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To cite this article: Natalia Mazzaro & Raquel González de Anda (11 Jan 2024): Socio-Economic Status and Language Prestige in the Linguistic Landscape of the U.S.-Mexico Border, Journal of Borderlands Studies, DOI: [10.1080/08865655.2023.2301103](https://doi.org/10.1080/08865655.2023.2301103)

To link to this article: <https://doi.org/10.1080/08865655.2023.2301103>



Published online: 11 Jan 2024.



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Socio-Economic Status and Language Prestige in the Linguistic Landscape of the U.S.-Mexico Border

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ABSTRACT

This study explores language choice in the public signage of a bilingual border city where the co-existing languages, Spanish and English, have unbalanced power and prestige. We analyzed 1400 signs around El Paso, Texas to investigate Spanish-English bilingualism, whether the signs reflect the demographic characteristics of the speech community, the vitality and prestige of both languages and the relationship between sign location and language choice. The results reveal that the use of English in signs is over-represented (63%) in a city where most of the population speaks Spanish at home (67%). Proximity to the border with Mexico and lower socio-economic status are strong predictors of Spanish use in signs, as are certain business categories.

KEYWORDS

Linguistic landscape;
Spanish-English bilingualism;
U.S.-Mexico border; El Paso;
Texas; language power;
language prestige

1. Introduction

The urban linguistic landscape of a place is made up of text on store windows, walls, and buses, among other things. These written signs on public spaces are an interesting object of study because they can inform about the languages spoken by the speech community and the power dynamics between them. In a border city like El Paso, Texas, at the U.S.-Mexico border, it is common to see signs in English, the dominant language and Spanish, the minority language. Describing Spanish as a minority language in El Paso could be quite misleading, given that around 82.9% of the population is of Hispanic¹ origin, 67.6% speaks Spanish, and only 30.8% is English monolingual (U.S. Census Bureau 2020). Despite the large proportion of Spanish speakers in El Paso, Spanish does not have the same status as English and the Hispanic population the same status as the Anglo² one (Alarcón and Heyman 2014; Achugar and Pessoa 2009; Hidalgo 1995, 2001). To investigate the power dynamics of Spanish and English in El Paso, we analyzed the language choice of written and printed texts found in public spaces, such as signs, billboards, advertisements, store names, etc., that constitute the “linguistic landscape” (LL) of a territory (Landry and Bourhis 1997). Our investigation is guided by four research questions:

- (1) What languages appear in the LL of El Paso?
- (2) How does the LL of the city reflect the language information from the U.S. Census?

- (3) What do these findings imply in terms of language prestige and vitality?
- (4) How does language choice co-vary with sign type, location and business types?

For research question 1, it is hypothesized that given the demographics of El Paso (section 3), both English and Spanish will predominate in the LL. However, we expect English to be more frequently used in signs. This is due to the higher status of English in the U.S. (Hidalgo 1986, 1995; Silva-Corvalán 2004; Vigil and Bills 2014; Wiley 2004; Wiley and Lukes 1996) and its role as an international language (Baumgardner 2006). Concerning question 2, we do not expect the LL to be representative of the population of El Paso because of the uneven status of English and Spanish, and the marked position that Spanish and Mexican immigrants have in El Paso (Hidalgo 1995; 2001). For question 3, we predict that closeness to Ciudad Juárez and the continued influx of immigrants from Mexico will promote the frequency of Spanish despite its lower prestige, as discussed in Section 2. Concerning question 4, we anticipate that there will be more Spanish and bilingual signs in areas closer to the border that cater to Mexican border commuters. These areas are also the ones with lower SES and higher concentration of Spanish speakers (see Section 7). We also expect businesses that cater to Mexican border commuters and sell Mexican products to have higher rates of Spanish in signs. Finally, we hypothesize that Spanish will be used less in government signs given that “prestige, power, and other factors can play a larger role than demographic influence in determining the language of public signage.” (Ben-Rafael et al. 2006, 52).

In the following sections, we provide a brief background about Spanish in the U.S.; we define the term “linguistic landscape,” we review previous LL studies that are relevant to our research mentioning important gaps in the literature, and we provide demographic and linguistic information about El Paso, Texas.

2. Spanish in Texas and the U.S.

The use of Spanish has a long history in what is modern-day United States territory, dating back to the sixteenth century with the arrival of the Spanish explorers (Silva-Corvalán 2004). During the Spanish conquest, the colonizers brought their language to Texas and New Mexico, which were the first territories explored in what constitutes the current Southwest. As early as 1536, these two states together with Arizona, California, Nevada, Utah, and the southern portions of Colorado, Wyoming, Kansas, and Oklahoma were part of the Spanish colonies. Spanish extended to all of the Southwest, and the many native indigenous groups became bilingual in their native language and Spanish (Silva-Corvalán 2004). The first permanent settlements were established in Santa Fe, New Mexico, in 1598, and near El Paso, Texas, in 1659.

The colonial Southwest depended politically on the Spanish Viceroyalty of *Nueva España* “New Spain,” which included what is now Mexico. Mexico declared its independence from Spain in 1821 and the Southwest became Mexican. As a result of the U.S.-Mexico war (1846–1848) and the treaty of Guadalupe Hidalgo in 1848, Mexico lost part of its northern territories. Although the treaty of Guadalupe-Hidalgo guaranteed the rights of the Mexican nationals living in these areas, there was no provision about language use for the new U.S. citizens (Macías 2000). English was immediately declared the language of instruction in public schools, the language to be used in the courts and in

public administration of the newly constituted states. By the mid-nineteenth century, the Spanish-speaking population inhabiting these territories soon became second class citizens in their own land (Hidalgo 1986).

The Spanish-speaking population was sparse in the late nineteenth century and most of them were concentrated in Texas (Silva-Corvalán 2004). Their number increased significantly in the twentieth century, when large waves of immigrants from Mexico arrived in the Southwest areas, one wave following the start of the Mexican Revolution in 1910, the other following World War II. Since then, economic difficulties and unemployment have sent millions of Mexican, Central and South American citizens, mainly from rural areas, north of the border. These immigrants have contributed to the spread of the Spanish language throughout the Southwest and beyond. While California is the preferred destination of political refugees from Central America (Silva-Corvalán 2004), Texas and El Paso are the preferred destination of Hispanics of Mexican descent (Hidalgo 1995; U.S. Census Bureau 2022; Vila 2000).

The cross-linguistic influence between Spanish and English in the Southwest is a continuous reality. In the early period of contact, English borrowed more from Spanish, while the twentieth century saw far more borrowing by Spanish from English, as is usual when one language is politically and socially subordinate to another (Silva-Corvalán 2004). The fact that numerous cities, towns, rivers, mountains and states have Spanish names in the Southwest is a living testimony of the importance of the Spanish language in the early days. States such as California, Nevada, Arizona and Colorado take their names from Spanish, as do cities such as El Paso, San Diego, Las Vegas, Santa Fe, Sacramento, among many others. Unlike the Spanish of the Northeast, which echoes Spanish varieties of several nationalities, the Spanish of the Southwest is basically a variety of Mexican Spanish, though with noticeably English influence on its vocabulary. Alongside the preferred term Southwest Spanish, a number of derogatory terms have been coined for this “anglicized” variety of Spanish: *Tex-Mex*, *border lingo*, *pocho*, *Spanglish* (Silva-Corvalán 2004).

As with other non-English languages spoken in the U.S., the maintenance of Spanish in the Southwest depends largely on immigration rather than on being transmitted from one generation to the next (Escobar and Potowski 2015; Hidalgo 2001; Silva-Corvalán 2004; Teschner 1995). The almost universal pattern of the immigrant groups in the U.S. is that there is language shift in favor of English in the third generation – that is, the grand-children of the monolingual or bilingual immigrants do not speak the heritage language of their grand-parents (Escobar and Potowski 2015; Hidalgo 2001). In the border region, the Southwest and other interior communities in which Spanish speakers have been established for at least two generations, bilingualism can be expected to last a bit longer. In the Southwest, the bilingual continuum begins with Spanish monolingualism in the first generation; Spanish/English bilingualism is usually the norm for the second generation, and at times even for the third generation, whereas English monolingualism is attained in the third or fourth generations (Hidalgo 2001; Velázquez 2009).

Contrary to the misleading view propagated in the media, Spanish speakers of Hispanic origin in the Southwest carry strong positive attitudes toward English (Silva-Corvalán 2004). In the 2019 U.S. Census, 72% of those who identified themselves as Hispanic reported that they spoke English well (Pew Research Center 2022). The positive attitudes toward English from the Mexican and Mexican-American community in El Paso has

been shown to be mainly for integrative and instrumental reasons (Achugar and Pessoa 2009; Hidalgo 1986; Teschner 1995), since command of English is required to move upward in the labor market (Alarcón and Heyman 2014; Alarcón et al. 2014; Galindo 1995; Teschner 1995). Hispanics in the Southwest also carry both positive and negative attitudes toward Spanish (Achugar and Pessoa 2009; Galindo 1995). The positive attitude has to do with feelings of loyalty and social identity toward the minority language, mainly because Spanish is strongly related to Hispanic culture or Mexican identity (Achugar and Pessoa 2009; Bedolla 2003; Galindo 1995; Hidalgo 1986; Weyers 1999). They also show interest in transmitting the language to their offsprings due to the requirements of the bilingual job market and to preserve family ties, “so that they can speak with their *abuelitos* ‘grandparents’” (Galindo 1995). This desire to transmit Spanish to children, however, seems to be in conflict with a significant decline to do something concrete to maintain the language (Silva-Corvalán 2004). For instance, a study on intergenerational Spanish transmission in El Paso, Texas (Velázquez 2009), showed that parents had positive attitudes toward Spanish, yet this did not translate into the investment of time and resources to foster Spanish development in their children.

Despite the lack of commitment to turn positive attitudes into action, El Paso Hispanics consider Spanish important for life at the border (Achugar and Pessoa 2009; Alarcón and Heyman 2014; Teschner 1995) and they express a desire to raise bilingual children (Velázquez 2009). Bilinguals’ conflicting attitudes stem from two primary stances: one being a sense of allegiance to their ethnic group and the other a drive to integrate into and attain social advancement within the larger dominant culture. For full participation in American society, they require good proficiency in English. For ethnic identity and solidarity, they need to be fluent in Spanish (Silva-Corvalán 2004; Achugar and Pessoa 2009). The strong sentiment of language loyalty toward Spanish makes it more likely that Spanish will be maintained at the border. In most cases, Spanish at the border carries covert prestige,³ because it allows speakers to be accepted by their network of Hispanic contacts in which they primarily interact. In this way, Hispanic adolescents living in Austin, Texas (Galindo 1995) used Spanish and Caló to be accepted by their Hispanic peers, to express intra-ethnic pride, authenticity and belonging, despite the stigma associated with this language and dialect.

Hispanics’ negative attitude toward Spanish has to do with lack of recognition of the language and culture by the dominant society, which has repercussions at the individual level in the desire to maintain the language and transmit it to future generations (Silva-Corvalán 2004; Achugar and Pessoa 2009). Urciuoli (1997) argues that issues of racial and linguistic stigma affect how Latinos relate to their language, and also to the development of their ethnic identities. A history of being diminished or criticized for speaking Spanish, for speaking a certain local variety or for speaking Spanish-accented English can result in negative feelings toward the first language in some Hispanics living in the U.S. (Achugar and Pessoa 2009; Bedolla 2003; Galindo 1995; Vidaña Matus 2020). According to García Bedolla (2003, 266) Spanish remains a source of ethnic pride and solidarity yet is seen as an obstacle to socioeconomic and social mobility. Based on her research involving 100 sociolinguistic interviews with Latinos in Los Angeles, California, García Bedolla (2003) determined that Latinos were practicing “selective dissociation.” This refers to their deliberate distancing from community sectors they hold responsible for the stigma associated with the language and those who speak it, especially, those

community members that are Spanish monolingual. This process has a negative effect on community cohesion.

In the borderland region, language plays a pivotal role in how individuals present themselves and view their neighbors. In fact, linguistic characteristics can often take precedence over almost any other indicator of belonging such as birthplace, parentage, and citizenship (Joseph 2010). Asserting a particular identity becomes challenging if the language, dialect, or accent is perceived as incongruent (Watt and Llamas 2014) with the image one wants to portray. Hence, from a linguistic standpoint, borderlands offer an exceptional context to examine the interplay between language and identity. Even after the unification of political boundaries, abstract divisions may still persist in the “linguistic fence posts” of borderland residents (Watt and Llamas 2014, 2). David Newman (2006, 147) stated that “Even if we have become more mobile and find it easier to cross the boundaries that previously hindered our movement, most of us retain strong ethnic or national affiliations and loyalties, be they territorial-focused or group affiliations.” An immediately accessible means to encode these affiliations and loyalties is through the use of linguistic codes (Watt and Llamas 2014), which underscores the importance of maintaining the minority language by speech communities.

Besides the importance of language in identity construction, languages play a significant role in the construction of political nationalism through language planning and policy. Language planning refers to “the deliberate efforts to influence the behavior of others with respect to the acquisition, structure, or functional allocation of their language codes” (Cooper 1989, 45). It is frequently depicted as an attempt to *solve* language problems, but the historical record indicates that the attempt to plan language has often been a *source* of language problems, particularly when it results in a denial of language rights and linguistic access to social, educational, economic, and political benefits (Wiley 2004). The most common rationale to advocate for linguistic assimilation is “national unity.” For instance, one of the major proponents of English-Only policies, distributed a flier entitled “A Common Language Benefits Our Nation and Its People” because the American population exhibits a wide range of diversity in terms of heritage, ethnicity, religion, and cultural backgrounds (Donahue 1995, 114). This reasoning implies that minority languages and ethnic, racial and religious diversity are an obstacle to national unity (Wiley 2004). Unfortunately, the belief in English monolingualism promotes a process of “deculturation” for linguistic minority groups, leading to the erasure of their languages and cultures through behavioral assimilation.

Despite the various attempts of the English-Only and other movements, the U.S. federal government has never designated English as an official language. Yet, English has historically been required for most of its operations. As stated earlier, it is the language of courtrooms; it is required for federal grant applications; it is the decreed language of instruction; and it is a specific requirement for most jobs (Wiley 2004). Thus, the dominance and status of English has always been “implicit” and by general consensus, rather than official. According to Wiley (2004), implicit policies are stronger than official ones, because they may be cloaked in lofty goals aimed at “helping” linguistic minority groups to assimilate even as these groups are being systematically excluded and denied their linguistic human rights. Language policies can be a tool for assimilation, encouraging the adoption of the dominant language and discouraging the use of other languages.

Michel Foucault, a French philosopher and social theorist, made significant contributions to the understanding of power and its relationship with language. He explored the role of language to exercise power. By implicitly or explicitly nominating one language as the national language of a country, governments can use language to discriminate, marginalize linguistic minorities and create a hierarchy of languages. Foucault (1972) emphasized the inseparability of power and knowledge. He argued that knowledge is not neutral but is shaped by power relations. Institutions, such as schools, prisons, and hospitals, produce and disseminate knowledge in ways that reinforce existing power structures. Wide-spread dominant language ideologies against minority languages and groups have been present in the U.S. educational system in which academic policy has favored monolingual English schooling denying minority children their linguistic birthright and segregating them (Bedolla 2003; Wiley 2004). Abundant stories of linguistic repression against Spanish users depict painful punitive measures for speaking Spanish in classrooms (or even during breaks) that go beyond verbal to corporal abuse (Vidaña Matus 2020). However, Foucault challenged traditional notions of power as something possessed or concentrated in specific institutions. Instead, he argued that power is dispersed throughout society, yet in unequal ways. One way of exercising power is by resisting it. Thus, resistance, in his view, is not external to power but is immanent within it. This resistance could be embedded in everyday practices and the use of linguistic forms that are not prescribed by the dominant society. In the present case, resistance to English-dominated public spaces could involve using Spanish or code-switching in private signs.

Linguistic ideologies not only target minority languages, but they also focus on their various dialects and forms. Hidalgo (1986) maintained that populations along the U.S.-Mexico border are very sensitive to language variation and tend to favor standard language varieties that do not show features of language contact such as code-switching (Achugar and Pessoa 2009). In this region, bilinguals have internalized the belief that Spanish-English code-switching is “incorrect,” and that their Spanish is somehow corrupted, “*pocho*” “americanized” or “*mochó*” “mutilated” (Achugar and Pessoa 2009; Galindo 1995; Vidaña Matus 2020). This linguistic insecurity results in part due to criticism from Mexican immigrants, *juarenses* and newcomers who consider the local variety rather “rustic” or anglicized, in addition to low class and uneducated (Achugar and Pessoa 2009; Galindo 1995; Hidalgo 1986). The negative assessments also come from some teachers at school, who often ridicule the Spanish spoken in El Paso (Vidaña Matus 2020). These societal forces can have psychological impact that restrains the use of Spanish and facilitates the shift to English (Achugar and Pessoa 2009).

This section has reviewed the historical development of Spanish in the U.S., highlighting the fact that it has been in the U.S. Southwest long before English. Although Spanish has been spoken since then, its status, as well as that of Spanish speakers, has gone through changes since these territories were part of Mexico. The lower status of Spanish compared to English has negatively influenced the formation of a Hispanic identity and the maintenance of the language in the U.S. English is seen as the language of opportunity because of its dominance in science, business and technology. Government and language policies have been oriented to promote the use of English for educational purposes, leaving language-minority communities to their own devices to maintain their languages without directing many resources toward that aim. Seeing the importance

given to English, immigrant language minority parents are eager to have their children learn English, leaving the development of literacy of the minority language behind. Unfortunately, the English hegemony and ideology of monolingualism, precludes a long-standing missed opportunity in the U.S. to develop a more widespread capacity for bilingualism (Wiley 2004).

The next section will introduce important concepts related to linguistic landscape studies, and it will discuss how the analysis of public signs can bring important insights into our knowledge about language and bilingualism at the U.S. borderland.

3. Linguistic landscape

Linguistic Landscape is defined as “the language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government buildings, which combine to form the linguistic landscape of a given territory, region, or urban agglomeration” (Landry and Bourhis 1997, 25). Considered a recent field that originated with the seminal work of Landry and Bourhis (1997) in Quebec, Canada, LL studies serve “important informational and symbolic functions as a marker of the relative power and status of the linguistic communities inhabiting the territory” (Landry and Bourhis 1997, 23). Crucially, LL studies address important questions concerning the public presence of individual languages in multilingual spaces, the delineation of territorial limits of a language group and what languages are central (dominant) and which ones are peripheral (minority languages) (Castillo Lluch and Sáez Rivera 2013).

According to Landry and Bourhis (1997) the more present a language is on public signs, the more likely this language will be used in certain domains, especially within commercial and public institutions. Their findings pointed to the importance of the LL as one of the most visible and salient markers of perceived in-group versus out-group ethnolinguistic vitality. The authors claimed that the presence or absence of the minority (or in-group) language in the LL is related to how much speakers use their in-group language with family, friends, neighbors; in social gatherings, in cultural activities, and as consumers of in-group language television, radio and print media. More recent research (Baumgardner 2006) shows that the frequency in which a language is used in domains such as advertising does not necessarily reflect the language’s vitality but the consumers’ preference for a prestigious language, even if they do not understand it. The prominence of a language in the LL can indicate which language serves as a *lingua franca* in the public sphere, but a lower presence of a language doesn’t necessarily mean the absence of its speakers (Blommaert 2013). Blommaert’s study examines the LL in a multilingual Belgian town where various languages like Dutch, Turkish, and Polish are utilized by different communities. Dutch functions as the *lingua franca* for both native Dutch speakers and non-native Dutch speakers in this research (Blommaert 2013).

One important feature in the analysis of signs is to observe which language/s is used by different creators of signs. For example, private signs produced by the general public in the in-group language may act as a stimulus for promoting the use of one’s own language in a broad range of language domains. In this way, there is a “bidirectional role” between LL studies and the sociolinguistic context (Cenoz and Gorter 2006). On one hand, the LL reflects the relative power and status of the different languages in a specific sociolinguistic

context, with the dominant language being used more often in public signs. On the other hand, the LL contributes to the construction of the sociolinguistic context, since the language in which signs are written influences people's perception of the status of each different language.

The language employed in government signage may not consistently mirror the community's actual linguistic practices, as governmental regulations can sometimes dictate the choice of language used in signs. If the minority language is largely absent from signs, it can indicate lack of institutional recognition of the linguistic minority and that the minority language has low status (Landry and Bourhis 1997). In some provinces like Quebec, Canada, there is a specific language policy that requires governmental signs and commercial advertising to be in French. In cases where there is no language policy on signage, such as in Texas, signs can be written in either the dominant or minority language. In a diglossic setting, the high-status language is more likely to be used in governmental and commercial signs than the language used for lower-status functions (Landry and Bourhis 1997). In a bilingual setting like El Paso, English is the language of prestige and social expectations dictate its use in more formal contexts (Alarcón et al. 2014; Hidalgo 2001), such as signs in the public space.

In addition to providing information of language status and power, LL studies can signal the sociolinguistic composition of the language groups inhabiting the territory in question. In the case of private signs that are not regulated by the government, they can reveal the linguistic diversity of the population. These types of texts are produced by "actors" that are generally members of the community and have knowledge of the community's linguistic code (Franco-Rodríguez 2009) or vernacular language. Private signs are "commercial signs on storefronts and business institutions (e.g. retail stores and banks), commercial advertising on billboards, and advertising signs in public transport and on private vehicles" (Landry and Bourhis 1997, 26). Conversely, public signs, which can be regulated by the government through language policy, do not always reflect the community's linguistic profile. Public signs constitute "road signs, place names, street names, and inscriptions on government buildings including ministries, hospitals, universities, town halls, schools, metro stations and public parks" (Landry and Bourhis 1997, 26). Corporate texts are different from private and public ones because the actors are not necessarily part of the community. This is the case of franchises and international companies that have branches in different places. Because of their more global status, corporate companies may produce texts that are not always a reflection of the local community vernacular. However, when corporations incorporate a minority language in their signs, it can help increase the in-group social prominence (Cenoz and Gorter 2009).

Due to the proximity to Mexico and the constant immigration from South of the border, Spanish presence in private signs is also expected. In fact, many Mexican products, especially food, are brought, sold and advertised in Spanish for Spanish speakers. When many of these products become popular and are sold to the general population (e.g. *tortillas*, *queso fresco*, *pico de gallo*, etc.) they retain their original Spanish names. Keeping the same names in Mexican products sold internationally can express the idea that the product is as good and authentic as the ones found in Mexico. In addition, U.S. advertising has a history of importing other languages in their advertising as an "attention-getter" device (Baumgardner 2006, 252). An example can be found on the



Figure 1. Spanish-English Code-Switching Used in Advertising of an Alcoholic Drink.

billboard in Figure 1 along Mesa Street (one of the main commercial streets joining west and central areas of El Paso). The advertisement is probably directed to the Mexican and Mexican-American population, but also to the non-Hispanic population who may think that they are purchasing an authentic Mexican product. The use of code-switching in advertising can also convey the idea of closeness and belonging, since it is more commonly used among family and friends in informal situations (Myers-Scotton 1999).

LL studies are crucially important in bilingual, binational and bicultural areas like El Paso, because they can reveal the power dynamics of the co-existing languages, and because signs tell us stories about the cultural, historical, political and social backgrounds of a certain space (Blommaert 2013). Since there are no previous LL studies in El Paso, the present study is important because it can shed light on aspects of language loyalty, language attitude and identity in this borderland community. Another novel contribution of this study is the analysis of how business type can influence language choice in the signage. In what follows, we review literature related to the linguistic and demographic composition of El Paso, immigration trends throughout the years, and the complex social and economic situation of the U.S.–Mexico border.

4. El Paso, TX

El Paso Texas is a city located on the southern border of the United States. It is adjacent to the Mexican city of Ciudad Juárez. The population estimate of El Paso County is 868,763 (U.S. Census Bureau 2022), and that of Ciudad Juárez is 1,512,450 (INEGI 2020). An aerial view of the entire region shows that El Paso and Ciudad Juárez are a single metropolis divided by an international border. In the past, these two border cities were once called Paso del Norte and existed as one when the state of Texas was part of Mexico. After the territory was divided in 1848 as a result of the Treaty of Guadalupe Hidalgo,

the international border was established at the Rio Grande, resulting in the current division of the two cities.

In El Paso racial animosity and conflict have been documented since the eighteenth century, when both Mexicans and Americans wanted to take control of the land (Hidalgo 1995). Part of the racial animosity is related to immigration from Mexico, which tends to concentrate in the poorest areas of El Paso. Although El Paso wages are better than the ones in Ciudad Juárez, El Paso is still one of the poorest major cities in the United States. Information of per capita income by metropolitan area shows that El Paso is ranked 369 among the 380 big cities in the country (Bureau of Economic Analysis: U.S. Department of Commerce 2021).

During the Mexican Revolution from 1910 to 1921, some of the immigrants were wealthy Mexicans but, since then, most of the newcomers belong to the lower socio-economic status and arrive in El Paso in search for economic prosperity. According to Teschner (1995), El Paso functions as an Ellis Island for immigrants from the south. Because most of the immigrants were poor and happened to settle in the poorest and oldest parts of the city (the area closest to the border) (Hidalgo 1995), El Paso residents blamed them for the existence of poverty in the city (Vila 2000). Nevertheless, the Mexican American population continues to grow steadily (Hidalgo 1995) and those who become upwardly mobile leave the southern part of the city and move to newer and more expensive areas such as the west and east (Teschner 1995).

In El Paso, Spanish is not generally the focal point for intense overt conflict, except during Trump's presidency when some outbursts of English-only sentiment occurred around the city. Although Spanish is the marked language and many parents prefer to transmit English to their children (Velázquez 2009), El Paso is characterized by stable bilingualism (Hidalgo 1995). The high vitality of Spanish in El Paso is due to: (a) constant influx of migrants from Mexico, (b) residents of Mexican descent have always outnumbered Anglo-Americans, and (c) an intense transborder interaction (Hidalgo 1995). For instance, in July of 2017, El Paso received about 600,000 pedestrians and about 2 million passengers in personal vehicles (excluding commercial trucks and buses) from Mexico (Bureau of Transportation Statistics 2017). Some of the commuters come for work, others to attend school, and others for leisure. It is estimated that as much as 20–40% of the retail trade within South Texas comes from Mexico (Richardson and Pisani 2017). The revenue of El Paso amounts to a retail trade of 12.24 billion a year – 980 million comes from Mexican visitors. These striking numbers show how dependent the U.S. border cities are on Mexican revenue, and the vital link between El Paso's economy and that of Ciudad Juárez.

4.1. The Linguistic Profile of El Paso, Texas

According to Hidalgo (1995), El Paso is such an intense bilingual community that it contradicts the sociolinguistic principle of bilingualism with diglossia. Bilingualism with diglossia suggests that the languages in contact are in complementary distribution, i.e. where one language is used, the other one is not. However, in El Paso, Spanish and English seem to share domains (Sánchez 1983). The use of Spanish in public space varies depending on the neighborhood (Teschner 1995). Spanish is the language most frequently used in social and commercial interactions in neighborhoods adjacent to

Table 1. Percentages of Language Use in the Different Areas of El Paso, According to the U.S. Census Bureau (2020).^a

Language spoken at home	El Paso city areas				
	East	West	Central	Border	Northeast
English	28.26%	40.65%	20.20%	10.8%	44.59%
Spanish	70.13%	56.13%	77.99%	89%	52.35%
Other	1.61%	3.20%	1.80%	0.20%	3.05%

^aZip codes per area: East – 79907, 79936, 79925, 79935. The report from the American Community Survey (Census Bureau 2020) does not include zip code 79926 from the East so that data is not included. West – 79922, 79912, 79932, 79911. Central – 79930, 79902, 79905, 79903. Border – 79901. Northeast: 79934, 79924, 79904.

the border. In the east and northeast areas there is a high percentage of Spanish-dominant and English-dominant bilinguals, which means that interactions can occur in either language. The neighborhoods on the east side (Washington park and Clardy Fox) were originally populated by Anglo Americans and later populated by Mexican Americans. The same happened in neighborhoods northeast of downtown (e.g. Grandview, Morningside Heights and Manhattan Heights). The west side includes monolingual English speakers, as well as balanced bilinguals and those who are English dominant with receptive skills in Spanish (see Table 1). The neighborhoods on the west side such as Kern Place and Coronado were originally populated by Anglo Americans, who still constitute the majority. The west represents the city's wealthiest area, which attracts an important number of well-off *juarenses* and other Mexican nationals who have their second residence there. Since 1980, there have been no pure English areas or neighborhoods in the city (Teschner 1995).

Although the U.S. census doesn't provide estimates of bilingualism percentages in El Paso, a large majority of those who speak Spanish at home are Spanish-English bilinguals. The ranges of bilingual proficiency vary widely, along with the percentage of Hispanics in each neighborhood. Despite these differences in proportion and linguistic abilities, bilinguals are found everywhere in El Paso, and they outnumber English and Spanish monolinguals.

The United States does not have an official language and neither does the state of Texas. There are no policies in place that regulate the language used in signs. The Texas Department of Transportation (TxDOT) regulates commercial signs, where the only restrictions pertain to where signs can be placed, their size, building material, and other esthetic aspects.

Having considered the demographic characteristics of El Paso, its geographic location, history, linguistic composition, and the relevant literature on LL, we now turn to the method of data collection and analysis.

5. Methodology

To investigate the dynamics of bilingualism in this border region we used a quantitative approach to study language choice in the signage (Soukup 2020). Variationist sociolinguistics has traditionally focused on the investigation of spoken language (Schilling 2013), exploring how the use of a particular variant of a linguistic variable (“a set of alternative ways of ‘saying the same thing’”) is influenced by certain sociolinguistic factors such as regional background, ethnicity, gender, etc. In a similar vein, quantitative

LL studies Labov’s “principle of accountability” (1966), which involved reporting values for every case where the variable element occurs (Spanish in our case) and comparing it to the total number of cases where it could have occurred but did not. It also involves assessing the distribution of the variable (i.e. language choice in signs) across the full range of factors that are thought to condition it (sign type, business type and location) (Tagliamonte 2011).

5.1. Data Collection

The pictures analyzed for this study were collected during the spring and summer of 2017 in El Paso, Texas. Undergraduate and graduate students in a Linguistics Research class were instructed to take random pictures of individual signs (only those that included text) in five different areas of the city. Students took between ten and fifteen pictures per area for a total of 1400 pictures. To study the relationship between neighborhood and language, we divided the city into five major areas, based on information from El Paso Planning Areas’ website (El Paso Neighborhood Associations n.d.). The main areas are listed below together with the number of signs analyzed in each area. See Figure 2 for location of these areas on the map of El Paso.

5.2. Picture Coding and Analyses

The pictures were coded following Dings and Hertel (2015). Each student coded their own pictures, and a research assistant reviewed all the coding to check for reliability. All the students who analyzed pictures were Spanish-English bilinguals taking an upper division Spanish course at a university in Texas. The research assistant that overviewed the analysis was also Spanish-English bilingual specializing in Spanish literature. To answer research question 1 about the languages that appear in the LL of El Paso, and research question 2 about whether the LL reflects the language information from the U.S. Census, the pictures were coded for language as monolingual English, monolingual Spanish, bilingual Spanish and English, or other. See Figure 3(a–d) for an example of each.

- (1) East: 289
- (2) West: 312
- (3) Northeast: 234
- (4) Downtown: 235
- (5) Border: 330

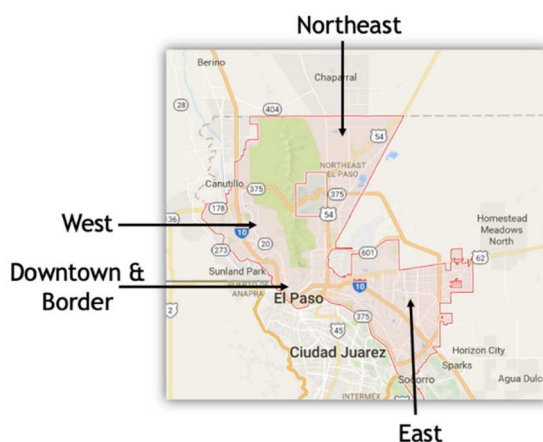


Figure 2. Map of El Paso, Texas Showing the Five Areas of Study. Google Maps (n.d.).



Figure 3. (a) (Top Left) Picture BLL50. Spanish Monolingual Sign; (b) (Top Right) Picture BLL03. Spanish-English Bilingual Sign; (c) (Bottom Left) Picture WLL105. English Monolingual Sign; (d) (Bottom Right) Picture WLL62. Other (English and Korean).

The overall representation of each language in the LL allows us to explore research question 3 regarding the frequency of Spanish and English, while the comparison between language choice in public, private and corporate signs allows us to investigate which languages hold a prestigious position in the community. Besides the overall presence of each language in the LL, we also conducted a linguistic analysis of the texts to assess whether the language is considered standard, in particular, whether there are orthographic errors, or cases of borrowing, code-switching and slang. According to Franco-Rodríguez (2009), the use of standard language in the LL is an indication of the vitality of a language and the deviation from it is recorded as a decline in language vitality. However, non-standard features can be used to achieve certain effects such as being humorous; a classic example is the Chick-Fil-A “Eat mor chikin” ad; being casual, familial and modern such as the McDonald’s slogan “I’m lovin’ it”; or indexing

localness, such as the frequent signs around Texas that include “y’all” (you all) and “howdy” (how do you do). Recently, Weyers (2021) found that “voseo” (the use of “vos” instead of “tu” for second person singular form in Spanish), is employed in the signage as a marker of local identity in Medellín, Colombia. Besides these examples, in a border city like El Paso, the presence of non-standard features can also include cases of code-switching, such as the example shown in Figure 1, which can index a bilingual identity, closeness and belonging. Non-standard orthography in signs can also signal low levels of literacy in a given language. In the case of bilinguals from El Paso, the great majority of school-aged children attend monolingual English education. Spanish-speaking children have limited opportunities to develop their heritage language formally since the bilingual programs available focus mostly on improving their proficiency in English (Vidaña Matus 2020). Thus, evidence of non-standard orthography in the minority language can be attributed to limited literacy skills in Spanish (Pascual y Cabo and DeLaRosa-Prada 2015). Another possibility is that non-standard forms are the result of the intense contact between English and Spanish in El Paso. A one-by-one case analysis will help us determine the possible sources of non-standard forms.

Variations from normative Spanish can be determined by “the researcher’s expertise, the use of regional and pan-Hispanic grammars, and direct questions submitted to the Spanish Language Academy.” (Franco-Rodríguez 2009, 12). In our case, the Spanish dialect used in the signs was Mexican Spanish, since most of the Spanish-speaking population in El Paso is of Mexican descent. To determine whether a certain text was slang or standard, we combined our knowledge of the regional English and Spanish dialects, and our perception of what constitutes formal or informal language. An example of non-standard orthography is shown in Figure 4(a). An example of slang or informal language in Spanish can be found in picture 4c. with the use of “pa” for “para” and “Sancho” for “Sancho Panza” (the character from Don Quixote). The whole phrase “pa el Sancho” in Mexican Spanish means “for the lover.”

Signs that reflect cross-linguistic influence were coded as cases of code-switching or borrowing (see Figure 4(a)). A sign with code-switching is one where there is evidence of alternation between the languages, which show no integration into the recipient language (Poplack 1998). Lexical borrowing, on the other hand, refers to the incorporation of a lexical item from one language into another with only the recipient system operative. In our case, since we analyzed written language, we considered orthography and morphology as evidence of adaptation into the recipient language. Words such as *taco*, *quesadilla*, *internet*, etc. which are part of the monolingual English and Spanish lexicon were considered examples of borrowings (see Figure 4(b)).

Signs were also analyzed for the presence or absence of translated text to examine whether bilingualism was assumed by the authors of the signs, or whether the signs were addressed to a specific Spanish or English audience. The analysis of translation can help us answer question 3 regarding the symbolic value attached to English and Spanish. Lack of translation from English into Spanish can be a marker of the power and high status of English and the Anglo-American community compared to the peripheral position of Spanish and the Mexican-American community. Conversely, the presence of Spanish-English translation in signs can indicate that both languages are valued in the community. To investigate this question, bilingual signs were coded as word-for-word translation, partial translation or no translation. Literal or word-for-



Figure 4. (a) (Left) Picture BLL49. Sign Showing Code-Switching and Non-Standard Orthography (in Italics): Income Tax, *Formas*, *Manifiestos*, **Traduccionmes*, *Apostillas*, “Notary Public”; (b) (Right) Picture ELL35. Spanish Sign with a Borrowed Word “Hot Dogs”; (c) (Bottom) Picture BJD11. Spanish Sign Coded as Slang.

word translation was the code given to pictures that provided the same information in both languages (see Figure 5(a) for an example). Signs in which only a portion of the message was available in both languages were coded as partial translation (see Figure 5 (b) for an example). Finally, bilingual signs like Figure 4(a), that provide different information in each language were coded as “no translation.”

To investigate question 4 regarding which factor group is better able to predict language choice in signs, we coded pictures for sign type, business type and location. Sign type included public signs (governmental authorities, public and private institutions, and public services such as utilities), corporate (corporations and franchises beyond the local level) and private (individuals and local businesses). See Figure 6(a–c) for examples.



Figure 5. (a) (Left) Picture BLL86. Sign with Literal Translation; (b) (Right) Picture DJD8. Bilingual Sign with Partial Translation.

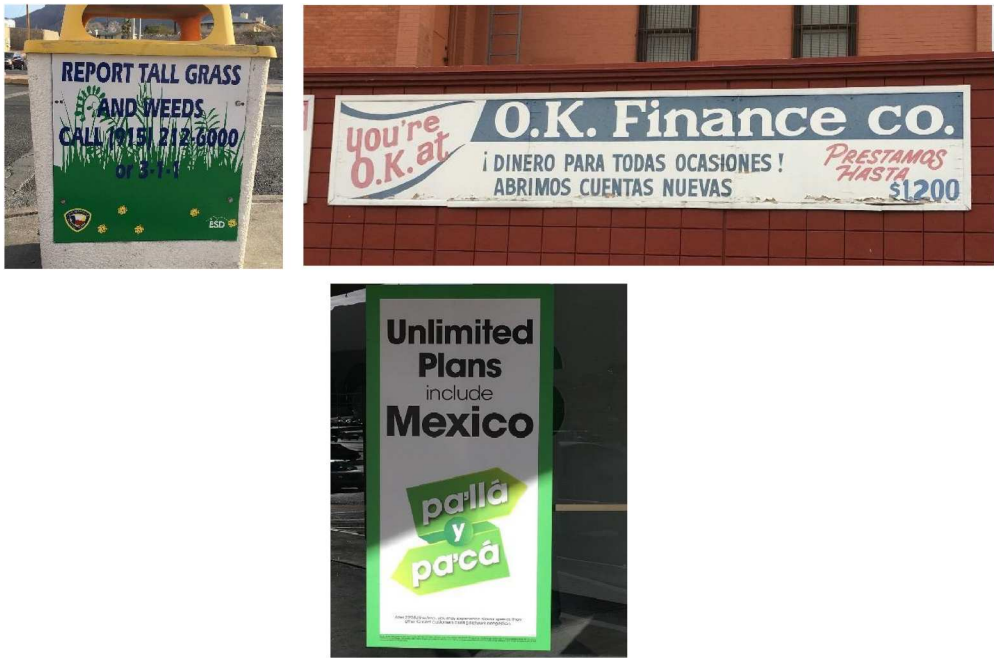


Figure 6. (a) (Left) Picture WLL41. Public Sign of the City of El Paso; (b) (Right) Picture DLL13. Private/ Local Business Sign; (c) Picture WLL11. Sign Type: Corporate/Franchise.

Pictures were also coded for location according to the area of El Paso where they were taken: downtown, border, east, west or northeast. Coding for area allows us to investigate if there is a relation between neighborhood and language use.

To assess the impact of product category on language choice, we categorized signs into business types (Table 2), following Franco-Rodríguez (2009). The categories food and

Table 2. List of Business Type Categories with Examples.

Business type	Examples
Food	Supermarkets, butcher’s shops, fish shops, fruit shops, bakeries, cake shops, liquor stores, welfare services, bars, cafeterias, restaurants, etc.
Vehicle	Vehicle repair shops, car dealers, car stereos stores, auto part stores, gas stations, private rental and sales, etc.
Beauty and personal care	Hairdressers, gyms, weight loss centers, beauty salons, perfume stores, etc.
Education	Beauty academies, citizenship schools, driving schools, nurseries, schools, etc.
Entertainment, hobbies, and leisure time	Party supplies stores, travel agencies, gift stores, flower shops, video clubs, photo stores, pet stores, etc.
Religion and beliefs	Churches, funeral parlors, fortune-tellers, herbal medicine stores, etc.
Restaurants and catering	Bars, cafeterias, restaurants, etc.
Health care	Clinics, medical centers, hospitals, dentist offices, pharmacies, health services, etc.
Legal and professional services	Law firms, accounting services, notaries public, insurance companies, real estate agencies, etc.
Clothing and apparel	Shoe stores, clothing stores, jewelry stores, dry cleaners, laundries, fabric stores, tailor’s shops, dressmaker’s shops, etc.
Home	Furniture, appliances, computers, television sets, upholstery, tools, plumbing, repairs, private rental and sales, utilities, etc.
Financial services	Banks, money order services, pawn shops, etc.
Communication	Telecommunication services and products.
Unclear/unknown	Mix of signs that did not fit in any other category. E.g. junk shops, second-hand stores, dollar stores, mail services, electronics stores, etc.

restaurant were collapsed after a pilot study showing they behaved similarly (González de Anda and Mazzaro 2017).

For the analysis, we conducted chi-squares of the dependent factor (language choice) against each independent factor: sign type, location, and business type. Then, we performed a random forest to determine the relative importance of the predictors. Finally, we conducted several binomial regression analyses adding the factors one by one to determine whether they were all important in predicting the dependent variable.

6. Results

The following charts (Figure 7) present the percentages of language choice in signs compared to the demographic information of El Paso (U.S. Census Bureau 2022). As stated earlier, the census does not provide information regarding bilingualism, but we estimate that around 55% of the population in El Paso is bilingual. This estimate derives from the questions regarding languages spoken at home, where 47.37%⁴ report speaking Spanish and also speaking English “very well.” We believe that this percentage is a conservative estimation of bilingualism in El Paso, since it only includes those who speak English “very well.” In addition, it does not include those who speak English at home and know Spanish well or very well.

The graph on the left shows that the percentage of Spanish speakers is much higher than the percentage of Spanish signs (67% and 11% respectively). The percentage of the El Paso bilingual population (55%) is more than double the rate of bilingual signs (26%). Conversely, the monolingual English-speaking population (33%) is much lower than the rate of English signs (63%). These results show that the LL of El Paso does not reflect the languages of the population but, on the contrary, they are in an inverse relationship. Due to the low number of tokens that contained languages other than Spanish and English ($N = 13$), they were discarded for the statistical analysis.

We then compared language choice in signs with the demographic characteristics of the population in each area (Figure 8).

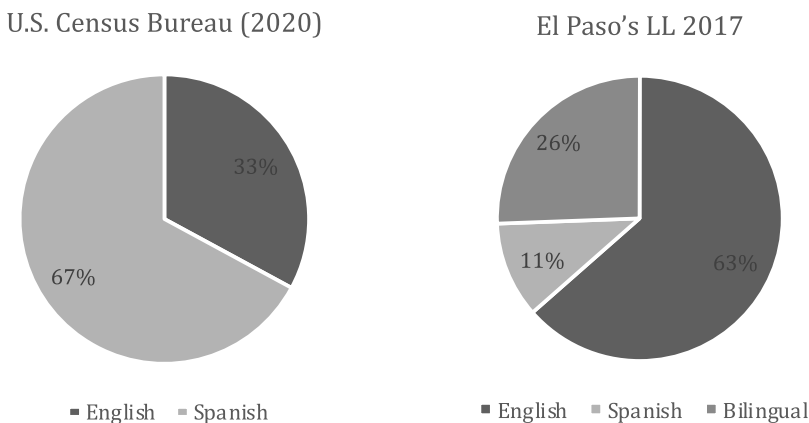


Figure 7. Comparison Between the Demographic Composition of the Population in El Paso (Left) and the Overall Rate of English, Spanish and Bilingualism in Signage (Right).

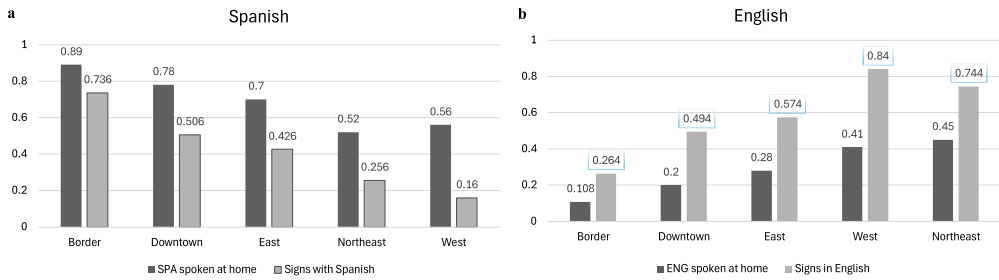


Figure 8. (a) (Left) Distribution of Spanish Signs and Spanish Spoken at Home Across Major El Paso Areas; (b) (Right) Distribution of English Signs and English Spoken at Home Across Major El Paso Areas.

Figure 8(a) shows that the percentage of the population that speaks Spanish at home is higher than the percentage of Spanish signs in all locations but, especially, in those further away from the border. Figure 8(b) shows the opposite effect, more English signs than people who speak English at home. This corroborates the hypothesis that the use of Spanish (the marked language) is underrepresented, while the use of English (the language of prestige) is overrepresented in signs. It also confirms our hypothesis that Spanish signs would be more frequent in places closer to the border that cater to Mexican border commuters.

We analyzed language choice across sign types (public, corporate and private) which, as stated earlier, can give an idea of the prestige attached to each language (Figure 9). The graph below shows bilingualism as a separate category from Spanish and English, but for the statistical analysis Spanish and bilingualism were collapsed. This is because we are interested in the presence of Spanish, which also includes bilingual signs, vs English-only signs.

The results show that Spanish is more frequently used in private signs (25.1%), compared to public (9.9%) and corporate ones (3.5%). The same pattern is observed in bilingual signs, which appear more often in private and public signs. A chi-square analysis shows that there are significant differences in the use of Spanish, English and

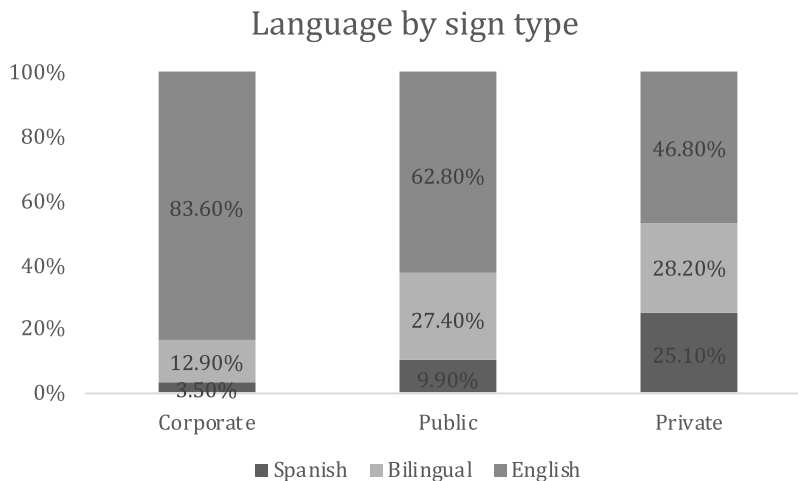


Figure 9. Distribution of Spanish, English and Bilingual Signs Across Sign Types.

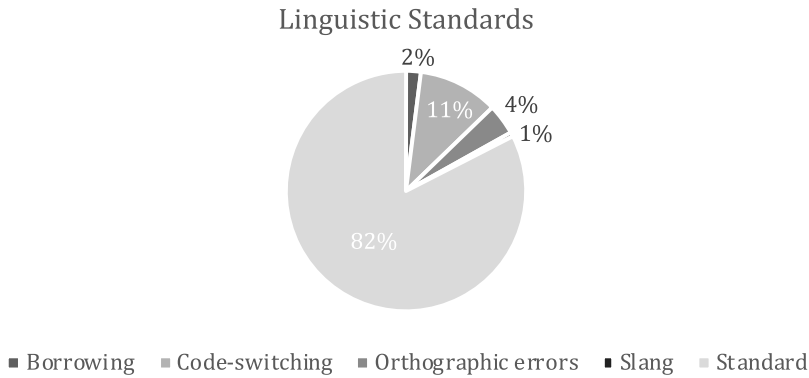


Figure 10. Analysis of Standard and Non-Standard Linguistic Features in Signs.

bilingualism across sign types $\chi^2(4, n = 1400) = 147, p < 0.001$. Pairwise comparisons showed significant differences between all pairs of groups.

The results of the analysis of linguistic standards show that most of the signs (82%) were written in standard language and a small percentage were cases of code-switching (11%). There were very few signs with borrowing, slang, and orthographic errors (Figure 10). The few cases of orthographic errors were mostly missing accent marks in Spanish words, and a few cases of letter “h” missing (for example “orchata” instead of “horchata” in BHA11).

Code-switching was the most common non-standard trait, but the rate was low compared to the 84% of standard signs. The low rate of code-switching in texts may be due to the stigma attached to it by members of this community (Velázquez 2009) and other border cities in Texas (Rangel, Loureiro-Rodríguez, and Moyna 2015). It could also be due to the fact that code-switching is a feature found mainly in popular speech, e.g. in casual conversations among bilingual peers, spoken word performances, radio advertisements, and song lyrics (Toribio 2011). Although, as shown in this study, it can also be reproduced in writing, e.g. on internet chat rooms, on billboards, in lifestyle magazines, in poetry, lyrics and in prose (Toribio 2011). Yet, given the formality associated with the written code in general and signs in particular, code-switching may be avoided by speakers who prefer to use it in more informal contexts. Very few cases of code-switching appeared in public signs (9/75) with most of the tokens found in private signs (55/75) providing further confirmation that private signs tend to be a closer reflection of the community norm (Landry and Bourhis 1997).

Our analysis of translation showed a low percentage of bilingual texts that offered a translation (24.64%). The results in Figure 11 include the subset of bilingual data divided by type of translation: partial translation, literal translation, and no translation.

The high percentage of “no translation” (55%) suggests that bilingualism is assumed by the authors of the signs and thus translation is seen as superfluous. The category “no translation” includes bilingual signs with a section of text in English and another section of text in Spanish, with each section offering different information (e.g. Figure 3(b): Open *antojitos mexicanos*; or Figure 6(c): Unlimited plans include Mexico; *pa'llá y pacá*). The next category was literal translation, which addresses monolinguals of either language, as well as bilinguals. Finally, there were 16% of signs with partial translation, which are mainly targeting bilinguals. More than half of the translated signs (86/157) were found

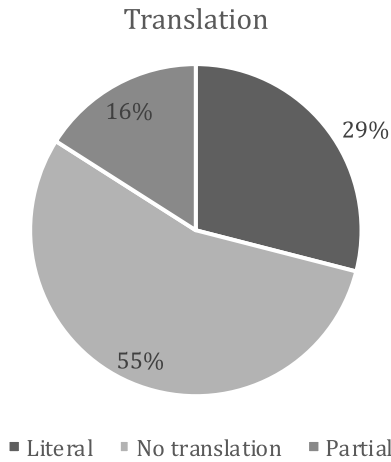


Figure 11. Analysis of Types of Translation in Signs.

in the border and downtown areas, which are the Spanish-dominant sections of the city. Only 16 (10%) signs were found in the west side, which is the English-dominant area. The majority of English-only signs with no translation reveals the imbalance between languages and their users (Landry and Bourhis 1997) and further supports the prestige attached to English, the language of the dominant minority.

The analysis of signs across locations in El Paso is shown in Figure 12. As expected, there is more Spanish use closer to the border with Mexico (border and downtown) and less Spanish use as distance from the border increases (West and Northeast).

There is a higher proportion of Spanish and bilingualism at the border (34.2% for Spanish-only plus 39.4% for bilingual signs, 73.6% combined), down to a total combined of only 16% in the west. A chi-square analysis shows significant differences between locations, $\chi^2(8, n = 1400) = 269, p < 0.001$. Pairwise comparisons showed that border signs have a significantly higher proportion of Spanish and bilingualism compared to

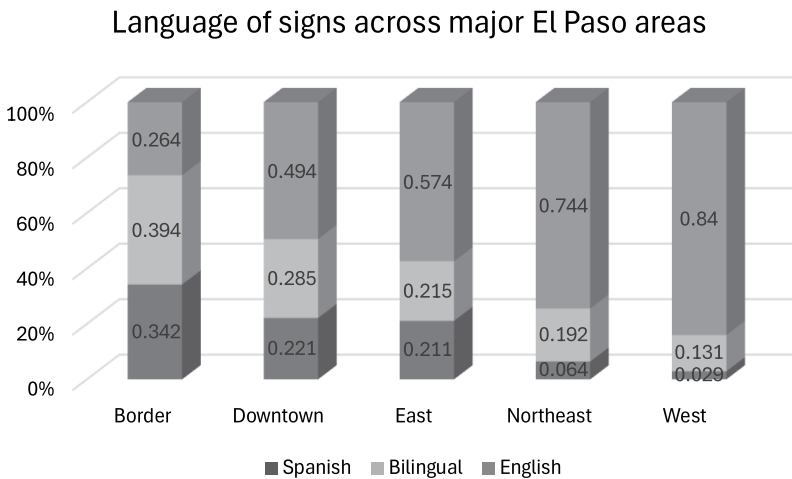


Figure 12. Distribution of Spanish, English and Bilingual Signs Across Major El Paso Areas.

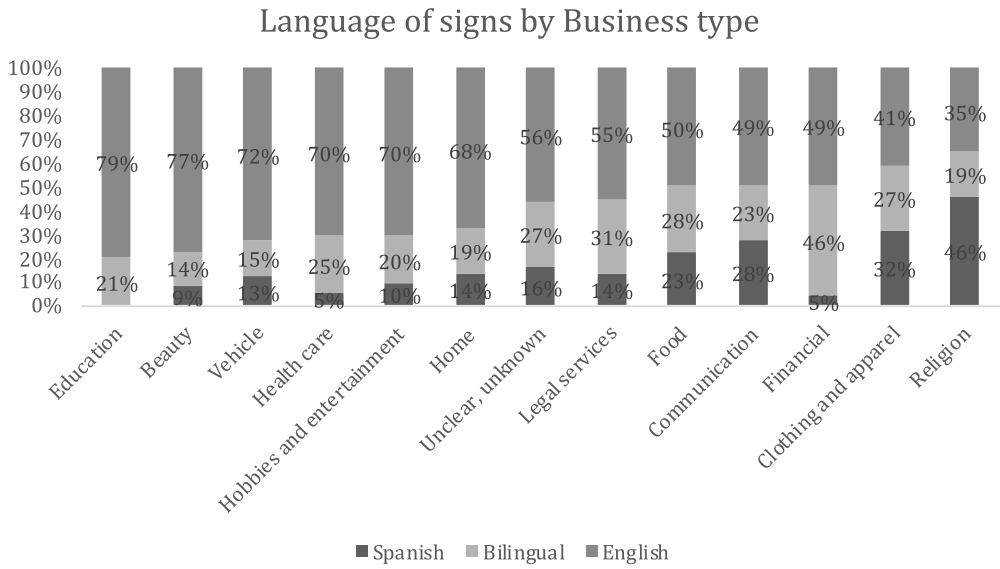


Figure 13. Distribution of Spanish, English and Bilingual Signs Across Business Types.

any of the other regions. No significant differences were found between downtown and east, or between northeast and west.

The next factor analyzed was business type. Figure 13 shows the distribution of language in signs for each category considered in the analysis.

To make the comparison easier to see, we ordered categories left to right from more to less English use in signs. As stated earlier, Spanish and bilingualism were collapsed for the analysis. We compared all pairs of business types. There was a total of 13 business types, so we obtained $13 \times 12 = 156$ pairs. We built a 2×2 contingency table for each pair and calculated a chi-squared for each, using Bonferroni correction, i.e. dividing the confidence level of 0.05 by the number of comparisons (156) to obtain a new limit for significance (0.00032). This resulted in some categories such as beauty, hobbies, and vehicles with significantly less Spanish use than other categories such as food, clothing or religion. Financial, communication and education did not reach a significant level due to having less tokens than the others.

In this section, we discuss the language choice by business category with reference to the bilingual context at the U.S.-Mexican border. Starting from the right of the graph, there is a high percentage of Spanish + bilingualism in religious signs. Unfortunately, the census has not collected information on religious associations since 1950, so we could not have access to this information from official sources. However, the website of the Catholic Foundation for the Diocese of El Paso (n.d.) reports that in El Paso around 78% of the population is Catholic. Teschner (1995) indicated that parishes in El Paso offer some or most Roman Catholic masses in Spanish and many Pentecostal churches operate exclusively in Spanish, which helps explain the high rate of Spanish in “religion.”

The next category with a high percentage of Spanish and bilingualism is “clothing and apparel.” We examined the relationship between this category and location, to determine whether there could be any interactions between factors. We found that 55% (110/200) of

the pictures were taken in the border and downtown areas, which could account for the higher rate of Spanish and bilingualism (59%). These areas are full of shops that sell affordable imported products, generally acquired for resale purposes across the border. Many shoppers with low SES cross the border to purchase clothing, makeup, blankets, shoes, accessories, and party supplies at lower prices than they would find in Mexico. For customers of higher SES with personal vehicles, there are high-end shopping malls in the east and west locations further away from the border.

The subsequent category in terms of the proportion of bilingual and Spanish signage is “financial.” This category did not show significant differences with any other in the pairwise comparison. As explained earlier, this is likely due to the low number of tokens (61). However, the high rate of bilingual signs deserves further explanation. We found that 44% of the pictures were taken at the border and downtown, and the rest were equally spread in other areas. The higher proportion of bilingual and Spanish signs in this category could be due to the nature of financial businesses, including tax returns, loans, bonds, brokers, and banks. Out of these, one of the most common are the tax-return offices, which reimburse international shoppers the taxes they pay for their purchases in the U.S. This is a typical border service since people can easily get taxes reimbursed on their way back to Mexico. The customs brokerage service is also common at the border because it clears imports from Mexico into the U.S. Due to the high number of manufacturing plants in Ciudad Juárez that produce goods intended for the U.S. market, customs brokerage services are especially relevant to the border area.

The next category in use of Spanish and bilingualism was “communication,” with almost half (47.3%) of the tokens taken at the border and downtown, which could partly explain the high percentage of Spanish. Most of the signs advertised cellular services for free or discounted international calls to Mexico and other countries in Latin America, appealing to recent immigrants or people with strong ties to Mexico whose first language is Spanish. Yet, there are other possible explanations found in the literature. According to a report by Nielsen in 2012, the companies that produced more advertisements in Spanish and “Spanglish” are Dish Network, AT&T, Verizon, Walmart, McDonald’s, General Mills, Kraft Foods, Toyota and General Motors (Escobar and Potowski 2015). The first three in the list are part of the communications category, thus suggesting a trend to advertise to Spanish-speakers.

The subsequent category in terms of bilingualism and Spanish percentage is “food.” An analysis of the distribution of food-related signs across locations does not explain the high proportion of Spanish and bilingualism in signs, since only 36% (89/246) of the food-related signs were taken in the border and downtown areas. To understand this pattern, one needs to simply look at the local grocery store aisles and the selection of restaurants in El Paso. Any grocery store carries tortillas, taco kits and salsa; and these products outperform hamburgers, hot dog buns and ketchup in sales, according to a new market research report of Hispanic foods and beverages in the U.S. (Llopis 2013). In addition, Mexican restaurants are commonly found in El Paso. An article by IBIS World (n.d.) indicated that Texas is among the three states with the highest number of Mexican restaurant businesses in the United States, together with California and New York. The proximity of El Paso to Ciudad Juárez makes this trend even stronger, as many successful restaurants that were established first in Ciudad Juárez, also operate branches in El Paso.

Legal services, which includes law firms, notary public, insurance companies, real estate agencies, are also among the categories with the highest percentage of Spanish and bilingual signs. A bit more than half of the signs (52%) come from downtown and the border which, as explained earlier, are Spanish-dominant areas. The high number of legal services in these areas may be due to their proximity to the courts and a detention facility downtown where these services are required.

The category “unclear, unknown” includes all the tokens that did not fit into any other category. The range of products and services contained in this category are so varied that it includes both signs that favor the use of English and those that favor the use of Spanish. This category closely resembles the overall distribution of language choice in the LL of El Paso.

The second half of the categories comprise those with higher proportion of English signs (more than 68%). “Home stores,” “hobbies and entertainment” and “health care” all have around 70% of English signs. In the case of home stores and health care, more than 70% of the pictures were taken in locations that favor the use of English (west, east and northeast), which could account for the higher rate of English signs. This is not the case with hobbies and entertainment stores, having had most of the pictures taken in the border and downtown areas, which favor Spanish and bilingualism. We argue that most businesses in home, entertainment and health care domains promote services targeted to locals and not border commuters. Options of more affordable entertainment and health care services of good quality can be found on the Mexican side of the border, which explains why most of the signs promoting these businesses in El Paso are in English.

Vehicle is another category with a high proportion of English signs (72%). This category includes dealerships and vehicle-related services, such as repair shops, gas stations, and car rentals. Most of the pictures from this category were taken in English-dominated areas (west, east and northeast), which may account for the strong presence of English. However, we believe that the reason for the high proportion of English is because they advertise to the Anglo-American community. Mexicans and Mexican-American border commuters can find these services for better prices in Mexico.

The last two categories with high percentages of English signs are “beauty” and “education.” Beauty includes products and services such as hair salons, weight-loss clinics, beauty salons, perfume stores, etc. Beauty services are less costly in Juárez, so these businesses in El Paso probably target locals almost exclusively.

There are few tokens for Education (24), and most pictures (66%) were taken in the west and northeast, which may account for the high rate of English in signs (79%). Thus, the results for this category should be taken with caution. Overall, two aspects were important to account for language choice in business type: (i) the availability of cheaper options across the border, which determines who the business will cater to and, (ii) the location of businesses in English- or Spanish-dominated areas. A future study that wishes to focus on the importance of business type in the LL of El Paso should consider collecting an equal and higher number of tokens per business type across locations.

To answer the research question about the relative importance of factors that affect the occurrence of Spanish and bilingualism in the signage, we conducted a Random Forest and Variable Importance analysis (Strobl et al. 2008). The result is shown in [Figure 14](#).

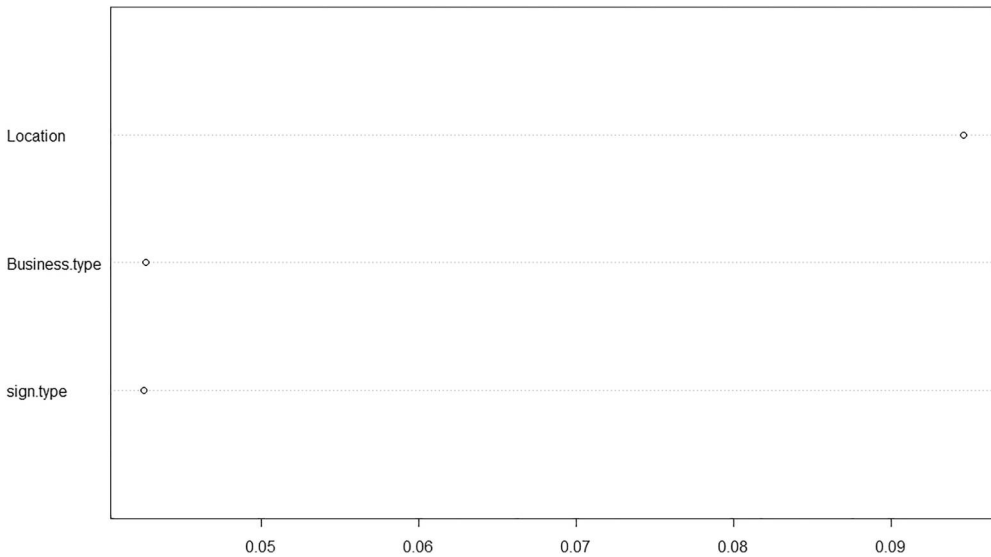


Figure 14. Random Forest with Location, Business Type and Sign Type.

The random forest shows that location is the most important factor in predicting language choice in signs, followed by business type and sign type. To determine whether all three factors are important in predicting language choice we conducted a set of binary logistic regression analyses, where the three factors were added one by one to the model, and the AIC and BIC were compared after each addition. AIC and BIC are measures of goodness of fit of the model to the data. A lower AIC and BIC indicate a better fit. A difference of two points or more in AIC and BIC from one model to another indicates that the models are significantly different. The results showed that all the factors contributed to the improvement of the model, which means that they are all important predictors of language choice in signs.

7. Discussion and Conclusion

Our results show that the pattern of language use in signs does not match the demographic characteristics of El Paso. Information from the census shows that there is a strong Spanish presence and a much smaller English monolingual community, yet our LL study reveals a large majority of English-only signs (ignoring 28% of the population who uses Spanish at home and speaks English less than very well (U.S. Census Bureau 2020)), pointing to the marked status of Spanish in the community. Although many of the Spanish speakers are bilinguals, the omission of Spanish in English-only signs is further evidence of the lesser value assigned to this language.

It is strange and almost counterintuitive that local businesses do not consider advertising in Spanish, given that 65.7% of the population speaks Spanish and that El Paso receives around 600,000 pedestrians and 2 million passengers in personal vehicles per month⁵ from Mexico (Bureau of Transportation Statistics 2017). With most public signs being in English, the major beneficiaries of public information/communication are bilinguals and English monolinguals. Spanish monolinguals are left out of the

conversation in 63% of the signs, compared to 11% of signs that English speakers would not understand, because they are in Spanish. As stated earlier, the inclusion of a minority group's language positively contributes to the social and psychological aspects of bilingual development. The absence of Spanish from public signs in El Paso can imply the weakness of the Spanish ethnolinguistic group and that its language is not valued and has little status within society. Lack of recognition of the language and culture by the dominant society can negatively impact the desire to maintain the minority language and transmit it to future generations. In addition, such exclusion may convey the idea that Spanish has little use for conducting public affairs, thus reinforcing a diglossic situation to the advantage of English.

Our findings indicate that the primary determinant influencing the LL of El Paso is location. The border and downtown regions exhibit a preference for Spanish and bilingualism, while the west and northeast areas lean toward English. This pattern is closely tied to the city's socio-economic development, as individuals with higher socio-economic status tend to reside in pricier neighborhoods like those in the western part of the city, which is distant from the border region. In these areas, the use of English in signage is nearly ubiquitous. Additionally, Spanish is recognized as the language of cross-border interaction, employed by Mexican pedestrians who regularly cross the border and gather in the vicinity. This clarifies why Spanish holds sway in the proximity of the border, while English prevails in areas farther from it.

We further analyze why location is related to socioeconomic development and language choice. The maps below are based on information from the U.S. Census Bureau's (2020) American Community Survey. [Figure 15](#) shows household income by neighborhood and [Figure 16](#) shows percentages of languages spoken at home. The comparison between figures reveals that Spanish is more prominent in areas with lower income and the inverse is true for English, which is more pronounced in areas with higher income. As people go up the social ladder, they move to more expensive areas further away from the border and appear to shift their language preference to English. This transition is usually completed by the third or even the second generations (Velázquez 2009) and is accompanied by partial or total assimilation into "mainstream American culture" (Richardson and Pisani 2017).

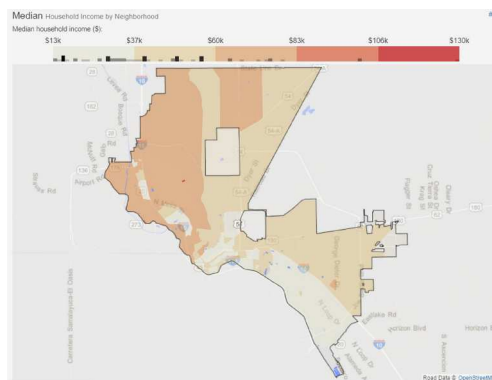


Figure 15. (Left) Map of Household Income by Neighborhood in El Paso from Statistical Atlas (n.d.-a).

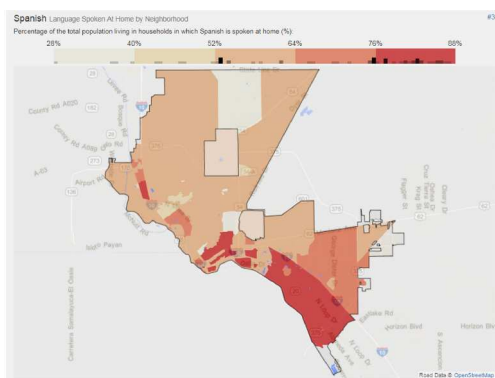


Figure 16. (Right) Map of Languages Spoken at Home by Neighborhood in El Paso from Statistical Atlas (n.d.-b).

We further explored why and how language choice is related to socioeconomic status. Work by Morales (2021) shows that English is preferred in the labor market and that it is considered a requirement for higher paying jobs. This study shows that language skills are rewarded in the labor market, but differently. According to Alarcón et al. (2014) Spanish monolinguals tend to perform lower-ranking and lower-paid jobs. Their study showed that in El Paso, bilinguals are needed in roles dealing with the public, patients, and customers (i.e. middle-ranking and average-paid personnel). There is no differential pay for bilinguals, who become “de facto interpreters” in the workplace (Alarcón et al. 2014). While being a Spanish-English bilingual can be advantageous in securing a job, especially at the border, some workers have actually lost their jobs for using Spanish in the workplace (Zentella 2014), and some others have been denied promotions even if their performance excels (Alarcón et al. 2014). In one of her articles, Zentella (2014) stated that there is “a rising number of cases of people hired for speaking Spanish, and then fired for speaking Spanish” (Zentella 2014, 623). She further asserted that, contrary to the widely held notion that Hispanic individuals receive preferential treatment over Anglo monolinguals in the workplace, bilinguals consistently face scrutiny at work, either for their accented English or for speaking Spanish. According to Zentella’s (2014) findings, within the initial four years of the Equal Employment Opportunity Commission (EEOC) commencing the tracking of discrimination charges related to accents and language in 1996, there was a staggering 500% surge in instances of linguistic discrimination. Eighty-eight percent of the complaints about English-only policies were made by Hispanics. Although bilingualism increases job productivity and monolingualism reduces it (Alarcón and Heyman 2014), there is a certain resistance to promote bilingual speakers to higher levels of organizational and professional hierarchies (Alarcón et al. 2014) “as the bilingual employee is most valuable to the institution in a contact job” (Villa and Villa 2005, 181), i.e. dealing with customers. Being an English monolingual does not seem to be a disadvantage but, on the contrary, it can provide occupational advantage and upward mobility (Alarcón et al. 2014). All these facts can explain the strong relationship between Spanish and low income shown in the maps above and, in the case of language shift toward English, why parents prefer to raise English monolingual children (Velázquez 2009).

Despite the historical presence of Spanish in the southern U.S. border, Spanish remains a peripheral language in contrast to English (Morales 2021). Due to the long history of discrimination against people of Mexican origin (Galindo 1995; Macías 2014; Vigil and Bills 2014), and resentment about ongoing immigration from south of the border (Hidalgo 1995; Teschner 1995), the dominant Anglo community tends to diminish the importance of speaking Spanish, even for individuals who are bilingual in both Spanish and English. As a result, Hispanics suffer from occupational segregation and reduced probability of holding professional or managerial occupations, even when their language capabilities give them work productivity benefits (Alarcón et al. 2014). Fluent bilingual individuals or those with limited English proficiency are less likely to occupy high symbolic analyst occupations like public safety executives, health executives, doctors, lawyers, and nurses compared to monolingual English speakers (Alarcón et al. 2014).

Considering the lower economic value attributed to Spanish, we wonder about the vitality of Spanish in El Paso. As stated earlier, in El Paso there is stable bilingualism due mainly to the continuous migration of native Spanish speakers. However, intergenerational transmission of Spanish typically does not extend beyond the third generation (Hidalgo 2001; Richardson and Pisani 2017). The preference toward English maintains its status as a dominant and prestigious language in El Paso, which ties well with our results showing that English is the prominent language across sign types, particularly on public signs. Public signs indicate which language is used for public affairs, thus contributing to the diglossic situation of coexisting languages (Landry and Bourhis 1997). In El Paso, the higher presence of English on public signs suggests its higher status relative to Spanish.

While earlier LL studies would suggest that the low percentage of Spanish in signs could indicate low vitality, a more in-depth analysis shows that this assumption is incorrect. Both, the census information and everyday life at the border indicates that El Paso is a perfectly bilingual city where residents and Mexican nationals can conduct their businesses in either English or Spanish (Teschner 1995; Achugar and Pessoa 2009). Further evidence supporting the strong vitality of Spanish is the use of standard language in most of the signs (Franco-Rodríguez 2009). The infrequent use of Spanish on signs in El Paso can be attributed to the unequal status between Spanish and English, despite the significant number of Spanish speakers living there and visiting the city. This finding aligns with prior literature (Ben-Rafael et al. 2006) and corroborates our hypothesis that factors such as prestige and power can outweigh demographic influence in determining language choice of signs in the public space.

The predominance of English in the LL of El Paso can be explained by the wide-spread dominant language ideologies that have favored monolingual English schooling, which often resulted in the loss of the minority language and culture through assimilation. English is also given priority in institutional practices conducted by the government including the writing of laws, the language to be used in courtrooms and in public administration. Most importantly, English fluency is a *sine qua non* requirement to have access to most non-manual jobs and be promoted in them (Alarcón et al. 2014; Ubalde and Heyman 2021). This way, both the authors of signs and the community targeted by them understand that English is a natural choice for public messages that are displayed in writing, which is considered a formal register. Besides explaining the high

rate of English used in signs, the formality of signs can also account for the low incidence of code-switching in the LL. Although the presence of code-switching was much higher than any other non-standard feature (borrowing, slang, orthographic errors), it does not mirror the frequent incidence of code-switching in the speech of border residents. The underrepresentation of code-switching in signage can be attributed to the stigma associated with this practice in El Paso, and the fact that code-switching is predominantly employed in spoken language (Toribio 2011; Velázquez 2009). Despite all these factors favoring the use of English, it is remarkable that Spanish and code-switching have managed to survive in written signs. The occurrence of these non-standard forms in an otherwise English-dominant context could be understood as small acts of resistance to English hegemony (Foucault 1972). In this way, borders are places that can challenge or contradict the prevailing norms and structures of power.

The findings of this study have demonstrated that rather than asserting a direct correlation between neighborhood and language (Teschner 1995), we suggest that location exhibits a direct association with socioeconomic status (SES), which in turn strongly influences language use. Both English and Spanish are important in the lives of U.S. Hispanics, but for different reasons. Command of English is required for instrumental reasons and to move upward in the labor market (Alarcón and Heyman 2014; Fernández, Howard, and Amastae 2007; Teschner 1995). Spanish is important for symbolic reasons, as it is related to local Mexican American culture and Mexican identity. This relationship between English and its importance in the labor market is what allows English-speaking people to occupy higher levels of SES. Spanish is also necessary for life at the border, to maintain family ties with relatives from Mexico and because of the covert prestige it conveys. But, as shown by previous research (Alarcón et al. 2014), Spanish monolinguals tend to occupy lower-ranking and lower-paid jobs. This can partly explain the relationship between language and SES and the reasons why, despite positive attitudes toward Spanish, some parents choose not to transmit the Spanish language to their children (Velázquez 2009). The disparity in status between Spanish and English in El Paso explains why, even with a significant number of Spanish speakers in the area, English takes precedence in the public and in writing, symbolizing prestige. Conversely, Spanish is predominantly employed in private settings and informal spoken contexts, signaling a lower status.

In conclusion, the signage can provide insight into the social value assigned to each coexisting language. The findings of this research demonstrate an uneven distribution of prestige and status to English and Spanish in the LL, with important consequences for the speakers of those languages.

To foster more positive attitudes toward Spanish and to achieve the language shift reversal advocated by Hidalgo (1995), a series of steps must be implemented. First, it is important to improve the status of Spanish speakers (bilinguals and monolinguals) by rewarding their linguistic skills in the labor market through added compensation. Bilingualism should be a requirement in occupations where bilingual communication is vital, and it should be valued and compensated accordingly (Alarcón et al. 2014). Second, the Spanish presence in the public space should be increased through deliberate policy within individual organizations and local, state and federal administrations. Third, educational institutions, including higher education, should endorse bilingualism and biliteracy, encouraging the use of Spanish for academic, administrative, and general

purposes. Lastly, as linguists, collaborating with families and the community becomes crucial in developing positive attitudes toward Spanish and Hispanic culture.

Notes

1. For this research project, we use the term “Hispanic” as defined by the U.S. Census (2020) where “Hispanic” is “a person of Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.”
2. The term “Anglo” is used to refer to Non-Hispanic whites (Teschner 1995) who represent the second largest group in El Paso (12.4%) compared to Hispanics (81.6%) (U.S. Census Bureau 2022). There are other ethnicities in El Paso such as African Americans (3.4%) and Asians (1.3%), but the term “Anglo” in this study refers to Non-Hispanic whites only.
3. Covert prestige (Labov 1966; Trudgill 1972) in linguistics refers to a form of social or cultural prestige associated with non-standard or stigmatized languages, dialects or linguistic features. Unlike “overt” prestige, which is linked to the use of standard or prestigious forms of language, covert prestige in linguistics refers to a phenomenon where speakers of a particular language or dialect may deliberately use a non-prestigious or stigmatized form of language as a marker of identity and as a means of asserting solidarity, or resistance against dominant linguistic norms.
4. More specifically, 65.7% speak Spanish at home and out of those 27.9% speak English less than very well. This means that 72.1% (100% – 27.9%) speak English very well, resulting in 47.37% of bilinguals (65.7% × 72.1%).
5. These estimates are from July 2017, when the data was collected.

Acknowledgements

We are truly thankful to the students from LING 4371/5370 Studies in Linguistics who helped us take some of the pictures of signs and analyze them back in Spring 2018, to the audience at HLS 2017 for insightful comments, to Joe Heyman for providing feedback on this project, and to Fernando Jimenez-Arevalo and Silvia Torezani for their comments and ideas on earlier versions of the manuscript. All errors remain our own.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

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