

**Heritage language and language change:
a study of *ser/estar* use by Heritage
Speakers of Mexican Spanish in the US**

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Submitted to the faculty of the Department of Linguistics in
partial fulfillment of the requirements for the degree of
Bachelor of Arts

Yale University

April 2021

Acknowledgements

First and foremost, I would like to thank my advisor, Maria Piñango for her guidance and encouragement throughout this project. I will forever be grateful for all I've learned through our talks! I also extend my thanks to the members of the Language and Brain Lab, for welcoming me in and inspiring me with their work. I am deeply grateful to the linguistics department for their kindness and genuine interest in our growth. Thank you Raffaella Zanuttini and Jim Wood for leading LING 490/491 through this interesting year, and my fellow majors for their feedback and camaraderie. Thank you to the TD community and LWAY for being essential in my Yale experience, my friends for their sincere care, and my family for their continued love and support. ¡Gracias por todo su apoyo!

Abstract

Studying current variations in uses of the Spanish copulas, *ser* and *estar*, can shed light on the process of diachronic language change where *estar* is encroaching on the domain of *ser*. In this project, we add the language of heritage speakers of Mexican Spanish to the landscape of the noted synchronic variation in uses of the Spanish copulas (*ser/estar*) across dialects. The assumed analysis focuses on the relationship between *estar* use and the contextual information it requires (Deo et al., 2016). Building on prior studies which found that Mexican speakers of Spanish were expanding the uses of *estar* in non-supporting contexts (Sánchez-Alonso et al. (2017); Sanchez-Alonso (2018)) we include heritage speakers of Mexican Spanish in the analysis of possible innovative uses of *estar*. Since the bilingual situation is often a driver for innovation (Silva-Corvalán (1986); Scontras et al. (2015)), copula use by heritage speakers of Mexican Spanish is interesting to study, as they could be pushing the language in either direction on the path of grammaticalization of *estar*. We conducted an experimental study that examined acceptability ratings of the copulas in supporting and non-supporting contexts, and assessed copula use given a context in a forced-choice task. Results showed that heritage speakers of Mexican Spanish were behaving similarly to monolingual speakers of Mexican Spanish, as there was a higher use of *estar* with supporting contexts than with neutral contexts. Yet, there were patterns indicating innovative uses of the copulas. As monolingual Mexican Spanish speakers had already presented high acceptability ratings for *estar* in either context (and less of a noticeable difference between acceptability of copula sentences when presented with either supporting or non-supporting contexts), heritage speakers were observed to be farther along on this trend, as revealed by a loss of significant effect of context in the acceptability-rating task. Compared to their monolingual counterparts, heritage speakers also had a higher proportion of *estar* use in neutral contexts in the forced-choice task. This indicates that heritage speakers of Mexican Spanish are better prepared to accommodate *estar*'s contextual requirement, in absence of supporting context, as they use and accept it in a larger variety of context and with more predicates. We conclude that the use of *estar* by heritage speakers of Mexican Spanish conforms with the expected trajectory of language change, where *estar* is encroaching on the *ser* domain, as expected in the grammaticalization process in diachronic semantics.

Contents

1	Introduction	4
2	Background	4
2.1	Meaning Change	4
2.2	Case study: Spanish copula system	5
2.2.1	Historical emergence of the bicopular system	5
2.2.2	Encroachment of <i>estar</i> into <i>ser</i> 's domain	8
2.2.3	The contrast underlying the <i>ser/estar</i> alternation	8
2.2.4	The role of context	9
2.2.5	Variation in <i>ser/estar</i> use across dialects	11
2.3	Background on Heritage Speakers	12
2.3.1	Spanish Heritage Speakers	13
2.4	Link between analysis and experimental study	14
3	Experimental Study	15
3.1	Methods	15
3.1.1	Materials and Design	15
3.1.2	Participants	17
3.1.3	Procedure	18
3.2	Predictions	19
4	Data Analysis and Results	20
4.1	Within the Heritage Speaker dialect	20
4.1.1	Acceptability-Rating Task	20
4.1.2	Forced-Choice Task	21
4.2	Comparing dialects of Mexican Spanish	21
4.2.1	Acceptability-Rating Task	22
4.2.2	Forced-Choice Task	23
4.2.3	Summary	24
4.3	In the landscape of variations across dialects and within the trajectory of language change	24
5	Conclusion	26
6	Further Directions	27

1 Introduction

Language change can be studied by observing synchronic variations in language use within and across language communities. These variations can be analyzed in the context of historical patterns already observed, as well as on a proposed path of future diachronic change. An interesting language phenomenon to study in this context is the copula system of *ser* and *estar* in Spanish. Reported variations in the language already having mapped out the path of change, we can look at innovative dialects and consider environments that could push this innovation further. This is where heritage speakers of Mexican Spanish will come in, as we discuss innovative trends in this system. Before delving in too deeply, it is important to first set the stage by providing some background into these concepts and the *ser/estar* copula system in Modern Spanish.

2 Background

2.1 Meaning Change

In diachronic semantics, meaning change is defined as “the study of the changing associations between concrete, changeable forms and abstract, unchanging concepts” (Deo, 2015). In this definition, a lexical item is ‘concretely’ expressed through articulation of a form, which is considered ‘changing’ due to roles of morphophonological markers; the ‘abstract, unchanging concept’ being the meaning¹. In other words, meaning change refers to the changing association between the form of a lexical item and its meaning. The manifestations of such semantic change can show up as the increased ability of a form to be used in varying contexts, or an expansion in the possibility of the concepts it can refer to. An example of such a process of meaning change is that of ‘grammaticalization’ (Deo, 2015). Grammaticalization is a unidirectional part of meaning change, which consists of Recruitment of lexical items for expressing functional meanings, the Categoricalization of their functions relative to an existing grammatical system, and Generalization of such functions over time. This can be observed through current variations across speakers or dialects, and consequently how they manifest as changes in the language over time. In the context of a path such as grammaticalization, we can also consider meaning change from the individual to the language as a whole. In their discussion of iterative learning models in grammaticalization, Deo (2015) describes the dynamic in which the overestimation of a speaker (and use of the form in a

¹Perhaps more appropriately: ‘changing associations between changeable forms (pronunciation + morphophonological markers) and unchanging concepts (meaning)’ since the terms “concrete” and “abstract” are up for debate

context relevant to levels below the threshold level) can cause a hearer to infer a lower threshold.

As we further explore their relation at the level of diachronic language change, we look at changes over time, observing how lexical items have been used differently historically. At a slightly narrower level, language change can be observed through synchronous variations across dialects of a language, for example. Then, we can see how these variations are adapted and used within the communicative process. Analyzing this process at an individual level, we consider the extent of possible uses in the mind of the speaker, and how associations between form and meaning change here. Thus, we can study language change in historical context, as well as in real time by observing variation in uses.

2.2 Case study: Spanish copula system

As a case study in language change and the process of grammaticalization, we turn to the Spanish bicopular system of *ser* and *estar*, by first looking at the historical distribution of the copulas. The patterns of distribution and corresponding examples we present here are summarized from 7.4: *The Diachronic Distributional Patterns of the Spanish Copula* in Sanchez-Alonso (2018)².

2.2.1 Historical emergence of the bicopular system

In the 11th century, in early stages of Old Spanish, there was only one observed copula, *ser*, which followed the patterns of Latin *esse*. Yet, in the 12th century, descendants of Latin *stare* and *sedere* begin to co-occur with adjectival predicates, which until then were only occurring with *esse* (and *ser* which followed its patterns). We see some examples of this co-occurrence in *Cantar de Myo Çid*³, as seen in (1).

(1) (Sanchez-Alonso, 2018:221; [Batllori and Roca, 2012:81-82])

a. **Firmes son** *los moros, avn nos van del campo.*

‘The Moorish **remain**, they do not leave the battle yet.’

[*ser*; *Çid*, v.755]

b. **Firme estido** *Pero Bermuez.*

‘Pero Vermuz **remained firm** (on the horse).’

[*estar*; *Çid*, v.3629]

²See Sanchez-Alonso’s work for a wider range of examples and in-depth discussion of copula distribution in Spanish

³Dating from the 12th century, the oldest preserved epic poem in Old Spanish (Sanchez-Alonso, 2018)

- c. **Firmes sed** *en campo aguisa de varones.*
 ‘**Remain firm** in the battle as knights would be.’
 [sedere; *Çid*, v. 2195]

However, in *Cantar de Myo Çid*, primarily *ser* is observed to be used with stage-level and individual-level predicates (2).

- (2) (Sanchez-Alonso, 2018:221; [Batllori and Roca, 2012:81-82])
- a. *Alegre es Myo Çid por quanto fecho an.*
 ‘Myo Çid **is** happy for all they have done.’
 [stage-level, *ser*; *Çid*, v.2745]
- b. *Todos eran ricos quantos que alli ha.*
 ‘They **were** al rich, all those who are over there.’
 [individual-level, *ser*; *Çid*, v.1215]

At this point of Recruitment in the 12th century, *ser* and *estar* are also observed to co-occur with some locative predicates (3), and *estar* is used with predicates which were only previously used with *ser* (4).

- (3) (Sanchez-Alonso, 2018:223; [Batllori and Roca, 2012:82])
- a. *El Señor, que es en el çielo*
 ‘The Lord who **is** in heaven.’
 [*ser*; *Çid*, v. 1094]
- b. *Al Criador, que en çielo esta.*
 ‘To the Lord, who **is** in heaven.’
 [*estar*; *Çid*, v. 2892]
- (4) (Sanchez-Alonso, 2018:224; [Batllori and Roca, 2012:85])
- a. *et el caño era del pozo çerca.*
 ‘and the spout **was** near the well.’
 [*ser*; *Calila e Dimna*:111]
- b. *el caño que está çerca del pozo.*
 ‘the spout that **was** near the well.’
 [*estar*; *Calila e Dimna*:111]

Between the 13th-15th century, *estar* began gaining terrain, increasing in frequency and establishing semantic contrast. In this process, *estar* was becoming the default for some uses such as event-in-progress readings (Sanchez-Alonso 2018:230) and stage-level predicates⁴, especially when making the temporal nature of these properties more explicit (5).

⁴Adjectival predicates which denote “a property that obtains in a temporally-defined slice of an individual” (Sanchez-Alonso, 2018)

- (5) (Sanchez-Alonso, 2018:231; [Batllori and Roca, 2012:84])
- a. *Quando la cabeça **está** bien, el cuerpo **está** bien.*
 ‘When the head **is** well, the body is well.’
 [estar; *Calila e Dimna*:284]
- b. *ca mi muger **está** doliente.*
 ‘because my wife **is** ill.’
 [estar; *Calila e Dimna*:257]

Since the 15th century, this developmental path of Categoricalization continues as *estar* uses expand with verbal and adjectival passives, with *estar* taking over and asserting itself in domains previously reserved for *ser*. As covered in Sanchez-Alonso (2018), Vaño-Cerdá (1982) observed no occurrences of *ser* with adjectives denoting physical appearance, health, or psychological states (6) in their analysis of texts from the 15th-17th century, further indicating that the Categoricalization of *estar* with adjectival predicates was already well underway in this period.

- (6) (Sanchez-Alonso, 2018:232; [Vaño-Cerdá, 1982:243, 268-269])
- a. *Hoy **está** la más desdichada criatura del mundo.*
 ‘Today s/he **is** the unhappiest creature in the world.’
 [estar; *El Quijote, II*:33,10]
- b. *¡Qué linda **estás!** ¿Qué te pones?*
 ‘How pretty you **are!** How do you do it?’
 [estar; *Los pechos privilegiados*:204]
- c. *Francia **está** sospechosa con la descendencia real...*
 ‘France **is** suspicious because of the royal offspring...’
 [estar; *Los sueños*:185, 20]

Modern Spanish is currently at a point where *estar* tends⁵ to be used with locative and stage-level predicates, and *ser* use is restricted to specific situations. The trajectory of language change predicts that eventually, at the Generalization stage, *estar* will take over the domains that were previously reserved to *ser*, and *ser*’s use will be restricted to even more constrained uses. However, Spanish is not quite there yet -it is still at this stage of Categoricalization.

During this on-going process of variation that reflects change, there are scenarios of overlap of copula use with adjectival predicates. A current case of variation between *ser* and *estar* in Modern Spanish, is with individual-level predicates, as

⁵We reference the trends in ‘Modern Spanish’ in a general sense, although exploration into the current variation in uses across dialects of Modern Spanish, has found that there are varying acceptability ratings for copulas used with these predicate types, as well as ranges in frequency of uses of *ser/estar*, depending on context and other factors (Sanchez-Alonso et al., 2020, under review)

in the anecdotal example in (7), where we still see use of both copulas at different frequencies across dialects.

- (7) a. Mi prima **es** alta
My cousin SER.PRES.3SG tall
'My cousin is tall'
- b. Mi prima **está** alta
My cousin ESTAR.PRES.3SG tall
'My cousin is tall'

We will be discussing this variation further in sections to come, when we explore the role of context (2.2.4).

Looking back at the emergence of *estar* and historical variations in copula use as *estar* use increases through recruitment, co-occurrence, and domination in a larger variety of predicates, we note a gradual blurring of semantic contrast over time.

2.2.2 Encroachment of *estar* into *ser*'s domain

Throughout this diachronic process of development, from its original meaning when it entered the language to its present use, *estar* has been involved in a process of “semantic bleaching”, referring to an extension of the novel form into uses previously restricted to another form, consequently leading to a loss of semantic distinction (Silva-Corvalán, 1986). The elimination of selectional restrictions in use of *estar* results in loss of semantic distinction, through a process of partial simplification and generalization of the *estar* form into a larger number of contexts. This manifests as an exaggeration and increase of *estar* uses and, in turn, the decrease in uses of *ser* in those contexts. During the aforementioned period of Categoricalization, the expansion into new contexts that results from this overuse of the new expression is known as “encroachment”. Thus, in the course of language change, *estar* has been observed to be encroaching on the domain of *ser*. In order to better illustrate just how this is happening in the language -how the *estar* form is being accommodated into these expanded uses- we will delve into the contrast underlying the alternation in copula use.

2.2.3 The contrast underlying the *ser/estar* alternation

The function of a copula is to link a subject to a predicate, such as with the English 'to be' linking verb. Like 'to be', both Spanish copulas, *ser* and *estar*, have the same truth conditional value, meaning they refer to a reality being observed in the same way, of something *being* something else. As copulas, they both assert

that the prejacent⁶ is true at the circumstance and time of evaluation. Yet, *ser* and *estar* differ in the conditions that license their use, and in the effect they have on the interpretation of the predication. It could be said that *estar* is used in cases of unexpectedness or temporariness readings, as prior literature has hypothesized, but it is more than this. What sets *estar* apart from *ser* is the presuppositional content encoded in the lexical item.

Sánchez-Alonso et al. (2017) observe that *estar* is used in cases that imply an ‘alternative’ that could have been true at the circumstance of evaluation. In other words, *estar* says that what is true does not have to be. In linguistic terminology, information that is not part of the main propositional content of a speech act, and is taken for granted in the Common Ground, is referred to as a *presupposition* (Beaver et al., 2021). So, we could say that, by recalling a broader context outside of the proposition, *estar* is *presupposing* an ‘alternative’ discourse situation or ‘alternative reality’, in addition to what is true at the circumstance of evaluation.

To elaborate, in the example above where “Sam is happy”, using *estar* (eg. *Sam está feliz*) references an alternative circumstance. Even if at the circumstance of evaluation, it is true that [Sam happy], the hearer will pragmatically recognize that at the moment of evaluation, Sam is happy, but in the context that this isn’t his constant state. In other words Sam is happy, but he isn’t always -in all circumstances- happy. This concept is more formally explained by Deo’s work, through the *boundedness-presupposition analysis* (Deo et al., 2016).

This analysis states that using *estar* presupposes that the prejacent is boundedly true at the circumstance of evaluation⁷ *i*. In this analysis, a sentence with *estar* is felicitous in a context where there are accessible circumstances *i*’ (distinct from *i*) at which the prejacent is taken to be false. The “boundedness requirement” therefore puts a boundary on the circumstances where the prejacent may be true and also signals the presence of accessible circumstances *i*’ which are beyond this boundary -circumstances where the prejacent is false. Furthermore, the *bounded-presupposition analysis* seeks to explain the role of contextual considerations in determining felicitous *estar* use.

2.2.4 The role of context

According to Deo (2015), “The role of the context is crucial in disambiguating between the two forms and ultimately in pushing the changes forward into specific directions.” To illustrate the disambiguation between copulas, what follows is an

⁶In the phrase “Sam is happy” the prejacent is the proposition [Sam happy], that *Sam is happy*

⁷A composite set of contextual parameters which include: worlds, times, contextual standards, locations, agents (Sanchez-Alonso et al., 2020, under review)

example⁸ *estar* use with the individual-level predicate, and how the alternative reality can be prompted through *alternative-supporting contexts*.

- (8) a. **Context:** I'm describing my cousin to you, as you are trying to find her in a crowd.
 b. Mi prima **es** alta
 My cousin SER.PRES.3SG tall
 'My cousin is tall'
- (9) a. **Context:** I just saw my cousin for the first time in years, and I was surprised.
 b. Mi prima **está** alta
 My cousin ESTAR.PRES.3SG tall
 'My cousin is tall'
 (She is taller than I expected!)

In example (8), we have a case where *ser* would be used, when describing my cousin, as you are trying to find her in a crowd. In (9), we see a case where, again I'm describing my cousin to you, yet there is more content in the context. I am seeing her for the first time in a while, and I am surprised that she is tall. In both uses, the truth-conditional value is the same; the prejacent [my cousin tall] still is true. Yet, *estar* is appropriate in this example following context (9-a) that cues an alternative reality, involving time and subjectivity. Such *alternative-supporting* context facilitates the accommodation of the requirement, by cuing aspects of the situation in which such a statement could be made, prompting the alternative-reality which could exist for one to make a statement like this.

In reference to theories of meaning change in diachronic semantics, Deo (2015), concluded that change results from interactions and interpretations of context and other pragmatic features by the participants of this discourse. This relates to the situation of *ser/estar*, in the case of expansion of uses of *estar* in a larger variety of predicates and contexts. As *estar* is carrying out the process of encroachment, speakers and hearers are able to accommodate the presupposition in absence of supporting contexts. This creates a feedback loop between expansions of *estar* usage and speaker expertise in accommodating *estar*'s presupposition. Increase in expertise with respect to *estar* use then leads to occurrence of *estar* with an even more diverse set of predicates and in a larger variety of contexts and thus loss of the presuppositional component of *estar* (which we previously (2.2.2) referred to as semantic bleaching). This process of increasing expertise on part of the speakers and expansion of *estar* uses as a result of that, thus continues on with

⁸This example is based on my own intuitions as a native speaker of Spanish (I am somewhat a heritage speaker of Mexican Spanish myself), and corroboration of its applicability with other native Spanish speakers.

the process of encroachment (within the Categoricalization stage in the path of grammaticalization) and further contributes to the feedback loop. Eventually, at the Generalization stage, *estar* would have undergone enough semantic bleaching, to where the copulas would be expected to be semantically indistinguishable and distributed in exactly the same contexts.

We are therefore conceptualizing copula use, not in terms of an explicit competition between *ser* and *estar* at the personal communicative level, but as a gradual expansion of uses of *estar*, which then lead to it taking over in a manner that manifests itself as competitive. Thinking back to how synchronous variations lead to diachronic change, as individuals of differing dialects or idiolects interact, some variations are adapted more broadly, and so these innovations in a language then contribute to the ‘change’ we observe, relative to what the system once looked like historically. In order to see where the copula system of Spanish currently is, with respect to diachronic language change, we can look at the variations synchronously occurring across speech communities.

2.2.5 Variation in *ser/estar* use across dialects

Sources in the literature, such as Juárez-Cummings (2014), report uses of *estar* with individual-level predicate adjectives, such as *cruel* ‘cruel’ and *descortés* ‘impolite’, by speakers in Mexico City, which are still considered “unnatural” by speakers of other dialects of Spanish, unless coerced by context that primes a temporariness reading.

Sanchez-Alonso et al.’s work (2017; 2018; 2020, under review) aimed to address these cases of reported variation and test the presence and the strength of the presuppositional component in the copula distinction across five dialects of Spanish (Iberian, Argentinian, Chilean, Venezuelan, and Mexican). It built on the semantic analysis of the presupposition, as discussed in previous sections of this paper (2.2.3). Their experimental study was designed to systematically investigate the effect of the presuppositional contrast in the *ser/estar* system within and across dialects, through comprehension and production proxies (acceptability-rating and forced choice tasks) as well as a self-paced reading study. They found sensitivity to presuppositional contrast across all varieties of Spanish, and found evidence to support the intuition that Northern Latin American varieties (especially the Mexican dialect) differed from other dialects, as *estar* use was licensed in cases *without* explicit support for the presuppositional component. Other dialects (Iberian and Argentinian), however, were still more rigid in their need for explicit support for *estar*’s presupposition. In relation to the communicative system, they concluded that “differences in expertise⁹ would allow speakers of certain dialects (e.g. Mex-

⁹Expertise or skill in using this form, which comes from increased frequency of exposure.

ican dialect) to be better prepared to accommodate *estar*'s presupposition in the absence of supporting contextual information relative to speakers of other dialects that have been associated with less frequent *estar* usage (e.g., Argentinian and Iberian)", in their discussion of the feedback-loop¹⁰ in the synchronic variations that lead to diachronic change (Sanchez-Alonso et al. 2020: 43).

Higher acceptability and frequency of *estar* use in absence of supporting contextual information (in the alternative-neutral context condition) by speakers of the Mexican dialect¹¹ meant they were farther along on this path of innovation. To further this research, one would seek an innovative subgroup of this dialect to test their level of 'innovation'. This is where heritage speakers of Mexican Spanish come in.

2.3 Background on Heritage Speakers

Heritage speakers are simultaneous or sequential bilinguals, in a situation where their weaker language corresponds to the language spoken at home (a minority language of their society) and their stronger language is the dominant language of the society they live in (Polinsky, 2018).

In the field of heritage speakers studies, there are many that consider the performance of heritage speakers to be one of "incomplete acquisition" or "attrition" (Lynch & Polinsky, 2018). However, the fact that their grammar differs from the baseline, is not necessarily evidence for an "incomplete acquisition". Otheguy (2016) points out many unsolved problems in the theory of "incomplete acquisition", such as having native speaker monolingual controls in studies assessing heritage speaker performance and selection of experimental subjects that do not fit into this category of second generation bilinguals. Instead of analyzing these observed differences from the baseline as a form of "incorrect grammar", we can

¹⁰A further explanation of how accommodation might happen in the communicative environment, in relation to the copula and alternative-supporting/alternative-neutral context experimental setup. *Production (from speaker/producer perspective)*: higher frequency of *estar* use in AN contexts (in addition to AS contexts), with a wider range of predicates, and in a more diverse set of contexts. *Reception (from hearer/comprehender perspective)*: exposure to higher frequency of *estar* use → expertise in accommodation of *estar*'s presupposition in the absence of supporting contextual information → higher acceptability of *estar* in AN context, with wider range of predicates, in more diverse contexts. *What this means for synchronic language change*: There is wider range of *estar* uses and accommodation of the presupposition by speakers. In a situation where the speaker is "choosing" which one to say, they would not have a problem using and felicitously accepting *estar* in AN context.

¹¹Despite higher acceptability patterns which might lead to claims that Mexican Spanish is already at the Generalization stage on the path of grammaticalization of *estar* (2.2.1), results from Sanchez-Alonso et al. (2020, under review) show that even this dialect at this time is sensitive to the presuppositional component associated with *estar*.

think of it as an innovative use of the grammar of this baseline language. As proposed in Otheguy (2016), the language of heritage speakers can be analyzed as an internally consistent dialect of the baseline language, with a “differently evolved grammar”. These changes in language can happen in either direction (where one isn’t automatically more grammatical or correct than the alternative). As we observe these processes of change, we can view them as steps within a trajectory of diachronic change. Considering the bilingual situation of heritage speakers, previous work on heritage speakers from this perspective has further considered the effect of language contact in the process of linguistic simplification and “speeding up the diffusion of a change despite its autonomous or language-internal cause” (Silva-Corvalán, 1986).

2.3.1 Spanish Heritage Speakers

Heritage speakers of Spanish in the US are in a specific circumstance where Spanish is their native language but they live in an environment with English as the dominant language. Their situation, like many other marginalized groups in the US, is one affected by sociological factors as well as the interaction with a dominant language. When considering heritage speakers in the US, the dominant language is American English, and they speak the baseline language, Spanish, at home with their parents. They would have received this input as their first language, and so began as “native speakers”. Although there is an unbalanced relationship between their languages, heritage speakers are early bilinguals who acquired the ‘minority language’ during the critical period by which native speakers are usually defined. This is an important point to note when studying heritage speakers, as they are in a situation of “dual-language acquisition”, in which fundamental elements of the language –such as the predicate-type distinction which is relevant for the copula contrast– are acquired by first language learners as innate universal information (Guijarro-Fuentes & Geeslin, 2008).

Some evidence to support the innovative use of language by heritage speakers, as previously mentioned by Silva-Corvalán (1986), is the reanalysis of psych verbs by heritage speakers of Spanish, referenced in Scontras et al. (2015). In their comprehension study, Pascual y Cabo (2013) found that heritage speakers reanalyze the psych-verb *gustar* to be optionally agentive, rather than strictly stative. They argue that rather than experiencing attrition themselves, heritage speakers receive “non-standard input” from their immigrant parents, and the resulting ambiguity in their mental representation of the syntactic constructions forces them to reanalyze these constructions and result in “otherwise off-limits agentive constructions for psych-verbs” (Scontras et al., 2015). Studies like this which delve into the syntax and morphology constructions of heritage speakers show a move toward innovation. When considering the sociolinguistic factors at play in the language

development of heritage speakers, we can talk about the case of attrition¹² of their immigrant parents. As a result of attrition among L1 monolingual immigrants (the parents of heritage speakers), heritage speakers are receiving non-standard input from their parents, which creates ambiguity in their mental representation of syntax construction, from which they are forced to reanalyze these agentive constructions for psych-verbs (Scontras et al., 2015).

Despite their knowledge gaps, heritage language speakers have much in common with native speakers, and can attain levels of proficiency highly comparable to those of native speakers (Lynch & Polinsky, 2018). Moreover, heritage speakers are of linguistic interest due to their circumstance of bilingualism and constant interaction between languages, in addition to the generational component of the language trajectory and the role of attrition. We are thus interested in seeing whether innovative processing of Spanish occurs systematically within this speaker group.

2.4 Link between analysis and experimental study

The objective of this project is to analyze the language of heritage speakers as an instance of synchronic variation in Modern Spanish and to see what it reveals about the trajectory of diachronic language change.

To do so, we refer back to the noted variations in copula use across dialects of Spanish in Sanchez-Alonso et al. (2020, under review) and prior works (see Section 2.2.5), which systematically investigated the effect of the presuppositional contrast in the *ser/estar* system within and across dialects, and concluded that Mexican Spanish speakers were the most progressive out of the speakers of the dialects that have been studied. Their innovation was in their expansion of *estar* acceptability and use in neutral contexts, which did not explicitly support the presupposition of an “alternative”.

Then, we incorporate a speaker community which could possibly push this innovative behavior of Mexican Spanish speakers further: heritage speakers of Mexican Spanish. Based on prior work in the field of heritage speaker studies, we assume they will perform innovatively relative to Monolingual Mexican Spanish Speakers who were born and grew up speaking Mexican Spanish as their only language (as opposed to the heritage speakers’ bilingual situation of language contact). Moreover, we have reasons to study them alongside their monolingual counterparts, as we know that heritage speakers would speak a consistent dialect of their variety of Spanish (covered in Section 2.3).

¹²Attrition refers to the temporary or permanent loss of linguistic skills in a bilingual environment. According to Scontras et al. (2015) “it implies that a given grammatical structure reached full mastery before suffering weakening or being subsequently lost after several years of reduced input or disuse.”

Therefore, considering heritage speakers within the trajectory of modern language use, and as contributors to the innovative use of the language, the study in this paper aims to: explore uses of *ser* and *estar* within the language of heritage speakers of Mexican Spanish, compare these uses with those of monolingual counterparts (monolingual speakers of the same age from Mexico City), and then consider them in the context of this system of language change. In order to go about studying the language of heritage speakers of Mexican Spanish as a dialect of Spanish, we include them in prior experimental procedures of past work done on dialects of Spanish, by maintaining the experimental structure and stimuli, modifying them accordingly.

3 Experimental Study

3.1 Methods

3.1.1 Materials and Design

This experiment had a 2x2 design: two contexts (N=100) and two copula types (N=100), amounting to a script containing 200 items (context-sentence pairings). The contexts were of two types: Alternative-Neutral (AN, 50 contexts) and Alternative-Supporting (AS, 50 contexts), for a total of 100 contexts.

An Alternative-Neutral (AN) context is “neutral with respect to the existence of alternative circumstances of evaluation that are relevant for assessing the truth of the prejacent” and an Alternative-Supporting (AS) context “makes accessible a set of alternative circumstances which contains circumstances at which the prejacent is understood to be false” (Sanchez-Alonso et al., 2020, under review)¹³. Alternative-Supporting (AS) contexts explicitly manipulate the nature of alternatives with respect to a particular parameter. In other words, AS refers to contexts that would support the presupposition of an alternative, but AN contexts would be neutral in this regard. Neither *ser* nor *estar* appeared in any of the context sentences to avoid biasing the participant towards a specific copula use. For a condensed example of experimental items (context-copula combinations), see Figure 1.

Copula sentences consisted of predicates with either *ser* (50 copula sentences) or *estar* (50 copula sentences) as the copula, for a total of 100 sentences. All copula sentences were in the present tense. Syntactically, they had the following distribution: For 60 sentences the main predicate was an adjective (e.g., *es/está*

¹³The experimental design and stimuli setup for this project were derived from prior research on variations in copula uses across dialects of Spanish, thus the wording is consistent with Sanchez-Alonso’s work

AN Context (50)	AS Context (50)	Copula sentence <i>ser</i> (50), <i>estar</i> (50)
<p><i>Sandra lleva una falda muy bonita</i></p> <p>‘Sandra is wearing a very nice skirt’</p>	<p><i>Sandra tiene que cambiar la falda que compró el sábado en el mercado</i></p> <p>‘Sandra needs to change the skirt she bought on Saturday at the market’</p>	<p>La falda <i>es/está</i> corta y ajustada de las caderas</p> <p>‘The skirt is short and tight on the hips’</p>
<p><i>La playa Mondragó tiene las cualidades de la playa ideal</i></p> <p>‘Mondrago Beach has the qualities of the ideal beach’</p>	<p><i>Fuimos por primera vez a la playa Mondragó y nos sorprendió</i></p> <p>‘We went for the first time to Mondrago Beach and we were surprised’</p>	<p>El agua <i>es/está</i> azul y tiene un mar tranquilo</p> <p>‘The water is blue and has a calm sea’</p>

Figure 1: Some examples of experimental items (AN = Alternative-Neutral, AS = Alternative-Supporting) in Sanchez-Alonso et al. (2020, under review)

alta, ‘be tall’), for 20 sentences the main predicate was a noun (realized either as an NP or PP) (e.g., *es peluquero/está de peluquero*, ‘be a hairdresser’), and for 20 sentences the main predicate was a prepositional phrase with locative meaning (e.g., *es/está en la cocina*, ‘be in the kitchen’). These predicates can be referred to as adjectival¹⁴, nominal, and locative, respectively. These were of interest in the creation of stimuli, based on the known situations that license the use of *estar*, and the parameters they correspond to, when thinking of the circumstance of evaluation.

Four parameter types are represented in the materials: World, Time, Contextual Standard and Agent. There are 20 items (context-sentence pairings) that involve variation along the World parameter (10 copula sentences with locative PPs as the main predicate and 10 copula sentences with adjectives as the main predicate), 15 (context-sentence pairings) that involve variation along the Time parameter (10 copula sentences with nouns as the main predicate and 5 sentences with adjectives as the main predicate), and 10 items that involve variation along the Contextual Standard parameter (all 10 sentences with an adjective as the main predicate). Then, 5 items involve variation along the Agent parameter (all 5 sentences with adjectives as the main predicate).

¹⁴The “adjectival” predicates can be further categorized as: adjectival, interpretational, and eventive

The stimuli were prepared to be presented as acceptability-rating or forced-choice tasks. They were randomized from an original list of stimuli, through 10 blocks with 15 sentences per block (so 150 sentences per questionnaire). Comprehension questions were used in this study to ensure participants were paying attention to the study and staying on task. These were distributed throughout the survey, corresponding to the stimuli context and sentence, as labeled with an item number. Although sentence-context combinations were created with a corresponding comprehension question, they weren't all shown to the participants. In a questionnaire with 150 sentences, there were 76 comprehension questions shown.

Furthermore, stimuli were constructed to meet idiomatic idiosyncrasies in Mexican Spanish as the heritage speakers are speaking that variety, based on their parents' origin. Considering how some cultural references may not be salient to Heritage Speakers, these items were inspected to make sure they were understandable to participants, despite the fact that they characteristically do not live in Mexico and some references to Mexico City might not have been salient for those in the US.

3.1.2 Participants

A total of 44 participants¹⁵ took part in the experimental study. Eligible participants were required to: be native speakers of Mexican Spanish, be born in the US¹⁶, speak Spanish at home, and be between 18 and 37 years old. Flyers were distributed to Latinx students at Yale University through the La Casa Latinx Cultural Center newsletter and to students at UCLA through the UCLA César E. Chávez Department of Chicana/o Studies' panlist.

As these participants are heritage speakers, it is understood that there would be variability in their home/community environments in terms of speech community, so there might be patterns related to performance on comprehension questions based on reported proficiency in Spanish as well as perhaps varying uses of the copula across these groups. After conducting a qualitative analysis of the biographical questionnaire data for all participants, the main things to consider when forming groups (based on language exposure) would be: those speaking only Spanish in the home (parents might be monolingual Spanish speakers or bilinguals who emphasize maintaining Spanish as the primary language at home as the children

¹⁵Out of these 44 participants, there are 39 female, 5 males. For this reason, gender was not a factor in this analysis. Despite the uneven distribution across genders, the higher proportion of female participants could work in our favor when studying innovation in language, from what we know of women tending to drive language change and the correlation of gender and context sensitivity (Zhang & Piñango, 2018)

¹⁶Exceptions were made for those who lived in the US since 1 year of age or early enough in language acquisition

are receiving English input at school), those who have a bilingual environment at home as one of the parents speaks English as well or they have siblings with which they communicate bilingually, those (especially in the LA environment) who have Spanish exposure in their community outside the home. It might be worth considering the region of origin of the parents' dialect of Spanish, when exploring further trends ¹⁷.

3.1.3 Procedure

The study was conducted through an online survey distributed through Qualtrics software, after receiving responses to a flyer sent out in the newsletter of the Latinx cultural center at Yale University, the Latina Women at Yale panlist, and UCLA César E. Chávez Department of Chicana/o Studies.

The stages of the distribution of portions of the survey included: a demographics survey (for personal and linguistic information), consent form, Autism Quotient survey ¹⁸, instructions, and a 1-hour long questionnaire with a 15 minute break. Participants were compensated with a \$10 Amazon eGiftCard for their participation¹⁹. The stimuli were distributed in the questionnaire through acceptability-rating tasks and a forced-choice tasks. For the Acceptability-Rating Task, participants were presented with a context (AN or AS), followed by a sentence with either copula (*ser* or *estar*). Participants were instructed to rate the sentences on a Likert scale of 1 to 5.

¹⁷I am currently working on a post-hoc analysis of the specifics of the demographics and sociological factors relevant to heritage speakers

¹⁸Although we will not be using it in the scope of this senior essay, this data was collected for future analysis

¹⁹Funding for participant compensation was made possible through the Timothy Dwight Richter Fellowship for research in the summer of 2020.

PREGUNTA TIPO 1: En esta pregunta, vas a leer unas frases. Tu tarea consiste en indicar si las frases podrían ser dichas por un hablante de español de México que creció en Estados Unidos. Tu respuesta debe corresponder a una de las siguiente categorías:

1. **Definitivamente NO:** No suena bien y no entiendo lo que la frase quiere decir. Un hablante nativo no lo diría.
2. **NO:** No suena bien, aunque entiendo lo que quiere decir. Un hablante nativo no lo diría.
3. **No estoy seguro/a:** Suena bien, pero no estoy seguro/a de si un hablante nativo lo diría.
4. **Sí:** Entiendo lo que la frase quiere decir y puede que la dijera o no.
5. **Definitivamente Sí:** Entiendo la frase perfectamente y yo mismo la diría.

Figure 2: Instructions shown to participants for the Acceptability-Rating Task

For the Forced-Choice Task, there was a given context (AN or AS), followed with a sentence where the copula position was blank. Participants were asked to choose either copula (*ser* or *estar*) to fill in the blank, based on which they felt was more appropriate.

3.2 Predictions

What follows is a breakdown of the predictions for the experimental study. For the Acceptability-Rating task, the stimuli (sentences containing *ser* or *estar*) should be in an acceptable range (of 3 and above). If we expect heritage speakers to perform generally like speakers of the Mexican Spanish dialect, ratings for sentences containing *estar* should increase when paired with supporting context (AS), compared to the same sentences preceded by neutral context (AN context, with no explicit support for *estar*), and ratings for *ser* sentences should increase when paired with neutral context (AN), and decrease when paired with the context that provides support for *estar* (AS). In the Forced-Choice Task, there would generally be a higher proportion of *estar* in supporting contexts (AS) and *ser* in neutral contexts (AN). Additionally, if heritage speakers of Spanish are using the language in a more innovative way (along the assumed path of language change for Modern Spanish), there would be an increase of *estar* use in neutral contexts (AN), relative to their monolingual counterparts. This would indicate an increase in encroachment of *estar*.

4 Data Analysis and Results

Following the predictions presented above, we present the results of the study, looking at the trends within the heritage speaker population²⁰, and consequently comparing them to their monolingual counterparts. For the statistical analysis of the acceptability-rating task, we used R and lme4 to perform a multilevel analysis on copula sentence acceptability. For the forced-choice task, we performed a generalized linear mixed model with binary copula choice (*ser* or *estar*) as a dependent variable, using the R and lme4. In both, participant and item were entered as random effects.

4.1 Within the Heritage Speaker dialect

4.1.1 Acceptability-Rating Task

Regarding the question of context-pairing acceptability, the mean ratings (regardless of context and copula type) were in the 3-5 range, meaning participants did find them within the acceptable range.

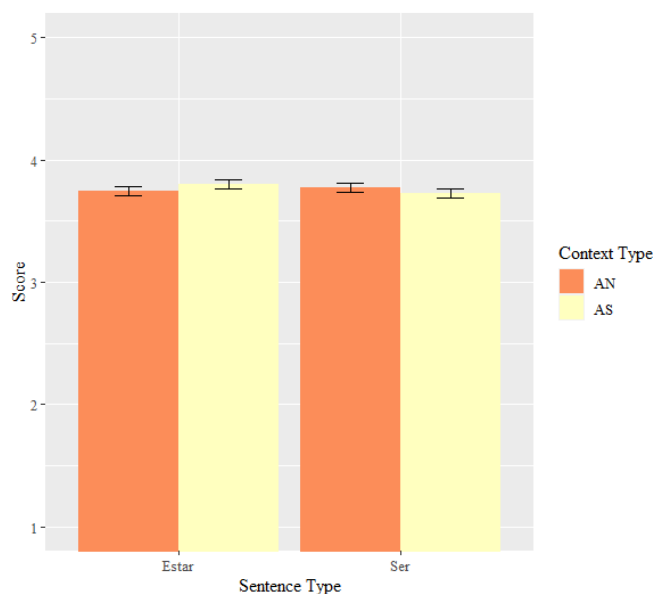


Figure 3: Mean Acceptability Score by Sentence Type and Context Pairing. AN = Alternative-Neutral, AS = Alternative-Supporting

²⁰Of the 44 initial participants, the data of 33 participants was used for the main analysis, after meeting the requirement of an accuracy of above 80% (61/76 correct) on the comprehension questions throughout the questionnaire.

Next, there’s the question of whether the presence of a context that provides explicit support for *estar*’s presuppositional component increases the acceptability of *estar* sentences. In the R analysis, there was no statistically significant effect of context for *estar* found for heritage speakers [$\chi^2(1) = 1.32$, $p=0.2512$], nor for *ser* [$\chi^2(1) = 1.19$, $p=0.2763$].

4.1.2 Forced-Choice Task

As predicted, we observe a main effect of context [$\chi^2(1) = 31.45$, $p= <.001$]: the probability of choosing *estar* is significantly higher when the sentence is preceded by an AS context, relative to an AN context. Correspondingly, the probability of choosing *ser* is significantly lower when the sentence is preceded by an AS context, relative to an AN context. This shows that heritage speakers are still sensitive to preuspositional content, as expected.

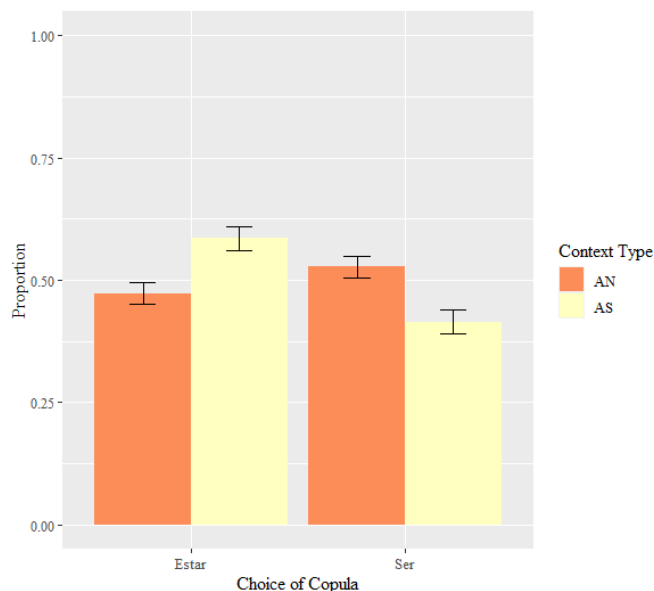


Figure 4: Proportion of Copula Choice for Each Context Type in the Forced-Choice Task. AN = Alternative-Neutral, AS = Alternative-Supporting

4.2 Comparing dialects of Mexican Spanish

We then compare the results of the heritage speakers’ responses to the questionnaire (average ratings of pairings and use of *ser/estar* in the forced-choice task) to the results from Sanchez-Alonso (2018), as we used a similar framework and stimuli set up. The goal here is to compare the language of heritage speakers of Mexican Spanish to that of monolingual Mexican Spanish Speakers, in order to

then generally place heritage speakers within the trajectory of language change in Modern Spanish.

An important caveat to consider in studies of the language of heritage speakers is the concept of a “baseline” to which heritage speakers are compared. In this study, we are comparing heritage speakers to their monolingual counterparts, or participants from the same age group, but who were born and raised monolingual in Mexico.

This study is considering them as speakers of a dialect of Spanish (as grammars develop divergently due to different environments), not necessarily stating that the innovations directly develop from the Mexico City Spanish present in the original study. The Spanish these heritage speakers received at home was from their parents’ generations, from various places in Mexico²¹.

4.2.1 Acceptability-Rating Task

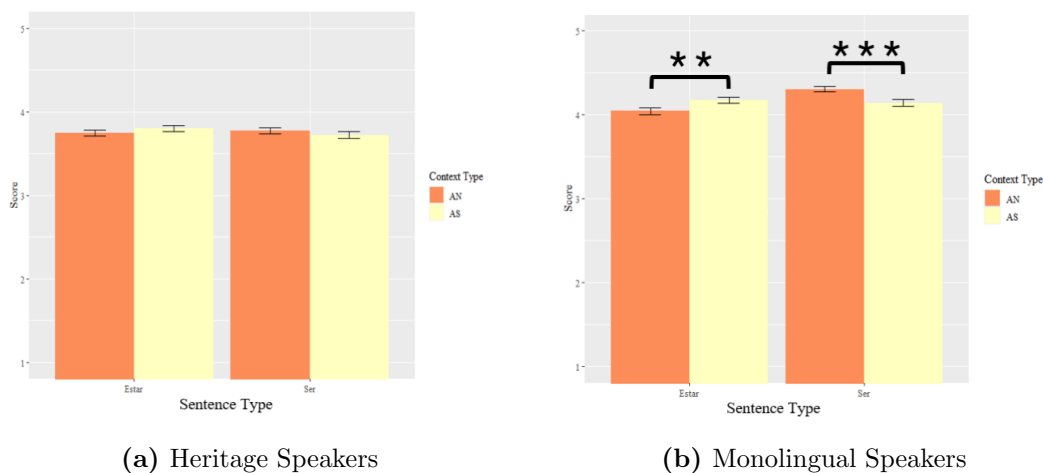


Figure 5: Side by side of Acceptability-Rating Task results for Heritage Speakers and Monolingual Speakers of Mexican Spanish. Asterisks signal statistical significance

Comparing to the data on Mexican Monolingual Speakers, we see a relative loss of statistical significance (see Figure 5). In the statistical analysis (R anova), we don’t observe a significant effect of variety in the interaction of variety \times context, since the effect of context on the Monolingual variety already was fairly slight, so it makes sense that comparing effect of context between varieties would not reveal a significant difference. Although there wasn’t enough of a difference between effect of context in each variety to warrant a ‘significant effect’, it is still relevant to point

²¹Reflecting on the regional distributions of the parents is part of a post-hoc analysis of biographical data

out the loss of significance, especially when considering how Mexican monolinguals were showing less significant effect of context compared to other dialects²².

4.2.2 Forced-Choice Task

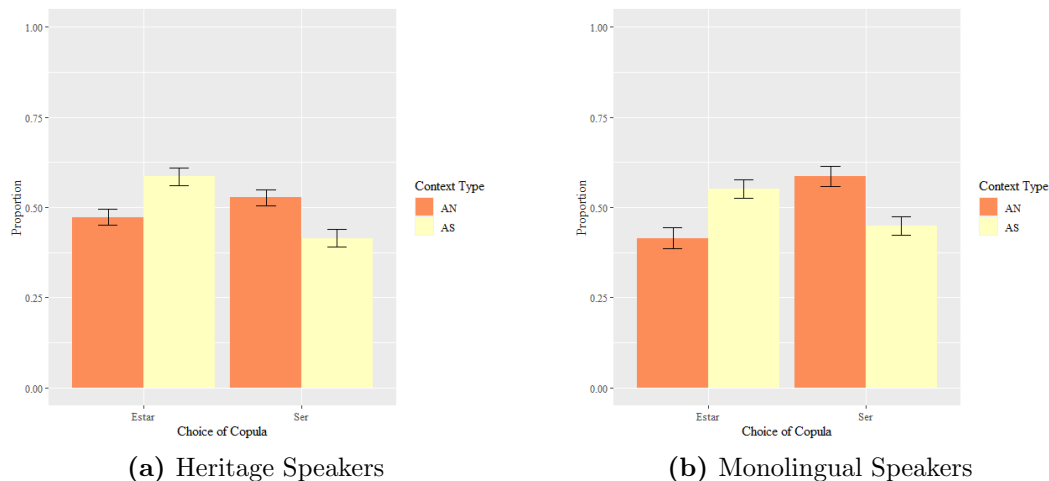


Figure 6: Side by side of Forced-Choice Task results for Heritage Speakers and Monolingual Speakers of Mexican Spanish.

Comparing to the data on Mexican Monolingual Speakers, we first see a similar effect of context in the forced-choice task, where there is a higher proportion of *estar* choice, given AS context, and higher proportion of *ser* choice given AN context (see Figure 6). Over both populations, we see a statistical effect in the interaction of verb \times context [$\chi^2(8) = 16.04$, $p = <.001$].

Additionally, we observe a significant effect of variety [$\chi^2(8) = 14.05$, $p = <.001$] and significant effect in the interaction of verb \times variety [$\chi^2(8) = 8.44$, $p = .0036$].

Moreover, looking at the breakdown by copula type (see Figure 7), we see a relatively higher proportion of choice of *estar* when given AN context for Heritage Speakers, compared to the proportion noted in Mexican Monolinguals.

²²See Section 4.3 for further discussion of this observation within the landscape of dialectal variation.

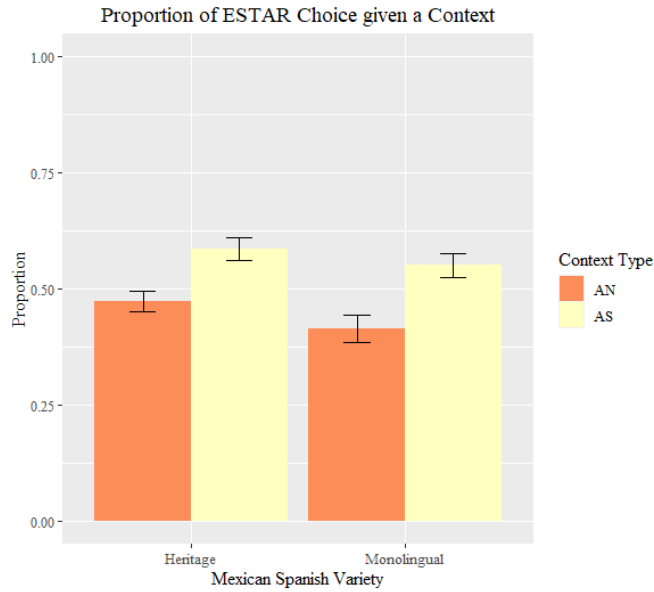


Figure 7: Proportion of *Estar* Choice, given a Context, for each Variety of Mexican Spanish. AN = Alternative-Neutral, AS = Alternative-Supporting

4.2.3 Summary

In this subsection, we compared the results of the heritage speakers' data to that of a group of monolingual Mexican Altiplano Spanish speakers, to see heritage speakers alongside trends previously noted across dialects of Spanish.

As predicted, they are similar to the trends of the monolingual Mexican Spanish speakers, in the Forced-Choice Task and go on to push their trends further. Mexican Spanish had already shown trends of higher acceptability of *estar* pairings with neutral contexts, relative to the other dialects in Sanchez-Alonso et al. (2020, under review), so the fact that they exhibit a higher proportion of *estar* choice in neutral context than Mexican monolinguals, supports our predictions of further innovative behavior by heritage speakers of Mexican Spanish. The loss of significant effect of context in the Acceptability-Rating Task is also pushing the trends of Mexican Monolinguals in the landscape of the other dialects of Spanish in the prior study.

4.3 In the landscape of variations across dialects and within the trajectory of language change

Considering the behaviors of heritage speakers in a broader sense, we can connect their behaviors to the general landscape of dialectical variation observed in

Modern Spanish and the proposed trajectory of language change. We observe that heritage speakers behave more innovatively than speakers of a dialect already considered innovative (Monolingual Mexican), especially when compared to other dialects which were not behaving as ‘innovatively’ (Iberian or Argentinian for example).

In the Acceptability Rating Task results of Sanchez-Alonso et al. (2020, under review), we observe a lessening of effect of context, as we near the Monolingual Mexican Spanish speakers on the x-axis.

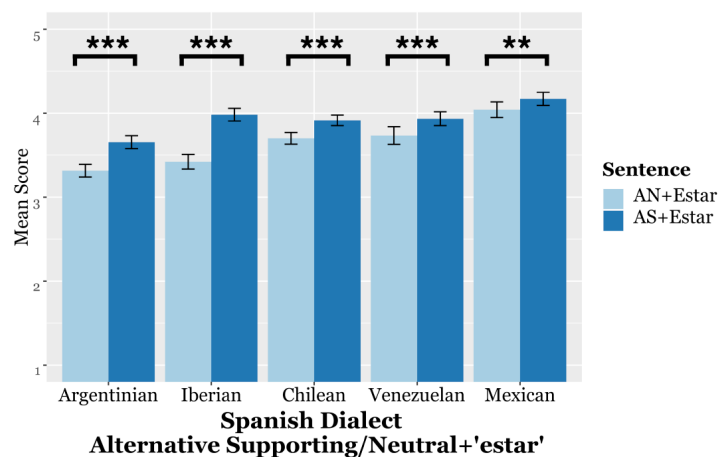


Figure 8: Mean Acceptability Scores for *estar* sentences by Context Type Across Dialects in unpublished Sanchez-Alonso et al. paper, pg 30. Bars represent standard error of the mean.

Although we did not initially consider this trend, we perhaps could have made this prediction earlier on in the study: expecting heritage speakers to have less ‘significant effect of context’. Analyzing this behavior in terms of comprehension, we could say that speakers are equipped to accommodate the copulas with either context (when looking back at loss of significance). Yet, this does not quite mean that speakers are losing their sensitivity to context, based on what we had found in the Forced-Choice Task in 4.1.2, where there is a significant effect of context on copula choice.

Placing their copula choices then within the landscape of the dialectical variations reported in Sanchez-Alonso et al. (2020, under review), we already observe a higher percentage of *estar* choice in alternative-neutral contexts, relative to Mexican Monolinguals (shown in 6). To contextualize this further, Figure 9 illustrates the innovative behavior of Mexican Monolinguals in the Forced-Choice task, alongside the other dialects in Sanchez-Alonso et al.’s study²³.

²³Sanchez-Alonso et al.’s results for the frequency of copula in the Forced-Choice Task were

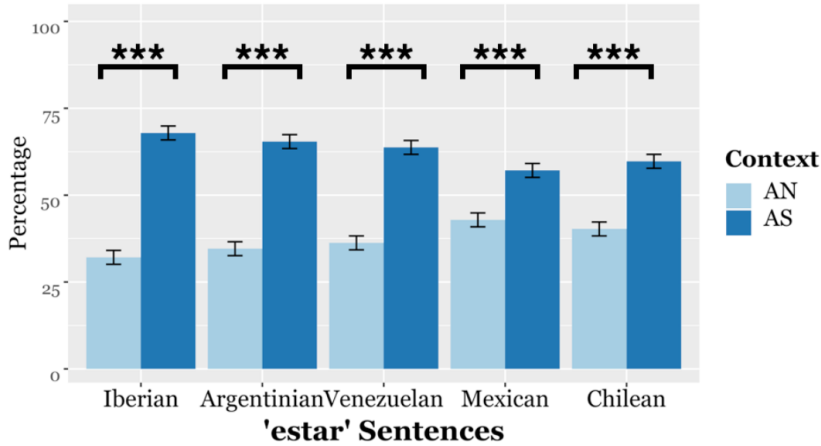


Figure 9: Percentage of *estar* choice for each Spanish Dialect by Context Type in unpublished Sanchez-Alonso et al. paper, pg 33.

As we find in our results for heritage speakers, we see they push this use of *estar* in alternative-neutral contexts further, acting innovatively as expected. Considering how this behavior is deemed ‘innovative’, we find that, in terms of production, these speakers are still sensitive to the presuppositional requirements of *estar* as their use is in fact facilitated by alternative-supporting context.

Furthermore, their production shows innovative tendencies as they are increasing their use of *estar* in alternative-neutral contexts, thus accommodating the presupposition in absence of explicit support (more than the other dialects are doing). This accommodation of the presupposition in absence of supporting context means that *estar* can be used in a larger variety of contexts, with more predicates, and can consequently continue encroaching on the *ser* domain, as expected in the grammaticalization process in diachronic semantics.

5 Conclusion

This paper explored copula use in the language of heritage speakers of Mexican Spanish living in the United States. By first recalling the context of current dialectal variation in *ser/estar* use, we were able to consider how heritage speakers may innovatively be using *estar*. As bilingual speakers of Spanish and English in the US, language contact had the possibility to accelerate the process of grammaticalization of the copula, where *estar* seems to encroach on the domain of *ser*. We found evidence to support our predictions, as results showed that there isn’t

presented as Percentages, while the results in this paper are presented as Proportions. Proportions and Percentages correspond as 1 = 100 percent

a significant effect of context on preference of *estar*, meaning that participants were likely already accommodating *estar*'s presupposition in these non-supportive (alternative-neutral) contexts, and increased their uses of *estar* in non-supportive contexts, relative to monolingual Mexican Spanish speakers. This conforms with the proposed path of grammaticalization, in that *estar* will be more acceptable and used more frequently in more contexts, with a larger variety of predicates. As *estar* continues to encroach on the *ser* domain, it is expected that *ser* is becoming more specific and *estar* undergoes semantic bleaching. Consequently, *estar* could eventually generalize as the neutral copula in the Spanish system, and a new copula would have to come in and be recruited, starting its own path of grammaticalization.

6 Further Directions

Although this paper focused on the expansion in *estar* use, it might be interesting to study the specification of the *ser* form and constriction of its uses, as a result of this expansion. In that vein, one could wonder if there would be a possible analysis where a requirement would emerge for *ser* use, as *estar* increasingly generalizes and possibly approaches the status of a neutral copula. Just as *estar* has a presuppositional requirement for an alternative, it would be worth considering whether *ser* could develop some sort of requirement as a result of speakers more easily accommodating the *estar* requirement.

Future work could delve into the cognitive analysis of this type of language change. Correlations with context-sensitivity are a logical next step, considering the focus on interaction between copula and context in this project. The role of perspective and subjectivity would be interesting to modulate in an experimental setting as well. Reflections on the interaction of language and cognition, and the feedback loop within this mechanism, naturally arise. Could using one copula over another be reflective of how we perceive our experiences or of how we think? Hopefully studying *ser/estar* could tell us about context-dependency and conceptualization in the minds of speakers, especially when it comes to the pragmatic features of the communicative situation. Especially when thinking of these experimental tasks as proxies for comprehension and productions, what are the implications?

When reflecting on the asymmetry in our results, there were many possibilities I considered. Whether this was a feature about language perception as opposed to production or if it revealed an interesting characteristic of the minds of heritage speakers. Placing myself in the situation of a participant in this study, I consider whether this could be a case of internalized feelings of hesitancy and inadequacy in claiming the grammaticality of something presented to you in a language you

reportedly do not feel as proficient in as you'd like. Alternatively, as a bilingual myself, I could say my experience has been of taking in language input and seeing where it might fit into my grammar, rather than judging the grammaticality of a native speaker's language within my own grammar.

However, it is worth noting that possible ambivalence toward acceptability of stimuli does not entirely reflect preferences when it comes to copula use. As found in the forced-choice task, participants were still very much guided by contextual features and able to assert their preference of a copula when given a context or predicate type, and they had a choice to make.

Either way, it would be interesting to study this intuition of a "lack of authority" in their home language, which heritage speakers in the US might feel when asked to assess it. From a cognitive or psychological perspective, the confounding factors of identity priming in experimental procedures could be valuable to parse through.

The experience of Mexican Spanish Heritage Speakers in the United States is one of immigration and largely one of marginalization of communities of color. It is important to study them since this situation of bilingualism and language contact is a reality for many immigrants and children of immigrants. Placing them alongside other dialects of Spanish, as an internally consistent grammar in its own right (rather than an "incorrect use" of a base language), is valuable in reiterating perspective of grammatical diversity. Just because speakers may stray from a "standard", does not mean that their dialect is any less valid –it is just a result of a grammar developing in another environment. Furthermore, it would be worth exploring the takeaways of this perspective on increasing acceptability of non-standard grammars such as in school settings. Anecdotally, a lot of the time heritage speakers receive contradictory input when learning Spanish in school in the US, since the school uses a "standard dialect" which many times isn't representative of their Latin American countries of origin. This itself could also contribute to aforementioned feelings of inadequacy in your home language. Yet, who has the authority to tell you if your mental grammar is correct or not? These are important questions to consider when studying innovations and the discourse around innovative grammars, especially when they tend to diverge from a 'standard' and are associated with negative, elitist, classist stereotypes.

All in all, it is inspiring to see that speakers in this situation -in which a majority language in society might dominate over their native language- still maintain the expected patterns of innovation of Spanish speakers.

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