggle to meet basic needs in life, such as having a house to live, providing education to their children, clothing and food, exploration of place and crafting of stories about those places may seem additional and not relevant to their daily lives. As, one of the participants said out loud in the classroom: “historia para que?” (“story for what?”). Hence, it is critical to respond to that question from the outset. The participants need to see a value in the act of crafting stories for their lives. And this value needs to be instilled in order to foster participation. Learning from Leonardi (2010), I argue that in order to promote or foster sustainable production of locative storytelling among Latinos/as, it is important to relate the activity and locative technologies directly with their specific cultural needs. In other words, the meaning of place needs to be connected to their identity and heritage.

Furthermore, having the ability to partner with an organization, such as River City Youth Foundation, that works closely with a specific geographical area is key. The partnership with them was fundamental in order to foster participation among disadvantaged populations and thus to close the gap of segregation of the hybrid space through a digital inclusion program. RCYF has a full annual cycle of community building events, such as Thanksgiving and Christmas for those who need it, as well as a Men’s and Father’s Pride parade, so it has built considerable trust and awareness in the community. Then it engages both parents and youth in training not only about technology but also about how to use technology in solving life problems and thus becoming more empowered.

It is also important to reflect on the fact that past research (Jönsson and Örnebring, 2010) on UGC have focused on two very important aspects: (1) degree of audience participation, i.e., how much effort is required by audience members in order to participate; and (2) type of content, i.e., if the content being produced is primarily private or public in character -- and if public, is it primarily information-

oriented or primarily entertainment-oriented? While I recognize these factors as fundamental in understanding the dynamics of participation for this research and taking into account the complete lack of geotagged content about Latinos/as in Austin, I found it reasonable to work on the topic of participation without constraints and without analyzing the degree of participation or type of content.

Rather, I aimed to diminish the “participation gap” mentioned by Henry Jenkins (2008) and addressed by Gordon & de Sousa e Silva (2011) in their discussion of net locality. That said, it would not have been reasonable to study degrees of participation when there is a need to first foster participation from the ground up. However, specifically, what does ‘participation gap’ mean in the context of locative media and locative storytelling? Which limitations will have to face to narrow this gap? Considering the segregation of the hybrid space and the splintered space as a framework, it is important to observe that we may be facing what I name in this work as a *spatial participation gap*.

The findings of this study indicate that low-income users of GPS-enabled phones do not explore the physical space in the city where they live and the locative capabilities of their smartphones. The fact that they do not experience fully the physical space diminishes the likelihood of producing locative content, which seems to increase the participation gap. This term I am proposing called “spatial participation gap” may be defined as the unequal access to spaces and hybrid spaces and the inability, due to social constraints, to change spaces into places. This term seeks to represent the cause and effects of not having access to the hybrid space generated by locative media. What this concept attempts to convey is the need to address the inequalities in regards to space and place and its effects on the creation of locative content. Taking into account, that locative technologies such as smartphones are becoming increasingly widespread, it is urgent to address this gap and understand its specificities. What can we do to create means that low-income populations and also newcomers, such as the college students of this study, become able and motivated to fully explore the public space more equally?

In order to close this spatial participation gap, and based on the findings of this study, I suggest:

- To foster the creation of happy memories through the generation of locative storytelling about places. The findings of this study suggest that the participants realized, through the process of creation, that they had had happy things to share about the place where they live or in the case of college students they created happy memories when visiting locations. These positive feelings seem to be fundamental in the creation of locative storytelling and thus for the increasing of participation among and about Latinos. In the case of TechComunidad parents, this feeling is tied tightly to the cultural values of forgotten family heritage connected to places.
- To encourage the exploration of the place where residents live for the sake of discovery and serendipity. As this study demonstrates, years of residency do not necessarily translate into local knowledge.
- Colleges of Communication should play a role in encouraging students to visit locations and to produce content about underrepresented groups through the teaching of locative media and locative storytelling.

In terms of increasing participation in the production of locative storytelling *about* Latinos/as, it emerged through our research findings that this is a subject that would be best approached by educators and researchers in the classrooms as a strategy to engage users with the field. As will be discussed later in this chapter, a location-based learning approach is a strategy to foster the production of storytelling *among* and *about* Latinos.

4.3. How locative media help alleviate the effects of spatial segregation

As Lloyd, Shuttleworth, and Wong (2014) wrote in the introduction of the book *Social-spatial Segregation*, segregation is a key theme for academic research and major policy and political interest. The authors mention that questions often asked include what the level of segregation is, whether segregation has increased or decreased and how, whether it is greater or lesser in one country or city than in another, and whether it is socially harmful. A related, specific goal of this research

was to understand to what extent locative media and storytelling may help to alleviate the effects of historical segregation in Austin, and its extension into the new digital media. One of the effects is the current spatial division between the "white" and wealthy side of the town and the less-advantaged Latino and African-American side of the city, where schools and resources are relatively worse compared to those on the west side and downtown. I argue that this spatial segregation has led to a new sort of segregation: the segregation of the "hybrid space," a concept proposed by de Souza e Silva (2006). Hybrid space is composed of three elements: social interaction, digital information, and physical space.

According to the findings of this research, most of the residents of the areas informally and historically segregated in Austin are oblivious to their reality of disadvantage. In addition to that, outsiders such as college students who do not live necessarily in segregated areas are not aware of the geography and the history segregation of the city. Hence, to a certain extent, the *among* and *about* groups have the same lack of awareness in terms of their spatial and local knowledge about where they live, although there is a difference between their knowledge and skills to be able to take advantage of the hybrid space. While TechComunidad parents did not know how to use smartphones to explore the history of the place where they live or even to find out about new places, the college students had the knowledge to do so but were not taking advantage of mobile applications to learn about places.

Based on the three elements of the *hybrid space* mentioned above, the segregation of hybrid space, as argued in this work, stems from three main realities: 1) digital inequality (Straubhaar et al., 2012) which disempowers the residents in the area of segregation to produce digital information about themselves and other topics deepening the gap; 2) the lack of social interaction between those who live in the impoverished area (*among*) and those who don't (*about*); and 3) the actual physical separation of space with constraints such as highway I-35 that complicates interaction of those ambivalent sides of the city, as explained in the first chapter of this dissertation.

That said, this study was accomplished some progress in raising awareness among Latinos/as, who face digital inequality, of what they can do with their smartphones. After all, the training also covered applications, such as translators and voice commands, that allow users to scan documents and meet participants' needs.

Obviously, in closing the digital gap, this study was constrained by time and the number of participants, but participants were at least trained to take advantage of their smartphones and locative capabilities. While I did not have a way to measure how college students and residents in the historically segregated areas interacted with each other, this study tried to expose college students to the reality and culture of the people who face the spatial stigma of living in an area with a history of segregation. Students, which refers to the group I named *about*, had to visit certain locations, explore the physical environment, and produce stories based on the history of these locations.

In this sense, this work helped to alleviate the effects of spatial segregation by fostering digital inclusion through the training of how to use mobile phones, and the interaction between outsiders and insiders in a specific geographical area of the city. After all, as Basso (1996) wrote about Apache Native Americans, the location of a story is an integral aspect of an event, and "placeless stories simply do not get told" (p. 87). This study argues that in order to alleviate the effects of spatial segregation, inhabitants of a specific space need to unearth their own stories of place, overlaying that space through a map interface with their own narrative. Empowering residents of these localities to tell stories and overlaying maps with these stories may help to raise awareness about them and also to diminish stigma.

4.4. Producers engaged with memory and knowledge of their locality

This study was efficient in raising awareness in terms of locality because, as mentioned before, many participants from the *among* as well as from the *about* group reflected on how much knowledge they held about the place where they currently live or had lived. Some college student participants even realized that they did not know much about the local history of their own hometowns. In the case of TechComunidad parents, it is important to remember that most of the participants are women who serve as the educators and caretakers of their households, although several have low self-esteem, as I noticed during my fieldwork. Despite having cars, these women do not leave the limits of their neighborhood and rely on their husbands to go to places that are further away.

It is also important to reflect on the fact that most of the studies on mobile storytelling approach users when they happen to be at a certain location and examine how smartphones aid memory and document historical information (Özkul & Humphreys, 2015). This current study is different from these studies because locative media was presented to the participants on the introductory level, introducing conceptual ideas of space and place. In this sense, the practice of storytelling fostered meaning and reflection on place. College students felt a feeling of regret when they realized they did not know much history about their hometowns. This demonstrates how the activity of producing a story about a place provokes reflection not just about the locality where they are in the present but also about places either familiar or faraway where they had been.

Paula Levine's (2014) study sheds light on these results, as the author argues that locative media have potential to change one's relationship to a place by introducing distant events or circumstances and making events that are happening elsewhere highly relevant to the immediate local space. A great example of dislocation is the Latinitas girl who wrote about a couch in Honduras to make meaning of her couch in Austin. By drawing from the psychological concept of "cognitive dissonance," Levine (2014) proposes "spatial dissonance," which means the "experience of two contradictory spaces (or ideas about a space)" (p. 144). As Levine (2014) explains "cognitive dissonance describes a state of mind that arises when two contradictory ideas must be held in mind, for example when information that is presented stands in conflict with strongly held beliefs" (p. 148). Levine (2014) argues that this conflict may also be applied to the ways we think about our relationships with space and place. Although Levine refers to the juxtaposition of spaces, for example, by overlaying certain locations of Baghdad on the map of San Francisco, her concept of spatial dissonance applies to how some participants decided to geotag their stories in this study. For example, some adolescents in the case study with Latinitas geotagged their stories in distant places to talk about a place in Austin (see Figure 5. Home is with Family).

Furthermore, Levine (2014) writes that locative media can collapse geographies to mix *here* with *there*. Part of Levine's argument is also the notion that place happens to be local and global at the same time, which is reinforced by the concept of net locality proposed by Gordon & de Souza Silva (2011). What is

interesting to highlight in the results of this research is that this process of thinking about locality and distant places happened naturally in the process of crafting the story, as in the case of the Latinitas participants and college students. Participants in this study used distant places or ideas about distant places to understand their locality. In some cases, as in the case of the Latinitas girls, this was expressed in their stories. In other situations, like in the case of the college students, the course assignment simply helped them to think about Austin and also about their hometowns.

4.5. The effectiveness of Location-based learning

When I began this research, I was not aware of the learning branch of locative media, but throughout the process, the case study with college students put me in contact with the branch of locative media called location-based learning, which helped to define the contributions of this research. Not all participants in this case study got into the practice of crafting storytelling because some just copied and pasted material from webpages. Rather, the most relevant outcome in the case study with college students was the experience of visiting a location and reflecting on the content learned in the classroom. For this reason, what I did in this case study falls under the definition of location-based learning. Conceptually, the scholarship on location-based learning is shaped by the questioning of formal versus informal education, or put in a better way, it is presented as an alternative/complement to formal learning. Livingstone (2007) defines formal learning “when it involves the presence of a teacher-someone presumed to have greater knowledge – and a learner to be instructed by said teacher” (p. 3). On the other hand, Livingstone defines informal learning as “forms of intentional learning in which we engage either individually or collectively without direct reliance on a teacher or mentor and an externally-organized curriculum” (p.3), for example, when visitors engage with geolocated information in a self-directed and self-managed manner.

The main result in the case study with the students of "Mapping Latino Culture in East Austin" revolves around the exploration of the physical environment of Austin and the experience of visiting a certain location to produce locative stories about local history and memory. The students truly enjoyed the assignment, and the

process required to produce storytelling was effective in conveying the knowledge about the historical legacy of segregation in Austin. Past studies that merged formal and informal learning found that visits to certain locations, such as museums, appear to consolidate and reinforce previous knowledge and understanding discussed in the classroom, rather than fostering new knowledge (Vavoula, Sharples, Rudman, Meek, Lonsdale, 2009). On the contrary, the participants of the case study with college students acquired new knowledge beyond what they learned in the classroom, since they were surprised with their own discoveries of the culture, history, and geography of East Austin. In fact, the participants in this study tried to make the experience of visiting predetermined locations outside the classroom enjoyable. As such, some of the participants brought along their partners or pets, turning the assignment of producing a locative story into a stroll on the Tejano Walking Trail.

Additionally, the participants deepened their understanding of Austin and the effects of segregation. I approached this case study aiming to foster familiarity of outsiders with the spaces *about* Latinos/as in Austin. I also aimed to diminish the gap of digital information geotagged on the map of Austin about Latinos/as. For this reason, I called this group in this case study: the *about* group.

In this context, location-based learning has the potential to foster “empathic narratives” proposed by Levine (2014), which she defines as stories that are based on empathy, allowing one to feel a deep connection to a feeling or event as if it was happening to him or her. The practice of visiting a location to reflect on the history of segregation of African-Americans and Latinos/as in Austin allowed some students to feel this empathy and look at the space they inhabit differently.

In line with past studies, the findings of this study provided support to the idea that assigning students to venture outside the classroom creates opportunity to more learning. By exploring the physical world, students better understood the issues of segregation in Austin and also its ongoing consequences, such as gentrification and economic disadvantage. On the other hand, this study found that the smartphone may not always be the favorite avenue to learn about a place, which may be counterintuitive, taking into account the high usage of smartphones by young people (Turkle, 2011; Wellman & Rainie, 2012). Some of the interviewed students said they learn more about places without mobile phones. Others said they avoided using the phone during their visits to locations to make it an enjoyable experience. Respondents

highlighted how they enjoy the place more when they have good company or when they are more open to talk to locals without the aid of mobile devices, for example, when they are abroad and do not have Internet connection on the go. Furthermore, this finding provides more support for past research that has found that mobile devices can be distracting, for example, for museums visitors (Hsi, 2002) or for children (Semper & Spasojevic, 2002). In order to prevent this, according to past studies (Rogers & Price, 2008) the information needs to be designed to be easily shared by groups during an ongoing task. Rogers and Price (2008) suggest: “ideally, groups of students and their instructors should be able to switch fluidly between observing the physical world, accessing relevant information on the device and being able to communicate this with others in the group” (p. 4). These findings may have implications for the design of educational locative apps, as the participants' responses implied that the smartphone might be disruptive for the exploration of the physical place in terms of location-based learning. A suggestion would be to include a time management button in mobile applications, encouraging users to not stare at their phones while observing the physical world.

Other interesting findings that may have serious implications for the design of locative apps and for the locative media is the result that history per se may not be enough to engage young smartphone users with their surroundings. Although several participants recognized that they do not know much about the history of the place where they live or where they come from, many said they would not use an app just to look up historical information about a place. Mobility was, however, highlighted as a positive aspect and potential of locative media. Integrating history into locative apps that deal with navigation and mobility would be a good alternative. In fact, combining this historical place-based information with everyday activities may foster situated learning, as it would enable people to learn through observation and interaction with other in a social setting. In line with Vavoula et al., (2009) our study showed that the activity allowed students freedom to explore the environment within the constraints of pre-existing learning goals.

As said before, several students mentioned in the UT class that they went to the locations with family relatives, partners, or with pets. The method of turning the assignment into a pleasure outdoor activity that takes place in a social setting is highly positive because it may create a happy memory for the participants, and thus it creates

context for informal learning. In other words, by bridging formal and informal learning, instructors give space to students to experience pleasure and wonder in the physical world. They feel that they are learning by themselves, by exploring and discovering the world but with the aid of previous content discussed in the classroom. In this sense, the bridge of formal and informal learning is made.

In addition, spatial segregation and Latino culture, two themes discussed in the UT RTF classroom, were grasped in two ways. First, students experimented walking in the trail and thus they embodied the content discussed in the class. Second, they had to geotag the description of the place on the map of Austin, which allowed them to contribute to the democratization of user-generated content about a demographic group that has been at a socio-economic disadvantage in the city. Furthermore, as Martin (2009) points out "by connecting learning with physical place, one taps into "embodied pedagogies of sensation in experiences - not with bodies, but as sensing and moving bodies, with cultural understandings mediating conscious experiences" (p. 287). The "physical experience" is, therefore key for this kind of activity because it encourages the students to leave their spatial comfort zones to navigate in different spaces and understand the social and cultural issues of the city where they live.

The strategy of integrating locative media into teaching was quite effective in understanding how little students knew about their surroundings. In fact, students acknowledged that they did not know much about the city. However, the same students acknowledged that location-based applications rooted in history such as Historypin might be best used in unfamiliar places, for example, when visiting a new city. Along these lines, participants also associated the act of walking with learning about places, and somehow they seemed negatively biased towards smartphones; one of the students said that she learned much more about her surroundings when she was in Guatemala and did not have a car or a smartphone and thus had less distractions. This specific finding, along with several responses, showed that the students realized did not know much about their locality and led me to think that it is difficult for these students to deepen their relationship with their locality in terms of information. However, when integrated in informal learning, locative media and storytelling may help users to connect in a different way with the place where they live.

Along these lines, Basso (1996) explains how "place possesses a marked capacity for triggering acts of self-reflection, inspiring thoughts about one presently

is, or memories of who one used to be, or musings on who one might become" (p. 107). More importantly, for the results of this dissertation, "place-based thoughts about the self lead commonly to thoughts of other things - other places, other people, other times, whole networks of association that ramify unaccountably within the expanding spheres of awareness that they themselves engender" (ibid). That is exactly what happened with the college students who by learning about Austin, where they currently live, started thinking about their home towns that they had left a while ago.

4.6. Efficiency of the application

Historypin, the application chosen for this study, was not appreciated by the participants, which may be considered a limitation of this study and thus affected the results. Perhaps, because of this, UT students said that they prefer to discover physical places without the aid of smartphones. There was such a high sense of frustration with the application and the website Historypin that students avoided the use of mobile technology to complete the assignment, as did RCYF adult learners and the Latinitas girls. The ones who did try to use the mobile application felt very frustrated. The annoyance with the mobile application spread to the classroom, which prevented other students from even trying or downloading the Historypin mobile application. Many others concluded that they would no longer use the application after completing the assignment. Problems such as crashing and the impossibility of rotating a picture were found. One participant who downloaded the mobile app felt frustrated afterwards. For her, the app seemed to have a different application than that of the website. Furthermore, many participants complained that the app requires the addition of too many details and makes navigation difficult. Another aspect of the app that annoyed the participants was the fact that the app did not enable the user to upload more than one picture at a time.

4.7. Summary

This chapter discussed the goals of this research in order to answer this thesis' RQs. By focusing on the demographic group of Latinos/as, this study found that access is no longer an issue for this group, except perhaps for the youngest, like the Latinitas girls, or the oldest residents, which surveys of Austin in 2011 Straubhaar, Chen, Spence, Correa and Machado-Spence (2011) show to be less likely to have smartphones. The main challenge to diminish the segregation of Latinos/as in the hybrid space is actually to foster participation in and raise awareness about the locality where they live. Below, I summarize some possible answers for the RQs "how locative media may elevate awareness of local history, of unknown or forgotten information, and events *among* and *about* Latinos/as in a place that faces historical spatial segregation?"

1) It is very important for this demographic, the Latinos themselves, those that live *among* the Latino communities, to create locative stories that convey positive or meaningful experiences about the place where they live. The process of crafting the story promotes attachment to the place. This finding has implications for immigration studies, as locative media and storytelling projects may help immigrants feel more integrated and settled in their new localities of residence. Stories by outsiders *about* the Latino communities are also useful, but insider knowledge and perspective is essential.

2) In order to close the segregation gap of hybrid space, it is not enough to engage only Latinos/as living in the spatially segregated areas. It is also key to involve others to become aware of Latinos/as reality and produce feelings of empathy and consequently to foster empathic narratives (Levine, 2014).

CHAPTER 5. CONCLUSION

Despite the emerging body of research on mobile media and locative media along with past research showing that Latinos/as are heavy users of tablets and smartphones, the research done here that approaches mobile and locative media use by or *among* Latinos/as and *about* Latino neighborhoods is scant. This dissertation therefore contributes empirically and theoretically to the literature on mobile/locative media and Latinos (as) and also by helping to narrow the participation gap *among* and *about* them. In order to create awareness about the legacy of segregation in Austin, this work brought other Austin residents into the reality of Latinos/as living in a historically segregated area mainly and also fostered participation in the creation of content among Latinos. Two main groups of users were selected to practice and reflect on locative Media in relation to Latino/as segregated community. The group corresponding to *among* (*insiders*) are resident immigrant parents in Dove Springs – a neighborhood in Southeast Austin. Specifically, this group consists of participants of the digital inclusion program TechComunidad provided by the non-profit River City Youth Foundation (RCYF), a partner in this research, in 2013, when the workshop with TechComunidad participants was conducted. Furthermore, this group (and where they live in Austin) is highly underrepresented in terms of the locative storytelling, geotagged information, and digital information available online as a whole.

The group corresponding to the *about* (*outsiders*) are undergraduate students of the “Mapping Latino Culture in East Austin” course offered by the Radio, Television and Film department at The University of Texas at Austin. These two case studies are the backbone of this dissertation. I also conducted a pilot study with Latina girls through the non-profit Latinitas. This preliminary pilot study generated results and lessons that enriched the research. This approach allowed us to create a two-way view of locative information about the landscape of Latinos/as. On one side, Latino/a immigrants were able to craft stories and geotag them in the space where they live. On the other side, college students visited the historically segregated areas where Latinos and African-Americans have lived. Both points of view were addressed via the concept and practice of locative media.

Participation was the thread that woven this dissertation because of my initial exploration of locative media, in 2012. On a first attempt to design a research proposal, I did one-week exploratory visit to the small town Monmouth, Wales, in August 2012, where QRcodes embedded with Wikipedia articles were stuck on several buildings and physical things. The project was called Monmouthpedia, as the Wikipedia articles were about the specific places where they were stuck. I conducted informal interviews with locals, residents, tourists, and stakeholders, including a post-visit interview with the chair of Wikimedia UK, Roger Bamkin. What I found most interesting in that project was the role of local participation in the production of local information for locative media projects. However, it is striking to note that a significant majority of creators of content – promoted as local knowledge - for Monmouthpedia were outsiders, not physically present in Monmouth (Bamkin, 2012, August 12, Telephone Interview).

Roger Bamkin (2012, Skype Interview) gave me the example of an American woman (Wikipedian collaborator) who wrote several articles about Monmouth from Chicago. In his words: “In just a day she wrote an article of 4000-5000 words with 10-15 references all well linked with images and maps. I can’t think she is doing anything else.” Bamkin was struck by the fact that that woman was motivated to write so many articles, which were supposed to be written with a basis on local knowledge, without being physically presented there.

This gap between local knowledge and not being physically present in the locality led me to think that although the materiality of content is expressed through the QRcode integrated in buildings, the production of local information is dislocated from its local context elsewhere in the world (the impact of the global village). Instead of increasing local community, Monmouthpedia might contribute to the development of a new kind of “imagined community” as Benedict Anderson observed (2006); not linked to geography, but a global community of Wikipedian collaborators. This outcome of Monmouthpedia was an interesting issue that made me reshape my research project in a way that the increasing of participation among local residents became the focus of this study, instead of tourists. In this sense, it was clear from past studies on locative storytelling, that participation was fundamental nevertheless hard to achieve to locative media projects. Løvlie (2011, p. 246), who did a locative storytelling project, argues that locative media requires a high degree of participation

and user contributions, as it aims to cover any place in the world, with geotagged stories. Drawing on the experience of Monmouthpedia, this work contributed to the increasing of participation on the production of locative media in different local communities in Austin. Although further research needs to be conducted to understand better how the production of content among low-income and local communities can be sustainable, this study was a starting point to unveil the dynamics of the production of locative storytelling.

Therefore, this dissertation contributes to the field of locative media and locative storytelling by highlighting the contemporary struggles of a demographic group that is increasing in mobile ownership in the United States but that is constantly overlooked and underrepresented. In this way, it is important to remember that this study was an attempt to close a gap in the literature about Latinos/as within mobile and locative media scope. It is also important to clarify that the stories produced for this study were not developed on smartphones or tablets. Rather, the study was focused on the *process* of creating locative storytelling, which made this research different from other locative media studies such as the analysis presented by Farman (2014) about mobile storytelling specifically on smartphones.

5.1. Main contributions

In this section I reflect on the research process and restate the dissertation contributions, by summarizing the most important aspects of this research. It is important to remember that this dissertation addresses the broad question of **“how locative media may elevate awareness of local history, of unknown or forgotten information and social events among and about Latinos/as in a place that faces historical spatial segregation.”** It is equally important to recall the goals of this study: a) to explore to what extent locative media may increase sense of place among Latinos and about Latinos who live in areas which have a recent history of segregation; b) how to increase participation in locative media, c) to better understand how locative media may help to attenuate the effects of segregation and consequently the segregation of the hybrid space, d) to understand how location-based media may engage Latinos as producers of locative storytelling with their memories and knowledge of their locality, e) to bridge the digital divide by teaching people how to

use mobile media and to gain mobile skills in order to increase participation in locative media, and (f) to analyze to what extent locative media could help undergraduate students to grasp the topic of spatial segregation and its effects on the Latino Culture in Austin, and (g) the efficiency of the application used. That said, in a conclusive way, the main contributions of this study are:

- This research found that GPS capabilities are being widely used in low-income communities, such as Dove Springs. Despite not being very educated or tech-savvy, the participants recruited for the digital inclusion program TechComunidad and consequently for this research were familiar with GPS and Google maps to navigate the city. In this sense, people's fundamental need to understand information through maps, as showed in the beginning of this study, may be further explored also among low-income communities. In this sense, how can we further explore the potential of locative media to engage these residents with their locality? How can low-income communities take fully advantage of locative capabilities of their devices?
- The fact that they do not experience fully the physical space diminishes the likelihood of producing locative content, which seems to increase the participation gap. This term I am proposing called "spatial participation gap" may be defined as the unequal access to spaces and hybrid spaces and the inability, due to social constraints, to change spaces into places. This term seeks to represent the cause and effects of not having access to the hybrid space generated by locative media. What this concept attempts to convey is the need to address the inequalities in regards to space and place and its effects on the creation of locative content. See below the conceptual map that explains the Spatial Participation and how the term was drawn on a numbers of findings of this study along with other concepts:

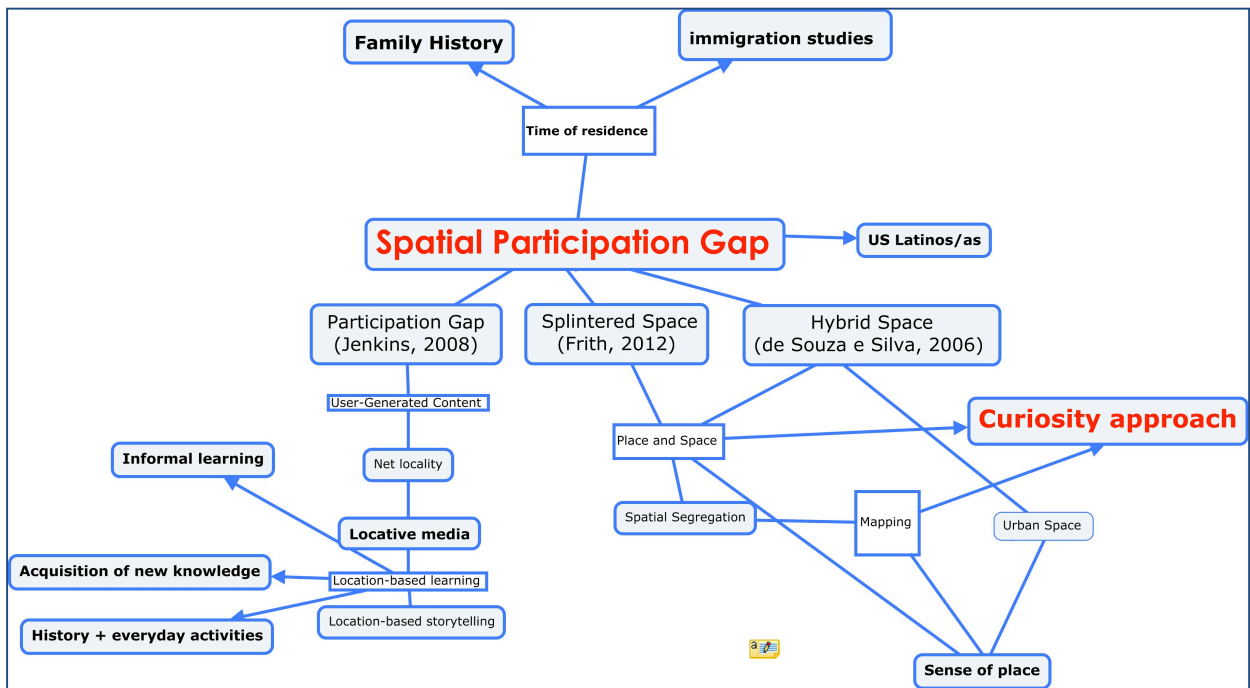


Figure 24. Conceptual map of the Spatial Participation Gap

- One of the conclusions of this study is that it is not the number of years of residence in a certain place that makes one an expert or very knowledgeable on her/his locality. Generally speaking, the findings indicate that Latino/a residents, old and young adults, including children, do not know much about the locality where they currently live. Rather than writing locative stories based on place, history, or possession of local knowledge, several TechComunidad participants produced stories based on memories and current events in which they are involved. Such findings may have implications for the design of locative media applications to help local residents, including immigrants and newcomers, to learn about their current local environment.
- By increasing participation among Latinos and immigrants, locative apps may be designed to help them to learn more about their locality in terms of history, local knowledge and services. The community of Dove Springs, for example, strives to achieve social and income mobility and to see their kids going to school and college. Indeed, the goal of TechComunidad is to train parents to help them to guide their children' education. There is an

intense encouragement and structure for change. As also mentioned elsewhere in this dissertation, the Dove Springs area was void of information on the map of Austin on Historypin. Many participants did not grasp this lack of information in the beginning when I showed them the neighborhood on the map through Historypin. This ongoing lack of digital information in Dove Springs could influence the sustainability of a locative media project in the area because it demands commitment. One way to think about the continuity of participation, at least in the community of Dove Springs, is to invest in individual mentorship to get locative stories done by building rapport with the community, as I did for this project. It is obvious that it requires financial investment or financial support by organizations and may be not sustainable in financial terms, a preoccupation that was not within the scope of this dissertation.

- Another way to reflect on participation is to think about it in individual terms. After learning the benefits of locative media or locative storytelling, are participants going to continue use it? Several participants in the case study using college students said they would no longer use Historypin because they did not like the technology. Obviously, their reluctance may be a limitation of the application, but it also indicates that mere exposure to the concept of locative media and locative storytelling is not enough to engage participants with the production of locative content. It also indicates that locative software and apps have to be made much easier to use and more self-sufficient (from web based applications) in order to facilitate more participation.
- Another main finding suggests that locative storytelling may be better adopted if integrated with everyday activities. Several college students said that they would not use a locative application just to learn about the history of places, even if they are travelling. This is an issue for locative media design because history is at the core of many locative application and locative media projects. On the other hand, it also may provide some insights for designers to integrate history in applications such as runner track apps. Several locative applications are designed for tourists; however, some college students said they believe they learn more when travelling by

talking to people or exploring serendipitously rather than using a smartphone.

- I believe one of the main theoretical contributions of this dissertation is the historical explanation of our *fundamental* need to understand information through maps even before the advent of media as we understand it today (Silva, 2014). As explained in the chapter 1, this argument is based on the work of the French scholar Jean Pierre Vittu (1994) who stated that readers from the late 17th and early 18th centuries perceived news like a maze without consulting analog maps (Vittu). I consider it a contribution to the field of locative media because no other researcher in the field of locative media had made such association yet. Although this finding is not empirical and does not relate specifically to our goals, I still see it as an important contribution, because it was the research path that I took to explore locative media in a very exploratory fashion that enabled me to find those associations showed in Silva (2014).

5.2. Limitations

Taking into consideration the exploratory nature of this work, I can point out a number of methodological limitations:

- **Technology:** The locative stories for this work were produced on laptops and not on the mobile phones. Participants used their smartphones mainly to take pictures of the locations. This happened because for different reasons, depending the group in discussion. The Latinitas girls did not have smartphones, so the only way to expose them to the mobile app of Historypin was to take my own personal tablet to the classroom. The mobile application Historypin was also considered by the college students to be defective, and thus, they avoided it. However, on one hand, this could not be considered a limitation because I asked participants to write lengthy stories, which is difficult to do on tiny keyboards. On the other hand, I do consider this a limitation because the literature on locative media and storytelling is grounded

on the usage of digital mobile devices, such as smartphones, while this current study is not. In this sense, there is a need for further research on the production of locative storytelling when one is not necessarily at the location and uses a laptop computer. It also requires more focus on making locative software much easier and more capable, making stories easier to produce.

- **Data Collection:** A) Participants of the three cases should have been interviewed before taking the locative media training, in a way that would have allowed me to gauge their knowledge and expectations about locative media, storytelling about space and place, and also about their needs. It would also have allowed a better sense of the impact of the training by comparing attitudes and abilities before and after the training. This oversight was caused by the fact that the organizations were responsible for the recruitment of the participants and did not provide me with the participants' information before the classes started. This limitation was most evident in the case of TechComunidad. After the locative media training with the parents of TechComunidad, the participants who finished their stories were interviewed. However, by analyzing the responses, I noticed that the respondents had difficulties understanding that I was not testing them, so they tended to answer the questions as though they were taking an exam. I think this occurred because TechComunidad parents had to take an exam about the knowledge they acquired throughout the program. For this reason, they reproduced this behavior when I interviewed them, although I had explained that they were not being tested.
- The fact that Latinitas children were not interviewed may be also considered a limitation that was caused by ethical constraints. The results could have reached more depth and consistency if they had been given a chance to talk extensively about their experience of crafting locative stories.

5.3. Future research and trends

Taking into account that this research was very exploratory in terms of methods and approach, it is really important to establish new ways and to suggest new paths for research in locative media and locative storytelling using the dissertation's

results. Thus, in this section, I will conclude this dissertation by suggesting some paths to future empirical and theoretical research that can be drawn from this study to further subsequent projects, such as post-doctoral work:

- **To invest in location-based learning in children’s education.** The findings suggested that children have a poor sense of place and consequently, a weak attachment to the place where they live. This is a problem that can be addressed in future research and also by local stakeholders. Recent research has shown that living in an affirmative place, such as a safe neighborhood, is fundamental to achieve upward income mobility (Chetty and Hendren, 2015). This study conducted by Harvard economists Raj Chetty and Nathaniel Hendren (2015) explores how community can influence a child’s future income. The authors found that a child’s chances of stepping out of poverty can improve depending on where they are raised. The study also state that low-income children are most likely to succeed in counties that have less concentrated poverty, less income inequality, better schools, a larger share of two-parent families, and lower crime rates. Boys’ outcomes vary more across areas than girls, and boys have especially poor outcomes in highly-segregated areas. It is clear that for an informally segregated space, such as Dove Springs, this situation is even more complex due to racial segregation. “Counties that produce better outcomes for children in low-income families tend to have five characteristics: lower rates of residential segregation by income and race, lower levels of income inequality, better schools, lower rates of violent crime, and a larger share of two-parent households” (Chetty and Hendren, 2015, p. 7).

This study shows that location-based learning approach has been efficient in raising awareness about place and space among students. Hence, I argue that this would be a starting point to help low-income children in underserved geographical areas to have a better sense of place.

- Moreover, Travis County (Austin) is among the worst counties in the US in helping poor children up the income ladder¹⁰ (Chetty and Hendren, 2015). By

¹⁰ See <http://www.equality-of-opportunity.org/>

investing in the notion of place through locative media and storytelling, these young people and children may be empowered through the poetics of space. River City Youth Foundation, the non-profit that partnered with this research, would be a great hub to conduct further research with children and locative storytelling for two main reasons: 1) The organization supports my research and I am currently working there. Moreover, I have bonded with the local community, which offers me a great opportunity to conduct more research in the community; 2) The main goal of the organization is empower children to help them to go to college. In other words, the organization envisions social, educational and income mobility.

- **To explore the use of space by children in the combination of the use of open data about the area where they live.** The stories produced by children may help pinpoint social issues and enable locals to create solutions. Taking into account that the second generation Latino kids studied here seem to feel disconnected with the place where they live, it is urgent to invest in the enhancement of their sense of belonging and identity through place. In terms of social mobility, studies show that prospects are worse for poor boys than it is for girls. River City Youth Foundation is reversing the trend, as most of the students they are serving currently are males. Because of this disconnection, it would be great to explore the clientele and the resources of the organization to continue the research on how storytelling combined with open data may help the community to understand the place where they live better.
- **Curiosity may be a framework to engage participants with their locality and consequently with the production of locative storytelling.** Psychology studies have found that curiosity improves wellbeing and increases happiness (Kashdan & Steger, 2007; Kashdan, 2009) or that helps us learn (Gruber, Gelman and Ranganath, 2014). This reminds us that curiosity was a framework to engage readership in the late 17th and early 18th century (Kenny, 2004). There is still work to be done on this matter, but the fact is that there exists a deep hole in the local knowledge of Austin residents and locals in general. The curiosity approach (Silva, 2014) offers a way out to explore the opportunity of filling this hole and engaging the residents with their locality through the spread of locative information.

- **Gender theories could also enhance our understanding of the reality of TechComunidad parents.** After all, the overwhelming majority of the adult participants are women, even though the majority of the participants in the youth program are male. At the time of the writing, I am working currently on another round of TechComunidad for River City Youth Foundation, and the trend of female predominance in the program continues. Latina women are the ones who stay home to take care of their children's education, even though they have little education.

The issues that were raised throughout this dissertation gain relevance as locative media and locative technologies (NFC, RFID, sensors and drones) becomes pervasive and informal learning opportunities start appearing in such a way that smartphone users have the chance to learn more about the physical world. The production of stories and geotagging about the underserved, such as Latinos/as immigrants, is something that has been scarcely explored by locative media scholars. Although this dissertation attempted to fill in this gap, it is still important to conduct further research to understand the demands of the contemporary society and a physical space that has been populated with digital locational information.

APPENDIXES

APPENDIX I Locative story I created – In Spanish

La Casa de mis Sueños

Por Cláudia Silva

"En la calle Felisbina Vieira, número 155, cerca del centro público de deportes..." Ésta es la frase que crecí diciendo para explicar donde vivía, en este pequeño pueblo en el centro-oeste del estado brasileño de Minas Gerais. Siempre fue un orgullo decir mi dirección porque, para mí, la ubicación era simplemente la mejor en la ciudad.

Esa calle no tenía nada especial arquitectónicamente, pero era como una extensión de mi espacio privado. Pasaba horas sentada en los escalones del porche. Hablaba con mis vecinos, eran niños como yo, y escuchaba a los pájaros que se anidaban en los varios árboles de la calle. Observaba a cada persona que pasaba por mi calle.

Bajando la calle en la primera esquina, a la derecha, estaba el centro público de deportes y, a la izquierda, una fábrica de jeans, la conocida "Fábrica del Geraldo". Todos los días a las 11 de la mañana, la calle se llenaba de mujeres de todo tipo de complexiones, colores y edades que salían de la fábrica para ir a comer. Algunas subían la inclinada calle en bici, otras se quedaban ahí platicando con sus amigos. Con el tiempo todas esas caras se volvieron conocidas y eventualmente empecé a notar los cambios en sus cuerpos. Notaba sus grandes senos repletos de leche y sus arrugas de cansancio.

A las cinco de la tarde todos los días, oía el silbato de la fábrica que indicaba el final de la jornada laboral. Las mujeres regresaban a sus casas, se iban de mi calle y, al verlas pasar, pensaba: "seguro fue otro duro día de trabajo".

Yo nací en esta casa y viví ahí hasta los diecisiete años. La casa perteneció a mi abuelo. Dicen los que siguen vivos que mi abuelo, que residía en las zonas rurales, compró la casa para que mi madre viviera, trabajara y estudiara en la ciudad. Y sí, mi madre vivió en esta casa, incluso antes de casarse y tener cuatro hijos. Y luego le dijo

adiós al mundo, y el mundo le dijo adiós desde la sala que ella decoró hasta el último rincón. Cortinas, cojines e incluso el suelo; todo fue hecho bajo sus órdenes y a su gusto. Pero antes de eso, recibió a la familia y plantó árboles frutales en el patio grande que teníamos: ahí crecían guayabas, aguacates, chayotes y otras frutas.

Ahí, en ese patio, yo me cubría los brazos con la tierra húmeda y la dejaba secar. Un día, mi padre cubrió todo el suelo con cemento porque en la casa, nadie quería cortar el pasto. Y lo hizo muy bien! Con el nuevo patio nos volvimos más civilizados. Ya no había tierra cubriendo el patio; ahora podíamos lavar el patio con una manguera.

Esta casa tenía cinco habitaciones, tres baños y dos cocinas. También tenía un garaje para dos coches, a pesar de que solo teníamos uno. No todas las habitaciones y cuartos de baño estaban en el interior de la casa. Alguien dijo alguna vez que nuestra casa parecía casa de palomas. Realmente nunca entendí muy bien el comentario...

Las habitaciones no eran grandes. Mis tres hermanos compartieron una habitación por muchos años. Yo era la única niña en la familia y, por esto, siempre tuve una habitación para mí sola. Siempre cerraba la puerta porque no quería que entraran ahí. Yo era una niña! Me convertí en la única mujer de la casa a los nueve años. Trataba de dar órdenes pero nadie me obedecía... bueno, la verdad es que me hicieron caso cuando pintamos la casa con otros colores: solía ser blanca y roja como el barro, y yo elegí los nuevos colores, amarillo y blanco.

Cuando terminé la escuela secundaria tuve que salir de esta casa por razones legales: mi abuelo se había olvidado de "darle" la casa a mi madre. Muchos otros también se fueron de este mundo, pero algunos de nosotros quedamos... Aunque tuvimos que dejar también, no el mundo, pero sí esa casa. Como alguien que ha perdido un gran amor, siempre tuve la esperanza de que algún día podría recuperar la casa, de volver a ella. Me decía que iba a trabajar duro, ganar dinero y comprar esa casa, para vivir ahí con mi familia.

Siempre que sueño con la idea de "hogar", de "estar en casa", sueño con las habitaciones de esa propiedad. Un día, me enteré quién había comprado la casa a mi familia. Era una mujer de unos cincuenta años, vivía sola con su hija adolescente en la cuál yo había vivido por diecisiete años. Y esa mujer era la prima de mi supervisora en un internado que yo estaba haciendo en la universidad en aquel momento. Un día,

entonces, mi supervisora me sugirió tomarme un día para revisar la casa y tomar un café con su prima. Fui. Todo era diferente, ya no era mi casa. No había grandes cambios en la apariencia física de la propiedad, sin embargo mi memoria no correspondía ya con ese lugar. Todo se había evaporado. Casi tres años después de esto, dejé Arcos, dejé Brasil. Decidí explorar el mundo. Hace un año, descubrí que la señora que había comprado la casa también había fallecido en ese lugar. La hija se fue a vivir con unos parientes. Ahora la casa está a la venta, pero ya no deseo comprar la

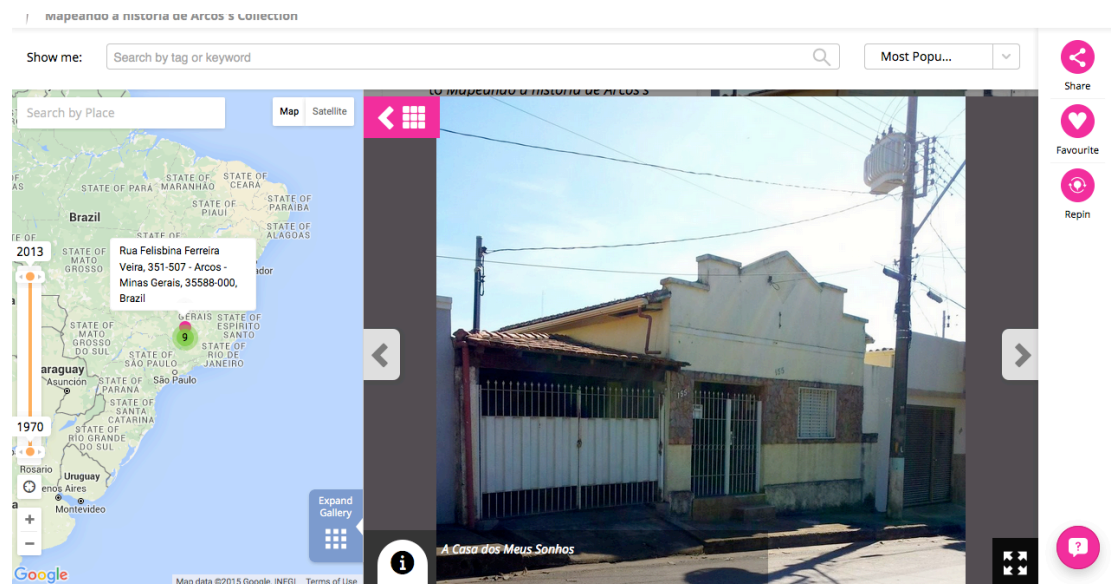


Figure 24. Historypin Screenshot La Casa de mis Sueños

APPENDIX II Locative story I created– In English

The House of my Dreams

Cláudia Silva

On The Street ... 155 Felisbina Vieira, near the sports center... This is the phrase I grew up saying to respond where I used to live in this small town in central Minas Gerais, a state in Southeast Brazil. I was always proud of saying my address, because I considered that location to be the best in town. What made that street so important to me were not its architectural features, but rather the emotional connection I had with it. That street was like an extension of my private space. I used to spend hours sitting on the porch step. I used to speak with my neighbors, kids like me, to listen to the birds that nested in the many trees, and to watch passersby.

On the right street corner, for whom were going up, there was a jeans factory, the well known "Fábrica do Geraldo", and on the left corner was located the public gym with an Olympic swimming pool. It was a huge one! Always at 11 a.m., the street was swarming with workwomen of all shapes, colors and ages. Some climbed the steep street by bike, while others were talking with their friends. I knew their faces very well and I could identify the change in their bodies over time; I remember large breasts full of milk and wrinkled faces. At 5 p.m., they finished working... I heard always the toot the factory, and I used to think to myself: "they are done with one more hard day of work!". The street was swarming with women again at that time.

I was born in this house and lived there until I was 17 years-old. The house belonged to my grandfather. Those who are still alive say that my grandfather, living in a rural area, had bought the house for my mother. Thus, she could live, work, and study in an urban area. It is true that my mother lived in this house even before she got married and gave birth to four children. And in this house, she said goodbye to the world, and

the world said goodbye to her, right there in the room that she decorated every corner. Curtains, cushions and floor were all made by her request. However, before that, she hosted her family and her husband's relatives, grew fruit trees in the large backyard we had: guava, avocado, chayote and many others. In our backyard, I used to play odd games and cover my skin with wet clay and let it dry. One day, my father cemented everything. After all, neither my father nor my brothers wanted to do the gardening. It was good a choice! We became more civilized. Instead of clay, we had a very large hose to wash the yard. And I could no longer cover my body with wet earth, which used to bother everyone at home.

This house had five bedrooms, three bathrooms and two kitchens. It had a garage for two cars, even though my family had only one. In a disorderly manner, not all rooms and bathrooms were indoors. Once, someone said to me that our place looked like a pigeon's house. I have never understood that comment... The rooms were not large. My three brothers shared one bedroom for many years. I was the only girl in my family. For this reason, I always had a room just to myself. I always locked the door because I did not want them to enter my private space inside the house. I was a girl! I became the only woman of the house at age nine. I tried hard to give them orders, but no one obeyed me. Oh, well...the truth is that they took me into account when this house was repainted. I chose the colors: yellow and white.

When I finished high school, we were obligated to leave this house, for legal reasons. My grandfather had forgotten to "give" the house to my mother. Almost everyone left... We had to leave too, not the world, but this home. As someone who is heartbroken, I was always hopeful that one day I could return to that house. I thought I could would work hard, earn money and buy this house, to live there again with my family. Whenever I dreamed of the concept of "home", of "being home", I dream about myself in the rooms of this house. One day, I found out who had bought the house. It was a middle-aged woman, living alone with her daughter. She was my boss's cousin at that time. My boss said he could take me one day to see the house and have a coffee with her cousin. I did so. Everything was different, that was not my home. Although they have not made great changes in the physical appearance of the

property, my memory did not correspond to that. It was all gone. After about three years after this, I left Arcos, I left Brazil. I decided to explore the world. A year ago, I found out that that woman, who bought our house, also said goodbye to the world. The daughter went to live with relatives. Currently, the house is for sale. I no longer want to buy this house. But I keep dreaming about it.

APPENDIX III OPEN-ENDED INTERVIEW GUIDE

1. Tell me about your typical day and how you move around the city (transportation)? How does your family commute?
2. Have you lived always in the same place?
3. How important is local knowledge about your neighborhood and the city for you?
4. How do you learn about local places, their background and what goes on there?
5. What type of local information is most relevant for you?
6. Did the workshop affect or contribute to your sense of place? How?
7. Which aspect of technologies (HistoryPin, tablet itself) do you find useful?
8. What could be added into the design of those apps?
9. Would you use those apps in your everyday life?

APPENDIX IV Consentimiento para Participar en la Investigación (In Spanish)

Título: La creación de un modelo de sostenibilidad para los proyectos de medios locativos

Introducción:

El propósito de este formulario es proveerle información que pueda afectar su decisión de participar o no participar en este estudio de investigación. La persona que realiza la investigación contestará cualquier pregunta que usted tenga. Lea la siguiente información y haga cualquier pregunta que usted tenga antes de decidir si desea participar. Si decide participar en este estudio, este formulario se va a utilizar para registrar su consentimiento.

El propósito del estudio

Se le ha pedido que participe en un estudio de investigación sobre la producción de contenidos locales y el uso de aplicaciones de Internet basados en la localización. Mi objetivo es explorar y proporcionar una mejor comprensión de cómo las tecnologías de localización están agregando una nueva forma para que los usuarios produzcan y consuman información local basada en su ubicación y cómo esto podría cambiar la forma en que la gente percibe su entorno a largo plazo.

¿Qué le pedirán que haga?

Si usted está de acuerdo en participar en este estudio, le pedirán:

- 1) Asistir a un taller, participar en la clase y producir contenido local. Usted será entrenado en el taller con el fin de ser capaz de hacer esto.
- 2) Si usted es mayor de 18 años, también se le pedirá responder a una entrevista abierta sobre su experiencia en el taller.

Los talleres se llevarán hasta una semana y serán organizados por la organización asociada en la que usted está involucrado y también por el investigador.

Su participación será grabada en audio, si usted está de acuerdo con eso.

Note: Usted será grabado en audio.

¿Cuáles son los riesgos por participar en este estudio?

Los riesgos potenciales son mínimos. Tenga en cuenta que soy un estudiante de doctorado, en la Universidad de Texas en Austin, haciendo investigación sobre la información local a través de aplicaciones para dispositivos móviles (smartphones y tabletas) basadas en la ubicación. Una copia de este formulario de consentimiento se enviará a los participantes para verificar la identidad del investigador. El riesgo potencial para los participantes no es mayor que el de la vida cotidiana.

¿Cuáles son los posibles beneficios relacionados con este estudio?

Este estudio presenta una serie de beneficios. En primer lugar, podría empoderar a las comunidades locales y aumentar su sentido de lugar en Austin. También aumentara su autoestima ya que su participación será crítica en un proyecto de investigación doctoral. Por otra parte, este estudio puede generar historias locales que podrían ser incorporados en la página web de un periódico local aprovechando la voz de las comunidades desfavorecidas. Además, los participantes aprenderán las funciones de los dispositivos móviles y la forma de utilizarlos en su vida cotidiana y para enseñárselos a sus hijos como una herramienta de educación. Los participantes podrían beneficiarse de este estudio mediante la comprensión de los servicios y las características que son más útiles para ellos para aumentar su sentido de lugar y el consumo y la producción de información local.

¿Usted tiene que participar?

No, su participación es voluntaria. Puede decidir no participar, o, si comienza el estudio, puede dejar de participar en cualquier momento. El hecho de negarse o dejar de participar no afectará su relación con La Universidad de Texas en Austin de ningún modo.

Si usted desea participar, por favor firme este formulario, y esté de acuerdo conmigo directamente.

Usted recibirá una copia de este formulario.

¿Habrá alguna compensación?

Usted no recibirá ningún tipo de pago por participar en este estudio.

¿Cómo serán protegidas su privacidad y confidencialidad al participar en este estudio?

Este estudio es anónimo y su nombre no será identificado en el estudio. Los participantes no serán identificados por sus nombres reales. Si le citamos o si describimos algo que hizo en uno de los talleres, utilizaremos un pseudónimo en lugar de su nombre real.

NOTA:

Si decide participar en este estudio, usted será grabado en audio. Las grabaciones de audio se etiquetan como "interviews locativemedia". Cualquier grabación de audio será guardada de manera segura y sólo el equipo de investigación tendrá acceso a las grabaciones. Las grabaciones serán guardadas por uno año en una computadora con contraseña, en una oficina cerrada, y luego borradas. Es posible que los datos que resulten de su participación sean usados por otros estudios de investigación o se hagan disponibles a otros investigadores para propósitos de investigación no explicados en este formulario de consentimiento.

¿A quién contactar con preguntas acerca del estudio?

Antes, durante, o después de su participación, usted puede contactar a la investigadora Cláudia Cristina da Silva al (512) 736-7544 o enviar un correo electrónico a silvaclaudia01@gmail.com.

¿A quién contactar con preguntas con respecto a sus derechos como participante de la investigación?

Si usted tiene preguntas acerca de sus derechos o si tiene cualquier descontento con cualquier parte de este estudio, puede contactar, anónimamente si así lo desea, a la Junta de Revisión Institucional por teléfono al (512) 471-8871 o por correo electrónico a orsc@uts.cc.utexas.edu.

Participación

Si usted está de acuerdo en participar, por favor firme este formulario.

Firma

A usted se le ha informado acerca del propósito, los procedimientos, los posibles beneficios y riesgos de este estudio y también ha recibido una copia de este formulario. Usted ha tenido la oportunidad de hacer preguntas antes de firmar, y ha sido informado que puede hacer otras preguntas en cualquier momento. Usted está de acuerdo en participar en este estudio voluntariamente. Al firmar este formulario, usted no está renunciando a ninguno de sus derechos legales.

_____ Estoy de acuerdo en ser grabado/a por audio.

Nombre en letra de molde

Firma

Fecha

Como representante de este estudio, he explicado el propósito, los procedimientos, los beneficios, y los riesgos implicados en este estudio de investigación.

Nombre de la Persona que obtiene consentimiento

Firma de la Persona que obtiene consentimiento

Fecha

APPENDIX V Consent for Participation in Research (In English)

Title: Creating a model of sustainability for locative media projects

Introduction

The purpose of this form is to provide you information that may affect your decision as to whether or not to participate in this research study. The person performing the research will answer any of your questions. Read the information below and ask any questions you might have before deciding whether or not to take part. If you decide to be involved in this study, this form will be used to record your consent.

Purpose of the Study

You have been asked to participate in a research study mainly about **the production of local content and use of location-based Internet applications**. I aim to explore and provide a better understanding of how technologies of location are adding a new way for users to produce and consume local information based on one's location and how it might change the way people perceive their surroundings in the long-term.

What will you to be asked to do?

If you agree to participate in this study, you will be asked to:

- 1) Attend a workshop, participate in the class and produce local content. You will be trained over the workshop in order to be able to do that.
- 2) If you are over 18 years old you will also be asked to respond to an open-ended interview about your experience in the workshop.

The workshops will take up to one week and they will be organized by the partner organization in which you are involved and also by the researcher.

Your participation will be audio recorded, if you agree to that.

What are the risks involved in this study?

The potential risks to this are minimal. Please be aware that I am a Graduate student at UT doing research about local information through location-based apps. A copy of this Informed Consent form will be sent to participants to verify the identity of the researcher. The potential risk to the participants is no greater than everyday life.

What are the possible benefits of this study?

This study presents a number of potential benefits. First, it might empower local communities and enhance people's sense of place in Austin. It also might increase participant's self-esteem, as their participation will be critical for this doctoral research project. Moreover, this study will generate local stories that could be incorporated in a local newspaper website leveraging the voice of disadvantaged communities. In addition, participants will learn the functions of digital mobile devices and how to use them in their everyday lives, gaining skills to teach their children how to use mobile phones and tablets as an educational tool. Moreover, participants might benefit from this study by understanding

the services and features that are most useful for them to increase their sense of place and the consumption and production of local information

Do you have to participate?

No, your participation is voluntary. You may decide not to participate at all or, if you start the study, you may withdraw at any time. Withdrawal or refusing to participate will not affect your relationship with The University of Texas at Austin (University) in anyway.

If you would like to participate, please sign this form, and agree directly with me.

You will receive a copy of this form.

Will there be any compensation?

You will not receive any type of payment participating in this study.

What are my confidentiality or privacy protections when participating in this research study?

This study is anonymous and your name will not be identified in the study. The participants will not be identified by real names. If we quote you, or describe something you did or made in one of the workshops, we will use a pseudonym instead of your real name.

NOTE:

If you choose to participate in this study, you will be audio recorded. Any audio recordings will be labeled as “interviews_locativemedia”, and will be stored during one year after the defense of the dissertation and then erased. The interviews will be transcribed and stored on a password-protected computer, and only the research team will have access to the recordings. Recordings will be kept for one year and then erased. The data resulting from your participation may be used for future research or be made available to other researchers for research purposes not detailed within this consent form.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher Cláudia Cristina da Silva at 512-736-7544 or send an email to silvaclaudia01@gmail.com

Whom to contact with questions concerning your rights as a research participant?

“For questions about your rights or any dissatisfaction with any part of this study, you can contact, anonymously if you wish, the Office of Research Support by phone at [\(512\) 471-8871](tel:5124718871) or email at orosc@uts.cc.utexas.edu.”

Participation

If you agree to participate please sign this form below.

Signature

You have been informed about this study’s purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

_____ I agree to be **audio** recorded.

Printed Name

Signature

Date

As a representative of this study, I have explained the purpose, procedures, benefits, and the risks involved in this research study.

Print Name of Person obtaining consent

Signature of Person obtaining consent

Date

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