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On the Labiodental Pronunciation of Spanish /b/ among Teachers of Spanish as a Second Language

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Abstract: Analysis of the speech habits of Spanish language instructors at the University of Southern California (USC) revealed that native Spanish speakers, as well as near-native Spanish speakers, sometimes produce labiodental [v] as an allophonic variant of Spanish /b/. Quantitative analysis by the VARBRUL statistical program indicated that linguistic, social, and stylistic factors condition the application of the labiodental. These results provide tentative evidence for the influence of English on the pronunciation of [v] in Spanish and suggest that the variation observed here may be a reflection of the confusion surrounding the labiodental, which is sometimes prescribed, but more often proscribed, in Spanish.

Key Words: Spanish language, phonology, labiodental pronunciation, sociolinguistic variation, variable rule analysis

1. Introduction

Spanish grammars, dictionaries, and textbooks used in the teaching of Spanish as a second or foreign language typically make no mention of the labiodental pronunciation of the Spanish voiced bilabial stop phoneme /b/ (e.g., Alarcos 1994; Knorre, Dorwick, Pérez-Gironés, Glass, and Villarreal 1996; Real Academia Española 1992). Nevertheless, native as well as near-native speakers of Spanish do sometimes pronounce labiodentals in Spanish words spelled with orthographic b and v. This discrepancy between the academic treatment of Spanish /b/ and actual usage is illustrated by the companion video that supplements Puntos de partida (Knorre et al. 1996), a popular Spanish language textbook in use at the University of Southern California (USC) and in many other colleges and universities throughout the United States. Although no mention is made of the labiodental allophone in a section of the textbook describing the pronunciation of b and v in Spanish, the female presenter of the Puntos video, apparently a native speaker of a Latin American variety of Spanish, produces frequent and unmistakable labiodentals.

Taking the observed discrepancy between the textbook treatment and the actual pronunciation of Spanish /b/ as its point of departure, this article seeks answers to the following research questions: Do Spanish instructors at USC, like the Puntos video presenter, pronounce labiodentals? If so, what is their frequency and distribution vis-à-vis the other allophones of Spanish /b/, namely, the voiced bilabial stop [b] and bilabial fricative [β]?

The variation among these instructors in their pronunciation of the allophones of Spanish /b/ is examined here within the framework of sociolinguistic variationist theory, which posits that linguistic variation is conditioned not random. Through variable rule analysis, it is possible to quantify the effects of multiple factors on the occurrence of a linguistic variable thereby creating a model that describes the variation in probabilistic terms (Cedergren and Sankoff 1974; Guy 1988). The factors evaluated in this study to ascertain what influence, if any, they exert on the labiodental realization of Spanish /b/ include orthography, phonetic context, speech formality, Spanish language proficiency, and amount of contact with English.

2. Voiced Labiodentals in Spanish

Authoritative sources assign two allo-
phonic variants to the Modern Spanish voiced bilabial phoneme /b/, orthographically b or v: a voiced bilabial stop [b], which is said to occur after a pause or a nasal; and a voiced bilabial fricative [β], which occurs elsewhere (Alarcos 1994; D’Introno, Del Teso, and Weston 1995; Real Academia Española 1992). The voiced labiodental [v], if mentioned at all, is not generally considered to form part of the Spanish allophonic inventory (Barrutia and Schwegler 1994). Its presence is often ascribed to interference from contact with languages such as English, French, or Catalan, and its use is strictly eschewed (Navarro Tomás 1970; Quilis 1993; Quilis and Fernández 1985; Seco 1973).

The issue of voiced labiodentals in Spanish has tended to be a thorny one. Menéndez Pidal, for example, claimed that the labiodental pronunciation never existed in Castilian (1973, 98). Today, most scholars seem to agree that Old Spanish did have a voiced labiodental phoneme /v/ (from Vulgar Latin V-, -V-, -B-) in those dialects spoken in the southern part of the Iberian Peninsula (A. Alonso 1967; D. Alonso 1962; Penny 1976). This feature was eventually displaced by the expansion of the voiced bilabial fricative phoneme /β/ typical of the north of the Peninsula, which was borne south by Aragonese, Castilian, and Leonese crusaders during the wars of the Reconquest (Penny 1976, 159). The etymological distinction between /b/ and /v/ survives today in Portuguese, Valencian, and in some dialects of Catalan. According to D. Alonso (1962, 208), remnants of the labiodental exist in Spanish in peripheral enclaves along the southern flank of the Reconquest; however, as far as I am aware, no solid proof has ever been presented to substantiate this claim. The best example of this so-called “archaic [v]” is found today outside the Peninsula in varieties of Judeo-Spanish, dialects known for their conservative and archaic features (Lapesa 1981,528).

Lope Blanch (1988, 160–61) distinguishes four types of labiodentals in Modern Spanish. In addition to archaic [v], his classification includes pedantic [v], assimilation [v], and language contact [v]. Pedantic [v] is pronounced hypercorrectly: The speaker has been taught or believes that the “correct” pronunciation of the “letter” v is labiodental. This tradition of prescribed labiodentalismo, based on classical models of Latin pronunciation, began with Nebrija (1517) and would not be abandoned by the Real Academia Española until the 20th century (D. Alonso 1962, 203). According to Lope Blanch (1988, 166–67), the labiodentalization of the grapheme v is particularly notorious among school teachers throughout the Spanish-speaking world, who view it as a way to avoid confusion in the spelling of words like billar [bi-yarl ‘billiard’ and villar [vi-yarl ‘small village.’ He reports that hypercorrect labiodentals can be heard in Mexican Spanish among certain actors and radio and television personalities, especially in speech that is read and in linguistic contexts characterized as serious or formal (165).

Assimilation [v] is said to occur in Modern Spanish as a voiced allophone of /f/ in words like afgano [av-ga-no] ‘Afghan’ (Harris 1969, 37) or when following a syllable-final, aspirated /s/ as in las vacas [lah vá-cas] ‘the cows’ (Salvador 1987, 131).

Language contact [v] is the result of interference from languages that have labiodentals. Phillips (1982), for example, claims that there is a correlation between the frequency of labiodentals and language dominance in Spanish/English bilinguals in Los Angeles. The purported labiodental pronunciation among bilingual and Castilian monolinguals in the Autonomous Community of Valencia (Salvador 1987, 130–31) is most likely the result of interference from Valencian, a language that has labiodentals. 3

3. Methodology

The data for the present study consist of recorded speech samples taken from 15 instructors of Spanish in USC’s Basic Language Program. The subjects comprised two groups: 10 native speakers of Spanish (6 females, 4 males) originally from Spain, Mexico, Costa Rica, Chile, El Salvador,
Peru, and the United States; and 5 near-native speakers (2 females, 3 males) from the United States and the United Kingdom. The subjects' ages ranged from 25 to 45 years. The native speakers had varying lengths of residency in the United States and/or Canada, ranging from less than 3 years to more than 40, and all were proficient, but not dominant, in the English language. The subjects were recorded performing three tasks: reading a list of isolated words, reading a list of sentences, and participating in an informal conversation. Each task was designed to elicit a different speech style measured in terms of formality in the Labovian sense of attention to speech; that is, subjects are expected to produce more standard language forms while reading a list of words or sentences than while participating in an informal conversation, because the formal reading tasks require that more attention be given to form than to content (Labov 1972, 79–85).

The elicitation instrument consisted of an equal number of Spanish words spelled with \( v \) and \( b \) that occurred in various phonetic contexts. The same 24 items appeared in the word list task as in the sentence task, rendering a total of 48 tokens per subject for the two formal tasks. The recorded conversations lasted approximately ten minutes each and produced, on average, 21 tokens per individual. Due to the informal and spontaneous nature of the conversations, subjects varied in their production of words spelled with \( v \) and \( b \); consequently, the data were not evenly distributed between all phonetic contexts. The recorded data were transcribed and coded by the author, a near-native speaker of Spanish with phonological training. The reliability of the coding was confirmed by a phonetician unfamiliar with Spanish, whose re-coding of a randomly selected portion of the data (5%) closely agreed with the original (92%).

In order to measure the influence that certain linguistic and social factors may exert on the articulation of Spanish \(/b/\) as a labiodental, the data were coded for variable rule analysis as performed by the statistical technique known as VARBRUL (Pintzuk 1988). The dependent linguistic variable in this case was coded for the allophonic variants of Spanish \(/b/\): \( [v] \), \( [b] \), and \( [B] \). The independent variables considered were orthography, phonetic context, style, sex, Spanish language proficiency, and length of residency in an English-speaking country. The factor group for orthography was coded for the two graphemes that represent the Spanish \(/b/\) phoneme, namely, \( v \) and \( b \). Phonetic context was coded for the following environments: after a pause, after a nasal, after a vowel, and after \(/r/\), \(/l/\), and \(/s/\). Style, originally coded in terms of three categories (conversation, sentence, word) was reduced to two (informal, formal) in the final model. Sex was coded as appropriate. Spanish language proficiency was coded to reflect whether subjects were native speakers of the language or not. Finally, length of residency was coded in terms of the number of years (less than ten, more than ten) subjects had lived in an English-speaking country, in this case, either the United States or Canada.

4. Results and Discussion

Table 1 shows the distribution of the allophonic variants of Spanish \(/b/\) in various phonetic contexts for all speakers in the study: after a pause, after a nasal, after a vowel, and after \(/r/\), \(/l/\), and \(/s/\). The results shown in Table 1 provide answers to the main research questions posed by this study: The subjects did pronounce the labiodental and did so with an overall frequency of 20%. Furthermore, this variant occurred in each of the environments examined, with the highest frequency occurring after \(/s/\) and \(/l/\). The corpus differs from "Standard Spanish" not only in containing a substantial number of labiodentals but also in its overall distribution of stops and fricatives. In those environments where a stop is expected in Standard Spanish, namely, after a pause or nasal, fricatives (either voiced bilabial or labiodental) also occur. After a pause, fricatives occur with a frequency of 21%; after a nasal, fricatives occur with a frequency of 22%. Similarly, in
those contexts in which the bilabial fricative is said to occur, that is, everywhere else, the stop frequencies range from 13% (after /l/) to 31% (after /s/). Although the tendency of these speakers is to produce stops and fricatives in the expected phonetic contexts described for the standard language, the appearance of either a stop or a fricative in any given environment is not categorical. The Spanish rule of spirantization, which converts stops into fricatives, applies variably here. This variation among a group of highly educated speakers and teachers of what is normally considered to be Standard Spanish needs to be accounted for and calls into question dialect studies which may be inaccurate due to the assumption that the phenomena they describe apply absolutely (Amastae 1995).

Salvador reports that, for some speakers in Spain, the phoneme /b/ may be realized as a labiodental which replaces the bilabial stop allophone (but never the bilabial fricative), especially after a pause or a nasal (1987, 130). The data in Table 1, however, show a different distribution. Not only does the labiodental appear in environments other than after a pause or a nasal, but it does so with a slightly higher frequency of five percentage points (21% other contexts vs. 16% after a pause or a nasal). This difference proved to be statistically significant at the \( p < .05 \) level \( (p = .000) \). Consequently, these data resemble more closely those of Lope Blanch for Mexican Spanish in which the labiodental is in apparent free variation with both the bilabial stop and bilabial fricative allophones (1988, 162).

Table 2 indicates relevant social characteristics for each speaker: age, sex, Spanish language proficiency (native, near-native), years of residency in the United States or Canada (less than 10, more than 10, or not applicable for near-native, English-dominant speakers), and country of origin. In addition, the frequency of the labiodental realization of Spanish /b/ is given for each subject in descending order.

Table 2 shows a frequency of labiodental pronunciation ranging from 48% (speaker O, a near-native U.S. female, aged 25–30) to 0% (speaker G, a native Spanish male, aged 35–40, resident in the U.S. for less than ten years, and speaker M, a native Costa Rican female, aged 40–45, also resident for less than ten years in the U.S.). The native speaker with the highest realization of the labiodental was speaker S (44%), a female originally from El Salvador, aged 30–35, who had resided in the United States and Canada for more than ten years. Of the five speakers who produced the labiodental with a frequency of 35% or greater, four were females and three were near-natives. The two native speakers with the highest labiodental frequencies (44% and 41%) had lived in the United States or Canada for at least ten years.9

The VARBRUL program cannot accept as input variables that occur categorically in relation to one another, either always applying (application = 1.00) or never applying (application = 0.00). In the jargon of variable rule analysis, these cases are referred to as “knockouts.” To measure the effect that orthographic \( v \) and \( b \) exert on the allophones of Spanish /b/, it was not possible to use the independent variable of orthography as input to VARBRUL, because the combination of dependent factor group ([v], [b], [β]) and independent factor group (the graphemes \( v \) and \( b \)) produced just such a case of knockout. Nevertheless, a two-way contingency table analysis was performed as a quantitative alternative to VARBRUL to measure the strength of the relationship between orthography and the occurrence of the allophones of Spanish /b/.10

Table 3 displays the results of the quantitative analysis of the distribution of [v], [b], and [β] by grapheme for all 15 subjects. Note that the labiodental is in a categorical relationship with the grapheme \( b \): the labiodental was never pronounced when spelled with orthographic \( b \). Tokens containing a written \( v \) were pronounced with a labiodental at nearly the same rate (40%) as bilabial fricatives (41%); stops were produced only half as frequently (20%). The correlation between orthography and allophonic variant proved to be statistically significant at the \( p < .05 \) level \( (p = .000) \). Among this group

9 The two native speakers with the highest labiodental frequencies...10
of speakers, a labiodental pronunciation was more likely in words written with \(v\) rather than \(b\). This is not surprising given the reports that some students are taught to pronounce \(v\) as a labiodental in order to avoid confusion in spelling between orthographic \(b\) and \(v\). (e.g., Alonso 1962; Lope Blanch 1988; Navarro Tomás 1970; Seco 1973).

The remaining factor groups of phonetic context, style, sex, Spanish language proficiency, and length of residency in an English-speaking country proved suitable for quantitative analysis by VARBRUL. The step-up/step-down function of the VARBRUL algorithm selects the factor groups that exert a statistically significant effect at the \(p < .05\) level on the dependent variable in question. The program also assigns probability weights to factors within groups. Whereas probabilities above .50 are thought to favor the application of a particular rule, weights below .50 are considered to disfavor its application. Because only the data spelled with the grapheme \(v\) exhibit variation among all three of the allophones under investigation in this study (i.e., \(b\) is never realized as \([v]\)), it makes sense to consider for the VARBRUL analysis a reduced corpus composed exclusively of the 516 tokens of orthographic \(v\).

4.1 Variable Rule Model: All Speakers

A variable rule model for the application of the labiodental variant for all speakers is presented in Table 4. The factor groups of sex, native speaker of Spanish, and style (task) were found to be statistically significant. Phonetic context was “thrown out” by the step-up/step-down function in VARBRUL as a variable that did not contribute significantly to the variation in the data. The factor group of length of residency in an English-speaking country is meaningful only for the native speakers of Spanish and was therefore not used in the analysis of the group as a whole (see note 8).

Not surprisingly, the results displayed in Table 4 indicate that language proficiency was found to be significant. The near-native speakers of Spanish produced labiodentals at a rate of 53%; the native Spanish speakers produced labiodentals at a rate of 33%. Consequently, the near-natives favored the labiodental pronunciation (.75), and the natives disfavored it (.38). This finding provides support for the hypothesis that English-dominant, near-native instructors of Spanish produce higher rates of labiodentals than native Spanish instructors, most likely due to influence from the English L1 phonological system. Unlike Spanish, the contrast between the voiced labiodental fricative and the voiced bilabial stop is phonemic rather than phonetic in English. It is hardly surprising that speakers of Spanish whose first and dominant language is English should produce a large percentage of words spelled with Spanish orthographic \(v\) with labiodentals (53%), because this is precisely what they do in English. Furthermore, given its status as an allophone of Spanish /\(b/\), the labiodental poses no threat to the overall Spanish communication system and may be easier for many English L1 speakers to articulate than the bilabial fricative \([\beta]\), which does not normally occur in English. Finally, if the near-native Spanish speakers in this study had been exposed to a labiodental pronunciation in Spanish while learning the language, either in or out of the classroom, this may have served as a model to reinforce their own habit of pronouncing Spanish \(v\) as \([v]\).

The independent variable of style, measured in terms of attention given to form rather than meaning, was also found to be statistically significant. The subjects were originally predicted to produce higher rates of labiodentals in the formal reading tasks than in the informal conversation task due to the effect of orthographic \(v\). The results shown in Table 4, however, indicate that labiodentals were less frequent in the reading tasks (36%) than they were in the conversation task (46%). The finding that informal speech favored the labiodental (.60) whereas formal speech did not (.45) is surprising in light of Lope Blanch’s description of hypercorrect Mexican \([v]\) as occurring in speech that is read and in linguistic situations characterized as formal (1988, 165).
Although it has already been shown in this article that orthography does play a role in the labiodentalization of Spanish /b/ (the grapheme b is never pronounced [v]), this influence does not appear to extend to the domain of speech style. Why should this be so? One possible explanation might be the tendency of speakers to produce higher frequencies of standard forms when performing formal tasks such as reading as a result of monitoring their speech output. If the subjects in this study view the labiodental as a non-standard variant (and there is some evidence that they do), then this may help to account for the reduction of labiodentals in the formal reading style.

The tendency to produce fewer labiodentals in the formal tasks obtained for both the native and near-native speakers. In the case of the near-natives, it is possible that the effect of having received Spanish language instruction up through the university level has made them aware that the labiodental is often considered to be non-standard and should therefore be avoided in a “good” Spanish pronunciation. Among the natives, the effect of formal education in Spanish may be quite different. Reports that the labiodental pronunciation may be taught and used to emphasize the difference between orthographic v and b (Alonso 1962; Lope Blanch 1988; Navarro Tomás 1970; Seco 1973) may cause some speakers to assign prestige to the labiodental and even produce it hypercorrectly. That this is not the case for at least some of the native speakers in this study is shown by anecdotal evidence. After the linguistic interviews had been concluded, several of the subjects expressed an interest in my investigation. When told that I was examining the variation in Spanish /b/, some of the native informants actually apologized for having produced labiodentals and blamed them on contact with English. This evidence, albeit anecdotal, provides support for the hypothesis that at least some of the speakers in this study are aware of the labiodental articulation and may consider its use to be non-standard, at least in very formal speech.

The independent variable of sex was also found to be a significant factor in the application of the labiodental. The female subjects produced labiodentals at a rate of 55%, whereas males produced them at a rate of 21%. Consequently, females favored the labiodental pronunciation (.73), and males disfavored it (.25).

The majority of studies that include gender as a sociolinguistic variable provide evidence that women tend to use fewer stigmatized and non-standard variants than do men of the same social group in the same linguistic circumstances. Labov, for example, states that “in stable sociolinguistic stratification, men use a higher frequency of non-standard forms than women” (1990, 205). Cameron and Coates likewise assert that “women on average deviate less from the prestige standard than men” (1988, 13). If women tend to produce fewer non-standard variants than men, how is the present result to be interpreted in light of the previous discussion of style in which it was hypothesized that the labiodental occurred less frequently in the formal reading tasks precisely because some speakers may consider its use to be non-standard and therefore less prestigious? The reconciliation of these apparently contradictory results may not be as elusive as it would at first seem. As previously suggested above, it is possible that some speakers do attach prestige to the labiodental pronunciation (in the tradition of Nebrija and, until recently, the Real Academia Española). In this study, the majority of speakers who tended to pronounce the labiodental were females. It seems possible that for the group of women as a whole, [v] may hold a certain amount of prestige or at least be viewed as a neutral, non-stigmatized feature. The example of the female Puntos de partida video presenter, mentioned in the introduction of this article, lends support to the idea that the labiodental may hold prestige for some speakers occurring as a “standard” variant in formal contexts such as the one described here: host instructor for a Spanish language textbook’s companion video.

4.2. Variable Rule Model: Native
Speakers

In order to compare differences between the native and near-native speakers of Spanish in the application of [v], separate VARBRUL analyses were conducted for each group. The results for the native speakers are shown in Table 5. The only factor groups found to be significant were sex and length of residency in the United States or Canada.

In regard to sex, the native speakers behaved in a manner consistent with the entire group of subjects as a whole, with females definitely favoring the labiodental (.65) and males strongly disfavoring it (.29). Once again, it seems possible that, at least for this group of speakers, females tended not to view the labiodental pronunciation as stigmatized and therefore produced it at a relatively high rate of 46%. This hypothesis finds support in the fact that the native speaker females produced a higher proportion of labiodentals (41%) compared to the native speaker males (13%) in the formal reading tasks in which a greater number of standard language forms is expected to appear.

Length of residency in an English-speaking country was also found to correlate significantly with the pronunciation of the labiodental. Native speakers who had lived less than ten years in the United States or Canada disfavored the labiodental (.35), whereas speakers who had resided for ten or more years in either of these countries favored its pronunciation (.71). It seems likely that prolonged contact with English /v/ is responsible for this favoring effect on the application of the Spanish labiodental. However, this hypothesis would need to be confirmed by more compelling evidence such as that provided by observing the labiodental frequencies of native Spanish speakers upon their arrival in the United States and subsequently measuring the changes in these frequencies over time.

4.3. Variable Rule Model: Near-Native Speakers

The variable rule model for the group of near-native speakers is displayed in Table 6. The only factor group found to be statistically significant was sex. As in the two previous models, females favored the application of the labiodental (.82), and males disfavored it (.27). The female speakers in this study, whether native or not, apparently do not consider the labiodental as a feature to be strictly avoided and may even assign to it a certain amount of prestige. This hypothesis finds support in the fact that, similar to their native speaker homologues, the near-native females produced a higher rate of labiodentals (83%) than their male counterparts (28%) in the two reading exercises, formal tasks expected to elicit a higher proportion of non-stigmatized, standard forms of the language.

5. Summary and Conclusions

This study has shown that the labiodental pronunciation of the Spanish /b/ phoneme occurred with a relatively high rate of frequency in the speech of this group of USC Spanish instructors, appearing in 40% of the tokens spelled with orthographic v. All three allophonic variants—[v], [b], and [β]—co-occurred with the grapheme v and were in apparent free variation with one another in the several phonetic environments examined here. The labiodental was never pronounced when spelled with the grapheme b. The correlation between orthography and the Spanish /b/ allophones was found to be statistically significant.

A comparative summary of the results of the variable rule analysis for the labiodental appears in Table 7. Listed are the independent factor groups that contributed significantly to the observed variation in the application of the labiodental allophone. The factors in parentheses had probability weights greater than .50,12

Whether a subject was a native Spanish speaker or not was found to be significant, with near-natives more likely to produce labiodentals than natives. This effect was probably due to influence from the English L1 phonological system. Speech style was another significant factor for the group of subjects as a whole. However, contrary to
expectation, less formal conversational speech, rather than formal read speech, was found to promote labiodentals.

The effect of amount of contact with English can also be observed in the group of native Spanish speakers. Subjects who had resided for more than ten years in an English-speaking country were more likely to pronounce labiodentals than were subjects who had lived in the United States or Canada for less than ten years.

The only variable that proved to be statistically significant for native speakers, near-native speakers, and, therefore, the group of subjects as a whole was sex. Whereas females favored the application of the labiodental, males disfavored it.

Although it is useful to know what sociolinguistic factors are likely to influence the labiodental realization of Spanish /b/, the most compelling finding of this study is the confirmation that native speakers of Spanish from diverse countries, as well as highly-proficient near-native speakers of Spanish, do pronounce labiodentals, albeit non-systematically. This lack of consistency is probably a reflection of speakers’ confusion regarding the pronunciation of the grapheme v, itself the result of two opposing pedagogical traditions in Spanish: one, the prescribed labiodentalism of Nebrija, the Real Academia Española, and the school teacher determined to distinguish b from v; the other, the more recent trend of linguists and academics who eschew the labiodental on the grounds that it does not conform to the perceived norm of Standard Spanish pronunciation.

As for the practical implications of this study for instructors of Spanish as a second language, as to whether they teach the labiodental pronunciation or not, I will not presume to decide for them. I will, however, point out the alternatives.

1. Teach Spanish /b/ as directed by traditional textbooks; that is, teach the voiced bilabial stop and fricative and ignore the labiodental. This may not reflect, however, the actual usage students encounter either in or out of the classroom. This means that English-speaking students must suppress the value they normally give to v, assigning to it instead the values of [b] and [β].

2. Teach students to pronounce orthographic v as a labiodental similar to English /v/. However, this coincides even less with actual native usage than (1). It does not obviate the need to learn to pronounce the grapheme b as a bilabial fricative in certain allophonic contexts.

3. Allow for variation and describe the allophones of Spanish /b/ in terms of tendencies. Explain that native Spanish speakers tend to pronounce b and v as a voiced bilabial stop after a pause or a nasal and that they tend to pronounce these graphemes as a voiced bilabial fricative everywhere else. Point out, however, that some speakers may at times pronounce v, and even b, (Lope Blanch 1988, 164; Salvador 1987, 129) as a labiodental.

Whichever approach is adopted, Spanish instructors, as well as Spanish language teaching materials, need to take into account that labiodentals have existed in Spanish from the earliest times (Penny 1976, 152) and may occur “naturally” in Spanish dialects not influenced by intense contact with languages, such as English, that have /v/. Similarly, Spanish grammars and dictionaries, in order to ensure greater descriptive (not prescriptive) accuracy, need to admit the possibility of the labiodental variant of /b/, instead of rejecting it a priori as non-existent in Spanish. Finally, second language researchers engaged in assessing the acquisition of Spanish L2 pronunciation, especially among speakers whose first language is English, need to be aware, when designing testing criteria based on native speaker production and acceptability, that labiodentals occur natively in Spanish (Elliott 1997; Zampini 1994).

NOTES

1Ariza (1994) provides an opposing view.
2According to D. Alonso, vestiges of /v/ have been reported in the 20th century in Garrovillas and Serradilla (Cáceres), Enguera and Canal de Navarres (Valencia), and sporadically within the provinces of Granada and Málaga (1962, 185–87).
3 Although Phillips’s conclusions were based solely on percentages, my subsequent VARBRUL analysis of his data revealed that the correlation between language dominance (English or Spanish) and the labiodental was statistically significant at the p < .05 level. (p = .000).
4 A native speaker of Spanish is defined here as a person who learned Spanish first, and for whom Spanish has remained the dominant language, no matter how many other languages are known or spoken. A near-native speaker of Spanish is a person who learned Spanish as a second or foreign language and who has achieved a high level of proficiency in speaking (including pronunciation) and writing Spanish, despite the fact that his or her dominant language has always been, and continues to be, English.
5 Five of the original 1,035 recorded tokens were discarded as unintelligible.
6 Many thanks to Shadi Ganjavi of the University of Southern California for re-coding the reliability sample.
7 In order to achieve the variable rule model that most appropriately fits the data, it is often necessary to eliminate entire factor groups and/or combine factors within groups. The goal is to achieve a model that has less than 1 possibility in 20 of being right by chance (p < .05). Each of the VARBRUL models presented here meets this criterion with excellent measures of "goodness-of-fit." For further discussion of goodness-of-fit, see Young and Bayley (1996).
8 This independent variable only applies to the native speakers of Spanish. It is included to measure the possible effect the amount of contact with English has on the labiodentalization of /b/.
9 One of these native speakers of Spanish was born and had lived her entire life in the United States. Despite this, she reported that Spanish was her dominant language.
10 The two-way contingency table analysis was performed using the Statistical Package for the Social Sciences (SPSS).
11 This hypothesis would need to be confirmed by comparing these results with those obtained from a group of near-native speakers of Spanish whose first language, unlike English, does not have labiodentals. The independent factor group of phonetic context was eliminated by the VARBRUL step-up/step-down function for not contributing significantly to the observed variation.

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puter Program. Philadelphia: U of PA Depart. of 
Ling.

Table 1

<table>
<thead>
<tr>
<th>Allophone</th>
<th>[v]</th>
<th>[b]</th>
<th>[β]</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td># _ _ _</td>
<td>15%</td>
<td>80%</td>
<td>6%</td>
<td>166</td>
</tr>
<tr>
<td>N _ _ _</td>
<td>17%</td>
<td>78%</td>
<td>5%</td>
<td>154</td>
</tr>
<tr>
<td>V _ _ _</td>
<td>21%</td>
<td>20%</td>
<td>59%</td>
<td>329</td>
</tr>
<tr>
<td>/f _ _ _</td>
<td>18%</td>
<td>18%</td>
<td>63%</td>
<td>122</td>
</tr>
<tr>
<td>/l _ _ _</td>
<td>23%</td>
<td>13%</td>
<td>65%</td>
<td>127</td>
</tr>
<tr>
<td>/b _ _ _</td>
<td>24%</td>
<td>31%</td>
<td>45%</td>
<td>132</td>
</tr>
<tr>
<td>Total</td>
<td>20%</td>
<td>39%</td>
<td>42%</td>
<td>1030</td>
</tr>
</tbody>
</table>

χ² = 357.56; p = .000

Table 2

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Age</th>
<th>Sex</th>
<th>Native</th>
<th>Years</th>
<th>Origin</th>
<th>Freq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>25-30</td>
<td>F</td>
<td>N</td>
<td>NA</td>
<td>US</td>
<td>48%</td>
</tr>
<tr>
<td>S</td>
<td>30-35</td>
<td>F</td>
<td>Y</td>
<td>&gt;10</td>
<td>El Salv.</td>
<td>44%</td>
</tr>
<tr>
<td>P</td>
<td>25-30</td>
<td>M</td>
<td>N</td>
<td>NA</td>
<td>UK</td>
<td>43%</td>
</tr>
<tr>
<td>P'</td>
<td>40-45</td>
<td>F</td>
<td>Y</td>
<td>&gt;10</td>
<td>US</td>
<td>41%</td>
</tr>
<tr>
<td>L</td>
<td>25-30</td>
<td>F</td>
<td>N</td>
<td>NA</td>
<td>US</td>
<td>35%</td>
</tr>
<tr>
<td>C</td>
<td>40-45</td>
<td>F</td>
<td>Y</td>
<td>&lt;10</td>
<td>Chile</td>
<td>26%</td>
</tr>
<tr>
<td>U</td>
<td>25-30</td>
<td>F</td>
<td>Y</td>
<td>&lt;10</td>
<td>Spain</td>
<td>18%</td>
</tr>
<tr>
<td>R</td>
<td>35-40</td>
<td>F</td>
<td>Y</td>
<td>&gt;10</td>
<td>Mexico</td>
<td>14%</td>
</tr>
<tr>
<td>X</td>
<td>35-40</td>
<td>M</td>
<td>Y</td>
<td>&gt;10</td>
<td>Peru</td>
<td>12%</td>
</tr>
<tr>
<td>D</td>
<td>25-30</td>
<td>M</td>
<td>Y</td>
<td>&lt;10</td>
<td>Mexico</td>
<td>10%</td>
</tr>
<tr>
<td>Z</td>
<td>35-40</td>
<td>M</td>
<td>N</td>
<td>NA</td>
<td>US</td>
<td>8%</td>
</tr>
<tr>
<td>J</td>
<td>25-30</td>
<td>M</td>
<td>N</td>
<td>NA</td>
<td>UK</td>
<td>3%</td>
</tr>
<tr>
<td>N</td>
<td>35-40</td>
<td>M</td>
<td>Y</td>
<td>&lt;10</td>
<td>Spain</td>
<td>3%</td>
</tr>
<tr>
<td>G</td>
<td>35-40</td>
<td>M</td>
<td>Y</td>
<td>&lt;10</td>
<td>Spain</td>
<td>0%</td>
</tr>
<tr>
<td>M</td>
<td>40-45</td>
<td>F</td>
<td>Y</td>
<td>&lt;10</td>
<td>CR</td>
<td>0%</td>
</tr>
</tbody>
</table>

* N = 15. This native speaker of Spanish was born in the United States.

Table 3

<table>
<thead>
<tr>
<th>Allophone</th>
<th>[v]</th>
<th>[b]</th>
<th>[β]</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>0%</td>
<td>57%</td>
<td>43%</td>
<td>514</td>
</tr>
<tr>
<td>v</td>
<td>40%</td>
<td>20%</td>
<td>41%</td>
<td>516</td>
</tr>
</tbody>
</table>

N = 1030; χ² = 292.93; p = .000
Table 4
Variable Rule Model for [v] for All Speakers

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Factor</th>
<th>Freq.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Female</td>
<td>55%</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>21%</td>
<td>.25</td>
</tr>
<tr>
<td>Native Speaker</td>
<td>No</td>
<td>53%</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>33%</td>
<td>.38</td>
</tr>
<tr>
<td>Style</td>
<td>Informal</td>
<td>46%</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>Formal</td>
<td>34%</td>
<td>.45</td>
</tr>
</tbody>
</table>

N = 516; input prob. = .36; df = 3; \( \chi^2 = 3.90; \chi^2/cell = .488; p = .008 \)

Table 5
Variable Rule Model for [v] for Native Spanish Speakers

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Factor</th>
<th>Freq.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Female</td>
<td>46%</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>13%</td>
<td>.29</td>
</tr>
<tr>
<td>Years US/Can.</td>
<td>Over 10</td>
<td>55%</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>Under 10</td>
<td>18%</td>
<td>.35</td>
</tr>
</tbody>
</table>

N = 355; input prob. = .28; df = 2; \( \chi^2 = 1.22; \chi^2/cell = .031; p = .000 \)

Table 6
Variable Rule Model for [v] for Near-Native Spanish Speakers

<table>
<thead>
<tr>
<th>Factor Group</th>
<th>Factor</th>
<th>Freq.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Female</td>
<td>86%</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>33%</td>
<td>.27</td>
</tr>
</tbody>
</table>

N = 161; input prob. = .57; df = 7; \( \chi^2 = 8.137; \chi^2/cell = .428; p = .000 \)

Table 7
Comparing Significant Factors for [v]: All Speakers, Native Speakers, and Near-Native Speakers

<table>
<thead>
<tr>
<th></th>
<th>All Speakers</th>
<th>Native Speakers</th>
<th>Near-Native Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (Female)</td>
<td></td>
<td>(Female)</td>
<td>(Female)</td>
</tr>
<tr>
<td>Native (No)</td>
<td></td>
<td>Years US/Can.</td>
<td>(More than 10)</td>
</tr>
<tr>
<td>Style (Informal)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. The factor groups listed were found to be significant at the \( p < .05 \) level as determined by the VARBRUL step-up/step-down function. The factors in parentheses had probability weights greater than .50.