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Variation and Evolution

Aspects of language contact and contrast across the Spanish-speaking world

Edited by Sandro Sessarego, Juan J. Colomina-Almiñana and Adrián Rodríguez-Riccelli

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Para Mónica (Adrián)
Per Marina (Sandro)
Per a Nicole i Ausiàs (Juan)

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Social and linguistic factors shaping language dynamics across the Spanish-speaking world

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Variation and evolution: Aspects of language contact and contrast across the Spanish-speaking world is a collection of original studies analyzing how different internal and external factors affect Spanish language variation and evolution across a number of (socio)linguistic scenarios. Its primary goal is to expand our understanding of how native and non-native varieties of Spanish co-exist with other languages and dialects under the influence of several linguistic and extra-linguistic forces.

This volume stems from the *Hispanic Linguistic Symposium*, which took place at the University of Texas at Austin in October 2018. The conference was aimed at bringing together scholars working on different aspects of Spanish linguistics, from a variety of Spanish-speaking regions and from a wide range of theoretical and methodological standpoints.

The book comprises three interconnected sections, organized keeping in mind the common themes their chapters analyze. Part I investigates morpho-syntactic and semantic phenomena, Part II concerns studies on phonetics and phonology, and Part III focuses on how language dynamics are driven by language attitudes and choice. Along these organizational lines, the volume covers an array of Spanish varieties distributed across Spain, the US, Mexico, Peru, Bolivia, Argentina and Uruguay. Overall, the articles in this book point to a cohesiveness in the field of language variation and change that is inspired by contemporary sociolinguistic and pedagogical theorizing and is built on empirically-rooted linguistic fieldwork.

While some papers analyze the linguistic dynamics affecting Spanish grammars from a cross-dialectal perspective, others focus more closely on the relations established between Spanish and other languages with which it is in contact. In particular, some of these studies show how power and prestige may support (or not) the use of Spanish in different social contexts and educational realities, given that the attitudes toward this language vary greatly across the Spanish-speaking world. On the one hand, in some regions, Spanish represents the variety spoken by the

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majority of the population, typically related to prestige and power (Spain and Latin America); on the other hand, in other contexts, the same language is conceived of as a minority variety, which may or may not be associated with stigmatized immigrant groups (i.e., in the US).

Part I delves into (morpho)syntactic and semantic patterns. It begins with Chapter 1, by Scott A. Schwenter and Mark Hoff, who perform a large-scale corpus analysis of the productivity of the subjunctive across Argentine, Mexican, and Peninsular Spanish. Specifically, their study investigates the variable mood selection both of so-called subjunctive-taking governor verbs (such as *dudar* 'to doubt') and of normatively indicative-selecting governors (such as *creer* 'to believe'). Against the tacit notion in the pedagogical literature that assumes a clear-cut distinction in Spanish between subjunctive-taking and indicative-taking predicates, Schwenter and Hoff demonstrate that none of the 22 verbs analyzed in their study is categorical in its mood selection. The behavior of governors varies from dialect to dialect, though the linguistic conditioning of this variation is largely consistent across the three varieties they study, with polarity and subject (non-)coreferentiality showing clear effects on mood choice. By measuring the overall type:token and *hapax legomena*:type ratios of each dialect (Pierrehumbert & Granell, 2018), this article concludes that the subjunctive is most productive in Argentina, followed by Mexico, with Spain showing the lowest levels of productivity. This demonstrates that subjunctive productivity is significantly affected by both dialect and governor, thereby revealing the critical importance of both inter- and intra-dialectal variation for the correct analysis of morphosyntactic phenomena.

In Chapter 2, Kathryn Bove offers another analysis of mood selection, but this time in a contact variety: Yucatec Spanish (YS), a Spanish dialect that carries a number of features attributed to centuries of contact with Yucatec Maya (YM). The author adopts a quantitative approach to offer an analysis of modal alternation in this variety. Her results significantly deviate from previous accounts on other Mexican Spanish dialects (Lope Blanch, 1989). Findings show that volitional predicates in YS categorically license the subjunctive, while variation is found with emotive and epistemic verbs. Also, significant differences are detected between the speech of monolingual YS speakers and YS/YM bilinguals. Such divergent morpho-syntactic patterns appear to be triggered by pragmatic factors and manifest themselves the most in the selection of mood under emotive and epistemic predicates, as well as in assertive constructions.

Further exploring the role of bilingualism on the processing of structural patterns, in Chapter 3, Karina Collentine and Joseph Collentine present an analysis of the cognitive factors in heritage language learners' production of syntactic modifiers and embedding. This study is based on data proceeding from speakers living in the US, who had to produce written answers in an instant-messaging task. Their

results indicate that, even though heritage speakers may be fairly homogeneous in their general grammatical and lexical abilities and sound monolingual-like in these respects, they vary greatly in the production of more elaborated constructions, especially when such structures impose significant constraints on their working memory and attentional resources (Jegerski, 2017). This suggests that those aspects of grammar that imply high processing demands on cognitive resources represent big challenges for acquisition. The authors thus conclude by suggesting that it is time to implement language programs capable of integrating cognitive research into the classroom setting. This will better support the needs of heritage speakers and help them achieve their educational goals.

Luis Andrade Ciudad, in Chapter 4, provides an overview of the literature on evidentiality and epistemic modality in Andean Spanish (primarily for the Bolivian and Peruvian varieties), and analyzes these phenomena by evaluating possible contact-driven effects. By this means, Andrade's study examines the relationship between Spanish verbal forms and evidential and epistemic functions in Aymara and Quechua. He concludes by showing that, indeed, certain Andean Spanish structures have been influenced by contact-driven forces (such as the pluperfect for "non-experienced past", the present perfect for "experienced past", and certain inferential uses of the future forms) (Calvo Pérez, 2001; Escobar, 1997, 2000), while other grammatical patterns may be better conceived of as the result of internally-motivated changes (such as the use of present subjunctive forms to talk about actions that took place in the past) (Sessarego, 2008).

Part II begins with Kara Yarrington's work (Chapter 5). Her research builds on an apparent anomaly that appeared during a pilot study on the allophonic distribution of /b/ across several varieties of Spanish spoken in the US: the unexpected high rates of [v] production by a group of native Peruvian Spanish speakers. Previous studies on the production of [v] across a number of Spanish dialects have accounted for this phenomenon by describing it as a case of assimilation to a preceding aspirated /s/, as hypercorrection, as an attempt to distinguish between the graphemes <b> and <v> in spelling, or as bilingual language interference (Phillips, 1982; Rao, 2015; Sadowsky, 2010; Stevens, 2000). Given that no extensive research on this topic has yet been done on Peruvian Spanish, the current article fills the gap by relying on an analysis of lab data collected among university students in Lima, Peru. Findings show that, contrary to what had been originally found in the pilot study in the US, Peruvian Spanish allophonic /b/ distribution actually follows canonical patterns. Thus, the chapter suggests that the anomalous results detected during the previous pilot investigation were probably driven by contact with English and should not be taken as representative of native Peruvian Spanish speech.

In Chapter 6, Matthew Pollock further explores aspects of phonetic variability, but this time by analyzing the relationship between /p, t, k/ and /b, d, g/ in

terms of voice onset time (VOT). This paper examines the perceptual patterns of English-speaking L2 Spanish learners in the US to understand which acoustic cues they follow to discriminate between voiceless and voiced stops. Participants were asked to categorize lexical items with digitally-manipulated consonants and to decide whether they began with a voiced or voiceless stop. Findings show that while VOT is indeed an important cue that speakers use to discriminate across categories, a number of other acoustic correlates also appear to potentially influence their choice (i.e., variation in F1 and F0, word frequency, etc.) (Benkí, 2005; Connine et al., 1993; Llanos et al., 2013). Speakers' skills are also significantly affected by external factors, such as level of proficiency and time spent studying abroad.

Chapter 7, written by Jim Michnowicz and Lucía Planchón, completes Part II by taking us to Montevideo, Uruguay. The authors show that, in contrast with the neighbouring dialect of Buenos Aires, Argentina, in Montevideo the ongoing change from /ʒ/ to /ʃ/ (*sheísmo*) is not yet complete. Data were collected by carrying out a semi-replica of Chang's (2008) methodology, which studied Buenos Aires *sheísmo* by asking informants to perform a reading task of comic strips. Tokens were subsequently inspected with Praat (Boersma & Weenink, 2018) and statistically analysed using R (R Core Team, 2017). Findings show that while young Montevidean women are for the most part *sheístas*, this devoicing process is still variable for older generations and men. Given these results, the authors conclude that Montevideo lags a generation behind Buenos Aires in this respect. Thus, they suggest that this change began later in the Uruguayan capital, as the result of diffusion from Buenos Aires.

Part III focuses on language attitudes and choice. It begins with Pamela Jiménez Lizama's paper, Chapter 8, which takes us to the Peruvian coast of Chincha to analyze the linguistic attitudes of the Afro-Peruvian community toward their own dialect and other Spanish varieties spoken in the country. On the one hand, this article reveals that the Afro-Peruvian inhabitants of El Carmen experience linguistic insecurity and thus consider their vernacular incorrect in comparison to the more prestigious Limeño variety. On the other hand, results show that the same informants rank Afro-Peruvian Spanish (APS) positively along the affective dimension, since they relate it to a key part of their cultural identity. In so doing, Jiménez's work builds on a recent body of research on APS (Gutiérrez Maté, 2018; Sessarego, 2015) and provides the very first systematic study on Afro-Hispanic language attitudes and ideologies.

In Chapter 9, Carolina Barrera Tobón, Sung Park-Johnson and Jazmín Brito examine how language attitudes and identity formation of young children impact linguistic development and use in a Spanish immersion preschool in Chicago. Focusing their efforts onto the intersection of language attitudes and identity formation, the authors show how children exhibit a systematic divide between the

language of social play and the language of education. Students use English for peer-to-peer interaction and Spanish to talk with teachers and adults. This indicates that the two languages fulfill different purposes and coexist in complementary distribution (Ferguson, 1959). Children's switches from one language to the other are primarily driven by the perceived expectations they hold about the interlocutors. The paper concludes by highlighting the importance of linguistic and educational resources to promote bilingualism and fluency in Spanish (the minority language in this specific context) from an early age.

Yuliana Kenfield, in Chapter 10, offers what may be seen as the "mirror image" of the previous study. Indeed, this work takes us to the other side of the Americas, more precisely to Cusco, Peru, where Spanish is not a minority language, but rather the language of administration, education, and thus power. In this context the author analyzes how Andean college students organize to overcome sociolinguistic discrimination against Quechua-Spanish bilingualism in higher education. Employing *Photovoice* (Wang, 2006), as a community-based participatory research tool, Kenfield shows how bilingual participants have contributed to the community's critical awareness of Quechua-Spanish bilingual ideologies in Cusco. By sharing personal experiences about maintaining their native language, they propose strategies to develop educational projects with the purpose of boosting bilingualism at the college level.

Finally, in Chapter 11, Rita Eloranta and Angela Bartens close this last section by discussing the linguistic challenges and ideologies at work in the reviving of a now-extinct language, Mochica, formerly spoken along the northern coast of Peru (Lambayeque). The authors show how the revivalists' dominant language, Spanish, has such a powerful impact on New Mochica, eradicating the most salient typological features of the original language (Van Coetsem, 1988, 2000). Along these lines of reasoning, Eloranta and Bartens stress how language revival should not be confused with language revitalization (Zuckermann & Walsh, 2011), and how the former process is actually much more similar to language making (Hüning & Krämer, 2018).

Taken as a whole, this volume provides a current perspective into language variation and evolution across several Spanish-speaking regions. It builds on a number of empirical and theoretical paradigms, across a number of linguistic subfields. In so doing, this book exemplifies the academic richness characterizing the studies that were presented at the *Hispanic Linguistics Symposium*, which reflect the current state of the discipline. By this means, the chapters in this collection offer a closer look at a variety of issues involving (linguistic) contact and (socio-cultural) contrast across the Spanish-speaking world.

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PART I

Morpho-syntax & semantics

CHAPTER 1

Cross-dialectal productivity of the Spanish subjunctive in nominal clause complements

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We performed a large-scale corpus study of the subjunctive across Argentine, Mexican, and Peninsular Spanish, in order to determine possible differences in productivity across dialects. Our data (N = 6,822) from the web/dialects section of Davies' (2016–) *Corpus del Español* were collected through random sampling of 22 matrix verb governors. All three dialects were significantly different from one another in type:token ratio, whereas only Spain differed from the others in terms of *hapax legomena*:type ratio. Furthermore, only eight verbs showed the same behavior across all dialects. Subjunctive productivity thus varies by both dialect and governor, thereby revealing the critical importance of both inter- and intra-dialectal variation for the correct analysis of morphosyntactic phenomena. The conditioning of the variation across dialects, nevertheless, was similar: mixed-effects logistic regression in R revealed that negated governors and cases of non-coreferentiality between main and subordinate clause subjects select significantly more subjunctive.

Keywords: subjunctive, nominal clauses, productivity, type:token ratio, variation

1. Introduction

In this paper, we examine the productivity of the subjunctive mood in nominal clause complements in Argentine, Mexican, and Peninsular Spanish, in order to determine potential differences in productivity across dialects.[1] That is, we analyze

1. The students in SPAN 5630 who worked on the data collection and coding for this paper were Lindsey Cole, Lee Davis, Katherine Denune, Kelly DiLullo, Kenneth Farmer, Eric Gundelfinger, Laura Hagy, Janelle Kiker, Dalton Kincaid, Nicolette Leon, Vanessa Lonigro, Robyn Miller, Adrienne Myton, Alexis Scharrer, Haley Waldo, Danielle Wheeler, Rachel Wolfe, and Shashe Wolfe-Steele. We are also grateful to Matt Kanwit and Dora LaCasse for helpful comments on prior versions of this paper. A prior version was presented at The Ohio State University Congress on Hispanic & Lusophone Linguistics (OSUCHiLL) in April 2018.

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the variable mood selection both of so-called subjunctive-taking governor verbs (e.g., *dudar* 'to doubt' as in (1)–(2)) and of normatively indicative-selecting governors (e.g., *creer* 'to believe' as in (3)–(4)).

(1) *¿Conservás alguna costumbre militar de tus días en el ejército? **Dudo que sea** la de levantarse bien temprano.* (Argentina)[2]

'Do you conserve any military habits from your days in the army? I doubt it's the one about getting up really early.'

(2) *Hoy en día nadie **duda que es** fundamental saber buscar información en Internet, encontrarla y separar la que es fiable de la que no.* (Mexico)

'Nowadays nobody doubts that it is fundamental to search for information on the Internet, find it, and separate what's trustworthy from what isn't.'

(3) ***¿Crees que** se **puede** ridiculizar así sin más la visión de los hombres tradicionales?* (Spain)

'Do you think you can just ridicule the view of traditional men like that?'

(4) *¿Cómo **crees que** esto **pueda** cambiar actitudes o generar cambios?* (Mexico)

'How do you think this can change attitudes or create changes?'

As these examples show, the linguistic reality is such that these verbs, which are often described as categorically taking one or the other mood by grammars or textbooks, in actuality exhibit variation within and across dialects. This variability is also seen with the verb *saber* 'to know,' which selects the indicative in (5), the subjunctive in (6), and both moods in (7).

(5) *Aunque la gente de mi edad recordará la época en que los astrónomos acariciaban la esperanza de que hubiera vida en Venus…hoy se **sabe que es** un entorno demasiado implacable para cualquier género de vida que razonablemente podamos concebir.* (Mexico)

'Although people my age will remember the time when astronomers clung to the hope that there was life on Venus… Today we know that it's too ruthless a place for any type of life we could reasonably conceive of.'

(6) *No vacila, ni busca excusas para no ir; tampoco **sabemos que haya** recibido mensaje alguno por parte de Isabel.* (Argentina)

'She doesn't hesitate, she doesn't look for excuses not to go; nor do we know that she has received any message from Isabel.'

2. Unless otherwise specified, all examples come from the web/dialects portion of Davies' (2016–) *Corpus del español.*

(7) *Y de este modo es la ignorancia causa del pecado; por ejemplo, cuando uno* ***sabe que es*** *un hombre aquel a quien mata, pero no* ***sabe que es*** *su padre; o cuando uno* ***sabe que*** *un acto* ***es*** *deleitable, mas no* ***sabe que sea*** *pecado.* (Spain)

'And in this way ignorance is the cause of sin; for example, when one knows that it is a man he is killing, but does not know that it is his father; or when one knows that an act is pleasurable, but does not know that it is sin.'

An important motivating factor for this study is therefore to challenge the often tacit assumption that there is a categorical distinction in Spanish between subjunctive-taking and indicative-taking predicates, and furthermore, that this distinction is similarly adhered to across dialects. The recent availability of online mega-corpora, such as the multi-billion-word updates to Mark Davies' *Corpus del español*, makes such research possible and, we would argue, quite necessary, given that our knowledge of such basic cross-dialectal facts is primitive, at best. Through a large-scale corpus analysis of 22 verbal governors, we ultimately demonstrate that none of these verbs is categorical in its mood selection, despite prevailing opinion. The behavior of governors varies from dialect to dialect as well, though the linguistic conditioning of this variation is largely consistent across the three varieties, with polarity and subject (non)-coreferentiality showing clear effects on mood choice. Regarding subjunctive productivity, we measure the overall type:token and *hapax legomena*:type ratios of each dialect and find that the subjunctive is most productive in Argentina, followed by Mexico, with Spain showing the lowest productivity of the three varieties. Each of these findings and their implications for linguistic theory are discussed in greater detail in the remainder of the paper, which is organized as follows: in Section 2, we review the previous linguistic literature on Spanish mood variation that informs our study; in Section 3, we present the research questions that guide our analysis, as well as their corresponding hypotheses; in Section 4, we detail the methodology used to address those questions; in Section 5, we report our results, presenting both descriptive and inferential statistics; in Section 6, we relate the results to our research questions, discuss their importance in responding to previous literature, and offer some conclusions.

2. Previous literature

2.1 The Spanish subjunctive

Research on synchronic mood variation in Spanish has revealed non-normative mood use in a variety of syntactic contexts (though, as discussed above, the traditional binary classification of governors as either indicative- or subjunctive-taking persists). Here we offer a necessarily incomplete sample of the numerous scholarly

works dedicated to the Spanish subjunctive and its variable use. Blake (1981), for example, used a sentence-completion task to examine variable mood choice among monolingual Mexican and Peninsular Spanish speakers in nominal complement clauses. Silva-Corvalán (1994) analyzed conversational data from Mexican-American bilinguals in Los Angeles and examined nominal clauses of several types, hypothetical manner clauses, temporal clauses, purpose clauses, etc. DeMello (1995) reported rates of indicative and subjunctive use following expressions of possibility and probability using data from 12 Spanish-speaking cities. González-Salinas (2003) used sociolinguistic interviews to analyze variable mood use in nominal, adjectival, and adverbial clauses in Monterrey, Mexico. Gallego and Alonso-Marks (2014) used a semi-spontaneous oral production task to compare rates of subjunctive use in complement clauses by speakers from Toledo, Spain and Rosario, Argentina. Gallego (2016) used a written task to examine mood choice by speakers from Córdoba, Argentina following matrices of volition, uncertainty, comment, and recommendation. Finally, Hoff (2019) used online questionnaires and qualitative interviews to analyze mood variation in future-framed adverbial clauses in the Spanish of Buenos Aires.[3]

As this brief summary suggests, Argentine, Mexican, and Peninsular Spanish are three of the best-represented dialects in the literature on mood variation and are thus an obvious choice for our quantitative analysis of nominal clause complements. However, ours is by no means the first study of variable mood in this syntactic environment; in fact, a great deal (perhaps even the majority) of linguistic scholarship on Spanish mood has focused on nominal clauses. Such studies are so numerous that a complete summary of their findings is beyond the scope of this paper, and therefore here we discuss only those analyses most directly relevant to our own.

Poplack et al. (2018) analyzed mood variation in nominal clauses across French, Italian, Portuguese, and Mexican Spanish in an effort to determine the extent to which the subjunctive is grammaticalized in each. The authors coded each governing verb according to three independent metrics: its overall rate of subjunctive selection, the proportion of the entire data set it represented, and the proportion of all subjunctive data it represented. According to these metrics, the authors identified the degree of grammaticalization of mood selection for each governor- the higher the score for each metric, the more routinized or grammaticalized, and thus the less productive, mood selection was determined to be.

Poplack et al. (2018) found that in all four languages, the major predictor of subjunctive selection is not semantic meaning but rather lexical bias (i.e. the

3. For a more complete overview, see for example Busch (2017). Spanish mood has also been analyzed from the perspective of formal semantics (e.g., Quer, 2001; Villalta, 2008) and generative syntax (e.g., Bosque, 2012; Kempchinsky, 2016).

idiosyncratic selection behaviors of individual verbal governors). Although Spanish was found to be the most conservative of the four languages in terms of grammaticalization of the subjunctive, the authors still identified clear evidence of structural conventionalization and lexical routinization in that a handful of governors accounted for the majority of subjunctive use. Thus, they concluded that "the usage facts militate against productivity in *all four languages,* with potential governors either highly or rarely associated with subjunctive, and more variability occurring *among* governors than within" (2018, p. 248, emphasis in original). While our data echo Poplack et al.'s (2018) finding of appreciable mood variation across governors, we also find notable variability in mood selection *within* the same governor across dialects, as previewed in Examples (1)–(7) above.

LaCasse (2018) analyzed data from the New Mexico Spanish-English Bilingual Corpus (Torres Cacoullos & Travis, 2018), which includes speech samples from minimally third generation New Mexicans who regularly use both languages. Mood variation in complement clauses was compared between this bilingual corpus and the "monolingual benchmark" of the *Corpus sociolingüístico de la ciudad de México* (Martín Butragueño & Lastra, 2011–2015) to measure the degree of subjunctive simplification in the contact variety. LaCasse (2018) finds that, although overall subjunctive rates and the absolute type count of governors would appear to support accounts of accelerated mood simplification, there is in fact no evidence of simplification in New Mexican Spanish (contact-induced or otherwise) once the variable context is operationalized properly and linguistic conditioning is considered globally, rather than subject to individual governor behavior.

2.2 Morphological productivity

Building on the recent work of LaCasse (2018), we take productivity of a linguistic form such as the subjunctive mood to be indicated by its dispersion across a variety of contexts. More specifically, following Pierrehumbert and Granell (2018), who look in particular at *hapax legomena* (type:token pairs that occur only once in a corpus), we can think of the "productivity of a morpheme … as the extent to which a language uses it actively in novel combinations" (p. 125). For instance, it seems inarguable that, all other things being equal, a Spanish speaker will create a novel past subjunctive form using the much more frequent morpheme variant *-ra* than with the much less frequent and lexically-restricted morpheme *-se* (see Rosemeyer & Schwenter, 2019). It is in this sense (among others), then, that we can label *-ra* as the more productive of the two morphemes. In this paper, due to the format of the corpus we limited our focus of attention to sentential contexts (as opposed to discursive or situational contexts, which we do not investigate but which could also affect the productivity of the subjunctive).

Bybee (2010, p. 95), building on extensive work on morphological productivity by Baayen (e.g., 2009), notes that *hapax legomena* in the domain of morphosyntax activate the whole construction and thereby strengthen constructional representation more than the use of high-frequency exemplars of a construction. More generally, low-frequency tokens require more parsing and contribute to the productivity of the constructional schema (such as [verbal governor + *que* + subjunctive verb] in this paper), while high-frequency tokens do not, since these are often stored as unanalyzed chunks. The same can be said, therefore, for high type:token ratios, since these also indicate greater dispersion of a form across distinct contexts (cf. Bybee & Torres Cacoullos, 2009). When type:token ratios are low, this means that there are many tokens of one type, and is indicative of greater grammaticalization of the subjunctive. This is illustrated by the famous case of French, where one verbal governor (*falloir* 'to be necessary') accounts for 65% of all the subjunctive tokens ($N = 2569$) in a corpus of spoken language, and together with one other governor (*vouloir* 'to want') accounts for 89% of all subjunctives (Poplack et al., 2018, pp. 240–241). While such extremes were not found for Spanish, it is still the case that there is a large skewing of the data such that the top two governors in Poplack et al.'s spoken Mexican Spanish data account for 48% of all nominal clause complement subjunctives (2018, p. 244).

3. Research questions and hypotheses

The three research questions guiding our analysis are the following:

R1: Do Argentine, Mexican, and Peninsular Spanish differ in the productivity of the subjunctive in nominal complement clauses?
R2: Do the individual verbs analyzed both within and across the three dialects differ in terms of productivity?
R3: How do these three dialects differ in terms of the linguistic conditioning of mood selection in complement clauses?

With regard to the first question, we measure the productivity of the subjunctive for each dialect in terms of two related metrics: the type:token ratio and the ratio of *hapax legomena* to type. As noted above, type:token ratio is an accepted measure of morphological productivity, while *hapax legomena* are type:token pairs that occur only one time in the data; we use these as measures of productivity insofar as they can be considered instances of innovative extension of the subjunctive mood to verbal lexemes.

a. The overall type:token ratio of each country, compared (more types = greater productivity)
b. The overall ratio of *hapax legomena* to type of each country, compared (more *hapax legomena* = greater productivity)

Regarding the second question, we use the same two metrics in order to determine the productivity of each verb and compare its behavior both to other governors in the same dialect and also across the three dialects.

a. The type:token ratio of each governor in each country
b. The number of *hapax legomena* of each governor in each country

Finally, in terms of the linguistic conditioning of mood selection across the three varieties, we hypothesize that individual verbal governors will exert by far the greatest influence on the variation. In this sense, we expect our findings to mirror those of Poplack et al. (2018), who found that Mexican Spanish[4] and other Romance languages have essentially grammaticalized mood alternations; these alternations are no longer based on independently-defined semantic (or pragmatic) criteria. They note, for instance, that while certain verbs (e.g., Spanish *creer*, Italian *credere* 'to believe') have the same semantic content, their mood selection patterns have been grammaticalized such that the selection of subjunctive over indicative (or vice-versa) is no longer meaningful. As they point out, Spanish is actually rather conservative when compared with Italian or French, which show more extreme grammaticalization of mood, and there are still remnants of a meaning-based system left. Thus, for instance, we expect that polarity will be an important predictor of subjunctive mood, given that verbs like *creer* often collocate with this mood when negated but not otherwise. We also hypothesize that person/number of the main and subordinate clause subjects could have an effect on mood choice, since asymmetries between, for instance, first and second persons versus third persons are widespread in morphosyntactic phenomena. Below however we will show that this effect is actually an epiphenomenon of (lack of) coreferentiality between main and subordinate clause subjects, or what has been called the "subjunctive disjoint reference effect" (Kempchinsky, 2009).

4. Although Poplack et al. (2018) analyze data from Mexican Spanish only, they treat it as representative of Spanish more globally. They furthermore compare these data to French, Italian, and Portuguese without dialectal specification in these languages.

4. Methods

We conducted a corpus analysis using the web/dialects portion of Davies' (2016–) *Corpus del español*, which consists of approximately 2 billion words of text.[5] We selected Argentina, Mexico, and Spain as the dialectal targets of our corpus searches. For the searches, we chose 22 verbal governors that all show at least some mood variation with nominal clause complements; following standard variationist method (cf. Labov, 1972; Tagliamonte, 2006), we do not include verbs that show no variation between indicative and subjunctive. Most of the verbs chosen came from prior research by Poplack et al. (2018) and Torres Cacoullos et al. (2017), in order to provide a point of comparison between our research and theirs, which was carried out on a much more restricted dataset. However, some of the verbs in these prior studies – especially some of those in the diachronic research of Torres Cacoullos et al. (2017) – were either too infrequent and/or obsolete in the present-day Spanish of the *Corpus del español* for us to include in our searches.[6]

To extract data from the corpus, we performed searches that yielded all present indicative forms of the matrix governor (e.g., *negar* 'to deny'), followed by any present indicative or subjunctive verb in the subordinate clause. To accomplish this, two separate searches were performed, using the following syntax: (1) [negar]_VIP* que _VSP* and (2) [negar]_VIP* que _VIP*. Because these searches returned many more tokens for some verbs than for others, we collected a maximum of 100 tokens per verb, per subordinate clause mood, per country (e.g., 100 tokens of *negar que* + subjunctive from Argentina, 100 tokens of *negar que* + indicative from Argentina, etc.). When less than 100 tokens were available, we coded all of these exhaustively, but when the search returned more than 100 tokens, we used an online random number generator to facilitate the random extraction of 100 tokens. These search methods yielded a total of 6,822 tokens: 2,239 from Argentina, 2,144 from Mexico, and 2,439 from Spain.

Table 1 below gives the list of governors analyzed, categorized by the governors' normative selection behavior. However, as mentioned above, none of these governors was categorical in its mood selection behavior, that is, we cannot consider any of these verbs to be fully grammaticalized in terms of selecting the subjunctive.

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5. This portion of the corpus consists of data culled from web pages in 2013–2014 and includes content of virtually all types, from blog posts to fora to online news to commercial websites.

6. For example, *ser derecho que* 'to be well founded' occurred zero times in our dataset, *ser harto que* 'to be tiring that' appeared only once, and *ser causa que* 'to be the cause of' yielded seven total tokens. Such low token counts do not allow for robust cross-dialectal comparison. Also note that Torres Cacoullos et al. (2017) included phrasal expressions such as *No es por nada que* 'it is not for nothing that', *Cómo será que* 'how could it be that', etc. and included tokens which would not have been accounted for using our more rigid search syntax (e.g., intervening material between governor and subordinated verb, elision of *que*, etc.).

Table 1. All governors analyzed, categorized by normative mood selection behavior

Normatively subjunctive governors			**Normatively indicative governors**
dejar 'to leave'	*hacer* 'to cause'	*rogar* 'to plead'	*creer* 'to believe'
desear 'to desire'	*mandar* 'to command'	*suplicar* 'to beg'	*pensar* 'to think'
dudar 'to doubt'	*negar* 'to deny'	*temer* 'to fear'	*saber* 'to know'
esperar 'to hope'	*pedir* 'to request'	*estar bueno* 'to be good'	*ver* 'to see'
exigir 'to demand'	*querer* 'to want'	*estar mal* 'to be bad'	
gustar 'to like'	*recomendar* 'to recommend'	*ser bueno* 'to be good'	

Each token was coded for matrix infinitive (from the 22 governors listed above); polarity of the matrix verb (affirmative or negative); person of the subordinate clause verb (1st, 2nd, or 3rd); and the dialect from which the token was extracted. This coding procedure permitted the analysis of the linguistic conditioning of mood selection in the entire dataset, and then individual analyses of each dialect.

5. Results

In this section, we first present results from searches of the entire web/dialects corpus to provide overall measures of subjunctive productivity in the largest possible data set.[7] Following this analysis, we turn to the linguistic conditioning of mood selection in the sample (N = 6,822) randomly extracted using the governors listed above from the larger corpus and coded for polarity and main and subordinate clause subjects.

In Figure 1, we provide the results of our analysis of the two different types of productivity measurements when applied to the entire corpus. First, looking at *hapax legomena*:type ratio, we see that Argentina and Mexico show no difference: both have a ratio of 0.64. Spain, however, has a significantly lower ratio, when measured by a chi-square, than the other two dialects, denoting lower productivity of the subjunctive. This same cross-dialectal pattern is also seen in the results for the type:token ratio. Argentina (0.30) and Mexico (0.27), albeit rather similar, are nevertheless significantly different from each other. Spain, on the other hand, shows a much lower ratio than either of its Latin American counterparts, at 0.18, once again showing that the productivity of the subjunctive in Iberia lags behind that of the New World dialects. Putting this differently, these results reflect the greater grammaticalization of the subjunctive in Peninsular Spanish than in the Argentine or Mexican varieties.

7. Since these results rely on the tagging of the corpus, there may be sporadic errors in lexical classification; however, any such tagging errors (which spot-checking showed to be minimal) would be consistent across governors and dialects.

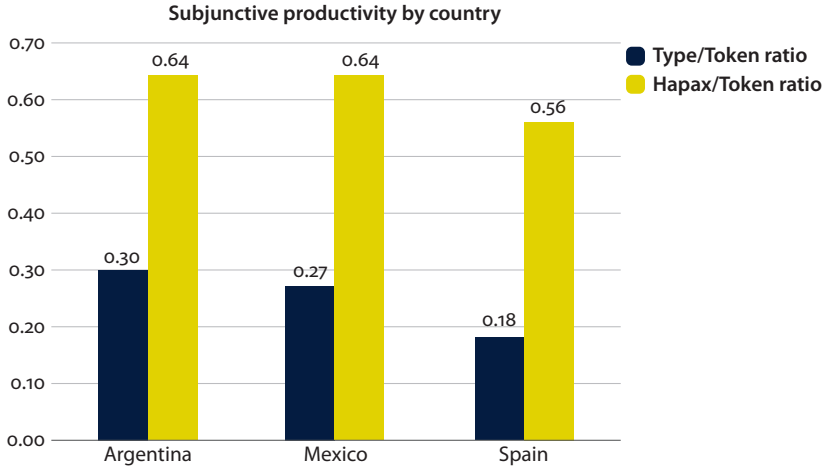

Figure 1. Overall productivity of subjunctive by dialect

In the next three figures, we break down the type:token ratios presented in Figure 1 above to highlight the behavior of individual verbs in each dialect.[8] Figure 2 reports the subjunctive productivity (black), as measured by type:token ratio, of all 22 governors in the Argentine data.[9] Productivity of the indicative (gold) is also provided for comparison. Thus, *suplicar* 'to beg/plead' has a type:token ratio of 1 (1 token per type) for both the subjunctive and the indicative in the Argentine data, whereas *creer* is much less productive in both moods, with a type:token ratio of about .1 for subjunctive, and lower than .1 for indicative.

The comparison of the Argentine data in Figure 2 with the Mexican data in Figure 3 shows widespread variation, both in terms of individual governors' subjunctive productivity and in terms of their ordering relative to other verbs (see Table 3 below for the statistical significance of these results). Looking at *creer* at the bottom of the figure, we see that its type:token ratio with subjunctive is once again just over .1, while the corresponding indicative ratio is lower than .1.

Finally, the subjunctive productivity of the Peninsular variety in Figure 4 also differs from the Argentine and Mexican data presented above. To take one glaring example, *estar bueno* 'to be good' does not occur at all with the indicative in this dialect, and has a high type:token ratio (over .8) with the subjunctive. There are,

8. Because type:token and *hapax legomena*:type ratios are related measures of morphological productivity, we present this breakdown for only the former metric for reasons of space.

9. In Figures 2–4 as well as Table 2, we note that token counts vary greatly across both verbs and dialects, and therefore affect the interpretation of type:token ratios. In Table 3, however, token counts are taken into account in the determination of statistically significant type:token ratio differences across verbs and dialects.

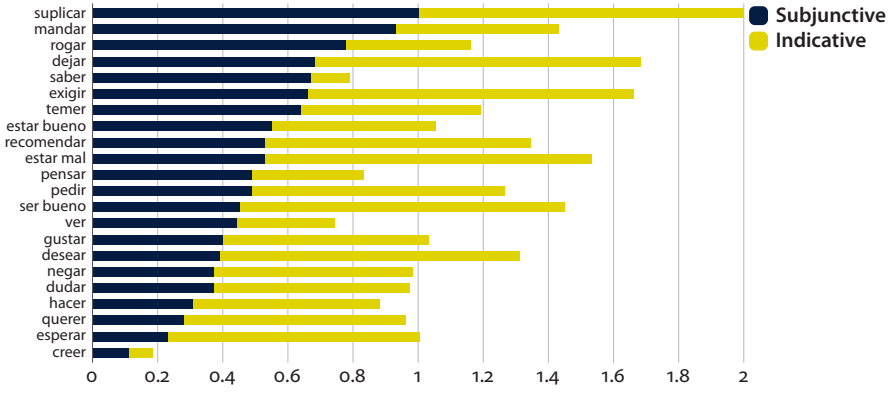

Figure 2. Subjunctive productivity by governor in the Argentine data

however, myriad similarities across all three dialects. For example, *suplicar, mandar* 'to command/order', and *rogar* 'to beg/plead' are consistently among the highest governors in terms of subjunctive productivity, while *querer* 'to want', *hacer* 'to make', *esperar* 'to hope', and *creer* occupy the bottom of the list, and therefore can be considered to be governors that have grammaticalized the subjunctive to a greater degree in their complements (though in the case of *creer*, subjunctive use is due to the effect of negation and interrogatives, to be discussed later).

In order to further facilitate the comparison of each governor's ranking in terms of subjunctive productivity across dialects, Table 2 lists the position that each of the 18 normatively subjunctive governors occupies in each of the three varieties with respect to subjunctive productivity. As shown in Figures 2–4 *suplicar* has the highest subjunctive productivity of all governors in Argentina, but occupies the second position in Mexico and Spain. *Recomendar* 'to recommend' on the other hand, has the 8th-highest subjunctive productivity rate in the Argentine data, but

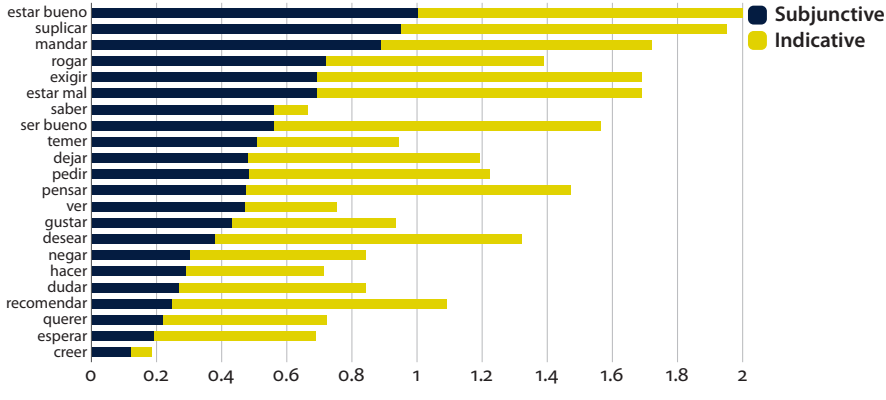

Figure 3. Subjunctive productivity by governor in Mexican data

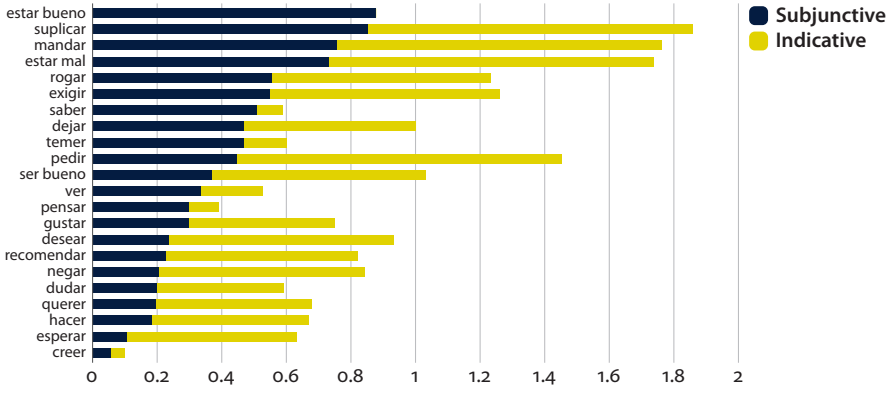

Figure 4. Subjunctive productivity by governor in Peninsular data

ranks 16th in Mexico and 13th in Spain. On the other hand, *estar bueno* shows the highest productivity rate in both Mexico and Spain but is only the 7th most productive governor in Argentina.

Thus far, we have reported the individual governors' subjunctive productivity as measured by type:token ratio and their consequent rankings relative to other verbs, but have not shown whether these differences are statistically meaningful. In Table 3, we report the statistically significant differences in type:token ratio of each

Table 2. Subjunctive productivity ranking of each governor compared across dialects

	Argentina	Mexico	Spain
suplicar	1	2	2
mandar	2	3	3
rogar	3	4	5
dejar	4	9	7
exigir	5	5	6
temer	6	8	8
estar bueno	7	1	1
recomendar	8	16	13
estar mal	9	6	4
pedir	10	10	9
ser bueno	11	7	10
gustar	12	11	11
desear	13	12	12
negar	14	13	14
dudar	15	15	15
hacer	16	14	17
querer	17	17	16
esperar	18	18	18

Table 3. Cross-dialectal comparison of type:token ratio of subjunctive for each governor

	Arg : Sp	Arg : Mex	Sp : Mex
dejar	*	n.s.	*
desear	*	n.s.	*
dudar	*	*	n.s.
esperar	*	*	*
exigir	n.s.	n.s.	n.s.
gustar	n.s.	*	*
hacer	*	n.s.	*
mandar	n.s.	n.s.	n.s.
negar	*	n.s.	n.s.
pedir	*	*	*
querer	n.s.	*	*
recomendar	n.s.	*	*
rogar	*	n.s.	*
suplicar	n.s.	n.s.	n.s.
temer	*	n.s.	*
estar bueno	n.s.	n.s.	n.s.
estar mal	n.s.	n.s.	n.s.
ser bueno	n.s.	n.s.	*
creer	*	*	*
pensar	n.s.	*	n.s.
saber	n.s.	*	*
ver	*	n.s.	*

verb, as determined by a chi-square test, across the three possible country pairings. Take *dejar* 'to allow', for example, whose type:token ratio for the subjunctive is significantly different between Argentina and Spain and between Spain and Mexico, but not between Argentina and Mexico. In the case of *esperar*, on the other hand, all three varieties are significantly different from one another. Note that 17 of the 22 verbs (77%) show significant differences for at least one dialect pairing, a result that is not at all expected from discussions of verbal governors in Spanish grammar or other sources. It is also useful to note that, according to type:token ratio, Argentina and Mexico are more similar to one another than to Spain, differing for only 9 verbs, whereas the greatest difference between dialects (14 verbs) is observed between Mexico and Spain.

The remainder of the results we report here are relative to the linguistic conditioning of mood selection and are based on the 6,822 tokens from the 22 verbal governors that were randomly extracted from the corpus and manually coded and verified. We begin with the mixed-effects logistic regression of all coded data analyzed together. In Table 4, we present the results of the best-fitting model, which

Table 4. Output of mixed-effects logistic regression (Mood ~ Matrix Polarity + Subordinate Clause Person + Dialect + (1+Matrix Polarity|Matrix Infinitive)

Fixed effects	**Estimate**	**Std. error**	***z* value**	***p* value**
(Intercept)	1.82497	0.53573	3.407	< .01
Matrix Polarity (Ref: Positive)				
Negative	1.69085	0.76236	2.218	< .05
Subordinate Person (Ref: 3rd)				
1st	−1.03596	0.11460	−9.040	< .01
2nd	0.13476	0.11981	1.125	
Dialect (Ref: Mexico)				
Argentina	0.03498	0.10011	0.349	
Spain	−0.47916	0.09368	−5.115	< .01
Random effects			**Variance**	**Std. Dev.**
Matrix Infinitive	(Intercept)		6.012	2.452
	Matrix Polarity Neg.		8.520	2.919

included Matrix Polarity, Subordinate Clause Person, and Dialect as fixed effects. Additionally, because we observed that verbal governors included in the dataset behaved differently depending on the polarity of the main clause, a random slope was included for Matrix Infinitive by Matrix Polarity.[10]

The polarity of the matrix clause is shown to have significant effects on mood selection in the subordinate, with negative polarity predicting significantly more subjunctive use. Subordinate clause person also predicts mood selection, with greater probabilities of subjunctive when the subordinate clause verb is in the 2nd person as compared to the 3rd. First-person subordinated verbs on the other hand are less likely to appear in the subjunctive. This finding will be contextualized and explained in greater detail in the discussion of Table 5 below. Finally, the dialect from which the data originate has a significant effect on the mood used. Argentina exhibits significantly more subjunctive than does Mexico, which in turn selects the subjunctive significantly more than Spain. Although we do not have diachronic data to examine this discrepancy further, future research should determine whether this more productive use of the subjunctive in the two Latin American dialects is a remnant of prior stages of the language, or a reflection of innovative extension(s) of the subjunctive to contexts where it was not found

10. Though random slopes do lead to a much more complex statistical model, our data clearly show that the effect of Matrix Polarity is not uniform across governors, which violates the assumption that would allow for the inclusion of Matrix Infinitive as simply a random intercept.

previously. Whatever the diachronic facts may be, these synchronic results are difficult to reconcile with recent views that the subjunctive is receding or being "lost" in (some) dialects of Latin American Spanish (Gallego, 2016; Gallego & Alonso-Marks, 2014; *inter alia*).

In Table 5, we break down the effects by the person of the subordinate clause in a different way. We hypothesize that it is not the person of that clause per se that affects mood choice, but rather the coreferentiality or lack thereof between the subject of the subordinate clause and that of the main clause. We therefore analyzed the data looking at these subjects in the singular (given that there are far fewer coreferential cases in the plural). As the results show, there is nearly a mirror-image in the results between coreferential subjects, which relatively rarely lead to subjunctive mood (14%) in nominal subordinate clauses, and non-coreferential subjects, which conversely rarely lead to indicative mood (19%) in these clauses. As might be expected, given that coreferential infinitival subordinate clauses are possible and undoubtedly the more common option in all dialects of Spanish (e.g., *[Yo] quiero ir mañana* instead of the finite and questionably acceptable *[Yo] quiero que [yo] vaya mañana*), there is a much smaller overall number of coreferential subjects (n = 203), less than one-third the number of non-coreferential subjects (n = 654). Non-coreferential subjects, moreover, are ungrammatical with an infinitival subordinate clause (**[Yo] quiero tú ir mañana*).

Table 5. The effect of subject (non)-coreferentiality on mood selection

	Coreferential subjects (1SG or 2SG)	**Non-coreferential subjects (1SG or 2SG)**
Indicative	174 (86%)	124 (19%)
Subjunctive	29 (14%)	530 (81%)
Total N	**203**	**654**

The statistical analysis presented thus far has identified that both polarity and subject (non)-coreferentiality are significant predictors of mood selection in the dataset as a whole and has shown that the three dialects under examination have significantly different overall rates of subjunctive use. However, in order to answer our third research question, which is concerned with the similarities or differences in linguistic conditioning of mood choice across Argentine, Mexican, and Peninsular Spanish, each dialect must be analyzed individually and these findings must then be compared. In Table 6, we present results for Matrix Polarity and Subordinate Person from individual mixed-effects logistic regression analyses of each dialect. Each model includes a random slope, as before, for Matrix Polarity by Matrix Infinitive; full reporting of these models is available in Tables 7–9 in the Appendix.

Table 6. Cross-dialectal comparison of the conditioning of subjunctive selection; Mood ~ Matrix Polarity + Subordinate Clause Person + (1+Matrix Polarity|Matrix Infinitive), for each dialect separately

Argentina	**Est.**	***p***	**Mexico**	**Est.**	***p***	**Spain**	**Est.**	***p***
(Int.)	1.856	0.002	(Int.)	1.405	0.121	(Int.)	1.364	0.027
Matrix Polarity (Ref: Pos.)			Matrix Polarity (Ref: Pos.)			Matrix Polarity (Ref: Pos.)		
Neg.	3.282	0.047	Neg.	3.050	0.028	Neg.	1.681	0.117
Subord. Person (Ref: 3rd)			Subord. Person (Ref: 3rd)			Subord. Person (Ref: 3rd)		
1st	−1.019	1.5e-05	1st	−1.288	9.4e-08	1st	−0.970	1.2e-08
2nd	0.236	0.362	2nd	0.071	0.779	2nd	0.131	0.465

As shown in Table 6, matrix polarity and subject (non)-coreferentiality are significant predictors of subjunctive selection in both Argentine and Mexican Spanish, with negative polarity and non-coreferential subjects predicting greater use of the subjunctive. Both of these findings hold for the Peninsular data as well, but the effect of polarity is not significant, thus suggesting that in Peninsular Spanish the grammaticalization of the subjunctive (i.e. the loss of optionality dependent upon polarity) is greater than in the two Latin American dialects. It is worth nothing, however, that the distribution of polarity in our data is highly uneven for all three dialects; in the Peninsular data, for example, *suplicar* never occurs with negative polarity and several other verbs have only single-digit counts of negation, whereas *ver* 'to see' and *creer* contribute over 90 negative tokens each. Although the distribution of negative polarity is similarly skewed in the Argentine and Mexican samples as well, the fact that polarity was a significant predictor of subjunctive selection for these dialects but not for Spain may be due to the specific tokens we randomly extracted or to idiosyncrasies of the corpus, rather than to a real difference in the conditioning of these varieties. Further investigation will be required to make this determination.

6. Discussion and conclusions

Returning to our three research questions presented above in Section 3 we can now provide the following answers.

R1: Do Argentine, Mexican, and Peninsular Spanish differ in the productivity of the subjunctive in nominal complement clauses?

In terms of overall type:token ratio, Argentina and Mexico are essentially identical, but differ from that of Spain. In terms of *hapax legomena*:type ratio, all three dialects differ, but Argentina & Mexico are more similar to one another than to Spain. When individual verbs are considered, Argentina and Mexico are again more similar to each other than to Spain in that there are fewer significant differences in type:token ratio between Argentina and Mexico than between either of these two varieties and Spain.

R2: Do the individual verbs analyzed both within and across the three dialects differ in terms of productivity?

Within dialects, the answer to this question appears to be affirmative, in that the type:token ratios for different verbs within a given dialect ranged from 1 or nearly 1 (e.g., *estar bueno, suplicar*) to less than .1 (e.g., *esperar, creer*), indicating great differences in subjunctive productivity from one verbal governor to another. Across dialects, however, the answer to this question seems to depend on the verb in question. Some verbs (e.g., *exigir* 'to demand', *mandar, suplicar*) pattern very similarly across dialects, showing no significant differences in type:token ratio from one dialect to the other. Other verbs (e.g., *esperar, pedir* 'to request/ask', *creer*), by contrast, had significantly different type:token ratios in each dialect.

R3: How do these three dialects differ in terms of the linguistic conditioning of mood selection in complement clauses?

As with their subjunctive productivity, Argentina and Mexico appear to be more similar to one another than to Spain, since matrix polarity and subordinate clause person – employed here as a rough means of accounting for subject (non)-coreferentiality across clauses – were significant predictors of mood choice for both dialects, with negative polarity and non-coreferential subjects favoring the subjunctive. In the Peninsular data, however, matrix polarity was not a significant predictor of mood choice, thereby suggesting less variability and lower productivity overall than in the two Latin American dialects. This is exemplified, for instance, by a verb like *dudar*, which in Peninsular Spanish governs subjunctive nearly exclusively with both affirmative and negative polarity, but is variable especially with negative polarity in the Latin American dialects. However, given that polarity varied greatly in our data, both in terms of its distribution across verbal governors and its effects on mood selection with different governors, this is an area for continued exploration.

The choice of subjunctive mood in nominal complement clauses in Spanish is mainly lexically-determined, i.e. highly restricted to a relatively small set of verbal governors (with some much more frequent than others), and constrained by

polarity (with negation leading to more subjunctive) and switch/same-reference between main and complement clause subjects (with switch-reference leading to more subjunctive). There are subtle differences between varieties, as we have shown, but overall the factors that regulate mood choice are extremely similar. In this sense, our results are consonant with Poplack et al.'s (2018) lexical view for Mexican Spanish and Romance more generally. However, in contrast to recent work on mood choice which has characterized some dialects as showing receding use of the subjunctive (e.g., Gallego & Alonso-Marks, 2014), we have used several measures of morphosyntactic productivity in cross-dialectal perspective to offer a more comprehensive, macro-level view of the phenomenon. An important take-home point from our results should be that the presence of variation in mood choice in a given dialect is not necessarily an indication that the use of the subjunctive is being lost; rather, it can be understood as a sign of its productivity and lesser grammaticalization than in other dialects where freedom of choice between moods is not (or is no longer) possible.

Clearly, much of the variation found in our data is not related to semantically- or pragmatically-driven considerations. In this sense, these results mirror those of Rosemeyer and Schwenter (2019), who found no meaning-based distinctions between Spanish past subjunctive forms in *-ra* and *-se* in the same three dialects studied in this paper. Rather, there are grammaticalized patterns of mood choice with different verbal governors that vary by dialect, such as the total lack of indicative with *estar bueno* in Spain and the complete absence of sensitivity to polarity that *dudar* shows in the same variety. Crucially, these kinds of patterns are difficult, if not impossible, to uncover without access to data from large corpora such as that analyzed in this paper, as well as random sampling of the analyzed tokens. We therefore consider this research to be complementary to, and not in conflict with, work such as that of Poplack et al. (2018), insofar as our results can be considered to provide both a macro-level and cross-dialectal perspective on the productivity of mood alternations in Spanish.

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Appendix

Table 7. Mixed-effects analysis of subjunctive selection in Argentine data (expansion of Table 6)

Fixed effects		**Estimate**	**Std. error**	***z* value**	***p* value**
(Int.)		1.856	0.600	3.091	0.002
Matrix Polarity					
	(Ref: Pos.)				
	Neg.	3.282	1.650	1.989	0.047
Subord. Person					
	(Ref: 3rd)				
	1st	−1.019	0.236	−4.322	1.5e-05
	2nd	0.236	0.259	0.912	0.362
Random effects				**Variance**	**Std. Dev.**
Matrix Infinitive		(Intercept)		7.087	2.662
		Matrix Polarity Neg.		20.996	4.582

Table 8. Mixed-effects analysis of subjunctive selection in Mexican data (expansion of Table 6)

Fixed effects		**Estimate**	**Std. error**	***z* value**	***p* value**
(Int.)		1.405	0.907	1.549	0.121
Matrix Polarity					
	(Ref: Pos.)				
	Neg.	3.050	1.389	2.196	0.028
Subord. Person					
	(Ref: 3rd)				
	1st	−1.288	0.241	−5.338	9.4e-08
	2nd	0.071	0.255	0.280	0.779
Random effects				**Variance**	**Std. Dev.**
Matrix Infinitive		(Intercept)		15.850	3.981
		Matrix Polarity Neg.		10.730	3.275

Table 9. Mixed-effects analysis of subjunctive selection in Peninsular data (expansion of Table 6)

Fixed effects		**Estimate**	**Std. error**	***z* value**	***p* value**
(Int.)		1.364	0.615	2.218	0.027
Matrix Polarity					
	(Ref: Pos.)				
	Neg.	1.681	1.072	1.569	0.117
Subord. Person					
	(Ref: 3rd)				
	1st	−0.970	0.170	−5.706	1.2e-08
	2nd	0.131	0.179	0.730	0.465
Random effects				**Variance**	**Std. Dev.**
Matrix Infinitive		(Intercept)		7.463	2.732
		Matrix Polarity Neg.		11.720	3.423

CHAPTER 2

Mood selection in a contact variety

The case of Yucatec Spanish

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Researchers have noted unique qualities of Yucatec Spanish with regard to phonetics, syntax, and pragmatics (Bove, 2018; Hoot, 2016; Michnowicz, 2009, 2012; Solomon, 1996, 1999). The objective of this study is twofold: to describe mood in Yucatec Spanish and to identify how bilingual and monolingual speakers' mood selection differs. Results indicate that volitional predicates categorically license subjunctive while alternation exists under emotive and epistemic predicates. This alternation highlights statistically significant differences between monolingual and bilingual speakers of Yucatec Spanish ($p = 0.01$ and 0.04 respectively). Emotive predicates pattern with previous accounts of Mexican Spanish (e.g., Lope Blanch, 1989), but unanticipated subjunctive selection in epistemic assertions, interrogatives, and statements with past temporal reference highlight a difference between monolingual and bilingual participants.

Keywords: Yucatec Spanish, mood selection, language contact

1. Introduction

Yucatec Spanish has been considered a contact variety of Spanish that carries many features attributed to years of contact with Yucatec Maya on the Yucatán Peninsula in Mexico. Researchers have noted unique qualities of Yucatec Spanish's sound system (Michnowicz, 2009; Solomon, 1996, 1999), syntax (Hoot, 2016; Michnowicz, 2012), and pragmatics (Bove, 2019). The focus of the current study is mood selection in Yucatec Spanish. Grammatical mood overtly marks modal information in a verb phrase with specific morphology. In Spanish, two moods can be triggered in the subordinate clause: the subjunctive and the indicative. This paper will focus on volitional, emotive, and epistemic matrix clauses:

(1) *Quiero que [la entregues mañana].*
want.1SG that it turn in.SUBJ.2SG tomorrow
'I want that [you turn it in tomorrow]'

https://doi.org/10.1075/ihll.29.02bov

(2) *Me gusta que [la entregues mañana].*
DAT be pleasing.3SG that it turn_in.SUBJ.2SG tomorrow
'I want that [you turn it in tomorrow]'

(3) *No dudo que [la puedes terminar mañana].*
NEG doubt.1SG that it can.IND.2SG finish.INF tomorrow
'I do not doubt that [you can finish it tomorrow]'

The volitional predicate in (1) (*quiero* 'I want'), emotive predicate in (2) (*me gusta* 'I like'), and negated epistemic predicate in (3) (*no dudo* 'I do not doubt') embed a proposition with complementizer *que*. In such cases in Spanish, two distinct moods are triggered: the subjunctive (as in (1) and (2)) or the indicative (as in (3)). A key distinction in Spanish mood triggers is the assertion/non-assertion divide (Terrell & Hooper, 1974) and pragmatic presupposition (Lunn, 1989, 1995).

The goal of this chapter is to provide a description of mood selection in Yucatec Spanish and to identify differences between monolingual and bilingual speakers. I take a quantitative approach in order to provide a descriptive overview of mood selection patterns in Yucatec Spanish to answer the following questions:

RQ1: To what degree does Yucatec Spanish mirror mood distribution as presented in prescriptive grammars and mood selection in other varieties of Spanish?

RQ2: To what extent do monolingual and bilingual speakers' mood selections differ? Given previous accounts of differences between speakers in language contact situations (e.g., Lynch, 1999; Silva-Corvalán, 1994; Torres, 1989) and in Yucatec Spanish (e.g., Klee, 2009; Michnowicz, 2009, 2011, 2015), I hypothesize:

H1: In this contact variety, there is a neutralization of mood in which speakers show less mood alternation than previously described in pan-Hispanic accounts.

H2: Given previous accounts of statistically significant difference between bilingual and monolingual speakers' production, there are also similar differences observed in mood selection patterns.

This paper is organized in the following way: Section two gives an overview of previous accounts of both pan-Hispanic and dialect specific patterns of mood choice. Section three describes the methodology of the current study. Sections four and five present the results and discussions, respectively, and Section six offers conclusions and suggestions for future investigations.

2. Previous semantic accounts of mood in Spanish

Traditional approaches to pan-Hispanic analyses of the Spanish subjunctive (e.g., Bell, 1980; Bosque & Demonte, 1999: Bull, 1960; Garcia & Terrell, 1977; Gili y Gaya, 1969; Lunn, 1989, 1995; Rivero, 1971; Studerus, 1995; Terrell & Hooper, 1974) agree that mood selection can be explained in terms of assertions and presuppositions. When a speaker's utterance is an assertion, the speaker is presenting the information as fact. In Spanish, an assertion licenses the indicative. On the other hand, a non-assertion does not present any information as fact, nor does it necessarily describe it as false. A proposition may also be presupposed to be true rather than asserted. A non-assertion, or presupposition, licenses the subjunctive.

The current study focuses on three predicate types: volitional, emotive, and epistemic predicates. For each predicate type, it has been argued that mood is selected differently. Kempchinsky (2009) argues that volitional predicates are lexically selected and have uninterpretable features that introduce possible worlds:

(4) *Prefiero que me *ayudas* (IND)/ *ayudes* (SUBJ) *con esa tarea.*
'I prefer that you help me with this homework'

Strong intensional predicates such as *preferir* 'to prefer' in (4) lexically license the subjunctive in Spanish. In such cases, subjunctive is categorically licensed because it is the verb itself that triggers mood. In case of emotive predicates, the truth of this complement is presupposed rather than asserted:

(5) *Me gusta que #llegas* (IND)/ *llegues* (SUBJ) *temprano.*
'I like that you arrive early'

In (5), the proposition *llegas temprano* 'you arrive early' is presupposed to be true. In cases in which the embedded proposition is presupposed, the subjunctive is often licensed. In many varieties of Spanish, this has been treated as categorical, but some alternation has been observed in several varieties of Spanish, including Mexican Spanish (Lope Blanch, 1989). Lastly, epistemic predicates are frequently referred to as polarity subjunctive (Stowell, 1993). Epistemic predicates license the indicative except when under the scope of negation

(6) a. *Creo que es* (IND)/ **sea* (SUBJ) *la respuesta.*
'I think that it is the answer'
b. *No creo que #es* (IND)/ *sea* (SUBJ) *la respuesta.*
'I do not think that it is the answer'

As a case of polarity subjunctive, traditional theory would suggest that the affirmative structure in (6a) triggers the indicative while the presence of the negator *no* in (6b) triggers the subjunctive. However, recent research (Gielau, 2015; Haverkate, 2002; Quer, 1998) discusses the subjunctive/indicative alternation that is available when under the scope of negation, as seen in (6b). Much of the previous work focuses on a pan-Hispanic account of mood selection, but several more recent studies (Gallego & Alonso Marks, 2014; García, 2011; González Salinas, 2003) discuss on varietal differences of Spanish mood selection.

2.1 Mood selection in contact varieties

While little work has been done on mood in Yucatec Spanish, studies of mood selection in other bilingual varieties of Spanish can shed light on the patterns observed in this contact variety. One pattern observed in mood selection in contact varieties is the substitution of the conditional in cases where the imperfect subjunctive would be used in other monolingual varieties of Spanish. This has been observed in Spain in language contact between Basque and Spanish (in (7)) and in Mexico with Veneto-Spanish contact (in (8)):

(7) Basque-Spanish Contact (Fernández Ulloa, 1996, p. 109):
Si me iría a Galicia creo que lo primero que haría es aprender gallego.
'If I were to go to Galicia I think that the first thing that I would do is learn Galician'

(8) Veneto-Spanish (Barnes, 2009, p. 227):
A lo mejor si estaríamos en Italia estaríamos mejor pero bueno pero estamos bien.
'Maybe if we were in Italy it would be better but, well, but we are good'

The conditional is used in place of the imperfect subjunctive. Both authors make the claim that this replacement is evidence of simplification[1] of the imperfect subjunctive, which is common in contact varieties. Another case of mood selection in a contact variety comes from Guaraní-Spanish language contact in Paraguay:

(9) Guaraní-Spanish (Granda, 1979, p. 275):
No creo que llegó mi amigo
'I do not believe that my friend arrived'

1. Throughout this paper, I use the term simplification following Silva-Corvalán (1994) to refer to the decreased use of the subjunctive.

While the subjunctive mood would prescriptively be licensed under a negated predicate in (9), the indicative is used by Guaraní-Spanish bilinguals. Lastly, in purpose clauses such as *para que lo sepas* 'so that you know' there are cases in which an infinitive is used instead of the subjunctive, which would be licensed in many varieties of Spanish.[2] For example:

(10) Spanish and Portuguese (Elizaincín, 2004, p. 113):
Ella viene toda marcada para quebrarse, para usted cortar (INF) *la medida que quiere.*
'She comes all marked up for breaking, for you to cut the measurements she needs'

(11) Guaraní and Spanish (Granda, 1979, p. 275):
El patrón nos dijo para venir (INF) *hoy.*
'The boss told us to come today'

In many varieties of Spanish, the change of referent between the first and second clauses licenses the subjunctive. However, the utterances from Spanish-Portuguese and Guaraní-Spanish contact varieties simplify the finite verb to an infinitive verb. As seen in Examples (7) through (11), there are several cases in which it is argued that language contact results in a simplification of the Spanish mood system, or an increase in the use of the indicative in cases in which the subjunctive would typically be licensed. However, the data presented are anecdotal, and there is much to learn about the indicative/subjunctive in such contact varieties.

The exception to this is U.S. Spanish, a contact variety on which extensive work has been done, including studies by Silva-Corvalán (1994) in Los Angeles, Lynch (1999) in Miami, Bookhammer (2013) in New York City, and Waltermire (2014, 2017) in New Mexico, among many others. Silva-Corvalán's (1994) formative research on L.A. Spanish found that speakers who were born in Mexico had a system of verbal morphology that allowed them to convey different degrees of possibility, assertiveness, predictive certainty, and so on, while U.S. born speakers had a reduced mood system. Overall, the only contexts in which the subjunctive was conserved were embedded under volitional predicates. Silva-Corvalán suggests that the grammatical mood systems have simplified or have undergone reductions in terms of subjunctive use and reflects "a reduced system that made it more difficult to distinguish between more or less possible situations in a hypothetical world" (Silva-Corvalán, 1994, p. 91).

2. Thank you to the anonymous reviewer that pointed out that the infinitive over the subjunctive has been observed in Caribbean Spanish as well (Suñer, 1986; Lipski, 1991). This is of particular interest because, as the reviewer notes, this is not a contact variety of Spanish.

In a similar investigation on the Spanish of Cuban Americans in Florida, Lynch (1999) compares first-, second-, and third-generation[3] speakers in bilingual communities in Miami, finding a high rate of variability in Miami subjunctive use in second- and third-generation speakers. Similarly, Bookhammer (2013) uses a corpus at City University of New York to identify uses of grammatical mood, concluding that there is a significant difference between first- and second-generation speakers of New York Spanish. Waltermire (2014) finds a significant relationship between mood selection and language preference in Spanish spoken in New Mexico. Furthermore, Waltermire (2017) argues that speakers of New Mexican Spanish with less formal education have a more simplified mood system than their formally educated counterparts. Overall, what is seen in U.S. Spanish is a simplified mood system in which there is a decrease in the semantic space occupied by the subjunctive for bilingual speakers.

2.2 Yucatec Spanish

Yucatec Spanish has been identified as "an Indigenous contact variety that is rapidly undergoing standardization, as speakers reject regional linguistic forms in favor of pan-Hispanic norms" (Michnowicz, 2011, p. 1). Phonetic differences between bilingual and monolingual groups have been observed (Solomon, 1996, 1999; Michnowicz, 2009, 2011), and, syntactically, there are differences between monolingual and bilingual speakers with respect to characteristics such as subject pronoun rates (Michnowicz, 2015; Klee, 2009). Michnowicz (2015) observed a decreased sensitivity to coreference, a factor that determines pronoun use in Spanish. According to Michnowicz (2011), bilingual speakers identify a primary distinction between categories, but complex differences are not recognized; for example bilingual speakers in his study acquired the phonemes /b/, /d/, /g/, but they often were unsure of when their approximate counterparts [β], [ð], [ɣ] were used.

Regarding the use of mood in particular, in her investigation of pragmatically motivated mood triggers, Bove (2019) found that bilingual mood selection is similar to monolingual mood selection when the subjunctive is syntactically licensed, but there are differences between monolingual and bilingual speakers when mood plays a pragmatic role in discourse. These findings support previous conclusions regarding Yucatec Spanish (Michnowicz, 2015) in that monolingual speakers are sensitive to pragmatically motivated mood selection that bilingual speakers are not.

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3. Lynch (1999, p. 94) uses 'generation' to describe birthplace and age of immigration rather than age.

2.3 Yucatec Maya and the subjunctive

As Yucatec Spanish is a contact variety, it is important to examine mood selection patterns in Yucatec Maya as well. In Yucatec Maya, preverbal particles convey aspectual and modal information (Bohnemeyer, 2002). These aspectual and modal markers (henceforth AM markers) are required in finite clauses much like temporal, aspectual, or modal morphology is required in Spanish finite clauses. The following are just two examples of the many AM markers in Yucatec Maya:

(12) a. Relative Perfect
Sáam in ts'o'oksej
Sáam in ts'o'ok- s- ej
REL PERF 1SG finish-CAUS-ACT- SUBJ
'A little while ago I finished'

b. Compulsory
Yaan in bin Jó.
Yaan in bin-Ø Jó.
COMP 1SG go-ANT.IMPF Merida
'I will (have to) go to Mérida'

In both examples in (12) above, the modal/aspectual information is provided preverbally. Temporal information is provided with the relative perfect *sáam,* glossed rel perf, in (12a) and modal/temporal information is given with the compulsory AM *yaan*, glossed comp, in (12b).

The subjunctive in Yucatec Maya is a verbal suffix *-ej* that communicates temporal, aspectual, and modal information. The subjunctive can mark possible event realization in the future, realization in other worlds (as in counterfactuals), or can have past temporal reference. In (12a) above, the subjunctive marker *-ej* 'subj' is a suffix of the verb *ts'o'ok* 'finish'.[4] The subjunctive is only marked overtly if there is no element that follows, as seen in Example (12a). According to Bohnemeyer (2002), Examples (13a, b) show that the AM markers *bíin, bik* license the use of the subjunctive.[5] The following are examples of all AM markers that require the use of the subjunctive (Chan Dzul, 2017):

4. Ts'o'ok itself is an AM marker marking completed actions, but in this case, it is acting as the verb *finish*.

5. In cases in which the transitive verb, such as *t'aan* 'speak' in Example (4) is followed by a NP *maaya* 'Maya', the subjunctive morphology is null.

(13) a. *Bíin*: predictive
Bíin u t'anej.
Bíin u t'an- ej.
PRED 3SG speak-SUBJ
'Maybe she will speak (someday)'

b. *Bik:* preventate
Bik u t'anej.
Bik u t'an -ej
PREV 3SG speak-SUBJ
'It is recommended that she not speak'

c. *Mika'aj*: prospective
Mika'aj u t'anej
Mika'aj u t'an -ej
PROSP 3SG speak-SUBJ
'She will speak'

d. *Óolak:* unaccertive (almost)
Óolak u t'anej.
Óolak u t'an -ej.
DES 3SG speak-SUBJ
'She almost speaks'

e. *Sáam*: Relative perfect
Sáam u t'anej.
Sáam u t'an -ej.
REL_PERF 3SG speak-SUBJ
'A little while ago she spoke'

f. *Úuch*: Remote perfect
*Úuch u t'an*ej.
Úuch u t'an -ej.
REM_PERF 3SG speak-SUBJ
'A long time ago she spoke'

The examples presented in (13) illustrate all AM markers that trigger the subjunctive. Some AM markers with future temporal reference (such as predictive *bíin* in (14a), preventative *bik* in (13b), and prospective *mika'aj* in (13c)) trigger the subjunctive, which is similar to the mood licensed under Spanish *cuando* 'when' with future temporal reference. The subjunctive in Yucatec Maya extends beyond future temporal reference, however, also marking past events including the relative perfective (e.g., 'just a bit ago' in (13e)) and remote perfective (e.g., 'a while ago' in (13f)). In general, the subjunctive is used in Yucatec Maya to communicate temporal/aspectual/modal information rather than pragmatic information. With regard to the current study, there is little overlap in terms of subjunctive use between the two languages.

3. Methodology

3.1 Data collection

In order to give an overview of mood selection in Yucatec Spanish, a questionnaire was created to test the effects of predicate type and structure on mood choice. The questionnaire was created in and shared through the online survey program *SurveyMonkey*, and it was primarily disseminated through community forums on Facebook. From initial contacts made through social media and prior contacts in the community, snowball sampling was used to increase the number of participants. Snowball sampling uses study participants and their contacts to recruit additional participants.[6] This sampling technique was especially helpful in entering a community in which the researcher was not a participant. The FC task was completed individually and often without the investigator present. Participants were not compensated for their participation in this study.

3.2 Forced choice task

As previous data on the state of the subjunctive in Yucatec Spanish are lacking, the first step in this investigation was to document some subjunctive selection trends in Spanish throughout the Yucatán Peninsula. The objective of this first task was to see if participants were sensitive to changes in subjunctive-licensing triggers. The Forced-Choice (or FC) task was selected because it can establish a contrast in acceptability between two conditions (in this case, the subjunctive and indicative moods) and can detect differences between several conditions (Schütze & Sprouse, 2013).[7]

3.3 Task design

The FC task was presented as dialogues describing three unique storylines. A brief context was provided to introduce each dialogue. Each line of dialogue contained a targeted structure, and each line of dialogue built upon the previous line(s). Each dialogue contained two participants with varying levels of formality: one informal dialogue (two friends), one formal yet familiar dialogue (professor and student),

6. See Buchstaller and Khattab (2013) for a discussion of the advantages and disadvantages of this technique in linguistic and ethnographic research.

7. Limitations of an FC task include the inability to describe the size of the difference or how (un)acceptable an utterance is (Schütze & Sprouse, 2013).

and one formal and unfamiliar dialogue (employee and client). Each dialogue contained a brief two-to-three sentence context as well as 12–15 lines of dialogue.

The task contained 50 questions[8] and aimed to compare three types of matrix verbs: epistemic, volitional, and emotive. For each verb type, there were three verb stimuli, which are listed in Table 1.

Table 1. Verb types and stimuli

Volitional verbs	Emotive verbs	Epistemic verbs
Querer 'To want'	*Gustar* 'To be pleasing'	*Creer* 'to believe'
Sugerir 'To suggest'	*Ser bueno* 'To be good'	*Pensar* 'To think'
Preferir 'To prefer'	*Lamentar* 'To be sorry'	*Estar seguro* 'To be sure'

Each matrix verb was then presented in four ways: an affirmative statement to act as a control, a negated statement, an interrogative, and a past statement. For example:

(14) Volitional verb: *Querer*
- (a) Affirmative: *Quiero que llegue mañana.* 'I want her to arrive tomorrow'
- (b) Negated: *No quiero que llegue mañana.* 'I don't want her to arrive tomorrow'
- (c) Interrogative: *¿Quieres que llegue mañana?* 'Do you want her to arrive tomorrow?'
- (d) Past: *Quería que llegara mañana.* 'I wanted her to arrive tomorrow'

All task items had a similar syntactic structure and included a matrix verb (either epistemic, volitional, or emotive) and a subordinate verb phrase in which the verb was missing. An example of the survey is shown in Figure 1.

Participants were asked to read each sentence and select the verb that sounded better for each sentence, and while it was possible to leave the questions blank, participants were not able to select both verbs as a preference.

8. This included 7 biographical questions, 7 distractors, and 36 target items. I acknowledge that the low level of distractors is a limitation to the current study. With the appropriate number of distractors, participants were not finishing the task. As this was an unpaid task, I opted to shorten the questionnaire by cutting some distractors in order to receive more complete responses.

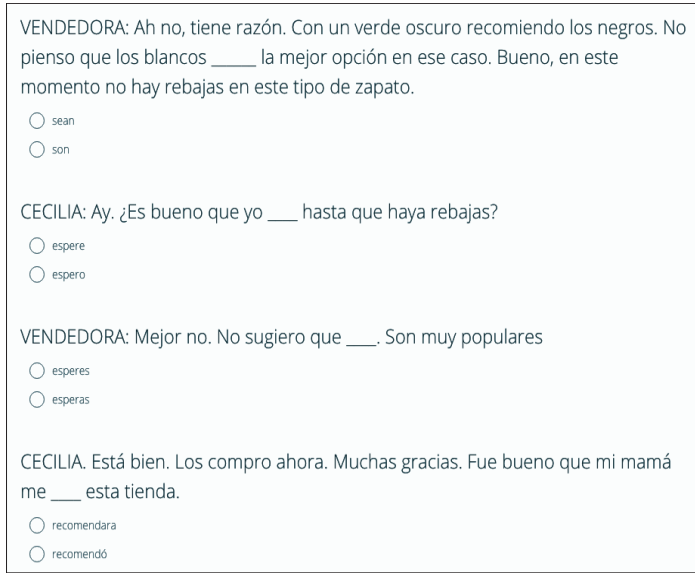

Figure 1. Screenshot from online survey

3.4 Participants

As the FC task aimed to get an idea of overall mood selection in the region, participants from all three states of the Yucatán Peninsula (Campeche, Yucatán, and Quintana Roo) were represented in this study. Table 2 describes the participants according to social factors.

Table 2. Participant data

Social factor		
Gender	Male	Female
	$n = 62$	$n = 94$
State	Yucatán	Campeche and Quintana Roo
	$n = 114$	$n = 42$
Education	University educated	Non-university educated
	$n = 120$	$n = 36$
Language	Monolingual Spanish	Bilingual Spanish/YM
	$n = 85$	$n = 70$

As this study was primary disseminated through Facebook, there was a large number of young, university-educated participants. There are, however, balanced numbers of each gender and language status.[9]

3.5 Data analysis

First, each participant was given a score that represented their responses. Each item was scored individually: an answer that corresponded with anticipated mood selection was given a one (1) and an answer that contradicted the anticipated mood selection was given a zero (0). Participant scores were summed with possible scores ranging from 0 to 12 for each predicate type and context. A higher score indicated that the individual's mood selection followed anticipated mood patterns and a lower score indicated that the mood selection did not follow anticipated patterns. Using R Studio, a mixed effects model was performed to determine if there was a significant difference between language groups (monolingual versus bilingual). Independent variables included predicate types (emotive, epistemic, volitional) and structure (assertion, interrogative, negated, past temporal reference). The social factors including gender, state, education, and age were run as random effects.

4. Results

Based on the mixed effects model, there was a statistically significant difference between bilingual and monolingual speakers with regard to mood selection embedded under epistemic ($p = 0.044$) and emotive ($p = 0.01$) predicates. Additionally, there was a statistically significant difference between bilingual and monolingual mood choice in assertive structures ($p = 0.026$). In the following sections, I discuss several patterns found within individual predicate groups.

4.1 Volitional predicates

Previous literature suggests that volitional predicates categorically license the subjunctive, and the current data support this idea, demonstrating little to no alternation in mood selection among volitional predicates in Yucatec Spanish. In Table 3, the number and percentage of anticipated responses selected in the FC task are presented.

9. This method of classification for language status was adopted because most monolingual people in Yucatán have relatives or close relations with people who speak Yucatec Maya, and the majority of Yucatecos know at least some Maya. Therefore, I classified Yucatec Maya speakers as the individuals who use Yucatec Maya at work/school/home/with family.

Table 3. Percentage of anticipated responses: Volitional predicates

	Affirmative	Negated	Interrogative	Past
Sugerir 'To suggest'				
Monolingual	100%	100%	100%	100%
Bilingual	96.6%	98.5%	98.5%	98.5%
Preferir 'To prefer'				
Monolingual	100%	100%	100%	100%
Bilingual	100%	94%	98.5%	97%
Querer 'To want'				
Monolingual	100%	100%	100%	98.8%
Bilingual	100%	97%	100%	98.5%
Average				
Monolingual	100%	100%	100%	99.6%
Bilingual	98.9%	96.5%	99%	98%
All	99.4%	98.25%	99.5%	98.8%

While there was minor difference in mood preference between bilingual and monolingual participants, in general, preferences aligned with anticipated mood selection in all categories of utterance type with little alternation; it is clear that speakers of Yucatec Spanish select the subjunctive embedded under volitional predicates. For example, both bilingual and monolingual participants unanimously selected the subjunctive in the sentence containing the verb *querer* 'to want' in the interrogative form, as follows:

(15) *BERTA: A ver. ¿A qué hora quieres que llegue/llego?*
'BERTA: Let's see. What time do you want me to arrive?'

Assertions and interrogatives with *querer* categorically licensed the subjunctive for all speakers as well. High rates of subjunctive are observed across utterance types. Like Silva-Corvalán's (1994) observation that volitional predicates are the only group to preserve subjunctive selection in U.S. Spanish, Yucatec Spanish also preserves the use of the subjunctive under volitional predicates with very little distinction between speaker groups.

4.2 Emotive predicates

While many previous accounts of mood selection under emotive predicates state that only the subjunctive should be licensed, some sources such as Lope Blanch (1991) suggest that there is mood alternation in Mexican Spanish. The current data suggest that this alternation is also available in Yucatec Spanish. Table 4 presents the percentage of anticipated responses indicated by participants.

Table 4. Percentage of anticipated responses: Emotive predicates

	Affirmative	Negated	Interrogative	Past
Ser bueno 'To be good'				
Monolingual	90%	100%	100%	93.3%
Bilingual	75.7%	98.6%	94.3%	85.7%
Lamentar 'To regret'				
Monolingual	91.8%	97.6%	72.3%	89.4%
Bilingual	91.4%	88.6%	66%	92.8%
Gustar 'To be pleasing'				
Monolingual	82.9%	96.4%	95.3%	87.8%
Bilingual	81%	95.7%	97%	71.4%
Average				
Monolingual	88.2%	98%	89.2%	90.2%
Bilingual	82.7%	94.3%	85.8%	83.3%
All	85.46%	96.15%	87.5%	86.75%

Subjunctive selection is not categorical for either bilingual or monolingual participants. There are slightly higher rates of subjunctive preference in bilingual speakers than monolingual speakers. Participants prefer the use of the subjunctive for emotive predicates, but the overall preference for the subjunctive is lower when embedded under emotive predicates than under volitional verbs. There were some outliers to this trend, including the emotive interrogative in (16):

(16) *BERTA: Ah sí tienes razón. ¿Lamentas que no vas/vayas a estar Juan?*
'BERTA: Oh yeah you are right. Do you regret that Juan will not be there?'

Participants expressed mixed opinions regarding this interrogative with 69% of participants selecting the subjunctive. However, such lower rates of subjunctive were not observed for all interrogatives; the items containing the predicate *ser bueno* 'to be good' in the interrogative form presented interesting mood selection patterns:

(17) *CECILIA: Ay. ¿Es bueno que yo espere/espero hasta que haya rebajas?*
'CECILIA: Ah. Is it good that I wait until there are sales?'

The matrix predicate in this sentence licensed the subjunctive 97% of the time. One key difference between the items may be pragmatic presupposition. Matrix clauses containing emotive predicates can introduce assertions as well as presupposition, and information value may also affect this mood selection (Lunn, 1989, 1995). As mood is pragmatically motivated, there was a statistically significant difference ($p = 0.01$) between bilingual and monolingual speakers. Monolingual speakers most often expressed more of a preference for the subjunctive across structures.

4.3 Epistemic predicates

Previous accounts of Spanish state that, as a case of polarity subjunctive, negated epistemic predicates select a complement in the subjunctive, but all other structure types (affirmative, interrogative, and past) should select the indicative. The current data present a very distinct pattern of unanticipated subjunctive use, as seen in Table 5.

Table 5. Percentage of anticipated responses: Epistemic predicates

		Affirmative	Negated	Interrogative	Past
Estar seguro 'To be sure'					
	Monolingual	81.7%	98.8%	90%	76.5%
	Bilingual	75%	98.6%	40%	73.9%
Pensar 'To think'					
	Monolingual	92.7%	95%	12.9%	5%
	Bilingual	90%	77%	21.4%	7.1%
Creer 'To believe'					
	Monolingual	89.4%	100%	7.3%	90.2%
	Bilingual	97%	98.5%	4.3%	81.4%
Average					
	Monolingual	87.9%	97.9%	37%	57.2%
	Bilingual	87.3%	91.4%	21.9%	54.1%
	All	87.6%	94.65%	29.45%	55.2%

While epistemic predicate should categorically select indicative in all structures with the exception of negated predicates, the current study suggests that this is far from categorical. High rates of the subjunctive were expected with negated epistemic predicates (18), and the results supported this prediction:

(18) *MARTA: No creo que venga/viene esta vez. Está en Mérida este fin de semana.*
'MARTA: I don't think he is coming this time. He is in Merida this weekend'

When presented with this example, participants selected the subjunctive almost categorically, and items containing *pensar* 'to think' and *estar seguro* 'to be sure' both licensed high rates of the subjunctive. Affirmative, interrogative, and past structures present patterns that stray from anticipated mood selection; while previous account of mood predict the exclusive use of the indicative, the subjunctive was available for some speakers of Yucatec Spanish. Other than the brief mention by Rivero (1971), interrogatives and mood selection have not been discussed frequently; however, the current results suggest that there are high rates of subjunctive use when a proposition is embedded under a doxastic predicate in an interrogative:

(19) *MARTA: A las ocho. ¿Crees que puedas/puedes?*
'MARTA: At eight o'clock. Do you think you can?'

(20) *MIGUEL: Sí, yo sé. Estuve con gripe. Ahora mis papás lo tienen también. ¿Piensa ud. que pueda/puedo tomar el examen de la semana pasada?*
'MIGUEL: Yes, I know. I had the flu. Now my parents have it, too. Do you think that I can take last week's test?'

Item (19) includes the matrix *creer* 'to believe', and 96.2% of participants indicated a preference for the use of the subjunctive. Item (20), with the matrix verb *pensar* 'to think', has a lower subjunctive rate of 83%. Some differences between individual predicates may be due to the effects of frequency (cf. Bybee, 2013). Nevertheless, both of these present mood selection patterns that contradict previous accounts of Spanish suggesting that these questions may reflect the uncertainty of an interrogative in the selection of the subjunctive.

Affirmative structures (21) have a low rate of subjunctive use, as seen in Table 5, but interestingly, *estar seguro* 'to be sure' presents unanticipated rates of the subjunctive.

(21) *VENDEDORA: Excelente, pues estoy segura de que usted pueda/puede encontrar el par perfecto para su ocasión. Tenemos muchos zapatos que tal vez le interesan.*
'SELLER: Excellent, well, I am sure that you can to find the perfect pair for your occasion. We have many shoes that perhaps may interest you'

In an informal conversation about the survey, several participants indicated that the utterance in (21) sounded more polite in the subjunctive form. In particular, they noted that the indicative was not incorrect, but it sounded more 'right' for a store clerk to use the subjunctive form. Since this dialogue occurred between a seller/buyer, it is likely that the use of the subjunctive reflects politeness (Lunn, 1995). As previously mentioned, bilingual and monolingual mood choice is statistically different ($p = 0.01$) when embedded under epistemic predicates. While monolingual speakers' mood selection patterns more with a standard Spanish, the overall rates suggest that epistemic predicates, like emotive predicates, allow for alternation of mood.

5. Discussion

To continue with the discussion of the data, I will revisit the research questions presented in the introduction. First, the current study demonstrates that Yucatec Spanish mirrors anticipated mood selection in some cases. Figure 2 below shows the indicative/subjunctive rates for matrix clauses that typically trigger the subjunctive.

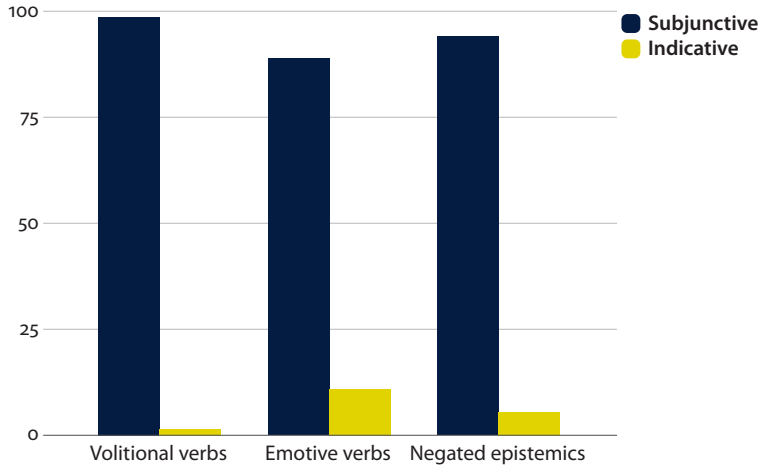

Figure 2. Mood selection in environments that anticipate subjunctive (%)

Figure 2 demonstrates that Yucatec Spanish patterns very similarly to what has been described in previous accounts of Spanish subjunctive. First, volitional predicates pattern very closely with other varieties of Spanish; the volitional predicate systematically triggers the use of the subjunctive with little difference between bilingual and monolingual speakers. Secondly, as many researchers have noted, there are some differences in the mood of the complements of emotive predicates. While there is still a preference for the subjunctive, some preference of the indicative suggest that Yucatec Spanish is similar to other varieties of Mexican Spanish (Lope Blanch, 1987; Lunn, 1995) in emotive predicates. Also, the triggering of the indicative under negated epistemic predicates does contradict previous accounts of alternation (Gielau; 2016; Haverkate, 2002; Quer, 1998). Although there are higher rates of the indicative in the use of emotive verbs and negated epistemics, it can be concluded that Yucatec Spanish licenses the subjunctive in a way that is very similar to previous accounts of Spanish of volitional, emotive, and negated epistemic predicates.

The most unique pattern of mood selection in Yucatec Spanish was found in contexts in which indicative selection was anticipated. Figure 3 presents the rates of indicative/subjunctive selection in embedded clauses under epistemic matrices that typically licenses the indicative and reveals results that contradict previous accounts of Spanish.

This figure demonstrates many unique mood features of Yucatec Spanish. This unanticipated use of subjunctive suggests that this is not a case of simplification. Unlike other cases of bilingual mood selection such as U.S. Spanish in which the indicative is being used in place of the subjunctive, Yucatec Spanish bilinguals indicate a preference for subjunctive in interrogatives containing an epistemic predicate

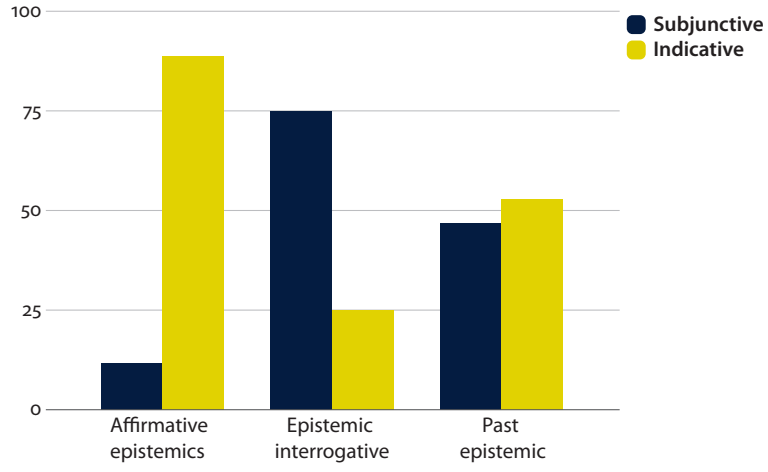

Figure 3. Mood selection in environments that anticipate indicative (%)

and accept the use of the subjunctive for epistemic utterances with past temporal reference at high rates. It should be noted that informal dialogue with participants suggests that there is a connection between the use of the subjunctive with epistemic predicates and politeness effects, particularly with the items with past temporal reference. Several participants preferred the subjunctive in affirmative utterances, a finding that highlights a statistically significant difference ($p = 0.026$) between monolingual and bilingual speakers. In light of these findings, I conclude that there is an extension of the semantic space occupied by the subjunctive in certain linguistic contexts. As such, these data do not support the first hypothesis that there is a neutralization of mood selection in Yucatec Spanish.

Second, when presented with emotive and epistemic predicates, there is a statistically significant difference between bilingual and monolingual speakers ($p = 0.01$ and $p = 0.044$ respectively). Therefore, the findings of this study support the second hypothesis that predicted a difference between bilingual and monolingual participants' judgement of utterances containing emotive and epistemic matrix clauses. Previous studies (e.g., Lunn, 1989) argue that emotive predicates select the subjunctive in pragmatically presupposed utterances, making mood selection pragmatically motivated. A novel contribution of this research is the observed alternation in clauses embedded under epistemic predicates that are *not* under the scope of negation. Some previous accounts have discussed pragmatic-motivated alternation under negated epistemic predicates (Haverkate, 2002) and interrogatives (Rivero, 1971). However, this study presents additional alternation that demonstrates that mood selection under epistemic predicates in Yucatec Spanish, in general, is pragmatically motivated rather than exclusively licensed by negation. The notion that

bilingual and monolingual speakers differ in pragmatic motivation of mood choice supports previous findings (Bove, 2019) that suggest that bilingual speakers' mood selection is different from their monolingual counterparts when mood is pragmatically determined.

The question is: why does Yucatec Spanish bilingual mood selection pattern the way it does? There is no evidence for simplification in this study as seen in other contact varieties. It also cannot be attributed to the transfer of the notion of the subjunctive from Yucatec Maya to Spanish given that the subjunctive in Yucatec Maya primarily contributes temporal meaning. Instead, I point to an important difference between bilingual and monolingual speakers in this study: the pragmatic use of the subjunctive. When mood is lexically licensed, such as with volitional predicates, the subjunctive is systematically selected. However, when mood is pragmatically licensed under emotive and epistemic predicates, there is a difference between speakers' mood choice. I argue that these differences indicate that the subjunctive itself is not different for monolingual and bilingual speakers. Instead, the concept of pragmatic motivation of the subjunctive differs for each speaker group.

6. Conclusion

As presented earlier, there is a plethora of mood research, but until now, an overview of mood selection in Yucatec Spanish had not been documented. As a contact variety, there was special attention paid to language status (bilingual versus monolingual speakers), which highlighted statistically significant differences between bilingual and monolingual speakers when selecting mood under emotive and epistemic predicates as well as in assertive structures. Therefore, regarding mood selection in Yucatec Spanish, we can arrive at three preliminary conclusions: (1) Subjunctive is accepted in epistemic structures other than those containing negation, (2) while U.S. Spanish presents an argument for a simplification of mood selection in which the subjunctive is used less, Yucatec Spanish allows the use of the subjunctive in environments in which the indicative would be anticipated, and (3) while lexically licensed volitional predicates categorically license the subjunctive, pragmatically motivated emotive and epistemic predicates indicate that there are differences in bilingual and monolingual speakers' pragmatic use of the subjunctive.

While each section of this survey produced informative results, the most unanticipated mood selection data come from the participant mood choice under epistemic predicates. The reasons for and extent of this alternation warrants further investigation. This paper has raised several other questions such as the use of the subjunctive as a politeness marker in Yucatec Spanish. I leave further development on these topics for future research.

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CHAPTER 3

A corpus analysis of the structural elaboration of Spanish heritage language learners

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Research on heritage language learner (HLL) grammar provides insights into bilingual developmental trajectories (Bolger & Zapata, 2011). More research is needed on the effects of cognitive processes on HLL grammar under real-time communicative pressures (Jegerski, 2017). The present corpus-based study analyzes the role of cognitive factors on HLLs' (N = 65) production of structural elaboration (i.e., syntactic modifiers and embedding), which is cognitively challenging to monolinguals (Ferreira, 1991). The analysis of the participants' production in an instant-messaging task indicates that, even though advanced HLLs may be fairly homogeneous in their general grammatical and lexical abilities, they vary significantly in the production of structural elaboration in syntactic frames (e.g., verb phrases with clitics, relative clauses) that interact strongly with working memory and attentional resources.

Keywords: heritage language learners, corpus, structural elaboration, cognition, Spanish

1. Introduction

Research on heritage language learner (HLL) grammar provides insights into the type(s) of linguistic knowledge that bilinguals possess, the effects of environment on such knowledge, and how bilingualism affects generalized reasoning and logical abilities (Bolger & Zapata, 2011; Jegerski, 2017). HLLs are also students in university-level Spanish programs, and their enrollments are growing. Second language acquisition (SLA) research in the last 30 years indicates that language development is more than acquiring grammatical and lexical knowledge. Instructional techniques involving structured input and input enhancement consider the role of cognitive processes in comprehension and production. HLL researchers are just beginning to understand the role that cognitive factors play in HLL production.

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The present corpus-based study entailing instant-messaging data contributes to our understanding of how cognitive factors interact with HLLs' production of structural elaboration (i.e., syntactic modifiers and embedding).

2. Literature review

2.1 Core and peripheral grammatical knowledge of advanced heritage language learners

Core syntactic phenomena develop with principles and parameters (e.g., ± pro drop) of Universal Grammar (UG). Non-core (i.e., peripheral) phenomena involve language specific phenomena, such as inflectional morphology (e.g., gender, mood). Spanish HLLs demonstrate the same knowledge of wh-movement restrictions that monolinguals demonstrate (Montrul, Foote, & Perpin, 2008). Consequently, most Spanish HLLs have superior implicit knowledge of fundamental grammatical restrictions (e.g., movement, case assignment, anaphoric reference) compared to non-HLL learners (Bowles, 2011). For example, in writing, Spanish HLLs produce the same number of complex syntactic structures (e.g., T-Units) as monolinguals do (Sánchez Abchi & De Mier, 2017). Low proficiency Spanish HLLs distinguish surprisingly well between unaccusative (e.g., *María [patient] se cayó* 'Maria fell') and unergative (e.g., *María [agent] lloró* 'Maria cried') verbs (Montrul, 2006).

Although advanced Spanish HLLs' core syntactic competence is like that of a monolingual Spanish speaker, their use of inflectional morphology and pragmatics often differs. For example, advanced proficiency HLLs demonstrate variable use of differential object marking (e.g., **Juan vio María* 'Juan saw Maria' instead of *Juan vio **a** María*; see Montrul & Bowles, 2009) and subject-verb inversion in subordinate clauses (e.g., *No sé adónde Juan fue* 'I do not know where Juan went' instead of *No sé adónde fue Juan*; see Bruhn de Garavito, 2002). This may occur because the interface between core and non-core language modules can be weak (Montrul & Polinsky, 2011; Pascual y Cabo & Gómez Soler, 2015). For non-core language modules such as those responsible for inflectional morphology and pragmatics to function as they are thought to among monolinguals, the interface between these knowledge stores and the syntactic module must be tightly connected (Sorace, 2011). For instance, mood selection (e.g., indicative/subjunctive) in subordinate clauses requires rapid and coordinated processing of features within and between the syntactic, morphological, and pragmatic modules.

2.2 On the need to expand our understanding of the cognition of HLL performance

HLL research has focused on how bilinguals coordinate the knowledge of two languages, how the languages influence each other, and how multilingualism affects domain-general cognitive functions, such as logical reasoning (Kroll, Dussias, Bice, & Perrotti, 2014). In general, research on bilingualism is concerned with the "cognitive representation of bilingual language knowledge" (Reif & Robinson, 2016, p. 23). Research on HLL grammar focuses on developmental trajectories, such as the consequences of limited access to the TL, attrition, and dominant-language influence (Benmamoun, Montrul, & Polinsky, 2013; Jegerski, 2017; Scontras, Fuchs, & Polinsky, 2015). Research has assessed HLLs' implicit (metalinguistic) knowledge with offline tasks, such as sentence-completion tasks, and grammaticality judgements (cf. Jegerski, 2017). To increase our understanding of advanced HLLs' grammatical knowledge and abilities, we need more research that depicts HLL performance under the cognitive pressures of real-time communication, such as in conversational interactions (Bolger & Zapata, 2011; Jegerski, 2017).

Researchers are beginning to understand how HLLs manage cognitive processes such as attention and working memory when they use morphological and syntactic knowledge, which varies in degree of proceduralization (Bolger & Zapata, 2011). Recent psycholinguistic research provides important insights into the interaction between processing (e.g., attentional resources, phonological memory) and HLLs' interpretation of structurally complex phenomena (Jegerski, 2017; Kroll et al., 2014). Processing mechanisms may play a more important role in HLLs' interpretation of grammatical properties than previously expected. Keating, VanPatten and Jegerski (2016) speculate that HLLs' interpretation of overt subject pronouns is more variable than that of monolinguals. Keating et al. (2016) report that, in real time, whereas monolinguals consistently interpret subject pronouns like *él* in sentences such as *Después de que el ladrón habló con el policía,* ***él*** *hizo unas llamadas* 'After the thief spoke with the police, he made some telephone calls' as referring to *el policía*, HLLs exhibit significant variability. While Keating et al. (2016) surmise that HLLs may represent overt subjects differently in the linguistic knowledge than monolinguals do, they also surmise that cognitive processing may explain their data. It may be that overt-subject assignment taxes HLLs' management of attentional resources and memory stores because it entails "the rapid and complex integration of various sources of linguistic information in real time" (p. 46). Additionally, Jegerski (2018) speculates that some HLLs' interpretation of relative-clause antecedents (e.g., *Mi tío vio a la hermana de la mujer* ***que*** *vivía calle abajo* 'My uncle saw the sister of the woman who lived down the street') can be variable because of either language transfer or because processing resources become taxed.

To contribute to our understanding of the interaction between HLLs' cognitive processing and their Spanish grammatical knowledge, the present study focuses on HLLs' production of structural elaboration. Formally speaking, structural elaboration involves complex syntactic phenomena such as subordination (e.g., nominal, restrictive, and adverbial clauses) and modifiers of basic syntactic nuclei, such as adjectives and determiners modifying nouns (e.g., *todas las otras casas, una ciudad antigua* 'all the other houses, an old city'), adverbs modifying adjectives (e.g., *muy antigua* 'very old'), or prepositional phrases modifying nouns (e.g., *una casa sin jardín* 'a house without a garden'). Cognitively speaking, structural elaboration tends to be costly. According to Housen and Simoens (2016), subordination and modification require that attentional resources and working memory manage various phrase-structure, morphological, and semantic features. Monolinguals require *exponentially* more time to produce an elaborate phrase structure than a relatively simple one (Ferreira, 1991). Even when controlling for word counts, monolinguals require exponentially more time to produce an NP with, for example, two determiners and an AdjP (e.g., *toda una casa nueva* 'a whole new house') than they need to produce a relatively simple NP with a determiner and a noun (e.g. *una casa* 'a house'). That is, structural elaboration does not simply entail the production of additional words; it also entails processing morphosyntactic relationships within and across phrases and constituents. Structural elaboration with subordination and modification increases the propositional content and specificity connoted by simple verbs and nouns, thus adding a layer of functional complexity (Housen & Simoens, 2016). Additionally, such elaboration requires the use of non-core knowledge structures (whether they represent implicit or explicit knowledge) that are less automatized than core structures, which is especially costly in spontaneous, meaningful production (DeKeyser, 2016; Housen & Kuiken, 2009).

2.3 Expanding the pool of HLL data

Researchers are encouraged to study linguistic development with multiple data sources (Norris & Ortega, 2009). To understand the effects of cognitive mechanisms on HLL grammatical processing, Jegerski (2017) argues that we need more data reflecting implicit linguistic knowledge. Techniques targeting HLLs' explicit knowledge of Spanish grammar may not accurately depict grammatical competence. Jegerski (2017) emphasizes that research can increase its ecological validity with techniques that are "meaning-based to the greatest extent possible" (p. 230). We submit that corpus-based research can both complement current HLL research and increase its ecological validity by providing insights into HLLs' competence with data from spontaneous, meaningful interactions under ever-present conversational and pragmatic pressures (cf. Meyer, Alday, Decuyper, & Knudsen, 2018).

3. Research questions

The present investigation presents a corpus-based analysis of the extent to which HLLs vary in structural elaboration in spontaneous and meaningful production, and the possible cognitive factors that affect elaboration. The study asks:

- What are the types of structural elaboration exhibited by advanced HLLs in spontaneous and meaningful production?
- What are the probable cognitive explanations for the types of structural elaboration exhibited by advanced HLLs?

3.1 Method

3.1.1 *Participants*

The HLLs ($N = 65$) on whose data this study reports participated in a task-based study that we recently completed (K. Collentine, 2018; Collentine & Collentine, in press). However, their data have not been reported to date since the focus of previous studies was adult second-language (L2) learners (See *Task and corpora* below.) Each HLL was enrolled in a university-level, foreign-language Spanish course at the third year from a mix of grammar ($n = 21$), conversation ($n = 14$), and composition courses ($n = 30$). According to an intake survey, the HLLs ranged from ages 18 to 25 and were mostly of Mexican descent ($n = 55$), although some reported Salvadoran ($n = 3$), Guatemalan ($n = 5$), and Honduran ($n = 2$) descent. All were raised in the US and reported Spanish spoken at home. The dominant language of their schooling was English, and all self-reported English as their dominant language. Some participants were simultaneous bilinguals ($n = 20$), although the majority were sequential ($n = 45$), experiencing their first immersive exposure to English after age five (6–11 years).

To contextualize objectively the HLLs' Spanish abilities, we compare their performance on four measurements of linguistic complexity to measurements resulting from a monolingual comparison corpus (See *General assessment of HLLs' proficiency* below).

3.1.2 *Task and corpora*

The HLL corpus resulted from a task representing spontaneous interactions. Within a virtual world designed by the researchers with Unity 3D (unity3d.com), students needed to identify the thief of a stolen relic. For 15 minutes, students explored an open-air marketplace (e.g., with vendors, stores, a restaurant, a café) containing interactive avatars that were customers and store owners. Students gathered information about the avatars, such as their name, their reason for being at the marketplace, and whether they witnessed anything relevant to the crime. Upon

approaching an avatar, a screen appeared with buttons that students could click to choose the questions they wanted to pose. Upon clicking a question button, students read an avatar's response. Students could return to a place or an avatar as much as they wanted. To lessen the need to memorize names, head shots and names of each avatar appeared at the bottom of the screen anytime a question-answer screen was prompted.

Students then participated in a synchronized computer mediated communication (SCMC) segment, lasting 25 minutes. In a Moodle instant-messaging chatroom, randomly assigned dyads shared in Spanish clues they collected. Dyads were tasked with reaching a consensus about who the culprit might have been. Dyads' interactions were archived to a database. All of the participants reported having experience using both virtual-world gaming and instant messaging. This HLL corpus consisted of 14,595 words (files = 65, mean words per interlocutor = 224.5, *SD* = 100.2).

SCMC, like oral conversation, requires that interlocutors manage cognitive resources at the same time that they must process linguistic form and meaning. According to Stockwell (2010), "SCMC is generally considered to place a greater load on learners [than asynchronous modes of communication] in that learners have less time to react and respond to input" (p. 84). It should be noted that, while SCMC contains many of the discursive features of conversations, SCMC does allow for slightly longer processing times than conversational interaction (Arroyo & Yilmaz, 2018).

Although we did not have an instant-messaging monolingual corpus with which to compare the HLL corpus, we built a monolingual corpus whose discursive characteristics approximated the SCMC portion of the task. We randomly sampled the *Corpus del español* reported in Biber, Davies, Jones, & Tracy-Ventura (2006), extracting short-oral interview documents (*N* = 65). This corpus consisted of 32,134 words (files = 65, words = 32,134, mean words per interlocutor = 494.4, *SD* = 330.1). We surmise that the sample was comparable because meaning is derived through negotiation and in real time in both SCMC and conversation (Arroyo & Yilmaz, 2018; Stockwell, 2010). Oral-interviews and SCMC are also similar since both favor the use of verbs and subordination to relate and connect events (Biber et al., 2006; Collentine & Collentine, in press). Additionally, SCMC contains features of oral communication, such as ellipsis and informality (Arroyo & Yilmaz, 2018).

3.2 General assessment of HLLs' proficiency

We assessed the HLLs' Spanish proficiency by comparing their structural and lexical complexity to that of monolinguals (cf. Bulté & Housen, 2012). We use four metrics that do not constitute elaboration: (i) clauses per turn, (ii) words per clause, (iii) lexical words to function words, and (iv) the measure of textual lexical diversity.

We authored Python scripts and used the Natural Language Tool Kit (NLTK; Bird, Loper, & Klein, 2009) to assess structural complexity by calculating *clauses per turn* and *words per clause*, which are common measures of syntactic sophistication in interactive production (Collentine & Collentine, in press; Bulté & Housen, 2012). We utilized the R package koRpus (Michalke, 2018) to measure *lexical words to function words*, which estimates the importance of content words (i.e., nouns, verbs, adjectives, and adverbs). We also used koRpus to calculate the *measure of textual lexical diversity* (MTLD), which estimates breadth of vocabulary while largely avoiding the text-length effects of type-token ratio (TTR).

Table 1. HLL and monolingual comparison corpus linguistic complexity

Measure	HLL	Monolinguals	Unpaired sample t-tests of significance
– Clauses per turn	$M = 0.83$ ($SD = 0.36$)	$M = 0.89$ ($SD = 0.36$)	$t = 1.04$, $df = 128$, $p = 0.30$
– Words per clause	$M = 5.89$ ($SD = 1.56$)	$M = 6.44$ ($SD = 0.75$)	$t = 2.57$, $df = 128$, $p = 0.01$
– Lexical to function words	$M = 0.98$ ($SD = 0.16$)	$M = 1.11$ ($SD = 0.16$)	$t = 4.75$, $df = 128$, $p < 0.001$
– Measure of textual lexical diversity	$M = 72.72$ ($SD = 11.70$)	$M = 82.44$ ($SD = 15.10$)	$t = 4.10$, $df = 128$, $p < 0.001$

At first glance, the HLLs and the monolinguals performed similarly, although the HLLs demonstrated less complexity across three of the four metrics. Statistically, the HLLs and the monolinguals produced the same number of clauses per turn, such that they approximated that of monolinguals. However, the HLLs produced fewer words per clause, and on both lexical measures the HLLs were less complex.

3.3 Tagging and parsing

We analyzed structural elaboration in the two corpora with morphological tagging and syntactic parsing with Python scripts and NLTK. Through an iterative process of word tokenization, dictionary lookups, disambiguation, probabilistic morphological assignment and manual accuracy checking, the software routines analyzed each word for class (e.g., adjective, noun, verb, determiner, preposition) along with inflectional properties such as gender, number, person, tense and mood (e.g., *pienso;*v_pres_1s, *estuvieras;*v_impsubj_3s, *vaso;*n_ms). The syntactic analysis entailed constituent parsing. We designed a regular-expressions parser with NLTK to produce syntactic tree objects, which groups tagged words into phrasal constituents (e.g., *[NP [Det las] [N huellas]] [VP [V son] [PP [Prep de] [NP [Det ese] [N hombre]]]]]*).

3.4 Analysis

To answer the research questions, the analysis identified clusters of HLLs that differ in terms of degree of structural elaboration and which could be explained by cognitive processing factors. This involved four steps.

First, we identified a heterogeneous set of syntactic frames (i.e., phrase structures) to characterize a range of structural-elaboration behaviors. The resulting 20 syntactic frames included core constituent types: noun, prepositional, adjectival, and verb phrases with and without clitic pronouns. They also included various types of adverbial phrases (e.g., location, time, pragmatic agreement, manner). The syntactic frames also targeted embedding: nominal, relative, and a variety of adverbial clauses (time, purpose, contingency, causal, etc.).

Second, to compute elaboration in each syntactic frame type (for each file in the HLL and in the monolingual corpus), we designed Python scripts that tabulated the average number of nodes (e.g., [Det …], [AdjP …]) that were not the nucleus of a noun, verb, adjectival, adverbial, prepositional phrase or of a subordinate clause. For instance, if a targeted syntactic frame was a noun phrase and one produced [NP *[Det* los *]* [N artefactos] *[SAdj* perdidos*]*], the elaboration count would be two. If a target was a relative clause and one produced [RelC [C'que] [[*VP* son [*AdjP* [*Adv* muy] [*Adj* grandes]]]]], we analyzed the subordinating conjunction as the nucleus, such that the elaboration count would be four. Thus, to estimate hierarchical elaboration in a straightforward fashion, the methodology counted both phrase structure (i.e., adjectival phrases, noun phrases, determiner phrases, clitic phrases, verb phrases, adverbial phrases, prepositional phrases, nominal, relative and adverbial clauses) and words (i.e., adjectives, nouns, determiners, pronouns, verbs, adverbs, prepositions, and subordinate conjunctions) that accompanied a nucleus.

Third, we sought to derive empirically motivated (i.e., a posteriori) models of monolingual elaboration with which we could compare HLL elaboration patterns. We assume that a monolingual comparison model can represent structural elaboration where cognitive resources and linguistic knowledge are managed without bilingual effects (e.g., language dominance, onset of L2 acquisition). Principal component analysis (PCA) identified macro (i.e., multivariate) measures of monolingual syntactic elaboration. PCA is an exploratory statistical procedure that reduces a set of candidate variables (i.e., the 20 syntactic frames) to a parsimonious set of linear equations. We consider each PCA equation to represent a *macro elaboration pattern* in the monolingual corpus. Each variable (i.e., syntactic frame) of an equation is weighted in terms of importance (e.g., frequency, its correlation or lack thereof with other variables) (Tabachnick & Fidell, 2012). For example, a linear equation might combine adjective phrase (AdjP) and prepositional phrase

(PP) elaboration, with the former being weighted more than the latter. PCA can reduce a set of 20 or so variables to a set of 3 to 4 macro variables (i.e., principal components), each of which weighs one of the original 20 or so differently. PCA also entails quality control procedures that eliminate extraneous variables. For instance, the procedure might determine that adverbs of manner were numerically unimportant in the monolingual corpus, or that causal adverbial clauses (e.g., … *porque*…) were too pervasive in the corpus to serve as a distinguishing variable. It should also be noted that the liberal approach to tabulating elaboration described above effectively biases the PCA toward identifying important macro elaboration patterns without establishing an arbitrary numeric cutoff for what constitutes a good amount of elaboration. Syntactic frames that have little elaboration will have low scores and low variances, which lessens the likelihood of their inclusion in any equation.

Fourth, with the help of k-means cluster analysis (Tabachnick & Fidell, 2012), we utilized the HLLs' mean syntactic frame counts from the second step and the monolingual *macro elaboration pattern* equations derived from the third step to identify clusters of HLLs differing in degree of structural elaboration. K-means cluster analysis allows us to distinguish between groups of HLLs based on the structural-elaboration patterns identified in the monolingual corpus. It identifies minimally heterogeneous (i.e., low variance) groupings of HLLs. To understand the grouping process, it is important to consider that, for each HLL, a score was calculated for each of the *macro elaboration pattern* equations (see Section 4). As a simplified (fictitious) example, suppose that the monolingual PCA analysis yielded three *macro elaboration pattern* equations, and one equation was (AdjP × 0.67) + (PP × 0.39). If an HLL's mean elaboration count was 1.3 for AdjPs and 3.6 for PPs, the participant's score for this macro elaboration pattern would be: (1.3 × 0.67) + (3.6 × 0.39) = 2.28. The same participant might score 1.8 and a 0.9 on the other two equations. If another HLL participant scored, respectively, 2.3, 1.7, and 1.0, then the k-means analysis might group these two HLLs together. If a third HLL participant scored, respectively, 1.3, 3.0 and 4.0, s/he might be placed into a different group.

4. Results

Regarding the identification of *macro elaboration patterns* in the monolingual corpus, the minimum counts to conduct PCA for each of the 20 initial syntactic frame types were met ($n > 9$). The syntactic frame type variables (i.e., the monolinguals' average number of non-nuclear nodes for each syntactic frame type) were examined for residual normality, and a Log10 transformation was applied to the dataset to

correct for positive skewness. To identify clusters of features that reliably co-occur in the dataset and to avoid spurious results, the PCA included only syntactic frame type variables with a shared common variance of at least 45% (Tabachnick & Fidell, 2012). This approach reduced the candidate variables to ten (see Table 2).

Table 2. Descriptive statistics of variables included in monolingual PCA

Syntactic frame type	Documents containing	M	SD
Clause: Nominal	66	5.16	0.63
Clause: Relative	66	4.82	0.53
Prepositional Phrase	66	3.18	0.16
Verb Phrase w/Clitic	66	3.05	0.04
Noun Phrase	66	2.15	0.05
Adjectival Phrase	66	2.11	0.06
Verb Phrase	66	2.05	0.02
Adverbial Phrase: Pragmatic agreement (e.g., *muy bien*)	65	1.97	0.25
Adverbial Phrase: Time	65	1.97	0.25
Adverbial Phrase: Location	57	1.72	0.70

We extracted three principal components (PCs) based on an assessment of communalities and scree plots of components' Eigen values (see Table 3).

Table 3. Component matrix: Monolingual elaboration

Syntactic frame type	PC1	PC2	PC3
% of Variance	*29%*	*18%*	*13%*
Clause: Relative	0.92		
Prepositional Phrase	0.87		
Clause: Nominal	0.81		
Noun Phrase	0.70		
Verb Phrase w/Clitic		0.90	
Verb Phrase		0.87	
Adverbial Phrase: Location			0.64
Adjectival Phrase			0.56
Adverbial Phrase: Pragmatic agreement			−0.38
Adverbial Phrase: Time			−0.59

Notes.

- Variance explained: 60%.
- KMO Sampling adequacy: 0.65 (Test of sphericity $p < .001$, $\chi^2 = 192.3$, $df = 45$ $p < .001$).
- Loadings < ±0.38 are suppressed.

Each PC represents a linear combination of variables (i.e., elaborated syntactic frames) that reliably co-occur in the corpus. The value for any variable is its weight in a given PC. For instance, the syntactic frame *verb phrase* was prominent in the second PC, reliably elaborated and occurring where there were elaborated *verb phrases with a clitic*. A variable's corresponding value (e.g., *verb phrase* = 0.87) represents its weight (i.e., loading) in the linear equation. In reducing the dataset by requiring a high common variance, we were able to establish minimum weights (i.e., load suppression levels) that are higher than normal for corpus analyses, which ultimately increases the reliability of the current analysis. The general rule of thumb in corpus research is ±0.30. This component matrix had nine variables at a suppression level greater than ±0.56, and one at −0.38. No one PC correlated with another, such that no *macro elaboration pattern* constitutes a sub-pattern of another.

The first and most prominent monolingual *macro elaboration pattern* (i.e., PC1) entails a combination of relative clauses, nominal clauses, prepositional phrases and noun phrases. Essentially, the linear equation (Clause: Relative × 0.92) + (Prepositional Phrase × 0.87) + (Clause: Nominal × 0.81) + (Noun Phrase × 0.70) reflects the observation that, in conversational interactions, monolinguals concentrate syntactic elaboration in subordinate clauses and NPs.

The second monolingual *macro elaboration pattern* (i.e., PC2) involves verb phrases with and without one or more clitic pronouns. Effectively, the linear equation (Verb Phrase w/Clitic × 0.90) + (Verb Phrase × 0.87) reflects the observation that, in conversational interactions, when monolinguals elaborate a verb phrase, they use a finite and one to two non-finite forms, or they couple a verb with one or more clitic pronouns.

The third and least prominent monolingual *macro elaboration pattern* (i.e., PC3) reveals that monolinguals also elaborate syntactic frames serving a prototypical modifier (e.g., adjective, adverb) role. The opposing mathematical signs of the weights of the linear equation (Adverbial Phrase: Location × 0.64) + (Adjectival Phrase × 0.56) + (Adverbial Phrase: Pragmatic agreement × −0.38) + (Adverbial Phrase: Time × −0.59) suggest that monolinguals concentrate elaboration in prototypical modifiers either (i) in adverbials of location and adjectival phrases, or (ii) in adverbials of pragmatic agreement and time.

Concerning the identification of clusters of HLLs differing in degree of structural elaboration, for each of the HLLs, we calculated three scores, one for each of the monolingual *macro elaboration patterns* identified in the PCA. For instance, an HLL who demonstrated a lot of elaboration where monolinguals concentrate elaboration might score 26.3 on the *subordination with NP's macro elaboration pattern* (i.e., PC1), a 6.1 on the *verb phrase's macro elaboration pattern* (i.e., PC2),

and a 0.5 on the *modifier's macro elaboration pattern* (i.e., PC3). Another HLL participant who demonstrated little overall elaboration might score, respectively, 15.4, 2.4, and −1.2. As described above (see Section 3.4), the k-means analysis, which groups individuals based on the similarities of *these three scores*, might place the two participants into different clusters because their overall elaboration scores were mathematically different. To correct for positive skewness so as not to violate the assumption of normality, we transformed the dataset with a Log10 transformation. The k-means analysis utilized the sum-of-squares method to calculate a hierarchy of clusters, and we utilized the elbow method (i.e., similar to the PCA scree method) to determine the number of compact groups. The analysis accounted for a large amount of the variation (77.5%), identifying three groups of HLLs.

Figure 1 compares the clusters based on the average z-scores of each of the *macro elaboration patterns*, providing a simplified visual of how the monolingual elaboration patterns distinguished the three groups of HLLs. Half of the participants fell into cluster 1 ($n = 30$), representing those that exhibited an average amount of structural elaboration across the entire HLL sample. Another quarter of the sample demonstrated below-average structural elaboration (cluster 2, $n = 17$), and another quarter demonstrated above-average elaboration (cluster 3, $n = 18$). Analyses of variance (ANOVAs) indicated that the three clusters differed significantly in terms of their different *subordination with NP's elaboration patterns*, $F(1, 63) = 239.8$, $p < 0.001$, $\eta^2 = 0.79$, and in terms of their *verb phrase's elaboration patterns*, $F(1, 63) = 10.49$, $p = 0.002$, $\eta^2 = 0.14$. All told, the k-means analysis suggests that these third-year, university-level HLLs exhibited a range of structural elaboration behaviors.

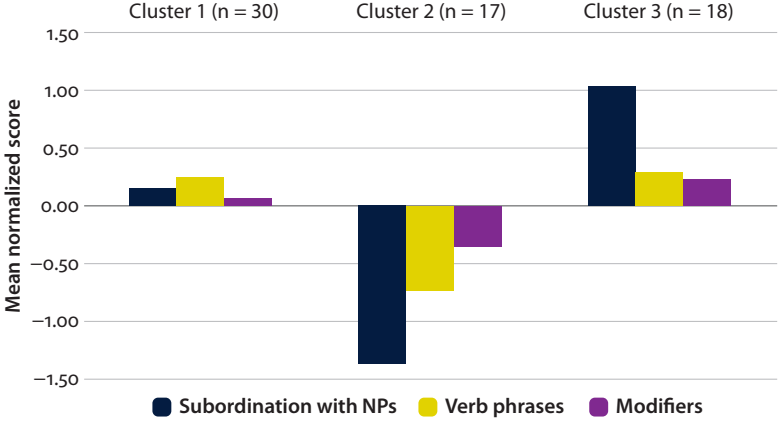

Figure 1. HLL mean z-scores per macro elaboration pattern by k-means cluster assignment

It is also interesting to note that a comparison of the three clusters in terms of their respective overall syntactic and lexical complexity (see Section 3.2) revealed that the clusters differed only in terms of *clauses per turn*, $F(2, 62) = 3.41$, $p = 0.040$, $\eta^2 = 0.10$. Post hoc tests showed that the difference was due to the fact that the below-average structural-elaboration cluster used significantly fewer clauses per turn than either the average or the above-average cluster. It may be that there is a cognitive threshold for some HLLs where processing complex syntax taxes attentional resources and working memory, leading to the production of fewer overall constituents and less elaboration within any given constituent.

To better understand the extent to which cognitive factors might explain the heterogeneous elaboration patterns we observed amongst the HLLs, we sought to ascertain whether the syntactic frames that most distinguish the three groups constitute core phrase structures or whether they entail inherently complex (i.e., hierarchical) syntax. We reasoned that, if the latter were the case, we could argue that cognitive factors were interacting with these HLLs' production of structural elaboration since the processing of hierarchical syntax can stress the cognitive resources of any speaker of a language, since using such syntax in spontaneous production requires a high degree of proceduralization (cf. DeKeyser, 2016; Ferreira, 1991; Housen & Kuiken, 2009). Specifically, we sought to determine which of the syntactic frame types ascribed to the *subordination with NP's elaboration pattern* (PC1) and the *verb phrase's elaboration pattern* (PC2) most distinguished between the three HLL groups. To that end, we employed a discriminant analysis (cf. Tabachnick & Fidell, 2012) where the independent variables were, for each HLL, the (transformed) average number of non-nuclear node counts of the variables included in PC1 and PC2 (see Table 3.) The grouping variable for each HLL was cluster assignment. The analysis identified 2 discriminant functions, Wilks' lambda = 0.07, χ^2 $(12, N = 65) = 157.5$, $p < .001$, correctly classifying 90.8% of the original grouped cases. A single function accounted for fully 99.7% of the observable variance, and so we focus on its results. The HLLs' elaboration in *relative clauses, nominal clauses*, and *verb phrases with a clitic* distinguished significantly between the three clusters.

Figure 2 provides a graphical representation of the three clusters' elaboration with the syntactic frame types that most discriminated between the HLLs, along with the original monolingual elaboration scores. Figure 3 provides the raw counts of each syntactic frame for the HLLs. There are two important observations. First, the below-average HLL cluster elaborated much less than either of the other HLL clusters or the monolingual comparison in verb phrases with clitics, $F(3, 126) = 13.71$, $p < .001$, $\eta^2 = 0.25$. Additionally, the below-average group produced few verb phrases with clitics. The HLL corpus samples in (1) and (2) depict the difference in elaboration between the below-average and above-average clusters.

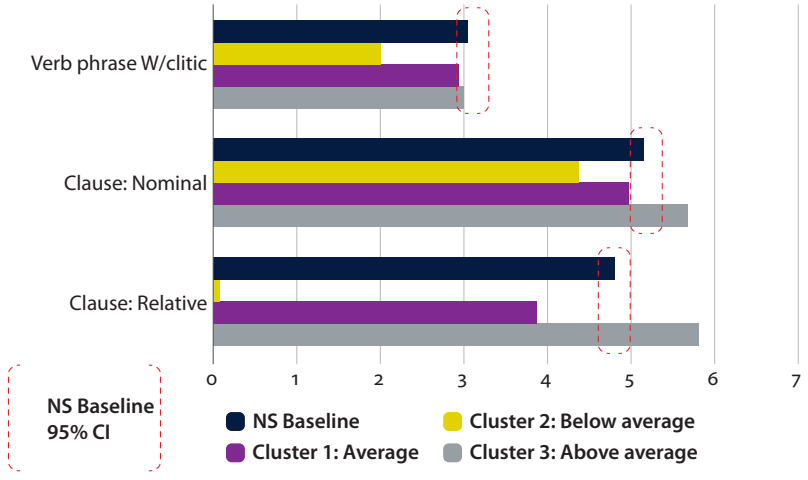

Figure 2. Mean elaboration scores for discriminating syntactic frame types by HLL cluster and monolingual

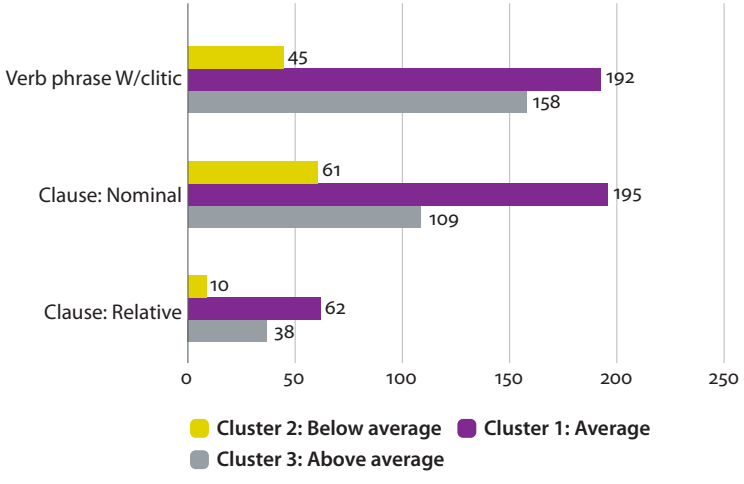

Figure 3. Raw counts for discriminating syntactic frame types by HLL cluster

The below-average examples have a single clitic pronoun and a single finite verb, whereas the above-average examples contain either an additional non-finite verb (e.g., a participle) or a direct object NP.

(1) Below-average elaboration cluster: Verb phrase with a clitic.
   a. Sí, [SV [SN lo] [V se]].
   b. no [SV [SN me] [V digas]]
   c. porque [SV [SN me] [V dijieron]] que [SV [SN se] [V fue]]

(2) Above-average elaboration cluster: Verb phrase with a clitic.
   a. Tito le mostró una moneda que su abuelo [SV [SN le] [V avía] [V regalado]]
   b. ella [SV [V ha] [V estado] [V buscando] [SN lo]]
   c. ella [SV [SN le] [V pidió] [SN dinero]]

Second, both the average HLL elaboration cluster and especially the below-average cluster elaborated relative clauses much less than either the above-average HLL cluster or the monolingual comparison, $F(3, 126) = 158.00$, $p < .001$, $\eta^2 = 0.79$. The corpus samples in (3) and (4) illustrate the difference in relative-clause elaboration between the below-average and above-average clusters. The below-average examples have a single finite verb, two of which are modified by an adverb. The above-average examples contain a direct object NP, an adjunct in the form of a prepositional phrase, and/or a clitic pronoun.

(3) Below-average elaboration cluster: Relativization.
   a. solamente robaron paginas de su diario y [NP el mapa] [[C' que] [VP [V tenía] [Adv allí]]]
   b. es [NP un viejo] [[C' que] [VP [V toma] [Adv mucho]]]
   c. Juan era [NP la última persona] [[C' que] [VP salió]]

(4) Above-average elaboration cluster: Relativization.
   a. Juan fue [NP el señor] [[C' que] [VP [V tocó] [NP música]] [PP [P en] [NP la fiesta]]]
   b. [NP los pasos] [[C' que] [VP [NP se] [V vieron] [PP [Adv afuera] [P de] [NP la fiesta]]]] se miraban que la pesona entró y salió
   c. estaba caminando por [NP el camino] [[C' que] [VP [NP la] [V lleva] [PP [P a] [NP su casa]]]]

5. Discussion and conclusions

Concerning the first research question as to the types of structural elaboration exhibited by advanced HLLs in spontaneous and meaningful production, the answer requires a consideration of two contrasting perspectives. On the one hand, the HLLs in this study were fairly homogeneous in terms of their general Spanish linguistic abilities, considering the syntactic complexity, the breadth of vocabulary, and the lexical diversity that they produced. (See Section 3.3). Additionally, considering the differences in the four linguistic complexity scores (see Table 1), it is evident that the HLLs demonstrated only slightly less overall linguistic complexity than what was calculated in the monolingual comparison. On the other hand, when we assess HLL production with monolingual models of structural elaboration exhibited within core phrase structures (e.g., NP, PP) or subordinate clauses, we

have evidence that these bilinguals vary greatly amongst each other. Some HLLs (i.e., approximately a quarter in the present study) tend to produce few clauses per turn and no more than one or two constituents per syntactic frame. Others (i.e., again, approximately a quarter in the present study) tend to regularly elaborate core phrase structure and subordinate clauses, at levels that are similar to monolinguals (see Figure 2.)

In online Spanish processing tasks where research considers factors such as moment-by-moment processing times and the order in which constituents are processed, HLLs frequently exhibit biases and strategies that parallel monolingual behaviors and that differ from those of L2 learners (cf. Jegerski, 2017). For example, Montrul, Davidson, de la Fuente, and Foote (2014) report that Spanish monolinguals' and HLLs' online processing of grammatical and ungrammatical NPs (e.g., **el/la quinta calle* 'the fifth street') in a production task varies significantly, presumably because ungrammatical segments are detected somehow as erroneous; L2 learners, however, process grammatical and ungrammatical NPs as if there were no differences. Keating et al. (2016) report that HLLs and monolinguals exhibit similar online processing profiles when processing overt subject pronouns (Keating et al., 2016). Still, Keating et al. (2016) also found "considerable variability" (p. 46) amongst the HLLs' interpretation of subject pronouns. We submit that the results of the previous and the present studies suggest that (i) a significant proportion of HLLs process Spanish with the same biases and strategies that monolinguals use but that (ii) an important sub-portion of the population present processing profiles that differ from those of monolinguals. Research needs to continue to elucidate the cognitive similarities and differences so that language instruction can optimally serve these students.

Regarding the second research question as to the probable cognitive explanations for the types of structural elaboration exhibited by advanced HLLs, cognitive processing limitations likely account for the lack of syntactic elaboration observed in a small but statistically significant sub-portion of the HLLs studied here. In two syntactic frames, a quarter of the sample generated little elaboration in meaningful, spontaneous production, when compared to monolingual production: *verb phrases with clitics* and *relative clauses*. Both structures entail considerable structural complexity. The verb phrase requires encoding verbal inflections, and if it includes clitics, pronouns must be linked to referents in the discourse or the situation. Relative clauses are structurally and conceptually complex since an antecedent's reference must be disambiguated across clauses (e.g., *Mi tío vio a <u>la hermana</u> de <u>la mujer</u> **que** vivía calle abajo*). The processing of the aforementioned linguistic properties of *verb phrases with clitics* and *relative clauses* is likely to tax attentional resources and working memory in input or output. Both can entail processing long-distance references within sentences and across a discourse/conversation.

Additionally, the efficient processing of syntactic or morphological complexity, such as subordination or verbal inflections, requires the automatic retrieval of procedural knowledge (DeKeyser, 2016). Furthermore, as mentioned above, Jegerski (2018) recently notes that it is unclear whether some HLLs vary in their interpretation of relative-clause antecedents due to L1-L2 transfer effects or due to the cognitively taxing nature of the structure. Of course, Jegerski's (2018) conjecture applied only to input processing. However, while input processing and output processing differ in important ways, they also utilize similar cognitive resources (e.g., phonological memory, working memory).

We fully recognize the study's limitations, which future research must address. Although instant messaging is an increasingly popular mode of spontaneous, interactive communication, SCMC does not impose all of the cognitive pressures that face-to-face conversations do. Support for the findings will involve research on elaboration in oral interactions and psycholinguistic research involving productions. Additionally, while the monolingual oral conversational corpus provided a comparable point of reference, future comparisons entailing a monolingual instant-messaging corpus will yield more reliable insights.

It may be time for HLL teachers and curriculum designers to consider the cognitive processing factors interacting HLLs. Many instructional strategies employed in foreign-language instruction (e.g., Processing Instruction, Task-based Language Teaching) have been informed by research on cognitive processing. It may be time to develop robust research programs that study the interaction between cognitive factors and heritage language in the classroom setting in order to support HLLs in their educational goals.

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CHAPTER 4

Evidentiality and epistemic modality in the Andean Spanish verb

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The aim of this chapter is twofold: first, it assesses the discussion about evidentiality and epistemic modality in the Andean Spanish verb as a set of hypothetical contact-induced changes due to the influence of Quechua and Aymara, and, second, it suggests new avenues for enhancing and strengthening this area of research. In order to do this, it reviews the studies conducted about the links between evidentiality and epistemic modality, on the one hand, and verbal forms such as the pluperfect, the present perfect, the future, and the subjunctive perfect correlated with verbs in the present tense, on the other. The review focuses on studies that address hypothetical contact-induced processes, since its aim is to examine the arguments that relate these elements with their possible Quechua and Aymara sources. The chapter suggests that some of the Andean uses pertain to the epistemic modality terrain (pluperfect for "non-experienced past" and present perfect for "experienced past"), while others are included in the evidentiality arena (inferential uses of the future forms), or plainly lack any relationship with these dimensions (subjunctive perfect correlated with verbs in the present tense).

Keywords: Andean Spanish, evidentiality, epistemic modality, pluperfect, preterit, Quechua, Aymara

1. Introduction

The aim of this chapter is twofold: it seeks, first, to review the claims made in the literature about evidentiality and epistemic modality in the Andean Spanish verb as a set of hypothetical contact-induced changes due to the influence of Quechua and Aymara, and, second, to suggest new avenues to deepen and strengthen this research area. With these objectives in mind, it begins by reviewing the studies that delve into the links between Spanish verbal forms and evidential and epistemic functions in the Andean languages, focusing on pieces of work that address

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hypothetical contact-induced processes. This includes the Andean pluperfect,[1] the present perfect,[2] the simple future, the future perfect (Calvo Pérez, 2000; Escobar, 1997a, 2000), and the use of the subjunctive present in correlation with verbs in the past tense (Escobar, 2011, p. 332; Sessarego, 2008, 2010; Speranza, 2014). Then, the chapter discusses the arguments that have been presented to relate those verbal forms with their possible Quechua and Aymara sources, and, after a theoretical review of the relevant concepts, explores whether the Andean uses of the aforementioned forms pertain to the epistemic modality terrain, to the evidentiality arena, or to neither. Such a review is necessary, since only Escobar's seminal work on Andean Spanish (Escobar, 2000) has performed a similar task, and scholars have since published a significant amount of literature on this topic. On the other hand, as will be shown, the concepts of epistemicity and evidentiality have been applied to the Andean verbal forms without a thorough discussion of these categories, their boundaries, and complex relationships. This has resulted in terminological inconsistencies that deserve attention.

As the scholarship devoted to each of the aforementioned phenomena is extensive, the criterion used for this literature revision was to select one or two studies that are representative of the various approaches, and to complement them with others as necessary to represent the complexity of the discussion involved. Thus, the approaches that directly address a contact-induced hypothesis for the phenomena have been selected. Following this review, the chapter develops several suggestions for deepening and strengthening the understanding of evidentiality and epistemic modality in Andean Spanish through the examination of these verbal forms. It highlights promising avenues of research to refine some of these hypotheses, and, finally, it suggests that some of the Andean uses of the mentioned verbal forms pertain to the epistemic modality terrain (pluperfect and present perfect), while others are included in the evidentiality arena (future forms), or plainly lack any relationship with these dimensions (subjunctive present used in correlation with verbs in the past tense).[3]

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1. See, inter alia, Escobar (1997a, 2000, 2011); García-Tesoro (2015); García-Tesoro & Jang (2018); Godenzzi (1996); Granda (2001a); Klee & Ocampo (1995); Merma Molina (2008); Pérez Sáez (1996–1997); Sánchez (2004); Schumacher de Peña (1980); Stratford (1991); Zavala (1999).

2. See, inter alia, Caravedo & Klee (2012); Escobar (1997b, 2000, 2012); García-Tesoro (2017); García-Tesoro & Jang (2018); Godenzzi (1996); Jara Yupanqui (2013); Klee & Ocampo (1995); Sánchez (2004); Schumacher de Peña (1980); Stratford (1991), Zavala (1999).

3. Thanks to the two anonymous reviewers for their valuable suggestions to improve the form and content of the text. Martha Bell, Rita Eloranta, Margarita Jara, and Liliana Sánchez also contributed to clarify the argument and enrich the sources in which it is based. Of course, the remaining mistakes are entirely my own.

2. Evidentiality, epistemic modality, and their complex relationship

Evidentiality, as a linguistic category, has a very complex history. It has shifted from being understood, in formal approaches, as part of modality – more specifically, as a subset of epistemic modality (Chafe, 1986; Palmer, 2001) – to be defined, in functional-typological approaches, as an independent semantic category (Aikhenvald, 2004; Willett, 1988). More recently, it has been understood again as closely related to epistemic modality, but this time within theoretical approaches that highlight the positioning of speakers in human interaction (Howard, 2014, 2018; Mushin, 2001; Nuckolls, 2018; Nuckolls & Michael, 2014). Evidentiality is traditionally understood as the semantic category that encompasses all the linguistic resources aimed at coding information sources that speakers rely on while they "do things with words" (Austin, 1971). Part of the things that speakers do, especially in linguistic areas like the Amazon and the Andes, is to alert their interlocutors constantly about the grounds upon which they are sustaining the information being conveyed. Therefore, it is not surprising that, historically, this category had such unsettling relations with epistemic modality, which is a subset of the wide semantic area of modality that codes attitudes and positions of the speakers toward the knowledge and truth-value implied by their statements.

Quoting a recent definition, when we speak about epistemic modality, we face an "assessment of the odds that a specific and hypothetical state of affairs under consideration (or some aspect of it) will effectively occur or is occurring in some possible world" (Nuyts, 2001, p. 21). The unsettled relationship between evidentiality and epistemic modality is not surprising, then, because the source of information, on the one hand, and epistemic positioning, with its various projections of statement valuation, on the other, have obvious links that cannot be dismissed if we embrace an approach aimed at gauging what speakers do with their linguistic, discursive, and cultural resources.

However, it is still reasonable to distinguish *in principle* between both conceptual areas given two reasons: first, from a theoretical point of view, many languages, including the Andean ones, make a fair distinction between both kinds of elements. For instance, in Quechua, speakers devote their complex area of verbal morphology to encode epistemic modality, and a diverse set of "independent" suffixes, with focus projections, for the expression of evidentiality. Second, from a pragmatic point of view, on occasions, speakers of languages with both systems perform different actions with evidential and epistemic resources. For example, they can code a witty joke with an evidential, pretending second-hand information, but they can structure the basic scheme of a narrative only combining epistemic resources.

Nevertheless, in the subtle unfolding of verbal interaction, both kinds of resources are used in conjunction. For example, a speaker can organize a bit of interesting

gossip, in its basic structure, with an epistemic marker of scarce validation, namely, the suffix of non-experienced past in Quechua. At the same time, the speaker can sprinkle the narrative with the evidential marker of second-hand information, which will allow them to obscure the actual source of the story. Furthermore, speakers can also license themselves to make personal inferences regarding the consequences of the story via the conjectural suffix. Hence, it is necessary to take a flexible, yet still cautious, position regarding this division. When analysing our materials, we must keep in mind this complex disciplinary history as well as the intense dynamics of alliances and tensions between both types of language resources.

Cornillie (2009) has developed a nuanced functional-cognitive approach to the distinction between these elements, acknowledging, at the same time, their close interrelationship. Following Nuyts' view on epistemic modality as an assessment of the likelihood that a specific state of affairs will effectively occur or is occurring (Nuyts, 2001), he suggests a revision to the priority given by the scholarship to the parameter "type of source" when understanding evidentiality. After reviewing data from Spanish, Dutch, and Italian – languages that do not code evidentiality as an obligatory linguistic category – Cornillie concludes that "mode of knowing" is a more widespread parameter in the languages of the world and, therefore, should play a paramount role in defining the notion.

Thus, Cornillie's proposal is to understand evidentiality as "the functional category that refers to the perceptual and/or epistemological basis for making a speech act" (Cornillie, 2009, p. 45). We must not conflate this dimension with the assessment of the truth-value of the facts referred to by the utterance (epistemic modality), since – as the data on Italian, Spanish, and Dutch suggest – there is no necessary relationship between them. More precisely, from a formal semantics point of view, "'truth' can no longer be considered as a concept that may be used to define evidentials" (Wiemer, 2018, p. 97). Another difference between both dimensions is that evidential elements are not scalar (e.g., there are not different "degrees" of 'hearsay'), whereas "epistemic functions can be arranged along a gradient from full certainty to a complete lack of certainty, or from full support to neutral support" (Wiemer, 2018, p. 90). Given all of the above, however, "when speakers report on a state of affairs, they necessarily express some kind of commitment to it, albeit a rather undetermined one" (Cornillie, 2009, p. 56). In fact, Cornillie (2009) gives detailed examples of Dutch sentences that combine, in a single clause, an epistemic qualification with an evidential one.

This approach to the distinction entails that the opposition between languages with "proper evidential systems" – Quechua, Tariana, Shipibo – and languages without them but with "evidential strategies" – English, Spanish, Italian – does not hold or loses relevance, regardless of Aikhenvald's (2004) argument.[4] Cornillie's

4. See also Wiemer (2018, p. 87) on this issue.

statement: "processes of reasoning involving different modes of knowledge may be the most widespread feature of the functional domain of evidentiality" (Cornillie, 2009, p. 46) calls into question the emphasis given by previous scholarship to the opposition between direct and indirect evidence, stemmed from the fact that languages with obligatory evidential systems prioritize the grammatical marking of direct evidence. According to the recent studies summarized above, hearsay and inferential functions should acquire a more prominent role in the study of evidentiality from a cross-linguistic approach.

Naturally, research on Andean Spanish has been informed by fluctuations in the understanding of both categories, and by shifts in the disciplinary trends that have studied them. This can be observed through review of the literature devoted to the basic verbal structures related to the area of evidentiality and epistemic modality in the complex ensemble of regional and social varieties that is Andean Spanish. Some of these structures have been the subject of a series of studies (e.g., the pluperfect and the present perfect), whereas others have been addressed more recently (e.g., the future forms and the special uses of the subjunctive). In the following, I will assess these elements stressing (1) the description of the evidential or epistemic function assigned to them, (2) the Quechua-Aymara source claimed to be related with them, and (3) the arguments used for that attribution.

3. Evidentiality and epistemic modality in the Andean Spanish verb

In the study of Andean Spanish verbal morphology, evidentiality and epistemic modality have been linked to the pluperfect, the present perfect, the future forms and, more recently, the use of present subjunctive with verbs in the past tense. Different scholars have worked on the pluperfect, whose links with evidentiality and epistemic modality have been claimed, although with different terminology, at least since the mid-seventies, both in Bolivia, for Spanish in contact with Aymara (Martín, 1976–1977), and in Peru, for Spanish in contact with Quechua (Cutts, 1973, pp. 116–117; Schumacher de Peña, 1975; Soto, 1978) and with Aymara (Cutts, 1973, pp. 116–117). In addition, various approaches have addressed the present perfect. Its links with evidentiality and epistemic modality have been shown at least since Schumacher de Peña's (1975, 1980) studies, for the Spanish of Puno in contact with Quechua. As for the future verbal forms, only Anna María Escobar (1997a, 2000) and Julio Calvo Pérez (2001) have suggested a link with evidential functions in Quechua-Spanish contact zones.[5] The present subjunctive used in

5. Escobar also assigned evidential functions to the following verbal forms: conditional perfect (*habría cantado*) and subjunctive pluperfect (*haya cantado*). However, I will not include them in this review, because the evidence presented by the scholar in these cases is somewhat scarce (2000, pp. 224–225). See also Calvo Pérez (2000, p. 124).

correlation with verbs in past tense – a sort of *incosecutio temporum* according to a Spanish standard view – has been addressed by Escobar (2011, p. 332), Pfänder (2010), Sessarego (2008, 2010), and Speranza (2014).

With respect to grammatical terminology, the label *pretérito pluscuamperfecto* 'pluperfect preterit' (*había cantado*) is used by the majority of works in the scholarship written in Spanish, with variants like the simpler *pluscuamperfecto* 'pluperfect', and the more precise but complex *pluscuamperfecto de indicativo* 'pluperfect indicative' (Escobar, 2000). Pfänder (2010) has used *pluscuamperfecto andino* 'Andean pluperfect' and *pluscuamperfecto evidencial* 'evidential pluperfect'. Applying more prescriptive nuances, Mendoza (2008, p. 222) has spoken about *pluscuamperfecto espurio* 'spurious pluperfect'. Dankel and Soto Rodríguez (2012) attempt a more neutral solution: they disassociate the label from its temporal resonances and speak about *la construcción había + V-ado*. Considering its opacity, the impact of this latter option is likely to be small. However, it is worth mentioning that Cerrón-Palomino (2003, p. 249) and Calvo Pérez (2001, p. 112) had already stressed their dissatisfaction with the traditional label for its anchoring in tense. Nevertheless, for the sake of clarity, in this work I will use the English label *pluperfect*.

Instead of *pretérito perfecto* 'past perfect' (*he cantado*), the scholarship written in Spanish has used *pretérito perfecto compuesto* 'compound past perfect' (Granda, 2001a), and *pretérito compuesto* 'compound perfect' (Caravedo & Klee, 2012), but more frequently *presente perfecto* 'present perfect'. Perhaps the latter emerges from an influence of the English terminology. However, this term also avoids confusion with *pretérito perfecto simple* 'simple past perfect' (*canté*), more commonly labelled *pretérito* 'preterit' or *pasado simple* 'simple past'. In this chapter, I will call the complex form (*he cantado*) *present perfect* and the *pretérito* (*canté*) *simple past*.

Escobar (1997a, 2000) calls the future forms relevant for this analysis *futuro sintético* or *simple* (*cantaré*) and *futuro perfecto* or *compuesto* (*habré cantado*). Here, I will call them *simple future* and *future perfect*. Regarding the subjunctive present correlated with verbs in the past tense, Pfänder (2010, p. 231) and Sessarego (2008) include it within "the question of *consecutio temporum*", and Speranza (2014, p. 74) speaks about "the presence of Pr. [Present] of the subjunctive mode in statements in which, according to the standard variety, other tenses would be expected".[6] In what follows, I examine each of these forms independently.

6. "La presencia del PTE. del modo subjuntivo en emisiones en las que desde la variedad estándar se espera la aparición de otros tiempos" (Speranza, 2014, p. 74).

3.1 Pluperfect

The pluperfect is an Andean Spanish verbal form that has long been associated by scholars with evidentiality and epistemic modality. Summarizing previous scholarship about the Spanish of Peru, Bolivia and Argentina, Granda (2001a) stated that the function of non-experienced past in Andean languages – coded by *-sqa* in Southern and Northern Quechua varieties and *-naq* in Central Quechua varieties, as well as *-tay* in Southern Aymara and *-x* in Central Aymara – had been transferred to this verbal form in the Andes. In this process, it was given a new epistemic meaning, namely, 'non-experienced events'. At the same time, the function of 'unexpected past' was also transferred – a function that we would currently label with the category of *mirativity*. Quechua and Aymara code the latter function with the same suffixes.[7] Since a formal approach to evidentiality prevailed (Palmer, 2001), Granda took for granted that both values, 'non-experienced' and 'unexpected', were "totally related with the epistemic dimension" of the Quechua language (Granda, 2001a, p. 140).[8] Preliminary versions of these ideas can be found in Granda (1994) and Granda (1996).

As for the 'non-experienced' meaning, which is our focus now, pluperfect was probably opposed, in an early period of the history of Andean Spanish, to the present perfect, which coded 'experienced events'. This would be the overall scenario in southern Peru and in wide areas of Bolivia, according to Granda (2001a). Using material collected mainly by Pérez Sáez (1996–1997) in north-western Argentina, the Spanish scholar concluded that in this region, a process of semantic neutralization had occurred, which yielded a synchronic coalescence of the same values for pluperfect and present perfect (Granda, 2001a, pp. 142–145). In both areas, anyway, present perfect (*he cantado*) would have displaced simple past (*canté*) "practically in a total way" (Granda, 2001a, p. 143).[9] Contrary to Granda's expectations, Howe's (2013, p. 7) analysis of the past forms used by Cusco speakers for past reference leads him to classify "Peruvian Spanish" as part of "the set of dialects in which the preterit is favoured", in contrast to Peninsular Spanish. In fact, simple past (or "preterit") is used for 77% of the tokens in his corpus, while present perfect is employed for the remaining 23% (Howe, 2013, p. 89). I return to this issue later.

Moreover, according to Granda's intuitions (2001a, p. 143), in the central and northern Andean zone (including the Ecuadorian highlands), "it seems that the

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7. See Adelaar (2013) on the problem of Quechua mirativity.

8. "Los rasgos morfosintácticos de la lengua quechua a que me acabo de referir, [están] relacionados en su totalidad con la dimensión epistémica de este código comunicativo…" (Granda, 2001a, p. 140).

9. "El perfecto compuesto castellano ha desplazado, asumiendo sus contenidos funcionales, al perfecto simple, de modo prácticamente total" (Granda, 2001a, p. 143).

process of displacement of the simple past in favour of the present perfect was less intense".[10] The linguist encouraged scholars to confirm this conjecture via specific field comparisons, which have not yet been performed. Schumacher de Peña (1980) had already made a similar claim with quite scarce data. In addition, the Spanish erudite was aware of the fact that a very different transference process had occurred in Ecuadorian Andean Spanish. There, it was the present perfect, and not the pluperfect, to which bilingual speakers transferred the epistemic function of non-experienced past and 'unexpected past'. Specific studies of the Ecuadorian solution are Bustamante López (1990, 1991) and Dumont (2013); see also Haboud (1998) as well as Pfänder & Palacios (2013).

Granda (2001a) argued for the transference of Quechua epistemicity to Spanish through this verbal form by focusing mainly on the coincidence between the semantic functions of the Spanish Andean pluperfect and the corresponding suffixes in Quechua and Aymara. This argument lacked the subtle structural or regional insights that he had previously dedicated to the case of possessive structures (Granda, 1997). Furthermore, there was no discussion regarding the reasons why Ecuador had a rather different grammatical solution for the same transference process. In fact, I have not found any comprehensive account of both outcomes in the literature.

In what follows I present and analyse an example of the epistemic functions that the pluperfect allegedly has in an autobiographic narrative discourse in Andean Spanish. The example comes from Escobar (2000, pp. 220–221):

(1) No sé / porque no sé / desde (que) mi (me he) nacido dice que cuando estuve chiquitita / no sé / dice que me *había pateado* el gallo y de ahí no más me froté / entonces mi mamá me *había echado* el limón en los dos lados / …con eso rojo así *había vuelto* mi ojo / entonces yo también frotado / como nadies me controlaban / y seguramente me habrán dejado / cómo será / entonces yo me froté froté / y mi gustaría también / se entró adentro / creció adentro / entonces y lágrimas ya también botaba y el sol no veía.

I don't know / I really don't know / since I was born it says that when I was little / I don't know / it says that the rooster *had kicked* me and afterwards I rubbed myself / then my mom *had put* lemon juice in both sides / …since then my eye *had turned* red / then I rubbed myself / since nobody kept an eye on me / and probably they had left me / what will it be like? / then I rubbed myself / and perhaps I liked it / it entered into my eye / it grew inside / then my tears fell and I did not see the sun.

10. "Por lo que respecta a la zona andina central y septentrional (centro-norte del Perú y Ecuador) parece que ha sido menos intenso en ella el proceso de marginación del perfecto simple con relación al compuesto" 'With respect to the central and septentrional Andean regions (Ecuador and Central-North Peru) it seems there that the process of marginalization of the perfect simple as it relates to the compund [forms] has been less intense' (Granda, 2001a, p. 143).

Considering examples like this, Escobar formulated a hypothesis to explain the genesis of this transference, and, thus, she strengthened the argument presented by Granda (1994, 1996, 2001a). In Quechua, suffixes *-sqa* and *-naq* – the alleged source of this transference – are not just used for the long-term past and the narration of legends, but also to convey early childhood experiences in which the speaker was not conscious, but were transmitted to them by others. This is precisely what we see in Example (1), where an interviewee explains why she uses glasses, anchoring the reason in her early childhood. Escobar suggests that in Spanish in contact with Quechua the pluperfect has been reanalyzed. Used originally in Spanish to code an event that occurred previous to another one in the past, the verbal form ended up referring to events that occurred previous to the period in which the speaker could attest to them (Escobar, 2000, p. 220). Although the author does not use these terms, we can extend the hypothesis as follows. According to this initial reanalysis, bilingual speakers generalized the use of the pluperfect to the remaining contexts that Quechua grammar expresses with the non-experienced past suffix; namely, legends, long-term past narrations, gossip, rumors, and – we can also infer – those events recently known but that surprise the "unprepared mind" of the speaker or the addressee (Adelaar, 2013; Peterson, 2015), i.e., the mirative use of this verbal form. As a notion straightforwardly tied to the (absence of) experience of the speaker, and, therefore, to their (lack of) support toward the effective occurrence of the state of affairs conveyed by the utterance, 'non-experienced past' seems to be closer to the epistemicity domain than to the evidential arena.

Dankel and Soto Rodríguez (2012) have suggested an additional morpho-syntactic coincidence that supports this process: both the Quechua suffix *-sqa* and the *-ado/-ido* participial suffixes in Spanish have a parallel role in verbal and nominal constructions. Think of *había cantado* 'had sung' and *lo cantado* 'the sung' in Spanish, and, in Quechua, of the homophone *takisqa*, which can be included both as a verb and as a noun in sentences like *Huwansi takisqa* 'Juan sang (non-experienced past)' and *Takisqaykimanta kusikuniku* 'We (excl.) cheer up with your song'. The authors claim that "possibly the Quechua speaker perceives a similarity in the combination of the verbal root plus the suffix, that functions in both languages" (Dankel & Soto Rodríguez, 2012, p. 112, note 22).[11] However, this factor could have also acted in favor of the present perfect selection, as in Ecuador, since present perfect also includes the participial form. Therefore, the semantic hypothesis of Escobar seems more plausible, in my view, as an explanation of the origins of this transference.

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11. "Posiblemente el hablante percibe una similitud en la combinación de la raíz verbal más el sufijo que se da en ambas lenguas" (Dankel & Soto Rodríguez, 2012, p. 112, note 22).

However, there is a drawback regarding this hypothesis. It stems from the fact that there is a thorough formal semantics analysis of the verbal suffix *-sqa* that states that its core meaning is deictic instead of evidential or epistemic (Faller, 2004). This approach understands the potential evidential readings of this form as secondary, pragmatically driven effects of the core semantics of this morpheme. In an analysis of the present perfect in Cusco Andean Spanish (see Section 3.3), Howe suggests that if there are no evidential features in the alleged Quechua source of the transference, it is doubtful that this kind of reading can arise as the result of contact (Howe, 2013, pp. 115–117). This objection identifies a clear problem with the contact hypothesis, since there has been no discussion of Faller's claim up to now. I will return to this issue in the final section.

Nevertheless, there is quantitative evidence that supports the contact-induced hypothesis. Adriana Speranza (2014) conducted qualitative and quantitative analysis of written compositions from Buenos Aires high-school students. With statistical controls and a large study population, she distinguished three groups of students: those with a Quechua-Spanish background (Bolivia and Santiago del Estero Quechua), those with a Guaraní-Spanish background, and those with a "rioplatense" 'of the River Plate' background (not strictly monolingual, but at least not marked by the presence of an Amerindian language as a familiar code). The frequency of the pluperfect was significantly higher among the first group than the others. The qualitative description that the author presents of the use of the pluperfect in the students' written texts is quite similar to the uses examined here. See also Sánchez (2004) for an experimental study that finds clear parallels between *-sqa* and the Spanish pluperfect in the retelling of a story by Quechua-Spanish bilingual children.

The following is a classic example of the pluperfect used for non-experienced events. A female speaker of La Paz, from an Aymara background, specifies the function that this verbal form has in her own variety. The frame is a dialogue between herself and the Argentinian linguist Herminia Martín, an excerpt of which was used to begin one of the first specialized papers on the topic:

(2) – Sapir fue un gran lingüista.
– ¿Cómo lo sabes?
– Los libros lo dicen.
– Entonces no puedes hablar así: debes decir: "Sapir había sido un gran lingüista" (Martín, 1976–1977)
– Sapir was a great linguist.
– How do you know that?
– Books say it.
– Then you can't talk that way: you should say: "Sapir had been a great linguist"

This example illustrates, in my view, three basic issues. First, the conscious knowledge that speakers of Andean Spanish have about the epistemic value attributed by the scholars to this verbal form. Second, the fact that this function holds not only for Spanish in contact with Quechua but also with Southern Aymara.[12] Third, the drawbacks entailed, at least in the case of Andean Spanish, by dividing epistemic modality – non-experienced past – from reportative evidentiality – second-hand knowledge – which would be the gloss strongly suggested by the speaker's complaint. Both are semantic functions that sometimes appear to be fused in the grammar of this variety, regardless of their different "etymological" or "patrimonial" origins in Quechua and Aymara. Considering the latter, we should remember that, according to Escobar (2000), the coexistence of both forms, the pluperfect and reportativity markers like *dice, dicen*, and *dizque*, is almost necessary in Andean Spanish,[13] although, based on narratives collected in Pampas, Huancavelica (Andrade, 2007), I did not find evidence for a categorical position regarding this correlation.

Although Howe's (2013) objection remains unaccounted for, in the case of the pluperfect, we have a relatively sound hypothesis for a contact-induced change. This claim has received reasonable consensus among scholars, in spite of differences in the prominence given by them to the evidential and epistemicity arenas (Dankel & Soto Rodríguez, 2012; García-Tesoro, 2015; Godenzzi, 1996; Sánchez, 2004; Zavala, 1999, pp. 54–44, inter alia). Escobar (2000) agreed almost totally with Granda's (1994, 1996, 2001a) proposal, with the exception of two important nuances. First, she found in her corpus that, contrary to what Granda had argued, simple past (*canté*) was far from disappearing from Spanish in contact with Quechua in the Andes (see also Howe, 2013). Moreover, it was opposed to, or was in competition with, the present perfect (*he cantado*), the form that I will examine in the next section. Second, Escobar argued that the pluperfect (*había cantado*), as a form loaded with a new epistemic value, was also opposed from a semantic point of view to the present perfect. In this sense, she suggested a "tripartite verbal subsystem in the verbal system of the Spanish of bilinguals",[14] a subsystem composed of the pluperfect, the present perfect, and the simple past (Escobar, 2000, p. 234). According to Escobar, this subsystem is based on evidentiality (not epistemicity, the notion used by Granda) and is organized, as we will see, around the notion of relevance regarding the present or the "deictic center" of the speaker.

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12. Regarding the presence of this use in the Spanish in contact with Central Aymara (Jacaru), see Hardman de Bautista (1982).

13. Sánchez (2004) also supports this claim.

14. "Un sistema verbal tripartito dentro del sistema verbal del español de los hablantes bilingües" (Escobar, 2000, p. 234).

3.2 Present perfect

In fact, Escobar (2000) judges the notion of present relevance as the central criterion in the reshaping of the past tense verbal subsystem in Andean Spanish. This conceptual axis is "a pragmatic resource that the speakers use in a subjective way in order to mark past events with regard to the here-and-now" of the communicative act (Escobar, 2000, p. 235).[15] This is also the main semantic-pragmatic feature of present perfect in Andean Spanish, according to Escobar (2000). The past event encoded by this verbal form could occur in any moment of the past, in contrast with other Spanish varieties that show tighter temporal restrictions for using it (e.g., the "hodiernal" function in some peninsular varieties, in which the present perfect refers only to events produced the same day of the communicative act). Thus, when Andean migrants in Lima refer to past events produced in this city, they tend to employ the present perfect, whereas they code events that occurred in their homeland with the simple past (Escobar, 2000, p. 240).[16] I will not expand on these uses, because they do not relate straightforwardly to the categories of evidentiality or epistemic modality. However, I do want to stress that this author frames "evidential" uses (she does not speak of "epistemic" uses, as Granda does) into this semantic reorganization of the Spanish verbal system anchored in the notion of present (deictic) relevance.

This allows us to explain – although in a somewhat complicated way – a present perfect use that would seem, in principle, contradictory to the previous one, as far as it codes facts that occurred outside the "deictic center" of the speaker, but, crucially, with his/her conscious involvement. In these "evidential" uses, present perfect – marking conscious involvement – is opposed to the simple past, since the latter does not highlight the past event as lived or witnessed by the speaker, as we see in Example (3):

(3) *Estuve* un mes no más [en mi tierra] después me *regresé* / me *enfermé* [mientras estaba allá] / mi garganta se *ha cerrado* y todo me *ha pasado* / no no se *abrió* mi garganta / todo enfermedad me *agarró* gripe todo y total amarilla *m'he vuelto*.
(Escobar, 2000, p. 242)

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15. "Un recurso pragmático que los hablantes emplean subjetivamente para marcar eventos pasados con relación al aquí y ahora" (Escobar, 2000: 235).

16. There are exceptions. In her corpus (of ten persons) migrants older than 50 years who lived in Lima more than thirty years used both the present perfect and the simple past to refer to events produced in the main city. However, they used the latter for earlier events, as if they were depicted outside of the deictic centre of the speakers, in "another Lima" (Escobar, 2000, p. 242).

> *I was* only one month [in my homeland] afterwards *I returned* / *I fell sick* [when I was there] / my throat *has closed* and everything *has affected* me / no no my throat *did not open* / all kinds of sicknesses *got hold of* me the flu, everything and all yellow *I have become*.

Escobar (2000) stresses that here "evidential" uses of the present perfect appear only in verbs that refer to past events that occurred outside the "deictic center". In the former example, events coded with the present perfect (*mi garganta se ha cerrado, todo me ha pasado, total amarilla me he vuelto* 'my throat has closed, it has all happened to me, I have turned completely yellow') contrast with those expressed with the simple past (*estuve, me regresé, me enfermé, no se abrió mi garganta, me agarró gripe* 'I was there, I returned, I got sick, my throat did not open, I got the flu'). This is not due to temporal, but to modal criteria – they stress the conscious involvement of the speaker. Incidental evidence that favors this reading, mentioned by Escobar herself, comes from Bolivian Spanish. Stratford (1991, p. 172) stated briefly that various speakers told him that they regarded utterances coded with present perfect as more plausible than those coded with simple past. It would be very useful to make consultations of this sort with the speakers in a more systematic way, with the help of instruments especially designed for this purpose. This emphasis on full versus weak support on the truth-value of the utterance suggests that "epistemic" would be a better description for the so-called "evidential uses of the present perfect".

According to Escobar, in the area of past events, the present perfect is also opposed to the pluperfect, which, as we saw (Section 3.1), codes non-experienced events. Therefore, the tripartite system she suggests can be summarized as follows: as verbal forms referring to the past, the pluperfect enables Andean Spanish speakers to convey non-experienced eventualities, whereas present perfect stresses the conscious involvement in the state of affairs – i.e., it marks the experienced past, with its epistemic entailments – and simple past codes the event in a neutral fashion.[17] With data from Calca (Cusco), Klee and Ocampo (1995) also found that present perfect coded attested events. The place of the Andean use of the present perfect in this paradigmatic opposition amounts to its understanding as an epistemic phenomenon, since pluperfect was already judged as such (see Section 3.1).

This tripartite system, in which present perfect acquires a distinctive semantic function in Peruvian and Bolivian Andean Spanish, contrasts – again – with Ecuadorian Andean Spanish. For this variety, Pfänder and Palacios (2013) describe a distinction between simple past, which codes "visual attested information"; present perfect, which, as we saw, expresses in Ecuador "non-supported information"

17. The facts expressed with simple past would be, in some way, represented as more "external", with zero subjectification (Hopper & Traugott, 2003; Traugott, 2010).

since "somebody has told me" (see Section 3.1); and pluperfect, which conveys "inference".[18] Note that the terminology used by these scholars derives directly from the area of evidentiality.

Pfänder (2010) offers an example of the contrast between pluperfect and present perfect for Cochabamba Spanish in contact with Quechua. As he explains, "with verbs in *present perfect*, the speaker herself was in the place and time of the events; for verbs in *pluperfect*, she was not there" (Pfänder, 2010, p. 229):[19]

(4) – ¿Y cómo es El Calvario?
– Se sube arriba del cerro, se saca piedra, dice que había unos borrachitos que *habían hecho* su virgencita de piedra.
– Ah, sí, ¿cómo?
– Dice que una virgencita de piedra *habían tallado* y allí ovejitas dice *habían hecho*.
– Sí, […] pero como *han pasado* el día pues, todo el día *han estado* ¿no ve?
– Se *han ido* ellos, nosotros estábamos jugando, helados nos *hemos comprado*, refrescos, al baño *hemos ido*, la Neli se *ha trancado* en el baño, no podría salir, "ay, no se puede", yo igual al mismo baño *he entrado*, "ay no se puede", chistoso *hemos salido*. (Pfänder, 2010, p. 230)
– And how is El Calvario?
– You go up the hill, you get stones, it says that there were some drunken men that *had made* their little virgin of stone.
– Oh, really? How?
– It says that they *had carved* a little virgin of stone and also it says that they *had made* little sheep.
– Yes, […] but since they *have spent* the day there, the whole day they *have been* there, you see?
– They *have gone,* we were playing, we *have bought* ice cream, refreshments, we *have gone* to the bathroom, Neli *has been trapped* in the bathroom, she could not get out, "oh, you can't get out", I *have entered* the same bathroom, "oh, you can't", *we have left* amused.[20] (Pfänder, 2010, p. 230)

18. Simple past: "lo he visto con mis propios ojos, la información es confiable"; present perfect: "lo infiero, me lo han dicho, pero no lo he visto directamente, la información no es tan confiable"; pluperfect: "información poco confiable, no experiencia directa ni referida, más bien inferida" (Pfänder & Palacios, 2013, p. 67).

19. "En la presentación con verbos en *perfecto*, la hablante misma ha estado en el lugar y el momento de los hechos; cuando se trata de verbos en *pluscuamperfecto*, en cambio, no ha estado" (Pfänder, 2010: 229).

20. Example (4) also shows the simultaneous presence of reportative *dice* and the epistemic pluperfect, a discursive trend that Escobar (2000) noticed.

If this is the actual scenario for the present prefect, we can predict that Andean performers of personal experience narratives would choose this verbal form for coding evaluation in Labov and Waletzky's (1967) terms. An example presented by Juan Carlos Godenzzi (1996), collected in Puno, points to this reading:

(5) Uno de nuestros hablantes, que ha pasado algunos años en prisión, cuenta las circunstancias de su puesta en libertad: cuando alguien le anuncia que ya está libre, no cree. Sólo cuando él mismo toma el diario y lee la noticia se convence verdaderamente. Es este momento culminante el que está expresado por medio del perfecto:
[…] Pensé que era una broma… entonces me *ha dado* el periódico, *he leído* el periódico, entonces era una alegría ya…. (Godenzzi, 1996, p. 325)

One of our speakers, who spent some years in prison, tells the circumstances of his release – when someone tells him he is free, he does not believe it. It is only when he picks up the newspaper himself and reads the news, that he is really convinced. It is this culminating moment that is coded by the present perfect:
[…] I thought it was a joke… so he *has given* me the newspaper, I *have read* it, then it was a joy…. (Godenzzi, 1996, p. 325)

A narrative outcome like this is, precisely, what Margarita Jara Yupanqui (2013) found in her study of the present perfect in *Limeño* Spanish:

> …en las narrativas el PP [present perfect] aparece principalmente en estructuras de *evaluación externa e interna* y de resumen. Sus funciones principales consisten en abstraer la idea principal de la narración o hacer comentarios metadiscursivos sobre esta. *También puede interrumpir la secuencia narrativa para imprimir emoción a la historia y expresar el punto de vista del narrador*.
> (Jara Yupanqui, 2013, p. 110, my emphasis)[21]

Although Jara Yupanqui's sample includes Andean migrants' children, the scope of her conclusion is too broad for the ends of this article, since it also covers the children of *Limeño* families. In contrast, Caravedo and Klee (2012) perform a preliminary and comparative quantitative-qualitative analysis in Lima on the use of the present perfect in narratives of first-generation migrants, second-generation migrants, and *Limeños*. Although they confirm a higher frequency of present perfect among interviewees of Andean origin, they avoid categorical statements on this

21. "…in the narratives, the PP [present perfect] appears mainly in structures of *external and internal evaluation*, and summary. Its main functions are the abstraction of the main idea of the narrative or meta-discursive comments on it. *It also can interrupt the narrative sequence in order to introduce emotion to the story and convey the narrator's point of view*" (Jara Yupanqui, 2013, p. 110, my translation and emphasis).

matter, since their qualitative analysis shows that some Andean speakers' narratives lack this verbal form in the expected moments, and, conversely, some *Limeño* speakers use it with clear evaluative functions.

More recently, García-Tesoro and Jang (2018) compared narratives of rural and less formally educated speakers from Chinchero, Cusco, and from urban speakers with higher education from Cusco city, and found in the former a higher frequency of the present perfect in contexts where, from a standard point of view, the simple past was expected. They also identified that in their narratives, speakers combined the "evidential" functions of the present perfect with discursive and pragmatic ends – namely, events they had lived or witnessed, narrative summaries, and emotionally loaded story climaxes. This study supports, therefore, the prediction derived from the contact hypothesis about this verbal form in Andean Spanish; i.e., that the 'experienced past' epistemic function was transferred from Quechua and Aymara to the Spanish present perfect.

García-Tesoro and Jang (2018) also suggest that, as speakers develop urban and standardized profiles, their use of the present perfect tends to decline in favor of the simple past. This can explain why Andean migrants in Lima, in Caravedo and Klee's sample, did not perform as "Andean" as expected regarding the present perfect. However, it would not explain why some of the *Limeño* speakers in their corpus used the present perfect for evaluative means. Stratford (1991, p. 71) also found evidence, in La Paz and in the Bolivian-Peruvian high plateau, of a stylistic or diaphasic distinction between both forms, the simple past being the most prestigious and formal option, and the present perfect the informal one. In a more specific way, Godenzzi (1996) established that *Puneño* residents who had been outside the city for a long time, as well as those of urban origins tended to use the simple past more than the present perfect, whereas the Quechua-Spanish and Aymara-Spanish bilinguals mainly used the present perfect, and they rarely used the simple past. At the same time, Godenzzi suggested that the present perfect likely holds covert-prestige as it indexes the speech of popular groups; *Puneño* bilinguals, in contrast, perceived the simple past as more formal and distant.

As can be inferred, the candidate form for the source of this transference is the 'experienced past' suffix *-rqa*, in Southern and Central Quechua, and vowel lengthening in Southern Aymara and *-w* in Central Aymara. This is the explanation offered by Godenzzi (1996) and García-Tesoro and Jang (2018). In Spanish, present perfect already had a meaning of continuity with respect to the present and, in consequence, could express the "psychological proximity" of the events. Therefore, the selected form to code the Quechua and Aymara notion of experienced past would be the composite form of the Spanish past rather than the simple one. This may explain why *Puneño* bilinguals favor present perfect over simple past, in contrast to their more urbanised and monolingual peers.

As previously seen, Howe's (2013) observation of Faller's (2004) formal semantics account of *-sqa* and *-rqa* as centrally deictic – and not evidential, nor epistemic – is problematic for the contact hypothesis. At the same time, Howe seems to acknowledge that there are "evidential" readings of the present perfect in his Cusco data, apart from the limited perfective interpretations he finds in comparison with Peninsular Spanish (2013, p. 162, Chapter 4). Another of his findings that supports the contact hypothesis is that in Cusco the present perfect has an "increased perfective usage" that is similar to observations in La Paz, Bolivia, and Cordova-San Luis, Argentina, places also located in the Andean region.

Therefore, while acknowledging the theoretical problem posed by Howe's (2013) observation, this article states that this is another relatively sound hypothesis, developed by Andean scholarship, which explains the epistemic uses of the present perfect as a contact-induced change. A pending task is to coordinate the differences between the various explanations, considering the distinct populations taken into account. For example, as mentioned above, Escobar (2000) found an "evidential use" organized around the notion of "deictic center" among Andean migrants in Lima – a hypothesis that highlights the idea of present relevance. In contrast, Godenzzi (1996), working in Puno, a city of the high-plateau, stressed the vertical and ethnic distinctions among different groups of speakers. The underlying hypothesis – that I take to be the same, i.e., the development of an epistemic use in Spanish present perfect due to contact-induced change – could be refined by future research designed to resolve these divergences and assess what is happening in this matter in different Andean regions. This is the path followed by García-Tesoro and Jang (2018), when they compared rural and urban speakers from Chinchero and Cusco.

3.2.1 *Two additional challenges*

In this section, I highlight two additional challenges for the development of this hypothesis. First, we cannot forget that Peruvian and Bolivian Andean Spanish has developed differently over time from Ecuadorian Andean Spanish. These differences concern the present perfect, as well as the pluperfect and, apparently, also the simple past – i.e., the whole verbal subsystem referred to the past (Pfänder & Palacios, 2013).

Secondly, there seems to be regional variation regarding the preference for the present perfect and the simple past between the Southern and Central Andean Peruvian zones. Schumacher de Peña (1980) and Granda (2001a) observed that in both zones, the Quechua adstratum of Spanish is different. Central zones pertain to Quechua I, in Torero's (2002) terminology, and Southern zones to Quechua II.

There is still much work to be done in this respect. In the first place, Schumacher de Peña's (1980) and Granda's (2001a) intuitions should be tested in the field (without forgetting that Granda's claim about the absence of the simple past in

the Peruvian Southern Andean zone was rejected outright by Escobar, 2000 and Howe, 2013). Second, samples of Central and Southern Andean Spanish should be systematically compared. Third, a structural explanation should be developed in order to understand the hypothetical variation, if it indeed holds. As it is currently formulated, the hypothesis should account for both Aymara and Quechua II regions, on the one side, and for Quechua I – Central Quechuas – on the other.

Sánchez (2015) conducted such an exercise with a systematic experimental design. She applied a picture-based story-telling task (Sánchez, 2003) to two groups of early Spanish-Quechua bilingual speakers: a Huánuco group (Quechua I) and a Cusco group (Quechua II). The results were quite different, apparently due to variation in the understanding of the task: while the Huánuco group – encompassed by collaborators with lower formal instruction – understood the task as a description, the Cusco group interpreted it as a narrative. Hence the high presence of the present progressive in the first group (31% of the verbal forms), and the low presence of simple past (4%), present perfect (2%), pluperfect (1%), and past imperfective (1%). In contrast, the Cusco interviewees used mainly a prototypical narrative device – present tense (39%) – as well as simple past (31%), and past imperfective (25%).

Due to these differences in the comprehension of the task, Sánchez' study does not provide an answer to the question of regional distribution of the present perfect-simple past opposition in Southern and Central Andean Spanish. However, the experiment did unveil interesting preliminary evidence on two verbal constructions with "attested events" interpretations in Huánuco bilingual Spanish: participle nominalizations as subordinate verbs and a structure formed by *estar* + *participle* + *direct object verb forms*, as Examples (6) and (7) illustrate:

(6) Y un sapo, levantado su pie así, apo alto.[22] (Sánchez, 2015, p. 107)
'And a toad, his foot raised high, like this'.

(7) El muchacho está cruzado su mano. (Sánchez, 2015, p. 107)
'The boy has his hand crossed'.

Sanchez' analysis suggests a convergence between *estar* + *participle* + *direct object* (Example (7)) and Huánuco Quechua nominalizations with the periphrastic perfective form *-sha*, illustrated in Example (8), which are not possible in Quechua II varieties:

(8) Puñu-ka:ku-*sha*-lla-mi ka-yka-n
sleep-COMPL-PRT-LIM-ATT be-PROG-3.S
'(S/he) has fallen completely asleep' (Sánchez, 2015, p. 110)[23]

22. *Apo* means here 'significantly' and derives from Quechua *apu* 'sacred'.

23. The gloss and the translations come from Sánchez (2015).

Sánchez (2015) provides a thorough syntactic analysis in favor of convergence between these kinds of nominalizations and the Spanish structures illustrated in (6)–(7). However, we know little about the epistemic or evidential functions of Central Quechua nominalizations with *-sha*. This would be necessary for stating that the "attested events" readings in bilingual Spanish structures previously illustrated originated from Quechua. While acknowledging Sánchez' findings as interesting, I suggest that we need more evidence, both for the relevant Spanish and Quechua structures, in order to consider these elements as part of the evidentiality-epistemicity devices that bilingual speakers handle.

3.3 Future forms

In contrast to the pluperfect and present perfect, which have merited long-lasting and diverse attention by scholars, future forms as evidential or epistemic devices have only been studied by Escobar in her 2000 book and in two previous papers (Escobar, 1993, 1997a), and briefly addressed by Calvo Pérez (2001, pp. 123–124).

Escobar identifies two special uses, referred to as the simple future (*cantaré*) and the composite future (*habré cantado*). After finding a higher frequency of the simple future in Spanish in contact with Quechua than in other Spanish varieties, like the Mexican one, she argues that these structures have been reloaded with evidential functions as marks of inference. In this function, both the simple future (*cantaré*) and the composite future (*habré cantado*) intervene, the first one for present and future events, and the second one for past events. Note the following examples:

(9) [¿cuáles son las comidas típicas de Urubamba?]
ya las comidas típicas *serán* ps (pues) ese almuerzo de moraya / sopa de trigo / sopa de morón / ese almuerzo de chaquepa. (Escobar, 2000, p. 124)

[which are the typical dishes in Urubamba?]
Ok the typical dishes *will be* in fact that lunch of *moraya* (dehydrated potato) / wheat soup / *morón* soup / that *chaquepa* lunch.

(10) [sobre el origen del pueblo] [nos dijeron] y de otros sitios *habrán venido*… mis abuelos así *habrán venido* ps de otros sitios / y aquí han radicado / así me han contado de… Tintay [el pueblo]. (Escobar, 2000, p. 122)

[on the origins of the town] [they told us] and from other places my grandparents *would have come* this way *they would have come* indeed from other places / and here they have lived / thus I have been told from… Tintay [the town].

Regarding Example (9), Escobar states that the interviewee lives in Pisac, so it is probable she knows the typical dishes of Urubamba. Therefore, besides the inferential function that the simple future seems to be coding, the example has a

nuance of politeness and modesty that is frequent in the use of this verbal form in the Andes. In relation to Example (10), Escobar (2000) says that the speaker is making an inference about the likely fact that his grandparents were immigrants, relying on the knowledge that the town where he lives was set up in recent times. The difference between both uses lies in the temporality of the inferred events, and their common function is to establish the epistemological basis for making a speech act. Thus, this use can be considered an evidential one, following Cornillie's (2009) definition.[24]

Nevertheless, as Escobar (2000) notices, different standard Spanish varieties assign probability meanings to the simple future and the composite future. Inference, based on external indications or on previous knowledge, can easily overlap with these functions. In fact, Escobar states that this probability (epistemic) meaning is the basis for the emergence of the inference (evidential) function in Andean Spanish. The main difference would rest in cases like (9), where the speaker has direct knowledge of the information, but, due to incomplete data or to politeness, decides to avoid categorical statements. In my view, the latter feature is too elusive and subjective to form a sound criterion for distinguishing between the Andean and standard uses. Therefore, I deem it necessary to refine the hypothesis by comparing samples of Andean Spanish and other Spanish varieties regarding the uses of these verbal forms.

Another area that merits further development is that it is unclear what the source of the transference is. On the one hand, Escobar (2000) states that, according to Antonio Cusihuamán (1976, p. 245) – an expert on Cusco Quechua grammar – the independent suffix *-ch/-chi*, that encodes inference in Quechua, is usually translated with the future tense in Andean Spanish. However, based on the studies of Wolfgang Wolck, she also explains that the main readings of the future tense in Quechua are modal and not temporal (2000, p. 112 passim). Thus, we have two candidates as the grammatical source for this transference process.

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24. Escobar also claims that particular modal uses of the simple future have developed in conditional sentences, in the area of probability judgements, but I think that the differences stipulated between these and the standard constructions are not clear enough. Therefore, I do not include these forms in this panorama. Two examples of these uses are the following: (a) *[mi esposo] acordión toca / no me trae plata nada // no me responde a mí /…/ [si] comerán o no comerán mis hijos no sabe él / nada* ([my husband] plays the accordion / he does not bring me any money // he does not answer me /…/ [whether] my children will eat or not he doesn't know / anything), and (b) *no hallo qué hacer ahora / por cuál dividirme o por mi esposo / o por mi hijo porque si lo llevo ahora mi hijo a Arequipa mi esposo también se quedará abandonado con mi otro hijito* (I don't figure what to do now / in favor of whom to decide my husband / or my son because if I take my son now to Arequipa my husband will remain abandoned with my other son) (2000, p. 119). See note 5 on other special uses of verbal forms, noticed by Escobar (2000), that I have not included in this paper.

Regardless, the frequent use of these forms in Andean Spanish indicates the need for further research. Andean narratives clearly show that this form functions as an inferential device. The following is an example extracted from a dream narrative that I collected recently in Huamanga, Ayacucho. The excerpt conveys the dream of an old man by his daughter:

(11) Dice que mi papá había viajado, adóoonde *habrá viajado* en su sueño, a un pueblito que él no conoce, y que la carretera era trocha, lleno de tierra y así en curva…, las curvas así, ¿no? Y dice que él estaba sentado en una cima, mirando, sentado ¿no? Miraba dice que había una carrera de cuyes….
(Huamanga, 15/10/2018)
It says that my father had travelled, wheeeere he *will have travelled* in his dream, to a little town he doesn't know, and the highway was a shortcurt, all dirt, and with curves, the curves this way, OK? And it says that he was sitting at a peak, looking down, he sat, OK? He looked it says there was a race of guinea pigs.

In this brief excerpt, the narrator employs the composite future, along with the pluperfect and also the discourse marker *dice* and *dice que*, as part of her available repertoire for translating into words a complex oneiric experience. We understand fairly well how the pluperfect functions in Andean Spanish (Section 3.1), and why is it present here, in a dream narrative. The discourse marker *dice* and *dice que*, that codes indirect evidentiality and is an important element of this narrative genre in the Andes, has also been studied.[25] Thanks to the insights of Escobar (1993, 1997a, 2000), we can clearly observe the inferential function of the composite future in this narrative. It is coherent that a dream coded in the past tense and in the non-experienced events modality uses the future composite and not the simple future for conveying inferences in the frame of the story.[26] At the same time, it must be mentioned that we lack a clear understanding on the relationship between this verbal structure and Quechua, so we cannot include it yet within the set of epistemic or evidential contact-induced changes in Andean Spanish.

3.4 Subjunctive present correlated with verbs in past tense

With data gathered on Cochabamba Spanish, Pfänder (2010) and his team have suggested an evidential function for the subjunctive present correlated with verbs in the past tense, as in the next example:

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25. See, *inter alia*, Andrade (2005, 2007); Calvo Pérez (2000); Coronel-Molina (2011); Escobar (2000, pp. 135–136); Granda (1994, 2001b); Fernández Lávaque (1998). Andrade (2005) is an essay on Andean dream narratives and theories of dreaming in the Andes.

26. However, the composite conditional (*habría viajado* 'would have travelled') was another possibility from the point of view of my own *Limeño* Spanish.

(12) Ofrecía recompensa a quien *proporcione* datos sobre los ladrones.
(Pfänder, 2010, p. 231)
'H/She offered a reward to whoever *gives* data on the thieves'.

The author provides few specifics on this use; he only states the following regarding examples as (12): in Cochabamba Spanish, "the question of *consecutio temporum* affects also the subjunctive. The following [previous, LAC] sequences of tense and mood would seem unusual to a speaker of standard Spanish" (Pfänder, 2010, p. 231).[27] The only claim on evidentiality refers, without much detail, to regional characteristics:

> Con la reducción de la diferenciación temporal se corresponde no sólo – como recién se ha visto – una diferenciación más señalada en el plano evidencial-reportativo, sino que también el aspecto presenta en el CC [Cochabamba Spanish] otro modo de diferenciarse, divergente del común en el CE [Standard Spanish].
> (Pfänder, 2010, p. 231)[28]

I am not interested in the claim about the new aspectual particularities of this verbal form, which I do not see clearly enough, but rather in the statement, coded as if it was shared knowledge, indicating a reportative reading of this use. Due to the use of a passive voice in the formulation, it is not clear whether it is another scholar who has "recently observed" this function or it is Pfänder's team itself.[29] I shall state that from the point of view of my *Limeño* Spanish, which I believe to be strongly influenced by Andean Spanish, I was astonished with the idea that there was something particularly Andean about this use of the subjunctive since, in my variety, it is perfectly standard. However, in my Spanish, the mirative use of the

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27. "La cuestión de la *consecutio temporum* afecta también al subjuntivo. Las siguientes secuencias de tiempo y modo parecerán bastante poco usuales a un hablante del CE [castellano estándar]" (Pfänder, 2010, p. 231).

28. "The weakening of the temporal distinction is not only correlated – as was recently observed – with a clearer distinction in the reportative-evidential arena, but also, the aspect presents another way to differentiate itself in Cochabamba Spanish, divergent with the common uses in standard Spanish" (Pfänder, 2010, p. 231, my translation).

29. Before the publication of Pfänder's book, Sessarego (2008, 2010) worked on this topic, without assigning it to Andean Spanish and without claiming an evidential reading for this structure. He performed a Varbrul analysis of nominal subordinate clauses in Bolivian and Peruvian written Spanish relying on data gathered from CORDE. He offers a fictitious but "entirely possible" example assigned to *Quiteño* Spanish, in which lack of communication is due to this grammatical trait:

Tourist: ¿Es nuevo ese edificio?
Driver: Sí, lo construyeron para cuando venga el Papa.
Tourist: Ah, ¿cuándo va a venir el Papa?
Driver: Ya vino, el año pasado (Sessarego, 2008, p. 91).

pluperfect, previously mentioned, is also entirely standard, and *Limeños* are not usually conscious about its Quechua and Aymara origins. Thus, I thought I should entertain the possibility that this use of the subjunctive could have a reportative function transferred from Andean languages.

Fortunately, the recent study of Speranza (2014) offers an answer to this question. She included these uses in her thorough assessment of written texts by Buenos Aires students, and her results do not support the claim. The use of subjunctive present with verbs in past tense is as frequent among the students with Quechua background as among those with Guaraní background and those with a Rioplatense monolingual background. Consequently, it seems that, at the moment, the aforementioned use should not be included among the specific verbal traits of Andean Spanish, and it is not a contact-induced change. In addition, its alleged evidential function is not sufficiently clear.

4. Conclusions and further research

In this section, I summarize the outcomes of my bibliographic examination in a table that reviews the current state of the contact hypothesis for each of the features studied, as well as suggestions for further research (Table 1).

Scholarship has shown that pluperfect and present perfect have been loaded with epistemic functions in the Andean Spanish varieties of Peru and Bolivia, derived from the corresponding indigenous past tense morphemes. As an outcome of this transference, these verbal forms code 'non-experienced events' and 'experienced events', respectively, in addition to their temporality functions. The close relationship of the new functions with strong or weak support toward the state of affairs conveyed by the utterance suggests that these uses are mainly epistemic.

However, we must acknowledge that the scholarship is not consistent on this matter and tends to describe the Andean functions of both verbal forms mainly in evidential terms. The proximity of the "type of source" parameter – namely, direct evidence vs. indirect evidence ('hearsay' and 'inference') – and the modal opposition between experienced and non-experienced events seems to be at the heart of this dilemma. Recent understandings of evidentiality, that stress the central role of the "mode of knowing" parameter for defining evidential elements (Cornillie, 2009), can help to disambiguate this issue. Further theoretical work is clearly needed in this matter.

In a similar vein, Faller's (2004) claim about the "deictic core" of *-sqa* in Quechua, that sets aside epistemicity and evidentiality from the nuclear semantics of this element, poses a strong challenge to the contact hypothesis in the case of the pluperfect. As Howe (2013) stated, this also has obvious implications against the

understanding of the present perfect Andean use as centrally epistemic. Escobar's (2000) claim about the role of the "deictic center of the speaker" for understanding evidential uses of the present perfect presents an alternative – which merits further development – to reconcile research on the Andean Spanish verb with Faller-Howe's argument.

"Mode of knowing" seems to be central in the Andean usages of the simple and composite future forms. Therefore, they can reasonably be accounted for in terms of evidentiality. However, as Escobar (2000) acknowledges, this matter requires further comparative study of the Andean evidential usages of these verbal forms and the probability (modal) functions that are frequent in other Spanish varieties. The source of the hypothetical transference in this case is also an open question for the Quechua-Spanish contact research agenda.

This review has not found grounds for persevering in the evidential or epistemicity contact hypothesis regarding the use of the present subjunctive in sentences with verbs inflected in the past tense. In my view, a more promising line of research in this case would be to delve into the relationship of this phenomenon with the influence and scope of different Hispanic regional standards, in line with Sessarego (2008, 2010).

Another pending task for the contact hypotheses in the present perfect and the pluperfect cases is to explain in a comprehensive way the starkly different outcomes of language contact in the Bolivian-Peruvian Andean area, on the one hand, and the Ecuadorian highlands, on the other. Another shared avenue for future research is to strengthen consultation with speakers on these verbal forms. This would help, for example, in assessing the centrality suggested here for epistemic support rather than evidential readings in an empirical way, or for refining our understandings of the relationship between the epistemicity-evidentiality dimensions in actual language use.

As for present perfect uses alone, we lack fine-grained information about the Aymara regions, since Godenzzi's classic work (1996), performed with bilingual speakers in Puno, does not specify their Quechua or Aymara origins, conflating them in a single group. Comparison between Spanish varieties in contact with Southern Quechuas, on the one hand, and Central Quechuas, on the other, is another pending task regarding Andean present perfect (and simple past). Finally, discrepancies between the results of different studies devoted to the narrative uses of this form (Caravedo & Klee, 2012; García-Tesoro & Jang, 2018) can be handled via regional comparative approaches based on carefully designed sampling.

Table 1. Panorama of the contact-hypothesis for the studied verbal structures

Verbal structure	Evidential or epistemic function?	Contact hypothesis	Source of transference	Pending tasks for strengthening the contact hypothesis
Pluperfect	Epistemic	– Supported	*-sqa* / *-naq* (Quechua) (but cf. Howe, 2013; Faller, 2004)	– Integrate Ecuadorian case – Consultation with speakers
Present perfect	Epistemic	– Supported	*-rqa* (Quechua) (but cf. Howe, 2013; Faller, 2004)	– Integrate Ecuadorian case – Consultation with speakers – Spanish in contact with Aymara vs. Quechua – Contrast between Quechua I and Quechua II – Refine sampling
Simple future and composite future	Evidential	– Not clear	*-ch/-chi*? Quechua future forms?	– Contrast between Andean Spanish groups and other varieties
Present subjunctive with verbs in past tense	None	– Not supported		

COMPL complementizer
PRT preterite
LIM limitative
ATT attested
PROG progressive.

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PART II

Phonetics & phonology

CHAPTER 5

Realizations of /b/ in the Spanish of Lima, Peru

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In canonical Spanish, the letters <b> and <v> represent the same phoneme: /b/. The phoneme has two main allophones, essentially in complementary distribution: [b] and [β] (Harris, 1969). Previous research has found allophonic deviations, such as [v], [Ø], and [w], in both monolinguals (Sadowsky, 2010) and bilinguals (Phillips, 1982; Stevens, 2000). Previous research has not extensively explored the production of /b/ in Peruvian Spanish. Fifty-one participants were recorded at a university in Lima, Peru reading isolated words and paragraphs. Half of the 60 target words were spelled with <v> and the other half with <b>. This study supports previous literature, demonstrating that Peruvian Spanish produces two complementary allophones of /b/.

Keywords: phonology, Spanish, /b/, Peru

1. Introduction

The Spanish phoneme /b/, represented by the letters <b> and <v>, has two complementary allophones within a word or phrase: [b], a bilabial voiced plosive, after pauses and nasals and [β], a bilabial voiced approximate, in the rest of the phonetic contexts (Harris, 1969; Hualde, 2014; Navarro Tomás, 1968; Quilis, 1981). Assimilation of /b/ to neighboring phonemes and elision of /b/ intervocalically, shown in Table 1, have been produced by native speakers in previous literature (D'Introno, Del Teso, & Weston, 1995; Morales Pettorino & Lagos Altamirano, 2000; Stevens, 2000; Vergara Fernández, 2011). The production of the voiced labiodental fricative [v] has been the most studied noncanonical allophone of /b/, especially in studies of bilingual speakers from Mexico and the United States (Fabiano-Smith & Goldstein, 2010; Trovato, 2017) and in studies of Chilean monolingual speakers, where [v] is the most common allophone of /b/ (Vergara Fernández, 2010, 2011, 2013). In addition to assimilation to a preceding aspirated /s/, the production of [v] has been explained as hypercorrection, distinguishing between the graphemes <b> and <v> in spelling, and bilingual language interference (Lope Blanch, 1988;

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Stevens, 2000; Vergara Fernández, 2011). Apart from these cases, it is assumed that native speakers of Spanish will follow the canonical distribution of /b/.

A pilot study for the current experiment was conducted in the United States with 21 Spanish first language (L1)/English second language (L2) participants from Spain (8), Peru (7), Ecuador (2), Chile (1), Colombia (1), Puerto Rico[1](1), and mainland United States (1). Like the present study, individual words, a picture naming task, and a paragraph task were used to collect a total of 1,258 tokens of /b/ separated evenly into each task by orthography and phonetic environment, see Section 3.3 below. Of the 420 tokens produced by the Peruvians, 8.6% of them were [v]. This was the highest rate of production of [v] among participants that could not be explained by previous dialectal literature (i.e. Chileans are known to produce the [v] allophone at high rates (Sadowsky, 2010; Vergara Fernández, 2010) and Puerto Ricans and Americans reside in bilingual Spanish-English areas where English can influence the production of Spanish (González Rivera & Ortiz López, 2018; Guzzardo, Tamargo, & Vélez Avilés, 2017; Lipski, 2008; Smith, 2004). Furthermore, no evidence of hypercorrection nor orthographic distinction for /b/ has been attested in Peruvian Spanish. Moreover, Peruvian Spanish is not in contact with other languages that contain /v/, as the other two co-official languages of Peru, Aymara and Quechua, do not contain that phoneme. While, the aspirated /s/ is attested in the Limeño dialect (Bernate, 2016; Caravedo, 1990; Hundley, 1986), the pilot data showed production in all phonological environments.

This study uses "Peruvian Spanish" instead of Limeño to describe the production of /b/ by the participants, even though the participants in both the pilot and present study were from Lima, Peru. Due to the high migrant population in Lima and corresponding regional accents migrants bring, sociolinguists classify third generation Lima residents have what can be considered a "Limeño" dialect (Klee, Tight, & Caravedo, 2011). Peruvian production of /b/ has not been extensively studied and further research is needed to confirm the canonical distribution of /b/ in Peru. The present study sought to investigate whether the unexplained Peruvian production of [v] in the pilot study was a product of the Spanish-English bilingual language interference (Navarro Tomás, 1999; Stevens, 2000) or a previously unexplained part of the Peruvian dialect.

The next section reviews the previous literature on modern-day Spanish production of /b/. This is followed by an overview of the experiment, including the hypotheses, the participants and the methodology. Then, the results are presented, analyzed, and discussed with suggestions for future studies.

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1. The author recognizes that Puerto Rico is a territory of the United States, but for the purposes of dialectal differences, it is used here separately from the dialects of mainland United States.

Table 1. Realizations of /b/ produced by native Spanish speakers

Type of realization	Word	Phonological representation	Phonetic Production	Translation	Data from
[b]	Bueno	/bueno/	[bwéno]	Good	D'Introno et al. (1995)
[β]	Uva	/uba/	[úβa]	Grape	Morales Pettorino & Lagos Altamirano (2000)
[Ø] (Elision)	Abuelo	/abuelo/	[aØélo]	Grandpa	D'Introno et al. (1995)
Assimilation					
[m]	Submarino	/submarino/	[summaɾíno]	Submarine	D'Introno et al. (1995)
[p]	Obtener	/obtener/	[optenér]	Obtain	D'Introno et al. (1995)
[w]	Vuelta	/buelta/	[wélta]	Trip	Vergara Fernández (2011)
[v] following an aspirated /s/	Las vacas	/lasbakas/	[lahvákah]	The cows	Stevens (2000)
[v] due to hypercorrection	Se baila	/sebaila/	[se.váila]	One dances	Isŭbaşescu (1970)
[v] bilingual/ distinction	Villar	/biyar/	[viyár]	Small village	Stevens (2000)

2. Literature review

2.1 Orthography and phonetics of /b/

Modern phonologists assert that <b>, <v>, and sometimes <w> (which was not an official Spanish letter until 1970) are represented by a single /b/ phoneme (Pharies, 2007; Hualde, 2014). This voiced bilabial plosive, in turn, has two allophones: [b] and a continuum of [β], which ranges from a closed spirant approximate to an open spirant approximate to a vocalic spirant approximant (Alkire & Rosen, 2010; Gil Fernández, 2000; Hualde et al., 2011; Martínez Celdrán, 1984). Analyses have found that the allophone [b] is posited in post-nasal and breath-group initial phonetic positions, while the continuum of [β], irrespective of its orthography, appears in all other positions (Alkire & Rosen, 2010; Martínez Celdrán, 1984; Martínez Celdrán

& Regueira, 2008). For instance, in Spanish the word *vaso* 'drinking glass' produced alone would be realized as [bá.so]. By adding the determiner *un* 'a' before the word, it would be realized as [umbaso] because within the utterance /b/ follows the nasal. While [b] is plosive and [m] is nasal, [b] and [m] share the features of being voiced bilabials. Because the latter feature is shared, /b/ is realized as [b]. With other phonemes preceding /b/ that do not share its place of articulation, /b/ is realized as [β]. Continuing with the above example, using the determiner *el* 'the' with *vaso*, [elβaso] would be produced because [l] does not share the place of articulation with [b]; therefore, [β] is produced in normal speech.

In addition to subjective judgments by trained raters, the differences between [b] and [β] can be analyzed with objective measurements: namely, the intensity difference between the lowest point of intensity of /b/ and the highest point of intensity of the following vowel. A lower /b/ intensity indicates more closure of the mouth and a more consonant-like production, while a higher intensity, and therefore smaller difference between /b/ and the following vowel, indicates a more open mouth and vowel-like production. For example, Carrasco, Hualde, and Simonet (2012) found a continuum of constriction of [β] from most open post-vocalically to most closed post-consonantally for Madrid speakers, but a clear separation of constriction between post-vocalic and post-consonantal [β] for Costa Rican speakers. Similarly, Carrasco (2008), examining Madrid and Costa Rican Spanish, and Eddington (2011), examining seven dialects including 2 Peruvian speakers, observed that the most lenited occurrences of [β] (i.e. smaller intensity differences) occurred intervocalically and /b/ was least lenited after /s/. Together this research demonstrates that [β] is produced differently depending on dialect and phonetic position.

Stress can also affect the degree of lenition of [β]. Eddington (2011) found [β] was more constricted when followed by a stressed syllable or between two stressed syllables, while Carrasco (2008) and Ortega-Llebaria (2004), who studied Caribbean Spanish, found that /b/ was more constricted when it was the onset of a stressed syllable. Similarly, in studying Castilian Spanish speakers producing words with intervocalic /g/ in carrier phrases, Cole, Hualde, and Iskarous (1999) found that /g/ was lenited following stressed vowels and when flanked by /u, o/. Likewise, in interview data of Argentinians, Colantoni and Marinescu (2010) found that /b/ was also lenited more with the back vowels, yet /g/ was more lenited with /a/ than /i, o/. Because the target words in the present study focused on the effects of preceding phonemes rather than intervocalic placement, stress placement was not considered in the selection of the target words.

2.2 Modern day use of [v]

Although the canonical [b]-[β] dichotomy is pervasive throughout the Spanish speaking world (Alkire & Rosen, 2010; Hualde, 2014), noncanonical utterances are realized. The production of [v] is the most produced and most widely studied noncanonical Spanish /b/ allophone (Lope Blanch, 1988; Stevens, 2000; Vergara Fernández, 2011). A labiodental [v] can be found in multiple dialects of monolingual Spanish speakers. For example, literate Chileans reading a word list (Sadowsky, 2010) and illiterate Chileans performing a picture identification task (Vergara Fernández, 2011) produce [v] almost categorically for instances of /b/ regardless of orthography in all phonetic positions. Sadowsky and Salamanca (2011) argue that /b/ in Chile, regardless of orthography, has neutralized to a labiodental neutral fricative allophone, represented as [b͡v], which contrasts with the canonical [b] and [β] dichotomy noted above. Mexicans also produce [v] in all phonetic contexts except for post-nasals (Lope Blanch, 1988). However, in this case the results demonstrate that spelling matters: [v] was produced only with <v> and not <b>. This indicates that in some dialects there can be a phonological distinction between different orthographical representations.

Mixed results have been found regarding bilingual Spanish-English production of [v]. In his analysis, Phillips (1982) observed that the simultaneous bilinguals who use [v] the most are people who speak English more than or equally with Spanish. Contrarily, Amengual (2017) found no instances of [v] by any bilingual group but found that early sequential Spanish-English bilinguals lenite [β] more than simultaneous or second language bilinguals who produced more constricted variations, indicating that the canonical distribution of /b/ is learned very early. Similarly, Rao's (2015) audio recordings of heritage speakers of Spanish reading words, paragraphs, or describing pictures found that the participants produced a tense approximate, rather than a lenited [β] or [b] and no instances of [v]. Yet by using video confirmation, Torres Cacoullos and Ferreira (2000) found that, when New Mexican Spanish speakers translated English words or phrases, the labiodental [v] was produced at 61% of all tokens. They also observed that the archaic [v] was maintained in high frequency words in the New Mexican dialect regardless of orthography, while language contact with English for mid and low frequency words tended toward orthographic differentiation for <b> and <v>. Additionally, in using word naming, sentence production, and informal conversation tasks, Stevens (2000) also found an orthographic distinction with his Spanish-English bilinguals: [v] was produced 40% of the time with <v> and 0% with <b>. These mixed results do not show a clear trend in the production of [v] in Spanish-English bilinguals and requires more investigation.

Sociolinguistic factors such as gender, education and class can impact use of non-standard linguistic forms. In addition to the amount of language use mentioned above, Phillips (1982) in his naturalistic bilingual data from Los Angeles, found that men and those from the lower class produced [v] the most. Contrarily, Stevens (2000), whose participants were all educated instructors working in the US, observed that women produced [v] more than men. There has been no previous research on sociolinguistic factors impacting the use of /b/ in Peru. However, sociolinguistic factors have been found to impact the phonetic realization of /s/ in Peru. In Hundley (1986), Limeños, especially those from the working class, and women aspirated or elided /s/ (the less canonical varieties) more so than those from Cuzco, the middle and upper-middle classes and men. Yet, in Klee, Rogers, Carvedo, and Diez (2018) gender and education had less strength in predicting aspiration or elision of /s/ than migrant status. Gender appears to have varying effects on the pronunciation of Spanish phonemes depending on which other sociolinguistic factors are held constant. Moreover, from the previous studies, it is expected that educated people will produce more standard varieties. Therefore, if [v] is found in significant quantities in educated participants, then it can be assumed that [v] is a standard allophone of Peruvian /b/. Conversely, if it is not found in the speech of educated adults, then it would not be a viable allophone of /b/.

The present study seeks to answer the following research questions:

1. Does the Peruvian dialect conform to the canonical [b] / [β] split found in other Spanish dialects?
2. Does the Peruvian dialect contain the allophone [v] in its inventory, and if so, is it conditioned by the phonemic placement and orthography?

In response to these questions, the following hypotheses were made:

- H1. Based on previous research of other Spanish dialects, Peruvian Spanish should product /b/ canonically.
- H2. If [v] is part of Peruvian Spanish, its production will be found in every phonological position except for post-nasal placement, which will have the allophone [b] due to assimilation.
- H3. If [v] is part of Peruvian Spanish, the use of the letter <v> in a word will produce more realizations of the allophone [v] than the letter <b> to distinguish between the graphemes.

3. Methodology

3.1 Participants

To test these hypotheses, a three-task experiment was run at a university in Lima, Peru. Fifty-one participants (26 women, 25 men) were recorded for the experiment. Two female participants were eliminated from the experiment due to recording errors. The average age of the participants was 21 (range 18–36). The average time studying English was 11.3 years (range 0–31) with 19 participants self-reporting an advanced knowledge of English, 25 at intermediate, 4 at novice, and 1 without reporting.[2] Although all participants were native Spanish speakers from Peru and the experiment was conducted in Lima, only 36 participants were born in Lima and of those only 10 participants had both parents born in Lima.

3.2 Procedure

The participants were asked to complete three oral production tasks: to read individual words, to read a given sentence and complete it by identifying a given picture, and to read paragraphs. Using Microsoft PowerPoint 2010 on an HP ProBook 4540s laptop with a 15.6-inch screen, the participants were presented with the stimuli. The isolated word task stimuli were automatically presented every two seconds centered on the left-hand side of the screen, the picture identification task stimuli were automatically presented every five seconds, and the paragraph task allotted two minutes per short story. Before each task, participants first received practice stimuli that did not contain the targeted phoneme in order to familiarize themselves with the task format. Once any questions were answered after the practice stimuli, participants proceeded to the target stimuli of the experiment. Participants' responses were recorded with a Zoom H1 Handy Recorder and lavalier microphone. Following the oral production tasks, the participants were asked to complete a written language background questionnaire on paper. The participants were allotted a break for as long as they wanted between each task, which normally lasted no more than 5 minutes. The experiment lasted between 15 and 25 minutes.

2. Prior to the study the author did not know that English was a university requirement and therefore did not record monolinguals in the experiment.

3.3 Materials

The experiment contained a total of 90 words which were split in half between words spelled with <v> and words spelled with <b> (Appendix A). These halves were then subdivided into five categories where the /b/ phoneme was placed word-initially, after a vowel, after a nasal, after an <l> and after other consonants. The target words were selected from among the highest frequency words with the aforementioned combinations as analyzed by *NIM* (Guasch, Boada, Ferré, & Sánchez-Casas, 2013). While Eddington (2011) did not find that word frequency affected the lenition of [β], high frequency nouns were chosen to prevent participants from realizing the purpose of the study, as more uncommon words might clue them in to its objectives and might elicit higher use of [v] if the participants were influence by a social desirability bias, thinking that hypercorrection was socially desirable with more infrequent words. Two hundred forty-three nouns were selected as filler words from a list of Spanish's top 5000 commonly used words (Davies, 2005) and were added as distractors for the stimuli. The sentence completion task placed the nouns into sentences with other non-target words (Appendix B). The paragraphs were created using the target nouns to make three short stories. Reading stories was intended to elicit more informal speech than the other two tasks as participants would focus on the meaning of the passages rather than the individual words. The 90 target words were divided into three lists of 30 words, which each had three representatives from each combination of orthography and phonetic position. Each task contained a list of 30 target words and 81 fillers. The target stimuli and accompanying fillers were pseudo-randomized into three blocks, wherein two to four fillers separated two target words. The order of the blocks within a given task had six different presentation options per task. This presented a total of 216 variations of presenting the three tasks together. Therefore, while each participant saw the same word list for each task, the order of presentation for each participant across all three tasks was different to reduce task effects.

The target words from the speakers were analyzed and coded in Praat (Boersma & Weenink, 2013). The subjective coding of the stimuli productions was based on the waveform of the vibration, intensity, the pattern of the spectrogram, and the formants (Martínez-Celdrán & Regueira, 2008; Russell, 2005). Each of the instances of the phoneme /b/, were coded as [b], [β], [v], [ø], or other. While the author recognizes the continuous scale of [β] mentioned by Hualde, Simonet, and Nadeu (2011), as the focus of this study was on the production of [v], the subcategories of [β] (e.g. open, closed, and vocalic approximates) were condensed to only [β], cf. Figure 1. The participants were recorded with audio and not with audio and video; therefore, the sound represented with [v] could not be confirmed as a true labiodental. Even

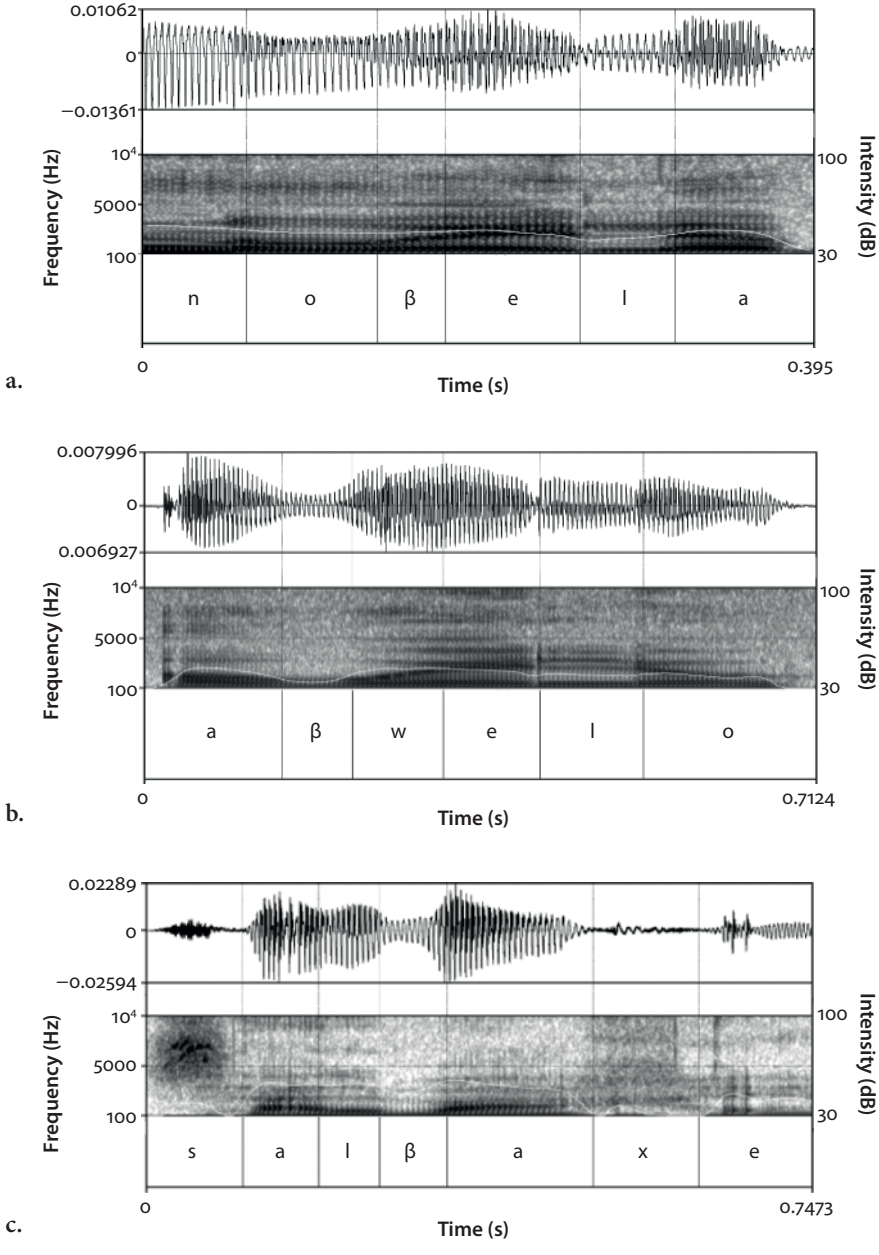

Figure 1. Continuum of [β]: (a) a vocalic spirant approximate [β], (b) a closed spirant approximant [β] and (c) an open spirant approximant [β]

though this leaves the possibility for a voiced labiodental approximate, [ʋ], other studies studying non-canonical production of /b/, such as Rao (2014) and Stevens (2000), also used audio recordings and identified the voiced fricative sounds as bilabial. For the ease of coding, the sound represented by a periodic waveform, with voicing, spectrogram and formants corresponding to [v] were represented with [v], cf. Figure 2. By comparing the waveform, intensity and spectrogram, [v] was differentiated from [β]. That the allophone was a fricative could be seen by the presence of more irregularities in the waveform than [β]; irregularities of the formants, compared to those of [β] which were easily visible, though the distance between them varied with the openness of the consonant; and regular, periodic static in the spectrogram above 5000 Hz, which [β] did not have.

While coding /b/, following the methods of Carrasco, Hualde, and Simonet (2012), two manual markers were placed: one at the point of minimum intensity within the consonant /b/ and one at the point of maximum intensity during the following vowel, as shown by the intensity curve displayed in Praat with a minimum pitch at 100 Hz and the time step set to 0. The difference between the two intervals was analyzed by Praat; a larger difference indicates more constriction while a smaller difference indicates less constriction. Therefore, [b] should have a large difference because an occlusive is the most constrictive type of consonant, [β] should have a small difference because it is more vowel-like, and [v] should be between the two (Hualde, Simonet, & Nadeu, 2011). However, if /b/ was omitted, the vowel had an intensity lower than the preceding /b/, /b/ had an intensity higher than the following vowel, or an intervening liquid (/l/ or /r/) exceeded the maximum or minimum pitch, the data point was excluded from the analysis.

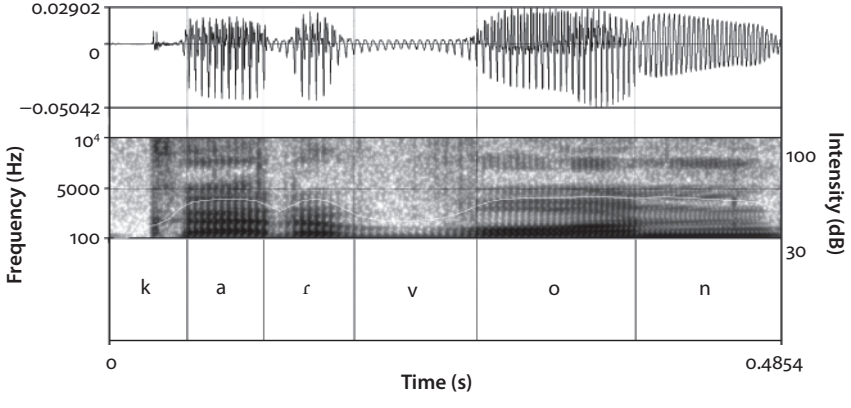

Figure 2. Image of [v]

4. Analysis

The data was coded by the author and 20% was verified by a second trained linguist. This percentage of data aligns with other studies where a phonological phenomenon is identified by the researcher (Davidson, 2006; Nadeu & Hualde, 2012). The interrater reliability was 90% and any discrepancies were reanalyzed, and a final judgement was made by both raters. The recording location, a faculty lounge on the university's campus, was not ideal: though relatively silent, it was not as soundproof as a sound-attenuated booth. The picture identification task was eliminated because nearly 20% of the data could not be analyzed due to background noise, misidentification of the target word, or providing a synonym for the target word that did not contain the target.[3] The other two tasks encountered issues with background noise and students speaking too softly; such instances were also eliminated. These eliminations resulted in a total of 2,895 instances of usable /b/ phonemes between the individual word task and paragraph task for the subjective identification and analysis of the target allophones by the trained raters. Of these 2,895 instances coded by the raters subjectively only 2,226 of these (77%) could be analyzed for the objective measurement due to the criteria outlined above.

The coded words and the interval differences assessed by Praat were analyzed in the statistical package, *RStudio* (R Core Team, 2016). Packages used for analysis included *nnet* (Venables & Ripley, 2002), *lme4* (Bates, Maechler, Bolker, & Walker, 2015), *Matrix* (Bates & Maechler, 2017), and *ggplot2* (Wickham, 2009). The allophones identified by the raters were assessed through multinomial log-linear regression models, and the interval differences were analyzed with linear mixed effects models (LMEMs). The intensity interval differences were analyzed as a dependent variable in the LMEMs, while participant was used as the random intercept because repeated measures were used for all participants. In one of the LMEMs, orthography and gender were used as the independent variables and in the other LMEM, the allophone and gender were used as the independent variables.

5. Results

Table 2 shows that the approximate allophone [β] was produced the most by participants with the occlusive [b] produced second most, for a combined total of 90% of all production of /b/. Within the remaining 10% of the data, the use of [v] accounted for 4% of production, the elision of /b/ occurred in 3% of the data

3. The exclusion of the picture identification task did not change the final results; analysis was performed both with and without the data and results were the same.

Table 2. Allophones by position

Allophone	Initial	Post-vocalic	Post-nasal	Post <l>	Post other consonants	Totals (% total)
[b]	282	21	468	56	65	**892** (30.81)
[β]	239	449	100	474	457	**1719** (59.38)
[v]	21	22	12	39	34	**128** (4.42)
[ø]	22	58	1	4	9	**94** (3.25)
other	15	25	3	5	14	**62** (2.14)
Totals	**579**	**575**	**584**	**578**	**579**	**2895 (100)**

and other productions accounted for 2% of the data. Of the 128 instances of [v], there was production in each phonemic placement with both <b> and <v>, cf. Figure 3. The range of production of [v] per participant ranged from 0 to 22 instances (mean = 2.62 [v] per person). Within the individual word task, which is the most formal task of the experiment, participants produced 102 instances of [v]. The remaining 26 instances occurred in the least formal task, reading paragraphs, cf. Table 3. Of the four occurrences where [v] was produced in a word where /b/ followed /s/ only one of the productions occurred after an aspirated /s/.

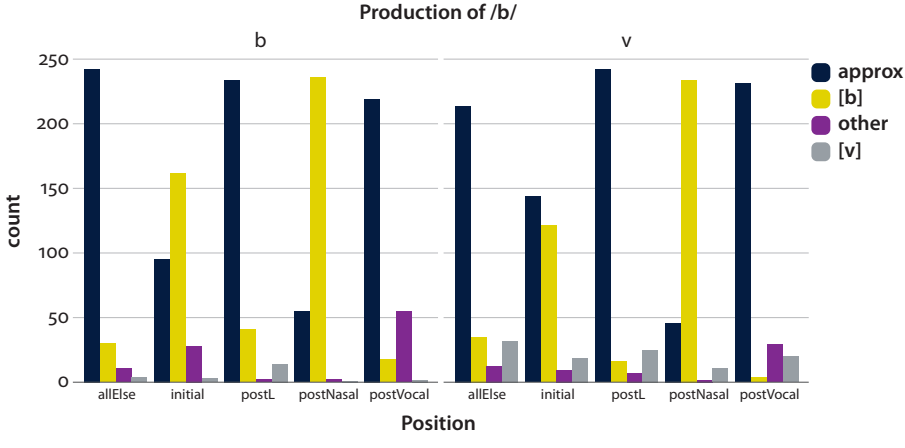

Figure 3. Production of /b/ by position and orthography

Per the multinomial log-linear regression models (Appendix C), when compared to the "post-other consonants" category, the selection of [v] was statistically different at $p = 0.05$ from [β] and other allophones word-initially; from the selection of [b], [β] and [ø] post-<l>; from [β], [ø] and other allophones post-nasally; from [b] and [β] post-vocalically. This showed that when there was a statistical significance, the selection of the other allophones was favored over [v]. Regarding task type, the

Table 3. Allophones by task type

Allophone	Task type	
	Individual word (Formal)	**Paragraph (Informal)**
[b]	571	321
[β]	731	988
[v]	102	26
[ø]	4	90
Other	38	24
Totals	**1446**	**1449**

regression coefficient for [b] was statistically different from zero for the formal task relative to the informal task given that [β], [ø] and "other" are in the model. That is, in those tasks, [v] was disfavored. In addition, the regression coefficient for "other" was statistically different from zero for the formal task relative to the informal task given that [b], [β], and [ø] are in the model. In the instances where [v] was statistically different from [b], [β], [ø] and the other allophones, the results of the multinomial log-linear regression models indicate that the other allophones are more likely to be favored than [v].

Additionally, 104 of the 128 realizations of [v] occurred with orthographic <v>. Per the multinomial log-linear regression model, the production of [v] in words containing the letter <v> was not statistically significant different at $p = 0.05$ than words with the orthographic <b>, indicating that any production of [v] is not dependent on orthography. The LMEM analyzing the intensity difference between /b/ and the following vowel found that in comparison to the use of [β], there were no significant main effects of the independent variables, allophone and gender. In the second LMEM model, orthography and gender produced no statistical main effect either.

6. Discussion and conclusions

Because Peru has not been subject to as many investigations of the phoneme /b/ as have other Spanish-speaking populations, the results of this study contribute to overall phonological investigations of /b/ by confirming the canonical divide between [b] and [β] and therefore, hypothesis 1. That the production of [β] was more prevalent than [b] is understandable because there are more phonetic contexts in Spanish that permit [β]. That [v] was produced more than the other non-canonical allophones of /b/ is also expected as it has been the focus of prior research on alternative productions of /b/ (Face & Menke, 2009; Phillips, 1982; Sadowsky, 2010; Stevens, 2000; Vergara Fernández, 2010, 2011, 2013). It was unexpected that

despite this descriptive majority, [v] was disfavored post-<l> and post-nasally in comparison to [ø] and word-initially and post-nasally in comparison to 'other' allophones, which had fewer occurrences in both positions in comparison to [v]. It is possible that the low quantity of [ø] and 'other' allophones may have led to a Type I error in the statistical analysis. What is more important is that the sample significantly favored [β] and [b] over [v]. This unsurprising finding aligns with the canonical accounts of this phenomenon in standard Spanish. It differs with Vergara Fernández (2010, 2011, 2013), Sadowsky (2010), and Sadowsky and Salamanca's (2011) accounts of the Chilean use of /b/; wherein the fricative is favored. The contrast in findings highlights the dialectal phonetic differences between the neighboring countries.

The results demonstrate that the null hypothesis for hypothesis 2 is rejected. The production of the allophone [v] was found in every phonetic position, including the post-nasal position. However, the multinomial log-linear regression demonstrates that while the production of [v] in comparison to [b], [β], [ø] and other allophones is statistically significant, the significance indicates that the other allophones are more likely to be favored than [v]. Moreover, the LMEM showed that there were no intensity differences in the production of [v] versus the other allophones. Therefore, while [v] is produced, its occurrence is not frequent enough to support the hypothesis. Such low quantities of [v] lend support to the theory that such production could be in error (Carnicer, 1972; Contreras, 1994; Waltermire, 2014). Yet since [v] was the allophone most used after [b] and [β] it could indicate that its use is less stigmatized that the other allophones or it could indicate that it is the most easily produced erroneous allophone.

This experiment fails to reject the null hypothesis for hypothesis 3 because, while there was descriptively more production of [v] with the use of <v>, its production in comparison to the other allophones was not statistically significant in the multinomial log-linear model or the LMEM. Therefore, this data demonstrates that orthography in Peruvian Spanish does not influence the realization of /b/, which contrasts with Stevens (2000) and Lope Blanch's (1988) findings of an orthographic influence on /b/ production. Stevens (2000) and Lope Blanch's (1988) participants were Spanish instructors and radio/television announcers, respectively, and their status as conveyors of knowledge may influence them to hypercorrect and purposefully distinguish between <b> and <v>. In contrast, the participants in the present study are students and may not feel the pressure to hypercorrect as strongly because they do not have such status.

Another contrast with Stevens' (2000) results is that when the participants did produce [v], they produced it in the more formal task than the informal task. While not a significant result, this trend may align with the theory that when a speaker has

time to think about their oral production, they may purposefully attempt to distinguish between the letters. Moreover, the higher quantity of the occlusive allophone in the formal task in comparison to its production in the informal task, indicates that participants are enunciating the words more precisely in the individual word task than in the paragraph task.

As age was held relatively constant, no argument could be made for a generational difference in production. The Lima university students from which the participants were drawn are required to know English for their coursework. This could mean that English could be interfering in their production and could explain why [v] is produced more frequently with <v>, as English utilizes the labiodental voiced fricative as a phoneme to correspond to the grapheme <v> (McMahon, 2002). However, only three of the 49 participants reported using English more than 25% of the time with their family or friends. These three participants produced 0, 1 and 6 instances of the voiced labiodental fricative, which indicates that any bilingual interference may be minimal, especially since there were other participants who produced more instances. In fact, as depicted above, one participant produced nearly four times as many [v] as the three participants who reported using English the most.

Future experiments could investigate participants who are monolingual Peruvian speakers to see if the production of [v] diminishes in comparison to the bilingual speakers. To better control for dialectal differences, future studies of Peruvian Spanish should target speakers with parents and grandparents from the same area as the study. Even more specifically, future studies should control for class. The current study targeted university students as an indirect way of doing this by minimizing the differences in education, but the participants in this study came from a myriad of class backgrounds due the financial accessibility of the university systems in Peru. Future experiments should record participants both audially and visually to verify that the [v] sound is truly labio-dental as an audio recording cannot provide that exact information.

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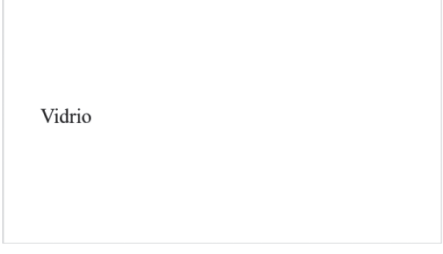
Appendix A. Experiment word list

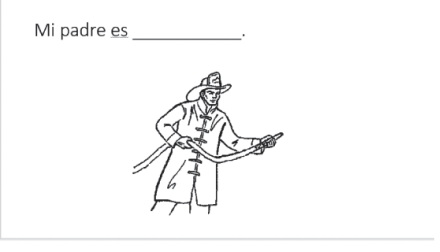
Position	Word list A		Word list B		Word list C	
	<V>	<B>	<V>	<B>	<V>	<B>
Initial	Vaso	Barco	Vidrio	Burro	Viuda	Banco
	Vela	Berenjena	Vecino	Bandera	Ventana	Bicicleta
	Vino	Búfalo	Vaca	Basura	Vecindario	Botella
Post-Vowel	Llave	Cebra	Aventura	Tiburón	Oveja	Dibujo
	Calavera	Escoba	Lavabo	Abril	Esclavo	Problema
	Avión	Abdomen	Novia	Abuelo	Novela	Globo
Post-Nasal	Invernadero	Bombera	Envoltorio	Nombre	Envidia	Asamblea
	Invierno	Hombre	Invitado	Hombro	Invasión	Sombrero
	Invitación	Ambulancia	Inventor	Noviembre	Envase	Hambre
Post <L>	Selva	Albañil	Olvido	Albornoz	Salvación	Albergue
	Polvo	Albino	Salvaje	Silbido	Válvulas	Alberto
	Calvo	Álbum	Pelvis	Alba	Malva	Albahaca
After Other Consonants	Cerveza	Árbol	Cerviz	Béisbol	Desviación	Desbloqueo
	Curva	Corbata	Advertencia	Hierba	Reserva	Árbitro
	Ciervo	Barba	Adversario	Carbón	Servicio	Turbulencia

Appendix B. Samples of experimental screen

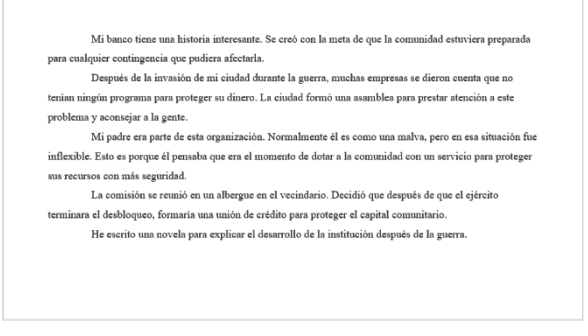
Isolated word



Sentence



Paragraphs



Mi banco tiene una historia interesante. Se creó con la meta de que la comunidad estuviera preparada para cualquier contingencia que pudiera afectarla.

Después de la invasión de mi ciudad durante la guerra, muchas empresas se dieron cuenta que no tenían ningún programa para proteger su dinero. La ciudad formó una asamblea para prestar atención a este problema y aconsejar a la gente.

Mi padre era parte de esta organización. Normalmente él es como una malva, pero en esa situación fue inflexible. Esto es porque él pensaba que era el momento de dotar a la comunidad con un servicio para proteger sus recursos con más seguridad.

La comisión se reunió en un albergue en el vecindario. Decidió que después de que el ejército terminara el desbloqueo, formaría una unión de crédito para proteger el capital comunitario.

He escrito una novela para explicar el desarrollo de la institución después de la guerra.

Appendix C. Multinomial log-linear regression outputs

Allophone	Orthography				Position of /b/											
95% Confidence interval	<b>	<v>		Sig.	Post-Other	Initial		Sig.	Post- <l>		Sig.	Post-nasal		Sig.	Post-vocal		Sig.
		Lower	Upper			Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper	
b	Base	−1.339	2.3		Base	−1.486	2.731		0.32	0.875	*	−2.521	3.971		0.092	1.387	*
β	Base	−0.097	1.885		Base	0.443	0.706	*	0.368	0.604	*	0.256	1.149	*	0.085	0.987	*
ø	Base	−1.7152	2.991		Base	−0.529	2.45		0.292	2.254	*	1.18	3.171	*	−1.428	3.221	
other	Base	−0.795	2.144		Base	0.291	1.541	*	−0.063	2.31		1.014	1.821	*	−0.134	1.844	

Note. These results are reported as log odds, where 0 represents the null effect of having both the reference and application values are likely. If the upper and lower limits of the 95% confidence interval contain the value of zero, then the category is not statistically different from the base category. * indicates that the results were statistically significant at a p=.05. If the values for the upper and lower limits are greater than zero, than the odds of choosing a category other than the base are greater than the odds of choosing the base category. If the values for the upper and lower limits are less than zero, then the odds of selecting a category other than the base are less than the odds of selecting the base category. "Base" refers to the production type against which all other productions of [v] were compared. For example, all productions of for letter <v> were compared against all productions of the letter <b>. Moreover, within the comparisons between the letters the probability of selecting [v] over [b] when the letter <b> was used (the base) is compared to the probability of selecting [v] over [b] for the letter <v>.

Allophone	Task type			.
95% Confidence interval	Formal (Individual words)	Informal (Paragraphs)		
		Lower	Upper	Sig
b	Base	0.373	1.2427	*
β	Base	−1.227	2.1092	
ø	Base	−3.39	5.5706	
other	Base	0.571	1.5756	*

Allophone	Orthography			
95% Confidence interval	<b>	<v>		
		Lower	Upper	Sig.
b	Base	−1.1697	2.0956	
β	Base	−0.9718	1.879	
ø	Base	−1.697	2.95	
other	Base	−0.799	2.1333	

CHAPTER 6

Did you say *peso* or *beso*?

The perception of prevoicing by L2 Spanish learners

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The Perceptual Assimilation Model for L2 speakers and the Speech Learning Model make predictions about the difficulty of acquisition based on pre-existing boundaries in learners' L1s. This study focuses on differences between voice onset time in English and Spanish stops, especially related to perceptual cues. Participants – 10 Spanish native speakers and 131 L1 English learners of Spanish at various levels – categorized 120 stimuli containing Spanish minimal pairs beginning with voiced and voiceless stops and the distractor /r/. Classifications varied based on acoustic manipulations of VOT, the original phone, and proficiency level. While VOT is an important determiner in perceptual boundaries, and learners can acquire L2 distinctions (although often not achieving native-like patterns), additional acoustic differences affect sound identification.

Keywords: perception, prevoicing, VOT, experimental phonetics, acquisition, L2 learning, PAM L2, SLM

1. Introduction

In Lisker and Abramson's (1964) seminal analysis of voice onset time (VOT), they determined that duration between the burst of the stop and the start of the voicing served as a phonological boundary between stop consonants. When considering results from eleven languages with two, three or four stop categories, they found a difference between monolingual English and Spanish stop tendencies.[1] English has long-lag VOT for voiceless stops and short-lag for voiced stops, while Spanish has short-lag VOT in voiceless stops and lead VOT (or prevoicing) in voiced ones (Figure 1). Other researchers have since reanalyzed differences in voice onset time

1. Several studies have examined Spanish-English heritage and bilingual speakers' VOT systems (Amengual, 2012; Bullock & Toribio, 2009), but these are not considered in the current analysis, as findings are often variable across authors and specific speech communities.

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across languages, including in Spanish and English, with similar results (Casillas & Simonet, 2018; Cho & Ladefoged, 1999; Flege & Eefting, 1986; García, Diehl, & Champlin, 2009; Llanos, Dmitrieva, Shultz, & Francis, 2013; Olson, 2013; Zampini, 1998). The current study set out to determine whether L2 learners of Spanish that are L1 English speakers have perceptual difficulty assimilating this distinction in stop production, given the overlap in VOT patterns of voiced English stops and voiceless Spanish ones.

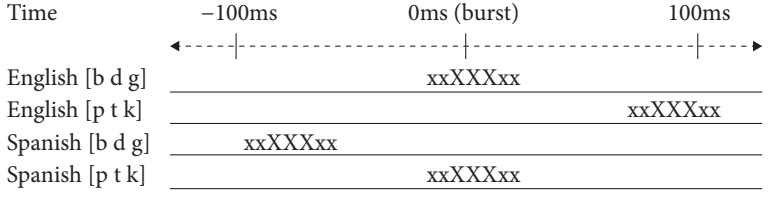

Figure 1. Distribution of English and Spanish voiced and voiceless stops (in milliseconds)

As Pallier et al. (1997) and Antoniou et al. (2012) argue, late-stage L2 learners are influenced by L1 listening tendencies when distinguishing between L2 sounds. Hunnicutt and Morris (2016) show, with the exception of some speakers in the American south, that prevoicing is rare in voiced English stops. In order to develop a new voicing boundary for the stops of their L2, there must be a shift in native English speaking Spanish learners' L1 boundaries. Strange and Schafer (2008), referring to infant acquisition of voicing, describe successful discrimination of English [b-p^h] by both native and non-native 6-month old children. Comparatively, the discrimination of Spanish [b-p] was not consistently achieved, indicating that, even before the acquisition of L1-specific boundaries at 10-12 months, listeners could not easily distinguish between the unaspirated voiced and voiceless stops.

The current study analyzed the perception of voicing by English-speaking L2 Spanish learners at a large Midwestern university, comparing them to the native and non-native graduate-level instructors of Spanish who provide much of their classroom input. It was expected that students at an advanced proficiency level would approximate the tendencies of native speakers, having developed acoustic boundaries more akin to natives than students at a basic or intermediate level. Using an online survey tool, participants categorized stimuli with digitally-manipulated stops as beginning with a voiced or voiceless sound.

2. Review of relevant literature

Although VOT serves as the primary acoustic cue in differentiating voiced and voiceless stops in Spanish; namely, the difference between lead VOT (or prevoicing) and short-lag VOT; there are secondary cues that influence speaker perceptions. Linguistic factors such as F1 or F0 (Benkí, 2005; Llanos et al., 2013), as well as social factors such as context or speaker experience (e.g., Newlin-Lukowicz, 2014) influence identification of voicing. Additionally, non-native perceptual tasks performed by naïve monolingual listeners often yield different results than bilinguals, indicating a fundamental reorganization of speaker acoustic awareness with the acquisition of additional languages (Caramazza et al., 1973; Casillas & Simonet, 2018; García-Sierra et al., 2009; Mack, 1989). These additional variables play a central role in perception, requiring consideration of (i) classroom perceptual acquisition, (ii) monolingual stop voicing in English and Spanish, (iii) bilingual acoustic spaces, and (iv) acquisitional models.

2.1 Perceptual acquisition in the language classroom

Research has shown that L1 English-speaking Spanish learners are able to perceive phonetic features in a manner approximating native-like norms (e.g., Knouse, 2012; Ringer-Hilfinger, 2012; Schoonmaker-Gates, 2017). In a meta-analysis of study abroad research, Solon and Long (2019) argue that while production of regional variants may only increase slightly after abroad experience, perceptual awareness increases both after institutional instruction in a home university as well as in immersion and study abroad environments. Schoonmaker-Gates (2017) found that explicit instruction of Castilian voiceless interdental fricative [θ] was necessary to increase student awareness of the variant – however, Solon and Long (2019) have shown that this is not necessarily always the case for acquisition of regional accent features.

Other social factors have been found to play a role in acquisition as well. Using a perception test, Schoonmaker-Gates (2012) showed that learners with higher Spanish competence were more accurate in their identification of speakers as either "native" or "non-native," indicating that learner awareness of L2 categorical distinctions increased with proficiency. This, she argued, resulted from cognitive processing – lower proficiency learners devoted more resources to deriving meaning from input, whereas advanced learners had additional resources to devote to noticing phonetic cues. Schoonmaker-Gates (2013) found similar results with respect to language exposure: learners with greater familiarity of Spanish dialects and more Spanish-speakers in their personal social networks were better able to differentiate between "native" and "non-native" speech.

The role of perception with respect to VOT has been examined before in the Spanish language classroom. Zampini (1998) focused on /p/ versus /b/, finding a lack of correlation between perception and production by learners over the course of a semester. Although there were indications of acquisition, some learners improved production and others improved perception, but none significantly improved both, leading her to claim that these are independent processes that can proceed at different rates. Language proficiency, if defined by production tendencies alone, may therefore not adequately reflect perceptual ability.

2.2 The acoustic space of monolingual Spanish and English speakers

The role of VOT in the description of stop perception has evolved over the past half century. Early classifications, such as that of Lisker and Abramson (1964, p. 399), described voiced and voiceless English stops as distinguished by aspiration and voicing. They recorded speakers and provided descriptive differences between sounds. For example, there is a distinction of around 60ms of VOT duration between voiced and voiceless stops in English. Alternatively, in Spanish, voiced stops are produced with a greater distinction on average. Unlike English, which has short- and long-lag VOT to distinguish stops, Spanish voiced stops has around 110ms prevoicing, and voiceless stops has a short-lag VOT of around 15ms. Many other accounts approached VOT and aspiration in a similar way, collecting descriptive statistics across various languages, and treating VOT as a key acoustic cue in distinguishing stops (Cho & Ladefoged, 1999; Flege & Eefting, 1986; Abramson & Lisker, 1972). It was only within the last couple decades that perspectives on VOT have broadened, looking at cues such as stop closure duration, lexical stress, formant levels (both F1 and F0), and unknown "others" that have an effect on the perception of both native speakers and language learners.[2]

These studies suggest that speakers are influenced by more than just the onset of voicing, and raise the question of the exact role of VOT in the perception of language learners. Learners must recognize a variety of new perceptual cues, only some of which are salient in their L1. In the case of English and Spanish, Simonet (2012) and Martínez-Celdrán (1993) found that while there are differences in the closure-duration of Spanish voiced and voiceless stops, the same distinction does not exist for English. Formant levels serve as an additional acoustic cue used to identify voicing distinctions across languages, and, like closure-duration, there is an effect of L1. Benkí (2005) reported that monolingual Spanish and English speakers, when

2. Although these cues come out of both production and perception studies, evidence from SLA research indicates that both can provide insight into perceptual boundaries, given their interrelated nature (George, 2014; Knouse, 2012; Schoonmaker-Gates, 2017; Solon & Long, 2019).

presented with stimuli from the two languages, used F1 in similar ways to distinguish voicing; however, Llanos et al. (2013) found that English bilinguals relied on F0, while Spanish bilinguals relied on prevoicing to make that distinction. Finally, some studies have questioned the role of VOT as a distinguishing feature altogether. When considering short-lag [t], Bohn and Flege (1993) showed that bilinguals and monolingual English and Spanish speakers identified voicing consistently in stimuli, but not corresponding to VOT, or any single other acoustic dimension.

A complex combination of linguistic and extralinguistic factors seems to influence a speaker's perceptual space. Olmstead et al. (2013, p. 5) determined that, when naïve monolingual Spanish and English speakers imitated both native and non-native words, their native stops were able to reflect L1 phonemic differences in VOT, but their attempt to imitate non-native stops did not accurately reflect L2 phonemic differences. Even in an explicit imitation task, speakers' L1 served as the basis for distinction. In addition to L1, language exposure also influences L2 awareness. Llanos and Francis (2016) instructed native Spanish speakers with both high and low levels of bilingual knowledge of English to categorize Spanish stops produced by native English speakers as either voiced or voiceless. Participants answered based on *English* VOT boundaries, albeit with their success varying according to their exposure to English and the amount of context provided in the stimuli. Hearers with greater knowledge of an L2 can therefore use contextual and social information like accent to adjust VOT boundary identification.

Social factors have also been found to play a role in perception. Using stimuli with manipulated stops and varying durations of VOT, Abramson and Lisker (1972) showed that native speakers of Spanish used prevoicing as a distinctive feature in English when mediated by the duration of contact with English. One speaker, who had studied English for thirteen years and lived in the US for five, identified a boundary between /k/ and /g/ that was much closer to monolingual English than Spanish norms. Flege and Eefting (1986) further found that speaker age also affected perception – both native Spanish and English adults required longer-lag VOT than children to identify /t/, and English adults used greater prevoicing than children when producing /d/. This could have resulted from shifting acoustic boundaries or changes in processing abilities.

2.3 Acoustic and acquisitional tendencies of bilinguals

Early descriptions of bilingualism in acquisitional phonology described bilingual speakers as having a single perceptual space, with an intermediary boundary that compromised L1 and L2 norms. Caramazza et al. (1973), working with perceptual and production data from English- and French-Canadian speakers, found that bilinguals more closely approximated the norms of the language they were stronger

in. They relied on VOT more than French monolinguals and less than English ones, and were not found to adapt these tendencies when moving between different language contexts. Williams (1977) argued that bilinguals distinguished voiced from voiceless stops at a single point in perception, despite maintaining VOT differences in production.

More recent studies have contributed to a view of bilingual phonetic systems as complex, taking into account individual differences such as input, cognitive load and proficiency. Birdsong (2018) argues that bilinguals are perpetually influenced by both of their language systems, and as such, it cannot be expected that two monolingual speakers operate within them. Instead, bilinguals differ categorically from monolinguals, with individual differences placing their perception in a constant state of flux. This is important, because we would therefore expect to find key differences between bilingual and monolingual systems that perceptual studies can key in on. Despite some of these individual and situational differences, such as age of acquisition, frequency, and acoustic specifications, Flege (2005) argues that learners with sufficient input and time should come to perceive phonetic properties of L2 speech accurately. Greater differences between L1 and L2 sounds may lead to new category creation rather than assimilation, but in cases with minimal differences, as in the case of Spanish and English stops, L1 and L2 categories are predicted to merge.

Comparing Spanish VOT boundaries to Quichua and Media Lengua, Stewart (2018) averaged voicing onset tendencies across the Spanish-speaking world, finding that speakers had an average 110ms difference between voiced and voiceless stops (Figure 2). Media Lengua was determined to rely more heavily on the Spanish superstrate VOT system as a result of the high cognitive load placed on bilingual speakers, who relied on the superstrate as a means of maintaining phonetic distinction in the new system they were constructing.

Stop:	p/	/t/	/k/	/b/	/d/	/g/
Average:	11	14	29	−109	−100	−89

Figure 2. Average VOT for speakers of Spanish in milliseconds (Stewart, 2018)

When analyzing the VOT of young Spanish-English bilinguals, Flege and Eefting (1987) argued that individuals had separate phonological categories for each language. L1 Spanish-speaking bilinguals were found to produce voiceless English stops differently from native speakers, which they attributed to limited input: their L1 Spanish caregivers did not produce English with native-like VOT patterns, meaning children did not acquire English phonological boundaries. An additional difficulty is that even once L2 perceptual boundaries are acquired, bilinguals do not necessarily stabilize their internal system (Amengual, 2012; Bullock & Toribio, 2009; Olson,

2013). They can instead demonstrate asymmetrical transfer, going so far as to employ L2 VOT boundaries in their L1. These studies show that social and cognitive factors play a role in the "native-ness" of bilingual speech production and perception.

2.4 Theoretical models of L2 perception

Following an organizational schema used by Schmidt (2018), I describe two important models of second language perception below in light of this study's theoretical interests: The Perceptual Assimilation Model for L2 Speakers (PAM L2: Best & Tyler, 2007) and the Speech Learning Model (SLM: Flege, 1995).

The PAM L2 serves as an extension of the original PAM model, which made predictions about naïve listeners' acoustic spaces, expanding to make predictions about language learners and the ease with which they would assimilate certain L2 categories into their native system. Best and Tyler (2007) predict that although learners start out comparable to monolingual listeners, assimilating non-L1 sounds based on the similarities to their existing system, they have the potential to develop their L2 system based on increased experience and exposure to the language. Over time, they integrate L2 cues into their system and an even approach the successful discrimination shown by native speakers. The resulting interlanguage system, melding phonetic and phonological levels, allows learners to determine the functional equivalence of phonology across both languages, even though the language-specific phonetic perception might differ. This model would predict two possible interpretations of the Spanish and English voiceless systems.

One possible description of the voicing distinction under PAM L2 would result in a Two-Category Assimilation, where "the two non-native phones are perceived as acceptable exemplars of two different native phonemes" (p. 23). If this were the case, L1 English listeners would be predicted to acknowledge both Spanish voiced and voiceless stops as akin to the English category, although with a consistent shift in VOT. The other possibility would be a Category Goodness Assimilation Contrast, where "both L2 phonological categories are perceived as equivalent to the same L1 phonological category, but one is perceived as being more deviant" (p. 29). In this case, learners would be expected to treat the prevoiced stimuli as more deviant when compared to the Spanish voiceless stop, with minimal short-lead VOT. It is unclear prima facie whether classroom learners of an L2 perceive two equally acceptable categories, or whether both Spanish stops are considered to be more and less deviant productions of the English voiced stop.

According to the second model, SLM, perceptual systems undergo equivalence classification between the L1 and L2 in bilinguals' phonological space (Flege, 1995). Phonetic information is shared across languages, and, in the case of perceived

similarities, L2 sounds are equated with the closest pre-existing L1 categories. Like PAM, two L2 sounds that are assimilated into a single L1 category will be difficult to distinguish under SLM, while two sounds perceived as different lead to the development of a new phonetic category. In this way, the elements of the L1 and L2 phonetic systems of bilingual speakers exist together, such that each can impact the other and cause bidirectional interference over the course of a speaker's life. In the current case, this results in an effect resembling PAM L2. If the similarities are great, speakers -- even at a relatively low proficiency and with minimal language exposure -- should adopt the L2 Spanish voicing categories. If the differences are larger, proficiency should have less of an effect.

Both of these perceptual models permit predictions regarding the difficulty learners will have in assimilating L2 sounds into previously-established L1 categories. In both cases, the degree of perceived difference of the Spanish voicing cues from English ones should affect the difficulty speakers have in adopting a new category, or adjusting the boundaries of a pre-existing one.

2.5 Research questions

In this study, L1 English learners of Spanish at varying proficiency levels identified manipulated Spanish stimuli as voiced or voiceless. Their responses demonstrated how perceptual boundaries shift as language learners' L2 familiarity increases. A control group of native Spanish bilinguals established a prototypical boundary for L1 Spanish voicing. The expectation was that, if this division fell into the Two Category Assimilation of PAM L2 (Best & Tyler, 2007), or allowed easy Equivalence Classification under SLM (Flege, 1995), learners would group Spanish norms into pre-existing English voiced and voiceless categories, with increasingly native-like classifications tied to individual proficiency. On the other hand, if this division were better described by a Category Goodness Assimilation, equivalence classification would not be possible initially because the sounds were sorted into a single category. If this is the case, then learners would have greater confusion in separating voiced and voiceless stops, which would be reflected in difficulty distinguishing stops by voicing at varying levels of proficiency. With the difference of these two models in mind, one question that motivated this investigation was: to what extent do L1 English speakers follow native-like perception norms when identifying Spanish stops, and how does this reflect the two types of perceptual classifications described by PAM L2 or SLM?

Cues other than VOT have been shown to affect participants' ability to distinguish between voiced and voiceless stops (Benkí, 2005; Bohn & Flege, 1993; etc.). Social factors like speaker proficiency, individual differences and experience abroad also play a role (Flege, 1995; Williams, 1977), as well as linguistic cues such as place

of articulation (Lisker & Abramson, 1964). Given the array of possible factors involved, the second question guiding this research was: what social and linguistic constraints govern listeners' perceptions of stop constraints, and how important overall was VOT specifically to their classification?

3. Methodology

3.1 Participants

A digital survey[3] hosted on Qualtrics was carried out at a large public university in the American Midwest during the spring and fall semesters of 2018. The survey, which participants completed in an average of 30 minutes, was (i) disseminated digitally to some students to complete outside of class as extra credit, and (ii) presented to some in-class as a "linguistic experiment." Native and graduate speakers were recruited, taking the study on their own. A total of 197 participants answered the survey; however, 36 submissions with less than 50% finished, 12 retakes by participants with technical problems, seven submissions lasting between two and 100 hours, as well as two participants who listed their gender as non-binary (resulting in a statistically unbalanced group) were excluded from the final analysis. The majority of the 140 remaining participants were students of Spanish (n = 118) in the fourth (n = 44), sixth (n = 36), and eighth (n = 38) semester of their undergraduate career. The other participants included non-native (n = 12) and native (n = 10) graduate instructors of Spanish.

3.2 Production and manipulation of stimuli

Stimuli from three speakers were recorded: one female and two male speakers of Iberian Spanish. Initially, a female Colombian Spanish speaker was also recorded, but her productions included unexpected short-lead and long-lag voicing that differed from previous studies so, in order to control for speaker differences, only individuals from a single region were included. Each speaker read a list of minimal pairs printed on a page of paper, which included stimuli beginning with stops, as well as distractors beginning with /r/ (Figure 3). Distractors were included to ensure that participants paid attention throughout the survey. Each word was saved as separate .mp3 sound files, with 20ms of preceding pause and 30ms following.

3. Available at <https://go.iu.edu/1T1h>

(1)	*peso*	weight	(7)	*teja*	weave	(13)	*kia*	kia
(2)	*beso*	kiss	(8)	*deja*	leave	(14)	*guía*	guide
(3)	*reto*	challenge	(9)	*reja*	railing	(15)	*ría*	estuary
(4)	*pata*	paw	(10)	*trama*	plot	(16)	*cano*	white-hiared
(5)	*bata*	robe	(11)	*drama*	drama	(17)	*gano*	I win
(6)	*rata*	rat	(12)	*rama*	branch	(18)	*rana*	frog

Figure 3. List of minimal pairs used in the survey

Across the six minimal pairs, three stops were followed by a front, high/mid vowel (i.e., /i/ and /e/), and three others were followed by /a/. Inclusion of minimal pairs with stops followed by back vowels (e.g., *cofre* 'trunk,' *gofre* 'waffle') was considered, but given the low frequency of many such pairs, and the number of stimuli already included in the survey, only the above eighteen were used. The average duration of the original VOT for each phoneme, as produced by the three native speakers, is presented in Table 1.

Table 1. Average duration and variance of VOT for stimuli (ms)

Phone	VOT	St. Deviation
/p/	10.2	2
/t/	17	3.1
/k/	27.3	11.5
/b/	−103.7	14.3
/d/	−91.7	17.2
/g/	−65.9	21.3

For each stimulus beginning with a stop, the original file was altered in Praat (Boersma and Weenink, 2017) to create three "manipulated" production types that formed a spectrum between the word (e.g., *bata*), and its minimal pair (e.g., *pata*). Durations were calculated from the onset of voicing to the edge of prevoicing or VOT, and this sound was cut or pasted into files to create four voicing "types". For example, for *bata*, the audio with "Full prevoicing" had no manipulation (prevoicing = 109.4 ms, Figure 4). "Half prevoicing" had exactly half the prevoicing bar from the original sound removed (prevoicing = 54.7 ms, Figure 5). "Zero prevoicing" had all prevoicing removed (prevoicing = 0, Figure 6). Finally, "Full short lag VOT" had the VOT from the voiceless minimal pair (i.e., *pata*) copied and pasted into the audio file with zero prevoicing, creating a word with voicing resembling *pata* (VOT = 10.3 ms, Figure 7).

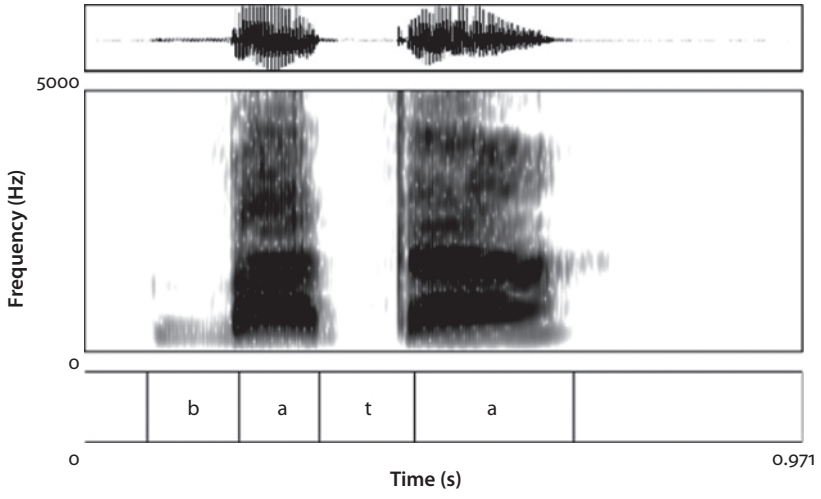

Figure 4. Full prevoicing

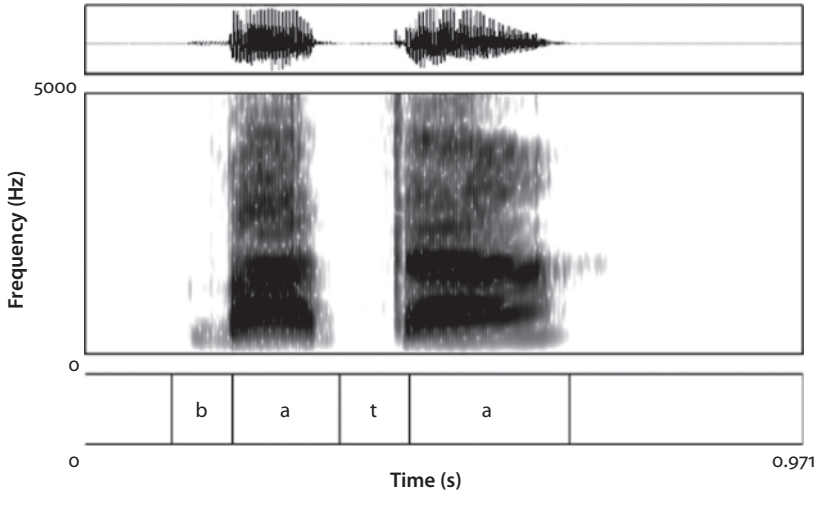

Figure 5. Half prevoicing

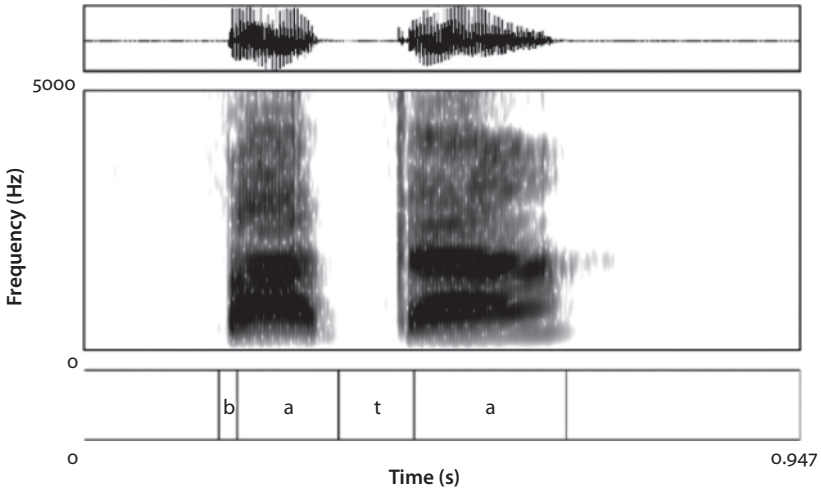

Figure 6. Zero prevoicing

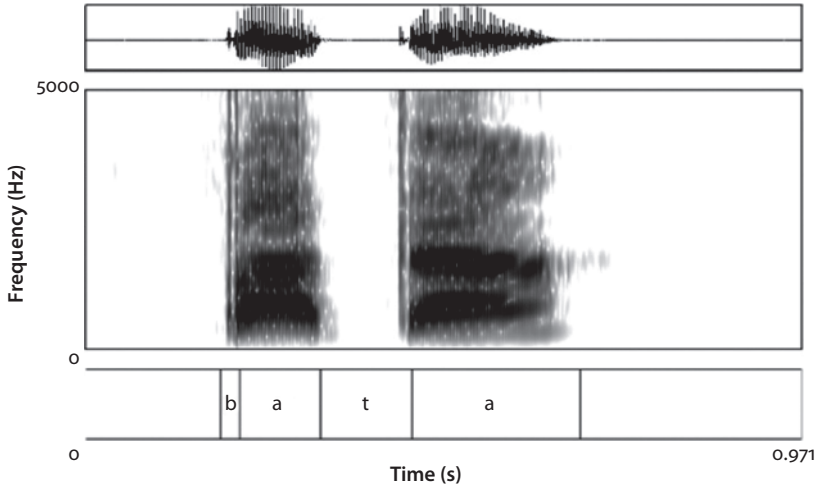

Figure 7. Full Short Lag VOT

The same process was carried out in the opposite direction as well. Thus, *pata* stimulus had (1) an unmanipulated "Full short lag VOT" stimulus, (2) a "Zero prevoicing" stimulus with VOT removed, (3) a "Half Prevoicing" stimulus with half the prevoicing of *bata* added before the burst, and (4) a "Full Prevoicing" stimulus with the prevoicing from *bata* added. Average values for the duration of each minimal pair are shown in Table 2.

Table 2. Average duration and variance of manipulated stimuli by place of articulation (ms)

	Full prevoicing		Half prevoicing		Zero prevoicing		Full short lag VOT	
	Duration	Var.	Duration	Var.	Duration	Var.	Duration	Var.
Bilabial (/p/ /b/)	−103.66	14.30	−51.83	7.15	0.00	0.00	10.24	1.99
Dental (/t/ /d/)	−91.69	17.23	−45.84	8.61	0.00	0.00	17.03	3.15
Velar (/k/ /g/)	−65.95	21.32	−32.97	10.66	0.00	0.00	27.33	11.51

In order to reduce variability between stimuli, the duration of each vowel following the stop was measured and averaged across minimal pairs. For example, if the female actor had produced an /a/ in *pata* of 100ms duration, and an /a/ in *bata* with 50ms duration, 25ms was cut from the vowel in *bata* and added to the one in *pata*, meaning that all of the stimuli for *pata* and *bata* had an /a/ with a duration of 75ms. A group of 20 focus-testers, including native and near-native Spanish speakers, were presented with the files and did not remark on infelicities concerning these vowels.

In the end, the study contained 120 total stimuli: 2 (minimal pair) × 4 (manipulation) × 2 (speaker)[4] × 6 (total pairs) = 96 experimental stimuli + 24 distractors beginning with /r/.

3.3 Instrument design

According to Thomas (2011), perception studies should employ normalized stimuli with built-in pauses and distractors to obfuscate the goal of the researcher. As a result, after a basic background questionnaire (Appendix 1) following Melero-García and Cisneros (2018), the instrument administered a vocabulary test. A secondary goal of this test, which used images for the minimal pairs in Figure 3, was to prime students with the lexical items in the survey.[5]

4. To balance the number of tokens from male and female speakers, three of the six minimal pairs produced by Male Actor 1 and three of the six by Male Actor 2 were used, averaging out to 2 speakers for any given minimal pair.

5. Minimal pairs were not controlled for lexical frequency or cognate status, which, as a reviewer noted, may have influenced perception (Amengual, 2012; Connine et al., 1993).

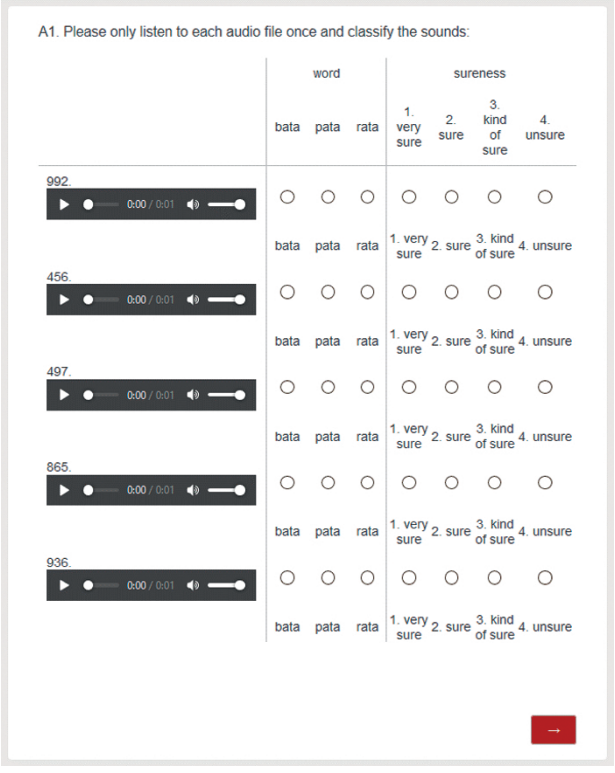

Figure 8. Sample survey page

Following a test page allowing students to adjust their headphone levels, the classification task began (Figure 8), interrupted by regularly-spaced intonation-based distractor sections. The task asked participants to listen to five stimuli per page, categorizing them into one of three word groups, and describing their certainty. While students were requested to listen to the audio file only once, this is a possible confound that could not be controlled for with the survey software, as some listeners may have chosen to listen to stimuli more than once. The stimuli were divided into 24 pages (i.e., five audios per page), with stimulus order randomized per page by Qualtrics to avoid ordering-based effects. Pages contained two stimuli from a male actor, two from the female actor, and one randomly-chosen distractor. At the end of the survey, a brief qualitative classification task asked participants to list cues they listened for when identifying stimuli.

3.4 Data analysis

Once the distractors were removed, the 140 participants made 11,766 identifications. The dependent variable reflected their responses: "voiced" or "voiceless." Five independent variables were analyzed.

First, "proficiency level" was determined based on participants' institutional classification (i.e., course level), divided into semesters four, six and eight of undergraduate studies, and non-native and native graduate speakers of Spanish. This variable quantified participant proficiency and experience with Spanish, given that lower-level participants were expected to perceive VOT with more L1-English-like boundaries, as various previous researchers have described their perception as closer to naïve non-native listeners (Flege, 2005; García-Sierra et al., 2009). Second, the "initial phone" (i.e., phone prior to manipulation) was analyzed to ascertain whether additional correlates continued to play a role in classification despite manipulations, and whether effects arose based on the initial place of articulation and voicing, given that some studies have identified non-VOT correlates that affect identification (Benkí, 2005; Bohn & Flege, 1993; Zampini, 1998). Previously voiced sounds, regardless of manipulation, were expected to be more likely classified as voiced. Third, "voicing type" (i.e., Figures 4–7) tracked the acoustic boundary between speakers' voiced and voiceless stops. English learners' perceptual boundary was expected to be at a higher VOT than Spanish natives (Abramson & Lisker, 1964). Spanish perceptual norms dictated that a stop with zero VOT should be closer to a "good" representative of a voiceless rather than voiced sound, unlike English norms, which should classify it as voiceless.

Two additional factors were drawn from the background questionnaire in Qualtrics. "Time abroad" reflected arguments in favor of perceptual development due to time spent in the country of the target language, showing that learners are influenced by dialectal exposure when producing phonetic differences (e.g., Schmidt, 2018; Solon & Long, 2019). This variable was divided into four sub-sections: never abroad, abroad less than three months (capturing summer programs), abroad more than three months, and native graduate students. Those with more international experience were expected to follow a similar trend to higher proficiency students, being influenced by their exposure to perceive more Spanish-like boundaries. Finally, "survey duration" in minutes served as a metric Qualtrics provided that passingly resembled reaction time: slower response times across the entire questionnaire were expected to indicate greater cognitive load, thereby showing higher L1 effects (Dupoux et al., 2008).

The response "voiced" was set as the reference value in the mixed-effects logistic regression performed in the R-based Rbrul program (Johnson, 2008). "Participant" and "Word" were both set as random effects. Finally, based on Table 3, interactions were set up between each of the first independent variables.

Table 3. List of variable levels

Variable	**Coding**		
Dependent variable			
Response	Voiced	Voiceless	
Independent variables			
1. Level	Semester 4 Non-native Grad	Semester 6 Native Grad	Semester 8
2. Initial phone	/p/ /b/	/t/ /d/	/k/ /g/
3. Voicing type	Full Prevoicing Full VOT	Half Prevoicing	Zero Prevoicing
4. Time abroad	No time abroad	0–3 months	3+ Months
5. Survey duration	Continuous (minutes)		

4. Results

The inclusion of distractor words served both to prevent participants from guessing the goal of the study as well as to ensure they were focused on the task. Before removing the distractor, the data were checked to ensure that overall misclassifications were low (Table 4).

With the distractors removed, a mixed-effect logistic regression yielded three significant main effects and three significant interactions – Voicing Type, Initial Phone, Proficiency Level, Voicing Type:Proficiency Level, Initial Phone:Voicing Type, and Initial Phone:Proficiency Level (Table 5a, see also Appendix 2 for a more detailed table). Due to the high correlation between participant level and time abroad (high proficiency students had spent more studying in countries where the target language was spoken), the main effect and interactions for Time Abroad were not included in the final model. Duration of the study was also not found to be significant.

Table 4. Overall classification of stimuli as voiced or voiceless stop or /r/

Initial phone	**/r/**		***Response* voiced stop**		**Voiceless stop**		**Total**
	n	**%**	**n**	**%**	**n**	**%**	**n**
/b/	60	2.90%	1507	73.60%	481	23.50%	2048
/d/	66	3.20%	1466	71.60%	516	25.20%	2048
/g/	69	3.40%	1519	74.20%	460	22.50%	2048
/p/	65	3.20%	1198	58.50%	785	38.30%	2048
/t/	63	3.10%	1148	56.10%	837	40.90%	2048
/k/	70	3.40%	1291	63.00%	687	33.50%	2048
/r/	2854	92.90%	122	4.00%	96	3.10%	3072
Total	**3247**	**21.10%**	**8251**	**53.70%**	**3862**	**25.10%**	**15360**

Table 5. Mixed-Effects logistic regression with "voiced" as the reference value

Factor	Factor weight
Voicing Type ($p < 0.001$)	
Range	*74.9*
Voicing Type*Proficiency Level ($p < 0.001$)	
Range	*48.2*
Initial Phone ($p < 0.001$)	
Range	*37.4*
Initial Phone*Voicing Type ($p < 0.001$)	
Range	*35.9*
Initial Phone*Proficiency Level ($p < 0.017$)	
Range	*35.9*
Proficiency Level ($p < 0.0091$)	
Range	*13.1*
Random Intercept: Respondent	
Range	*70.4*
Random Intercept: Word	
Range	*12.7*

n = 11766 df = 62 Log Likelihood=−5367.5 AIC = 10859 R2 Fixed = 0.363 R2 Random = 0.08 R2 Total = 0.443

The variable rule analysis conducted in Rbrul provides four types of data to situate results statistically: p-values, log-odds factor weights, and variable hierarchy. When the p-value is less than 0.05, a factor is determined to be significant. Positive log-odds show that a factor favored identification as voiced. Factor weights go from zero to one, with values above 0.5 indicating that voicing was favored, and values below 0.5 indicating that it was disfavored. Finally, the fourth value, the variable hierarchy, ranks predictors in terms of most to least descriptive of the variation in the model. All but log-odds are shown in the condensed Table 5a.

First, with a p-value < 0.001 and a range (difference across factor weights) of 74.9, the most predictive independent variable selected by Rbrul was Voicing Type (Figure 9). The longer the prevoicing, the higher the chance that participants would identify the sound as voiced. Rather than a sharp slope, classifications undergo a gradual curve, as both Full (89.8%) and Half Prevoicing (85.7%) have factor weights above 0.5, while No Prevoicing was categorized slightly above chance (63.5%) with a factor weight indicating that it favored "voiceless" identification, and Full Short Lag VOT was least frequently identified as "voiceless" (34.6%).

The second most predictive independent variable in the logistic hierarchy was the interaction between Voicing Type and Proficiency Level, with a p-value < 0.001 and a range of 48.2 (Figure 10). In the model, Native Speakers and Non-Native Grads were more likely to identify Full (97.6% and 95% respectively) and Half

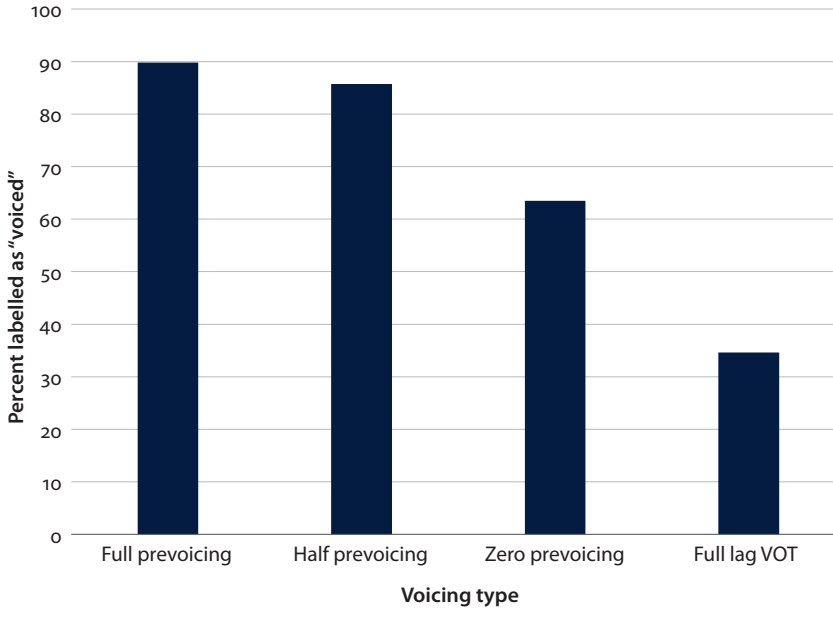

Figure 9. Stimuli identified as "voiced" by Voicing type

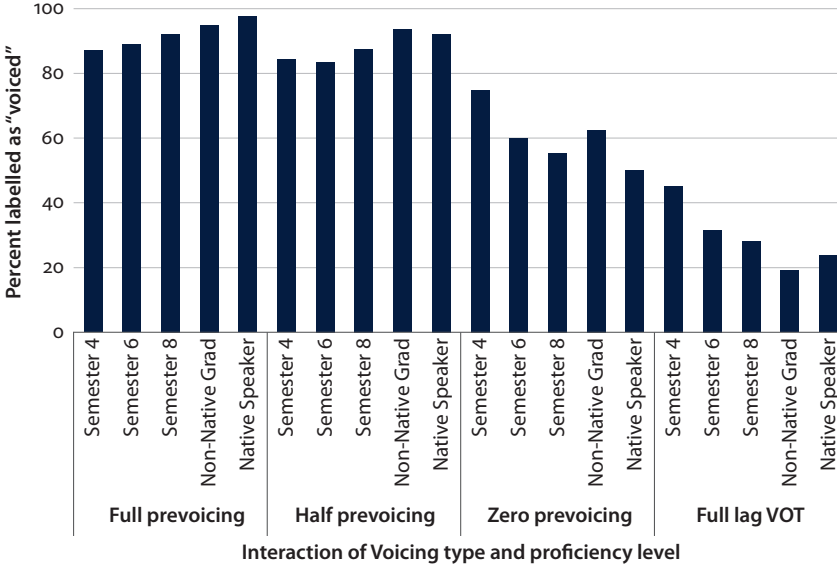

Figure 10. Stimuli identified as "voiced" by Voicing type and proficiency level

prevoicing (92.2% and 93.5%) as "voiced," while students in Semester 2 identified Zero Prevoicing (74.8%) and Full Short Lag VOT (45.3%) as "voiced" most, with the undergraduate groups performing similarly to the native speakers, and graduate groups fluctuating.

Third in the prediction hierarchy was "initial phone," with $p < 0.001$ and a range of 37.4 (Figure 11). The main division here was between originally voiced and voiceless stops, prior to manipulation. Despite the alteration of VOT and the normalization of following vowel duration, the initially voiced stops were labelled as "voiced" more (/g/ = 76.8% /b/ = 75.7% /d/ = 74.5%) than the voiceless ones (/k/ = 65.3% /p/ = 60.3% /t/ = 58.3%). This is reflected in the factor weight, as the first three favor a "voiced" identification while the voiceless ones disfavor it. There is also a smaller trend based on place of articulation: for both originally voiced and voiceless stops, the velar sound has the highest "voiced" identification, and the alveolar one has the lowest.

The fourth most predictive independent variable was the interaction between Initial Phone and Voicing Type, with $p < 0.001$ and a range of 35.9 (Figure 13). Originally voiceless stops were least often identified as "voiced" for Full, Half and Zero Prevoicing, while /g/ was most often perceived as "voiced" (Full = 92.6% Half = 92.4% Zero = 83.1%). However, for Full Short Lag VOT, this trend changes, as the alveolar stops are more often classified as "voiced" in both the originally

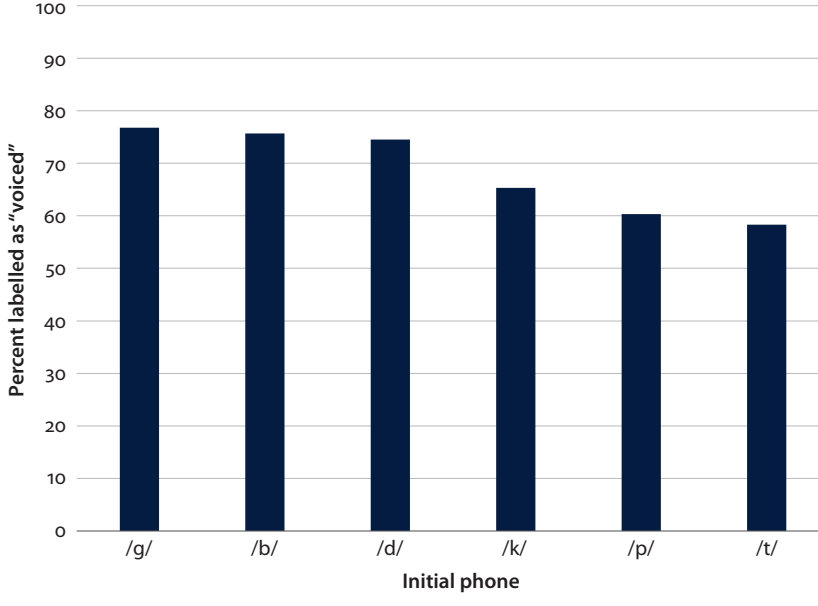

Figure 11. Stimuli identified as "voiced" by initial phone

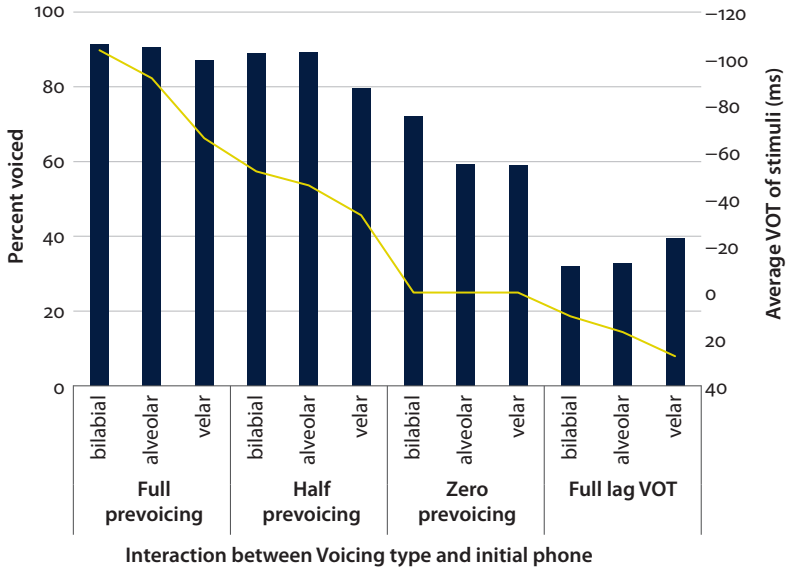

Figure 12. The bars show participant identification of sounds as voiced, while the line gives the average VOT for the stimuli

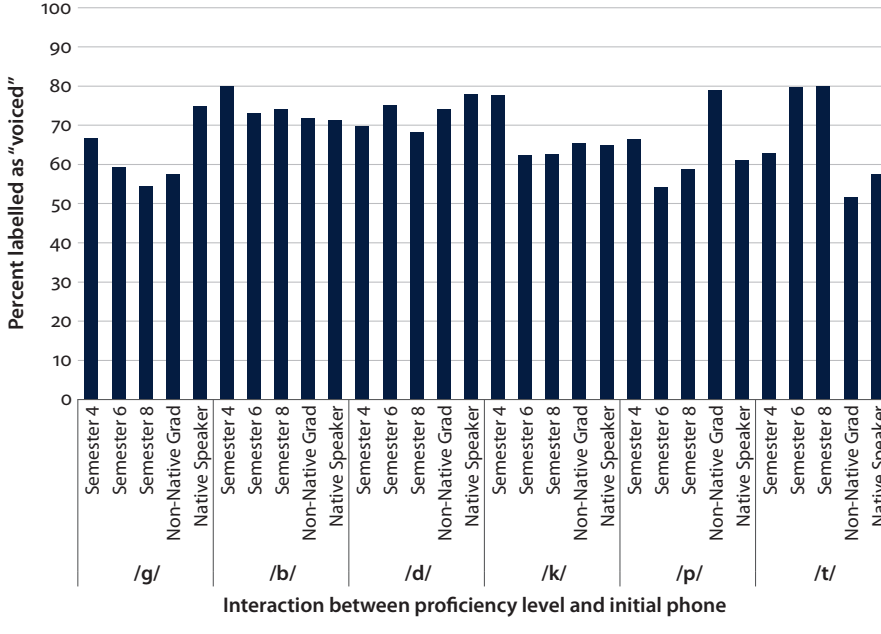

Figure 13. Stimuli identified as "voiced" by proficiency level and initial phone

voiced (/d/ = 52.3%) and voiceless (/t/ = 26.4%) groups. Participant categorization of the initial phones have been charted with bar graphs alongside a line graph averaging the VOT of the stimuli to depict the relation between actual voicing and identification as "voiced." The level of prevoicing does not appear to have a strong effect on identification as "voiced" until the VOT approaches -40ms (40ms prevoicing), with the actual shift being closer to 10ms.

The fifth factor in the hierarchy was the interaction between initial phone and proficiency level, with $p < 0.017$ and a range of 35.9 (Figure 13). In addition to an interaction between Voicing type, the proficiency level of participants affected the degree to which they identified sounds as voiced based on their original voicing. For some of the sounds like /g/, there is a u-shaped curve, with natives identifying the sound most-frequently as voiced, whereas in other cases, as with /k/, the lowest-proficiency group was highest, while the other groups were similar. Still another pattern, shown in /p/ and /t/, is that students with higher proficiency behave unexpectedly (Non-Native Grad for /p/ = 79%, Semester 8 for /t/ = 79.9%), while natives are more consistent (/p/ = 61.2%, /t/ = 57.5%).

The final factor in the hierarchy was Proficiency Level, with $p < 0.0091$ and a range of 13.1 (Figure 14). The division between the groups, holistically, is relatively minimal, with the most noticeable division between the lowest proficiency participants (Semester 4 = 72.9%) and both native speaker (66.1%) and higher-level non-native participants (Semester 6 = 66.1%, Semester 8 = 65.9%, Non-Native Grads = 67.8%) participants.

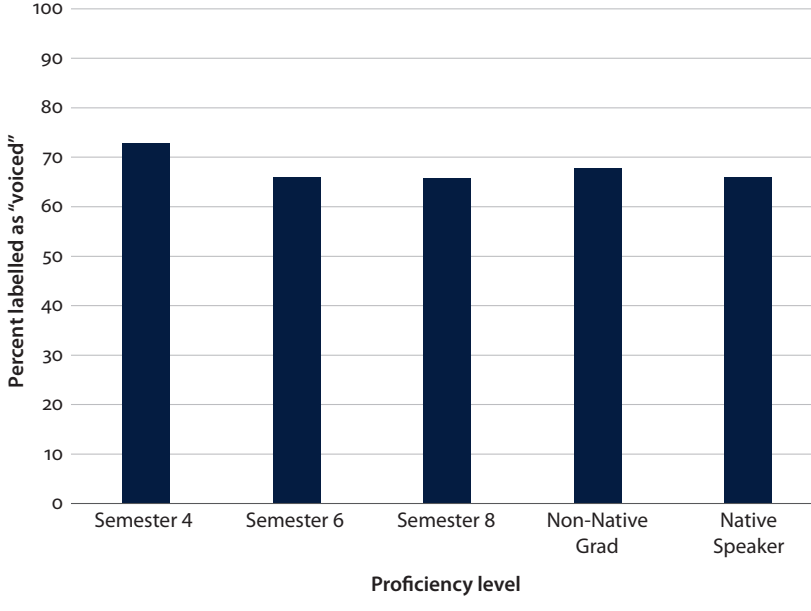

Figure 14. Stimuli identified as "voiced" by proficiency level

4.1 Qualitative description of Spanish stops

At the end of the survey, participants were asked to describe how they differentiated ten manipulated audio files from the classification task meta-linguistically. In Figures 15 through 19, word-clouds demonstrate the most-frequent terms used by each proficiency group, where size correlates with frequency (e.g., "sound" was used quite frequently).

Fourth semester participants talked about "rolled" /r/, and adjectives like "hard" and "soft" to distinguish between voiced and voiceless sounds – salient elements and general descriptors. Sixth semester participants talked about the flow of "air" and mentioned articulators (e.g., "mouth" and "tongue"). In the eighth semester, participants used linguistic explanations, sometimes abandoning "soft" and "hard" in favor of "vibration" and "tongue." The non-native graduate students (mainly students of linguistics) wrote more specifically about "voiceless" and "voiced" sounds, "stops," "trills" and voicing "duration." Finally, natives from various backgrounds were less technical in their descriptions, mentioning "flaps," "contexts," and adjectives that implied the ease of categorization (e.g., "easy," "clearly," "sure").

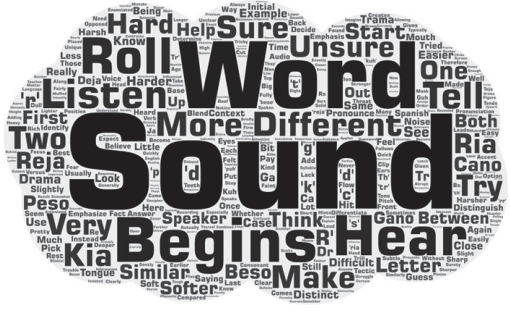

Figure 15. Semester 4 students' responses

Figure 16. Semester 6 students' responses

Figure 17. Semester 8 students' responses

Figure 18. Non-native graduates responses

Figure 19. Native graduate responses

5. Discussion

5.1 RQ1: To what extent do L1 English speakers follow native-like perception norms when identifying Spanish stops, and how does this reflect the two types of perceptual classifications described by PAM L2 or SLM?

The factors selected as significant in the mixed-effect logistic regression indicate that proficiency level interacted with Voicing type and the initial phone, as well as being a significant main effect in the data, meaning that participants' classificatory patterns did differ based on their language proficiency. Fourth semester students behaved most differently from the other participants, while the rest of the students, both graduate and undergraduate, moved in the direction of, but did not quite reach, native-like identification patterns. Fourth Semester participants were most likely to under-classify Full and Half Prevoicing tokens and over-classify Zero Prevoicing and Full Short Lag VOT tokens as "voiced," compared to natives.

This pattern reflects Casillas and Simonet's (2018) and Mack's (1989) visualization of bilingual perceptual spaces. Both studies show that bilinguals perceive stops similarly to monolinguals when they enter a given language "mode" or hear a certain perceptual cue. Higher-proficiency participants followed this behavior, while those in Semester Four acted more like English monolinguals. Flege (1995) and Birdsong (2018) have indeed argued that language learners at low proficiencies behave more like monolinguals than bilinguals, which explains this trend. As participants were placed into only a single language mode (i.e., Spanish), the data are not sufficient to reject earlier claims (e.g., Caramazza et al., 1973) that the bilingual perceptual space is a fixed realm existing between monolingual norms for speakers' languages. However, as participants at higher levels showed an increased ability to distinguish voiced from voiceless stops following boundaries that differed from those employed in their L1, they likely can switch between English and Spanish norms, although further research would need to confirm this assertion.

It was predicted that, if Spanish and English stops were close enough to allow Equivalence Classification (Flege, 1995) and fit the Two Category Assimilation of PAM L2 (Best & Tyler, 2007), learners would group Spanish stops into pre-existing English voiced and voiceless categories with increasing success based on their proficiency level. This seemed to be the case. The alternative, that there would be increased confusion due to an inability to successfully categorize the Spanish voiced stop with lead VOT into the English "voiced" category with short lag VOT, was not observed. Instead, the abrupt shift in classification patterns between the fourth and sixth semester, and the slow trend of sixth, eighth and non-native graduate participants in the direction of (and in certain cases over-shooting) native-like perceptual

norms indicates that L1 speakers can develop acoustic boundaries that approximate L2 norms, albeit with aspects of their L1 perceptual system continuing to play a role. As Birdsong (2018) argues, it is overly simplistic to expect learners to become native-like, given the perpetual influence of their L1 systems.

Learners' phonological boundaries can and do shift when distinguishing between voiced and voiceless stops in their L2, an ability that develops with increased exposure to the L2 system. Because they have to recognize voicing differences so as to distinguish between minimal pairs, nuanced perception must be developed early in acquisition. Following predictions from the phonological acquisition models, learners gain awareness of differences in L2 categories at an early proficiency level, with increased exposure to Spanish allowing the acceptable VOT boundaries to become more flexible depending on their language mode.

5.2 RQ2: What social and linguistic constraints govern listeners' perceptions of stop constraints, and how important was VOT specifically to their classification?

The initial phone was selected as significant both in main effect and in two interactions. Across these factors, it was evident that identification of stimuli differed based on the voicing of the original stop. The results showed variable tendencies for stops to be identified as "voiced" based on both the type of VOT and the proficiency of the participant. Stops with Zero Prevoicing and Full Short Lag VOT behaved variably, whereas those with Full and Half Prevoicing received more consistent identifications. When participants were uncertain of how to interpret voicing cues, other factors seemed to come into play. Similarly, identifications based on language level showed that native speakers were the only group to consistently classify the originally voiced stops /b/, /d/ and /g/ as "voiced" more frequently than the voiceless ones /p/, /t/ and /k/. This suggests the presence of Spanish voicing cues, which L1 English speakers were less likely to perceive. Fourth Semester participants in particular seemed to be relying on a different (perhaps L1) set of acoustic cues than the other participants, or to be identifying voicing at a rate approaching random chance. This reinforces arguments made by Flege (2005) and García-Sierra et al. (2009), who found that increased experience and competence in an L2 correlates to the success with which L2 categories are assimilated (or not).

Although individual differences, measured by time spent studying abroad and cognitive load (measured by duration of the survey), did not significantly affect perception, factors other than VOT did indeed play a role. The fact that originally voiced stops were categorized as "voiced" nearly ten percent more than their voiceless counterparts follows Bohn and Flege (1993), showing that there are difficult-to-identify cues that must lay behind the systematic decisions of listeners.

This consistent variability indicates that acoustic differences other than VOT were used by participants in their classifications, which merits future investigation to determine what factors specifically affect identification (e.g., Benkí, 2005; Llanos et al., 2013; Simonet et al., 2014).

6. Conclusion

This study focused on the ability of college-level L1 English speakers, learning Spanish as an L2, to perceive prevoicing and VOT in voiced and voiceless stops. Learners at intermediate language proficiencies showed perceptual boundaries that resembled native speakers, allowing them to distinguish voicing in Spanish stops. Speakers at higher proficiencies showed more-refined categories that resulted from further language learning, and a steady reduction of L1 interference, even though they never completely replicated native tendencies. The voicing distinction in Spanish for L1 English learners, under the PAM L2 or SLM models, seems to be most similar to Two Category Assimilation, allowing Equivalence Classification and encouraging acquisition.

While VOT is indeed one acoustic cue that speakers of both Spanish and English use to distinguish between voiced and voiceless stops, additional acoustic correlates affect identification. This study could not make as a strong a rejection of VOT as Bohn and Flege (1993), who argued that VOT is not the "dominant" correlate in stop identification. However, these results strongly indicate that there are (unidentified) correlates that most significantly affect the classification of stops, which could include variation in F1, F0, or even word frequency (Benkí, 2005; Connine et al., 1993; Llanos et al., 2013).[6]

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Appendix 1. Consent and demographic survey questions

Welcome to the research study!

We are interested in understanding the language acquisition and perception of learners of Spanish. You will be presented with several basic Spanish words pronounced in different ways, and asked to answer some questions. Please be assured that your responses will be kept completely confidential.

The study should take you around 25 minutes to complete. There is no compensation for taking part in this study. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice.

By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

- I consent. Begin the study
- I do not consent. I do not wish to participate

Spanish level:

- S100 level (S100, S105, S150, etc.)
- S200 level (S200, S250, S280, etc.)
- S300 level
- S400 level
- Non-native Graduate Spanish Student
- Native Speaker
- Other

What are your strongest languages? How long have you studied them?

	At what level would you describe your abilities in each language?					How long have you studied the language?						
	n/a	Beginner	Intermediate	Advanced	Native(-like)	n/a	1-12 weeks	3-12 months	1-3 years	3-8 years	8+ years	Native speaker
English	○	○	○	○	○	○	○	○	○	○	○	○
Spanish	○	○	○	○	○	○	○	○	○	○	○	○
Other (write in)	○	○	○	○	○	○	○	○	○	○	○	○

The gender I identify as:

- Male
- Female
- Non-binary

I've studied or lived outside of the U.S.

- Yes
- No

Which regions and countries have you studied or lived in? For how long?

	Duration					
	n/a	1-12 weeks	3-6 months	6-12 months	1-4 years	4+ years
USA	○	○	○	○	○	○
Mexico	○	○	○	○	○	○
Central America	○	○	○	○	○	○
South America	○	○	○	○	○	○
Spain	○	○	○	○	○	○
Other (write in)	○	○	○	○	○	○

Appendix 2. Mixed-effects logistic regression results of factors

Table 1. Mixed-Effects logistic regression with "voiced" as application value, "Participant" and "Word" as random effects, and Voicing Type, Level and Initial Phone as main effects, with three 2-way interactions between them

Factor	Log-odds	Tokens	Percent voiced	Factor weight
Voicing Type ($p < 0.001$)				
Full Prevoicing	1.683	3068	89.80%	0.843
Half Prevoicing	1.251	2828	85.70%	0.777
Zero Prevoicing	−0.665	2937	63.50%	0.34
Full Short Lag VOT	−2.269	2933	34.60%	0.094
Full Short Lag VOT				74.9
Interaction: Voicing Type*Proficiency Level ($p < 0.001$)				
Half Prevoicing:Native Speaker	1.098	115	92.20%	0.75
Full Short Lag VOT:Semester 8	0.929	883	28.10%	0.717
Full Prevoicing:Semester 6	0.71	855	89.00%	0.67
Half Prevoicing:Semester 6	0.644	783	83.50%	0.656
Full Short Lag VOT:Semester 4	0.373	1019	45.30%	0.592
Full Prevoicing:Non-Native Grad	0.327	100	95.00%	0.581
Zero Prevoicing:Native Speaker	0.25	120	50.00%	0.562
Zero Prevoicing:Semester 4	0.217	1017	74.80%	0.554
Full Short Lag VOT:Non-Native Grad	0.107	94	19.10%	0.527
Zero Prevoicing:Semester 8	−0.013	891	55.40%	0.497
Full Prevoicing:Semester 4	−0.026	1061	87.00%	0.493
Full Prevoicing:Semester 8	−0.067	927	92.20%	0.483
Zero Prevoicing:Non-Native Grad	−0.105	96	62.50%	0.474
Half Prevoicing:Non-Native Grad	−0.329	92	93.50%	0.418
Zero Prevoicing:Semester 6	−0.349	813	60.10%	0.414
Full Short Lag VOT:Native Speaker	−0.403	118	23.70%	0.4
Half Prevoicing:Semester 4	−0.564	984	84.30%	0.363
Half Prevoicing:Semester 8	−0.849	854	87.50%	0.3
Full Prevoicing:Native Speaker	−0.944	125	97.60%	0.28
Full Short Lag VOT:Semester 6	−1.005	819	31.60%	0.268
Range				48.2
Initial Phone ($p < 0.001$)				
/g/	0.731	1963	76.80%	0.675
/b/	0.473	1972	75.70%	0.616
/d/	0.314	1950	74.50%	0.578
/k/	−0.186	1961	65.30%	0.454
/p/	−0.489	1966	60.30%	0.38
/t/	−0.842	1954	58.30%	0.301
Range				37.4

Factor	Log-odds	Tokens	Percent voiced	Factor weight
Interaction: Initial Phone*Voicing Type ($p < 0.001$)				
/k/:Full Short Lag VOT	0.762	491	24.40%	0.682
/g/:Zero Prevoicing	0.489	492	83.10%	0.62
/t/:Half Prevoicing	0.448	490	70.40%	0.61
/d/:Zero Prevoicing	0.324	491	65.20%	0.58
/p/:Full Prevoicing	0.305	494	88.50%	0.576
/t/:Full Short Lag VOT	0.277	489	26.40%	0.569
/b/:Half Prevoicing	0.225	494	93.10%	0.556
/p/:Zero Prevoicing	0.204	486	46.10%	0.551
/d/:Half Prevoicing	0.059	490	89.00%	0.515
/g/:Full Prevoicing	0.051	610	92.60%	0.513
/t/:Full Prevoicing	0.016	489	83.60%	0.504
/b/:Full Prevoicing	−0.03	492	92.70%	0.493
/b/:Full Short Lag VOT	−0.074	493	44.80%	0.481
/d/:Full Prevoicing	−0.099	495	90.70%	0.475
/b/:Zero Prevoicing	−0.121	493	72.20%	0.47
/p/:Half Prevoicing	−0.141	494	85.20%	0.465
/k/:Zero Prevoicing	−0.155	489	61.10%	0.461
/g/:Half Prevoicing	−0.228	367	92.40%	0.443
/k/:Full Prevoicing	−0.243	488	90.20%	0.44
/d/:Full Short Lag VOT	−0.284	474	52.30%	0.429
/g/:Full Short Lag VOT	−0.312	494	39.30%	0.423
/k/:Half Prevoicing	−0.363	493	85.60%	0.41
/p/:Full Short Lag VOT	−0.368	492	20.90%	0.409
/t/:Zero Prevoicing	−0.741	486	52.70%	0.323
Range				35.9
Interaction: Initial Phone*Proficiency Level ($p < 0.017$)				
/t/:Non-Native Grad	0.776	64	51.60%	0.685
/p/:Semester 6	0.517	548	54.20%	0.626
/p/:Semester 4	0.474	682	66.40%	0.616
/g/:Native Speaker	0.402	80	75.00%	0.599
/b/:Native Speaker	0.295	80	71.20%	0.573
/d/:Semester 8	0.158	595	68.20%	0.539
/t/:Semester 8	0.115	676	79.90%	0.529
/d/:Semester 4	0.11	682	69.90%	0.527
/k/:Semester 4	0.099	587	77.70%	0.525
/g/:Semester 8	0.085	603	54.60%	0.521
/t/:Native Speaker	0.083	80	57.50%	0.521
/k/:Semester 8	0.054	588	62.60%	0.514
/b/:Semester 6	0.03	549	73.00%	0.507
/b/:Semester 4	0.021	689	80.10%	0.505

Factor	Log-odds	Tokens	Percent voiced	Factor weight
/b/:Non-Native Grad	0.001	64	71.90%	0.5
/d/:Semester 6	−0.012	539	75.30%	0.497
/k/:Native Speaker	−0.014	80	65.00%	0.496
/d/:Native Speaker	−0.028	684	78.10%	0.493
/g/:Semester 4	−0.039	78	66.70%	0.49
/p/:Semester 8	−0.051	592	58.80%	0.487
/k/:Semester 6	−0.067	547	62.50%	0.483
/k/:Non-Native Grad	−0.083	64	65.60%	0.479
/g/:Semester 6	−0.213	64	59.40%	0.447
/d/:Non-Native Grad	−0.214	548	74.10%	0.447
/p/:Non-Native Grad	−0.222	62	79.00%	0.445
/g/:Non-Native Grad	−0.253	539	57.70%	0.437
/t/:Semester 6	−0.26	64	79.70%	0.435
/b/:Semester 8	−0.347	590	74.10%	0.414
/t/:Semester 4	−0.691	668	62.90%	0.334
/p/:Native Speaker	−0.727	80	61.20%	0.326
Range				35.9
Participant Level ($p < 0.0091$)				
Non-Native Grad	0.227	382	67.80%	0.557
Native Speaker	0.175	478	66.10%	0.544
Semester 4	0.067	4081	72.90%	0.517
Semester 8	−0.172	3555	65.90%	0.457
Semester 6	−0.297	3270	66.10%	0.426
Range				13.1
Random Intercept: Respondent				
96-Semester 4	1.898	96	97.90%	0.87
109-Semester 4	1.655	96	95.80%	0.84
46-Semester 8	1.439	95	87.40%	0.809
81-Semester 4	1.149	96	90.60%	0.76
100-Semester 4	1.149	96	90.60%	0.76
… (130 participants omitted)	…	…	…	…
47-Semester 4	−0.922	77	55.80%	0.285
116-Non-Native Grad	−0.956	95	55.80%	0.278
32-Semester 8	−1.03	60	43.30%	0.264
42-Semester 8	−1.284	60	38.30%	0.217
39-Semester 4	−1.617	58	39.70%	0.166
Range				70.4

Factor	Log-odds	Tokens	Percent voiced	Factor weight
Random Intercept: Word				
guia	0.249	981	80.30%	0.563
beso	0.22	988	79.10%	0.556
Kia	0.218	978	69.10%	0.555
pata	0.187	982	63.40%	0.548
teja	0.15	977	61.40%	0.538
drama	0.087	963	76.40%	0.523
deja	−0.102	987	72.60%	0.475
trama	−0.152	977	55.20%	0.463
peso	−0.187	984	57.10%	0.454
cano	−0.223	983	61.50%	0.445
bata	−0.232	984	72.30%	0.443
gano	−0.26	982	73.20%	0.436
Range				12.7

n = 11766 *df* = 62 Log Likelihood = −5367.5 AIC = 10859 R2 Fixed = 0.363 R2 Random = 0.08 R2 Total = 0.443

CHAPTER 7

Sheísmo in Montevideo Spanish

Not (yet) identical to Buenos Aires

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Studies have documented an ongoing change from /ʒ/ to /ʃ/ in *Rioplatense* Spanish, and research indicates that the change to /ʃ/ is complete for young speakers of Buenos Aires (BA) Spanish. However, *sheísmo* in the neighboring country of Uruguay has not been thoroughly studied. The present study finds that, unlike in BA, the change to /ʃ/ is not yet complete in Montevideo, as determined by persistent sex differences among young speakers (Cameron, 2011; Chang, 2008), and differences in voicing rates between /ʒ/~/ʃ/and phonologically voiceless /s/, indicating that observed voicing is not due solely to gestural overlap (Rohena-Madrazo, 2015). Uruguay is at least one generation behind BA for this change, distinguishing the Spanish spoken in the two regions.

Keywords: Rioplatense Spanish, Montevideo, Sheísmo, sociolinguistics

1. Rioplatense Spanish

The varieties of Spanish spoken in urban centers around the Río de la Plata form a macro-dialect area, known as *Rioplatense* 'River Plate' Spanish. These varieties, which include the urban areas of both Buenos Aires, Argentina (BA) and Montevideo, Uruguay, share many linguistic features that serve to distinguish the Spanish spoken in the region (Correa & Rebollo Couto, 2012).

Among the features that characterize *Rioplatense* Spanish are the predominance of *vos* in both oral and written language, coda /s/ weakening, as well as intonational and lexical differences that distinguish the region from the rest of Latin America (Colantoni & Gurlekian, 2004; Lipski, 2004; Weyers, 2009). Among the most frequently cited linguistic traits of *Rioplatense* Spanish is the presence of assibilated palatal fricatives, referred to as *zheísmo* or *sheísmo*, according to whether the palatal sibilant is voiced [ʒ] or voiceless [ʃ] (Fontanella de Weinberg, 1983; Wolf &

https://doi.org/10.1075/ihll.29.07mic

Figure 1. Map of the *Rioplatense* dialect region, including the urban centers of Buenos Aires and Montevideo.
Source: <https://www.openstreetmap.org/#map=9/-34.5689/-57.3899>

Jiménez, 1979). The (de)voicing of /ʒ/ is the focus of the present study.[1] Importantly, *Rioplatense* Spanish is often assumed, implicitly or explicitly, to be synonymous with the *Porteño* Spanish spoken in BA. Historically, it is likely that BA was the nucleus of many of the linguistic changes that characterize *Rioplatense* Spanish (Colantoni, 2006; Lang-Rigal, 2015), and there is no doubt that the varieties of Spanish spoken in BA and across the river in Montevideo are indeed very similar. Lipski (2004, p. 369) states "*…[e]n un cierto sentido, el español de Uruguay es una mera extensión del habla porteña de Buenos Aires*", noting that even many inhabitants of the two cities cannot tell if someone is from BA or Montevideo based solely on linguistic factors. While we do not debate the veracity of this and similar statements *grosso modo*, the assumption that the Spanish of the two major *Rioplatense* cities is identical has rarely been examined in the literature. Therefore, one of the goals of the present investigation is to determine how Montevideo patterns vis-à-vis published accounts on BA Spanish (BAS) of one of the most characteristic linguistic traits of *Rioplatense* Spanish, the widely reported shift from *zheísmo* to *sheísmo*. Specifically, the shift from voiced /ʒ/ to voiceless /ʃ/ has been reported as being a completed change in BA, at least for the middle classes (Chang, 2008; Rohena-Madrazo, 2013). At the same time, there have been relatively few studies on palatal (de)voicing in Uruguayan Spanish, especially with the goal of comparing results from Montevideo with those of published studies on BA. The present study examines the social and linguistic factors that condition the use of /ʒ/~/ʃ/ in and around Montevideo, as a preliminary step in determining if the change can also be considered complete in *Rioplatense* Uruguayan Spanish, as has been reported for BAS.

The rest of the article is presented as follows. In Section 2, we review the literature on *zheísmo/sheísmo* in *Rioplatense* Spanish, with a particular focus on the role of speaker sex and age in determining patterns of use in BAS. We will also outline two methods employed in previous studies to determine the completion of a sound change, specifically through social (Cameron, 2011; Chang, 2008) or phonetic comparisons (Rohena-Madrazo, 2013). In Section 3 we detail the methodology employed, and Section 4 presents results. Sections 5 and 6 include discussion and final conclusions, respectively.

1. In the rest of this study, we will follow recent previous work by Rohena-Madrazo (2015), Lang-Rigal (2015) and others in representing this phoneme as /ʒ/ for speakers of Montevideo and BAS where appropriate.

2. *Zheísmo* and *sheísmo* in *Rioplatense* Spanish

Both *zheísmo* and *sheísmo* refer to the pronunciation of /ʝ/ as a sibilant fricative, either voiced [ʒ] or voiceless [ʃ]. For example, *calle* 'street' may be pronounced as either ['ka.ʒe] or ['ka.ʃe]. *Rioplatense* assibilated palatals represent a variety of *yeísmo*, without distinguishing between orthographic "y" and "ll" (Canale & Coll, 2016). Assibilated palatals arose at various times in the development of spoken Latin to Spanish (Penny, 2002), and assibilation occurs sporadically in many modern dialects of Spanish (Lipski, 2004). It is in the *Rioplatense* region, however, that sibilant palatals represent the most common pronunciation of /ʝ/, and are widely considered to be the most indicative pronunciation of the region for Spanish speakers around the world (Lipski, 2004, p. 192). The assibilation of /ʝ/ is believed to have begun in BA sometime between the 18th and 19th centuries, and to have undergone a rapid expansion during the second half of the 20th century (Fontanella de Weinberg, 1973). Assibilated palatals are currently undergoing diffusion from BA to other regions of the country (Colantoni, 2006; Lang-Ridal, 2015).

Studies on /ʒ/ in Argentinian Spanish have consistently reported a systematic devoicing to [ʃ], with younger speakers and women in particular leading the change (Chang, 2008; Fontanella de Weinberg, 1983; Lang-Ridal, 2015; Rohena-Madrazo, 2015; Wolf & Jiménez, 1979; among others). Similar trends have been reported in the few studies on Uruguayan /ʒ/ (Barrios, 2002; Winkler, 1998). While most studies have interpreted these patterns of more devoicing among women and younger speakers as evidence of language change in progress, Wolf (1984) argues that the pattern in BA was one of stable variation at the time of publication, with persistent social class differences that, "*[m]uy probablemente, jamás lleve a un cambio lingüístico*" 'most probably, [it] never leads to a linguistic change' (p. 185). More recent studies, however, have confirmed that a change is underway, and has reached completion for most social groups (Chang, 2008; Rohena-Madrazo, 2015).

Early studies on this phenomenon show a consistent effect of social factors on sibilant (de)voicing in BAS, with speaker age and sex offering the strongest correlations.[2] Examples of these early patterns, with women leading the change to /ʃ/ and men trailing by at least a generation, are seen in Figures 2 and 3, from Fontanella de Weinberg (1983) and Wolf and Jiménez (1979), respectively.

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2. Social class also plays an important, albeit secondary role, especially in early studies of (de)voicing. As noted in Wolf and Jiménez (1979, p. 129), "Es evidente que la correlación de las variables edad y sexo nos proporciona las más significativas conclusiones de esta investigación…" 'it is evident that the correlation of the variables age and sex provide the most significant conclusions of this research' (emphasis in the original). For that reason, along with the role of sex and age in determining the completion of a sound change (Cameron, 2011), we focus on age and sex here.

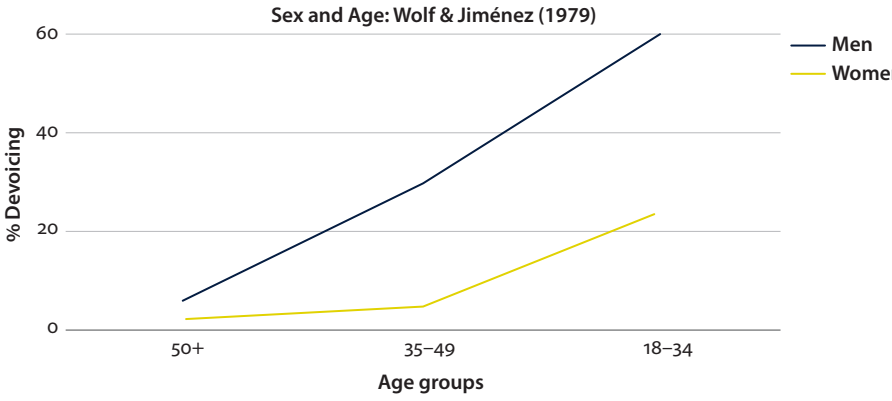

Figure 2. Devoicing according to speaker sex and age in BAS. Adapted from Wolf and Jiménez (1979, pp. 129, 143)

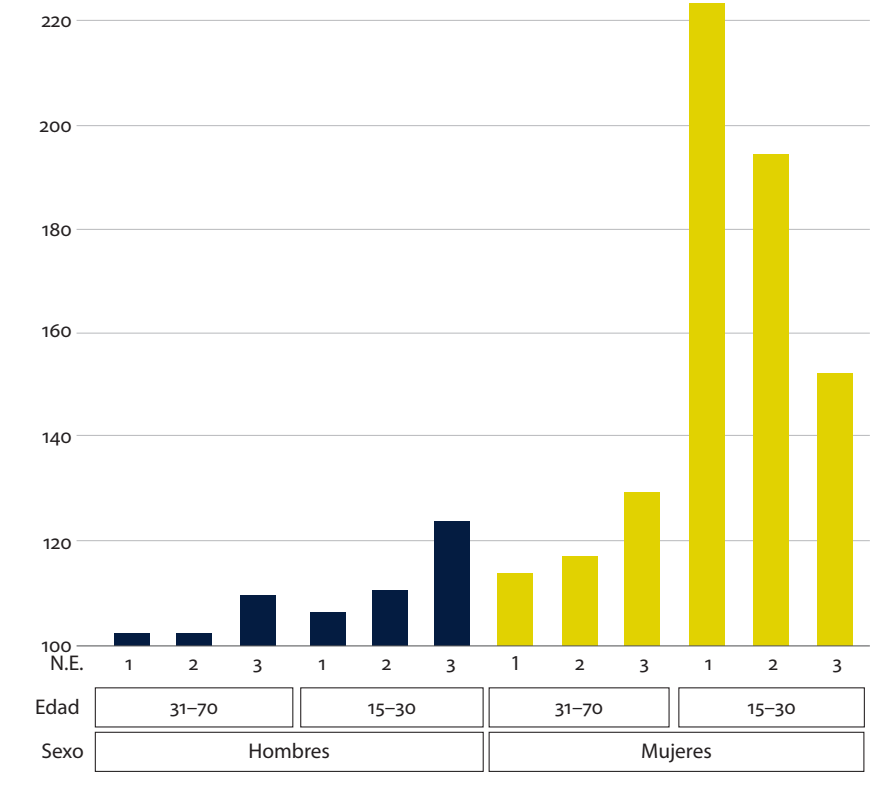

Figure 3. (De)voicing of /ʒ/ by sex, age and education level (1=lowest). On the y-axis, a score of 100 = 100% voiced tokens; 200 = an intermediate, partially devoiced realization; 300 = 100% voiceless tokens (Fontanella de Weinberg, 1983, p. 100). Graph taken from Fontanella de Weinberg (1983, p. 112)

Both Figures 2 and 3 show the same overall pattern, with men trailing behind women in the devoicing of /ʒ/. This trend is particularly striking in Figure 3, where Fontanella de Weinberg (1983) found that the behavior of men between the ages of 15–30 mirrors that of women between the ages of 31–70; at the time of data collection almost 40 years ago, men in BA were a full generation behind women. Wolf and Jiménez (1979) show the same basic pattern, with the youngest men producing a similar rate of devoicing (24%) to that of middle-aged women (30%).

Importantly, some researchers have singled out sex differences in the frequency of an innovative form as an indicator of an on-going, incomplete change. Labov (2001) shows how sex differences are small or non-existent at the beginning of a change, since everyone is using the same, more conservative form. Sex differences increase at the midpoint of a change, and then again decrease as the change nears completion, as the community converges on the new, innovative form (pp. 307–308). Cameron (2011) applies these concepts to palatal (de)voicing in BA, using data from Wolf and Jiménez (1979). Cameron's (2011) analysis demonstrates how sex differences in (de)voicing are greatest among the middle age groups, and that these differences are reduced among the youngest speakers, as males steadily catch up to the devoicing rates of females (Figure 4). This trend leads Cameron (2011) to hypothesize that, at the time of Wolf & Jiménez (1979), the change from /ʒ/ to /ʃ/ was a mid-stage, and he predicts that, if the trend has continued to the present day, "…[t]he youngest speakers in present-day BA would show little or no gender differentiation…whereas those who are somewhere near or above 40 years of age would show continuing gender difference" (p. 224). In this way, the presence or

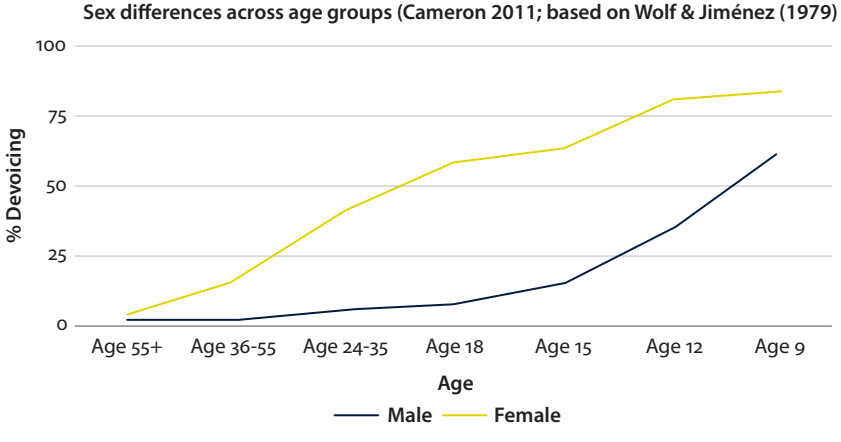

Figure 4. Sex differences for devoicing across age groups in BA. Data for the graph adapted from Table 10.4 in Cameron (2011, p. 224), which is originally based on data from Wolf & Jiménez (1979)

absence of sex differences for an innovative form can indicate at what stage a change is, and if it can be considered to have been completed.

The lack of important sex differences among younger speakers, as predicted by Cameron (2011), is in fact exactly what is reported in more recent studies on *sheísmo* in BAS. Link (2009) found identical rates of devoicing for young men and women (ages 16–30), with both groups devoicing at 96% in a reading task. Lang-Rigal (2015) compared the speech of men and women across three cities in Argentina: BA, Tucumán and Córdoba. She finds that BA shows the most advanced stage of palatal devoicing among the three cities, and that there are no significant differences between men and women in that city. Tucumán, on the other hand, continued to show a strong gender divide, similar to that seen for BA in previous studies, suggesting that this city is at an earlier stage of the change to /ʃ/ (Lang-Rigal, 2015, p. 160). Córdoba in general lagged behind the other two cities, with no important gender differences, but much lower rates of devoicing, suggesting that Córdoba may not be fully participating in the change (p. 161). Additionally, Chang (2008), in his study of BAS likewise found no significant differences among the younger men and women that make up his study, as speakers of both sexes produced almost categorically 100% devoiced tokens. Chang (2008, p. 62) observes "…although palatal devoicing was found to be correlated with age, it no longer seems to be correlated with gender…this result suggests that the change from [ʒ] to [ʃ], rather than being an ongoing change, is better characterized as a change that has already been completed". Taken together, these studies indicate that the change to /ʃ/ in BA can be considered complete, at least for middle class speakers, as patterns of devoicing no longer show differentiation by sex for younger speakers. In the present study, we will likewise use sex differences as a diagnostic for comparing patterns of (de) voicing in Montevideo Spanish.

In a recent study, Rohena-Madrazo (2015) addresses the question of sound change completion in BAS by examining phonetic variation at the individual speaker level. Rohena-Madrazo (2015) notes the difficulty in determining the status of a sibilant fricative as either voiced or voiceless at the phonemic level, given that such phones regularly undergo phonetic voicing assimilation due to surrounding phonetic context. In other words, a phonologically unvoiced segment can be phonetically voiced to one degree or another when it occurs between two voiced segments, such as vowels. This process of phonetic voicing has been frequently found to affect uncontroversially voiceless sibilant phonemes, such as /s/ (Schmidt & Willis, 2011; and sources therein). Rohena-Madrazo (2015, p. 292) states "If /ʒ/ were to be consistently produced as 100% voiceless, then there would be no doubt that the devoicing change has been completed. However, the question remains, does the completion of the devoicing change necessarily imply or require 100% voicelessness in all utterances of /ʒ/?".

Rohena-Madrazo (2015) therefore uses the phonetic voicing of /s/ as a baseline for determining the phonological status of /ʒ/ and /ʃ/. If the palatal sibilant fricative shows voicing at the same rate or less than /s/, then voicing is due to phonetic factors of coarticulation and gestural overlap, and an underlying /ʃ/ can be posited. The change would be considered complete. If, on the other hand, the palatal sibilant shows greater levels of voicing than voiceless /s/, it would be interpreted as evidence that the production of voiced [ʒ] is not due to phonetic factors alone, and instead reflects an underlying voiced phoneme /ʒ/. Rohena-Madrazo (2015) calls speakers whose voicing rates of /ʒ/~/ʃ/ are similar to their voicing of /s/ "devoicers", while speakers who voice the palatal fricative at a rate greater than /s/ – e.g. at a rate greater than would be expected in the presence of phonetic voicing alone – are "voicers".

In an initial analysis, Rohena-Madrazo (2013) finds that the change to /ʃ/ is complete for young, middle-class speakers, since there were no significant differences in the voicing of /s/ and /ʒ/~/ʃ/ for this group. He does find, however, that upper-class young speakers still maintain higher rates of voicing for /ʒ/~/ʃ/ than for /s/, indicating that the change was not complete for speakers of that group, as their voicing of the palatal sibilant cannot be explained by phonetic processes alone. In his extended analysis of the data, however, Rohena-Madrazo (2015, p. 308) shows that the apparent preservation of voiced /ʒ/ among young upper-class speakers is due to the behavior of one speaker, a young woman "voicer" that lives "in a very luxurious high-rise building, in which each floor had only one apartment – this exceeds conventional standards of poshness even for La Recoleta [an upper class neighborhood in north BA]" (p. 310). Rohena-Madrazo (2015) notes that more detailed ethnographic studies are warranted to further explore the motivations for some speakers to produce voiced forms in a way incongruent with their age-matched peers, but overall characterizes the change to /ʃ/ as complete for most younger speakers, and in its final stages overall in BA, "perhaps with some correction from above (Labov, 1966, p. 225)" (p. 312). Importantly, the change was found to be complete for lower- and middle-class speakers, the same social groups represented in the present study on Uruguayan Spanish (see Table 1). In this study, we also compare each speaker's percent voicing of /s/ and /ʒ/~/ʃ/ as another criterion for determining the status of (de)voicing in Montevideo.

Palatal (de)voicing in Uruguay has received much less attention from scholars, as noted previously, with only a handful of studies examining the possible shift to /ʃ/, and even fewer examining the phenomenon from within a variationist paradigm. Lipski (2004) observes that devoicing is not as common in Montevideo as in BA, but that Uruguayan Spanish is quickly catching up in the production of [ʃ]. Winkler (1998) reports that /ʒ/ remained the dominant form in Montevideo

at the time of publication, but as in other studies, notes that devoiced variants are more common among women and younger speakers. Thun and Elizaincín (2000), using data from the *Atlas diatópico y diastrático del Uruguay*, report that younger speakers show increased devoicing, as has also been found for BA. Barrios (2002), in her analysis of sociolinguistic interviews, also finds increased *sheísmo* among younger speakers, and evidence of sex differences among older speakers indicate that, again like in BA, the change is led by women. She notes fewer differences based on speaker sex among young speakers. Fernández Trinidad (2010) presents an acoustic analysis of five female speakers of *Rioplatense* Spanish, from both BA and Montevideo. Interestingly, and underlying the assumed equivalence of BA and Montevideo in the literature, Fernández Trinidad (2010) makes no distinction between participants from the two cities, stating "*[a] pesar del hecho de que pertenezcan a dos países diferentes, (Argentina y Uruguay, respectivamente) en el habla de las capitales se reconocen muy pocas diferencias diatópicas, al punto que dialectalmente constituyen una única unidad lingüística, el español platense o rioplatense*" 'in spite of the fact that [they] are from two different countries (Argentina and Uruguay, respectively), in speech of the capitals one can recognize very few diatopic differences, to the point that dialectally [they] form a single linguistic unit, "Plate" Spanish and "River Plate" Spanish' (p. 269). While her study focuses on describing the fine-grained acoustic correlates of voiced and voiceless variants, where differences between the two cities might not be expected, the commonly held idea that the same process in both countries is identical has not been tested in the literature to the best of our knowledge.

Based on patterns of (de)voicing reported in the previous literature, as well as both social and phonetic criteria for determining the completion of a sound change, the present study constitutes a preliminary analysis of palatal (de)voicing in and around Montevideo as compared to previous reports of BAS. Specifically, we seek to answer the following research questions:

RQ1: What are the social and linguistic factors that influence (de)voicing of the palatal fricative /ʒ/~/ʃ/ in the Spanish of Montevideo, Uruguay and surrounding areas?

RQ2: How does Montevideo compare to previous studies on BA? Has the change from /ʒ/ to /ʃ/ been completed in Montevideo, as determined by social and phonetic criteria, and as reported for BA?

3. Methodology

3.1 Participants

The present study is a semi-replica of Chang (2008), which investigated the speech of Argentinians in BA using a reading task that consisted of a series of *Mafalda* comic strips by Quino (2007). There were 24 total participants (10 men, 14 women) who completed the task for the present study. Participants were recruited using familial connections, which included friends, coworkers, and clients of family. 18 participants were long term residents or natives of Montevideo, while three participants lived in Nueva Helvecia, Colonia during the time of the recordings, and three others were from Nueva Helvecia, but had been living in Montevideo for a short time.[3] For the purposes of the study, participants were divided into three age groups (older: age 54–86; middle: age 32–49; and younger: age 24–30). Demographic data (including sex, age, age group, residency, and level of education) for the participants can be found in Table 1.

Table 1. Information of participants, in order of age

Participant	Sex	Age	Age group	Residence	Education
AMWGR	M	86	Older	Montevideo	Elementary
AFWAR	F	77	Older	Montevideo	High School
AMWSP	M	67	Older	Montevideo	University
AMBOA	M	66	Older	Nueva Helvecia	Some High School
AFWCS	F	65	Older	Montevideo	Masters
AFBMI	F	62	Older	Nueva Helvecia	University
AFBJP	F	57	Older	Montevideo	University
AFBSC	F	54	Older	Montevideo	Some High School
MFBST	F	49	Middle	Montevideo	High School
MMBJC	M	45	Middle	Montevideo	Elementary
MMWGI	M	43	Middle	Montevideo	University
MFBPR	F	36	Middle	Montevideo	Some High School
MFBIN	F	35	Middle	Nueva Helvecia	University
MMWSP	M	35	Middle	Montevideo	Masters
MFBPI	F	34	Middle	Montevideo	University
MFWLY	F	33	Middle	Montevideo	University
MMWDV	M	32	Middle	Montevideo	University

3. Nueva Helvecia, Colonia, is on the southern coast of Uruguay, across the Río de la Plata from Buenos Aires. See the map in Figure 1. As described below, there was no main effect of residence in the analysis, so all speakers were kept together in the rest of the study.

Table 1. (*continued*)

Participant	Sex	Age	Age group	Residence	Education
JFWAG	F	30	Younger	Montevideo	University
JFBJN	F	28	Younger	Montevideo	High School
JFWSB	F	28	Younger	Montevideo	University
JMBJI	M	27	Younger	Montevideo	High School
JMWSG	M	27	Younger	Montevideo	University
JMWMG	M	26	Younger	Montevideo	University
JFWMN	F	24	Younger	Montevideo	High School

3.2 Analysis

Before beginning the reading task, participants completed a demographic questionnaire. Participants were then given the reading task, consisting of thirty-two comic strips from *Toda Mafalda* (Quino, 2007) picked deliberately to encourage palatal production, following Chang (2008). Using the comic strips allowed for the speech to be conversational and more comfortable, as the participants saw familiar lexicon from a storyline that they had encountered prior to the investigation. The participants were recorded on an H2 Zoom digital recorder. Participants were asked to read as naturally as possible, at a normal reading pace. The recordings lasted between nine and twenty minutes, and due to the satirical nature of the comic strip, participants were encouraged to react as they normally would, which resulted in some tokens being disregarded due to laughter, etc. Overall, the comic reading task produced a range of between 65 and 75 tokens for most participants, for a total of 1,628 instances of palatal fricatives.[4] All data were collected by the second author, a native speaker of Montevideo Spanish.

Tokens were manually identified and segmented in Praat (Boersma & Weenink, 2018), and each token was identified categorically, according to the waveform, spectrogram, presence or absence of a voicing bar and glottal pulses. This initial categorical coding was done to allow for a global view of the variants of /ʒ/ available to speakers in and around Montevideo, including non-sibilant variants, which appeared sporadically in the data (Table 2). The primary focus, however, consisted of an acoustic analysis of percent voicing of each token, carried out with a Praat script. Following File-Muriel and Brown (2011), the script automatically adjusted the window size so that the fricative token occupied precisely two-thirds of the analysis window, since the level of zoom can impact the measure of voicing. The

4. One participant only completed part of the task, producing a total of 27 tokens.

script then utilized the Praat Voice Report to determine the percent voicing of each token.[5] Examples of token coding and delimitation showing both voiced and voiceless tokens is found in Figure 5.

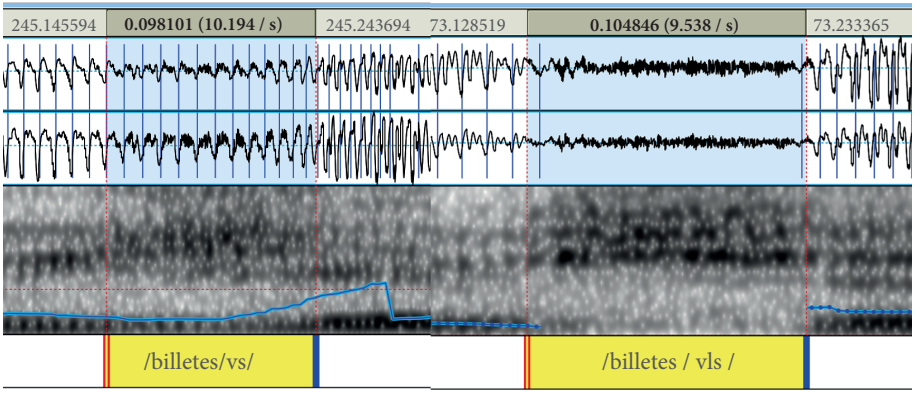

Figure 5. Voiced (left) and voiceless (right) tokens of /ʒ/ in the word billetes

Percent voicing as a continuous variable formed the basis for the quantitative analysis detailed in the results.[6] A series of mixed-effects linear regression models were fitted to the data using lme4 (Bates, Maechler, Bolker, & Walker, 2015) in R (R Core Team, 2017), with %Voiced as the continuous dependent variable, and independent variables of speaker sex, age group (older, middle, younger), place of residence (Montevideo vs. Nueva Helvecia), as well as the following linguistic factors to control for context: position in the word (initial vs. medial), grapheme ("y" vs. "ll"), and syllable stress (tonic vs. atonic). Given that all but two of the participants have

5. Gradoville (2011) examines the validity of several acoustic measures of sibilant voicing, and determines that the Praat Voice Report (along with low-frequency-to-total intensities) provided "the best match for what can be observed in the spectrogram and auditorily" (p. 71), although he did note problems with "phantom pulses" (p. 70) that can cause the Voice Report to mistake periodic noise in the fricative as glottal pulses. Unfortunately, the solution (setting the pitch setting to 250Hz max) also resulted in the exclusion of data for one speaker in that study. We have opted to script the use of the Voice Report here for consistency, to address the problem of analysis window zoom, and ease of comparison with other studies, although any potential shortcomings must be kept in mind.

6. An anonymous reviewer points out that duration can be a stronger cue for fricative voicing than glottal pulses; an additional mixed effects analysis with duration as the dependent variable found syllable stress to the be only significant predictor (p. 0.43). Since no social factors significantly predicted differences in duration, the analysis will proceed with percent voicing.

high school or greater education, education level was not included in the statistical models. Speaker and word were included as random intercepts. P-values were computed with lmerTest (Kuznetsova, Brockhoff, & Christensen, 2017).

Finally, in order to compare participants voicing rates for /ʒ/ and /s/, approximately 50 tokens of intervocalic /s/ were extracted and analyzed for percent voicing from each recording, using the same script as for /ʒ/. A total of 1,231 tokens of /s/ were analyzed, with the following distribution: 819 in atonic syllables, 412 in tonic syllables, and 322, 482 and 427 tokens in word initial, medial, and final position, respectively.

4. Results

4.1 Variants of /ʝ/

Table 2 shows the results of the categorical analysis, undertaken to document the variants available to speakers in Montevideo.

Table 2. Categorical distribution of variants

Variant	n	% of data
Affricate	5	0.31%
Approximant	2	0.12%
Palatal lateral	1	0.06%
Non-sibilant fricative	20	1.23%
Voiceless sibilant fricative	1274	78.3%
Voiced sibilant fricative	326	20%
Total	**1628**	**100%**

The categorical results indicate that speakers produced very few variants other than [ʒ] or [ʃ], as the two sibilant fricatives account for 98% of the data. This is similar to the findings of Rohena-Madrazo (2015) for BA, where sporadic [ʎ], [dʒ] and [j] were also found, as well as the data from the *Atlas diatópico y diastrático del Uruguay (ADDU)* (Thun & Elizaincín, 2000). It is clear from these results, however, that the postalveolar sibilant fricatives [ʃ] and [ʒ] are by far the dominant forms in Montevideo Spanish.

4.2 Analysis of voicing

Results of the best mixed-effects linear regression analysis are found in Table 3. We began with a maximal model (including all possible main effects and two-way interactions), and undertook model selection using anova() in R.

Table 3. Results of best mixed-effects linear regression. Speaker and Word as random factors. n = 1628. Std. Dev. of Speaker 0.14529; Std. Dev. of Word 0.09032

	Estimate	Std. error	t-value	p-value
Intercept	0.20815	0.06474	3.215	0.003264 **
Sex = Male	0.20257	0.06163	3.287	0.003123 **
Age Group = Middle (ref=Younger)	0.15608	0.07474	2.008	0.047685 *
Age Group = Older (ref=Younger)	0.33027	0.07697	4.291	0.000254 ***
Stress = Tonic	−0.07228	0.02839	−2.546	0.013754 *

Speaker sex, age group and syllable stress were significant predictors of % voicing. Specifically, men showed significantly higher rates of voicing than women, and middle age and older speakers likewise showed higher voicing rates than younger speakers (significantly so for older speakers, with the difference between younger and middle age speakers marginally significant). An additional analysis with releveled age group shows that the difference between middle age and older speakers is also significant (p = 0.024127). There were also significantly lower rates of voicing in tonic syllables. Residence, word position and grapheme did not significantly influence the percentage voicing in the present data. There were no significant interactions.

The intersection of the two significant social factors, sex and age group, is clearly visible in Figure 6. Men consistently produced higher voicing rates than women across age groups, with younger women showing the most consistent devoicing (indicated by the median line and the size of the boxplot). A comparison of men's values with those of women for the preceding generation (i.e. younger men compared with middle aged women, etc.) shows that men are a full generation behind women in the shift from /ʒ/ > /ʃ/. A similar result has been found for BAS (Fontanella de Weinberg, 1983; Wolf & Jiménez, 1979). Importantly, Figure 6 shows that important differences remain between sexes, even among the youngest speakers, which are confirmed in separate mixed-effects regression analyses of each age group, as seen in Table 4.

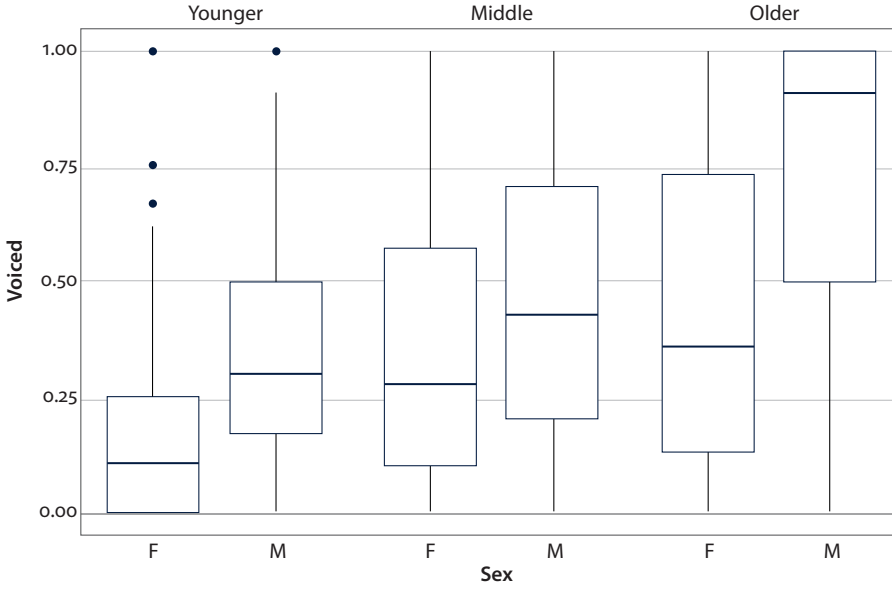

Figure 6. %Voiced by Sex and Age Group

The differences observed in Table 4 again demonstrate that men are a full generation behind women in the move to /ʃ/, as men's voicing rates correspond to those of women of the previous generation. The difference in voicing between men and women is significant for older and younger speakers. The middle age group shows more variation and overlap in voicing values, as seen in Figure 6, leading to a non-significant difference in the mixed-effects model, in spite of the difference in mean voicing. Overall, the differences based on speaker sex could have implications for determining if the change from /ʒ/ > /ʃ/ is complete in Montevideo (Cameron, 2011; Chang, 2008). We turn our attention to determining the status of completion of this change, as well as how Montevideo compares to BA, in the next section.

Table 4. Mean voicing rates and significance for speaker sex across age groups

	Older (p = 0.024579)	**Middle p = 0.340620**	**Younger p = 0.00333**
Men	74.2%	46.4%	34.3%
Women	43.7%	35.9%	17.1%

4.3 Completion of the change in Montevideo and comparisons with BA

In this section, we examine the results according to the criteria for determining the completion of a sound change suggested by Cameron (2011), Chang (2008), and Rohena-Madrazo (2015). To recap, Cameron (2011) and Chang (2008) base their determination on the social distribution of [ʃ], where the lack of significant sex differences indicates that the sound change has been completed. Rohena-Madrazo (2015), on the other hand, bases his determination of change completion on a comparison of voicing rates of /ʒ/~/ʃ/ with the baseline phonetic voicing of /s/. If voicing rates for /ʒ/~/ʃ/ are equal to or lower than for phonologically unvoiced /s/, any residual voicing is due to phonetic assimilation and gestural overlap, and the change to /ʃ/ is posited to be complete.

4.3.1 *Sex differences as a criterion for completed sound change*

Following Cameron (2011) and Chang (2008), we interpret significant differences in (de)voicing of /ʒ/ as evidence of an ongoing change in Montevideo. As seen in Table 3, sex was a significant factor in the analysis of %Voiced in Montevideo Spanish. Figure 6 shows that women are a full generation ahead of men in the devoicing of /ʒ/, and that sex differences remain even among the youngest speakers (Table 4). In order to examine this pattern in more detail, a mixed-effects conditional inference tree was run on the data using the lmertree function in the glmertree package in R (Fokkema, Smits, Zeileis, Hothorn, & Kelderman, 2018). The package glmertree combines mixed-effects analysis from lme4 (Bates, Maechler, Bolker, & Walker, 2015) and the recursive partitioning (trees) from partykit (Hothorn & Zeileis, 2015).[7] For purposes of clarity, only social factors were included.

Starting at node 1, the primary breakpoint in the data is for age group, with younger speakers differing significantly from older and middle age participants. For middle age and older speakers, there is a split for sex (node 2), and a further split by age group for each sex. Interestingly, residence does play a significant, albeit very specific, role in the tree. Among older men, residents of Montevideo show lower percentages of devoiced tokens than their counterparts from Nueva Helvecia. Possible explanations for this pattern will be addressed in the discussion. Still, the most important node for the present discussion is node 11, which shows that significant sex differences are found among the youngest speakers, with women producing lower percentages of voicing than men. In the Uruguayan data, the persistent sex difference among young speakers suggests that, unlike in BA, the change to /ʃ/ is not yet complete in Montevideo.

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7. See Tagliamonte (2011) and Tagliamonte & Baayen (2012) for more on Conditional Inference Trees.

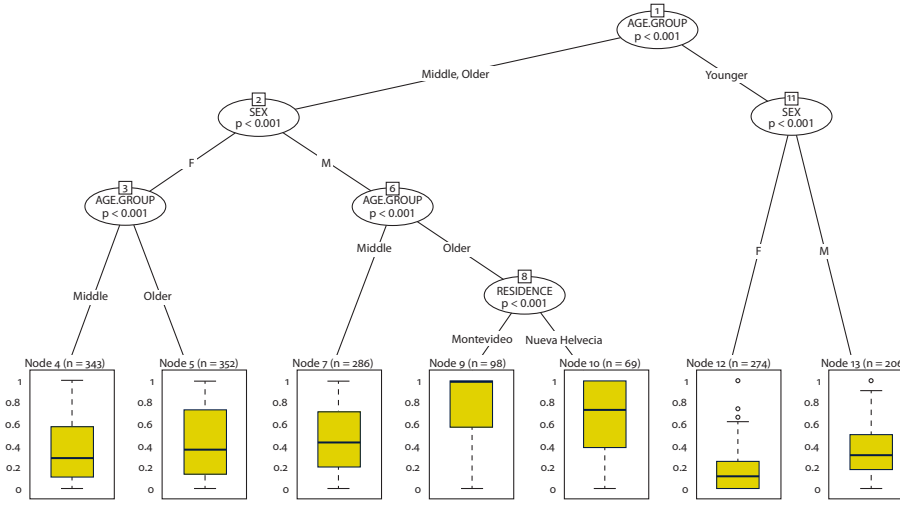

Figure 7. Mixed-effects Conditional Inference Tree of social factors. %Voiced Speaker as random factor

4.3.2 *Comparison with /s/ as a criterion for completed sound change*

The percent voicing for /ʒ/ tokens was compared to that of intervocalic /s/, following Rohena-Madrazo's (2015) diagnostic for determining the completion of the devoicing to /ʃ/. A comparison of /ʒ/ and /s/ tokens by age and sex groups is found in Figure 8.[8]

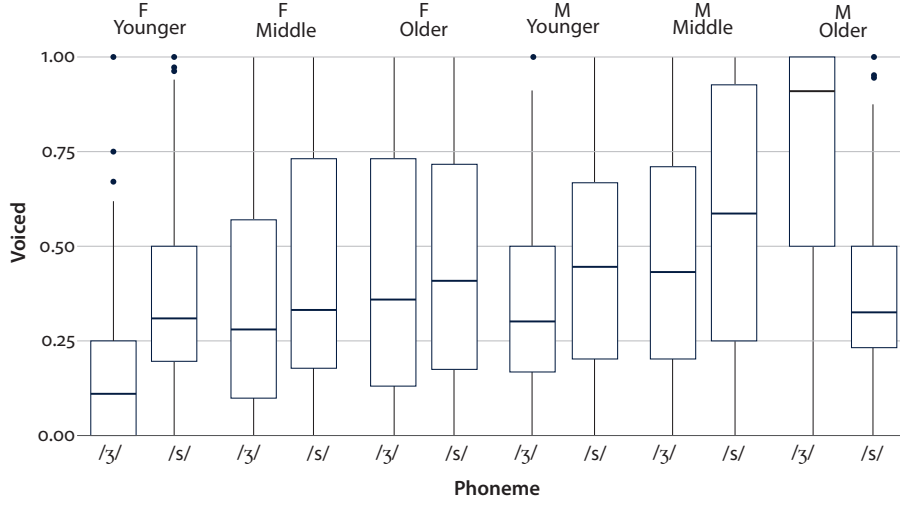

Figure 8. Percent voicing of /ʒ/ and /s/ by age and sex

8. Overall, a higher rate of voicing for /s/ was found in the present data than in Rohena-Madrazo (2015), although the patterns for both /s/ and /ʒ/ are consistent across both studies. Intervocalic /s/ voicing in Montevideo should be examined further in future studies.

The only group that shows a higher voicing rate for /ʒ/ than /s/ are older men, suggesting that these speakers maintain a phonologically voiced phoneme. The other groups, however, show voicing rates at or below those of /s/. Following Rohena-Madrazo (2015), this result indicates that the voicing that does occur is due to phonetic factors such as gestural overlap, and therefore the change from /ʒ/ > /ʃ/ has been completed. In this sense, Montevideo is like BA, as both younger men and women have lower rates of voicing for /ʒ/ than for /s/. However, the results in Figure 8 indicate that younger men and women do not (de)voice at equal rates; the boxplot for younger women bottoms out at 0% voicing, and maxes out at approximately 25% voiced. Younger men, on the other hand, have middle quartiles between 20% and 50% voicing. So, while both groups show the same phonological

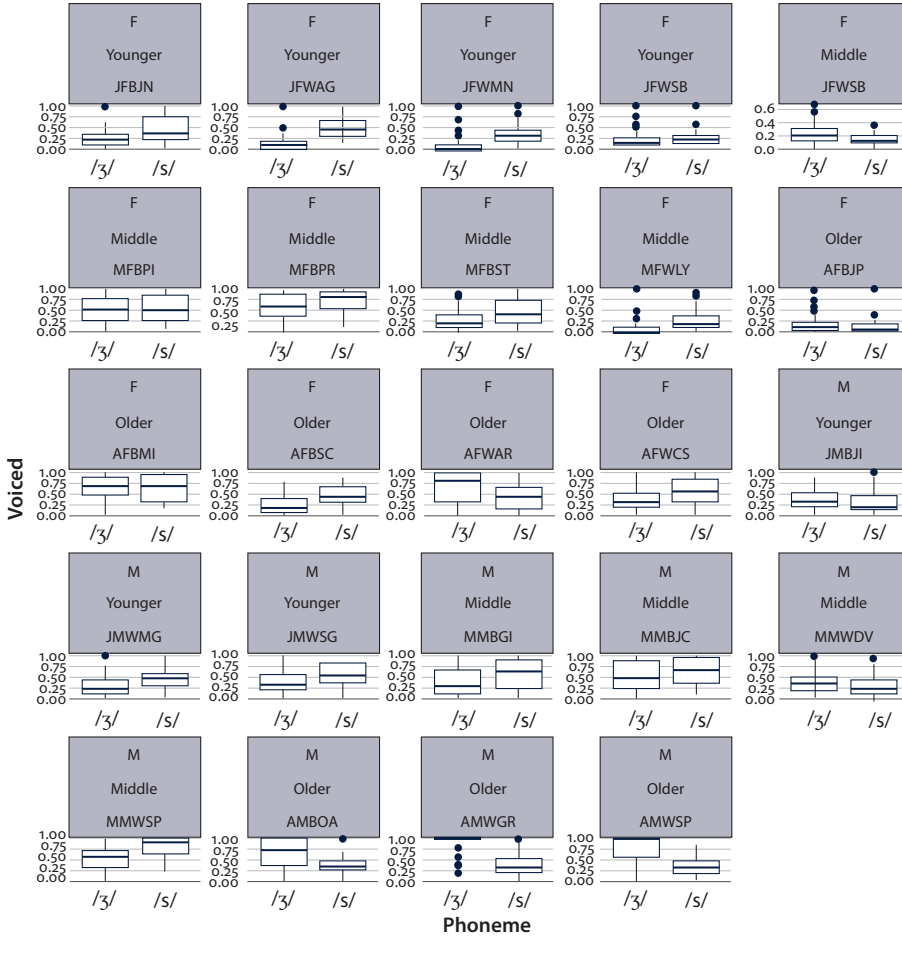

Figure 9. Percent voicing of /ʒ/ and /s/ by speaker

pattern of devoicing, on a phonetic level they still behave differently. In fact, it is interesting that many younger women do not even allow phonetic voicing of /ʃ/, suppressing voicing rates far below those of /s/. This trend can be clearly seen in an examination of individual voicing patterns, as in Figure 9.

Three of the four younger women suppress the voicing of /ʒ/ far below that of phonologically unvoiced /s/, with the fourth producing relatively equal rates of voicing for both phonemes. This suggests that some younger women may be forcibly maintaining a voiceless [ʃ] for social reasons. Two of the three younger men, however, show much more similar voicing rates between /ʒ/ and /s/, and one speaker (JMBJI) maintains voiced /ʒ/ at a greater rate than /s/. So while younger speakers of both sexes behave the same at a phonological level, in that as a group they voice /ʒ/ at a similar or lower rate than /s/, a comparison of the range of voicing in Figure 8 along with individual patterns in Figure 9 suggest that there are still important differences between younger men and women according to this criteria.

5. Discussion

The results above allow us to answer our initial research questions, repeated here for convenience.

RQ1: What are the social and linguistic factors that influence voicing of the palatal fricative /ʒ/~/ʃ/ in the Spanish of Montevideo, Uruguay and surrounding areas?

Three factors were found to be significant predictors of the percentage of (de)voicing in Montevideo: age, sex and syllable stress, with younger speakers, women and tonic syllables all favoring higher rates of devoicing. Women also led the change to /ʃ/ in BA (Chang, 2008; Rohena-Madrazo, 2015), as is commonly found in studies on language change (Labov, 2001). Likewise, younger speakers show higher rates of devoicing in BA, as the change progresses across time (Chang, 2008; Fontanella de Weinberg, 1983; Rohena-Madrazo, 2015; Wolf & Jimenez, 1979). The same patterns have also been found in the few studies on palatal (de)voicing in Montevideo (Barrios, 2002; Thun & Elizaincín, 2000; Winkler, 1998). Finally, tonic syllables have been shown to preserve contrasts to a higher degree than atonic syllables (cf. Penny, 2002 on the differing behavior of vowels and consonants according to syllable stress in the history of Spanish). Additionally, stressed syllables are overall of longer duration, which likewise makes them more likely to be voiceless; fricatives in tonic syllables were significantly longer than in atonic syllables in the present data (see footnote 9). This trend is reflected here in the higher rates of devoicing in stressed syllables.

RQ2: How does Montevideo compare to previous studies on BA? Has the change from /ʒ/ to /ʃ/ been completed in Montevideo, as determined by social and phonetic criteria, and as reported for BA?

The results of this study indicate that the change from /ʒ/ > /ʃ/ is well underway in Montevideo Spanish, a result which links this variety with the dialects spoken in and around BA, as coastal regions of Uruguay, including Montevideo, are likely affected by the same inter-urban transmission of /ʃ/ taking place throughout Argentina (Lang-Rigal, 2015). Chang (2008) found 85% devoicing across younger speakers in BA, and Rohena-Madrazo (2015) reports a similar 81% devoicing for middle class younger speakers.[9] Younger speakers in the present study produced 76% devoicing on average, slightly lower than the results for BA in previous studies.

One of the main driving questions behind the present study is whether we can consider Montevideo Spanish to be identical to BAS with respect to *sheísmo*. Previous studies of BAS have concluded that the change to /ʃ/ is complete, at least for middle class speakers in that dialect, using either social criteria (the lack of sex differences in Cameron, 2011 Chang, 2008), or a comparison with the phonetic voicing of /s/ (Rohena-Madrazo, 2015). At the same time, the few studies on Montevideo Spanish suggest that speakers in this city are following the same trends as in BA (Barrios, 2002; Winkler, 1998). Results indicate that sex differences in devoicing persist among the youngest speakers in Montevideo (Table 4, Figure 7), a finding that distinguishes Montevideo from BA, and supports Lipski's (2004) observation that Montevideo may be slightly behind BA in the change to /ʃ/. Likewise, Rohena-Madrazo (2015) finds that all but one of the younger speakers (mentioned in footnote 12) are 'devoicers'; that is, they display rates of /ʃ/ voicing that are at or below the rates for /s/. While there is considerable variation among older speakers in those studies, younger speakers in BA were found to be remarkably consistent in their production of /ʃ/.

A comparison of younger speaker mean voicing rates between the present Montevideo study and Chang's (2008) BA data clearly demonstrates the differences between the two cities.

Figure 10 shows the mean percent voicing for younger speakers from the present study, compared to younger speakers from BA in Chang (2008). Montevideo speakers are on the left (speaker codes JFWAG through JFWMN), and Chang's (2008) BA speakers are on the right (F1 through M5). The BA speakers are much more consistent in their (de)voicing, with an average rate of 15% voicing, and a

9. Upper class younger speakers in Rohena-Madrazo (2015) showed a lower mean devoicing rate, 71%, but individual speaker results show that this difference is due to the productions of one speaker (p. 308). With that speaker removed, younger speakers of both social classes behave virtually identically.

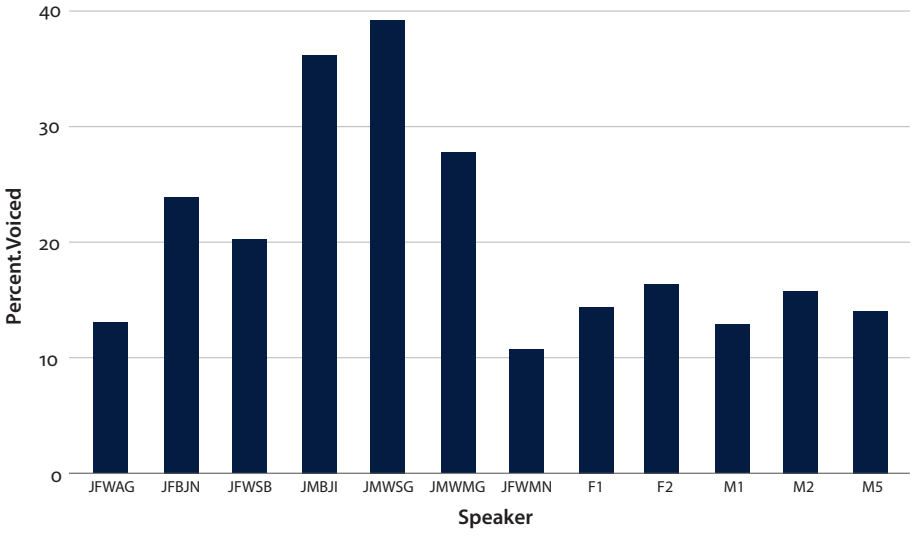

Figure 10. Percent Voiced: Younger speaker comparison, Montevideo and BA. BA data from Chang (2008). Montevideo speakers on the left (JFWAG-JFWMN); BA speakers on the right (F1–M5)

range from 13% to 16%, regardless of sex. The Montevideo speakers, however, show much more variation. Only two speakers voiced at less than 20%, and the average voicing for this group was 24%, nine percent higher than the average rate for BA. Likewise, the range of voicing across Montevideo young speakers is from 11% to 39%, a range of 28%. The three highest voicing rates in Montevideo were all produced by men (speakers JMWSG, JMBJI and JMWMG), again reinforcing the persistent sex differences among younger speakers shown in the analysis in Section 5.

Likewise, a closer examination of individual patterns for /ʒ/ and /s/ in Figure 9 indicates that, of the 24 Montevideo participants, 15 can be considered 'devoicers' in the sense of Rohena-Madrazo (2015). Of the nine 'voicers', five are men, including all three older men. In sum, results indicate that women are a full generation ahead of men in the adoption of /ʃ/ in Montevideo, a trend that continues among young speakers.

Returning then to the question of whether Montevideo and BA are identical with respect to *sheísmo*, results indicate that the answer is no – at least not yet. Montevideo appears to be a generation behind BA in the adoption of /ʃ/, and in this way behaves similarly to other areas of Argentina, that are receiving the change through diffusion from BA (Lang-Rigal, 2015). A future study should examine interactional patterns between cities in the River Plate region, to determine how the change to /ʃ/ extends from BA to other regions. The present results suggest that geographic proximity may play a role. As seen in the conditional inference tree in

Figure 7, region (Montevideo vs. Nueva Helvecia) is only a significant factor for older men, with speakers from Nueva Helvecia showing lower voicing rates than their peers from Montevideo, although these results are tentative due to the low number of speakers from outside Montevideo. Nueva Helvecia is a town in the Department of Colonia, the geographically closest part of Uruguay to BA. Future study should examine this possibility in more detail, including the role that transportation routes may play in diffusing linguistic changes from BA to Uruguay (see Trudgill, 1974). Likewise, comparative sociolinguistic analysis of palatal (de)voicing in cities across the *Rioplatense* region would shed light on the processes of transmission and diffusion that may be taking place with a variety of linguistic variables (see Tagliamonte & Denis, 2014).

6. Conclusions

This study has shown that the change from /ʒ/ to /ʃ/ is not yet complete in Montevideo, as the percent (de)voicing in this dialect continues to show significant sex differences among all age groups, a result which distinguishes Montevideo from BA (Chang, 2008). While a comparison of /ʃ/ and /s/ voicing indicates that younger women most likely possess an underlyingly devoiced phoneme /ʃ/, the process is still variable for older speakers and men. Montevideo lags a generation behind BA in this change, suggesting that devoicing began later in Montevideo, as the result of diffusion from BA. These results also suggest that the future of *sheísmo* in Montevideo is likely identical to that in BA, where /ʃ/ will become essentially the only form within a generation or two, at least among most social groups. At the same time, the possible persistence of subtle phonetic or sociolinguistic differences should be investigated, as well as possible future divergences as the results of sociolinguistic processes. This research also underlines the need for more detailed studies of *Rioplatense* varieties outside of BA, without simply assuming a priori that all of these regional lects are identical to *porteño* Spanish.

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PART III

Language attitudes & choice

CHAPTER 8

‘Debemos aprender y manejar un poco mejor el español’

An approach to the linguistic attitudes of the Afro-Peruvian people in the district of El Carmen (Chincha)

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This is a preliminary research about the linguistic attitudes of Afro-Peruvian participants living in El Carmen, a district located in Chincha (Peru), at the South-Central coast of Peru. Data were collected from in-depth interviews conducted to Afro-Peruvian participants born in El Carmen. Linguistic attitudes are addressed from a Mentalist approach (González, 2009; Zamora, 2015). Results reveal that Afro-Peruvian participants experience linguistic uncertainty about their own way of speaking as they consider it incorrect compared to the Lima inhabitants’ way of speaking, which they perceive as more prestigious. On the other hand, they tend to assess negatively the way of speaking of the Peruvian Highlands inhabitants, as they consider these regions are plenty of indigenous languages from the Andes.

Keywords: linguistic attitudes, Afro-Peruvian Spanish, Afro-Peruvian people, El Carmen district, Chincha province

1. Introduction

Afro-Peruvian people in Peru experience invisibility associated with strong racism, racial discrimination and social exclusion. Their current social situation is related to the “context of social exclusion and discrimination which they faced during the colonial period, and the absence of means for the expression of their own identity and culture, a continuing condition during the Republican period” (Defensoría del pueblo, 2011, p. 40).[1] According to the reports of the 2017

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https://doi.org/10.1075/ihll.29.08jim

Population and Housing Census carried out by the National Institute of Statistics and Informatics – NISI (Instituto Nacional de Estadística e Informática, 2018), 3.6% of the Peruvian national population identifies themselves as Afro-Peruvians, approximately 1 million inhabitants (828,841 people).[2] Their location as population in the Peruvian area is decentralized in different regions and departments: Tumbes, Piura, Lambayeque, La Libertad, Cajamarca, Ica, Callao, San Martin, Lima, Amazonas and Ancash (Instituto Nacional de Estadística e Informática, 2018, p. 221). One of the geographic areas known for the historical presence of Afro-Peruvians is the province of Chincha, located in the department of Ica, at the South-Central coast of Peru.

The province of Chincha is characterized by the presence of Afro-Peruvian communities since its formation (Mori, 2018, p. 152). During the sixteenth century, enslaved people from Africa (Guinea, Angola, Biafra, Congo) arrived to these regions to work in agricultural estates (*haciendas*) (Barriga & Lossio, 2014, p. 45). The African population performed agricultural work in the valleys (as in Ica province) and domestic work (Aguirre, 1993). Over the years, and due to earthquakes, that struck the Ica valley in 1664 and 1883, the Afro-Peruvian population diminished. At present, El Carmen is one of the eleven districts of Chincha, renowned for the foundation of populated centers or Afro-Peruvian communities, such as El Guayabo, Chamorro, Hoja Redonda, Punta de la Isla, among others.

Our research takes place in the district of El Carmen. This district is recognized by the historical presence of Peru's African-descendant population: "Few places in Peru, town or neighborhood, port or rancheria, shelter a black population as pure and compact as in the El Carmen district"[3] (La Prensa, 1966, p. 42). We chose El Carmen because it is a district with a native Afro-Peruvian population. As mentioned before, El Carmen gathers the Afro-Peruvian population centers of the area. However, for this preliminary study, we conducted the investigation only in the central area of El Carmen (referred to as 'El Carmen urban area' or 'El Carmen district') not including the populated centers.

Our choice to investigate the evaluation of Afro-Peruvian inhabitants of El Carmen started first with our interest to study one of the most disregarded populations in Peru, such as the Afro-Peruvian people. Second, although we find linguistic studies on Afro-Peruvian Spanish conducted by Cuba (1999, 2002), Gutiérrez Maté (2018), Lipski (2005), and Sessarego (2015), studies related to this Spanish language variety called the Afro-Peruvian Spanish are still limited, especially the

2. However, due to the strong racism, it is really hard to determine how many Afro-Peruvian people compose the nation based on a question of self-identification.

3. Our translation.

ones addressing subjects related to beliefs, ideologies and linguistic attitudes toward Afro-Peruvian people's manner of speech. Such studies are relevant from a political perspective mainly because they are related to the country's language policy and planning. Likewise, it contributes to the cultural investigation of the Afro-Peruvian people.

Note that a recent publication, following our data-collection procedure, is directly linked to our topic of interest. Gutiérrez Maté (2018) documented the linguistic awareness of speakers from El Carmen district in order to perform an analysis of linguistic variation in the process of "ethnicization" of the region. One of the most important findings describes the lack of a linguistic identity of the *carmelitanos* toward the manners of speech of their community. This conclusion is especially interesting and it is linked to the preliminary results that we obtained from our research.

The main purpose of this study is to perform a preliminary analysis on how Afro-Peruvian participants from El Carmen district value their own Spanish variety compared to the other Spanish varieties in Peru. A first hypothesis acknowledges that Afro-Peruvian *carmelitanos* tend to value their Spanish variety positively in the affective component of linguistic attitudes, while the Spanish spoken in Lima tends to be positively appreciated in the cognitive component.

2. Theoretical approach

In this study, linguistic attitudes are addressed from a theoretical-mentalist approach, which considers attitudes to be the speaker's inner mental state regarding a language or a language variety (Agheyisi & Fishman, 1970; Cooper & Fishman, 1974; Fasold, 1996). As Fishman (1982) properly remarks, attitudes are not inherited. In other words, attitudes are (re)built throughout social interactions. Speakers think, feel and act in a certain manner because they are predisposed by value judgments toward the languages or varieties of a language. According to Labov (1966) (cited in Moreno Fernández, 2009a, p. 50), sociolinguistic awareness is formed during adolescence and at the ages of 17–18 a greater social awareness about manners of speech is developed. At this age, speakers have shaped a strong value of a language.

There are discrepancies regarding the components of linguistic attitudes. Mentalist studies usually address the cognitive, affective and behavioral components. As Zamora (2015) remind us, "mentalists usually think that attitudes have subparts such as the *cognitive* (knowledge) or cognoscitive, the *affective* (feelings)

and the *conative* (action) or the one governing our conduct/ behavior" (p. 25).[4] The relationship between these components is truly complex, since speakers may oppose results between them. In other words, they could have positive opinions and feelings for a language and, in turn, a negative behavior toward the same language. Zamora (2015) states that the mentalist approach evaluates, mainly, the cognitive and affective component (p. 26). These are the components to be addressed in our study.

It is necessary to point out that investigations on linguistic attitudes have come with a remarkable methodological development. Mentalist experts resort to more complex techniques compared to supporters of the behavioral approach, who conceive attitude as the behavior of acceptance or rejection of a language (Fasold, 1996, p. 230), for which they employ direct observation. Mentalist studies acknowledge direct techniques (interviews, surveys, observation) and indirect techniques (the masking technique or *matched-guise* technique). Both direct and indirect techniques investigate cognitive and affective evaluation. Therefore, the sociolinguistic-interview technique was addressed in this study, which is detailed in Section 4.

For the development of our analysis, we will also use terms referring to sociolinguistic phenomena or concepts linked to linguistic attitudes. Some of the concepts mentioned in this study are the following:

- *Linguistic awareness.* Speakers' knowledge about languages and manners of speech (varieties) (Zamora, 2015, p. 27). This linguistic awareness can manifest itself when choosing one language over another.
- *Linguistic insecurity*. It is evident "when such coincidence [between the speaker's language and what is considered correct] diminishes or disappears" (Moreno Fernández, 2009a, p. 180).[5] In other words, if a speaker considers that his/her language is stigmatized, he/she will feel insecure about such choice and use.
- *Linguistic variety.* "A linguistic system used by a group of speakers in certain geographical or social contexts" (Moreno Fernández, 2009b, p. 128).[6]
- *Speech community*. "A group of speakers who share at least one linguistic variety, some rules of use, an interpretation of such use, some attitudes and the same evaluation of linguistic forms" (Moreno Fernández, 2009b, p. 128).[7]
- *Linguistic prestige.* "The process of granting esteem and respect to some individuals or groups that meet certain characteristics and which leads to the imitation

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7. Our translation.

of those individuals or groups' behaviors and beliefs" (Moreno Fernández, 2009a: 187).[8] In addition, the author points out that "speakers grant positive attitudes to the prestigious" (p. 187).[9]

– *Linguistic loyalty.* "It has as its background a feeling of affection or emotion toward what one has learned in the first stage of life" (Moreno Fernández, 2009a: 244).[10]

3. Previous studies

This study's background includes the study conducted by Arias (2014) within the research project Linguistic Identity and Attitudes in Spanish-speaking Latin America (LIAS, 2014).[11] The researcher explores Lima speakers' evaluation of the Spanish of Peru and its varieties: Central Coast, Southern Coast, Northern Highlands, Central Highlands, Southern Highlands, North East, and Central East. Research was carried out in Lima and included 400 participants classified according to the variables of age, gender, and socioeconomic status. We used the sociolinguistic questionnaire designed in the LIAS (2014) project. This instrument includes questions on cognitive-linguistic perceptions, opinions about idiomatic accuracy and the perception of other countries' Spanish language. Findings include that the linguistic attitudes are positive in the Central Coast (21.4%) and North (27.7%) of Peru, where Lima, Piura, and Trujillo city stand out. The study also revealed that there are negative linguistic attitudes toward the Southern and Central Highlands, as well as the North East area. (Arias, 2014, p. 1245).

De los Heros (1999) conducted a study of linguistic attitudes with speakers from Lima and Cusco in order to explain the varieties of overt and covert prestige. For this purpose, it also analyzes attitudes about Quechua, since some of the participants speak Quechua as their first language. The researcher uses the hidden-pair technique,[12] together with the semantic differential scale, to measure

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9. Our translation.

10. Our translation.

11. This project was carried out in 20 capitals of Spanish-speaking countries from 2009 to 2012. The main objective was to analyze Spanish speakers' linguistic attitudes toward the dialectal varieties of the same language.

12. An indirect technique used, mainly, in studies of linguistic attitudes with a mentalist approach. It consists in the presentation of recordings or speech in different languages or language varieties. Those evaluating the recordings do so under the assumption that they evaluate different

linguistic attitudes. It displays a classification of pairs of opposing adjectives which measure the dimension of competence (intelligence, ability, etc.), social appeal (sympathy, sociability, etc.) and morality (honesty, credibility, etc.). The sample includes 325 participants from Cusco, students at the Universidad San Antonio Abad del Cusco, 87 participants and students at the Pontificia Universidad Católica del Perú, 48 participants at the Universidad Nacional Mayor de San Marcos, and 11 participants without higher education. On the one hand, results show that Lima accents obtained the most positive scores in the three dimensions of hidden pairs. On the other hand, Quechua receives a more positive evaluation from Cusco participants. According to De los Heros (1999), these results are related to an expression of identity.

De los Heros (1994) also conducted a study on the relationship between the use and self-perception of stigmatized forms of Andean Spanish and bilingual Spanish in Peru. This study analyzes the linguistic attitudes from the most important aspect: Spanish internal variation. The author obtains the following characteristics of the sample: (1) speakers of Andean origin, (2) Andean Spanish speakers, and (3) speakers living in Lima. The variables used were first language (Quechua or Andean Spanish) and education level. In total, 10 people with the aforementioned characteristics were interviewed. Interviews include the application of a questionnaire based on thirteen questions, each of them representing an Andean feature. Results showed a significant relationship between the use and perception of stigmatized forms: "Speakers of bilingual Spanish showed a more significant use and a lower perception than speakers of Andean Spanish" (De los Heros, 1994, p. 58).[13]

The studies presented thus far have addressed the matter of linguistic attitudes in Peru. Arias (2014) is used in this preliminary study as the main reference. The methodological approach and instruments are taken as a model. Results are contrasted with the evaluations given by Afro-Peruvian participants. Although the Arias study differs in objectives and participant selection, we take it as a close reference for our study. De los Heros (1994, 1999) are relevant as they explore the evaluation of the Peruvian Spanish manner of speech. The findings show agreement on positive evaluations of the Spanish spoken in Lima and negative evaluations of the Andean Spanish. These three previous studies are the closest studies in Peru related to our objectives.

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people. However, recordings are performed by the same person who speaks in different languages or language varieties. Thus, the speaker thinks that he evaluates a person, but in fact, he evaluates the language.

13. Our translation.

4. Methodology

4.1 Participants

We chose purposeful sampling to collect data. In other words, an equal number of participants were selected, taking into account social variables. As explained by Silva-Corvalán (1989), purposeful sampling "consists in establishing in advance the social categories and the total number of individuals to be included in the study. The researcher then chooses completely at random the speakers needed to fill each subgroup, balanced in number" (pp. 18–19).[14] One of the advantages of this sampling is the possibility of having equal groups of participants according to the categories the researcher is interested in. In our case, only gender and age were taken as control variables.

Table 1. Classification of participants

Young (18–25 years)		**Adults (26–45 years)**		**Seniors (46+)**	
M	W	M	W	M	W
1	1	1	1	1	1
1	1	1	1	1	1

A sociolinguistic questionnaire was given to 12 participants: 6 Afro-Peruvian men and 6 women, born in the El Carmen district. This sample was selected considering the following characteristics: (1) participants must be over 17 years old, taking into account the age indicated by Labov (1996) and cited by Moreno Fernández (2009a, p. 50): "the formation of sociolinguistic awareness starts in adolescence and during the age of 17–18 a greater social awareness of the manner of speech is shaped";[15] (2) they must have been born and lived in the community of El Carmen; and (3) their parents and grandparents must have been born in that area.

The variables considered in this study are age, gender, and education level. Three age groups were established: young people (18–25); adults (26–45); and seniors (46+). Regarding education level, primary, secondary, and higher education were considered.[16] Data on this variable are referential, since the difference in an equal number of participants for each category of this variable prevents a homogeneous comparison.

14. Our translation.

15. Our translation.

16. Each of these age groups corresponds to complete/incomplete studies. Initially, the variable education level (with four categories) had been considered as a control variable for the delimitation of the sample. However, during the fieldwork, no participants without education were found, and there were few participants who only had a primary-education level.

4.2 Instruments

Our questionnaire was developed based on the instrument designed for the LIAS (2014) project, and the studies undertaken by Salazar (2015) and Zamora (2015). This adapted questionnaire (see Appendix) is divided into four sections. The first section asks about the names the participants give to their language. The second section deals with cognitive-linguistic perceptions, both positive and negative: 'In which areas of Peru do you like how Spanish is spoken?', 'In which areas of Peru you do not like how Spanish is spoken?' A third section asks opinions regarding linguistic correctness; for this purpose, questions like 'What do you mean by speaking correctly?' were used. The last section is dedicated to identifying the traditional dialectal variety of El Carmen; in this section, there are questions such as: 'What is your opinion about the way of speaking in El Carmen?'; 'Do you feel identified with the way of speaking in El Carmen?' Additionally, a sociolinguistic profile was established for each participant, including age, place of birth, etc.

As mentioned above, this questionnaire is an adaptation of the instrument developed in the LIAS (2014) project. Questions were adapted considering our work objectives. A pilot test was conducted for each question. During this process of testing questions, we considered the questions that did not present difficulties, taking into account the different age groups of our participants. In the final application we considered the questions that did not present problems during the pilot test.

The questionnaire was applied during informal interviews. I personally made the questions to the participants and I took special care in obtaining the reasons (qualitative data) for each of their answers. The aim was to prevent the participants from seeing or reading the questionnaire in order to avoid possible access limitations.[17] Finally, the application of the questionnaire lasted 20 to 40 minutes. All interviews were recorded in audio and then transcribed.

5. Results

This preliminary study focuses on qualitative questionnaire answers. Answers regarding evaluations about the manner of speech in Peru and, specifically, in El Carmen district will be analyzed. The objective is to find, during a second stage of the investigation, a holistic analysis that considers a greater number of participants and questions inquiring about important facts for the study. Taking Zamora (2015) as a model, answers from the interviews will be analyzed. In this section, examples of the questions with qualitative answers will be displayed according to the order established in the questionnaire.

17. We were able to conduct interviews with elderly people more easily. In addition, if there were any illiterate participants, the application of the questionnaire would not be an impediment.

5.1 What do you understand by speaking Spanish correctly?

Responses to this question related speaking correctly either to the phonetic level or to the level of expression, a classification taken from Zamora (2015). Regarding the phonetic level, participants emphasized that speaking correctly means to pronounce the sentence segments completely, without eliding sounds, as in Examples (1a), (1b) and (1c).

(1) Phonetic level
   a. *Decir las palabras completas. No cortarlas.* (3F3E1G)
      'Pronounce all words completely. Do not reduce the words'
   b. *Correctamente, como lo estoy diciendo ahorita. El sonido.* (4F3E1G)
      'Correctly, as I am saying right now. The sound'
   c. *La pronunciación es mala.* (5M1E3G)
      'The pronunciation is poor'

Other answers are related to the level of expression. These answers indicate that speaking correctly is related to the communicative function of a language, as shown in Examples (2a), (2b) and (2c).

(2) Level of expression
   a. *Se llegue al mensaje; que se entienda el mensaje; el propósito que se quiere decir para satisfacer una necesidad. Cuestiones de entendimiento.* (1F2E3G)
      'Get the point; be sure the message is understood; the purpose of communication [is] to satisfy a need. [It is] a matter of understanding'
   b. *Buena expresión de la persona al dialogar con otro. Es el manejo que uno lleva. Uno da a entender cómo se expresa.* (6M1E3G)
      '[A person's] good expression when talking to another. It is the way you handle a situation. A person makes him/herself understood depending on how he/she expresses himself/herself'
   c. *Dejarse entender el mensaje.* (3M3E2G)
      'When your message is understood'

This second level appreciates the communicative function between speakers. Regarding this stage, Zamora (2015) states that "the transmission of ideas and emotions is the main function of a language, and as long as ideas and emotions are communicated correctly, the interlocutor is better reached" (p. 90).[18]

18. Our translation.

5.2 In which areas of Peru do people speak Spanish incorrectly?

Five out of twelve people interviewed responded that the Peruvian Highlands was the area in which people speak Spanish incorrectly. Young men with higher education expressed that in the Highlands people speak Spanish incorrectly.

(3) *La sierra. Es muy seguro de que necesitan tener más interés en el idioma, porque es complejo.* (3M3E2G)
'In the Highlands. They surely need to put more interest into language, because it is complex'

(4) *En Ayacucho, porque no saben pronunciar la palabra.* (5M1E3G)
'In Ayacucho, because they do not know about word pronunciation'

Examples (3) and (4) show the reasons why participants consider that in the Highlands people speak Spanish incorrectly. However, the following question allows for further elaboration (see Examples (5)–(7)). Two people responded that there is no area where they consider people to speak Spanish incorrectly. This suggests that the question does not anticipate responses that refer to any specific area.

5.3 In which areas of Peru do people speak the worst Spanish?

Five out of twelve participants answered that in the Highlands people speak the worst Spanish. People interviewed are adult men with a high school education. Four out of six participants identified the Highlands. On the other hand, three people identified no area.

(5) *Ellos son los padres de nuestra lengua quechua. Entonces, han adoptado otra lengua: el español. Y, entonces, les es difícil hablarlo.* (1M2E2G)
'They are the parents of our Quechua language. Then, they have adopted another language: Spanish. Thus, it is difficult for them to speak it'

(6) *En la sierra, porque ellos hablan más quechua y el aimara.* (2M2E2G)
'In the Highlands, because there people speak more Quechua and Aymara'

(7) *Los nativos del quechua no tienen un buen dominio.* (6F1E3G)
'Native speakers of Quechua do not have a good command of Spanish'

Examples (5), (6) and (7) explain why participants consider the Highlands as the area where people speak the worst Spanish. The reason is related to areas where Spanish is spoken as a second language, but the most important reason is that people from these areas have indigenous languages, specifically Quechua and Aymara (main indigenous languages in Peru) as first languages.

5.4 In which areas of Peru do you like how Spanish is spoken?

Most answers for this question were as follows: three participants (especially women with a high school education) answered that they like the way of speaking in the jungle; three people (men with a high school education) mentioned they like the way of speaking in Chincha; and three people (adult women with higher education) answered that they do not prefer any area in particular. The examples shown in (8) give representative responses.

(8) *No area*

a. *No tengo ninguna particularidad. No conozco mucho el Perú.* (1F2E3G)
'I do not have any particular area in mind. I do not know much about Peru'

b. *Solo he estado en Lima y aquí. Para mí, es igual. No hago ninguna diferencia.* (2F2E3G)
'I have only lived in Lima and here. For me it is the same. I do not see any difference'

c. *Cada departamento o región del Perú tiene un modo diferente. Específicamente, no.* (6F1E3G)
'Each Peruvian department or region has a different style. Specifically, I will say no area'

Answers (8a) and (8b) show that participants do not express any preference for a specific manner of speech because they do not know many areas of Peru outside Chincha, nor do they mention Chincha as an answer to this question. Answer (8c) refers to the fact that in each area of Peru people speak differently, thus it does not establish any preference.

(9) *In the jungle*

a. *En la selva porque me ha gustado la forma de la expresión que tienen ellos. Acá o en otros sitios hay mucha jerga.* (3F3E1G)
'In the jungle, because I like the way people from the jungle speak. Here or in other places, people use many slang words'

b. *En la selva porque tiene un acento. Me gusta el acento.* (5F1E2G)
'In the jungle, because people there have an accent. I like the accent'

Answer (9a) suggests that the participant likes the way that the people in the jungle speak Spanish. The informant also mentions that in El Carmen people use slang words, which is the reason why he does not like the way of speaking in his district. Answer (9b) singles out the jungle because of the accent. This positive assessment emphasizes suprasegmental traits.

These three types of answers reject the city of Lima as an alternative, which was the majority answer to the question 'In which area of Peru do people speak Spanish

correctly?' As per the quantitative answers, three out of four young participants answered Lima, and one of them specifically mentioned the district of San Isidro. This shows that the variety considered as correct is not necessarily the one preferred in terms of manner of speaking.

5.5 What is your opinion on the manner of speaking in El Carmen district?

Five out of twelve participants answered that the way of speaking in El Carmen district is good. They are mainly adult men with high school and higher education.

(10) *La pronunciación es buena. Gracias a Dios, estamos en un distrito donde está la presencia de la escuela, de la educación, el cual te permite ir corrigiendo.* (1F2E3G)
'Pronunciation is good. Thanks to God, we live in a district with schools, education, which allows you to improve'

(11) *Para mí, está bien. Es como la pronunciación de un distrito.* (2M2E2G)
'For me, it is fine. It is like the pronunciation of a district'

(12) *Buena opinión. Es un castellano semicorrecto. Han adoptado una lengua con su jerga.* (1M2E2G)
'It is ok in my opinion. It is a semi-correct Spanish. People have accepted a language with slang words'

(13) *Se aprecia una comunicación correcta.* (4M1E3G)
'There is a correct form of communication'

Answers (10) and (11) refer to elements related to the phonetic level of pronunciation. In the case of answer (10), the school is emphasized as an entity that corrects bad pronunciation in the district. Answer (12) mentions that it is a semi-correct Spanish because people have accepted slang words, and answer (13) indicates that communication is correct: communicative function.

5.6 Do you feel identified with the way of speaking Spanish in El Carmen?

Ten out of twelve participants answered that they do identify with the way of speaking in the El Carmen district. This group is specifically composed of young participants. The two remaining participants answered that they felt indifferent to the way of speaking in the district.

(14) *Sí, muy identificado. Es una forma propia de nosotros, con la que se pueden entender.* (6M1E3G)
'Yes, I feel very identified. It is our own way of speaking, with which we can understand each other'

(15) *Sí, me siento identificada. Los rasgos físicos son característicos, también.* (1F2E3G)
'Yes, I feel identified. Physical features are distinctive, too'

Positive feelings of identification with the variety of an Afro-Peruvian community such as the El Carmen district reaffirm the identification with their Afro-Peruvian cultural background: "Verbal behavior is also an act by which identity is affirmed as members of a social group, as residents in a region and as citizens of a nation" (quoted in Zamora, 2015, p. 137).[19]

5.7 Do you think that in El Carmen district people speak Spanish correctly?

Six out of twelve participants answered no. They are mainly young women with higher education. Examples are as follows:

(16) *Nunca se va a llegar a hablar como una persona que nace nosotros. No es nuestra lengua original. Nos han impuesto el castellano. No es perfectamente.* (1F2E3G)
'You will never get to speak correctly. It is not our original language. They have imposed Spanish on us. It is not spoken perfectly'

(17) *No, porque cortan las palabras.* (6F1E3G)
'No, because people omit words'

(18) *No se habla correctamente. Es por la enseñanza. El profesor que enseña castellano no llegas a entender. No hay buena enseñanza en el colegio.* (3M3E2G)
'It is not spoken correctly. It is because of the way they teach. It is difficult to understand teachers teaching Spanish. There is no good teaching at school'

(19) *No correctamente. La mayoría de aquí no tenemos una forma absoluta de entendernos. La forma de aquí es un poco golpeada. Debemos aprender y manejar un poco mejor el español.* (6M1E3G)
'Not correctly. Most of us here do not have an absolute way of understanding each other. Our style of speaking here is a bit broken. We must learn and handle Spanish a little better'

(20) *No, nunca. A veces nos comemos una letra. Ya es herencia de cada quien.* (3F3E1G)
'No, never. Sometimes we omit letters. It is part of each one's inheritance'

Examples (17), (19) and (20) mention reasons related to phonetics, such as the elision of segments in pronunciation. In Section 5.1 an evaluation related to the phonetic level was mentioned. Regarding this level, intuition says there is an elision

19. Our translation.

of segments in pronunciation, which is a stigmatized feature in the district. Other examples indicate that people do not speak Spanish correctly in the El Carmen district because Spanish there is not the first language, as in Example (16); or due to the way of teaching Spanish, as in Example (18).

5.8 If you could change your way of speaking, what accent would you like to have?

Most participants mentioned no accent. Nine out of twelve participants mentioned that they would not like to change their accent. These people are young men and adults with high school and higher education.

(21) *No, porque es lo tradicional. Lo típico. Es parte de la comunidad.* (2F2E3G)
'No, because it is traditional. It is something representative. It is part of the community'

(22) *No porque le quitaría identidad, porque esta manera de expresar el castellano ya es marcada desde. ¿No es 100 años? El Carmen tiene antecedentes.* (3M3E2G)
'No, because it would take away the identity, because this way of speaking Spanish is already marked since 100 years ago, right? El Carmen has a background'

(23) No, es parte de la identidad. (4M1E3G)
'No, it is part of the identity'

Answers (21), (22) and (23) refer to reasons related to the cultural identification people have in El Carmen district. This question shows that Afro-Peruvian men, in particular, have a strong identity with their district.

6. Analysis

The first question of the preliminary results that investigates what it would be to speak correctly has presented equal evaluations on the phonetic and expression levels. Taking the first level as a point of analysis, it emphasizes a particular characteristic described in so-called Afro-Peruvian Spanish. This particular characteristic defines the non-pronunciation or change of segments caused by elisions, aspirations or other phenomena. One of the regular aspirated sounds described in this variety is the sound /s/ (Sessarego, 2015, p. 30). In the authors' fieldwork (Cuba, 1999, 2002; Sessarego, 2015), this aspect has been documented in the El Carmen district. The positive evaluation of word pronunciation without elisions or changes in the segments is linked to the status granted by the *carmelitanos* to these speech patterns.

At this level of analysis, it is important to recognize which social characteristics are linked to this pronunciation. In other words, who would be the speakers who have a good pronunciation in the community for the *carmelitano* participants or, even with greater emphasis, who would be the speakers who have this type of elisions or changes in pronunciation? Negative evaluations of certain characteristics of so-called Afro-Peruvian Spanish can refer to stigmatized forms within the community or features of lower social and linguistic prestige. In this regard, it will be necessary to carry out a larger study concerning these problems and questions.

Section 5.2 refers to the areas of Peru where Spanish is perceived to be spoken incorrectly, and Section 5.3 refers to the areas of Peru where the Spanish is judged to be the worst, indicating a tendency to have negative linguistic attitudes toward the way of speaking of the Highlands in Peru. The Andean Spanish variety receives the most negative evaluations from participants. The reason to consider Andean Spanish incorrect or the worst variety is mainly because Andean areas are regarded as spaces where native languages such as Quechua or Aymara are spoken. In these areas, the local Spanish variety receives much more negative evaluation because Spanish is considered to be a second language and – the main reason – the primary language is regarded as an indigenous language. Participants' opinions reveal a linguistic discrimination against the Highlands variety. This negative evaluation matched with Arias' (2014) findings, who points out that people born in Lima (*limeños*) tend to negatively evaluate the Spanish spoken in the South and Central Highlands. Apparently, there is a generalized negative evaluation of Andean speech patterns. During our interviews, our attention was drawn toward the fact that the participants only acknowledged Andean areas as spaces where indigenous languages are spoken – and do not consider Amazonian regions that also have native speakers of the languages of the jungle. This is an important fact to take into account in a larger study. They probably indicated Andean areas because these areas hold the majority of the Andean languages in the country. Likewise, the El Carmen district has a more direct relationship with Andean people because of the strong connection between Afro-Peruvian and Andean people: migration of Andean people from Huancavelica and Ayacucho who work on farms.

Additionally, preliminary results in Section 5.4 show a predisposition of positive linguistic attitudes toward the way of speaking in the jungle. It is also mentioned that there is no preference for a particular way of speaking in the country as people ignore the language varieties. Regarding the way of speaking in the jungle, it is recognized by its particular expression and accent. Evaluations referring to the phonetic-prosodic level of the jungle's way of speaking are mentioned in the interviews. On the contrary, other participants, especially women, mention not preferring a particular area of Peru in which they like the way of speaking Spanish. This is possibly due to the relative isolation of this area. Adult women, in

particular, tend to remain in their communities. However, it is important to note that these communities receive daily visits and, mainly on weekends, from national and foreign tourists for cultural interest, celebration of the Black Summer, cultural festivities such as the *Hatajo de Negritos*, among others.

In addition, the quantitative data show that Spanish spoken in the city of Lima is regarded as the "correct" variety of Spanish: Three out of four young participants had a positive evaluation of the Spanish spoken in Lima.[20] In this regard, a young participant specifically mentioned the district of San Isidro, located in Lima, characterized by the presence of high society. Positive evaluation of the way of speaking Spanish in Lima is because it is considered to be the standard and correct variety of Spanish. Since it is regarded as correct, it receives more linguistic prestige nationwide. Results of De los Heros (1999) also conclude that the Lima variety receives positive evaluation. Another similar case could be found in Arias (2014), who assigns positive linguistic attitudes to the Central and Northern Coast, such as Lima and Trujillo cities. The findings of Arias (2014) and De los Heros (1999) show that, in general, the speech patterns considered to be correct are located on the Central or Northern coast, especially in the city of Lima. The difference in the choice of the variety considered to be preferred (the variety of the jungle) and the other regarded as correct (the variety of Lima) reveals that a relationship between the correct and the preferred form chosen by the speakers does not necessarily exist. Finding the reasons or justifications behind the choice of Lima as the area with the correct way of speaking is a pending topic in the El Carmen district.

With respect to linguistic attitudes on the ways of speaking in El Carmen, there is a positive predisposition to value the affective dimension of linguistic attitudes, since their dialectal variety is linked to positive feelings of integration and identity toward their speech community. On the one hand, this is evident in the mostly positive answer to the question presented in Section 5.6, regarding identification with the way of speaking in El Carmen. On the other hand, the open question (Section 5.5), regarding the opinion on the way of speaking in El Carmen, showed agreement in answers categorized as positive answers. In this question, five participants mentioned that the way of speaking in El Carmen is good compared to other isolated answers that qualified or described them as African, colloquial, fast or mixed ways of speaking.

On the contrary, there is a different view regarding the question related to idiomatic correctness in Section 5.7 of the results. Half of the participants mentioned that in El Carmen Spanish is not spoken correctly, five participants answered that it is spoken correctly and another one hesitated. The negative responses correspond

20. Although data were not presented in the results section due to the lack of qualitative information for this question, we consider it important to mention this finding here.

mainly to young people. Among the reasons, their negative choice was mainly due to the lack of full pronunciation, or elision, (of sounds) in speech. *A veces nos comemos una letra* 'sometimes we leave out a letter', *porque cortan las palabras* 'because they cut words'. Remember that the linguistic description studies about the Spanish of Chincha (*chinchano*) have presented elision of segments in their literature. Cuba (2002, pp. 30–33) explained that the Spanish of Chincha is characterized by the omission of the segment /r/, consonant fluctuation of segments /r/, /l/, /d/, consonantal nasalization and neutralizations. Likewise, Cuba (1999, p. 27) finds that there is elision of the segment /s/ at the end of a syllable or word. This characteristic is also collected by other authors (Cuba, 1999, 2002; Sessarego, 2015). Remember that this feature of the phonetic level was one of the most-mentioned aspects of the question: What do you understand by speaking Spanish correctly? We consider it important to investigate in-depth the participants' qualitative answers in future research with emphasis on this level.

Building on previous ideas, we go back to the apparent differences or contradictions between having positive feelings toward their own ways of speaking (such as the sense of identity) and, at the same time, considering them to be incorrect. These differences between evaluations show feelings of linguistic insecurity in relation to their own ways of speaking. A relevant idea in this interpretation can be taken from Gutiérrez Maté (2018). As a complementary idea in his study, he mentions that speakers of El Carmen have not achieved a sense of ethnic identity from their way of speaking despite the process of 'ethnicization' that they are undergoing: "there is no ethnicization of the language, that is, no defense of an ethnic speech" (Gutiérrez Maté, 2018, p. 59).[21] This lack of identity of the way of speaking in El Carmen can be understood, as it is considered to be an incorrect way of speaking according to what we have found so far in this preliminary study. Deeper investigation will be required in a larger study which considers a larger sample of participants.

Additionally, Section 5.8 includes a question related to the loyalty of the Spanish variety spoken in El Carmen. In this section, most of the answers have been positive toward the loyalty of the community's way of speaking. Answers came mainly from young men, who mentioned that they would not want to change their way of speaking. Among the reasons, we had the following: *porque es lo tradicional* 'because it is traditional', *es parte de la identidad* 'it is part of identity', *porque le quitaría identidad* 'because it would take away identity'. These answers are very interesting in the general analysis we present, since they suggest, to some extent, the impermanence of a way of speaking considered incorrect by speakers, and contradict Gutiérrez Maté's (2018) idea which describes the lack of ethnic identity development through

21. Our translation.

speech. At this point, I want to emphasize that these are preliminary findings, as we have mentioned throughout this chapter. Future studies will involve greater detail regarding this loyalty to the way of speaking of the community in cases where it is linked to a specific environment or communicative field; whether linguistic loyalty appears only in the community, whether this loyalty changes outside of interaction spaces among *carmelitanos*, among other situations that may better help us understand the contradiction between speakers' linguistic insecurity and the loyalty they have toward their own ways of speaking.

7. Conclusions

Based on the twelve interviews conducted, I propose the following conclusions to this preliminary study.

1. Regarding the varieties of Spanish in Peru, the linguistic attitudes of the *carmelitano* participants have been, mainly, positive toward the variety of Spanish spoken in the jungle and the one spoken in Lima. We remark that the latter tend to be valued positively by young people as it is considered to be the standard and correct form of Spanish.
2. We emphasize that the Andean variety receives more negative evaluations. There is a tendency of linguistic discrimination toward the Andean Spanish way of speaking; this negative evaluation comes mainly from young *carmelitanos*. The interviewees' evaluations show linguistic discrimination toward the way of speaking in the Highlands for being areas where Spanish is spoken as a second language and, mainly because an Andean native language is the most common first language spoken in the region.
3. Regarding the evaluations of the variety of Spanish spoken in El Carmen, we conclude that it is positive in the affective dimension of linguistic attitudes, as its Spanish variety is related to positive feelings of integration and identity toward their cultural community. However, we highlight the fact that participants, mainly young people, negatively evaluate their own variety in the category of idiomatic correctness, as they consider that in El Carmen they speak incorrectly due to elisions in pronunciation.

8. Further research

Note that ideas, research approach, analysis, conclusions and questions arising from this study should be taken as the starting point of a larger investigation which I am currently working on. I raise some important comments and considerations that will lead future work.

First of all, based on our interviews, we note that there is a hypothesis of linguistic discrimination toward the areas of greatest Afro-Peruvian presence in El Carmen, such as the populated centers. During the field work, we have noticed a negative perception toward the way of speaking of El Guayabo, a populated center in El Carmen where most Afro-Peruvian people live according to the interviews conducted. Therefore, we consider it important to make a contrastive study of the linguistic attitudes among Afro-Peruvian communities.

It will also be important to go in-depth into the research of less-prestigious ways of speaking: analyze whether there is the same negative evaluation of Andean indigenous languages in the original languages of the Amazon. Further studies will also analyze in which social groups the greatest stigmatization of elision can be found. For this purpose, it is important to have more participants. They will also evaluate the ways of speaking considered to be prestigious. For this purpose, it is necessary to know why Lima is considered to be the preferred region, and whether there are some areas of Lima where it is recognized as such. Finally, future studies will investigate the phenomenon of linguistic loyalty related to the variety of so-called Afro-Peruvian Spanish. At this point, we will take a closer look at the communicative environment and use the qualities described as the way of speaking of those varieties.

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Appendix. Sociolinguistic questionnaire

I. First section: describing the names given to the Spanish language
   1. What do you call the language you speak?
II. Second section: cognitive-linguistic perceptions

Affective attitudes or positive attitudes

2. In which areas of Peru do you like how Spanish is spoken? Why?
3. In which areas of Peru do you consider the best Spanish is spoken? Why?

Negative attitudes

4. In which areas of Peru, you do not like how Spanish is spoken?
5. In which areas of Peru do you consider the worst Spanish is spoken?

III. Opinions on linguistic correctness (general Spanish)
   6. What do you understand by speaking Spanish correctly?
   7. In which areas of Peru is Spanish spoken correctly? Why?
   8. In which areas of Peru is Spanish spoken incorrectly? Why?
IV. Attitudes toward the traditional dialectal variety

Identity toward the traditional dialectal variety of African-descendants

9. What is your opinion about the way of speaking in El Carmen district?
10. Do you feel identified with the way you speaking in El Carmen district? Why?
11. If you could change your way of speaking, what accent would you like to have? Why?

Idiomatic correctness

12. Do you think that Spanish language is spoken correctly in El Carmen district? Why?

CHAPTER 9

Language choice and use by bilingual preschoolers

Evidence from a Spanish immersion preschool context

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In a Spanish-immersion preschool with a dual population of heritage speakers (HS) and second-language learners (L2) of Spanish, we explore the language choices students make when their school language differs from the dominant language (English) and factors that contribute to their language choice. Observational data suggest students exhibit a type of interlocutor-dependent diglossia, typically reserving English for peer interactions and Spanish for interactions with teachers. Data from a language elicitation task revealed that a students' language background (L2 vs HS) is not a significant predictor of their Spanish production; Spanish exposure proved to be the most significant factor. Case studies confirmed these findings and further revealed the multiple factors that make up Spanish exposure and predict students' language use.

Keywords: immersion, bilingualism, language choice, heritage language, Spanish in the US

1. Introduction

Despite the emergence of an increasingly interconnected and globalized multilingual society, the United States (henceforth US) has failed to foster the widespread development of bilingualism in its population. Linguistic hegemony is the creation of a consensus by dominant groups to convince linguistic minorities to accept the majority language and its use as the standard (Wiley, 2000). English hegemony in the US is achieved through various institutionalized and implicit ways. One of the institutions where this is most salient is in schools, where language-minority students struggle in comparison to their majority-language peers (Yoo & Namkung, 2012). For Latinos in the United States this problem is twofold. First, Latino youth

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entering US schools with limited English proficiency struggle to succeed academically (Suarez, 2002). For example, they have significantly higher dropout rates than other ethnic groups (NCES, 2018) and this increases among foreign-born and late arrival Latino children (Suarez, 2002). This is due, in part, to the limited support they receive in the transition from their heritage language (henceforth HL) to English (Carreira, 2007). Second and third-generation Latinos in US schools face a different, but related, challenge. Despite an increasing rate of growth in the native-born Latino population,[1] a shocking lack of support for bilingualism by educators and politicians leads to the loss of Spanish among early Spanish-English bilinguals. These students assimilate to the dominant language and culture, and many lose the home language. Specifically, a shift to English dominance is the norm (Benmamoun, Montrul, & Polinsky, 2013; García, 2009; Pew Research Center, 2016; Veltman, 1983).

Paradoxically, these students who were emergent bilinguals become English dominant or monolingual in English, are then required to take a foreign language (henceforth FL) during their late adolescence in high school or college. Rather than maintaining and developing the HL in a continuous trajectory, speakers often lose it and struggle to regain it later in life. In a social context where "members of every minority group continue to be measured largely by the degree of our assimilation – how closely speech patterns, dress or demeanor conform to the dominant white culture," (Obama, 2006, p. 235) the importance of HL, and with its cultural maintenance, becomes secondary. In fact, for these emergent bilinguals their bilingualism is viewed as a burden, rather than an asset, that they need to overcome (Wong-Filmore, 1991).

Developing bilingualism is also generally not supported by the mainstream educational system for monolingual English speakers (García, Zakharia, & Otcu, 2013). Given the lack of a national FL mandate, US students are typically not exposed to a FL until middle school, but more commonly high school (Pew Research Center, 2015). This exposure varies dramatically across states. For example, in Arizona, Arkansas, and New Mexico nine percent of students study a FL compared to New Jersey with 51 percent (Pew Research Center, 2018). Across the US, only 20% of students in grades K-12 are enrolled in FL classes (American Councils for International Education, 2017). Over the past twenty years there has been a decline in FL enrollment at the primary (Pufahl & Rhodes, 2011), secondary (Center for Applied Linguistics, 2010), and university levels (Looney & Lusin, 2018). The

1. The Pew Research Center (2016) reports that Hispanic children born in the US are driving the rise in English proficiency among US Hispanics, as 88% of Latinos aged 5–17 report speaking only English at home or speaking English 'very well' in 2014. English proficiency among older Latinos has not changed much since 2000 (Pew Research Center, 2016).

outlook for FL instruction in the future is not promising either. The latest (Fiscal year 2020) budget released by the Trump Administration calls for significant cuts in funding to programs that support language instruction (American Council on the Teaching of Foreign Languages, 2019). Even if students manage to receive four years of FL instruction in high school (approximately 720 hours), the overwhelming majority (85%) do not reach the Intermediate-Mid proficiency level in reading and writing comprehension. In fact, only six percent of students typically speak at the Intermediate-Mid level (Center for Applied Second Language Studies, 2010). Surpassing the Intermediate level in a foreign language for native English speakers usually involves extra resources (e.g., AP classes or study abroad opportunities), which are not accessible to most low-income communities of color (Borowczyk, Subtirelu, Hernandez, & Venzia, 2018). This type of bilingualism, unlike HL bilingualism, is prestigious and considered an asset (Ovando, 1990; Wong-Filmore, 1991). Furthermore, Flores (2016, p. 33) argues that the current debate surrounding bilingual education has limited its ability to produce real social change and instead reproduces white hegemony by privileging "the idealized language practices of the White middle class and the otherizing of the language practices of Latinos".

There is also extensive research across various fields – including sociolinguistics, education, and neuroscience – that provides overwhelming evidence for the benefits of bilingualism for both HS and native English speakers. For instance, bilingual individuals have heightened communicative competence, such that they are better attuned to the needs and desires of the people with whom they are conversing and are able to make the appropriate language choices to meet these needs (García, 2009; Genesee & Nicoladis, 2008). Bilinguals also outperform monolingual counterparts academically, especially if both languages are supported in the school setting (Thomas & Collier, 1997). In studies examining the neurological function of bilinguals, researchers found that due to the constant inhibition and decision-making processes bilinguals conduct on a daily basis, the bilingual brain is more efficient, better able to handle complex tasks, has denser grey matter, and is able to delay neurological diseases such as Alzheimer's and dementia (Bialystok, 2001; Prior & MacWhinney, 2010). However, despite the aforementioned benefits, the US educational system does not place a high priority on the development of bilingualism until late adolescence and prioritizes bilingualism only among certain communities. Ovando (1990) summarizes this point:

> On the one hand we encourage and promote the study of foreign languages for English monolinguals, at great cost and with great inefficiency. At the same time we destroy the linguistic gifts that children from non-English language backgrounds bring to our schools. (p. 354)

Would not a more efficient way to assure an educated citizenry of bilingual and biliterate youth entering a globalized world be to maintain the HL of minority speakers and provide earlier exposure to additional languages for majority language (i.e., English) speakers? One way to address this contradiction is to expose children to a second language (henceforth L2) or to provide a way to develop their preexisting HL and prevent language loss in early childhood. One of the best ways to achieve this is through dual-immersion programs, where language-minority children are educated in their HL for 50–90% of instructional time. In addition to promoting multiculturalism, minority-language students in these programs score higher on standardized tests and have higher levels of academic achievement than those in any other type of bilingual education programs (Christian, 2011; Lindholm-Leary & Genesee, 2010; Lindholm-Leary & Hernández, 2011). Likewise, majority-language students score the same or better than their monolingual peers on standardized tests while also attaining high proficiency levels in the minority language.

Despite these benefits, dual-immersion programs are still rare; only 778 programs exist in the US (Center for Applied Linguistics, 2019); in Chicago, where Latinos make up 46.7% of all students, only 41 out of the 644 schools in the city offer dual-immersion programming with plans to open another eight programs in the 2019–2020 academic year (Chicago Public Schools, 2019). Yet, despite institutional efforts to elevate the status of non-English languages, dual-immersion programs struggle with the permeating effects of English hegemony in the larger society. The assimilative power the English language holds in the US is reflected by the diglossic linguistic patterns students in dual-immersion programs tend to exhibit. According to Tarone and Swain (1995, p. 166) "a diglossic situation is one in which a second language is the superordinate, formal language variety, and the native language is reserved for use in informal social interactions". In dual-immersion contexts, children tend to use the two languages for separate functions, typically reserving English for social purposes. This pattern becomes more salient as students grow older (Broner, 2000; Christian, Howard, Loeb, 2000; Fortune, 2001; Potowski, 2005, 2007).

Though the effects of English hegemony in a dual-immersion context have been studied in the middle grades (Potowski, 2007) little research exists in the early childhood years. Yet, preschool-aged children and their language choices can provide many insights into the early effects of being bilingual in a society characterized by English hegemony. We know that there are many factors that contribute to children's language choice and use, including a child's proficiency in the language, their interlocutor's language, and the social context and power dynamics (Ghimenton, 2015; Lee & Levine, 2003; Montanari, 2009). It is also known that young children are able to negotiate language ideologies, especially when placed in minority language environments, such as a Spanish classroom (Volk & Angelova, 2007). Along these lines, children are also able to perceive their interlocutor's language preferences as

soon as they are able to communicate (Montanari, 2009). However, factors predicting a child's use of a minoritized language are further complicated based on their age, their social context as well as their language background. Research exploring pre-school aged children's language choices is especially relevant considering that in the last 30 years, the number of children entering US schools that speak a LOTE has doubled; today, 33% of children entering early childhood education programs speak a language other than English and the overwhelming majority of these children are Spanish speakers (Raikes et al., 2019). For these reasons, the present study seeks to further investigate the language choices children make in immersion contexts and the social and demographic factors that contribute to their language choice and usage.

2. The setting and participants

Despite the aforementioned benefits of dual-immersion programs, as well the presence of a large Hispanic community (U.S. Census Bureau, 2018), there are only four early childhood education immersion programs in Spanish in the Chicagoland area. Puerta Abierta, located in Evanston, is the smallest of these programs, as well as the only one founded and currently run by a Latino family. Puerta Abierta is a Spanish-immersion preschool that follows a Reggio Emilia program; classrooms are child-centered and learning is student driven. Children are distributed among three classrooms based on age, which ranges from two to six. Beyond the hours spent on the playground and gym, classrooms are also designed to promote learning through exploration and discovery. The environment is enriching and supportive and children's interests are central in curriculum development. Student attendance varies widely, from half days once a week to eight hours a day five days a week. The school allows for this flexibility in scheduling in order to accommodate a larger number of families, some of which might not be able to afford to send their children to full-day programs. This is extremely rare among most early childhood education programs or even daycare programs in the city. Although tuition is reasonable compared to similar programs; many families nonetheless receive a modicum of financial support. Puerta Abierta also offers summer programming and children that graduate from the preschool often come back for their summer camp, sometimes even becoming camp counselors. Through conversations with faculty, staff, and parents at Puerta Abierta, as well as informal observations of the children throughout the last four years it is clear that the school serves both an important social and cultural goal for the Hispanic and broader Evanston community.

Though Puerta Abierta's curriculum aligns more with a traditional one-way immersion program, its student population aligns more closely to that of a

dual-immersion program. The school serves heritage speakers (HS) of Spanish who have been exposed to Spanish since birth, and second-language learners of Spanish (L2) who have been exposed to English from birth without any exposure to Spanish prior to attending Puerta Abierta. The present study reflects data from a total of 74 participants (now aged two to nine years old). While the majority of participants in the study are HS of Spanish ($N = 60$), the overwhelming majority of parents report English to be their child's dominant language ($N = 43$). This means that most of our HL students are reportedly English dominant. The unique context and demographics of students at Puerta Abierta provide a great opportunity for sociolinguistic research on the social and demographic factors that predict language choice and use among emergent bilinguals.

3. Research questions

This project differs from previous research because we examine language choice and use from a community-based ethnolinguistic perspective. This perspective requires attention to local-level, insider meanings that we explored by observing and participating in the community itself. This methodology requires that researchers spend time in and collect large amounts of observational data. It also requires an understanding of ground-level phenomena relevant to contemporary social issues. This means that our research team has spent significant amounts of time at the preschool interacting with the children and staff and have been doing so since the Spring of 2017. As such, this project is in line with the Linguistic Society of America's (LSA) statement on ethics which states that "communities are eager to share their knowledge in the context of a long-term relationship of reciprocity and exchange. In all cases where the community has an investment in language research, the aims of an investigation should be clearly discussed with the community and community involvement sought from the earliest stages of project planning." (Linguistic Society of America, 2009, p. 3). As such, the director has been an integral part of this process from the beginning and our research aims are driven by both the researchers' but also the expressed interests of the school.

The director founded the school to fill a need for high-quality early childhood education for students to enrich their language and cross-cultural development. She chose this partly dual-immersion model for her school with the goal of allowing both HL students and L2 Spanish learners to affirm the values of their own cultural heritage while acquiring an understanding, appreciation, and acceptance of other cultures. In our conversations to develop our research questions, she expressed the need to demonstrate empirically the linguistic and social effects of an early bilingual education. Specifically, she wanted to examine whether institutionalized support for

a minority language (in this case Spanish) at an early age has any significant effects on minority children's use of English and Spanish. Thus, we were able to build our research questions to address this particular need.

1. What language choices do children make when the language of the school and dominant language differ?
2. What factors contribute to language choice and use?

4. Methods

For this chapter, we report on two data collection procedures: child observation and a language elicitation task. For the observational data, children were observed during their regular classroom time as they interacted with each other and their teachers. Naturalistic play interaction allowed students to feel comfortable with the research team, but also allowed us to observe students' natural, undoctored language choices and patterns in their normal classroom setting. These data allowed us to observe the patterns of language in students and teachers (e.g., code-switching) and their imitation of larger social language power dynamics that privilege English and their exhibition of diglossic linguistic patterns within a Spanish-immersion context. Classrooms were observed one to two times per week for one to four hours throughout the school year and observations were video- and audio-recorded. To date, we have 23 hours of observational data. We transcribed and coded approximately 10 of those hours and will only be reporting on the hours that have been transcribed and coded. Each of the students' utterances were coded for language of the utterance (English, Spanish, Mixed), type of interlocutor (adult or child), interlocutor's language background, as well as other demographic information (see Table 1). In order to calculate the percentage of English, Spanish and code-mixed utterances that students produced depending on interlocutor, all utterances were separated by adult or child interlocutor. Once

Table 1. Observational data coding

Student	Utterance	Language	Words	Interlocutor's age	Interlocutor's language background	Interlocutor's gender
F4	*trompeta*	Spanish	1	Adult	HL	Female
F4	but I already have a *guitarra*	Mixed	6	Adult	HL	Female
F4	oh I I wanna tell you something	English	6	Adult	HL	Female

separated, the percentage of responses in each language was calculated, as was the percentage of words in each language. Calculating both percentages allowed us to see how often children interacted with an interlocutor in each language, but also the length of these utterances overall.

Our second data collection procedure is the administration of a story elicitation task. This language elicitation task was administered at Puerta Abierta during the school day. Students were shown a series of pictures that told a story and were then asked to describe the pictures (see Figure 1 for an example of the elicitation sequences).

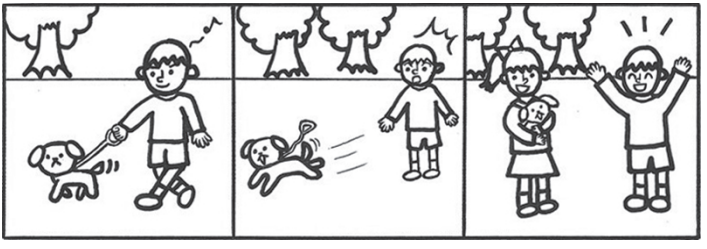

Figure 1. Example of elicitation task sequence

Students were not told which language to use specifically during the elicitation task but the administrator used only Spanish and was a native Spanish speaker. As such, some students performed the task exclusively in Spanish, while others used various amounts of English and Spanish. The task is given to each student once per year. We currently have first year elicitation data for 44 students and longitudinal elicitation data for 17 students.

5. Results and discussion

5.1 Language choice

With respect to our first research question, which concerns the language choices students make when the language of the school (Spanish) and the dominant language (English) differ. We found that children exhibit a clear divide between the language of social play and the language of the school. Children switch from English to Spanish depending on their interlocutor, reserving English for peer-to-peer interaction and Spanish for interacting with teachers and adults. This complementary distribution according to interlocutor indicates that the two languages appear to fulfill different functions (Ferguson, 1959). We can see this clearly in example 1, where students M12 and M10 were exchanging books during reading time. When

one of the Spanish-speaking research assistants approached the students on the reading rug, her mere presence leads to an immediate switch from English to Spanish by M12. This instantaneous shift reflects not only that M12 is attuned to the language preferences of his interlocutors, but also that he has the proficiency in both languages to accommodate to these preferences instantaneously.

(1) M12: Do you want this one? <offers book>
M10: Yeah I want that one
M12: I want- I want that one
M10: Want that one?
<RAs join students reading on the rug>
M12: <to one of them>: *¿Te enseño?*
'should I show you?'

Evidence of diglossic linguistic behaviors based on interlocutor were widespread despite the Spanish immersion context of the school. In fact, based on ten hours of coded observational data, we found that children use English 89% of the time when interacting with each other. In contrast, student's usage of English drops to only 27% when interacting with their teachers or adults in the school. Instead, children use Spanish 69% of the time, regardless of their language background or their dominant language. These results highlight how despite attending a Spanish immersion preschool, children use an overwhelming amount of English in their interactions with each other. Yet, the ease with which students' linguistic behavior changes so drastically to accommodate their interlocutor's language preferences reflects their metalinguistic awareness, their ability to perceive social linguistic expectations and their competence in both languages to meet them.

Students showed further evidence of this in a more structured context during the one-on-one storytelling elicitation task. We found that children who produced 90% or more of their words in Spanish ($N = 20$) during the elicitation task tended to produce an average total of 106 words and a mean length of utterance in words (MLUw) of 3.03. In contrast, students who only used 20% of Spanish words ($N = 12$) produced an average total of 140 words and had an MLUw of 5.72. Thus, students who used higher percentages of English produced longer responses than their peers who chose to use more Spanish. Our findings thus show that often, when students use Spanish, they produce simpler structures and shorter utterances, while in contrast, when they use English they are able to produce much more descriptive responses. Their choice to use Spanish, however, suggests that students feel a need to stick to Spanish in order to accommodate their interlocutor's language preferences, even at the expense of longer utterances, more descriptive language and complex syntax. This behavior illustrates the language choices students make based on their interlocutor and their perceived linguistic expectations.

This behavior is exemplified by two four-year-old students who used opposite percentages of Spanish during the elicitation task. Although F26 and F6 are both HS, 99% of F26's words were in Spanish during her elicitation, while F6 only produced 1% of Spanish words during her elicitation task. F26 used a total of 144 words and had an MLUw of 3.78, while F6 used a total of 159 words but had an MLUw of 14.5. The content of their utterances was also very different as most of F26's responses consisted of about 3 or 4 words such as *en la piso* (on the floor) or *con la nena* (with the baby girl). In contrast, F6's responses were much longer and more descriptive: "first she was playing with a ball, then she was cold because it was raining" or "then a little girl um helped her get feel better because she was so cold she wanted a umbrella".

It is also particularly notable that children whose Spanish is still not as developed as their English often still choose to speak Spanish with adults at the school. Though they may be able to describe a picture or story with longer and more complex utterances in English, they opt for shorter, less complex utterances in Spanish. Had they switched to English, they could have produced fuller descriptions of the pictures; however, they choose to use their emergent Spanish anyway, demonstrating not only knowledge of interlocutor preference but also their prioritization of Spanish in academic settings. This reflects how children's metalinguistic awareness allows them to navigate language switches to accommodate interlocutor preference (namely, Spanish with teachers and adults), even at an early age despite proficiency.

This linguistic pattern is also present in the classroom observational data: despite the fact that students responded in Spanish 69% of the time when interacting with their teachers and other adults in the school, only 55% of their total words were in Spanish. In other words, these utterances were much shorter than when students responded to teachers or adults in English. This discrepancy highlights that even in naturalistic situations, students prioritize accommodating to their interlocutor's language preferences, using Spanish at the cost of longer utterances. In contrast, during interactions with peers, students prioritize using English 89% of the time. However, their English utterances are also longer than their Spanish utterances during peer interactions as 93% of their total words are in English. This is especially telling given that these findings are based on data collected during naturalistic observations and thus students were not under any structured pressure to behave a certain way. Our findings therefore suggest that even preschool-aged children reflect diglossic linguistic patterns when the language of the school (Spanish) and the dominant language (English) differ as they often reserve the use of Spanish for interactions with their teachers or adults in the school and privilege the use of English for play and social interactions with their peers.

5.2 Factors that affect language choice

In this section we explore the relationship between performance on the elicitation task (MLUw, percent Spanish words, and total number of words) and sociodemographic information related to the children's home language background (reported exposure to Spanish, student's sociolinguistic generation, and the number of Spanish speaking parents). We present group data for 44 students using a multiple linear regression in Section 5.2.1 and individual data for ten students in the form of case studies in Section 5.2.2. The consideration of all of these factors highlights the diversity among HS and complicates our understanding of which factors are most salient in predicting a child's Spanish production.

5.2.1 *Group results*

Despite the prevalent use of English among the children at Puerta Abierta, we found that attending a Spanish immersion preschool nonetheless results in significant improvements in students' Spanish production. Specifically, one year of enrollment in the immersion school results in a statistically significant increase in the percentage of Spanish words used during the picture elicitation task, $t(9) = -2.455$, $p < .05$. While there is a statistically significant difference in the Spanish production across HS and L2 learners ($p < .001$), when other factors aside from language background were entered into a multiple linear regression model (in Table 2 below), we found that a child's dominant language ($p = .026$), Spanish exposure (and $p < .001$), MLUw ($p < .001$), and age ($p = .004$) were more important variables than home language background.

Table 2. Multiple linear regression predicting Spanish production on elicitation task

Variable	*B*	SE_B	β
Intercept	−.366	.248	
Age	.009	.002	.362*
Lang. background	−.026	.123	−.022
MLUw	−.067	.017	−.394*
Dominant language	.136	.059	.248*
Spanish exposure	.206	.041	.576*

* $p < .05$

Note. *B* = unstandardized regression coefficient; SE_B = Standard error of the coefficient; β = standardized coefficient

Although we often think of HL and L2 learners as two very separate groups, especially among elementary and secondary aged students, perhaps this distinction becomes more blurred in early childhood. Given that language background was

insignificant in our model, our results suggest that whether a student is a HS or learning Spanish as an L2 may not be the most important factor in predicting their use of Spanish. This also highlights the vast differences across HS populations. In order to further investigate the various factors that contribute to students' use of Spanish, we now turn to a more in-depth analysis through the use of three case studies that compare 10 students of various ages and backgrounds.

5.2.2 *Case studies*

The following three case studies reflect the performance of 10 children on our storytelling elicitation task. Students included in the case studies represent both students currently attending Puerta Abierta, but also students who have graduated and gone on to different educational settings. Data from Puerta Abierta graduates provide a unique lens into the longitudinal effects of attending a Spanish-immersion preschool and other social factors that contribute to students' Spanish production. Throughout these case studies, we focused on students' performance during their elicitation task and demographic factors such as the language of the school they attended at the time of the elicitation, their reported exposure to Spanish, their generation and number of Spanish-speaking parents (see Tables 3, 4, and 5). By looking at these other factors we are able to go beyond the dichotomy of whether a student is a HS or L2 learner of Spanish in order to investigate which other factors are more relevant in predicting their use of Spanish. These case studies also highlight the great diversity among students' experiences with their heritage language.

Our first case study compares four HS: Luis, José, Lola and Rafael (pseudonyms). Students were all four years old at the time of their first elicitation, have varying degrees of reported Spanish exposure and number of parents who speak Spanish. For example, although Luis, José and Lola all responded to their elicitation completely in Spanish, we noted that Luis and José both have the same Spanish exposure and two Spanish-speaking parents. Yet, Lola, who only has one Spanish-speaking parent and as a result less exposure to Spanish, also responded solely in Spanish. Thus, despite their different home language environments, these young second-generation children exhibited similar performances on the elicitation task.

When we compare these students to a third-generation student, like Rafael, we note various differences: First, Rafael's exposure to Spanish is lower than that of his second-generation peers; like Lola, he only has one Spanish-speaking parent. However, Rafael's elicitation was 59% Spanish, albeit a lower percentage than his peers, it is still primarily in Spanish, which is somewhat exceptional considering his background as a third-generation HS with limited Spanish exposure. Oftentimes, third-generation children – having suffered an intergenerational language shift – have various levels of Spanish skills, and are limited to receptive skills in their HL.

This is not the case for Rafael, for whom the HL support offered by the preschool is instrumental in his language maintenance. Despite the permeance of English hegemony in the school, these four students reflect the linguistic advantages a Spanish immersion preschool provides to young HL.

Table 3. Case study 1

Student	Age	% Spanish words on elicitation	MLUw	Total # words	School language	Spanish exposure	Generation	# of Spanish-speaking parents
Luis	4;10	100%	3.8	133	Spanish	75–100%	2	2
José	4;8	100%	2.88	75	Spanish	75–100%	2	2
Lola	4;9	100%	3.06	95	Spanish	50–75%	2	1
Rafael	4;7	59%	3.75	105	Spanish	25–50%	3	1

Our second case study examines the language production of heritage students on the elicitation task after they graduate from Puerta Abierta and go on to different schools. This was possible by looking at the elicitation data of three boys who graduated from Puerta Abierta but returned for summer camp the following year. The boys were approximately six years old at the time of their second elicitation. In Table 3 we see data for Rafael again, as well as Carlos and Pablo. Both Rafael and Carlos went on to Spanish-English dual-language schools. When we compare Rafael's performance on his second elicitation (in Table 3) to his first elicitation (in Table 2) we see a clear increase in his Spanish percentage as well as his MLUw after a year of attending this type of program. Carlos, a second-generation student with one parent that speaks Spanish, also attends a dual-language school. He produced only Spanish during his elicitation. These data suggest that second- and third-generation HS benefit from and make linguistic gains as a result of continued academic support in their HL.

Unlike Rafael and Carlos, Pablo went onto an English-only school with no academic support for his HL. Note that both Pablo and Rafael are third-generation students with only one Spanish-speaking parent. Pablo's reported Spanish exposure is higher than Rafael's though this information was only collected at the onset of the study when Pablo was still attending Puerta Abierta. Pablo's percentage of Spanish words and MLUw are lower than Rafael's during their second elicitation. Since graduating from Puerta Abierta, Pablo's exposure to Spanish has likely decreased, unlike Rafael who is still exposed to Spanish in both academic and home settings. Despite these differences, Pablo still produced over half of his responses

in Spanish, reflecting an understanding of his interlocutor's preference for Spanish and his efforts to meet this expectation. Given the little exposure to Spanish and academic support Pablo now has, his Spanish production skills are likely a reflection of the strong foundation he established during his time at Puerta Abierta, thus highlighting the importance of his early immersion and the academic support he received in his HL.

Table 4. Case study 2

Student	Age	% Spanish words on elicitation	MLUw	Total # words	School language	Spanish exposure	Generation	# of Spanish-speaking parents
Rafael	5;11	89%	7.82	133	Dual Language	25–50%	3	1
Carlos	6,3	100%	2.66	96	Dual Language	50–75%	2	1
Pablo	6;4	67%	3.85	108	English	50–75%	3	1

We found further evidence of how impactful Puerta Abierta's early immersion context is for a group of slightly older students in our third case study (see Table 5). We examined four seven-year old girls who graduated from Puerta Abierta but also returned during the summer program two to four years after graduation. These students represent different sociolinguistic generations and percentages of Spanish exposure.

Three of the girls, Julieta, Victoria and Gabriela, went on to English-only schools. Julieta, however, still has a high exposure to Spanish because she has two first-generation Spanish-speaking parents. Julieta only produced Spanish during her elicitation and a total of 106 words. In contrast, Gabriela only produced 79% of Spanish words and both her MLUw and total number of words was much lower than her peers. Gabriela's MLUw (1.91) and total number of words (44) reveal that her utterances were much shorter and much less descriptive than that of her peers. It is important to note, however, that Gabriela has only one second-generation Spanish-speaking parent. She is also the oldest student in the study, having graduated from Puerta Abierta four years ago, and since then does not receive any academic support for her Spanish development. Despite her limited exposure to Spanish, Gabriela's ability to produce an overwhelming amount of Spanish during her elicitation illustrates how impactful her preschool years at Puerta Abierta

were to her HL maintenance, even several years after graduating from the Spanish immersion context.

It is important to remember that HL learners are not the only students who benefit from attending a Spanish-immersion school in early childhood. We found evidence of these benefits among one of the few L2 learners of Spanish in our study: Michelle. Michelle does not have any Spanish-speaking parents and thus, her Spanish exposure is limited to her schooling. She attended Puerta Abierta in her early years and went on to a dual-language school where she continues her development of Spanish. Most noteworthy is that her linguistic behavior patterns like a HS: she produces an MLUw similar to Victoria's and used a higher percentage of Spanish than Gabriela and Victoria both HS. Michelle's elicitation results suggest that attending a Spanish-immersion context in her early childhood allowed her to blur the seemingly strict line between HL and L2 learners.

Table 5. Case study 3

Student	Age	% Spanish words on elicitation	MLUw	Total # words	School language	Spanish exposure	Generation	# of Spanish-speaking parents
Gabriela	7;4	79%	1.91	44	English	0–25%	3	1
Victoria	7;2	86%	6.31	183	English	75–100%	2	2
Julieta	7;10	100%	4.07	106	English	50–75%	2	2
Michelle	7;5	88%	6.34	146	Dual Language	25–50%	L2er	0

These case studies illustrate the nuances that may be lost in the group data relating to the many factors that predict a child's language choice and use. The group data revealed that the children's language background, which we and many researchers use to categorize them as either HL and L2 learners, was not a significant predictor of Spanish use on the elicitation task. Instead, the child's reported Spanish exposure was the strongest predictor of Spanish use on the task. In order to explore this unexpected result, we looked at individual children's linguistic profiles. Through the case studies, we found that Spanish exposure – which was the strongest predictor in the regression – reflects the quality and quantity of input that the children are exposed to. Regardless of home language background, children who attend a school where was Spanish was the primary medium of instruction tend to produce more Spanish and their utterances are longer and more complex compared to children

who attend English only schools. For HL children, Spanish exposure, was also proxy for the number of Spanish speaking parents they have and their sociolinguistic generation. The data in our case studies reveal that focusing solely on one of the aforementioned factors is insufficient in order to understand the children's linguistic behavior on the elicitation task.

6. Implications and future avenues

Our findings indicate that children at the preschool adopt a heteroglossic world view. When the language of the school and the dominant language differ, these emergent bilinguals exhibit a type of interlocutor based diglossia. Our observational data indicate that regardless of their home language background, children prefer to speak Spanish with their teachers and English with their peers. This linguistic compartmentalization across interlocutors appears to also be functional. Children *expect* Spanish to be the language of instruction, and not just at the preschool. Several parents have reported the children's surprise upon entering Kindergarten and hearing their new teachers speak English. The children's world view, their schema, is that Spanish is the language of instruction (and is spoken with teachers) and English is the language of play (and spoken with their peers). Though we interpret the complementary distribution of Spanish with adults and English with other children to indicate the early age at which the children are able to perceive their interlocutor's language preferences (Montanari, 2009) and the power dynamics embedded in larger society (Ghimenton, 2015), we need to examine the children's linguistic behavior when accommodating to new students. In particular we need to look closely at how they interact with newly arrived monolingual Spanish-speaking children to see how they adapt and accommodate their language choices. We have a few participants in the study that fit this profile (recent arrivals) and we need to examine the linguistic choices the other children make when approaching these Spanish monolinguals. Do the existing students accommodate to the new students' language preferences? How do these two groups of students negotiate their language preferences and communicative needs to create meaning in this bilingual context? And how does this exchange evolve over time?

Our case studies bring to light other important factors that contribute to children's language choice that may often be overlooked because of the focus on their language background. Data from our elicitation task revealed that a student's language background is insignificant in predicting their Spanish production, and rather other factors, especially their Spanish exposure was the strongest predictor. By looking at the students individually and comparing them to peers their age, we

also found that Spanish exposure is a proxy for factors related to Spanish input, namely the language of the school, how many Spanish-speaking parents the children have, and what sociolinguistic generation they belong to. These three factors are associated with an increase in Spanish production on the elicitation task across three different metrics: number of words, percentage of Spanish, and MLUw. In combination with the previously established factor of the interlocutor's language preferences, we now have a more complex and in-depth understanding of the various factors that influence children's language choices.

The implications of these results highlight the benefits and importance of early immersion for both HL and L2ers. HS benefit from such early immersion because it helps them establish an early foundation in their HL and provides them early academic support for its development, a support that may not be guaranteed in their later education given the scarcity of dual-language programs. We believe that this type of immersion experience can be an important factor in preventing language loss, especially among third-generation students. We saw notable differences between the third-generation children in our case studies that did not continue on to a dual-immersion school after graduating from Puerta Abierta versus those that did. Specifically, the children that continued on to English only schools had a lower in the percentage of Spanish used, a smaller MLUw and fewer number of words in their elicitation. Another avenue for future research is to examine these children longitudinally to see whether there is evidence of loss. As it relates to L2 learners, early exposure and academic support for Spanish can lead these children to pattern linguistically like their heritage-speaker peers. This chapter presents a selection of data gathered in an early childhood education Spanish immersion context and fills a gap in the extant literature given the scarcity of research of this type: community-based longitudinal and ethnolinguistic research. We have focused on the linguistic choices among children in these types of early education programs. However, much more research is needed to explore the children's linguistic development, as well as their attitudes, parent motivations for enrolling their children in these types of programs as well as their motivations with discontinuing their child's bilingual education. We also need to examine the teaching practices and look for ways to support these types of programs that are historically under-resourced and misunderstood.

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CHAPTER 10

Decolonial sociolinguistics gestures of Andean Quechua-Spanish bilingual college students promoting Quechua

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Andean college students in Cusco, Peru, struggle to overcome sociolinguistic discrimination against Quechua-Spanish bilingualism during their pursuit of higher education. To examine this situation and possibilities for change, I employed a participatory method, photovoice (Wang & Burris, 1994) within a community-based participatory research framework, to facilitate bilingual college students' exploration of Quechuan practices in their university. Findings of this participatory study explain how bilingual participants contributed to community critical awareness of Quechua-Spanish bilingual ideologies in Cusco when presenting their visual metaphors during photo interventions. Participants shared personal experiences to maintaining their Quechua language and shared their proposals for encouraging their university to create a fertile terrain for bilingualism, rooting out ideologies of deficits toward Quechua, and promoting Quechuan practices in college.

Keywords: Quechua-Spanish bilingualism, language ideologies, sociolinguistic discrimination, Andean linguistics

1. Introduction

Peruvian linguistic and cultural diversity has been and remains a great challenge for the Peruvian state: one of Peru's intentions is to strengthen Quechua-Spanish bilingualism in the country, and practice actual dialogues with Quechuan peoples. In the specific field of Quechua-Spanish bilingualism, the work of von Gleich and Wölck (1994) and Wölck (1983) might be the most ambitious work in Peru with longitudinal research in language attitudes. In 1973, during the emergence of bilingual education policies in Peru, research on attitudes toward the Quechua language was utilized to assess the social status based on language. In collaboration

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with the Peruvian government, Wölck conducted a seminal work regarding language attitudes. The inherent dichotomous analysis prompted Wölck to assess attitudes toward Quechua and Spanish through the binary lenses of Hispanicism and Indigenism. The Hispanicist lense promotes the colonial hispanization project, and the Indigenist lense promotes retention of the Quechua language (Ryan & Giles, 1982). Wölck's research revealed that, as bilingualism increased, the perceived differences of status between speakers of Spanish or Quechua decreased. Further, Wölck also postulated that "minority languages evoke more positive personal affective reactions, majority languages more instrumental institutional values" (Wölck, 2003, p. 36). This last point becomes problematic since it suggests that the destiny of languages such as Quechua is of limited value in higher education. To further explore these ideas and possibly challenge this potential limitation, the participatory action research study presented here explored the perceptions of collegiate Andean students toward the use of Quechua in higher education and their desire to promote Quechua-Spanish bilingualism.[1] Bilingualism in this sense refers to lingual competency in both Quechua and Spanish, and its application in communication by faculty, students, and professionals.

Importantly, while intercultural policies exist in higher education in Peru, they seem not to promote Quechua primarily because they are not enforced. This lack of enforcement of Quechuan sociolinguistic policies displaces Quechuans from higher education (Valdiviezo & Valdiviezo, 2008; Yataco, 2012). By extension, intercultural Quechua-Spanish bilingual initiatives that exclude critical dialogue about language ideologies threaten to reproduce the historical colonial and postcolonial stigmatization of indigenous Quechua heritage among the Andean communities at large.

1.1 Policy versus practice

Few Quechuan or bilingual Quechua-Spanish speakers use their native voice on campus even though *de jure* policies promote inclusion of indigenous practices in higher education. One reason for this behavior is that bilingual Spanish-Quechua practices on campuses remain largely symbolic even though affirmative action initiatives like the Universidad Nacional de San Antonio Abad del Cusco,[2] the

1. In this study, an Andean person refers to someone who has at least one of the following languages as their mother language: Aymara, Quechua, and Spanish. Although Andean peoples are linked merely by the Andean mountainous range, in this study the cultural and linguistic practices are the main characteristics of Andean peoples.

2. The Universidad Nacional de San Antonio Abad del Cusco (UNSAAC), founded in 1692, is one of the oldest public universities in the region. Its undergraduate student population in 2016 was of 15,000 students (Kenfield, Mercado Huayllani, & Huillca Quishua, 2018).

Hatun Ñan program of the Ford Foundation,[3] and the Peruvian Beca 18 scholarship program could have helped Quechuan students access higher education and facilitate their academic experience. Based on the minimal use of Quechua on campus, however, these initiatives have not facilitated activities toward the maintenance of and promotion of the practice of Quechua on campus (Kenfield, Mercado Huayllani, & Huillca Quishua, 2018; Villasante, 2015). Current administrative oversight seems to disregard programs promoting interculturality despite evidence that, when implemented, they became effective (Villasante, 2015). One example of the effectiveness of promoting interculturality: during the existence of the Ford-funded Hatun Ñan program (2003–2015), indigenous students from various careers received regular, academic, structured activities (math tutoring, study support, and intercultural workshops). These activities became indirect venues for the use of their Quechua language among peers because most of students who participated in the Ford-funded Hatun Ñan program had Quechua as their mother language. Students' enthusiasm and engagement increased during the program, but, after it ended, indigenous students felt abandoned because they had nowhere to meet nor any sponsored activities to practice their Quechua. Recently, in fall 2016, and only after persistent requests from a group of former Hatun Ñan members, Quechuan students were assigned a physical space for meetings. This administrative concession stimulated Andean students' desire for even more formal recognition.

After learning these facts, one of my goals in this study became understanding how Quechuan students respond to Universidad Nacional de San Antonio Abad del Cusco's institutional discrimination. Initially, research partners in this study included two college students of the Universidad Nacional de San Antonio Abad del Cusco: Yexy Huillca Quishua and Wenceslao Huayllani Mercado. During the photovoice segment,[4] student participation expanded to members of the Voluntariado Intercultural Hatun Ñan Center,[5] as 12 college students from the center became

3. The Hatun Ñan program was an affirmative action program supported by the Ford Foundation. This program, as other pathways programs of the Ford Foundation, seeks to reverse discrimination in society with a support system for selected groups or discriminated sectors who inherited social exclusion. This program was first implemented in the San Antonio Abad del Cusco University in 2003 and lasted close to 12 years. The Quechua expression Hatun Ñan literately means 'Large Path'.

4. Photovoice (Wang & Burris, 1994) is the participatory approach adopted for this study; Section 2 offers further detail about this methodology.

5. The Voluntariado Intercultural Hatun Ñan (VIHÑ) is a student organization that is self-sustaining. This organization started in 2016 and has no relationship with nor funds from the Ford Fundation. Recently, since the summer of 2017, a minimal amount of funding has been obtained from the Office of Student's Welfare of the San Antonio Abad University of Cusco.

research partners. All 14 Andean college students consented to participate in this study. As the CBPR unfolded, the students requested to recruit off-campus Quechuan peoples who were not directly related to the university research partners. The students reasoned, and I agreed, that input from Quechuan villagers would enhance their (the students') knowledge of the Quechuan episteme and strengthen their goal to promote greater appreciation of Quechua, not only on campus but in the general public. Selected non-student Quechuan participants included the Huayllapata women weavers, the Quechuan villagers who reside in Casa Campesina, and Claudia Cuba Huamani, the coordinator of Casa Campesina.

This Community-Based Participatory Research (CBPR) study explored the bilingual Quechua-Spanish practices of Andean college students in higher education. Specifically, this study addressed the following research questions:

1. What conditions do Andean (bilingual Quechua-Spanish) college students identify regarding the practice, maintenance and revitalization of Quechua in higher education?
2. How did the participation of the Andean research partners (College students, and Quechuan community members) shape the implementation of this CBPR study?

1.2 Researcher's positionality

I should begin by identifying myself as a *Surandina* or a South Andean mother-child. Where I came from, the term *Surandina/o* is used to refer people who live in the southern Andean mountain range. I grew up in the Cusco region of Peru where most of the population lives in rural areas and where sixty percent have Quechua as their mother language. I was born in Cusco's capital city (at that time with about 300,000 people), and grew up in both in the city and the rural Sacred Valley. During childhood, I heard both the Quechua and Spanish languages; I was a passive bilingual due to the preference of my bilingual relatives to speak to me in Spanish. Their preference for Spanish stemmed from the long history of stigmatization to the indigenous Quechua heritage: bilingual Cusco natives would choose to use Spanish, as the imagined language of prestige and power, at the expense of losing their indigenous languages. My relatives, like many of the Cusco people in poverty, cared little about abstract ideals related to our indigenous heritage. More important to them was socio-economic stability through employment, obtained only by an effective command of Spanish. At the time I was an undergraduate student at San Antonio Abad University (UNSAAC) I decided to study Quechua in a language academy because at that time Quechua was not offered in the Language center of the UNSAAC. It would be 14 years after my graduation in UNSAAC that I would

reconnect with its campus and its community, particularly through the participants, and research partners presented in this article.

In my experience as a novice scholar at the University of New Mexico, I found the positivist epistemology of education too narrow for the multi-ethnic world we live in as it takes scientific-natural knowledge as a reference to model the objectivity, neutrality, universality, and certainty of knowledge. This personal reflective process also has to do with my self-questioning about the influence of non-western traditions in my personal stand and positionality as a novice researcher and scholar.

Reflection on my upbringing led me learn about a collaborative approach to research called Community-Based Participatory Approach (CBPR). In 2015, I enrolled in the summer institute *Community-Based Participatory Research and Critical and Indigenous Methodologies* at the University of New Mexico. During my participation in the institute, I felt that the CBPR approach aligned to the collaborative and emancipatory actions promoted by Andean activists.

As a researcher involved in CBPR efforts I acknowledge the effect of my identities, particularly regarding the potential impact that my positionality can have which may affect the goals of this research, interpretation of the data, and production of knowledge.

1.3 Conceptual framework

The conceptual framework that informs this CBPR study draws from decolonial thinking and poststructuralist perspectives on language ideologies because these concepts seemed to be embodied in the student participants. I particularly used the analytics of decoloniality (Maldonado-Torres, 2016) and the Andean concept of *chi'xi* (decolonial gesture) presented by Rivera Cusicanqui (2017) to reflect on and analyze how Quechua-Spanish bilingual students identify colonial and decolonial ideologies which are linked to language ideologies that impact their bilingualism in higher education.

1.3.1 *Conceptual models of the analytics of coloniality and analytics of decoloniality*

Because of the intended focus on language practices and ideologies, which involves a flux of colonial and decolonial tensions, the models of "analytics of coloniality and decoloniality" (Maldonado-Torres, 2016, p. 30) were useful when exploring the "areas involved in the production of coloniality as well as in the consistent opposition to it" (Maldonado-Torres, 2016, p. 2) (Figures 1 & 2). My application of these models illuminated not only the discriminatory and exclusionary acts based on language, but also documented the agency by which the photovoice students

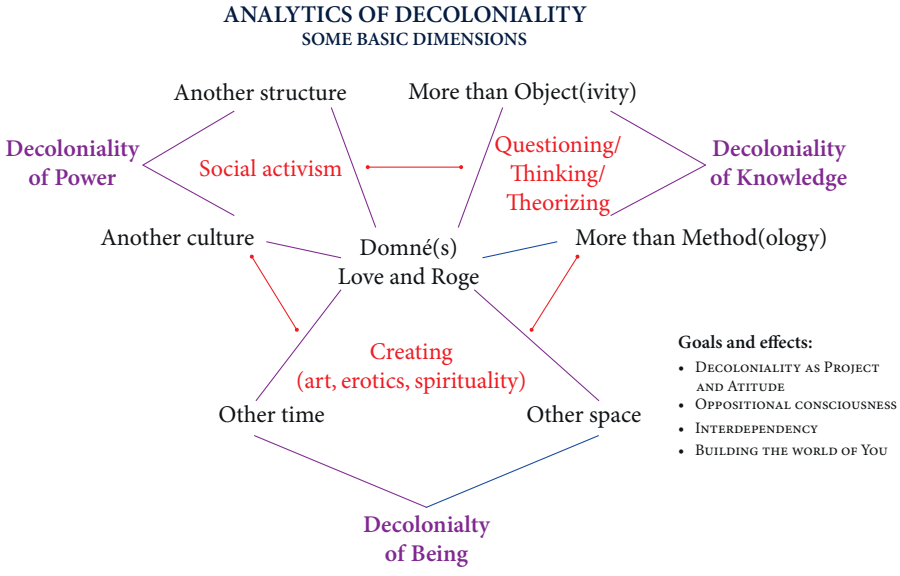

Figure 1. Analytics of decoloniality. Maldonado-Torres (2016) in Foundation Frantz Fanon (p. 30)

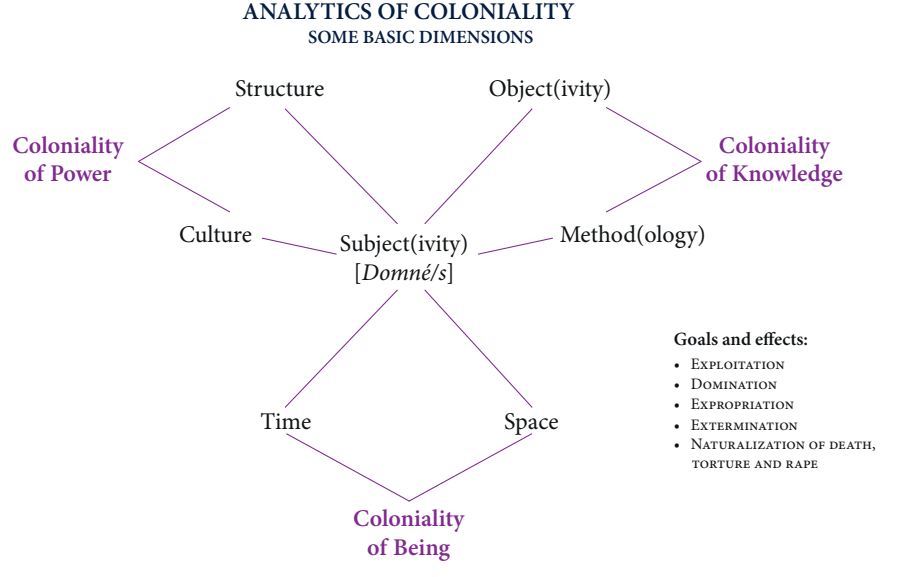

Figure 2. Analytics of coloniality. Maldonado-Torres (2016) in Foundation Frantz Fanon (p. 20)

engaged in an array of activities to battle colonial ideologies and practices. These models were helpful when exploring the colonial and decolonial forces that promote and/or impede Quechua-Spanish bilingualism on campus. Additionally, Maldonado-Torres's model of analytics of decoloniality broadened the lens of this researcher, allowing me to exceed the dimensions of dehumanization caused by current racialized colonial practices: it focused my investigation on the agency of bilingual students and their decolonial actions. It shed light on the link between the situated and the recursive; it provided opportunities to explore the normative structures and the dynamic interplay of coloniality with decoloniality of knowledge, being, and power.

These models provide a roadmap for my investigation of bilingualism. They include the three constructs commonly used in decolonial studies: coloniality/decoloniality of power, coloniality/decoloniality of being, and coloniality/decoloniality of knowledge (Quijano, 2000). Coloniality of power refers to economic and political hegemony; coloniality of being refers to gender, sexuality, subjectivity, and hegemony; and coloniality of knowledge focuses on the anthropocentric view of knowledge. I explored Quechua-Spanish bilingualism that occurs at the intersection of these constructs and elucidated the stigmatization and destigmatization of bilingual students' use of their linguistic repertoire and their agency as they "create, think, and act in the effort to decolonize being, knowledge, and power" (Maldonado-Torres, 2016, p. 30).

Analysis of these dimensions of coloniality and decoloniality enhanced understanding of a "context where coloniality perpetuates itself through multiple forms of deception and confusion" (Maldonado-Torres, 2016, p. 2). The models also helped me understand the ways in which collegiate bilingual students disrupt colonial reproduction to favor decolonial forms of being, knowing, and transforming.

1.3.2 *Decolonial gestures*

Rivera Cusicanqui (2010a) utilizes the Aymara and Quechua terms *Ch'ixi* and *Che'qche*, respectively, as metaphors to explain decolonial gestures of Andean peoples. *Ch'ixi* and *Che'qche,* translated as "motley", that which "expresses the parallel coexistence of multiple cultural differences that do not extinguish but instead antagonize and complement each other" (Rivera Cusicanqui, 2010a, p. 105). This *ch'eqche* force and its contradictions were critical during this study; particularly because photovoice participants and facilitators all practiced diverse types of Quechua-Spanish bilingualism, biculturalism, and trans-culturalism. *Ch'eqche* allowed us to combine our differences yet retain our separate identities, much like oil and water can be combined in an emulsion yet, no matter how small, each bubble of liquid retains its separate identity as oil or water.

In her use of the term "motley," Rivera Cusicanqui emphasizes that decolonial gestures involve efforts of "ours" and excludes the efforts of "others." However, decolonial gestures are not exclusive to a collective "ours," rather they are "stained, and partially inhabited by *others*" (Rivera Cusicanqui, 2010a, p. 92). Ultimately, decolonial gestures "admit new forms of community and mixed identities, and thus enter into a creative dialogue in a process of exchanging knowledges, aesthetics, and ethnics" (Rivera Cusicanqui, 2010a, p. 106). My openness to a non-fixed "ours" guided by the students' decolonial gestures helped to better understand their true voices and to avoid reduction of this study to an exclusionary "ours", an appreciation that ultimately contributed to reshaping the dynamics of photovoice discussions.

1.3.3 *Language ideologies*

In addition to decolonial gestures and *ch'ixi/ch'eqche*, and because of the focus on bilingual practices, this study explored language ideologies surrounding Quechua-Spanish bilingualism amidst modern colonialism. Such language ideologies are conceptualized as a person's beliefs about language which are guided by ideologies from the larger society (Pavlenko, 2002). This concept is understood from a poststructuralist approach, which accepts the non-stable nature of affective views of language and its link to larger societal processes. By necessity, then, this study recognizes that language ideologies are "context-sensitive" (Pavlenko, 2002, p. 284).

Shifting from structuralism toward a poststructuralist approach helped me shift the focus of language as "not merely a tool for communication, but the main site of world and identity construction" (Pavlenko, 2001, p. 121). This poststructuralist perspective on language, combined with the use of the decolonial thinking and the model of analytics of decoloniality, were integral to this study because they helped visualize intersections of colonial/decolonial language ideologies, and decolonial gestures, which affect language practices under hegemonic forces.

2. Methodology

2.1 Choice of methodology

A community-based participatory approach was utilized because it placed the participants' perspectives at the core of the study and hopefully disrupted vertical power relations between them and this researcher. Community-based participatory research (CBPR) is an approach that democratizes research. Reciprocity is a guiding principle that resonates with Andean epistemologies and that aligns with CBPR because it promotes access to local knowledges and relies on partnering with community members to develop mutually meaningful communal contributions.

CBPR is not a single methodology, rather an approach that could involve different quantitative and qualitative methods that are adaptable to the researchers' needs (Israel, Schulz, Parker, & Becker, 1998).

I chose photovoice, a visual participatory methodology, because this approach emphasizes the participants' voices in determining the scope, goals, and actions of the work. Photovoice is one of the recommended methodologies in CBPR and it is commonly used with youth (Israel, Schulz, Parker, & Becker, 2012). The visual component of photovoice engages youth, encouraging their critical collective dialogue; in this study, participants were expected to engage in a dialogue about their shared bilingual Quechua-Spanish practices.

2.2 Community-based participatory research and design overview

Community-based participatory research (CBPR) underpins this study. I chose CBPR because this research approach values local and indigenous knowledge as a basis for actions that improves people's lives (Muhammad et al., 2015). The CBPR approach offers an alternative, non-Western approach to working with Andean community members, mainly youth. This CBPR study focused on an issue suggested by the Andean college students, former members of an affirmative action Hatun Ñan program. These students wanted to explore the possible argument that could support their desire to have the Quechua language as a core course in all departments within a public university that serves Quechuan students. This study therefore required the use of an engaging participatory method, photovoice, in order to address the different types of questions related to opportunities for Quechua-Spanish students with regard to the use of the Quechua language.

The photovoice method had two major phases because the photovoice process from a CBPR approach involved a great deal of time and effort to establish the conditions for a CBPR photovoice study to happen. The first phase focused on approaching the community. Figure 3 shows the sequential flow of this design.

Community-Based Participatory Research with Photovoice

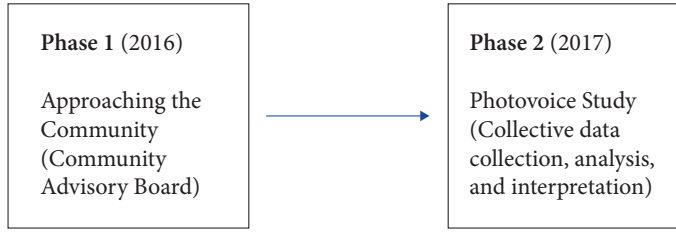

Figure 3. Sequential flow of the CBPR phases

2.3 Photovoice participants

The participants in this study were adult students who resided in a urban setting and attended the Universidad Nacional de San Antonio Abad del Cusco (UNSAAC). These students identified themselves as Andean, Quechuan, or place-specific (e.g., *Haquireño*, i.e., someone from the Haquira town, Apurimac department, Peru). The students' ethnicity is Andean, all self-identify as an Andean person.

In Peru, an Andean person is one who was born in the Andean mountainous range or whose heritage and ancestors are Andean. Andean people speak any of the following three languages: Spanish, Quechua, and/or Aymara (and their diverse array of variations). Andean peoples whose first language is Quechua often speak the language variety known as bilingual Spanish (Escobar, 1988) in which morpho-syntactic and phonological features from the Quechuan linguistic inventory carry into Spanish, a dialectal signature of this variation.

These photovoice participants were selected from the pool of students who completed the sociolinguistic survey study conducted by Yexy, Wences, and myself (Kenfield et al., 2018). Over twenty students responded to an email invitation to the first photovoice orientation session. Only sixteen actually came to our first orientation session, fifteen signed the informed consent but due to time availability three photovoice participants could not continue after the third session. Twelve photovoice participants were part of the photovoice study. All of them (12) self-identified as bilinguals who were bilingual from birth, or who had Quechua as their first language, or whose first language was Spanish (Table 1). All participants indicated that they wanted to be referred to by their actual names in this study with the exception of PucaHuayta, which is a pseudonym; this was cleared by the Institutional Review Board (IRB) of the University of New Mexico.

Table 1. Photovoice Participants' First Language and College Major

N°	Names	First language	Major
1.	Castilla Callapiña, Ronald	Quechua	Anthropology
2.	Casa Aparicio, Carmen	Spanish	Law
3.	Chino Mamani, Fructuoso	Quechua-Spanish	Law
4.	Conde Banda, Nilda	Quechua-Spanish	Anthropology
5.	Ccasani Ccossco, Edgar	Quechua	Psychology
6.	Flores Ramos Ana, Cinthia	Quechua-Spanish	Anthropology
7.	Levita Pillco, Yolanda	Quechua	Anthropology
8.	PucaHuayta	Quechua -Spanish	Anthropology
9.	Quispe Huayhua, Gabriel	Quechua	Psychology
10.	Tecsi Ayme, Yanet	Quechua	Agronomy
11.	Vargas Quispe, Yuly	Quechua-Spanish	Communication
12.	Ventura Aucca, Diana.	Quechua-Spanish	Anthropology

Data were gathered from the field notes (observations), narratives written by the photovoice participants about their photos (brochure for the photo-exhibition), photo-elicited semi-structured individual interviews with photovoice participants, and audio-recorded photovoice group discussions. The data collection occurred throughout the three major stages of a photovoice study, as in Figure 4:

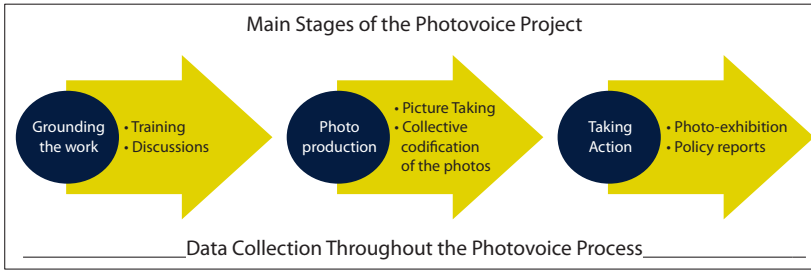

Figure 4. Data Collection Throughout the Main Stages of the Photovoice Project

2.4 Data analysis

Data analysis in this study was handled in two ways, one followed the photovoice collective analysis procedure conducted by the photovoice participants, and the other one followed a thematic qualitative data analysis procedure conducted by this researcher. The photovoice participants completed the initial coding during the third photovoice session, this was based on their discussions in the second photovoice session. Later, during the fifth photovoice session in Casa Campesina, the photovoice participants created categories after presenting in small groups the major themes of four of their photographs. Finally, they wrote the interpretations of their own findings (elicited by their own photographs) in the brochure distributed during the second photo exposition.

Following the general protocol for qualitative thematic analysis, I created and organized the data files from the photo-elicitation interviews, read the texts to make notes, and formulated the initial codes using the data analysis software Nvivo11. Then, after more data (observations) were collected from the video-recorded photo-exhibitions (approximately by July 2017), I began an overall initial coding to establish primary coding structures, defined a central experience, and utilized a coding structure to define causes, context, and ordering (Creswell, 2013).

I completed the selective coding by November 2017. Then, I engaged in a thematic analysis of the data (individual photovoice participants interviews probed by their own photographs, photovoice group discussions, field notes) to create a version of the story, which I shared with Yexy, Wences, and the photovoice participants electronically. This member-check allowed me to confirm the version of the

story during the data analysis stage. Creswell (2013), states that thematic analysis "… [a]ssumes emergent multiple realities; the link of facts and values; provisional information; and a narrative about social life as a process" (p. 197).

As this study favors the engagement of the participants in the data analysis, the photovoice participants were part of the analysis of data through regular Facebook meetings. In this last phase, I followed the grounded-theory approach to data interpretation (Strauss & Corbin, 1990) rather than theoretical guided data interpretation. Concepts and theories that emerged during the data analysis guided the interpretations. In addition to following the grounded-theory tradition to data interpretation, I compared and informed my interpretations respecting the interpretations of the photovoice participants drafted in the form of a brochure. Thus, I paid special attention to how the photovoice participants themselves made sense of the data (i.e., their own photographs).

3. Findings

Listening to the voices within the data, I was overwhelmed by the students' efforts and vision to create spaces for their Quechua practices to flourish, despite the hindrance found at their university. The themes (*supay* 'to act with ill intent', *lazos* 'ties', and *t'ikarinanpaq* 'to flourish') discussed in this study reflect the conditions identified by the photovoice participants to reach their overall objective of achieving the maintenance, revitalization, and practice of Quechua among the Andean people through decolonial gestures, intercultural dialogue and Quechua-Spanish bilingual coexistence. These three themes summarize students' political objective of *t'ikarinanpaq*, maintaining and promoting Quechua in order to exercise genuine *lazos* and intercultural citizenship through battling *supay* as a carrier of long-standing colonial practices. Though few in number, participants were focused and are taking advantage of new formats like photovoice and internet chat groups to strengthen their stance and spread their message.

As tangible evidence of equality and respect, they perceive achieving *Quechua T'ikaraninpaq* (the blooming of Quechua language-culture) as closely linked to language equity, a crucial right that is often lessened for Quechua speakers since this population lacks equal access to basic services and their view of the (Andean) world is ignored and delegitimized. Demanding respect for the Quechua language is their primary vehicle for attaining *T'ikarinanpaq*. Students like Fructuoso state this concept emphatically:

> *noqa niykichis kusisqa orgulloso kaychis runa simi rimasqaykichismanta kawsayninchismanta, culturanchismanta, amataq ima p'inqakuypas kachunchu,amataq p'inqakusunchu imayna kasqanchismanta, hinaspapas niqayman hina piwanpas maywanpas, presidente de la republica kamachiqwapas ñawpaqta rimana runasimipi paykuna mana yachaqtinkuña castellano simipiqa, runasimipi rimayqa hoq derecho fundamentalmi… manan pipas ninmanchu ah…. Qanqa runasimi rimaqmi kanki lloqsiy lloqsiy*.
>
> [I tell them to be proud of the fact that they speak Quechua, to be proud of our experiences, our cultures, to not be ashamed. We are not ashamed of what we are. That is what I would say to anyone, even the president of the republic. Speak in Quechua first; if they cannot, then speak in Spanish. Speaking in Quechua is a fundamental right. No one can tell us: "Ah, you're just a Quechua speaker: get out."]

Feeling ashamed because of their appearance, names, and language seems to be a major *supay* for even the most vociferous participants. They fight back with pride of self, and strive to encourage all Andean students with Quechuan roots to do the same. They also recognize that self-respect is a good start, but insufficient to accomplish true *T'ikarinanpaq*. Non-Quechuans and institutions like UNSAAC must change their colonial behavior. The students emphasize the racialized experience of many Quechua peoples since they argue that legal, educational, and health care systems limit the exercise of intercultural citizenship for those who do not speak Spanish, and the university also enables this unequal treatment by not training professionals capable of serving everyone. In their fondest wishes, students hope that the university community will gradually open up to intercultural dialogue, become not only tolerant of but respectful to the Quechuan episteme. Not just hopeful, they insist on concrete measures to create greater opportunities to achieve this vibrant blooming for everyone within the community university – classes taught in Quechua by Quechua speakers, physical spaces dedicated to Quechua, structural recognition (statuary) of the importance of Quechua to Peru, funding for Quechua-specific cultural events like Research Quechua Week. Immersion in Quechua – the people, their language, their culture – at the university would shut off the tap that feeds exclusionary systems. This respect must also extend to legislative and legal venues where Quechuans are treated as inferior. Fructuoso states this emphatically (Figure 5) in his criticism to the judicial service in Peru.

Photovoice participants were acutely aware of the hegemonic forces rooted in colonial practices that impede the full exercise of citizenship by Quechua speakers. Quechuan citizens offer diverse and critical ways of knowing, being, and communicating. To magnify and exemplify this potential benefit for all Peruvian society, the photovoice participants believe that exercising citizenship through the Quechua language is a central issue in their criticism of institutionalized racism, a discriminatory action that precludes access to valuable knowledge from its marginalized

Original Title: Photo: El Idioma Quechua Como Derecho Fundamental

Translated Title: The Quechua Language as a Fundamental Right

Original Text:

Esta imagen es el reflejo de las instituciones públicas que tenemos en nuestro país, donde observamos el quechua hablante es considerado como un discapacitado, a pesar que nuestra constitución reconoce que el idioma quechua es un idioma oficial, donde señala expresamente que ***"todo peruano tiene derecho a usar su propio idioma, ante cualquier autoridad"***. ¿Entonces porque considerar a un quechua hablante como un minusválido que limitaciones tiene psíquicas, físicas? No es gracias a la comunicación con el idioma quechua sean construido las grandes construcciones en el incanato que ahora deja atontado a toda la humanidad? Así como la maravilla del Machupicchu. Entonces por que la marginación a un quechua hablante, peor aún en otras instituciones del estado ni existen ventanillas que te pudieran atender en quechua, a sabiendas de que en el Cusco más del 50% de la población es quechua hablante.

Es por ello en mi opinión de que todos los egresados de nuestra tricentenaria casa de estudios estén obligados con el dominio del idioma quechua, de esa forma exista un servicio profesional adecuado y correcto a la ciudadanía.

"Runasiminchista parlasun maypiña, piwanya tariricuspapas"

Translated Text:

This image is a reflection of the public institutions we have in our country, where we see that Quechua speakers are viewed like disabled people, despite the fact that our constitution recognizes the Quechua language as an official language, where it expressly states that "all Peruvians have the right to use their own language before any authority." So why would a Quechua speaker be considered the same as a disabled person who has mental or physical limitations? Isn't it true that it is thanks to communication in Quechua that the great construction projects of the Incas were built, which now leave all of humanity in amazement? Not to mention the glories of Machu Picchu. So why are Quechua speakers marginalized, even more so in other state institutions. There are no service counters that serve people in Quechua, even though we know that more than 50% of the population in Cusco speaks Quechua.

That is why, in my opinion, all graduates from our three-hundred-year-old institution of learning should be required to master the Quechua language. That way there would be adequate and proper professional services for our citizens.

Runasiminchista parlasun maypiña, piwanya tariricuspapas

Figure 5. Entry in the brochure. F. Chino Mamani (2017)

communities. Students like Fructuoso fail to find compatibility between the "dead letter" of the constitution and the reality of rights. He believes in passive-active resistance to this bigotry and advises, "Runasiminchista parlasun maypiña, piwanya tariricuspapas", which means "Let's speak Quechua wherever we are, with whomever we meet." If linguistic rights are limited for indigenous citizens and their exercise of citizenship remains nearly nonexistent, the outlook for *T'ikarinanpaq* is dismal.

Cogently aware of colonial forces still at work in this century, photovoice participants accept their responsibility to transform awareness into actions, actions that engender bilingual Quechua-Spanish interculturality. Students continue to hope that more students will join in Quechua-Spanish bilingual practices, creating, in

effect, a mandate to accept openly Peruvian diversity in all its manifestations. They desire a community-wide interculturality that they have felt in activities organized by VIHÑ on the university campus and outside it, and in their daily lives when they return to or visit anew Quechua communities.

4. Discussion and conclusions

Initial findings, emerged from a focus on exploring the experiences of photovoice participants regarding their current and projected opportunities to use Quechua in higher education. The themes of *supay* (to act with ill intent), *lazos* (ties), and *t'ikarinanpaq* (to flourish) explain the struggles, colonial and decolonial tensions, resistance, contestations, inspiration, and hope that Quechua-Spanish bilingual students perceive, live, and wish for in their higher education experiences.

As illustrated in Figure 6 below, students recognized having minimal support for the use of Quechua at the university:

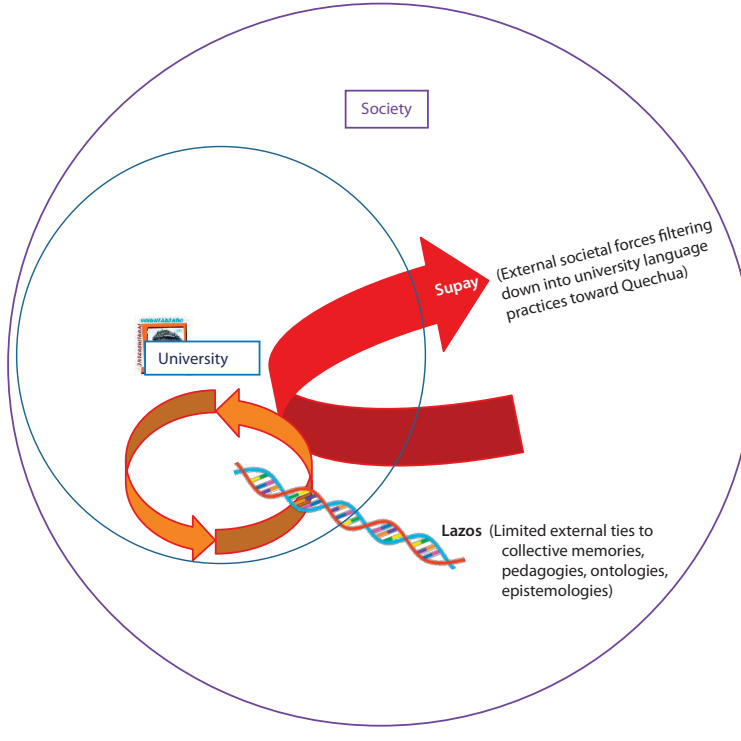

Figure 6. Andean students' perspectives on current Quechuan practices at the university campus

As portrayed in the figure, Andean students identified experiencing these limitations arising from an intra-, inter-personal, communal, and institutional character: *supay*. *Supay*, directed by colonial ideologies, refers to limitations that sustain an array of linguistic discriminatory practices such as language shaming, the absence of Quechua courses in core curricula, and the failure of administrations to recognize the bilingualism of the Quechuan students as an asset. Despite these limitations, Andean students also recognized the importance of their background and commitment to the Quechuan peoples through *lazos* (ties). *Lazos* have helped create personal spaces within the university through decolonial gestures toward supporting the use of Quechua, to gain respect for Quechuan peoples and Quechuan knowledges, and to battle against deficit views of bilinguals – actions that in turn encourage Quechua to flourish on campus. A particular space that Andean students identified as a place where they can nurture Quechuan knowledges and practice the Quechua language is the Intercultural Volunteering Hatun Ñan group (VIHÑ, Spanish-Quechua Acronym). This is a student group managed by students who self-identify as indigenous. Photovoice participants in this study are active members in the VIHÑ who, collectively, constantly battle the *supay*.

In Figure 6, students (VIHÑ members) enact decolonial responses to the coloniality of intrapersonal *supay*: they increasingly and actively confront the collegiate community at large as they attempt to root out the internal colonialism on campus. For these students, the *supay* existing within the university community can be understood as thinking and acting according to linguistic coloniality (Veronelli, 2012) and epistemic coloniality (Garcés, 2007; Maldonado-Torres, 2007). Most students perceive that Spanish, and therefore European, ideology is superior: many even deny the existence of their native language Quechua. This *supay*, this linguistic coloniality in the university community, corroborates the literature on lingual colonialism (Cusicanqui, 2012; Garcés, 2007; Rivera Supa Huaman, 2002; Veronelli, 2012; Zavala, 2011) as well as the coloniality of being, knowledge, and power (Maldonado-Torres, 2011).

Carmen, one of the participants, spoke about this deficit view of Quechuan peoples based solely on their last name, a distinct manifestation of colonial thinking. People with surnames that show Quechuan descent (e.g., Quispe and Mamani) are presumed ignorant, the burden of prejudice levied according to colonial racial categories. These discriminatory and discriminating acts exemplify the impacts of the social practices of power they from which they exude: "…quedó formada de la idea de que los no europeos tienen una estructura biológica no solamente diferentes de los europeos, sino sobre todo pertenece a un tipo o a un nivel inferior." [the idea that non-Europeans have a biological structure not only different from Europeans, but of a lower type or level] (Quijano, 1992, p. 761).

According to participants, the stress of migrating to the city as a university student causes Quechuan students to dress as a *mestizo* (crossbreed), delink from or deny their Quechuan heritage, and disconnect from, even exclude, others coming from Quechua communities. The use of the social and racial category of *mestizo* reproduces the coloniality of being (Maldonado-Torres, 2012), an aspiration to belong to more civilized categories. Although *mestizo* often camouflages the Quechuan heritage of numerous bilingual students, most participants in this study continually affirmed their *mestizaje*: their Spanish and Quechuan languages and ways of knowing coexist within them. Students also confront sociolinguistic discrimination not only toward their speaking in Quechua but even more so when they speak in bilingual Spanish (Escobar, 1988).[6] Students identify these discriminatory practices as *pukawayta* (acts of ignorance), since these acts come from a blindness that pushes other students and some teachers to denigrate students who speak the bilingual form of Spanish.

Despite limitations that students experience when using Quechua in the university, they find solace and support when they form *lazos*, bonds created between students, certain teachers, and their Quechuan cohorts outside of the academy. This need to connect, create, and maintain ties with other Quechuan peoples is another decolonial gesture that could be explained as communality: "una racionalidad comunitaria y gremial, prácticas que no resulten legibles para el ethos eurocéntrico que sólo podría verla como 'supervivencia' al desconocerlos como sujetos colectivos de su propia historicidad, y su propio proyecto de vida" 'a communitarian and unionizing rationality, practices that are not readable for the Eurocentric ethos that could only see it as "survival" by not knowing them as collective subjects of their own historicity, and their own project of life' (Rivera Cusicanqui, 2016, p. 135).

Further, photovoice participants identified the coloniality of power as the most difficult area to dismantle: it requires collective efforts from bottom up. In Figure 6, the coloniality of power is represented by the red arrow of *supay*, whose presence is found in the university and the society at large. One reason coloniality of power is so difficult to address is that bilingual students, like the general Quechua population, have had limited access to educational systems historically. Andeans had to fight constantly for their rights. Thus, their limited background in education has been primarily Spanish-centric and has imprinted a colonial mindset in those students who aspire to higher education.

Current decolonial gestures by photovoice students have stimulated a limited sprouting of Quechua within the university community (students, faculty,

6. Bilingual Spanish refers to the Spanish variety that carries morphosyntactic and phonological features from the Quechuan linguistic inventory into Spanish.

professional staff), but achieving flourishment of Quechua in a sustainable and expanding way will require a continuous collective effort. Photovoice participants envisioned *t'ikarinanpaq* as a cyclical, self-perpetuating process that disrupts the reproduction of *supay* (intra-, inter-personal, communal, and institutional limitations) guided by deficit views to Quechua practices, peoples, and language, as illustrated in Figure 7.

Andean students envision that with each cycle of decolonial gestures, each cycle of *lazos*, *t'ikarinampaq* will bloom even larger and reinforce the students' collective Quechuan practices. The nature of this cyclical process corresponds to the vision not only of collective efforts from the university community members, but for a working continuum undergoing constant revisions. The Andean students perceive this revision as an annual collaboration between VIHÑ members and the university administration.

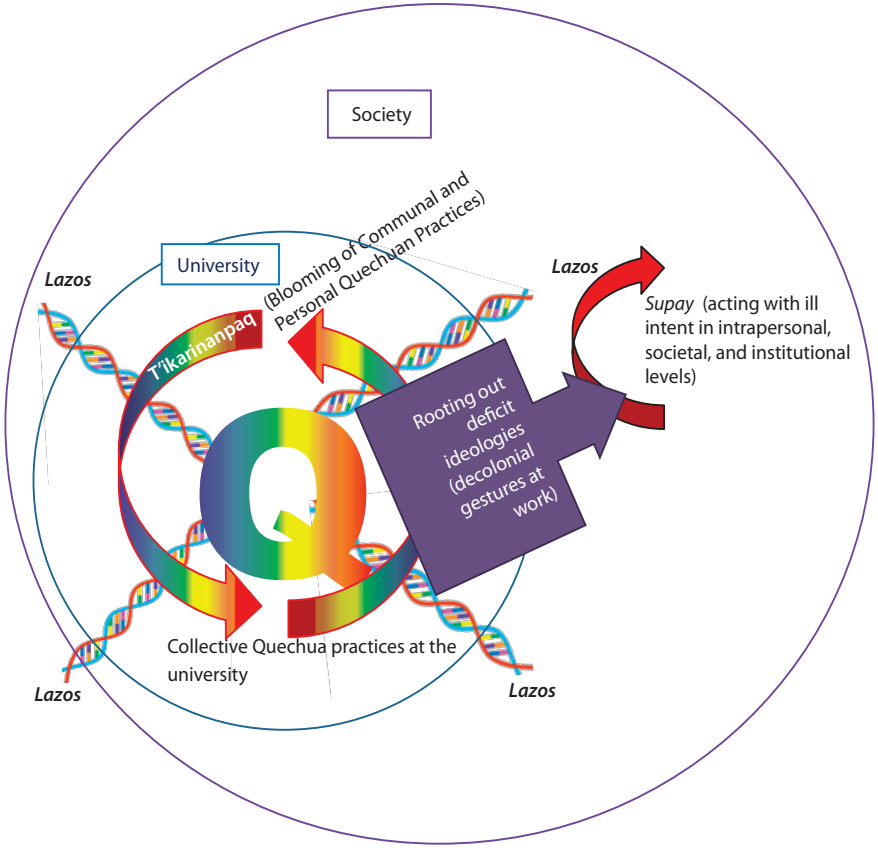

Figure 7. Andean Students' Envisioned Cyclical T'ikarinanpaq (Cycles of Quechua Blooming)

Photovoice participants not only respect and practice Quechua knowledge, they also urge the university to broaden their vision and promote Quechua knowledge in the classroom. Beyond the classroom, they desire support for a "Quechua research week", a conference-like event that brings in outlying Quechuan peoples thus creating more connections with the Quechua communities. In this action, the students are reflecting Santos' difference between "science as monopolistic knowledge and science as part of the ecology of knowledge" (Santos, 2014, p. 56). They openly acknowledge and wish to display the richness of Andean knowledge as complementary to and an extension of academic learning.

Photovoice participants envision that more collective forces, coming from faculty, student body, families, and staff, will join them to battle discriminatory practices on campus and in the classroom by speaking in Quechua, forming Quechuan support groups, requesting coursework in Quechua, and petitioning administration for more emphasis on the Quechua language as well as physical spaces in which to practice their culture. For Andean students, members of VIHÑ, the physical space recently granted to them, an office, is not large enough for their growing membership body. Under the Ford-funded Hatun Ñan program, this group, much smaller then, occupied an entire building dedicated exclusively to the Quechuan students. As VIHÑ members recruit more bilingual Quechua-Spanish students to their activities at UNSAAC, they will also expand their activism to other campuses, urban Quechuan communities, and rural villages in the mountains to have Quechua bloom in the university.

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CHAPTER 11

New Mochica and the challenge of reviving an extinct language

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In this paper, we discuss New Mochica as an example of language revival. New Mochica is definitely not the Mochica of the colonial or republican epoch of present-day Peru and the continuity of an already extinct language can be questioned. Van Coetsem's (1988, 2000) framework of language contact explains why the contribution of the language revivalists' dominant language, Spanish, has such a powerful impact on New Mochica, eradicating the central typological features of Mochica. On the other hand, the groups of language revivalists presented in this paper explore the linguistic resources at hand in creative ways. Based on this case study, we propose that language revival should be studied as distinct from language revitalization (cf. Zuckermann & Walsh, 2011), yet as related to overall processes of language making (Hüning & Krämer, 2018).

Keywords: indigenous languages of Peru, language policy and planning, language revival, language making

1. Introduction

The Mochica language represents an important element in the process of reconstructing a specific cultural identity on the northern coast of Peru both after its death during the second half of the 20th century and as a result of recent language revival. Mochica is considered a linguistic isolate. It is predominantly a synthetic, suffixing language (Adelaar, 2007[2004]; Eloranta, 2018). It is typologically distinct from Andean Languages. Among its unusual typological features, it presents an "exotic" sound system (Adelaar, 2007[2004], p. 321). The term *exotic* is impressionistic but emphasizes the difference in comparison to Andean languages like Quechua and Aymara, which have a trivocalic system, while Mochica appears to have featured six vowels. The presence of an inalienability split (Eloranta, 2019, forthcoming) and multiple copular verbs (Eloranta, 2014) are other salient features that are not common in Andean languages. Morphologically speaking, Mochica

https://doi.org/10.1075/ihll.29.11bar

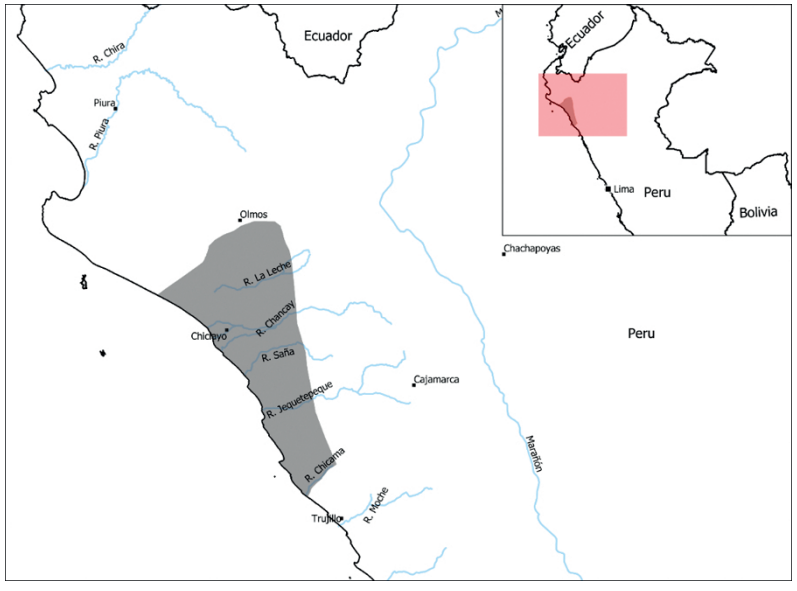
also had two-stemmed nouns (an obligatory distinction between possessed and non-possessed). The recurrent use of passive constructions and the presence of an agentive case suffix *-n* lead Hovdhaugen (2004, p. 74) to state that Mochica was a "rather special kind of a split ergative language".

Moreover, the presence of numeral classifiers is unusual among Andean languages, but they are common among Amazonian languages. Among the so-called Andean languages, this feature is present in the extinct languages Cholón and Hibito of the eastern slopes of the Andes (Alexander-Bakkerus, 2002; Eloranta, 2017; Salas García, 2012) and in Mochica. Mochica's numeral classifier system has been analyzed by Adelaar (2007[2004], pp. 342–343), Hovdhaugen (2004, p. 26), Middendorf (1892, pp. 129–131), Salas García (2008, 2011, 2012, pp. 154–176), and Torero Fernández (2002, pp. 346–347). Interestingly, Mochica classifiers do not behave like the ones found in Amazonian languages.

There are several problems one encounters when approaching the Mochica language. The fact that there are no speakers left is a clear limitation. In relation to its phonological system, the reconstruction of Mochica sounds will probably always remain hypothetical, unless someone discovers the location of the wax cylinders that were recorded by Hans H. Brüning in Eten. The recordings were made with an Edison phonograph during the first half of the twentieth century. Another problem one faces when dealing with northern Peruvian languages in general, including Mochica, is the scarcity of sources on these languages. The historical distribution of Mochica can be seen in Map 1.

Peru's region of Lambayeque, on the northwestern coast of Peru, witnessed the rise and fall of several important pre-Columbian civilizations, still visible in impressive archaeological sites and diverse cultural manifestations such as pottery, artifacts of metallurgical work, etc. Interestingly, not only the people of modern Lambayeque (which, according to evidence in Torero Fernández, 1986, pp. 523–548, 2002, pp. 213–233, and Urban, 2019, pp. 62–63, was originally a Mochica-speaking area) but also the people of modern La Libertad (which originally was a Quingnam-speaking[1] area) seek to build and reinforce their identity, rediscovering cultural and linguistic elements and trying to implement a new version of the Mochica language. Thence, we find the development of New Mochica which is based on grammatical and lexical features of Mochica as outlined in both colonial and post-colonial descriptions (see Section 3). The areas of Lambayeque and La Libertad, relevant for showing the linguistic boundaries between Mochica and Quingnam, are depicted in Map 2 below where the asterisks mark the Mochica-speaking area (Lambayeque) and the dot the Quingnam region (La Libertad).

1. Quingnam, commonly known as lengua pescadora 'fisher language/language of the fishers', is another extinct language of the northern Peruvian Coast (Cerrón-Palomino, 1995, p. 31; Rabinowitz, 1983, pp. 260–263; Torero Fernández, 1986, p. 541).



Map 1. The distribution of Mochica according to Carrera y Daza (1644)[2]

Considering both the period of time when the sources for the study of Mochica were produced and the nature of the language itself, we have been able to delimit three phases. We do not elaborate here on the works developed by linguists, such as grammatical analyses and language sketches. Nevertheless, the first phase covers the colonial period, thus Colonial Mochica, and since the only grammatical description is that by Fernando de la Carrera y Daza (1644), who missionized in Reque, one can suspect that the language described is an abstraction of the several varieties this missionary encountered, but with predominant influence from the Reque variety. The second phase is represented by the remnants of the language collected by several travelers when the language was already dying out, mainly from Eten, the last stronghold of the language. We refer to the Mochica language attested during this phase as Republican Mochica. The third phase coincides with the production of Mochica materials through the efforts of several local researchers from both the regions of Lambayeque and La Libertad. In the quest of constructing a cultural identity, they conduct diverse projects of language reclamation and revival. According to Amery (2016, p. 19), "language reclamation specifically refers to language revival in situations where the language is no longer spoken and little is known orally within the community". Indeed, we prefer to refer to the ongoing process in northern Peru as language revival rather than language revitalization, as we will explain in Section 2. We shall henceforth refer to the Mochica varieties of this phase as New Mochica.

2. This map was created by Arjan Mossel (University of Leiden).

Map 2. Mochica-speaking towns and villages, according to Carrera y Daza's (1644) account

As a result of the language revivalist movement – as opposed to language revitalization – to be outlined in Section 2, Mochica is now used in a much wider area in present-day northern Peru than at the height of its diffusion during colonial times (1542–1821 for Peru), i.e., it is taken as a point of reference and even practiced in areas where it was not previously spoken. This type of Language Policy and Planning (henceforth LPP) intervention by stakeholders not belonging to the original speech community mirrors, for example, the spread of Quechua as a Lingua Franca by the Spanish after the Spanish colonization in the larger Andean region[3] or, for example, the successful reinvention of Hebrew (cf., e.g., Coulmas, 2016, pp. 139–153) and thence constitutes a perfect example of language revival.

The Regional Board of Education issued resolution number 0675–2008-GR. LAMB/DREL along with the Regional Government of Lambayeque's regional ordinance number 011-2010-GR.LAMB/CR that supports the diffusion of the Mochica

3. Quechua was already used as a Lingua Franca in the Inca Empire, but the Spanish LPP intervention, establishing it as an official *lengua general*, a means of interethnic communication (see, e.g., Vitar, 1996, p. 148, for uses of *lengua general*, and Baker, 1990, for "Means of Interethnic Communication") made it spread well beyond its original area of diffusion. In this context, the observation by Alvar (1996, p. 13) that interethnic communication in Latin America was facilitated by the Spanish is outdated.

language in schools and other educational centers in the region of Lambayeque. As we shall see, this teaching is based on revivalist postures in the sense of reconstructing the language. Basically, the language is taught as a subject in very few experimental schools (Peralta Vallejos, personal communication, August 4, 2017). The community has realized that classroom-based language instruction is not enough (cf. Hinton, 2001, pp. 7, 10). Therefore, the revival of the Mochica language is part of a larger movement in the pursuit of a Mochica identity. To achieve this goal, there are activities held in different schools and communities of the Lambayeque region, such as the election of both the *Chisi Muchik* 'Mochica girl' and the *Iñikuk Muchik* 'Mochica teen'.[4] These contests can be considered ethnocultural pageants where the participants are evaluated according to criteria such as the ability to give a short speech in Mochica, master some commonly used Mochica expressions, describe regional dishes, or dance traditional Lambayeque dances.

Asensio (2012, 2014) claims that the discoveries of the great archaeological sites in northern Peru during the 1980s motivated the rise of this movement, which he refers to as *Movimiento Muchik* 'Muchik movement'. This movement is growing stronger through support from the regional government as well as some intellectuals promoting an ethnic and political discourse that allows for the discovery and enhancement of cultural elements – including the linguistic ones to be discussed in Section 3 – that were already either lost or almost lost.

2. New Mochica and language revival

Mochica constitutes an interesting case of language revival. Following Zuckermann and Monaghan (2012) and Zuckermann and Walsh (2011), we prefer to use the term "language revival" instead of "language revitalization" because it is more appropriate to the situation of Mochica. Language revival differs from language revitalization in that there are no longer even vestigial speakers – at times equaled with semi-speakers (cf. Dorian, 1977; Lipski, 1989, p. 31;) – whose knowledge could be drawn upon. This presents special challenges for the reconstructions of the language but also allows for processes of language making (Bartens et al., forthcoming).

After language death in the first half of the 20th century (see Crystal, 2000, p. 19 for the concept), Mochica was revived. As stated above, whereas revitalizing a language implies rescuing a weakening or a dying language, language revival means resurrecting a language with no existing speakers. Coulmas (2016, pp. 139–153) and Zuckermann and Walsh (2011, p. 114) discuss the most quoted example of

4. Iñikuk is Middendorf's orthographic variation (1892, p. 58) of the term registered as yñicuc 'marriageable woman' attested in Carrera (1644, p. 146).

language revival, Hebrew, already mentioned above,[5] and state that modern-day Hebrew or Israeli is a very different language from that of Biblical Hebrew, both typologically and genetically.

Zuckermann and Walsh (2011) present various attempts to classify Israeli. It has been considered either Indo-European or Semitic. However, they find it more appropriate to categorize it as both Semitic and Indo-European at a time. This makes Israeli a hybrid language – not only in terms of being multi-layered in linguistic structure but also multi-parental (Zuckermann & Walsh, 2011, p. 114) – rather than an evolutionary phase of Hebrew. The way these authors conceive the hybridity of Israeli makes it a relevant example for understanding the nature of revived Mochica, or what we prefer to call New Mochica, as we show at the end of this section.

Considering the Mochica revival linguistic movement, it is important to distinguish two groups[6] of revivalists, the Lambayeque group (in Lambayeque) and the Moche group (in La Libertad). For years, the Lambayeque group has been more visible because of the work of several activists who aim at recovering the Mochica language and other cultural elements (cf., Duranti, 2000, p. 47, on language as an extrinsic part of culture) in order to construct a northern Peruvian identity. The Lambayeque group can be subdivided into two subgroups that we will henceforth call Lambayeque 1 and Lambayeque 2.

Lambayeque 1 is represented by several activists. Antonio Serrepe Ascencio is one of the activists of the northern Peruvian language and culture revival movement in Lambayeque. He is a university lecturer of "History of the Mochica Culture" at the Faculty of Education of the private University of Chiclayo. He has dedicated over sixteen years of his life to the study of the history of Lambayeque and its ancestral civilizations and is the author of a considerable number of publications on these topics. Serrepe Ascencio is also the director of the *Sociedad y Cultura Muchik* 'Mochica Society and Culture' in Chiclayo, which is a group of researchers focusing on the Mochica culture, especially the language, founded in 2008. This association is dedicated to the teaching of Mochica at the *Instituto Nacional de Cultura* 'National Institute of Culture' in Chiclayo. In 2010, Serrepe Ascencio published a book called *Las culturas prehispánicas en la región Lambayeque I* 'Pre-Hispanic cultures in the Lambayeque region'. In collaboration with another renowned language revival activist, the lately deceased Ana Ramos Cabrera, he prepared the re-edition of the grammatical description of Colonial Mochica (Carrera y Daza, 2009[1939]) of Altieri's edition of the 1644 original (Carrera y Daza, 1939[1644]). In the final

5. See also Fishman (2001) on Hebrew revival.

6. Dividing the people involved in the Mochica revival movement into two main groups is our way of analyzing the grassroots LPP situation.

pages of this book, Serrepe Ascencio and Ramos Cabrera (2009, pp. 110–111) include a seminal text written entirely in New Mochica, narrating the mythological legend of Ñaymlap. Serrepe Ascencio and Ramos Cabrera (2012) is a book called *Maellaec Maix ed Muchik* 'Let's talk Mochica language' that consists of a Mochica vocabulary (Serrepe Ascencio, 2012a, 2012b) and a learning/teaching manual *Ed Muchik* 'Muchik language' prepared by Ramos Cabrera (2012[2006]). Serrepe Ascencio (2012a) is a compilation of various sources, in which the author respects the original orthography of each author and does not standardize the vocabulary used. Serrepe Ascencio (2012b) is a basic vocabulary of words and phrases that appears in the manual *Ed Muchik* and which was created for pedagogical purposes to facilitate the use of the manual. It includes expressions that pertain to both Colonial and New Mochica.

Linguist Guillaume Oisel, who is a visiting professor at the *Universidad Nacional Intercultural de la Amazonía* 'Intercultural National University of the Amazon area' (Pucallpa) and the director of the *Alliance Française* in Chiclayo, also promotes the diffusion of the Mochica language, including a course of the Mochica language at the Alliance Française. According to Oisel (personal communication, May 5, 2017), Serrepe Ascencio supports this teaching initiative in collaboration with two other Mochica language teachers: Luisa Santisteban and Wagner Cabrejos Guevara.

Lambayeque 2 counts with a group of revivalists who form an interdisciplinary team consisting of Medali Peralta Vallejos and the brothers Juan Carlos Chero Zurita and Luis Enrique Chero Zurita. Since 2005, this team has been very active in Mochica language and culture revival. Peralta Vallejos is a secondary school teacher of the discipline of "Language and Literature" and a researcher and promoter of the Mochica language and culture. She promotes, for example, the ancestral technique of backstrap loom weaving and other regional craftwork. Juan Carlos Chero Zurita is also a teacher of Language and Literature, a lawyer, and a lecturer at the *Universidad Señor de Sipán* 'Lord of Sipan University' in Chiclayo, while his brother Luis Enrique Chero Zurita is an archaeologist and lecturer at the *Universidad Nacional Pedro Ruíz Gallo* 'National University Pedro Ruíz Gallo'. He is also the director of the Site Museum of Huaca Rajada in Sipán. The efforts and activities led by this team have been fruitful, consisting of workshops, teacher training, and Mochica instruction in some schools. They promote the investigation of cultural manifestations in the area, as well as producing linguistic material. They are also very supportive of other initiatives in the region and eager to work in collaboration with other groups. They have actively participated in organizing various events as part of the *Festival del Señor de Sipán* 'The Lord of Sipan Festival' organized between 2012–2016. The result of their years of study of the Mochica language and culture is a language manual of Mochica basics, called *Tūk Muchik* 'Mochica tongue' (Chero Zurita et al., 2012).

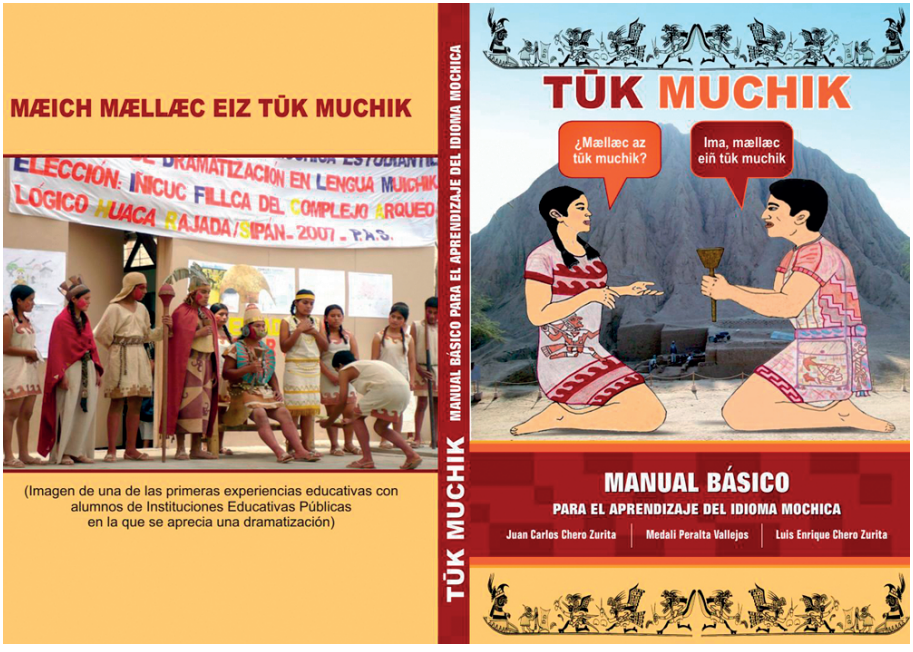


Figure 1. Front and back cover of the Tük Muchik Mochica learning manual

The Moche (La Libertad) group of revival and diffusion of the Mochica language and culture mainly consists of the brothers Antonio Hermógenes and Jorge Juan Sachún Cedeño. Antonio Hermógenes Sachún Cedeño is an ethnohistorian. With his brother, an anthropologist, he co-founded a research center that concentrates on investigating and empowering the Mochica language and culture as a means of constructing and enhancing the ethnic identity. This research center's name is *Eje de Investigación y Vigorización de la Etnia Muchik*. When reading Hermógenes Sachún Cedeño's manuscripts,[7] one catches a glimpse of his manifesto in which he presents different proposals for the renovation of the educational system, among other ideas; his main goal is, obviously, the diffusion of Mochica language and culture. Indeed, language plays an important role in this manifesto, as a means of learning and interpreting culture and as a key element for the consolidation of the historical, cultural, and artistic identity of the *etnia Muchik* 'Mochica etnia'

7. One of the authors visited Antonio Hermógenes Sachún Cedeño in Moche and received several of his manuscripts. Most of the manuscripts are not dated, but we list them in the bibliography according to their titles.

(Sachún Cedeño, 2004).[8] This group's motto is *Moeiche Muchik-Chipan siamein*. 'We, the Mochicas, still live.' This, along with many other phrases, are of Sachún Cedeño's authorship, as are the Mochica ethical-moral maxims *Ekeiñ pecanpoen*. 'Tell the truth.', *Lokeiñ odka*. 'Be honest, honorable, sincere.', and *Lokeiñ caf loepac*. 'Be hardworking.' In a 2017 interview, Jorge Juan Sachún Cedeño adds a fourth maxim the spelling of which we assume to be: *Lokeiñ kallapoek*. 'Be friendly.'[9] The followers of this group are trying to boost the use of these maxims in schools. An important detail to be mentioned in relation to the maxims is that their creators use the first-person singular clitic *-eiñ* in combination with the verbal roots instead of using an imperative form as most probably would have been the pragmatically expected form in Colonial Mochica.

Overall, the Sachún Cedeño brothers have devoted efforts to developing what Jorge Juan Sachún Cedeño (2017) calls "ethno-pedagogical strategies" in support of the revival of the Mochica language. The election of both the *Chisi Muchik* 'Mochica girl' and the *Iñikuk Muchik* 'Mochica teen' are so-called ethno-pedagogical strategies. The previously mentioned *Iñikuk* ethnocultural pageant appears to have been initiated as a result of an initiative by Jorge Juan Sachún Cedeño[10] in 1993 (Sachún Cedeño, 2017), and it has been gaining acceptance and popularity, nowadays replacing mainstream beauty contests in the area. We will refer to this New Mochica variety as the Moche variety and the two others as Lambayeque 1 and Lambayeque 2 New Mochica.

8. Note, however, that the concept etnia Muchik defended by Sachún Cedeño is highly controversial.

9. Middendorf (1892, p. 67) reports kallapäk 'smiling', 'friendly'.

10. Peralta Vallejos reports (personal communication, August 4, 2017) that she believes that there is no consensus about which group initiated the celebration of the election of the Iñikuk. Besides Sachún Cedeño, Victorino Túllume Chancafe, archaeologist, director, and founder of the Círculo Cultural Étnico Pedagógico Victorino Túllume Chancafe, also claims to have been the initiator of the pageant. Serrepe Ascencio and Ramos Cabrera (2009, pp. 7, 102) confirm that Túllume Chancafe started with the celebration already in 2002 and that the first Iñikuk was Amalia Uypan. However, the regional government institutionalized the election of the regional Iñikuk in 2008 as a cultural symbol to recover and promote values such as respect, responsibility, and solidarity (Gobierno Regional Lambayeque et al., 2008).

3. Characteristics of New Mochica

As outlined in Section 1, Colonial Mochica is characterized by the following linguistic features: it has a numeral classifier system, not found in Andean languages, an inalienability split which should nevertheless be considered a continuum rather than a bipartite system, and a nominative-accusative system in transition toward an ergativity-based system (Eloranta, 2017, p. 321, 2019). New Mochica has none of these features.

It is impossible to discuss all New Mochica features that have emerged lately as a result of the work of the three revivalist groups presented in 2. As these features do neither represent historical continuity nor are they consolidated in the community, it might be too early to speak of varieties of New Mochica but we nevertheless take this approach in our study.

In the following, we illustrate some salient characteristics of New Mochica.[11] In order to be able to discuss the nature of these features, an important point of departure is the language of the revivalists. In this respect, Zuckermann and Walsh (2011, p. 115) claim that "the more revivalists speak contributing languages with a specific feature, the more likely this feature is to prevail in the emergent language", calling this "the Congruence Principle". This is a typical setup in other language contact situations as well, e.g., the formation of creoles where a relatively homogeneous sub-/adstrate has a stronger and more identifiable impact on the emerging language varieties (see Keesing, 1988, for Pacific English-lexifier creoles).[12] The comparison is warranted as we consider the contribution of language revivalists' dominant languages a mechanism of imposition in Van Coetsem's (1988, 2000) framework.[13] As can be gleaned from the examples below, it is, however, not accurate to speak of an intertwined language in the case of New Mochica. We shall return to this point in our discussion in Section 4.

As far as New Mochica is concerned, the situation is even more clear-cut than in the case of, e.g., Israeli as studied by Zuckermann and Walsh (2011), since the revivalists' only dominant language is Spanish. The influence of Spanish manifests itself in different aspects of New Mochica, as we will show in what follows.

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11. We follow the analysis of the impact of English on Kaurma presented by Zuckermann and Walsh (2011, p. 120) and apply some of the argumentation presented there to explain the case of New Mochica.

12. Discussing the differences between pidgins, creoles, and pidgincreoles pace Bakker (2008), crucial in the context of the emergence and present of the Pacific English-lexifier varieties, is not relevant for our discussion here.

13. Imposition implies source language agentivity in linguistic transfer. Receiving language agentivity results in borrowing (Van Coetsem, 1988, p. 2).

At the level of phonology and phonetics, even though there is no record of the original Mochica pronunciation (cf. Section 1), information on Mochica's peculiar sound system and its phonemes, very different from those of Spanish, was to a considerable extent preserved through colonial documentation, as we aim at showing in Appendix 1. In New Mochica, these particular sounds are simplified; they are pronounced following the Spanish phonetic rules and represented in Spanish orthography.[14] Simplification is also in line with L2 acquisition mechanisms (cf. Flege, 1995; Iverson et al., 2002).

According to Smith-Stark (2005, p. 12), early grammarians used a familiar letter to represent a novel sound. Carrera y Daza (1644)[15] explicitly says that he uses the Latin diphthong, that is, the symbol *æ* itself, to represent a vowel that does not exist in the Spanish inventory, known in the Mochica literature as the "sixth vowel". Chero Zurita et al. (2012) keep Carrera y Daza's orthographic representation of the sixth vowel *æ*, proposing, however, [eu] as its pronunciation. Ramos Cabrera and Serrepe Ascencio (2012, p. 77) do not always make use of the Latin ligature and most often use either *ae* or *oe*, as in the cases of *aiapaec* and *chizoer*, respectively. These cases would have originally had the Latin ligature *æ* as in *aiapæc* 'the creator' and *chizær* 'grace'. In the Moche variety, the tendency is to use *oe* instead of the Latin ligature, for example: *cianchipoec* 'human being', 'person' (Sachún Cedeño, 2013). The segment of this word that serves as an agentive nominalizer *-poec* was originally *-pæc* in colonial Mochica. Carrera y Daza (1644, p. 208) reports *çiamo chipæc* 'person'.

At the lexical level, these varieties present a good number of calques from Spanish, evidently literal translations that have appeared independently in the work of the two groups. The word for 'welcome' is an illustrative case. There are three versions of the translation of 'welcome' into New Mochica: *chizoer tañeiñ* (Sachún Cedeño, 2013),[16] *ayen tesäkedo* (Serrepe Ascencio & Ramos Cabrera, 2009, p. 99) and *ayentaado* (Chero Zurita et al., 2012). The version *chizoer tañeiñ* is perhaps used the most due to the fact that it appears to be the oldest one. In opposition to *chizoer tañeiñ*, Peralta Vallejos (personal communication, August 4, 2017) considers the calque *ayentaado* more appropriate but does not have a clear opinion on *ayen tesäkedo*. The respective glosses are presented in (1), (2), and (3).[17]

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14. To give just one example: As for example in Quechua, Aymara, Guaraní, and Bubi (of Ecuatorial Guinea; cf. Bartens forthcoming), Spanish ñ is used for the palatal nasal.

15. The pages in Carrera y Daza (1644) are not numbered and are henceforth cited as "n.p.", also used for some other authors cited below for the same reason.

16. There is no report of the year when this expression came into use, but even in local museums in Lambayeque, tourist guides welcome guests using this expression.

17. Example (1) was produced by the Moche group, (2) is from Lambayeque 1 and (3) from Lambayeque 2.

(1) *chizoer tañeiñ* (Sachún Cedeño, 2013, n.p.)
chi- zoer tañ =eiñ[18]
be- EVENT.NMLZ.REL go =1SG
'welcome'

(2) *ayen tesäkedo* (Serrepe Ascencio & Ramos Cabrera, 2009, p. 99)
ayen t- esäk -edo
well go- EVENT.NMLZ -PTCP
'welcome'

(3) *ayentaado* (Chero Zurita et al., 2012, p. 10)
ayen- ta- a -ado[19]
well- come- a[20] -PTCP
'welcome'

Despite the fact that these three interpretations depart from Colonial Mochica grammar (see Carrera y Daza, 1644), it is necessary to accept them all as correct, keeping in mind that the only way of maintaining the recovered language alive is embracing its hybridity (see Section 4).

At the syntactic level and with regard to constituent order, all three New Mochica varieties share the same characteristic: they formulate expressions according to SVO order. It is often assumed that free word order implies a significant amount of morphological marking. Nevertheless, Colonial Mochica, lacking overt morphological distinctions between arguments, had a rather free constituent order. However, the preferred order was Agent-Verb-Object order in transitive active clauses and Verb-Subject in intransitive clauses (Hovdhaugen, 2004, pp. 72–73). In his discussion of the free order of arguments in Colonial Mochica, Torero Fernández (2002, p. 32) identifies three options, namely SVO, VSO, and OSV, as shown in (4), (5), and (6), respectively. Mochica copulas and clitics are constrained to the clause initial or second position (Hovdhaugen, 2004, pp. 72–73).

SVO Order

(4) *Moiñ ang met xllac* (Carrera y Daza, 1644: 97)
Moiñ ang met xllac
1SG COP bring fish
'I bring fish'

18. In Colonial Mochica, the clitic for 1SG is normally =eiñ or =iñ. It is common in the variety of Moche to have only the 1SG clitic for all grammatical persons, thence resulting in a simplification of the system.

19. Carrera y Daza (1644: 147) reports the participle *tædo* as the participle form of verb 'to go'.

20. According to Peralta Vallejos (personal communication, August 4, 2017), a would be a support vowel, being such term her own way of explaining the occurrence of this extra a.

VSO Order

(5) *Meteiñ xllac* (Carrera y Daza, 1644: 97)
met =eiñ xllac
bring =1SG fish
'I bring fish'

OSV Order

(6) *Pupeiñ met mæiñan ainæm* (Carrera y Daza, 1644: 102)
pup =eiñ met mæiñ an ai- næm
wood =1SG bring 1SG.OBL house do- PURP
'Wood I bring to build my house'

Whereas SVO is very common in Spanish (fronting of subjects for signaling new information, emphasis or contrastive focus), VSO is considered the canonical word order (Ordóñez, 2000; Suñer, 1994). A number of Amerindian non-SVO languages have, however, experienced variable pressure toward SVO as a result of language contact with Spanish. For example, in K'ichean Maya LPP, SVO order is identified with and therefore avoided as an emblem of Spanish domination despite the fact that some varieties of Kaqchiquel Maya have already undergone the shift to SVO while geographically much more isolated Sipakapense has not (Barrett, 2008).

The role of Spanish in this converging process is highlighted by the fact that within the noun phrase, New Mochica nominal expressions do not follow the original Colonial Mochica order modifier-modified, but rather follow the usual Spanish NP word order postposed modifiers.[21] Examples (7), (8), and (9) show cases of the modifier-modified order of New Mochica.[22] Note that in the translations of (8) and (9), the use of the ablative *ich* is used while the genitive would be the preferred solution in Colonial Mochica as described in Carrera y Daza (1644) and used in (7).

(7) *Ap eiñ ed muchik Centro Investigacioneaerô Muchik nic*
(Ramos Cabrera, 2012[2006], p. 164)
Ap =eiñ ed muchik Centro Investigacion- eaerô Muchik nic
learn =1SG tongue Mochica Center of Investigation- OBL Muchik INE
'I learn Mochica language in the Mochica Center of Investigation'

21. The order modifier-modified only occurs for emphasis or specific meanings in Spanish: *un excelente trabajo* 'an excellent work' is even better than *un trabajo excelente*.

22. Example (7) is from Lambayeque 1, Example (8) from Lambayeque 2 and Example (9) from the Moche group.

(8) *An kankapissäkærô "Çiequic Sipán ich"*
(Peralta Vallejos, personal communication)[23]

An	kan-	kap-	issäk-	ær-	ô	Çieq-	uic	Sipán	ich
house	a lot-	know-	EVENT.NMLZ-	OBL-	REL	lord-	DEREL	Sipán	ABL

house knowledge of lord Sipán of
'house of knowledge (university) "Lord of Sipán"'

(9) *Kankapissak kesmik ich moche* (Sachún Cedeño, 2013, n.p.)

Kan-	kap-	issak	kesmik	ich	moche
a lot-	know-	EVENT.NMLZ	old	ABL	moche

knowledge old from moche
'ancient Moche knowledge'

Expressions in New Mochica are not the exclusive creations of the groups mentioned so far; the *Universidad Señor de Sipán* 'University Lord of Sipán' in Lambayeque has an institutional scientific journal called *Tzhoecoen*. Peralta Vallejos (personal communication, August 4, 2017) informed one of the authors that the meaning of this name is 'the messenger' but was not able to indicate the origin of this name. We believe that the only verb that it can be derived from is *tzhæcæm* 'to run',[24] which is attested in Carrera y Daza (1644, pp. 136, 147). This is an interesting case of neologism in New Mochica because there is a direct connection to a mythical Mochica character considered a ritual messenger who would deliver a bag of lima beans as a message (Castillo Butters, 2000, p. 116).

At the level of discourse, everything said is translated, i.e., calqued, from Spanish which therefore goes well beyond lexical calquing. Zuckermann and Walsh (2011, p. 120) comment on revived Kaurna that "The most pervasive influence from English is at the level of discourse. Almost everything said or written is translated from English. Thus, the turn of phrase and the idioms are from English." According to the observations of one of the authors, this also applies to a large extent to San Andrés Creole English, heavily influenced by Spanish (Bartens, 2003, p. 14). For limits of space, we shall address this issue in New Mochica in a posterior study, making use of, among other sources, the text by Ramos Cabrera mentioned in Section 2.

23. Peralta Vallejos (personal communication, August 4, 2017) reported that the first time they used the term was in 2007 in the archaeological complex of Huaca Rajada in Sipán. A hypothetical Colonial *Mochica* version would have been *Çiequic Sipaning cancapissæcærô an*.

24. This verb is attested as *tsůkum* in Middendorf (1892, p. 91).

4. Discussion and conclusions

New Mochica is definitely not the Mochica of the colonial or republican epoch and the continuity of an already extinct language can be questioned as has been in the case of Hebrew. This is why we speak of New Mochica. But if New Mochica is not Colonial Mochica, what is it then? Considering that basically only two languages are involved, it might be suggested we are dealing with a mixed language, especially when allowing for a more diversified definition than the classical lexicon – grammar split manifest in the subtype of intertwined languages (see, e.g., the often cited case of Media Lengua; Muysken, 1997) and relaxing identity-based criteria (cf. Bakker & Mous, 1994; Matras, 2003; Matras & Bakker, 2003; Bakker, 2013). This is clearly not the case and, as we have suggested above, we are rather dealing with the effects of imposition of source language structures (cf. Van Coetsem, 1988, 2000) in language revival.

This type of language making (cf. Bartens et al., forthcoming; Hüning & Krämer, 2018) or reconstitution (Makoni & Pennycook, 2005) as a result of a conscious effort by language activists engaged in language revival could be studied as a paradigm distinct from cases of language revitalization – as suggested above (and Zuckermann & Walsh, 2011) – or other cases of language making (see Bartens, 2019, forthcoming, under review, for language making in creole communities) as the challenges are quite different even to revitalizing almost, but not completely extinct languages which still have vestigial speakers. A revived language is no longer the original language. Rather than an evolutional phase of Mochica, New Mochica is a new language based on Colonial and Republican Mochica, albeit with different structures belonging to Spanish in the sense of imposition mentioned above. The integration of such structures into remnants of the original language needs to be mapped in a more systematic way in order to understand the possibilities of language revival as a means of countering the loss of linguistic (and bio-)diversity and part of our cultural heritage (cf., e.g., Nettle & Romaine, 2000).

This is also crucial for understanding what can be achieved at what price. Hinton (2001, p. 16) gives the example of two Californian indigenous languages, Karuk and Nomlaki, both of which are being brought back to life. Language activists prefer working with what is left – or can be reconstructed – of the language eclectically over not using it at all. This is the only option for New Mochica as well.

Assuming the resulting new language develops new functions and new vocabulary, the same way any living language does, it will become as valid a system of communication as any other – as long as the new speakers value it as a true expression of their identity (Crystal, 2000, p. 162; Zuckermann & Walsh, 2011, p. 120). However, the challenges are substantial on all levels of this LPP endeavor – not only

is documentation of Colonial Mochica limited but all resources are also scarcer than in other cases of language revitalization or revival:

1. There is no support from the national government, only the regional one.
2. Teaching materials and teacher training resources are insufficient.
3. The former should be based on linguistic research and counseling which need to be incremented.

Rivalry and lack of consensus between the two main revivalist groups (Lambayeque 1 and 2 vs. Moche) also diminishes the impact of the resources at hand. Combined with the fact that all parties involved are not linguistically trained results in a revival process which at times may appear chaotic.

Sometimes a relatively small and less obvious LPP measure may have a relatively big impact: In the Hubei province of China, heritage tourism has led to the reinvention of linguistic forms of the nearly extinct and hitherto unwritten Tujia language and its introduction into the local linguistic landscape in writing (Wang, 2018). While not necessarily suggesting Mochica revivalists go for heritage tourism – so far, the affirmation of New Mochica identity targets people from the area, some of whom could not even be descendants of the original Mochica speakers, e.g., through the mentioned pageants – we can conclude by saying that diverse options can be explored in establishing New Mochica as a genuine means of communication.

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Appendix 1. Phonological interpretations of Colonial Mochica

Carrera y Daza (1644)	Stark (1968)	Cerrón-Palomino (1995)	Torero Fernández (2002)	Salas García (2002)	Hovdhaugen (2004, 2005)	Adelaar* (2007 [2004])	Eloranta (2013)	Michael et al. (2015)
a	a, aː	a, aː	a	a	a	a, aː	a, aː	a, aː
e	e	e	e	e	e	e, eː	e, eː	e
i	i	i, iː	i	i	i	i, iː	i, iː	i, iː
o	o, oː	o, oː	o	o	o	o, oː	o, oː	o, oː
u	u, uː	u, uː	u	u	u	u, uː	u, uː	u, uː
æ	ɵ	ø	ʉ	ɘʊ	ɘ	ə, œy̆	i̇	i̇
c/qu	k	k	k	k	k	k	k	k
ç/z	ɕ / ʑ	s	s	s	sʲ	s	s	s
ch	t͡ɕ	t͡ʃ	t͡ʃ	t͡ʃ	t͡ʃ	t͡ʃ	t͡ʃ	t͡ʃ
cɥ	t̪ʲ	tɕ	kʲ	tʲ	tʂ	tʲ / tᶜ	c	c
d	d̪	d	d	d	ð	ð / θ	d	d
f	f	ɸ	f	f	f	f / ɸ	ɸ	f
l	l	l	l, ɭ	l	l	l / ɬ	l	l
ll	ʎ	ʎ	lʲ	ʎ	ʎ	lʲ	ʎ	ʎ
m	m	m	m	m	m	m	m	m
n	n	n	n	n	n	n	n	n
ñ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ	ɲ
ng	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
p	p	p	p	p	p	p	p	p
r/rr	ɾ/r	ɾ/r	r	r	r	ɾ/r	r	r
s/ss	z/s	ʂ	s̪	ʂ	s	s̪	s̪	ʂ
t	t	t	t	t	t	t	t	t
tr	–	–	–	–	ʈ	–	–	–
tzh	t͡s	t͡s	t͡s / tʲ	t͡s	tsʲ	tˢ / tˢ	t͡s	t͡s
v	u	u	u	u	u	u	u	u
x	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ
xll	ɕʲ	ɬ	ʎ̊	ɬ	ʂ	ɬʲ	ɬ	ɬ
y, j, i	j	j	j	j	j	j	j	j

* Adelaar's column is based on Adelaar (2007[2004], pp. 321–329) but it also profited from Adelaar's revision and comments (personal communication, March 8, 2019).

Index

This book is a collection of original studies analyzing how different internal and external factors affect Spanish language variation and evolution across a number of (socio)linguistic scenarios. Its primary goal is to expand our understanding of how native and non-native varieties of Spanish co-exist with other languages and dialects under the influence of several linguistic and extra-linguistic forces. While some papers analyze the linguistic dynamics affecting Spanish grammars from a cross-dialectal perspective, others focus more closely on the relations established between Spanish and other languages with which it is in contact. In particular, some of these studies show how power and prestige may support (or not) the use of Spanish in different social contexts and educational realities, given that the attitudes toward this language vary greatly across the Spanish-speaking world. On the one hand, in some regions, Spanish represents the variety spoken by the majority of the population, typically related to prestige and power (Spain and Latin America). On the other hand, in other contexts, the same language is conceived as a minority variety, which may or may not be associated with stigmatized immigrant groups (i.e., in the US).

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