Quantifying the Linguistic Landscape: A Study of Spanish-English Variation in Pilsen,
Chicago

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Short Title: Quantifying LL Variation in Pilsen, Chicago

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Abstract

Study of speech and written texts has provided significant insight regarding linguistic variation and its social correlates. Variation in the *representation* or *display* of language, however, remains a relatively understudied phenomenon. With this in mind, we present a quantitative and qualitative analysis of the variation observed in the Linguistic Landscape (LL) of Pilsen, Chicago. A community undergoing perceived processes of gentrification, Pilsen is an active site of economic, sociocultural change as well as newly intensified language contact. To investigate Pilsen's displayed language variation, we implement a series of logistic regression models that analyze the distribution of both language and contextual framing observed on signs in four key areas in Pilsen. In doing so, we present an informed means with which to understand the sociolinguistic context of Pilsen as a community undergoing change and provide a replicable framework for future study of LLs that experience similar dynamics.

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INTRODUCTION

Study of language variation within variationist sociolinguistics has focused on describing the linguistic and stylistic patterns of the ‘real’ use of ‘real’ speakers’ language in specific communities linked to territories to which they politically belong (Labov, 1963; 2001; Tagliamonte, 2012; 2015), revealing a myriad of insights regarding the complex interplay between language, identity and context. In the Spanish-speaking world, language variation and its accompanying social meanings are frequently studied in contact situations where Spanish may be politically regarded as the majority language (Granda, 1999; Choi, 2004; Escobar, 2000; Carvalho, 2014) or, as in the case of the U.S., the minority language (Silva-Corvalán, 1994; Otheguy & Zentella, 2012). Such studies have exhaustively described contact effects on *vernacular variation* and its role in the construction of ‘new’ or ‘authentic’ identities (Wolfram, Kohn and Callahan-Price, 2011). However, little has been discussed regarding the *portrayal* of language in these settings – namely, the representation of languages on display within diasporic contexts. The variation within these ‘new spaces’ of contact deserve special attention to deepen our understanding of language contact itself; the social processes at work in these communities and the role of Linguistic Landscape research in providing insights for the field of language variation and change. The present study contributes to this endeavor by documenting a specific case of language display within an urban bilingual community in the United States and by providing a replicable methodological framework that may be replicated in similar contact situations.

To do so, we present an analysis of displays of Spanish and English in Pilsen, a predominately Hispanic neighborhood located in the lower southwest region of Chicago,

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Illinois. The neighborhood of Pilsen is frequently characterized by residents and outsiders as experiencing gentrification. Traditionally, gentrification is defined as the “transition of inner-city neighborhoods from a status of relative poverty and limited property investment to a state of commodification and reinvestment” (Ley, 2003, 2527; c.f. Smith, 1996), however Freeman (2006) and others have pointed out the definition of gentrification should also take into account the resulting displacement and cultural upheaval experienced by more established residents (Atkinson, 2004). As ‘reinvestment’ in urban spaces escalates around the world urban neighborhoods are undergoing rapid change economically and culturally. Pilsen is no exception: once characterized for its long-established Hispanic community, recent increases in average rents and numbers of white residents have caused tension and stress for the Pilsen community. An example of this is presented in Figure 1, a flier criticizing “white hipsters” (understood as harbingers of gentrification) and the perceived negative consequences of their presence.

Figure 1. Gentrification Effects in Pilsen¹

The widely-perceived threat of gentrification in Pilsen (Betancur, 2011; Wilson et al. 2004) presents an opportunity to study the relationship between language, identity and

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place and the larger social effects of urban re-territorialization on local bilingual communities. To this end, the present study focuses on two central questions: 1) is language representation correlated with localized socioeconomic changes? and 2) what does the variation observed reveal about the relationship between English and Spanish in a community undergoing such change? In addressing these questions, we follow a dual quantitative and qualitative approach to isolate significant aspects of language occurrences and representations (implementing Goffman's conception of frame analysis; c.f. Goffman, 1974; Kallen, 2010; Coupland, 2012) and situate our discussion of language display within authentication processes (Bucholtz, 2003). In so doing, we show how the Linguistic Landscape may be analyzed to generate considerable insights regarding the dynamic sociolinguistic context of a community experiencing gentrification as well as reference to the impact of gentrification on language variation in general.

PILSEN, CHICAGO

Pilsen is a neighborhood located in the Lower West side of Chicago. Colloquially, the name Pilsen is used to refer to most of the Lower West side, encompassing the area between 18th Street to the North, W. Cermak Road to the South, Halsted Street to the East and Western Avenue (or Damen Avenue) to the West (see Figure 2).²

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Figure 2. Pilsen, Chicago³

Inhabited by German, Irish and Czech immigrants in the 19th century,⁴ Pilsen has maintained a majority of Hispanic residents since the 1950s. According to the 2013 U.S. Census, approximately 20,691 people live in Pilsen (census tracts 3103 – 3109, see map in Figure 3). 79.47% of the population is Hispanic or Latino, followed by a 13.29% white population and a small presence of black or African American and Asian residents (4.55% and 1.44% respectively).⁵

According to the 2013 U.S. Census, the median household income in the 3109 area (the western area of Pilsen) was \$32,692; followed by \$38,062 in 3108; \$32,500 in 3107; \$30,920 in 3106; \$32,316 in 3105; \$42,989 in 3104 and \$50,324 in 3103.⁶ Similar distributions are also found in median property values reported in the 2013 U.S. Census, a map of which is shown in Figure 3: higher property values in 3103 and 3105; lowest values in 3106 and mid-range values in the far west (3107 – 9).

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Figure 3. Map of Pilsen Median Property Values⁷

As suggested by the distribution of incomes and property values, there appears to be a divide of sorts West and East of Ashland Street (the street separating 3106 and 3107). West of Ashland property values remain relatively homogenous and stable (ranging from \$70,000 to \$130,000 – denoted here in light yellow and green) while east of Ashland exhibits more variation. The far east shows the most expensive areas to purchase a house (\$170,000 or greater – denoted in dark blue), prices gradually decreasing as you move west (\$70,000 or less – denoted in yellow). Increase of property value (and rent) in these areas is frequently attributed to gentrification and the increase of white residents in this part of the neighborhood (Schmich, 2015; Bernard 2015).

Comparable patterns are also seen in resident demographics: 2013 census data reports West of Ashland (tracts 3107 – 3109) to have relatively homogenous ratios of Hispanic or Latino residents to white residents (75.46% Hispanic or Latino to 16.42%

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white for 3107; 88.93% Hispanic or Latino to 10.32% white for 3108 and 85.02% to 10.86% for 3109). East of Ashland, however, shows a bit more variation, with 60.64% Hispanic or Latino to 26.19% white in 3103; 71.96% Hispanic or Latino to 19.85% white in 3104; 93.89% Hispanic or Latino to 5.4% white in 3105 and 69.96% Hispanic or Latino to 14.67% white in 3106. While we see smaller degree differences in the West compared to the East, it is also important to note that *all* census tracts saw an increase in white residents and a decrease in Hispanic or Latino residents from 2000-2013, a fact congruent with community perceptions of gentrification (see Table 1).

Table 1. Demographic Variation in Pilsen 2000 - 2013

	2000	2010	2011	2012	2013
3103					
<i>Hispanic or Latino</i>	68.41%	64.61%	62.26%	58.95%	60.64%
<i>White</i>	22.01%	31.55%	31.4%	30.45%	26.19%
<i>Black or African American</i>	5.73%	3.83%	4.27%	5.24%	5.11%
<i>Asian</i>	2.03%	0%	0.22%	2.84%	5.46%
3104					
<i>Hispanic or Latino</i>	91.54%	76.13%	74.61%	72.41%	71.97%
<i>White</i>	6.29%	12.08%	13.87%	14.82%	19.85%
<i>Black or African American</i>	1.97%	11.77%	10.27%	9.76%	5.25%
<i>Asian</i>	0.06%	0%	0.88%	2.79%	2.16%
3105					
<i>Hispanic or Latino</i>	93.54%	95.87%	96.30%	94.58%	93.9%
<i>White</i>	3.83%	4.13%	3.53%	4.76%	5.41%
<i>Black or African American</i>	2.01%	0%	0%	0%	0%
<i>Asian</i>	0.13%	0%	0%	0%	0%
3106					
<i>Hispanic or Latino</i>	91.77%	72.19%	69.17%	71.51%	69.95%
<i>White</i>	3.99%	15.87%	15.85%	14.90%	14.67%
<i>Black or African American</i>	3.38%	6.86%	8.72%	7.97%	10.35%
<i>Asian</i>	0.30%	1.93%	2.85%	2.59%	2.37%

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3107					
<i>Hispanic or Latino</i>	93.94%	73.55%	86.72%	85.76%	75.46%
<i>White</i>	4.28%	22.69%	8.5%	9.49%	16.42%
<i>Black or African American</i>	1.23%	3.22%	4.22%	3.84%	6.78%
<i>Asian</i>	0.17%	0.54%	0.55%	0.59%	0.84%
3108					
<i>Hispanic or Latino</i>	93.35%	89.34%	89.21%	89.9%	88.94%
<i>White</i>	5.36%	10.15%	10.16%	9.39%	10.33%
<i>Black or African American</i>	0.65%	0.51%	0.63%	0.7%	0.73%
<i>Asian</i>	0.13%	0%	0%	0%	0%
3109					
<i>Hispanic or Latino</i>	92.95%	90.00%	86.64%	87.64%	85.02%
<i>White</i>	5.51%	6.40%	8.72%	8.89%	10.86%
<i>Black or African American</i>	0.54%	1.36%	1.5%	1.52%	2.19%
<i>Asian</i>	0.22%	0.56%	0.84%	0.90%	1.0%

An example of community reaction to such shifts are echoed in the flier in Figure 1 addressing “white hipsters”: “you are ... displacing people of color ... this is not your art community to think so IS RACIST”. This reference to an “art community” likely refers to the strong connection between Pilsen’s art (consisting of a multitude of murals, art galleries, community centers and museums) and a sense of the ‘authentic’ Pilsen community. Pilsen is Chicago’s largest art district, with a rich history of Mexican and Mexican-American culture and art. Pilsen’s National Museum of Mexican Art (located on West 19th street) frequently hosts temporary collections, but its permanent exhibition and showcase is “Mexicanidad: Our Past is our Present” – an excellent indicator of the collective sense of heritage and its importance in the Pilsen community. Drawing from the cultural theorist perspective on memory and identity, this strong link between identity and heritage can be characterized as nostalgic within the diasporic setting of Pilsen (Spitzer, 1999).

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In representations of ‘Mexican-ness’ and its significance in the community of Pilsen, we find reference to the nostalgic imagined past as key in constructing a type of localized authenticity. This authenticity is also constructed through the cultivation and preservation of Spanish: according to the 2010 U.S. Census, Pilsen is home to numerous educational institutions that offer dual language programs or some type of bilingual education (13 elementary schools; five high schools and a community college).⁸ In 2000, 83.82% of Pilsen spoke Spanish at home and 15.06% only English, and while the presence of Spanish at home has decreased according to the 2013 census to 72.24%, it remains the main language spoken in the neighborhood (English-only households at 25.43%). Pilsen’s sense of shared Mexican heritage is seen to be cultivated and constructed through programs at various schools and community organizations as well as artistic representations within the landscape itself (chiefly through large murals). We find perceptions of identity in Pilsen (what Pilsen is and who belongs in it) to be inextricably linked to such institutions as the types described that actively celebrate and promote a sense of collective Mexican heritage – a process in which the Spanish language plays a significant role.

THE STUDY

To assess the effects of urban re-territorialization on this bilingual community, we documented 425 signs located in five different areas of Pilsen in March 2014. Following Backhaus (2007), we define a sign as “any piece of text within a spatially definable frame” (66) and recorded signs that were visible from the perspective of a passerby on the sidewalk. While this approach may have left out smaller signs (such as stickers or

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business cards) present in Pilsen's LL, we follow the point brought up in Huebner (2009) and re-addressed in Blackwood (2015) that it is problematic in a quantitative analysis to assign "equal weight" to significantly less visible signs (e.g. stickers) and larger signs (e.g. billboards or large shop awnings) (Huebner, 2009, 71). We did not include names on houses or street name signs (following Edelman and Gorter, 2010), nor count signs produced by official government bodies (e.g. street parking information signs, official bus stop signage). These so-called "top-down" signs (Ben-Rafael et al., 2006) were not included chiefly due to their relative low frequency in areas surveyed and because this study focuses primarily on "bottom-up" productions of commercial or private entities in which localized processes of language representation are made more salient.

Each observed sign was then coded for three variables: language, presented context (what we will refer to as 'frame') and location. Language of the sign was assessed according to the sign's "code preference", that is, the language used to express the main or most relevant information in a sign (Scollon and Scollon, 2003, 119). 'Frame' refers to a qualitative assessment we employed to describe the different points of view in which Spanish and English were observed to be displayed. We use Goffman's frame analysis (1979), a common qualitative framework employed in LL literature (c.f. Kallen, 2010; Coupland, 2012)⁹ and operationalize it for quantitative study aligned with variationist sociolinguistic methods (Tagliamonte, 2012). A series of binomial logistic regressions were performed to gauge the significance of location in predicting frame and language instances as well as the significance of frame in predicting language use (Field et al. 2012; Paolillo, 2002). Before we report the relationship of location, language and

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frame we will first discuss frame analysis as a method within LL study and the process by which we operationalize frames for quantitative analysis.

LINGUISTIC LANDSCAPES AND FRAME ANALYSIS

The present study is grounded in the assumption that the Linguistic Landscape (LL) constitutes a ‘visual ideology’. The most common definition of an LL comes from Landry and Bourhis’ seminal 1997 paper, which describes the LL as “the visibility and salience of languages on public and commercial signs in a given territory or region” (23). A more nuanced definition which takes into account the inherent ideological representations found in LLs is provided in Jaworski and Thurlow (2010): “any (public) space with visible inscription made through deliberate human intervention and meaning making” (2). LL study examines the relationship between specific signs and their social context: signs, and their content, are thus understood as symbolic or ‘objectifying’ both in their ability to communicate a message to the viewer as well as the potential higher-ordered indexical meanings encoded in messages such as language choice; script choice and other semiotics (colors, images, etc.) (Coupland, 2012; Cenoz & Gorter, 2006).

A point of central concern in the study of Linguistic Landscapes, therefore, are the subjects or actors from whom and to which signs may communicate these many layered meanings. From its beginnings as a proposed component with which to evaluate an area’s ethnolinguistic vitality (Landry and Bourhis, 1997), the LL has been seen as a way to observe some of the language attitudes and practices of a community (Pons Rodríguez, 2012; Gorter, 2006). Importantly, the LL is not positioned as a direct indicator of language use in other domains, as there are often discrepancies in the degree

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of display vs. other forms of discourse (Lou, 2016; Hult, 2014; Tufi, 2013; Barni & Vedovelli, 2012). Rather, study of the presence of language(s) on display is understood as “one approach to understanding better attitudes towards that language” (Blackwood, 2015, 39). This perspective is also supported by research on the role of the *perceived* LL on resident language attitudes. Studies on the perception of Linguistic Landscapes in the U.S. among Anglo and Hispanic residents, for example, have found that the more *perceived* Spanish present in an LL, the less favorably Hispanic participants rate Anglo-accented speakers (Dailey, Giles & Jansma, 2005) and a lower likelihood for Anglo participants to support restriction of immigrant rights (Barker & Giles, 2003). Our aim in studying the LL of Pilsen, therefore, is to contribute to a growing understanding of the different subjective perspectives and attitudes towards the languages present in this rapidly changing neighborhood by tracking how often, where and how they are represented.

One method of categorizing and analyzing the ‘how’, or the configuration of potential higher-ordered indexical meanings embedded in a sign is through Goffman’s concept of ‘frames’ (Kallen, 2010; Jaworski & Yeung, 2010; Coupland, 2012). While Goffman (1974) does not provide a clear definition of what exactly frames themselves consist of, frames are conventionally understood as a means of unpacking *context* (Scheff, 2005; Kallen, 2010). We follow Scheff’s (2005) definition of frames as the abstract representation of a word, phrase or proposition that defines recursive levels of mutual awareness. In essence, frames are a way of characterizing the abstract way interactants answer the question “What is it that is going on here?” (Goffman, 1974, 46).

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Frames are therefore used in LL study to describe categories of abstract representations (achieved through words, phrases, images, colors) that construct a context for the viewer.

Based on this definition, we view frame analysis as closely linked to Bucholtz & Hall's (2005) notion of *intersubjectivity*, which views frames as a representation of how humans understand and contextualize experience. It is important to note that constant 'mutual' awareness in this process is not assumed – certain frames might evoke different contexts for different viewers. Therefore the goal of frame analysis in LL is not to catalog all possible sign intentions and interpretations – rather, frames are employed in order to highlight particular 'points of view' and discuss the process by which these 'points of view' construct contexts in the communities they are observed. This understanding is echoed in application of frames to study spoken discourse: frames as different points of view that add up to a particular contextual structure needed to understand a "strip of discourse" (Scheff, 2005, 384).

Previous LL frame analytic studies have discussed specific sign frames both in isolation and in terms of the close relationship they have with one another in building contexts for interactants. Coupland (2012), for example, examines representations of Welsh bilingualism that show commodification of Welsh on public signage, one frame commodifying Welsh for tourist purposes (exotifying the language for outsiders) and another for "nationalist resistance" (Welsh commodified as a symbol for localized ethno-nationalism). Both frames (as well as the other three Coupland discusses) build unique contexts, however they are all jointly complicit in structuring the overall context of Welsh's visual public representation, and in turn the sociolinguistic context of Wales itself.

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The use of frames provides a more nuanced and comprehensive means with which to describe and catalog the semiotic variation on display than simply noting the language used, and has served as an effective method for in-depth qualitative LL analyses (Kallen, 2010). Understanding frames as an important tool in capturing the sociocultural dynamics on display, we adapt the frame-analytic framework to variationist methods: using ‘Frame’ as a countable variable and employing statistical analyses. Additionally, instead of counting mutually exclusive frames, as have been discussed in previous LL literature (Kallen, 2010; Coupland, 2012), we account for cases of hybrid frames in which *multiple* concurrent points of view are observed within one sign. Beginning with four main categories of frames of Spanish and English, we also account for signs that show aspects of two or more of these categorical frames.

In so doing, we note that frames within a landscape can be productively thought of as occupying different points on a scale – in the case of Pilsen, frames observed are argued to represent different positions on a continuum of the authentic. When considered at a larger community-wide level, all points and positions on display are of course in dialogue as to what is authentic for the Pilsen context, however when viewed in individual signs, we understand frames in terms of a linear scale. This framework is depicted in Figure 4.

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Figure 4. The Frame Analytic Approach

In viewing the signs of Pilsen in this manner, we are able to both recognize the dialogic nature of frames on a community-wide scale, and isolate these features on an individual basis so as to study their distribution with statistical methods.

FRAMES OF AUTHENTICATION

To discuss the various points of view on display in Pilsen, we employ Bucholz's (2003) discussion of authentication processes. While other social processes are undoubtedly at work within Pilsen's LL, we found contextualizing Pilsen's signs within different representations of the 'authentic' provided an effective account of Pilsen's current socio-cultural dynamic: a (now slowly decreasing) majority Hispanic community that cultivates a strong sense of Mexican and Latin American heritage that has found itself confronted by new residents, businesses and investment that are not perceived as sharing or appreciating this culture. Ideas and understandings of Pilsen's 'culture', as well as the very concept of culture in general are inextricably tied to notions of authenticity and identity. What 'counts' as an 'authentic' representation of a culture and who exactly belongs to it is a social process – conceptions of the 'real' Pilsen and 'real' Pilsen residents are regarded as the outcome of constantly negotiated social practices of varying congruence. We are therefore wary of labeling one type of sign or one instance of Spanish or English use as more 'authentic' than another and instead describe how different *types* of authenticity are seen to arise in the semiotics of signs within the sociopolitical conditions in Pilsen. Thus, we propose four different frames of authenticity construction: Recent Immigrant; Familial; Established and Alternative.

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In describing these different ‘points of view’ of authenticity construction, we note the importance of recognizing our engagement in *strategic essentialism* (Spivak, 1988; Bucholtz, 2003). Our goal in presenting these essentialized categories (e.g. a category of recent immigrants or established community members) is to bring attention to the different sociolinguistic processes on display in Pilsen. Our argument is not that all individuals in Pilsen share these points of view nor, most importantly, *identify with* these categories – simply that these terms provide a way to capture observed salient points of view on display and the means with which to discuss the relationships and roles these frames perform within a community undergoing such social and economic shifts.

The frame of Recent Immigrant describes signs aimed at the recently immigrated population of Pilsen (depicted as immigrated from Mexico or other areas in Latin America). This frame is characterized by messages pertaining to immigration and related concerns (such as lawyers and income tax filing). Use of *abogados* ‘lawyers’ and *inmigración* ‘immigration’ is prevalent in signs that construct this frame, as well as mention of either translations or bilingual services (*servicios bilingües* or *traducciones*). Examples are provided in Figure 5.

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Figure 5. Example of a Recent Immigrant Frame

An additional common aspect of these signs, shown as well in Figure 5, is the use of the colors red, green and white – symbolic of the Mexican flag. We characterize these semiotic features as working to construct a type of authenticity related to a specific group of new arrivals in Pilsen: businesses and services who engage in presenting an image of authenticity perceived to be attractive or of value to recent immigrants presumably originating from Mexico or other parts of Latin America.

The second frame, Familial, is understood to depict an authenticity grounded in familial or ethno-national heritage. Three features characterize these signs: use of place names in Mexico or Latin America; specification of products as originating from places in Mexico or Latin America (e.g. *Mariscos al Estilo Nayarit* ‘Nayarit style seafood’) and use of family names, commonly with the genitive case marker ‘’s’. Figure 6 provides examples of Familial frame signs.

Figure 6. The Familial Frame

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The authenticity expressed in these signs is achieved through direct reference to a heritage of some sort – either through evocation of a place or family name. The authenticity cultivated in these frames can also be described as drawing on a sense of a “collective memory” of diaspora, documented in other LL studies of diasporic communities (Jaworski & Thurlow, 2010). As shown in Figure 6, *Luciano’s Carniceria y Licoreria* ‘Luciano’s Butcher Shop and Liquor Store’, genitive ‘’s’ suggests a familial tie while use of Mexican flag colors underscores a sense of authenticity rooted in national origin. This is echoed in the second sign depicted, *Dulceria Lupitas – Mexican Candy – Dulce Mexicano* ‘Lupita’s Candy Store – Mexican Candy’, with use of genitive ‘’s’ as well as reference (this time more explicit).

It is important to note that we did not find any signs that categorically fit into the Familial frame, instead finding aspects of the Familial frame accompanying other ‘points of view’. We include it as one of our four base categories to recognize a salient aspect of signs observed as well as a common theme of literature surrounding diasporic communities (Hall, 1994 Jaworski & Thurlow, 2010). The Familial frame *is* present in Pilsen, however the signs in which it is observed also feature other elements from other authentication strategies discussed.

The Established frame is understood to express an authenticity tied to perceived long-time residence in Pilsen. These types of signs are commonly employed by institutions such as schools, churches or retail stores (such as hardware, liquor, clothing or shoe repair stores, bakeries and restaurants). Common flourishes on Established framed signs are phrases such as “since (year)”, mention of Pilsen (“Pilsen’s Best X”) or explicit reference to family services – examples of this are shown in Fig. 7.

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Figure 7. The Established Frame

The last categorical frame discussed, the Alternative frame, presents an authenticity constructed using semiotic resources associated with current ‘hip’ or ‘cool’ trends. The best way to describe the type of authenticity cultivated in these signs is through reference to hipsters and hipster style – hipster is a term referring to a subculture usually understood as consisting of younger college-aged (as well as predominately white – particularly in the Pilsen context) individuals. What exactly the term ‘hipster’ describes varies and is difficult to pin down. Originally used to describe individuals with an interest in nihilistic and anti-establishment aesthetics and behaviors such as smoking American Spirit brand cigarettes, wearing clothing considered by mainstream fashion as ‘ugly’ or ‘low-culture’ (e.g. crewneck sweatshirts depicting oil paintings of wolves howling at the moon or large, thick-rimmed eyeglasses), the hipster label and definitive aspects of the

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hipster subculture have been subsumed into contemporary mainstream styles and trends (Hendlin et al., 2010). Other defining characteristics of contemporary hipster-hood include patronage of local art and music scenes as well as engaging in recent trends of ‘back-to-basics’ consumerism (buying organic food, do-it-yourself projects and locally produced products and cuisine).

As shown in the flyer in Figure 1, hipsters are also the perceived harbingers of gentrification. Discourse within Pilsen and in other gentrified neighborhoods (e.g. the Mission District in San Francisco; Brooklyn, New York) frequently criticizes hipsters as appropriating local ethnic traditions and products while forcing local people and establishments out (Schmich, 2015). Despite the apparent push-back to hipsters and hipster lifestyle, signs were observed in Pilsen that appealed to it. The Alternative frame therefore describes a presentation of local authenticity that is couched in terms congruent with the hipster aesthetic: use of words such as ‘local’, ‘organic’, ‘healthy’ as well as the hip ‘re-packaging’ of local products or culture. Two examples of Alternative framed signs are shown in Figure 8.

Figure 8. The Alternative Frame

Like all the other frames mentioned, categorization of signs into the Alternative frame does not mean that all viewers of such signs will interpret them in an identical

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fashion – rather, our discussion of different types of observed frames highlights the observed processes by which varying constructions of the authentic are achieved in Pilsen’s LL.

In order to capture as accurately as possible the variation on display in Pilsen, we accounted for signs that shared different frame characteristics. One important example of this was the Established Familial frame, found in signs that were observed to employ stylistic characteristics referential to Mexican-born U.S. citizens or residents of Pilsen of Mexican heritage in framing their products or services. The construction of authenticity observed in these signs were found to be rooted in simultaneity, or the simultaneous claim to more than one identity (Woolard, 1998). In this frame, authenticity is constructed using both Mexican *and* American allusions, referencing established community members within an American neighborhood who also maintain an imagined Mexican past. Figure 8 provides examples of this frame. The first, a bakery sign, advertises both desserts of Mexican origin (*Tres Leches* cake; *Pudin*) and more traditionally American treats (*German Chocolate* cake; *Cheesecake*).

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Figure 9. The Established Familial Frame

This simultaneity is echoed in the second example, a barber shop sign. This sign employs the conventional semiotics of an American barber shop (the ‘candy stripe’ rotating barber pole in red, white and blue) with the traditionally Hispanic name *Gabriel* and the genitive ‘s’.

Additional hybrid or scalar frames observed include instances of Alternative Established; Alternative Established Familial; Alternative Familial; Established Familial Recent Immigrant and Established Recent Immigrant.

Co-present and in constant dialogue with the authentication processes on display in Pilsen’s LL are processes of *commodification*, or the transformation of different forms of value (here primarily social) into economic value (Kockelman, 2006). As Linguistic Landscapes, especially the LLs of primarily commercial areas are assumed at some level to be “market-driven”, or geared to attract the most profitable attention as possible (Edelman & Gorter, 2010; Cenoz & Gorter, 2009), commodification is ever-present, as the social value of language and other semiotics are manipulated to attract attention, interest and, hopefully, clientele (Leeman & Modan, 2010). While we maintain authentication and commodification are separate processes, within the LL they are

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closely intertwined, as to construct the authentic in a commercial sign is to simultaneously commodify it.

LANGUAGES OF PILSEN

The second feature of interest in Pilsen's LL was the language used on observed signs. Following Scollon & Scollon (2003), signs were categorized according to "code preference", that is, according to gradations of what language was used to communicate the majority of or most prevalent information (119-33). This resulted in five categories: English only (e.g. *Your Neighborhood Market Cafe*); mostly English with some Spanish (*Silver Coin Lavanderia – Dry Cleaning – Drop-off Service*); Equal Translation (*Healthy Living – Vida Sana*); mostly Spanish with some English (*¡Consulta Gratis! – Abogado de Inmigracion – Asociados de Mexico – Support Services – Midwest Center for Mediation* 'Free consultation! Immigration Lawyer; Associates of Mexico') and Spanish only (*Se Solicita Estilista* 'Stylist Wanted').

LOCATION

To investigate the relationship between language, frame and place we focused on five main areas in Pilsen: three main commercial streets and two residential areas. These are depicted in map of Pilsen in Figure 10. Elongated circles represent streets investigated (West 18th street; East 18th street; West Cermak Road) and rounder circles denote residential areas (the area west of Ashland Avenue and the area east of Ashland Avenue).¹⁰

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Figure 10. Map of Areas Studied¹¹

As we were interested in investigating the relationship between language representation and gentrification processes, we chose areas that are representative of more and less socio-economic change, both from the technical perspective (i.e. defining gentrification as increased property investment and increased average income of residents) as well as community perceptions of gentrified parts of Pilsen. We chose Ashland Avenue as a divider between more gentrified residential and commercial areas (east of Ashland) and more stable, established areas (west of Ashland). Our hypothesis was that we would find increased likelihood of Spanish and Established or Established Familial frames in less gentrified areas in the west and increased likelihood of English and Alternative framed signs in the east.

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RESULTS AND ANALYSIS

Overview

To ascertain the relationship between gentrification processes and language representation, we coded 425 signs for language, frame and location. The majority of recorded signs were unsurprisingly found in commercial streets (21.3% of all signs in West 18th; 16.7% in East 18th; 42.2% in West Cermak) compared to more residential areas (15.5% in West Ashland and 4.3% in East Ashland) (see Table 2).

Table 2. Signs by Street

West 18 th	West Ashland	West Cermak	East Ashland	East 18 th
92/425 21.3%	67/425 15.5%	176/425 42.2%	17/425 4.3%	73/425 16.7%

As mentioned, for frames we accounted for instances of hybrid frames (e.g. Established Familial; Alternative Established) instead of only categorical labeling. The benefits of this approach are depicted in Tables 3 and 4: Table 3 depicts results of categorical descriptions which only accounted for 35.8% of the variation in the data. By using a scalar approach, that is, allowing for overlap between categories, we are able to describe 100% of the variation observed.

Table 3. Categorical Coding Results

Alternative	Established	Familial	Recent Imm.	Total
74/425 17.4%	47/425 11.0%	0/425 0.0%	31/425 7.3%	152/425 35.8%

Table 4. Scalar Coding Results

Alt.	Alt. Est.	Alt. Est. Fam.	Alt. Fam.	Est.	Est. Fam.	Est. Fam. RI.	Est. RI	RI	Total
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74/425	54/425	13/425	6/425	47/425	46/425	29/425	125/425	31/425	425/425
17.4%	12.7%	3%	1.4%	11.0%	10.8%	6.8%	29.4%	7.3%	100%

To analyze the relationship between location, frame and language we performed a series of nine binomial logistic regressions in *R* (R Core Team Development, 2015).

Common within variationist sociolinguistics, logistic regression models provide predictions of categorical outcomes based on two or more predictor variables or factors (Wiechmann & Lohmann, 2013; Field et al. 2012). For this study, we used a series of binomial logistic regression models to predict whether or not a categorical response would occur based on location as well as frame. The base form of each model is illustrated in the following equation:

$$\log(p / 1 - p) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k$$

in which x_i represents the value of predictors investigated and β_i the coefficients or respective weights of these factors in predicting the presence or absence of the outcome.

The binomial logistic regression models performed investigated potential correlations between location and type of display (location as predictor and language or frame as response respectively). We argue the incorporation of such analyses is a step forward for the study of Linguistics Landscapes, as it provides further insights for the study beyond the distribution itself (i.e. allows us to isolate significant predictors within the distribution and the strength of factors as predictors) at hand as well as a replicable framework for future work in studies of variation within LLs.

Following Goodman (2008), we use the term ‘significant’ not to imply that our findings necessarily *prove* anything about Pilsen – rather, we view the *p* value as *advisory*, in that significant correlations isolated by models are flagged as worthy of further quantitative and qualitative investigation. The results at this stage, therefore, are

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considered as a preliminary account of patterns of sociolinguistic variation within Pilsen's LL. When paired with qualitative assessment, however, we argue these findings offer a more nuanced and informed perspective on the significant structural elements of an area's socio-cultural context as seen through the LL.

Location and Language

The first series of binomial logistic regression models focused on the distribution of languages in streets. A graph of the distribution of languages in streets is shown in Figure 11.

Figure 11. Distribution (%) of Languages in Areas Studied

A cursory look at the distribution does not suggest Spanish is more common in the one area of Pilsen compared to another making potential differences and their magnitude difficult to ascertain. To analyze further the distribution of languages we ran a binary logistic regression for each of the five language types, all corresponding to the equation mentioned above,

$$\log(p / 1 - p) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k$$

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in which East 18th street was selected as β_0 (the intercept) and x_i East Ashland, West 18th, West Ashland and West Cermak. A summary of results are presented in Table 5, showing the response variable investigated in each model, predictors, coefficients (β), standard errors (SE), z values and p values [$\Pr(>|z|)$] respectively.

Table 5. Summary of Location and Language Model Results

Response	Predictor	β	SE	z value	$\Pr(> z)$
<i>English</i> (Model 1.1)	<i>Intercept (E. 18th)</i>	2.83	0.60	4.68	< 0.001 ***
	<i>East Ashland</i>	-0.41	0.86	-0.48	0.63
	<i>West 18th</i>	-0.23	0.49	-0.48	0.63
	<i>West Ashland</i>	0.54	0.51	1.06	0.29
	<i>West Cermak</i>	0.33	0.45	0.72	0.47
<i>English w. Spanish</i> (Model 1.2)	<i>Intercept (E. 18th)</i>	-3.37	0.81	-4.17	< 0.001 ***
	<i>East Ashland</i>	0.61	1.02	0.59	0.55
	<i>West 18th</i>	-0.07	0.59	-0.11	0.91
	<i>West Ashland</i>	-0.46	0.63	-0.73	0.46
	<i>West Cermak</i>	-0.97	0.59	-1.64	0.10
<i>Equal</i> (Model 1.3)	<i>Intercept (E. 18th)</i>	-21.14	1208.15	-0.02	0.99
	<i>East Ashland</i>	1.32	1.50	0.88	0.38
	<i>West 18th</i>	1.35	1.17	1.16	0.25
	<i>West Ashland</i>	1.86	1.15	1.62	0.11
	<i>West Cermak</i>	2.28	1.08	2.11	< 0.05 *
<i>Spanish w. English</i> (Model 1.4)	<i>Intercept (E. 18th)</i>	-5.29	1.16	-4.56	< 0.001 ***
	<i>East Ashland</i>	1.61	1.00	1.61	0.11
	<i>West 18th</i>	1.25	0.70	1.79	0.07
	<i>West Ashland</i>	1.35	0.70	1.92	0.06
	<i>West Cermak</i>	0.94	0.66	1.43	0.15
<i>Spanish</i> (Model 1.5)	<i>Intercept (E. 18th)</i>	-3.68	1.03	-3.57	< 0.001 ***
	<i>East Ashland</i>	-1.11	0.83	-1.34	0.18
	<i>West 18th</i>	-0.67	0.48	-1.40	0.16
	<i>West Ashland</i>	-1.57	0.51	-3.08	< 0.01 **
	<i>West Cermak</i>	-0.99	0.42	-2.34	< 0.05 *

Only Model 1.3 (Equal Translation) and Model 1.5 (Spanish) show any significant factors. Model 1.3 suggests West Cermak is a significant predictor of signs with equal translations of Spanish and English ($p < 0.05$). Odds ratios calculated for

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Model 1.3 show signs with Equal Translation are 9.76 times more likely to occur on West Cermak than the intercept (East 18th), which implies signs with equal representation of Spanish and English are more likely to occur in less gentrified commercial areas. Model 1.5 isolates West Cermak and West Ashland as significant predictors of Spanish, however unlike in Model 1.3, Spanish is found to be *less* likely to occur in West Cermak and West Ashland (the less gentrified residential area) than East 18th (0.37 times less likely for West Cermak and 0.21 times less likely for West Ashland). This suggests that in less gentrified areas, there is a significantly less likelihood of finding Spanish-only signs when compared to a more gentrified street. While the finding of less Spanish in less gentrified areas may be surprising (based on community understandings of gentrification threatening Spanish's linguistic vitality), this finding is also congruent with other studies on Spanish presence within landscapes in the U.S., which have shown a predominance of English despite large numbers or majorities of Spanish-speaking residents living in areas surveyed, reproducing and simultaneously providing support for language ideologies that favor English over Spanish in the U.S. public sphere (Hult, 2014; Yanguas, 2009).¹² These findings on Pilsen's language distribution combined with analysis of distribution of frames and languages found to be used in specific frames also suggest there is more to Pilsen's LL than language itself.

Location and Frames

The finding of less Spanish in less gentrified areas becomes further enriched by comparing it to the findings of frame distribution. For the second series of models, we looked at the predictive power of location on frame occurrence. Figure 12 shows overall frame distribution by location.

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Figure 12. Distribution (%) of Frames in Areas Studied

We expected to find more Established frames in the Western areas of Pilsen and more Alternative frames in the Eastern areas, following community perceptions of West as more residential and established and East as more gentrified. However the observed distribution of frames is not that clear cut: while East Ashland and East 18th do appear to have more categorical Alternative frame instances, presence of Alternative Established Frames and Alternative Established Familial frames in West Cermak and West Ashland seemingly comprise a comparable percentage of signs. Significant differences in frame distribution in areas studied are provided by our second series of models, a summary of which is presented in Table 6. As for the first series of models for language and location, East 18th was set as the intercept (β_0) for all models.

Table 6. Summary of Location and Frame Model Results

Response	Predictor	β	SE	z value	Pr(> z)
<i>Alternative</i>	<i>Intercept (East 18th)</i>	-3.85	1.02	-3.77	< 0.001 ***

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<i>(Model 2.1)</i>	<i>East Ashland</i>	-13.31	908.10	-0.02	0.99
	<i>West 18th</i>	2.32	1.06	2.18	< 0.05 *
	<i>West Ashland</i>	1.63	1.12	1.46	0.14
	<i>West Cermak</i>	2.87	1.04	2.76	< 0.01 **
	<i>Intercept (East 18th)</i>	-1.55	0.43	-3.64	< 0.001 ***
<i>Alternative Est. (Model 2.2)</i>	<i>East Ashland</i>	0.04	0.88	0.05	0.96
	<i>West 18th</i>	0.19	0.53	0.36	0.72
	<i>West Ashland</i>	0.49	0.54	0.91	0.36
	<i>West Cermak</i>	0.19	0.49	0.39	0.70
	<i>Intercept (East 18th)</i>	-20.14	1971.48	-0.01	0.99
<i>Alternative Est. Fam. (Model 2.3)</i>	<i>East Ashland</i>	17.64	1971.48	0.01	0.99
	<i>West 18th</i>	17.74	1971.48	0.01	0.99
	<i>West Ashland</i>	17.33	1971.48	0.01	0.99
	<i>West Cermak</i>	16.51	1971.48	0.01	0.99
	<i>Intercept (East 18th)</i>	-2.75	0.75	-3.68	< 0.001 ***
<i>Alternative Fam. (Model 2.4)</i>	<i>East Ashland</i>	0.46	1.34	0.35	0.73
	<i>West 18th</i>	-1.28	1.28	-1.00	0.32
	<i>West Ashland</i>	-1.24	1.31	-0.95	0.34
	<i>West Cermak</i>	-2.32	1.34	-1.73	0.083
	<i>Intercept (East 18th)</i>	-3.85	1.02	-3.77	< 0.001 ***
<i>Established (Model 2.5)</i>	<i>East Ashland</i>	-13.31	908.10	-0.02	0.99
	<i>West 18th</i>	2.32	1.06	2.18	< 0.05 *
	<i>West Ashland</i>	1.63	1.12	1.46	0.14
	<i>West Cermak</i>	2.87	1.04	2.76	< 0.01 **
	<i>Intercept (East 18th)</i>	-1.85	0.39	-4.71	< 0.001 ***
<i>Established Fam. RI (Model 2.6)</i>	<i>East Ashland</i>	-1.26	1.10	-1.14	0.25
	<i>West 18th</i>	-0.59	0.48	-1.24	0.21
	<i>West Ashland</i>	-0.28	0.50	-0.55	0.58
	<i>West Cermak</i>	-0.73	0.43	-1.68	0.09
	<i>Intercept (East 18th)</i>	-3.70	0.53	-6.97	< 0.001 ***
<i>Established RI (Model 2.7)</i>	<i>East Ashland</i>	1.53	0.80	1.90	0.06
	<i>West 18th</i>	0.34	0.44	0.77	0.44
	<i>West Ashland</i>	-0.67	0.52	-1.29	0.20
	<i>West Cermak</i>	0.64	0.39	1.64	0.10
	<i>Intercept (East 18th)</i>	-1.85	0.39	-4.71	< 0.001 ***
<i>Established Familial (Model 2.8)</i>	<i>East Ashland</i>	-1.26	1.10	-1.14	0.25
	<i>West 18th</i>	-0.59	0.48	-1.24	0.21
	<i>West Ashland</i>	-0.28	0.50	-0.55	0.58
	<i>West Cermak</i>	-0.73	0.43	-1.68	0.09
	<i>Intercept (East 18th)</i>	-4.73	1.07	-4.44	< 0.001 ***
<i>Recent Immigrant (Model 2.9)</i>	<i>East Ashland</i>	-17.32	2348.39	-0.01	0.99
	<i>West 18th</i>	-0.37	0.58	-0.63	0.53
	<i>West Ashland</i>	0.24	0.59	0.40	0.69

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	<i>West Cermak</i>	-1.12	0.55	-2.03	< 0.05 *
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Model 2.1 shows West Ashland and West Cermak as significant predictors of the *absence* of the Alternative frame. Results show instances of the categorical Alternative frame are 0.26 times less likely to occur on West Ashland and 0.28 times less likely on West Cermak when compared to East 18th – a result that is consistent with our preliminary analysis of distribution percentages as well as depictions of East 18th as a more gentrified area. However, for other permutations of the Alternative frame (Alternative Established; Alternative Familial), no significant differences in distribution were found.

Model 2.5 isolates West 18th street and West Cermak as predictors of the categorical Established frame. This frame was found to be 10.13 times more likely to occur on West 18th street and 17.57 times more likely on West Cermak than East 18th. Similar to the findings on the distribution of the Alternative frame, categorical instances of this frame were patterned as expected (i.e. more likely to occur in areas perceived as less gentrified). Similar to findings on permutations of the Alternative frame, only one location was found to be a significant predictor of a hybrid or overlapped frame: West Ashland, with the Established Familial Recent Immigrant frame 4.02 times more likely to occur. We did not find any other correlations between other Established frames and streets (e.g. Established Familial; Established Recent Immigrant).

West Cermak was also significant for Model 2.9, which investigated the distribution of the Recent Immigrant frame. This frame was found to be 0.33 times less likely to occur on West Cermak compared to East 18th, which is also an interesting result considering the perception of East 18th as a more gentrified part of Pilsen.

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These results, when taken into consideration with the language and location findings, shows a more nuanced division in Pilsen than East and West and English and Spanish – while signs operating within the Alternative frame can be characterized as significantly infrequent in the West, other signs that incorporate the Alternative and other frames do not exhibit such a strong division with East 18th. A similar dynamic is observed with instances of the Established categorical frames (significantly more likely in the West) and permutations (no significant patterns found). Additionally, categorical instances of English; preference of English; and presence of English but preference of Spanish were not found to be significant in any area studied. Spanish, however was found to be more likely to occur in the East, while equal representations of Spanish and English were more common in the West.

Returning to our discussion of frames as representative of different processes of authentication, we interpret these results to suggest a relationship between the social changes experienced in Pilsen and a polarization of sorts of what is constructed as ‘authentic’. Categorically Alternative representations (authenticity presented in the ‘hipster’ aesthetic) dominate in the more gentrified East while categorically Established (authenticity constructed through reference to an established simultaneous Mexican or Latin American and American heritage) dominate the West. Importantly, however, this division is not observed in languages themselves – we do not see such categorical alignment with English or Spanish – instead we see the opposite of what we might expect: a stronger likelihood of Spanish being found in the East vs. the West. In these results we find a strong argument for the necessity of further contextualization of LL variation (either through using frame analysis or other comparable methods) within

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quantitative analysis so as to be able to isolate these (in the case of Pilsen, surprising) dynamics. The difference in distribution of categorical frames and language displays also fortifies the concept that one language does not necessarily serve as an inherent marker of the authentic.

DISCUSSION

The results and analysis detailed above have provided a key insight in characterizing Pilsen's LL: we observe a polarization of frames, *not* languages, between more and less gentrified parts of the neighborhood. We argue that these results encourage consideration of more than just language itself when cataloging the variation found within LLs and support implementing hybrid frames of language representation to adequately recognize significant sociolinguistic patterns. We will now position these findings within the Pilsen socio-cultural context – what does this mean for our understanding of Pilsen and our understanding of gentrification processes?

To do so we situate the observed frames of authentication processes and observed distributions of languages and frames within two larger contextual frames: the Frame of Collective Memory and the Frame of Economic Changes (see Figure 13). As discussed, the established diasporic community of Pilsen places great importance on their Mexican and Latin American heritage. This fact must also be considered along with the widely-held perception of gentrification and socioeconomic change. We therefore position a broader analysis of Pilsen's LL within these two contextual frames.

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Figure 13. Understanding the Pilsen Context

This approach incorporates findings from statistical analysis (language and frame distributions) and situates those findings within community-wide frames. The first frame, the Frame of Collective Memory, utilizes Jaworski and Thurlow’s discussion of the diasporic as an “imaginery of place” in which place acts as an “important resource for diasporic communities in maintaining their sense of national or ethnic identity and through which ... express their longing and nostalgia for the ‘lost’ homeland” (2011, 8).

It is this place that “facilitates and creates” the collective memory of the diaspora – a dynamic we observe in Pilsen on a small scale (authenticity productions in the Familial and Recent Immigrant frames) and at large through community institutions, events and art. In Pilsen, this frame is seen in constant dialogue with the Frame of Economic Change, as more and more white residents move into the neighborhood and property values and rents increase. This is seen within the LL in terms of categorical frame polarization with Alternative framings focused in the east and Established in the west. This does not seem to be reflected, however, in terms of language itself.

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This brings us to our first insight into gentrification processes – for Pilsen, at least, we do not observe language variation to adhere strictly to geographical boundaries. Areas of perceived gentrification were not found to have significantly less Spanish – instead we found areas with *less* perceived gentrification to show less likelihood of Spanish occurrence. It is rather the *framing* of language that shows significant differences in terms of gentrification. We observe significant variation in the way language is employed to construct the authentic that provides insight regarding gentrification effects: categorical authenticity productions appear to be polarized by socioeconomic change while dynamic frames are not. We argue these findings can be characterized as an effect of contact – while the presence of Spanish itself does not seem to be negatively influenced by gentrification, the ‘point of view’ in which Spanish is represented *is*. In areas of socioeconomic change, authenticity as constructed through reference to community heritage is dominated by an alternative authenticity – authenticity produced through hip re-packaging of local culture. An example of this difference is shown in Figure 14, photos comparing a ‘hipster’ bar on East 18th street with a grocery store in West Cermak.

Figure 14. Alternative vs. Established Authenticities

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In the storefront for Harbee's bar, we observe Spanish in the upper right corner: *Calle 18* (18th Street). This is accompanied by other images – a painting of the Chicago flag in the lower right and skull wearing a Native American style headdress in the upper left. The style of the paintings on this building is in-line with the hipster aesthetic particularly in its appropriation of 'counter culture' stylistics such as lettering and flourishes similar to those used in tattoos and Native American iconography (c.f. Lanphier, 2014 for a more in-depth discussion of appropriation of Native American aesthetics among hipsters). A striking difference is seen in Spanish-dominated signs for the grocery store on West Cermak *La Huacana Carniceria y Fruteria* (*La Huacana* referring to either the city or municipality in the state of Michoacán in Mexico). The Spanish observed in West Cermak in its reference to a physical place frames an Established Familial authenticity – that grounded in collective memory and heritage of diaspora. The Spanish present in East 18th, however, cultivates authenticity not in reference to a collective past or place, but in a cursory, truncated fashion: Spanish de-contextualized and employed as decoration instead of denotation.

It is here we see the effects of gentrification on language and on Pilsen as a community – not in the presence of Spanish itself, but in the way it is framed. Acknowledgment of the presence of hybrid frames is important – while only one hybrid frame (Established Familial Recent Immigrant) was isolated as significant, observation of Alternative Familial frames as well as Alternative Established and other permutations of frames suggests language representations are not unconditionally Alternative or Established.

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CONCLUDING REMARKS

Through this analysis of Pilsen's LL, we have attempted to characterize in some aspect the effects of gentrification on the Pilsen community. In doing so, we provide a framework with which to effectively quantify LL data and, with our use of frames, to account for additional linguistic variation. It is in this recognition of the various frames of Pilsen, both macro and micro, that we are provided with a scaffold of sorts with which to characterize its context: a community with overarching divisions in cultural representation (i.e. what counts as 'authentic' in Pilsen) but not without room for more nuanced depictions. It is in this area, the realm of nuance and hybridity, that we believe would benefit from further study through the incorporation of attitudinal data from community members to further enrich our understanding of the social effects of gentrification. As it stands, however, our current analysis suggests that gentrification is much more than socioeconomic change or even linguistic change: its impact can also be found in the varying ideologies of representation.

¹ Retrieved November 7, 2014 from <http://www.missionmission.org/2011/05/12/white-hipsters-get-out-of-pilsen/>

² Retrieved January 31, 2016 from <http://www.chicagomag.com/images/2012/0912/C201209-C-Guide-to-Pilsen-map.jpg>; <http://www.chicagonow.com/getting-real/2014/07/what-we-really-know-about-how-chicagos-pilsen-neighborhood-is-changing/> and <http://www.chicagoneighborhoods.cc/neighborhoods/pilsen.html>

³ Map obtained with the ggmap package in R (Kahle and Wickman, 2013).

⁴ Hence Pilsen's name – derived from Plzeň, the fourth largest city in the Czech Republic.

⁵ Retrieved January 30, 2017, from <http://censtats.census.gov>. Demographic information was obtained using the 'American Fact Finder Advanced Search Tool' looking specifically at the seven census tracts colloquially understood to make up 'Pilsen' (within Cook County, IL tract numbers 3104, 3104, 3105, 3106, 3107, 3108 and 3109). Percent calculations were completed by hand to insure an accurate representation – as the U.S. Census categorizes race and ethnicity as separate categories ('White' and 'Black' belonging to race and 'Hispanic or Latino' belonging to ethnicity) there exists the potential for some overlap between categories and (consequently, in some readings of census data) mis-representations of area demographics. The percentages reported here are based on the designation of "Hispanic or Latino", "White alone", "Black or African American alone" and "Asian alone" as reported in the 2013 American Community Survey in the "Hispanic or Latino Origin by Race" files (Table number B03002).

⁶ Retrieved January 31, 2016 from <http://www.census.gov/censusexplorer/censusexplorer.html>

⁷ Map created using the acs (Glenn, 2016), tigris (Walker, 2016) and leaflet (Cheng et al., 2017) packages for R (R Core Team, 2016).

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⁸ Retrieved October 5, 2014 from <http://censtats.census.gov>

⁹ Frame analysis, first presented as a qualitative metric in Kallen (2010), was proposed as an alternative to the “top-down” / “bottom-up” distinction described in Ben-Rafael et al. (2006), as the dichotomy of “top-down” / “bottom-up” assumes “different types of signage are in opposition within the same system” (Kallen, 2010, 42). Frames thus present an opportunity to capture more nuance in the potential interpretation of signs in the categorization process necessary for a quantitative analysis.

¹⁰ Coordinates of starting and stopping points for 18th and Cermak are (41.857°, -87.676°) to (41.857851°, -87.666373°) for West 18th; (41.857779°, -87.666040°) to (41.858099°, -87.646792°) for East 18th and (41.852185°, -87.675803°) to (41.852392°, -87.665987°) for West Cermak.

¹¹ Map obtained with the ggmap package in R (Kahle and Wickman, 2013).

¹² We do, however, find more Spanish present overall in our survey area than in Hult (2014) and Yanguas (2009), perhaps due to the smaller and more concentrated nature of the area (an outcome hypothesized by Hult, 2014: 520).

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