

## Article

# Basic Intonation Patterns of Galician Spanish

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**Abstract:** This paper presents an inventory of pitch accents and boundary tones in Galician Spanish (GS), a variety spoken in Northwestern Spain. Research so far has focused on explaining GS intonation features as transfer phenomena from Galician, the vernacular Romance language in the region. Because of this, previous studies have often included Galician L1 speakers, for whom transfer is expected when speaking Spanish L2. However, GS is the single L1 of half the children in Galicia, and it is spoken almost exclusively by about a quarter of Galicians. Our study focuses on this population and investigates the relative frequency and distribution of tonal units in GS when direct transfer from Galician is unlikely. A corpus of 1706 sentences (statements, questions, imperatives, and vocatives in neutral and biased contexts) was obtained from 28 participants through a discourse completion task. Results showed that patterns previously attributed to direct transfer from Galician L1 (for example, upstepped final accents in neutral declaratives or falling contours in unmarked interrogatives) are widespread in GS as L1. Findings also show commonalities with other L1 Spanish varieties, both in Europe (for example, L\* L% as the unmarked declarative ending) and America (for example, the L\* + H prenuclear accent of Caribbean varieties).

**Keywords:** Galician Spanish; cross-dialectal intonation; prosodic variation



**Citation:** Pérez Castillejo, Susana, and Mónica de la Fuente Iglesias. 2024. Basic Intonation Patterns of Galician Spanish. *Languages* 9: 57. <https://doi.org/10.3390/languages9020057>

Academic Editors: Timothy L. Face and Meghan Armstrong

Received: 12 September 2023

Revised: 29 December 2023

Accepted: 24 January 2024

Published: 6 February 2024



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## 1. Introduction

This study focuses on the intonation of Galician Spanish, a variety spoken in Northwestern Spain. Several intonational features of GS originate in the centuries-long contact with Galician, the vernacular Romance language in the region (Castro 2003; Fernández Rei 2019; Hernández 2020; Pérez Castillejo 2012, 2014; Rodríguez Vázquez 2019). As Galician linguistic influence permeated the speech of bilinguals whose L1 was Galician, a distinctive way of speaking Spanish evolved into what we know today as GS. Nowadays, GS is acquired as single L1 by half the children under the age of 14 in Galicia (IGE 2019), and it is spoken almost monolingually by about a quarter of all Galicians (IGE 2019). When these functional monolinguals produce typically Galician prosodic features while speaking Spanish, it may not be because of direct transfer from Galician, but because they have acquired these features as part of their L1 linguistic repertoire (Fernández Rei 2019).

In the last fifty to sixty years, contact with Castilian Spanish (the national standard in Spain) has intensified through urbanization and the media (Fernández Rei 2016). Contact with Castilian Spanish phonetics also occurs via the increase in speakers of standard Galician, another contact variety that differs from vernacular Galician (i.e., the more traditional Galician) in that it is highly influenced by Castilian Spanish phonetically (Beswick 2010; Regueira 2004). This language and dialect contact situation has resulted in great intra- and inter-speaker variation at different levels, including prosody (Fernández Rei 2019; Pérez Castillejo 2012, 2018; Regueira and Fernández Rei 2020). As is common in modern bilingual communities where language contact has been intense and long, speakers in Galicia have a vast array of linguistic resources available for their communicative needs. They draw on these resources dynamically (Fernández Rei 2019; Palacios 2011) as their

linguistic competence allows and as they construct meaning, including social meaning and identity performance (De la Fuente Iglesias 2020; De la Fuente Iglesias and Pérez Castillejo 2020). Prosodic variation is one of these resources. However, to explore how GS speakers utilize prosody to perform identity, we need first an inventory of available prosodic features.

Because of its interest to understand the prosodic outcomes of bilingualism and historic language contact, GS intonation is often compared to Galician and rarely to other Spanish varieties beyond the national standard. The exception is the study by Rodríguez Vázquez (2019), which includes a comparison of wh- question intonation in GS, in Galician, and in multiple varieties of European Spanish, not only the standard. This comparative approach offers insights into how GS intonation phenomena align along the continuum of dialectal prosodic variation across the Iberian Peninsula. It also helps discern which aspects of GS intonation make this a distinct and identifiable way of speaking Spanish in Spain. Is it a specific contour or group of contours? Is it the frequency of certain tonal units in given contexts? Rodríguez Vázquez's (2019) participants were Galician L1 speakers who remained dominant in their first language as adults, so the contours they produced in Spanish could be interlanguage phenomena expected in bilingual speech. This bias in the data, although useful to address the language contact hypotheses of that study, limits our ability to establish the extent to which the intonational features observed are acquired as part of the native repertoire of Spanish L1 speakers in Galicia.

Our study investigates intonational variation in GS from a cross-dialectal lens, equating it to other Spanish varieties acquired as L1. We adopt a descriptive approach aimed at documenting the inventory of tonal units in GS, as well as their relative frequency and distribution by sentence position (prenuclear or nuclear), sentence type (statements, questions, imperatives, and vocatives), and meaning (neutral or biased). To better situate the GS tonal inventory within cross-dialectal prosodic variation in Spanish, we adopt a methodology that has already been employed for this purpose for other dialects (Prieto and Roseano 2010), and we provide a broad phonetic transcription (Hualde and Prieto 2016) according to the Sp\_ToBI labeling system (Estebas-Vilaplana and Prieto 2008). We also establish connections between our findings and those of previous studies with a similar approach. This descriptive and comparative effort allows for a more nuanced characterization of GS as a native variety, and it widens the range of non-standard varieties (non-standard when considered within their national contexts) that have been studied so far to build the Spanish tonal inventory.

The paper is structured as follows: First, Section 2 gives a brief overview of the main aspects of cross-dialectal variation in Spanish intonation. Section 3 offers a review of research on GS intonation. Section 4 formulates the research questions and hypotheses explored. Section 5 reports on the methods. Section 6 presents the findings, which are discussed in Section 7. Conclusions are offered in Section 8.

## 2. Spanish Intonation across Dialects

Our paper presents an inventory of pitch accents and boundary tones in GS and describes the frequency of these units in different sentence types, in neutral and non-neutral contexts. As mentioned, we adopt the Sp\_ToBI notation system anchored in the Autosegmental Metrical (AM) model of intonational phonology (Pierrehumbert 1980). This framework represents the movement of the fundamental frequency, F0, into a series of low (L) and high (H) tones and their combinations. These discrete tonal units can be associated with syllabic prominence (pitch accents) or with utterance phrasing (phrase accents and boundary tones). These units combine into contours that convey grammatical, pragmatic, or paralinguistic meaning.

Spanish intonation has been amply analyzed within the AM framework. It would be lengthy and impractical to provide here a detailed account of how the multiple tonal units documented so far are implemented across dialects. Instead, this review focuses on the cross-dialectal descriptions offered in the edited volume by Prieto and Roseano (2010) be-

cause our paper's methodology is based on that research. We summarize the main aspects of variation observed in the ten Spanish dialects included in [Prieto and Roseano \(2010\)](#). These were three varieties from Europe, Madrid ([Estebas-Vilaplana and Prieto 2010](#)), Cantabria ([López Bobo and Cuevas Alonso 2010](#)), and Las Palmas ([Cabrera Abreu and Vizcaino Ortega 2010](#)) and seven from America including the Cibao region of the Dominican Republic ([Willis 2010](#)), Puerto Rico ([Armstrong 2010](#)), Mérida in the Andean region of Venezuela ([Astruc et al. 2010](#)), Quito in the Andean region of Ecuador ([O'Rourke 2010](#)), Santiago de Chile ([Ortiz et al. 2010](#)), Buenos Aires ([Gabriel et al. 2010](#)), and Mexico DF ([De la Mota et al. 2010](#)). For a more extensive comparison, see [O'Rourke \(2012\)](#) and [Hualde and Prieto \(2015\)](#).

### 2.1. Declaratives

In all varieties documented in [Prieto and Roseano \(2010\)](#), the unmarked prenuclear accent in declaratives across dialects was a rising tone. For most varieties, the rising accent had a post-tonic peak. In Argentinean Spanish, however, the peak occurred within the stressed syllable,  $L + H^*$ . Post-tonic peaks were represented as  $L + >H^*$ , if the  $F_0$  went up through the stressed syllable, or  $L^* + H$ , if the  $F_0$  remained low for much of the stressed syllable. The unmarked prenuclear late rise  $L^* + H$  accent was only found in the Caribbean varieties.

Contrastive focus also tended to be expressed with rising accents. While  $L + H^*$  was common for marked declaratives in many varieties, Argentinean Spanish presented a tritonal accent  $L + H^* + L$  with two valleys and a peak within the stressed syllable, and the Chilean variety had upstepped peaks,  $L + \uparrow H^*$ , at the end of biased statements.

The most extended boundary tone for neutral declaratives was  $L\%$ , but Dominican Spanish also had broad focus statements that ended in  $H\%$ . There was more variation at the end of biased statements than neutral statements. Many varieties presented a suspension boundary tone  $M\%$  in sentences that communicated uncertainty. This suspension tone has been recategorized as  $!H\%$  in Sp\_ToBI for consistency with other language ToBI systems ([Hualde and Prieto 2016](#)).

### 2.2. Interrogatives

Interrogative nuclear configurations varied across question types and dialects. Neutral yes–no questions ended in  $L^* HH\%$  in Madrid, Cantabria, and Quito. In Puerto Rico, the  $HH\%$  tone added a nuance of politeness. In Mexico DF, both neutral and non-neutral yes–no questions ended in  $L^* LH\%$ . An upstepped final accent,  $L + \uparrow H^*$ , occurred in all yes–no questions in Buenos Aires Spanish.

Low  $L\%$  or circumflex  $HL\%$  boundary tones in yes–no questions had a neutral meaning in Puerto Rico, Las Palmas, Buenos Aires, and Dominican Spanish. In Cantabrian Spanish, which is geographically close to GS,  $H\%$  alternated with  $HL\%$  in information-seeking yes–no questions. A falling nuclear configuration  $H + L^* L\%$  occurred in neutral and non-neutral yes–no questions in Dominican Spanish, but in all other varieties, this configuration added some bias.

Neutral wh- questions ended mostly in  $L\%$ , except in Santiago de Chile, the Dominican Republic, and Quito, where they showed a final rise. The nuclear accents of wh- questions varied considerably according to dialect and pragmatic intention. One relatively extended pattern was that upstepped final peaks,  $L + \uparrow H^*$ , were observed in biased wh- questions in Madrid, Cantabria, Puerto Rico, Mérida (Venezuela), Santiago de Chile, and Buenos Aires. Another common trait in wh- questions was that  $HH\%$  communicated counter expectation in the European varieties and in Chile.

### 2.3. Imperatives and Vocatives

Imperative contours tended to end in  $L\%$  across dialects, except in Las Palmas, where  $L + H^* HH\%$  was documented, and Madrid and Puerto Rico, where suspension boundary tones were observed. Vocatives always presented a final accent  $L + H^*$  and either a

circumflex HL% boundary tone or the suspension tone and sometimes both in the same variety (Madrid, Cantabria, Las Palmas, Puerto Rico, Quito, Buenos Aires, and Mexico DF).

Prieto and Roseano's (2010) volume provided a baseline for the analysis of the basic intonational patterns in Spanish. Other studies have adapted their research protocol to document the contours of additional regional varieties (Henriksen and García-Amaya 2012; Terán and Ortega-Llebaria 2017). Our study follows this line of research to facilitate cross-dialectal comparison. Unlike the chapters in Prieto and Roseano (2010), we add frequencies for the different intonational units in each context to show how common each pattern is within the sample.

### 3. Galician Spanish Intonation

Spanish has been in contact with Galician in the northwestern part of the Iberian Peninsula since the Middle Ages. Castilian nobility introduced what we call today Spanish in the region in the early 13th century, but Galician remained the language of politics and the literature up to the end of the 15th century. It was then replaced by Spanish as the language of written public discourse, although Galician was still the language of 90% of the population of Galicia until the early 20th century (Regueira and Fernández Rei 2020). The last century saw a rapid decline in the use of Galician in favor of Spanish, especially in urban areas, despite intense maintenance and revival efforts and its recognition as one of the official languages of Galicia in 1981.

Nowadays, the region's sociolinguistic fabric is made up of various contact varieties that tend to be associated with different social profiles (Fernández Rei 2019; Pérez Castillejo 2017) and, therefore, can be exploited for identity work in discourse (De la Fuente Iglesias 2020). These ways of speaking Galician and Spanish vary along a continuum based on whether their salient features are traditionally linked to Galician or traditionally linked to Spanish. Prosody also contributes to characterize speech as more Galician- or more Spanish-sounding (Castro 2003), in part, because of the shifting frequency and distribution of some suprasegmental features linked to vernacular Galician (Pérez Castillejo 2018).

Empirical research since the beginning of the 21st century has discerned several prosodic patterns in GS that also characterize traditional Galician intonation. Castro's (2003) exploratory study identified three features: higher intensity in stressed syllables, the absence of declination (progressively lower peaks in an utterance) in statements, and a higher initial peak in questions. The author observed these features in the data from GS and Galician speakers, but not in the Spanish data from outside of Galicia. Castro's observations have been attested by later studies. In a larger corpus produced by 74 GS speakers, Pérez Castillejo (2014) observed the absence of declination in broad focus statements that Castro (2003) had documented. In fact, in utterances with three tonic syllables, the intermediate peak was sometimes significantly higher than the first peak. These upstepped peaks were positively correlated with speakers' exposure to Galician at home during childhood. In contrast to these findings, Fernández Rei (2019), the other study that has considered broad focus declaratives in GS, did not find evidence of absence of declination. More research on the intonation of GS statements can clarify how widespread this feature is.

Rodríguez Vázquez (2019) and Regueira and Fernández Rei (2020) also observed the higher initial peak followed by a global fall that Castro (2003) had documented for wh- questions. In this contour, the maximum F0 occurs on the stressed vowel of the wh- word and is followed by a steep fall until the end. This contour, which has been documented in Galician and other Romance languages, such as Sardinian and Romanian (Frota and Prieto 2015), is called the global fall by Rodríguez Vázquez (2019) and nuclear accent left displacement by Regueira and Fernández Rei (2020). Fernández Rei (2019) also observed this pattern in information-seeking yes-no questions. Rodríguez Vázquez (2019) found evidence that the global fall of wh- questions in GS is caused by direct transfer from Galician.

As in other Spanish varieties (Prieto and Roseano 2010), interrogatives in GS present considerable prosodic variation that may be related to the speaker's linguistic profile



(Hernández 2020; Regueira and Fernández Rei 2020; Pérez Castillejo 2012, 2014) or the question's pragmatic function (Rodríguez Vázquez 2019). Besides the global fall, Rodríguez Vázquez (2019) also observed a "hat" pattern in which the F0 rises from the first stressed syllable and remains high during the body of the question until a final drop associated with the last stressed syllable. This contour was also frequent in Pérez Castillejo's (2012, 2014) and Hernández's (2020) yes–no questions. In Rodríguez Vázquez's (2019) data, the hat pattern was associated with echo wh- questions (90.5% of the total, p. 102), while the global fall was the preferred contour in neutral wh- questions (85.7% of the total, p. 97). Hernández (2020), Rodríguez Vázquez (2019), and Pérez Castillejo (2014) also observed circumflex contours with an utterance-final rise–fall, which is common in some Galician varieties (Fernández Rei 2007; Fernández Rei and Escourido Pernas 2008). However, circumflex patterns were not very frequent in any of the three GS studies that observed it. Pérez Castillejo (2014), Rodríguez Vázquez (2019), and Hernández (2020) also found some cases of the rising nuclear configurations ( $L^* H\%$  and  $L + H^* H\%$ ) that characterize yes–no questions and polite questions in Castilian Spanish (Estebas-Vilaplana and Prieto 2010; Face 2004, 2008). Additionally, Fernández Rei (2019) and Regueira and Fernández Rei (2020) found a hybrid pattern that combined the high initial peak typical of Galician wh- questions with the final rise characteristic of standard European Spanish. Pérez Castillejo (2014) also found this pattern in about a third of the yes–no questions in her data set and showed that this contour occurred more in read speech than in unscripted data.

Another feature of GS intonation that Pérez Castillejo (2014) documented was the use of a falling pitch accent  $H + L^*$  in pre-nuclear and nuclear positions in broad focus declaratives. This accent occurs in Galician (Castro 2006; Fernández Rei 2007) and in Castilian Spanish, but in the latter, it is usually not present in broad focus statements. Instead, it has been documented in imperative and confirmation yes–no questions in Castilian Spanish (Estebas-Vilaplana and Prieto 2010). In a later analysis, Pérez Castillejo (2018) demonstrated that final  $H + L^*$  in broad focus declaratives in GS was stylistically motivated, as it occurred significantly more in unscripted than in scripted speech. Additionally, Pérez Castillejo (2014) observed that the peaks in the  $H + L^*$  accents were significantly higher in questions than in statements, both in nuclear and pre-nuclear positions. This phenomenon was also observed in Galician by Fernández Rei (2007), but, to our knowledge, it has not been documented for Spanish.

Thanks to the intensification of experimental research on Galician Spanish intonation in the second decade of the 21st century, we know much about the contours that link this variety to Galician prosody. We also know that there is a great deal of variability in the distribution of the contours observed, which may be linked to speakers' sociolinguistic profiles, stylistic choices, or pragmatic intentions. However, only a few sentence types have been considered so far, and the research focus has been on using GS data to inform models of contact-induced language variation and change. Our study advances research on GS intonation by offering a more complete inventory of tonal units and by exploring the relative frequencies of substratum and non-substratum features among L1 speakers of this variety.

#### 4. Research Questions and Hypotheses

Our study is guided by these questions:

1. What are the main pitch accents and boundary tones of GS spoken as L1?
2. What is the relative frequency of these tonal units across sentence types and pragmatic functions?
3. How does GS intonation compare to other Spanish L1 varieties?

Based on previous research on cross-dialectal variation in Spanish intonation (Prieto and Roseano 2010), we expect to find considerable variability conditioned by utterance type and by the sentence's neutral or non-neutral meaning.

Given the role of language contact in the development of GS as L1 variety, we expect that the intonational features that have been linked to Galician prosody in previous

research (Castro 2003; Fernández Rei 2019; Hernández 2020; Pérez Castillejo 2012, 2014; Regueira and Fernández Rei 2020; Rodríguez Vázquez 2019) will be widespread in the sample or will be more common in our data than in other Spanish L1 varieties. However, we also expect to find points of connection between GS and other Spanish L1 varieties, especially those spoken in Europe.

## 5. Methods

### 5.1. Participants

The study included 28 participants (11 women and 17 men, average age 35.3). They all spoke Spanish as L1 and reported various degrees of proficiency in Galician, which they learned as L2 in school. In other words, our data do not represent the Spanish spoken by Galician L1 speakers (for whom transfer would be expected), but the variety of Spanish acquired in Galicia as L1 (Ramallo 2007; Rojo 2004) and spoken regularly by people who may also use Galician L2 as members of a bilingual society. All participants were born and raised in urban areas of Galicia: 8 were from Santiago de Compostela (the region's capital), 18 were from A Coruña (the second most populated city in Galicia), 1 was from Ferrol (a city of about 65,000 inhabitants, 33 miles from A Coruña), and 1 was from Lalín (a city of 20,000 inhabitants, 32 miles from Santiago). They all lived in A Coruña or Santiago when the data were collected.

### 5.2. Instruments

Participants completed a brief questionnaire to gather demographic information and a discourse completion task based on Prieto and Roseano (2010). This task contained 69 contexts designed to elicit a variety of intonational contours (see Appendix A). For our study, the language of the task was slightly adapted to the Galician context (for example, by changing the present perfect tense for the more common preterite). Using the same procedure as in Prieto and Roseano (2010), contexts were read one by one to each participant who was asked to react to the situation. Participants' responses, which were not scripted, were recorded with a Marantz PMD 660 recorder and a head-mounted Shure SM10A microphone.

### 5.3. Data Coding and Analysis

Speech data were manually transcribed by the authors and acoustically analyzed with Praat (Boersma and Weenink 1992–2023). Given the descriptive and comparative nature of this study, we adopted a phonetic approach to the transcription of contours (Hualde and Prieto 2016). We applied a Praat script, Eti-ToBI (Elvira-García et al. 2016), that has been implemented before in the analysis of GS (Regueira and Fernández Rei 2020; Rodríguez Vázquez 2019). The Eti-ToBI Praat script automatically annotates tonal events according to the Sp-ToBI conventions (Estebas-Vilaplana and Prieto 2008), based on lexical information (stress location and syllable separation) provided by the researchers and acoustic information extracted from the recordings. For a detailed description of this script and its reliability, please see Elvira-García et al. (2016). The output from the Eti-ToBI script was manually revised by the two authors. A total of 54 (3.2%) tokens (combined pitch accents and boundary tones) were re-coded by the researchers. There were also some cases of deaccenting erroneously assigned a tonal label by the automatic annotation system. Where these cases happened, we removed the assigned label from the resulting Praat textgrid.

## 6. Results

Because of the unscripted nature of the data, the sentences in the corpus varied in length, syllabic structure, and syntactic structure. There were speakers that consistently produced rather long sentences while others uttered shorter fragments, often with no prenuclear material. After discarding invalid data (i.e., indirect speech or cases where the

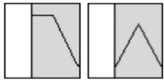
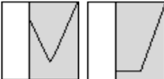
participant's laughter or another noise interrupted the signal), a total of 1706 sentences were included in the analysis.

In response to our first research question, Table 1 presents schematic representations and phonetic descriptions of each of the pitch accents and boundary tones found in the corpus. All tonal patterns previously reported for other Spanish varieties in [Prieto and Roseano \(2010\)](#) were observed in GS, except for the tritonal pitch accent documented in Argentinian Spanish and the HH% boundary tone attested mainly in questions in several European Spanish varieties, including Castilian, Cantabrian, Canarian, and Andalusian Spanish.

**Table 1.** Pitch accents and boundary tones in the corpus.

| Accent  | Phonetic Realization                                                                                        | Schematic Representation                                                              |
|---------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| L* + H  | an F0 valley on the stressed syllable and a post-tonic rise                                                 |    |
| L + H*  | an F0 rise within the stressed syllable with the peak located at its end                                    |    |
| L + ¡H* | an F0 steep rise within the stressed syllable with the peak located at its end                              |    |
| L + <H* | a rising movement through the tonic syllable with the peak in the post-tonic syllable                       |   |
| H + L*  | a falling movement through the stressed syllable                                                            |  |
| H* + L  | a rising movement from the pretonic syllable with an early peak in the stressed syllable followed by a fall |  |
| H*      | high F0 without significant movement                                                                        |  |
| ¡H*     | extra high F0 without significant movement                                                                  |  |
| L*      | low F0 without significant movement                                                                         |  |
| H%      | a rising movement coming from a low or a high pitch accent                                                  |  |
| !H%     | a rising or falling movement that reaches a midpoint                                                        |  |
| L%      | a low sustained tone or a falling movement                                                                  |  |

Table 1. Cont.

| Accent             | Phonetic Realization                                   | Schematic Representation                                                            |
|--------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|
| HL%                | an F0 peak followed by a fall                          |  |
| LH%                | an F0 valley followed by a rise                        |  |
| L!H%               | an F0 valley followed by a rise movement to a midpoint |  |
| H!H% <sup>1</sup>  | an F0 peak followed by a fall to a midpoint            |  |
| ¡H!H% <sup>2</sup> | an extra high F0 peak followed by a fall to a midpoint |  |
| LHL%               | a falling–rising–falling tone                          |  |

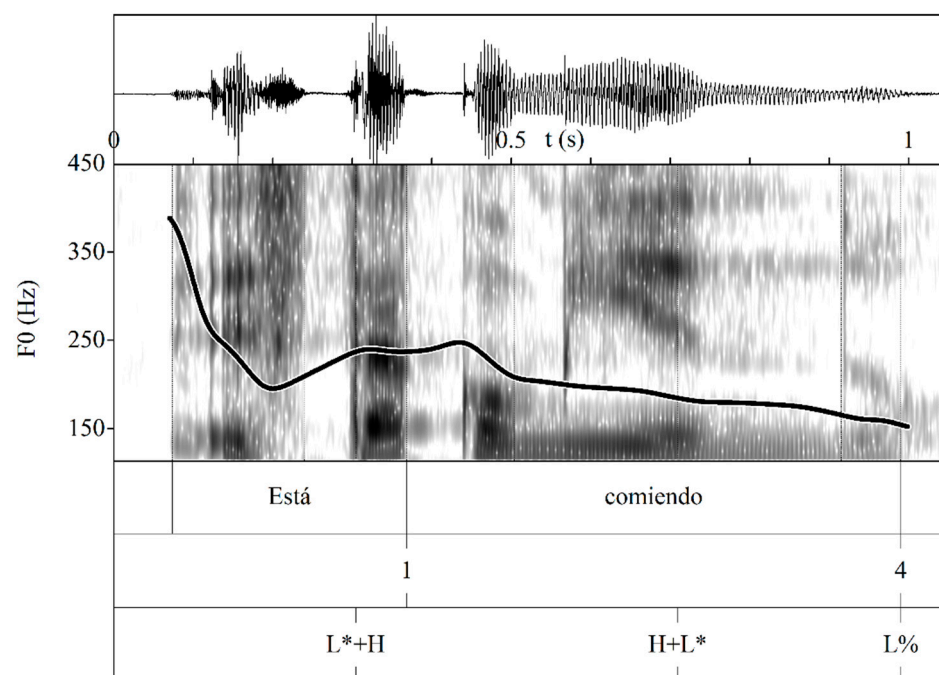
6.1. Statements

6.1.1. Broad Focus Statements

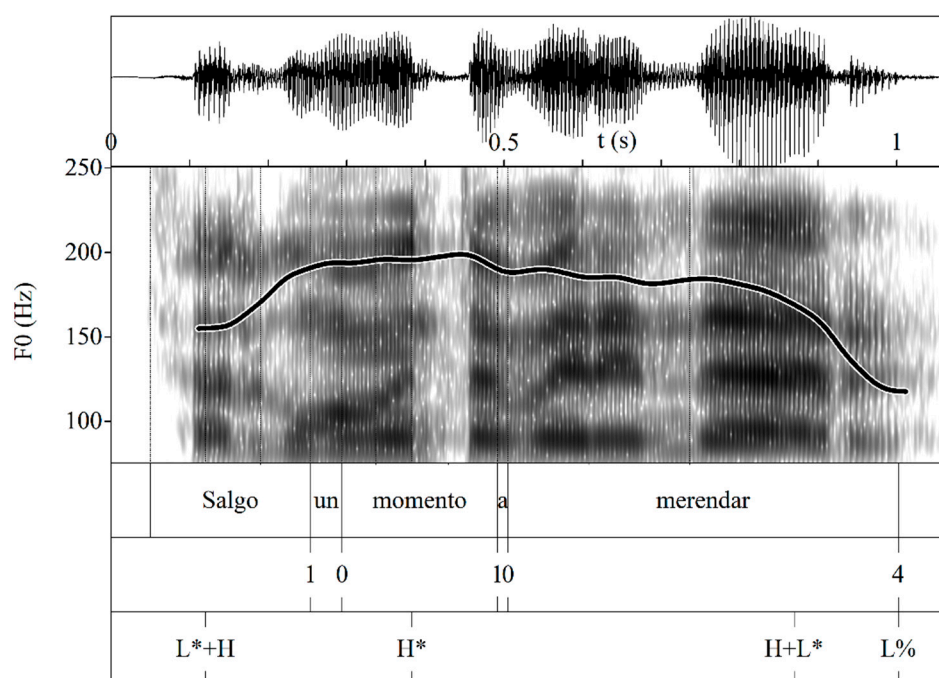
The corpus included a total of 237 broad focus statements, of which 227 contained more than one stressed syllable. Given the variability in sentence length across participants and contexts, we only report prenuclear accents associated with the penultimate stressed syllable in each utterance (Díaz Campos and Tevis McGory 2002). Table 2 captures the relative frequency of the different prenuclear pitch accents. Figures 1 and 2 exemplify some of these contours.

Table 2. Pitch accents associated with the penultimate stressed syllable in broad focus statements (N = 227).

| Accent  | N   | %    |
|---------|-----|------|
| L* + H  | 74  | 32.6 |
| L + H*  | 42  | 18.5 |
| H*      | 36  | 15.9 |
| H + L*  | 31  | 13.7 |
| L + <H* | 26  | 11.4 |
| L*      | 15  | 6.6  |
| H* + L  | 3   | 1.3  |
| Total   | 227 |      |



**Figure 1.** Waveform, spectrogram, and F0 trace for the broad focus statement *Está comiendo* 'She is eating', produced with an H + L\* L% final configuration by a 36-year-old female from Lalín.



**Figure 2.** Waveform, spectrogram, and F0 trace for the broad focus statement *Salgo un momento a merendar* 'I am going out for a moment for snack', produced with an H + L\* L% final configuration by a 22-year-old male from Santiago.

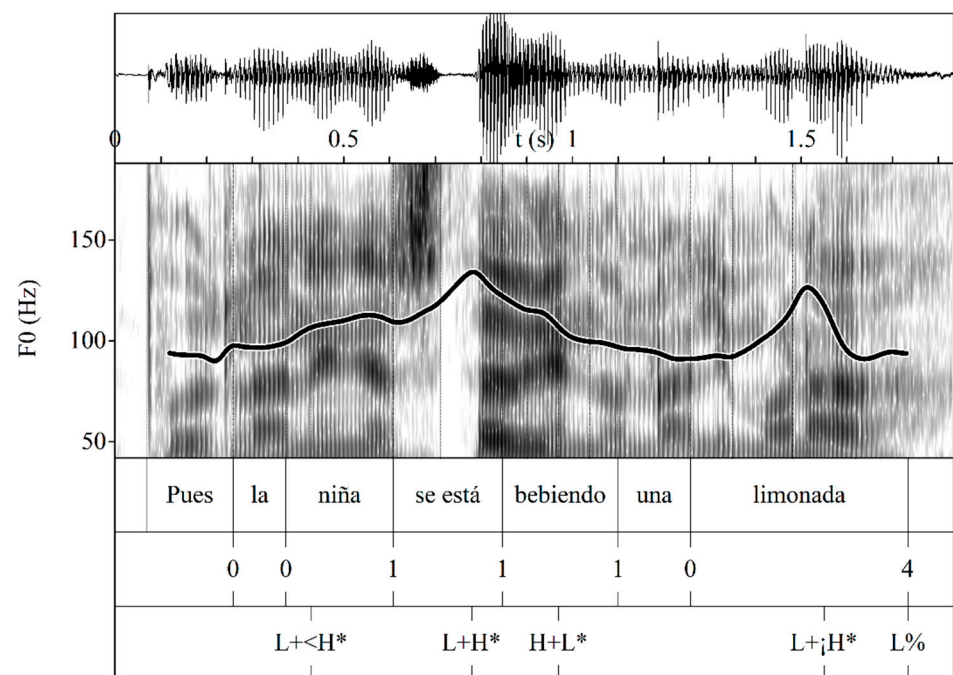
The nuclear configurations in our data were varied as well. As Table 3 shows, the most common final accent was L\*, followed by L + H\*, which sometimes was upstepped L + ¡H\* (Figure 3). This pattern coincides with that reported in other European Spanish varieties for broad focus statements, including Castilian (Estebas-Vilaplana and Prieto 2010), Cantabrian (López Bobo and Cuevas Alonso 2010), Canarian (Cabrera Abreu and Vizcaino Ortega 2010), and Andalusian Spanish (Henriksen and García-Amaya 2012), as well as in



some Latin American varieties included in Prieto and Roseano (2010). The most common prenuclear pitch accent,  $L^* + H$ , was the least frequent in final position. Although European Spanish varieties also exhibit a rising prenuclear accent, this tends to be  $L + <H^*$ , which only accounts for 11.4% of the cases in our corpus.

**Table 3.** Final pitch accents in broad focus statements (N = 237).

| Accent            | N   | %    |
|-------------------|-----|------|
| $L^*$             | 83  | 35.0 |
| $L + H^*$         | 69  | 29.1 |
| $L + \text{¡}H^*$ | 37  | 15.6 |
| $H + L^*$         | 35  | 14.8 |
| $H^*$             | 5   | 2.1  |
| $\text{¡}H^*$     | 4   | 1.7  |
| $H^* + L$         | 3   | 1.3  |
| $L^* + H$         | 1   | 0.4  |
| Total             | 237 |      |

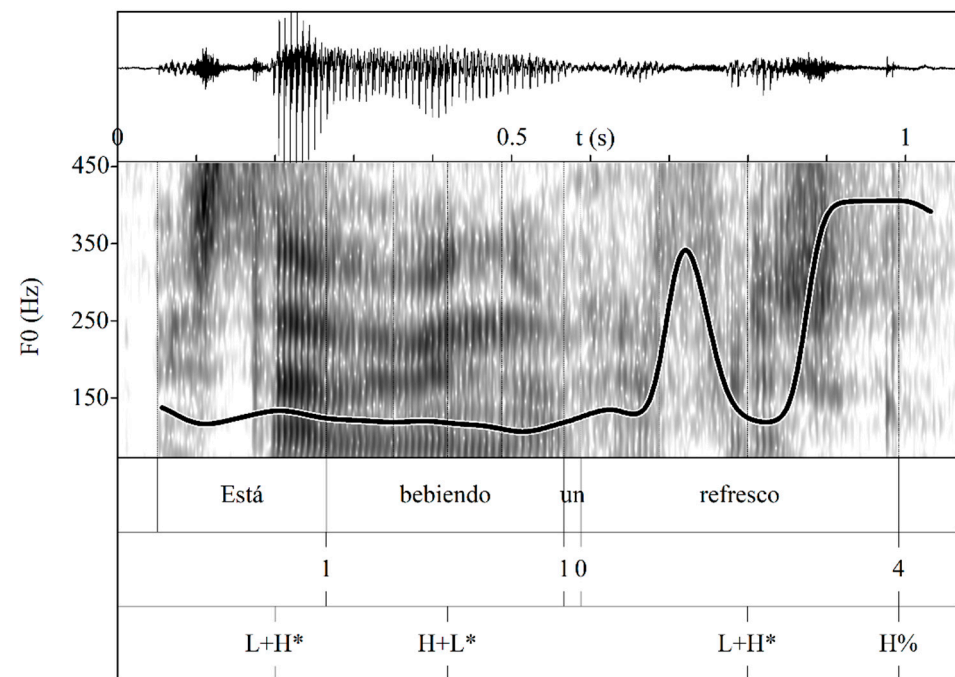


**Figure 3.** Waveform, spectrogram, and F0 trace for the broad focus statement *Pues la niña se está bebiendo una limonada* ‘Well the girl is drinking lemonade’, produced by a 21-year-old male from A Coruña with an upstepped  $L + \text{¡}H^{*3}$  final accent followed by  $L\%$ .

Table 4 shows that broad focus declaratives in GS tend to end with a low tone as in other European Spanish varieties (Estebas-Vilaplana and Prieto 2010; López Bobo and Cuevas Alonso 2010; Cabrera Abreu and Vizcaino Ortega 2010; Henriksen and García-Amaya 2012), but we also found the final rises (Figure 4) reported for this sentence type in some Latin American varieties (Díaz Campos and Tevis McGory 2002; Willis 2010). Careful reinspection of the audio files and the spectrograms confirmed that tokens with  $H\%$  in this category were not produced as questions.

**Table 4.** Boundary tones in broad focus statements (N = 237)<sup>4</sup>.

| Tone  | N   | %    |
|-------|-----|------|
| L%    | 113 | 47.6 |
| H%    | 62  | 26.2 |
| HL%   | 18  | 7.6  |
| !H%   | 17  | 7.2  |
| L!H%  | 16  | 6.7  |
| LH%   | 5   | 2.1  |
| H!H%  | 3   | 1.3  |
| LHL%  | 3   | 1.3  |
| Total | 237 |      |

**Figure 4.** Waveform, spectrogram, and F0 trace for the broad focus statement *Está bebiendo un refresco* 'She is drinking soda', produced with an L + H\* H% final configuration by a 22-year-old male from A Coruña.

#### 6.1.2. Biased Statements

##### Narrow Focus and Contradiction Statements

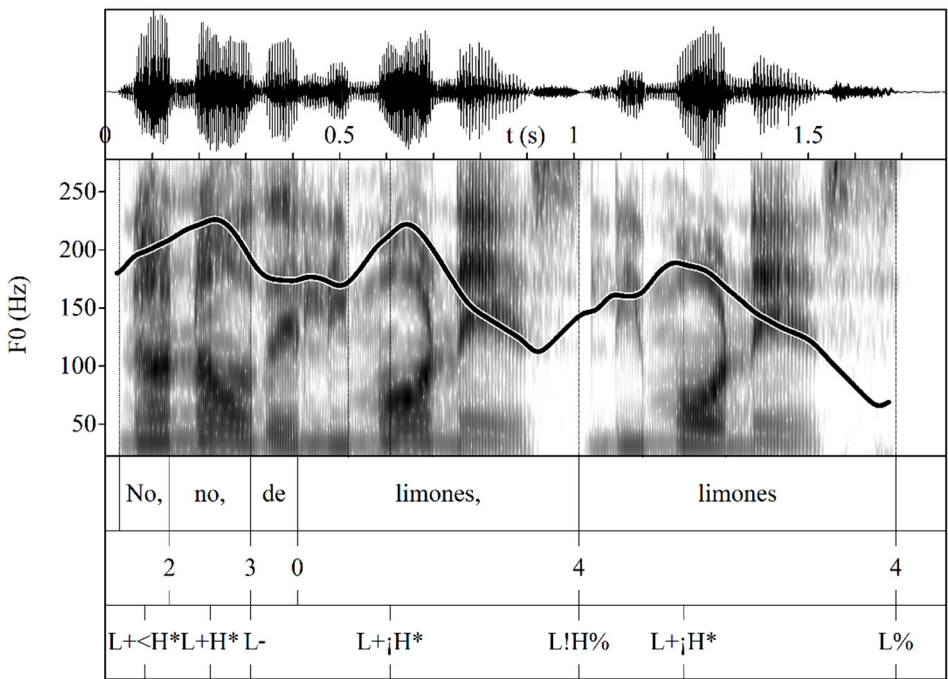
The prompts for narrow focus elicited contrastive and contradictory statements. The contrastive statements included several versions of the utterance '*No, de limones*' (Context 11, see Appendix A). Table 5 reports the frequencies for the different pitch accents associated with the initial negation and the contrastively focused word '*limones*.' Figures 5 and 6 show examples of contrastive narrow focus statements.

As Table 5 shows, the initial intonational unit presented three pitch accents that are also common in prenuclear material in broad focus statements (see Table 2). The data also show that there does not seem to be a final pitch accent that only occurs in narrow focus statements (see Table 3), although final upstepped peaks were more common in narrow focus than in broad focus declaratives. The two most frequent pitch accents were L +  $\uparrow$ H\* and L\*, each accounting for 36% of the cases. While L\* has been documented in Andalusian Spanish for this sentence type, marking a nuance of obviousness (Henriksen and García-Amaya 2012), the upstepped configuration has not been reported for contrastive statements in other Spanish varieties. The third most frequent pattern for this type of sentence in our corpus, L + H\* without an upstep, has been documented in all

varieties of Spanish (Prieto and Roseano 2010; Henriksen and García-Amaya 2012), except in Argentinian Spanish, which tends to present a tritonal accent, L + H\* + L.

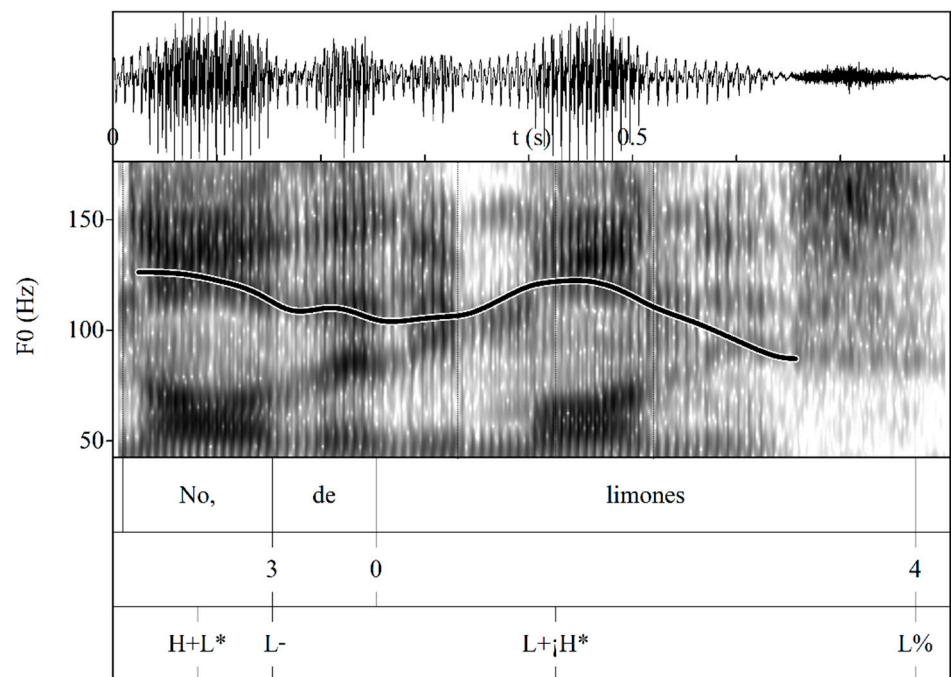
**Table 5.** Pitch accents for contrastive statements in the corpus (N = 25).

| Accent              | 'No' (Initial Position) |    | 'Limonés' (Final Position) |    |
|---------------------|-------------------------|----|----------------------------|----|
|                     | N                       | %  | N                          | %  |
| L* + H              | 12                      | 48 |                            |    |
| H + L*              | 8                       | 32 | 2                          | 8  |
| L + H*              | 5                       | 20 | 5                          | 20 |
| L + <sub>i</sub> H* |                         |    | 9                          | 36 |
| L*                  |                         |    | 9                          | 36 |
| Total               | 25                      |    | 25                         |    |

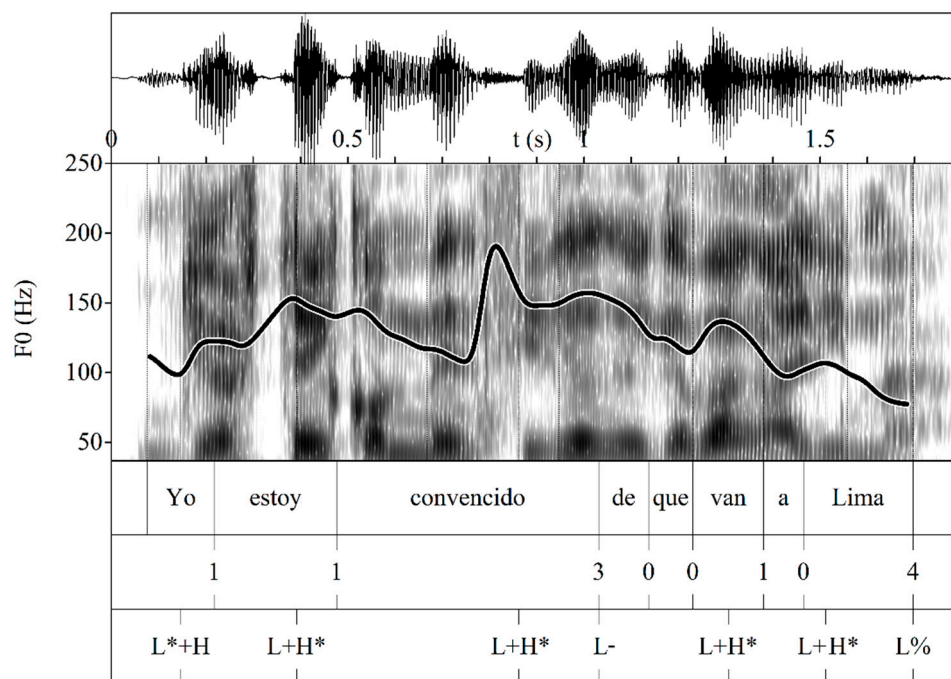


**Figure 5.** Waveform, spectrogram, and F0 trace for the narrow focus statement *No, no, de limones, limones* ‘No, no, of lemons, lemons’, produced with an L + <sub>i</sub>H\* L% final configuration by a 34-year-old female from A Coruña.

Contradictory statements in our corpus were uttered as rebuttals in which the word ‘Lima’ was focalized (Context 13, see Appendix A), serving as the item contradicting something the interlocutor had said. An example is depicted in Figure 7. Unlike the contrastively focused word ‘limones’, ‘Lima’ did not always occur in nuclear position. When it occurred in mid-sentence, the pitch accents could be L\* + H, L + H\*, L\*, or H\* (Table 6). H + L\* and L + <sub>i</sub>H\* were associated with the word ‘Lima’ only when it occurred in nuclear position. The most frequently produced final accent, H + L\*, has not been observed in other Spanish varieties for this sentence type, nor for Galician. The second most common final accent, L\*, has been documented in Castilian (Estebas-Vilaplana and Prieto 2010) and Mexican Spanish (De la Mota et al. 2010).



**Figure 6.** Waveform, spectrogram, and F0 trace for the narrow focus statement *No, de limones* ‘No, of lemons’, produced with an L + iH\* L% final configuration by a 22-year-old male from A Coruña.



**Figure 7.** Waveform, spectrogram, and F0 trace for the contradiction statement *Yo estoy convencido de que van a Lima* ‘I am convinced that they are going to Lima’, produced with an L + H\* L% final configuration by a 52-year-old male from A Coruña.

**Table 6.** Pitch accents for the word ‘Lima’ in contradictory statements (N = 26).

| Accent              | ‘Lima’ (Mid-Sentence) |      | ‘Lima’ (Sentence-Final) |      |
|---------------------|-----------------------|------|-------------------------|------|
|                     | N                     | %    | N                       | %    |
| L* + H              | 2                     | 25.0 | 7                       | 38.9 |
| H + L*              | 2                     | 25.0 | 3                       | 16.6 |
| L + H*              | 2                     | 25.0 | 1                       | 5.6  |
| L + <sub>i</sub> H* | 3                     | 37.5 | 6                       | 33.3 |
| L*                  | 1                     | 12.5 | 1                       | 5.6  |
| H*                  |                       |      |                         |      |
| <sub>i</sub> H*     |                       |      |                         |      |
| Total               | 8                     |      | 18                      |      |

Table 7 shows how frequently various boundary tones occurred in narrow focus statements, including contrastive (N = 25) and contradictory sentences (N = 26). Narrow focus statements tended to end in a fall more frequently than broad focus statements. Although there were also high and rising boundary tones, these were not as common as in neutral declaratives. A falling contour is also the prevailing boundary tone for this sentence type in all Spanish varieties (Prieto and Roseano 2010; Henriksen and García-Amaya 2012), apart from Mexican Spanish, in which the common boundary tone is HL%.

**Table 7.** Boundary tones for narrow focus statements (N = 51).

| Accent | N  | %    |
|--------|----|------|
| L%     | 37 | 72.5 |
| !H%    | 5  | 9.8  |
| H%     | 3  | 5.9  |
| LH%    | 3  | 5.9  |
| L!H%   | 3  | 5.9  |
| Total  | 51 |      |

### Exclamative Statements

Exclamative statements (Contexts 12, 16, and 17 in Appendix A) were like broad focus statements in that L\* + H and L + H\* were the most common pitch accents in prenuclear position (Table 8), and L\* and L + H\* were most frequent in nuclear position (Table 9). Similarly, L% was the most frequent boundary tone in both sentence types (Table 10). Figure 8 shows an example of an exclamative statement from the corpus. The L + H\* L% configuration is also the most common pattern in European Spanish varieties (Prieto and Roseano 2010; Henriksen and García-Amaya 2012), with the exception of Canarian Spanish, which features an !H\* L% contour (Cabrera Abreu and Vizcaino Ortega 2010).

**Table 8.** Pitch accents associated with the penultimate stressed syllable in exclamative statements (N = 65).

| Accent  | N  | %    |
|---------|----|------|
| L* + H  | 23 | 35.4 |
| L + H*  | 11 | 17.0 |
| H + L*  | 11 | 17.0 |
| L + <H* | 8  | 12.3 |
| H*      | 7  | 10.7 |
| L*      | 3  | 4.6  |
| H* + L  | 2  | 3.0  |
| Total   | 65 |      |

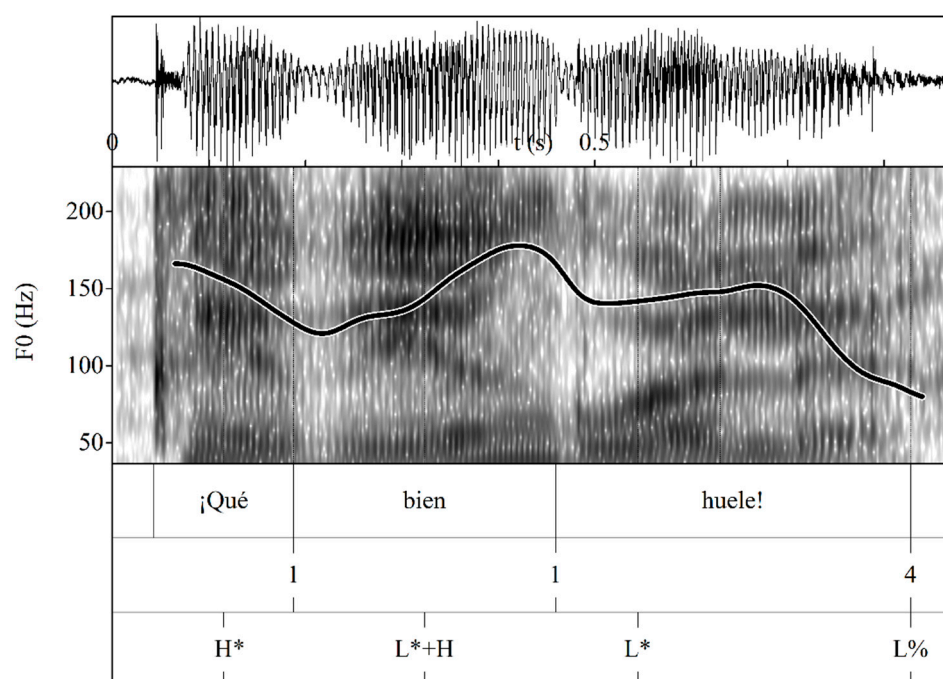


**Table 9.** Final pitch accents in exclamative statements (N = 69).

| Accent  | N  | %    |
|---------|----|------|
| L + H*  | 26 | 37.8 |
| L*      | 23 | 33.3 |
| H + L*  | 7  | 10.1 |
| L + ¡H* | 6  | 8.7  |
| ¡H*     | 3  | 4.3  |
| H*      | 2  | 2.9  |
| H* + L  | 2  | 2.9  |
| Total   | 69 |      |

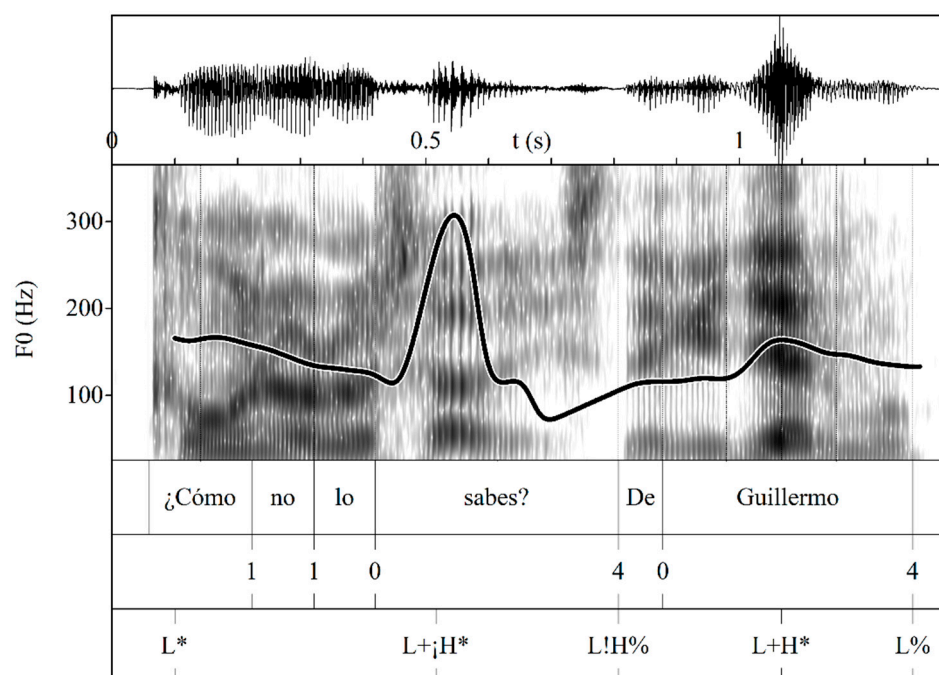
**Table 10.** Boundary tones in exclamative statements (N = 69).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 33 | 47.8 |
| H%    | 14 | 20.3 |
| L!H%  | 8  | 11.6 |
| HL%   | 7  | 10.1 |
| !H%   | 5  | 7.2  |
| LH%   | 1  | 1.5  |
| LHL%  | 1  | 1.5  |
| Total | 69 |      |

**Figure 8.** Waveform, spectrogram, and F0 trace for the exclamative statement *¡Qué bien huele!* ‘How well it smells!’, produced with an L\* L% final configuration by a 64-year-old male from Santiago.

#### Statements of the Obvious

The prompt to obtain this type of statement (Context 15) elicited a variety of utterances with the focalized word *Guillermo*. The information conveyed by this word is perceived as self-evident by the speaker, who realizes that the obviousness is not shared by the listener. An example is illustrated in Figure 9.



**Figure 9.** Waveform, spectrogram, and F0 trace for the uncertainty statement *¿Cómo no lo sabes? De Guillermo* ‘How do you not know this? It’s Guillermo’s!’, produced with an L + H\* L% final configuration by a 19-year-old male from A Coruña.

The word *Guillermo* appeared in the middle or at the end of the utterance. When in mid-utterance, it could be followed by a low-intermediate phrase tone, L-. Unlike the variety of pitch accents associated with words that express a contradiction or a contrastive focus (Tables 5 and 6), only three pitch accents were associated with the word *Guillermo*: L + H\*, L + ¡H\*, and L\* + H. Table 11 shows how frequent each of those accents were.

**Table 11.** Pitch accents associated with the word *Guillermo* (N = 24).

| Accent  | Guillermo (Mid-Sentence) |      | Guillermo (Sentence-Final) |      |
|---------|--------------------------|------|----------------------------|------|
|         | N                        | %    | N                          | %    |
| L + H*  | 9                        | 81.8 | 9                          | 69.2 |
| L + ¡H* |                          |      | 4                          | 30.8 |
| L* + H  | 2                        | 18.2 |                            |      |
| Total   | 11                       |      | 13                         |      |

Boundary tones in statements of the obvious were also varied, and the most frequent was L%, as in other types of broad and narrow focus statements in our corpus. Table 12 displays the boundary tones found.

**Table 12.** Boundary tones in statements of the obvious (N = 24).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 13 | 54.2 |
| HL%   | 4  | 16.7 |
| L!H%  | 3  | 12.5 |
| H%    | 2  | 8.3  |
| !H%   | 2  | 8.3  |
| Total | 24 |      |

L + H\* in nuclear position is common to all European and most Latin American Spanish varieties for expressing statements of the obvious (Prieto and Roseano 2010; Henriksen and García-Amaya 2012). However, instead of an L% boundary tone, this sentence type tends to end with an LM% boundary tone in Castilian (Estebas-Vilaplana and Prieto 2010), Canarian (Cabrera Abreu and Vizcaino Ortega 2010), Mexican (De la Mota et al. 2010), and Puerto Rican Spanish (Armstrong 2010), with an HL% boundary tone in Cantabrian Spanish (López Bobo and Cuevas Alonso 2010), and with an H% boundary tone in Dominican Spanish (Willis 2010).

### Uncertainty Statements

Hesitation in GS does not seem to be expressed through a specific intonational contour. The tonal units in this sentence type (prompted by Context 14) tend to follow the same patterns observed in other statements: L\* + H is a frequent prenuclear accent in hesitations, L + H\* and L\* are the most common final accents, L + ¡H\* occurs only in nuclear position, and L% and H% are the most frequent boundary tones. One difference with other types of statements is that hesitations did not have L\* and L + <H\* in prenuclear position. Additionally, H\* seemed more common in uncertainty statements than in other declaratives. Tables 13–15 show the tonal units and their frequency in uncertainty statements. Figure 10 offers an example.

**Table 13.** Pitch accents associated with the penultimate stressed syllable in uncertainty statements (N = 23).

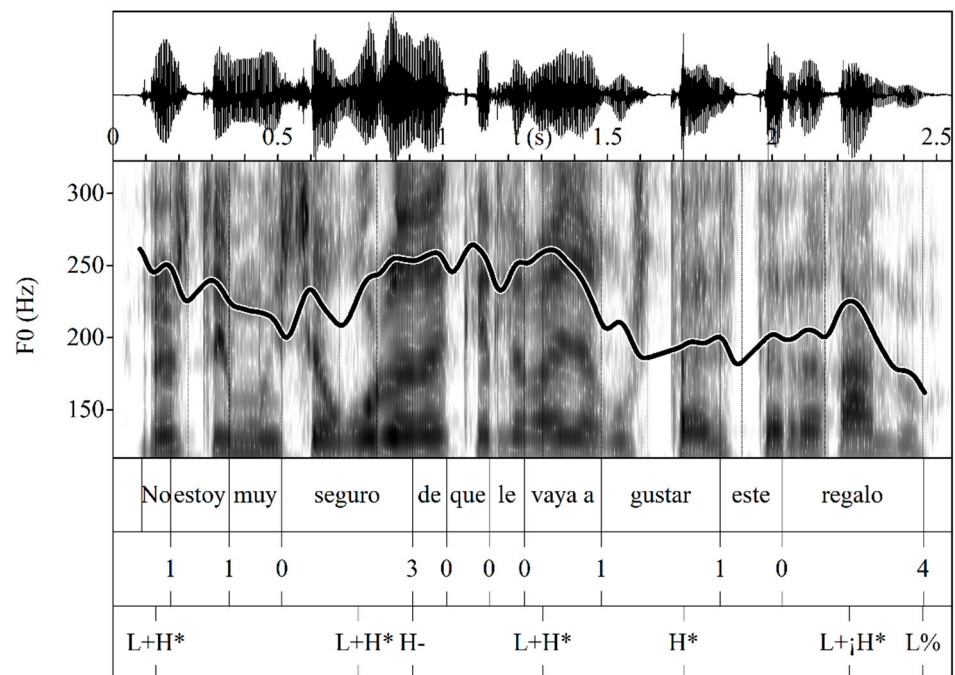
| Accent | N  | %    |
|--------|----|------|
| L* + H | 6  | 26.1 |
| H*     | 6  | 26.1 |
| L + H* | 5  | 21.7 |
| H + L* | 5  | 21.7 |
| H* + L | 1  | 4.4  |
| Total  | 23 |      |

**Table 14.** Final pitch accents in uncertainty statements (N = 23).

| Accent  | N  | %    |
|---------|----|------|
| L + H*  | 8  | 34.8 |
| L*      | 8  | 34.8 |
| L + ¡H* | 6  | 26.1 |
| H + L*  | 1  | 4.3  |
| Total   | 23 |      |

**Table 15.** Boundary tones in uncertainty statements (N = 23).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 10 | 43.5 |
| H%    | 6  | 26.1 |
| HL%   | 3  | 13.1 |
| !H%   | 2  | 8.7  |
| H!H%  | 1  | 4.3  |
| L!H%  | 1  | 4.3  |
| Total | 23 |      |



**Figure 10.** Waveform, spectrogram, and F0 trace for the uncertainty statement *No estoy muy seguro de que le vaya a gustar este regalo* ‘I am not really sure that s/he is going to like this present’, produced with an L + ¡H\* L% final configuration by an 18-year-old female from A Coruña.

The most common GS configuration for uncertainty statements, L + H\* L%, is shared with Cantabrian (López Bobo and Cuevas Alonso 2010) and Andalusian Spanish (Henriksen and García-Amaya 2012). However, the configuration in Castilian Spanish exhibits a mid-tone !H% (Estebas-Vilaplana and Prieto 2010), whereas the most common pattern in Canarian Spanish is ¡H\* !H% (Cabrera Abreu and Vizcaino Ortega 2010).

6.2. Interrogatives

6.2.1. Yes–No Questions

As in the case of statements, we will only report prenuclear accents associated with the penultimate stressed syllable in each question. The most common prenuclear accent for information-seeking yes–no questions in GS was L\* + H, followed by L + H\* and L + <H\* (Table 16). The most frequent final accent was H + L\*, followed by L + H\*, which was sometimes upstepped L + ¡H\*, and L\* (Table 17). In our corpus, yes–no questions tend to end in a falling contour, although rising boundary tones were also often observed (Table 18). The main difference between broad focus statements and this type of question lies in the final pitch accent. In statements, it is commonly realized as L\*, as previously reported in Table 3.

**Table 16.** Pitch accents associated with the penultimate stressed syllable in yes–no questions (N = 244).

| Accent  | N   | %    |
|---------|-----|------|
| L* + H  | 75  | 30.7 |
| L + H*  | 51  | 20.9 |
| L + <H* | 41  | 16.8 |
| H*      | 26  | 10.7 |
| H + L*  | 26  | 10.7 |
| L*      | 21  | 8.6  |
| H* + L  | 4   | 1.6  |
| Total   | 244 |      |

**Table 17.** Final pitch accents in yes–no questions (N = 258).

| Accent  | N   | %    |
|---------|-----|------|
| H + L*  | 145 | 56.2 |
| L + H*  | 47  | 18.2 |
| L*      | 47  | 18.2 |
| L + ;H* | 17  | 6.6  |
| ;H*     | 2   | 0.8  |
| Total   | 258 |      |

**Table 18.** Boundary tones in yes–no questions (N = 258).

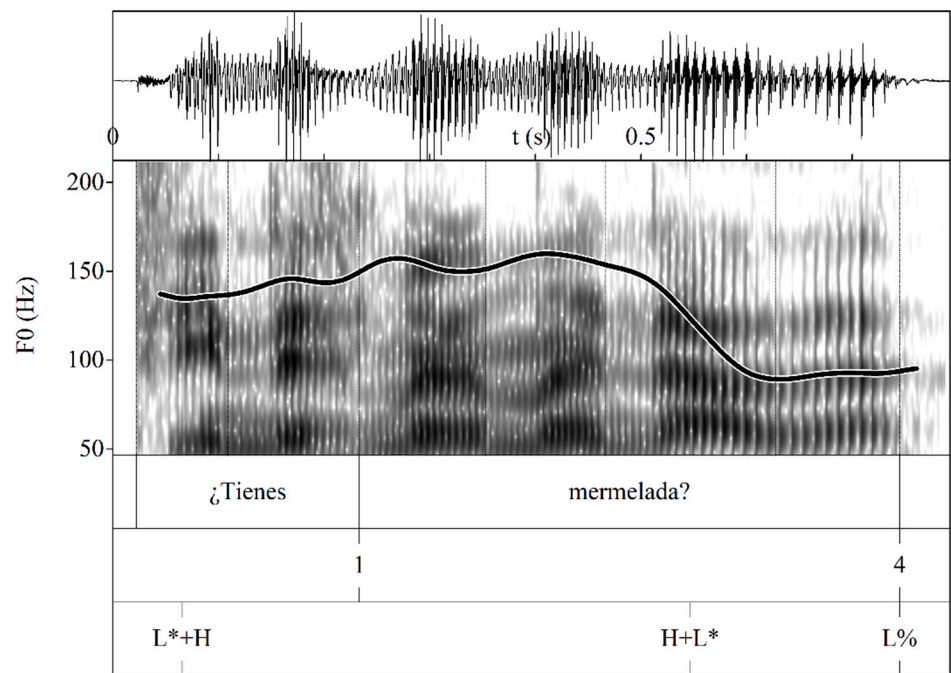
| Tone  | N   | %    |
|-------|-----|------|
| L%    | 131 | 50.8 |
| H%    | 62  | 24.0 |
| !H%   | 25  | 9.7  |
| L!H%  | 15  | 5.8  |
| HL%   | 12  | 4.6  |
| H!H%  | 10  | 3.9  |
| LH%   | 3   | 1.2  |
| Total | 258 |      |

Figure 11 exemplifies the most common configuration for information-seeking yes–no questions in our data, which tends to start with a rising pitch accent at the beginning of the sentence, remains at a high pitch until an H + L\* final pitch accent, and tends to end in a falling boundary tone. This configuration, which is typically expected in imperative and confirmation yes–no questions in Castilian Spanish, has been documented in previous studies on GS intonation (Pérez Castillejo 2012, 2014; Hernández 2020; Regueira and Fernández Rei 2020) and it is attributed to Galician (Fernández Rei 2007; Fernández Rei and Escourido Pernas 2008). It is also noteworthy to mention that this contour has been found in Dominican Spanish (Willis 2010) for this sentence type and several biased yes–no questions. Contrasting with the typical Castilian Spanish pattern of L\* HH%, descending contours in information-seeking yes–no questions are common in other northwestern Spanish varieties due to language contact with the adstrate languages, but the most common pattern varies across dialects: H\* HL% in Cantabrian Spanish (López Bobo and Cuevas Alonso 2010) and L + H\* L% in Basque Spanish (Elordieta and Romera 2021).

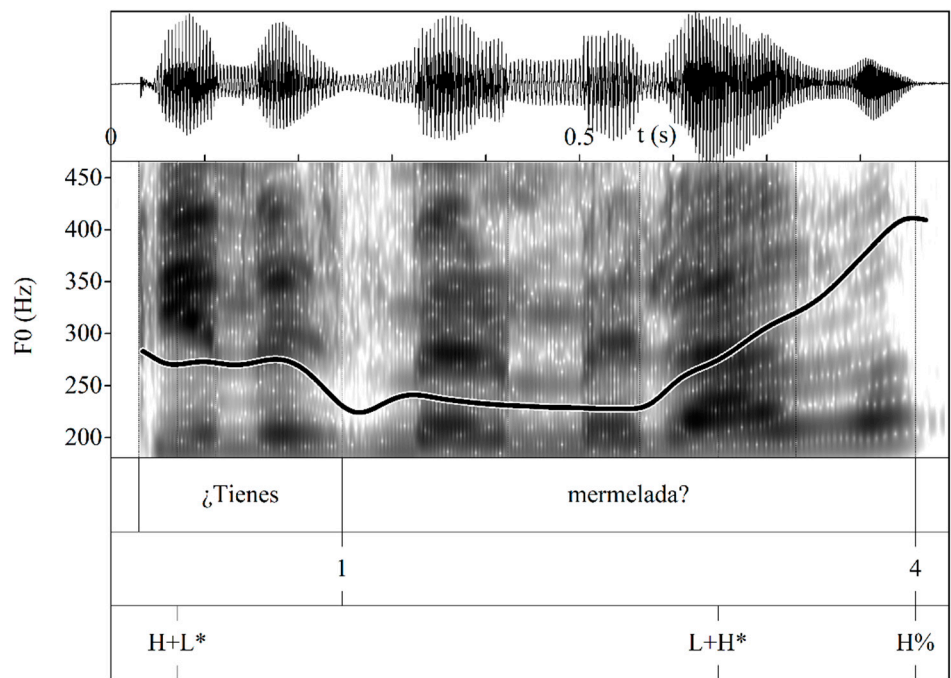
In our corpus, questions with a rising boundary tone, which are also found in Castilian and Andalusian Spanish (Estebas-Vilaplana and Prieto 2010; Henriksen and García-Amaya 2012), tend to start with a low accent that either remains low throughout the utterance or displays rising pitch movements in prenuclear accents until a final L\*, L + H\* or upstepped L + ;H\*. Previous studies on GS (Pérez Castillejo 2012, 2014; Hernández 2020) have also reported the L\* H% and L + H\* H% contours. Figure 12 shows an example.

In utterances in which information-seeking yes–no questions have more than one prosodic constituent, such as enumerations or disjunctive questions, the most common nuclear configuration presents an H + L\* pitch accent. While the second phrase falls to L%, the intermediate phrase tends to rise to H-. Figure 13 illustrates an example of a disjunctive question with this contour.

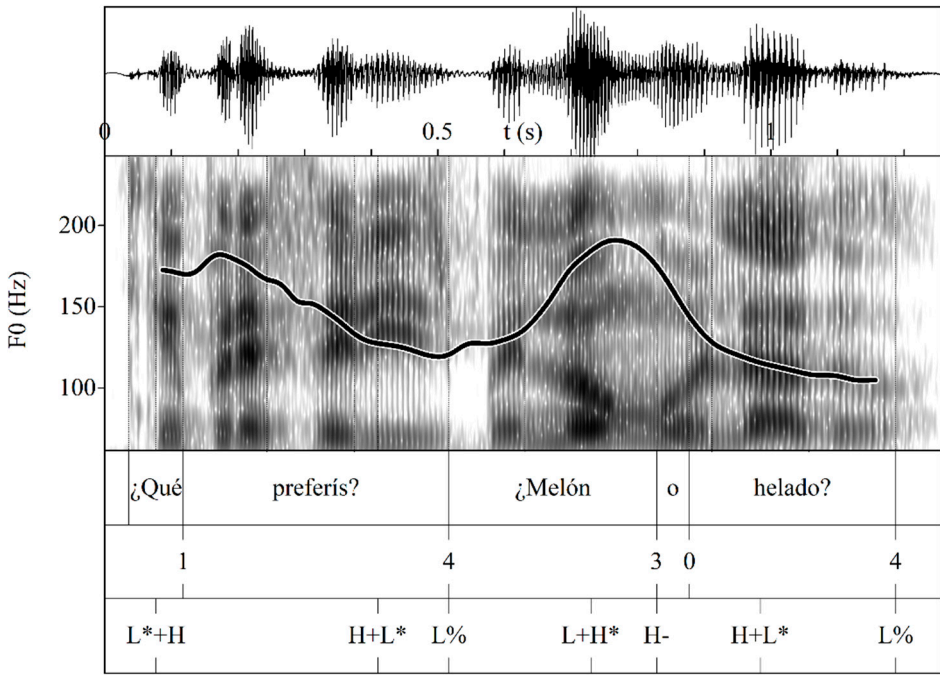




**Figure 11.** Waveform, spectrogram, and F0 trace for the information-seeking yes–no question *¿Tienes mermelada?* ‘Do you have any jam?’, produced with an H + L\* L% final configuration by an 18-year-old male from A Coruña.



**Figure 12.** Waveform, spectrogram, and F0 trace for the information-seeking yes–no question *¿Tienes mermelada?* ‘Do you have any jam?’, produced with an L + H\* H% final configuration by an 18-year-old female from A Coruña.



**Figure 13.** Waveform, spectrogram, and F0 trace for the disjunctive yes–no question *¿Qué prefieres? ¿Melón o helado?* ‘What do you prefer? Melon or ice cream?’, produced with an H + L\* L% final configuration by a 22-year-old male from Santiago.

6.2.2. Biased Yes–No Questions

Echo Yes–No Questions

The echo yes–no questions, also known as reiterative yes–no questions, indicate that the listener might have failed to understand something said by the speaker and thus utters a confirmation question. Unlike information-seeking yes–no questions and other biased yes–no questions, in which L\*H was the most frequent prenuclear accent, the most common prenuclear accent for echo yes–no questions was H\*, followed by L\* + H and L + H\* (Table 19).

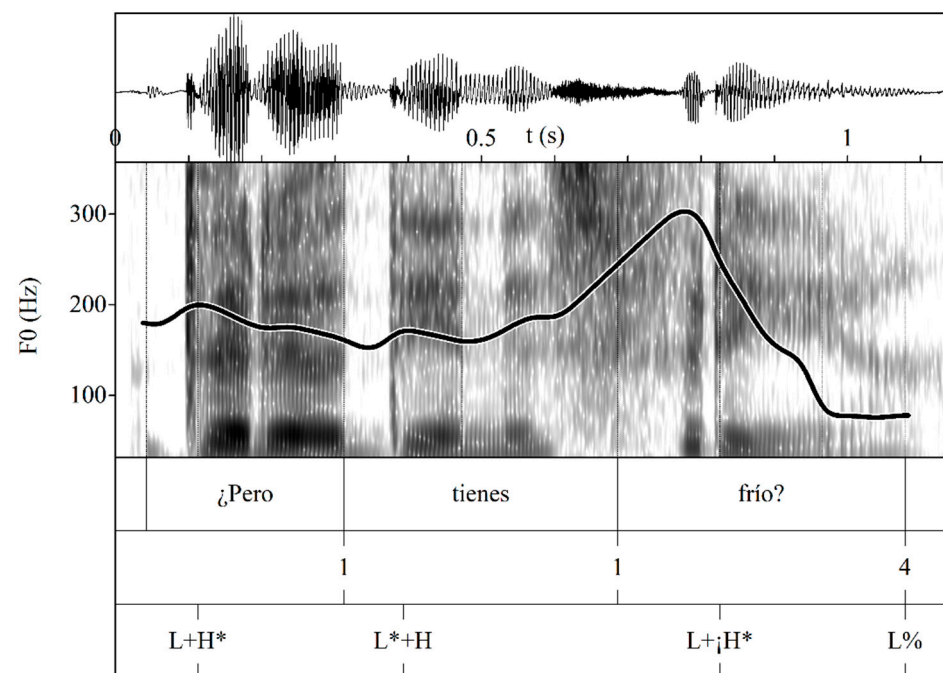
**Table 19.** Pitch accents associated with the penultimate stressed syllable in echo yes–no questions (N = 157).

| Accent  | N   | %    |
|---------|-----|------|
| H*      | 41  | 26.2 |
| L* + H  | 35  | 22.3 |
| L + H*  | 31  | 19.7 |
| L + <H* | 25  | 15.9 |
| H + L*  | 23  | 14.6 |
| L*      | 2   | 1.3  |
| Total   | 157 |      |

For this type of sentence, the final pitch accent tends to be produced as H + L\* (Table 20), as in information-seeking yes–no questions (Table 17). However, the second most frequent final accent was the upstepped L + ¡H\*, which, in information-seeking questions, accounted for only 6.6% of the utterances. Figure 14 displays an example of this final accent. The same boundary tones as in yes–no questions were found for echo questions. Similarly, falling contours were more common than rising configurations (Table 21). As in the case of the previous sentence type, the H + L\* L% configuration may be attributed to Galician, whereas L + ¡H\* L% is the typical intonation pattern of echo yes–no questions in Castilian (Estebas-Vilaplana and Prieto 2010) and Puerto Rican Spanish (Armstrong 2010).

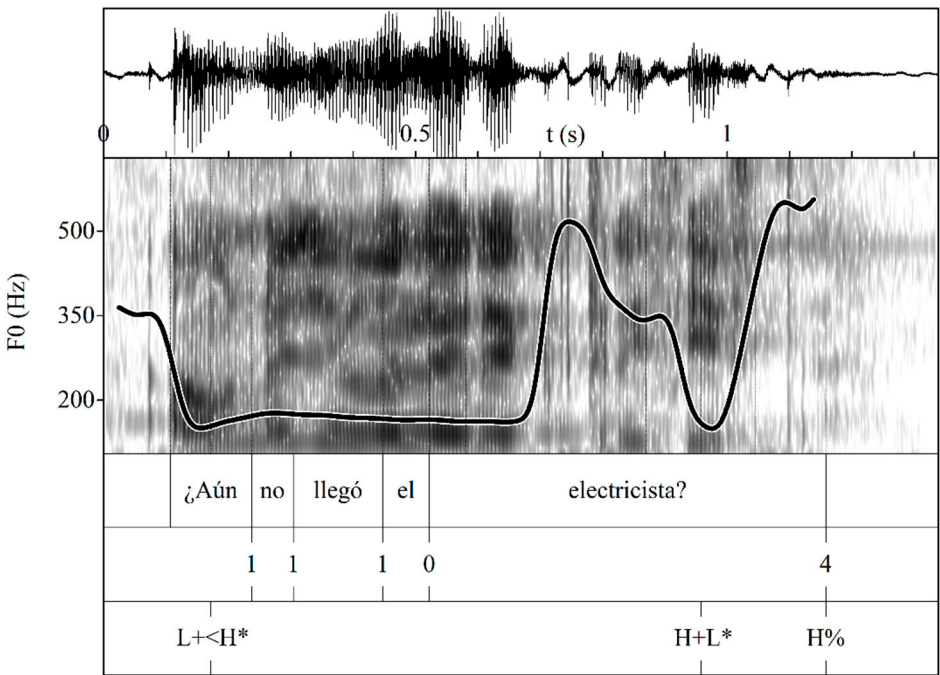
**Table 20.** Final pitch accents in echo yes–no questions (N = 181).

| Accent  | N   | %    |
|---------|-----|------|
| H + L*  | 106 | 58.6 |
| L + ¡H* | 36  | 19.9 |
| L + H*  | 28  | 15.4 |
| L*      | 11  | 6.1  |
| Total   | 181 |      |

**Figure 14.** Waveform, spectrogram, and F0 trace for the echo yes–no question *¿Pero tienes frío?* ‘But are you cold?’, produced with an L + ¡H\* final accent followed by an L% boundary tone by a 26-year-old female from Santiago.**Table 21.** Boundary tones in echo yes–no questions (N = 181).

| Tone  | N   | %    |
|-------|-----|------|
| L%    | 93  | 51.4 |
| H%    | 35  | 19.3 |
| !H%   | 12  | 6.6  |
| L!H%  | 23  | 12.7 |
| HL%   | 13  | 7.2  |
| LH%   | 4   | 2.2  |
| H!H%  | 1   | 0.6  |
| Total | 181 |      |

In some elicited contexts, reiterative yes–no questions often convey the speaker’s attitude toward the preceding statement, with participants posing questions that reflect surprise or disbelief. In our corpus, most of these counter expectational echo questions end in a final falling contour, while others end in a rising boundary tone, as in L + H\* H% (Figure 15). This contour, albeit produced with a sharp rise at the end (L + H\* HH%), has been reported in Castilian Spanish (Estebas-Vilaplana and Prieto 2010).



**Figure 15.** Waveform, spectrogram, and F0 trace for the counter expectational echo yes–no question *¿Aún no llegó el electricista?* ‘The electrician has still not arrived?’, produced with an H + L\* H% final configuration by a 22-year-old male from A Coruña.

Imperative Yes–No Questions

Imperative yes–no questions in GS tend to be produced with an L\* + H prenuclear accent, similar to other biased questions (Table 22) and neutral questions (Table 16). Likewise, as shown in Table 23, the most frequent accent in nuclear position in this sentence type is H + L\*, followed by L + H\* or upstepped L + ¡H\*. Most imperative yes–no questions in our data end with a falling boundary tone (Table 24), although rising contours were also observed. The most frequently produced configuration in GS, H + L\* L%, has also been observed in Castilian Spanish (Estebas-Vilaplana and Prieto 2010).

**Table 22.** Pitch accents associated with the penultimate stressed syllable in imperative yes–no questions (N = 85).

| Accent  | N  | %    |
|---------|----|------|
| L* + H  | 35 | 41.2 |
| H*      | 16 | 18.8 |
| L + <H* | 14 | 16.5 |
| H + L*  | 10 | 11.8 |
| L + H*  | 7  | 8.2  |
| L*      | 3  | 3.5  |
| Total   | 85 |      |

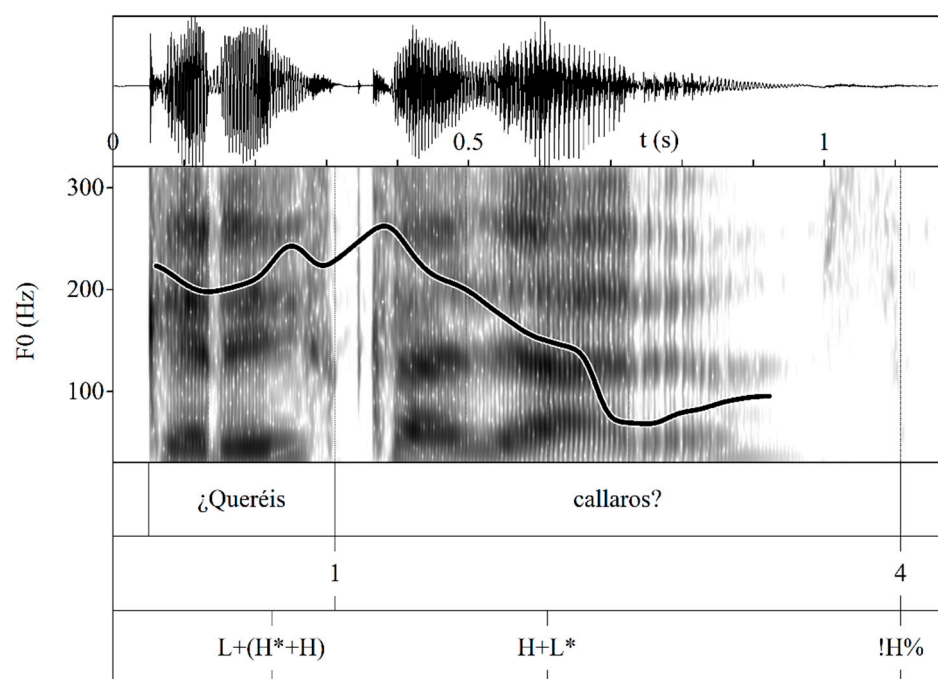
Figure 16 illustrates one example of this type of question with the nuance of an order, which was produced in response to a situation where a grandparent asks their grandchildren to be quiet. The sentence in the example was realized with a mid-boundary tone, which is also the most common pattern in Cantabrian Spanish for imperative yes–no questions (López Bobo and Cuevas Alonso 2010).

**Table 23.** Final pitch accents in imperative yes–no questions (N = 99).

| Accent  | N  | %    |
|---------|----|------|
| H + L*  | 63 | 63.6 |
| L + ¡H* | 15 | 15.2 |
| L + H*  | 14 | 14.1 |
| L*      | 4  | 4.1  |
| ¡H*     | 2  | 2.0  |
| H*      | 1  | 1.0  |
| Total   | 99 |      |

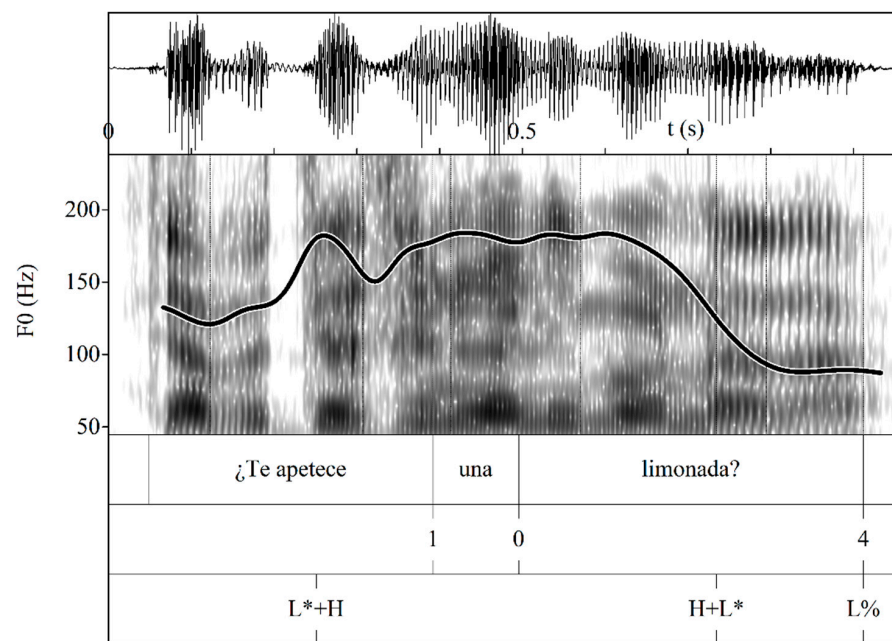
**Table 24.** Boundary tones in imperative yes–no questions (N = 99).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 55 | 55.6 |
| H%    | 19 | 19.2 |
| !H%   | 8  | 8.1  |
| HL%   | 7  | 7.1  |
| L!H%  | 5  | 5.0  |
| H!H%  | 3  | 3.0  |
| LH%   | 1  | 1.0  |
| LHL%  | 1  | 1.0  |
| Total | 99 |      |

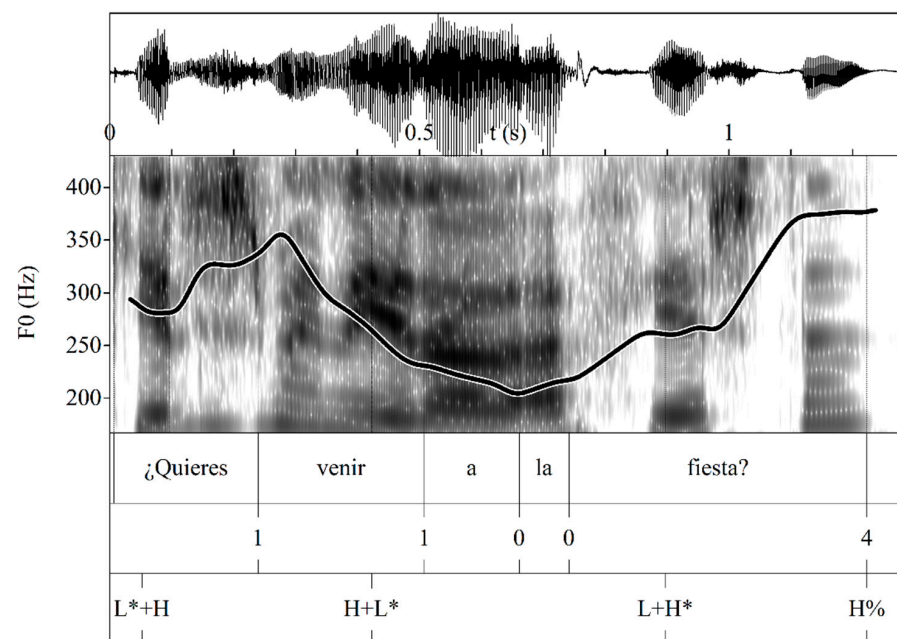
**Figure 16.** Waveform, spectrogram, and F0 trace for the imperative yes–no question *¿Queréis callaros?* ‘Would you be quiet?’ produced with an H + L\* !H% final configuration by a 26-year-old female from Santiago.

Questions with an invitational nuance primarily exhibit an H + L\* L% nuclear configuration, as depicted in Figure 17. Other yes–no questions asked as an invitation frequently observed in our data include an upstepped rising final accent L + ¡H\* followed by an H% boundary tone. An example is provided in Figure 18. The patterns of these sentences differ from the nuclear configuration L + H\* HH% attested for this sentence type in Castilian Spanish (Estebas-Vilaplana and Prieto 2010) and the L + H\* HL% contour described in Cantabrian Spanish (López Bobo and Cuevas Alonso 2010).





**Figure 17.** Waveform, spectrogram, and F0 trace for the invitation yes–no question *¿Te apetece una limonada?* ‘Would you like a lemonade?’, produced with an H + L\* L% final configuration by a 52-year-old male from A Coruña.



**Figure 18.** Waveform, spectrogram, and F0 trace for the invitation yes–no question *¿Quieres venir a la fiesta?* ‘Would you like to come to the party?’, produced with an L + H\* H% final configuration by a 39-year-old female from Santiago.

### Confirmation Yes–No Questions

As in the case of imperative and information-seeking yes–no questions, the most frequent prenuclear accent for confirmation yes–no questions is L\* + H (Table 25). However, a difference from the other two types of sentences is that confirmation questions are produced with H + L\* (25%) and L + <H\* (23.5%) accents at a similar rate to L\* + H (28.1%). This type of biased question is associated primarily with an H + L\* final accent (Table 26) and with a falling boundary tone (Table 27). This contour, exemplified in Figure 19, has



also been described in Castilian Spanish (Estebas-Vilaplana and Prieto 2010) and in several Latin American Spanish varieties, such as Dominican, Puerto Rican, and Chilean Spanish, included in Prieto and Roseano (2010).

**Table 25.** Pitch accents associated with the penultimate stressed syllable in confirmation yes–no questions (N = 64).

| Accent  | N  | %    |
|---------|----|------|
| L* + H  | 18 | 28.1 |
| H + L*  | 16 | 25.0 |
| L + <H* | 15 | 23.5 |
| L + H*  | 8  | 12.5 |
| H*      | 7  | 10.9 |
| Total   | 64 |      |

**Table 26.** Final pitch accents in confirmation yes–no questions (N = 81).

| Accent  | N  | %    |
|---------|----|------|
| H + L*  | 41 | 50.6 |
| L + ;H* | 16 | 19.8 |
| L + H*  | 14 | 17.3 |
| L*      | 10 | 12.3 |
| Total   | 81 |      |

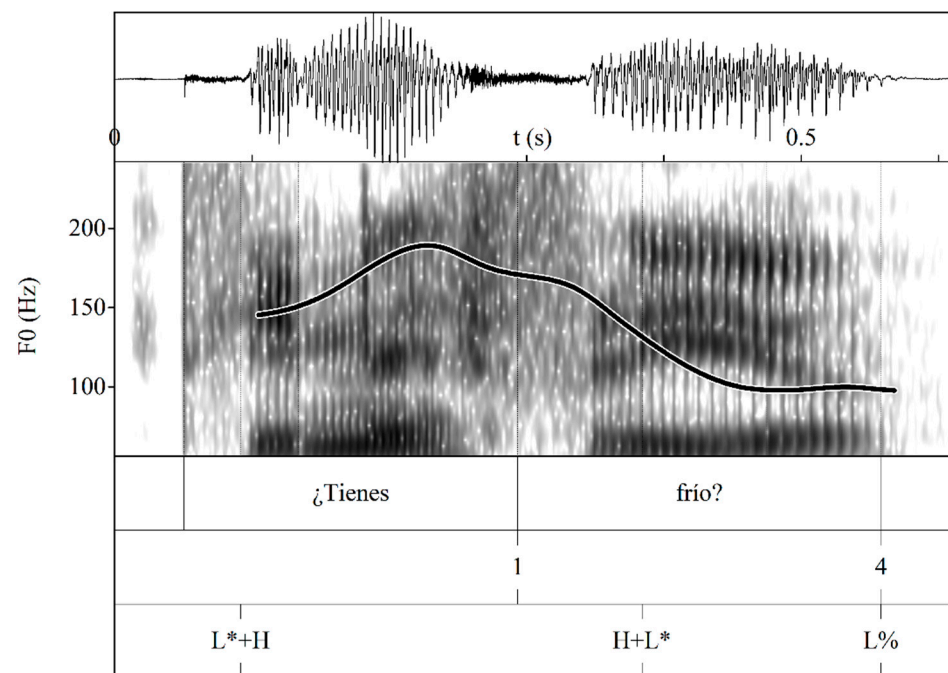
**Table 27.** Boundary tones in confirmation yes–no questions (N = 81).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 48 | 59.3 |
| H%    | 19 | 23.4 |
| !H%   | 3  | 3.7  |
| L!H%  | 5  | 6.2  |
| HL%   | 5  | 6.2  |
| H!H%  | 1  | 1.2  |
| Total | 81 |      |

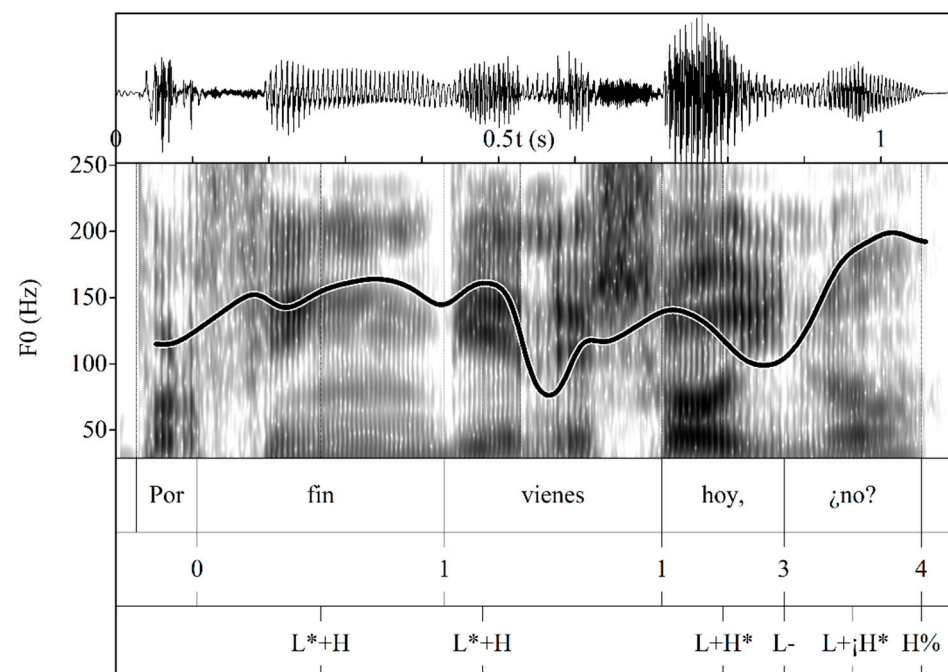
In a smaller percentage (23.4%), confirmation yes–no questions with a rising final configuration were also present in our corpus, as illustrated in Figure 20. In those instances, the final accent is L + H\*, which was often produced with an upstep.

### 6.2.3. Neutral Wh- Questions

Information-seeking wh- questions in GS tend to present a progressively falling contour from a peak on the wh- word to a low boundary tone. The most frequent tonal units associated with the wh- word in the data were L + H\* and H + L\* (Table 28), while the most frequent final accents were L\* and H + L\* (Table 29). Although falling contours were the most common, rising boundary tones were also present in the corpus (Table 30). Figures 21 and 22 show examples of falling and rising wh- questions. When compared to the intonation of neutral statements, the difference seems to be in the relative frequency of certain tonal units. For example, H + L\* was much more frequent in prenuclear and nuclear positions in neutral wh- questions than in neutral declaratives (see Tables 2 and 3). Likewise, L\* + H, which was the most common prenuclear accent in broad focus statements (32.6%), was less than half as frequent in wh- questions (12.8%).



**Figure 19.** Waveform, spectrogram, and F0 trace for the confirmation yes–no question *¿Tienes frío?* ‘Are you cold?’, produced with an H + L\* L% final configuration by an 18-year-old male from A Coruña.



**Figure 20.** Waveform, spectrogram, and F0 trace for the confirmation yes–no question *Por fin vienes hoy, ¿no?* ‘You are finally coming today, right?’, produced with an L + <sub>i</sub>H\* H% final configuration<sup>5</sup> by a 57-year-old male from A Coruña.

**Table 28.** Pitch accents on *wh*- words in neutral interrogatives (N = 156).

| Accent              | N   | %    |
|---------------------|-----|------|
| L + H*              | 66  | 42.3 |
| H + L*              | 38  | 24.4 |
| L* + H              | 20  | 12.8 |
| H*                  | 16  | 10.3 |
| L + <H*             | 8   | 5.1  |
| L*                  | 7   | 4.5  |
| L + <sub>i</sub> H* | 1   | 0.6  |
| Total               | 156 |      |

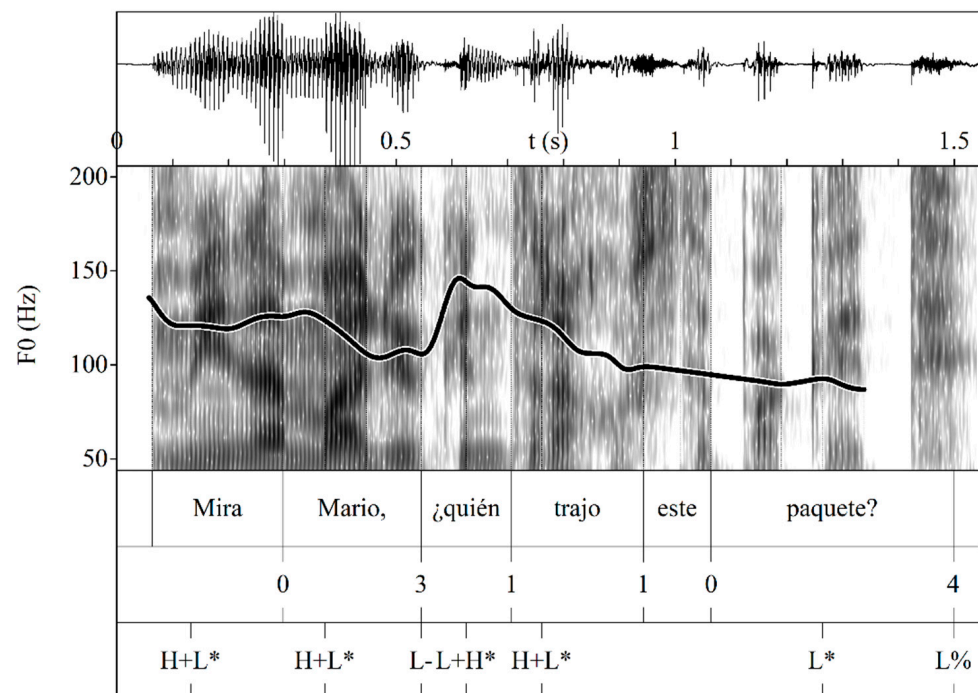
**Table 29.** Final pitch accents in neutral partial interrogatives (N = 156).

| Accent              | N   | %    |
|---------------------|-----|------|
| L*                  | 64  | 41.0 |
| H + L*              | 46  | 29.5 |
| L + H*              | 32  | 20.5 |
| L + <sub>i</sub> H* | 9   | 5.8  |
| <sub>i</sub> H*     | 5   | 3.2  |
| Total               | 156 |      |

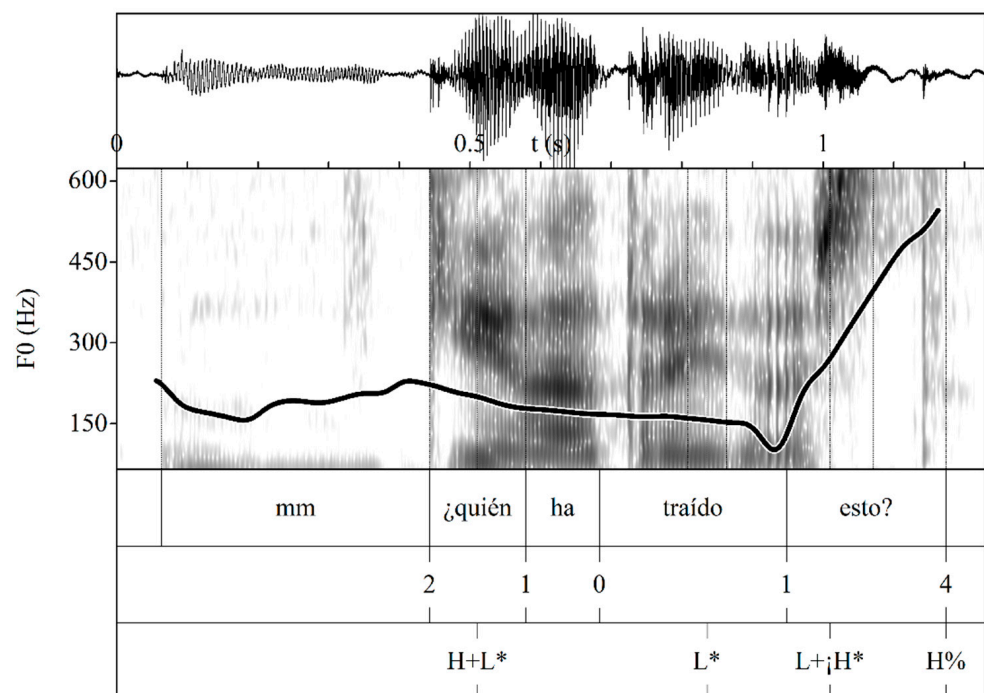
**Table 30.** Boundary tones in neutral partial interrogatives (N = 156).

| Tone  | N   | %    |
|-------|-----|------|
| L%    | 82  | 52.6 |
| H%    | 43  | 27.6 |
| !H%   | 17  | 10.9 |
| HL%   | 6   | 3.8  |
| L!H%  | 5   | 3.2  |
| LH%   | 2   | 1.3  |
| H!H%  | 1   | 0.6  |
| Total | 156 |      |

The two most common nuclear configurations for information-seeking *wh*- questions in our corpus, L\* L% and H + L\* L%, have also been attested in many Spanish varieties, including Castilian, Cantabrian, Andalusian, Puerto Rican, Venezuelan, and Argentinian Spanish described in [Prieto and Roseano \(2010\)](#) and [Henriksen and García-Amaya \(2012\)](#). These contours have also been observed in GS ([Rodríguez Vázquez 2019](#); [Fernández Rei 2019](#); [Regueira and Fernández Rei 2020](#)) and in Galician ([Rodríguez Vázquez 2019](#)). However, a distinct feature of GS is that the maximum F0 tends to occur on the stressed vowel of the *wh*- word, which is attributed to Galician ([Regueira and Fernández Rei 2020](#)). In her study, Rodríguez Vázquez reported that the L\* L% pattern accounted for most *wh*- questions (85.7%, p. 97), whereas the remainder utterances were realized as H + L\* L%. The contrast in the distribution of these contours in our study might be due to differences in speakers' language profiles. The seven participants in Rodríguez Vázquez's study were all Galician-dominant individuals from semi-urban and rural areas who had learned Spanish as L2. The similarities in intonational patterns when they spoke Galician and when they spoke Spanish may be explained by direct transfer ([Fernández Rei 2019](#); [Rodríguez Vázquez 2019](#)).



**Figure 21.** Waveform, spectrogram, and F0 trace for the information-seeking wh- question *Mira Mario, ¿quién trajo este paquete?* 'Look Mario, who brought this parcel?', produced with an L\* L% final configuration by a 22-year-old male from A Coruña.

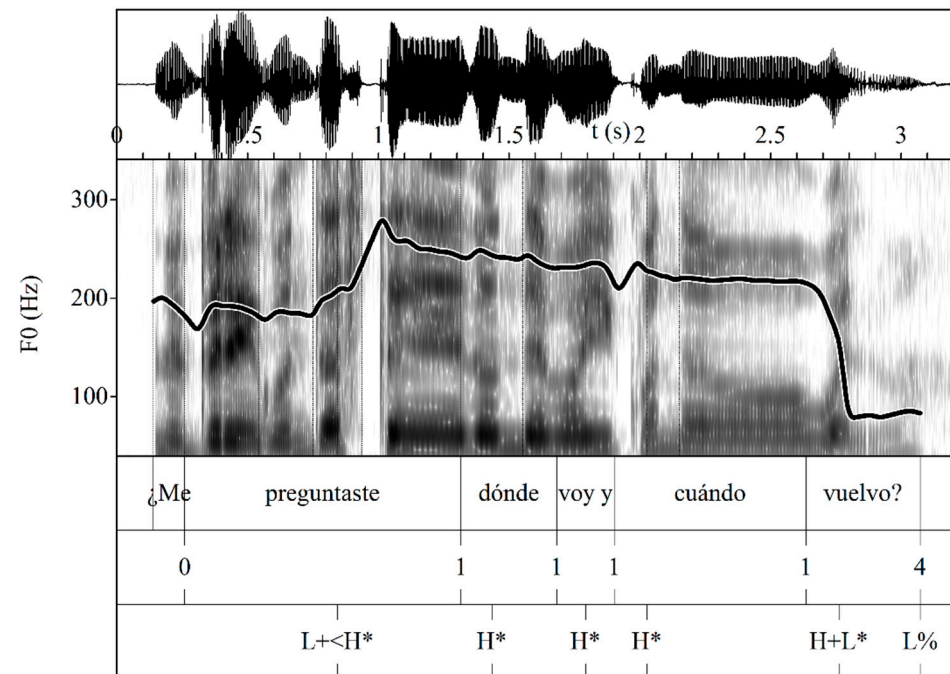


**Figure 22.** Waveform, spectrogram, and F0 trace for the information-seeking wh- question *¿Quién ha traído esto?* 'Who brought this?', produced with an L + ;H\* H% final configuration by a 41-year-old female from A Coruña.

#### 6.2.4. Biased Wh- Questions

##### Echo Wh- Questions

In wh- echo questions, the speaker repeats what the interlocutor has just asked and the wh- element is narrowly focused. In some cases, there were two focalized wh- words within the same sentence, as in Figure 23.



**Figure 23.** Waveform, spectrogram, and F0 trace for the echo wh- question *¿Me preguntaste dónde voy y cuándo vuelvo?* ‘Did you ask me where I’m going and when I’m coming back?’, produced with an H + L\* H% final configuration by a 26-year-old female from Santiago.

When the wh- word is narrowly focused, it is commonly realized as L\* + H or L + H\* (Table 31), unlike the neutral wh- questions where the wh- word is most frequently associated with L + H\* and H + L\* (Table 32).

**Table 31.** Pitch accents associated with the focal wh- element in echo wh- questions (N = 140<sup>6</sup>).

| Accent  | N   | %    |
|---------|-----|------|
| L* + H  | 37  | 26.9 |
| L + H*  | 33  | 23.9 |
| H*      | 22  | 15.9 |
| H + L*  | 17  | 12.3 |
| L + <H* | 16  | 11.6 |
| L*      | 13  | 9.4  |
| Total   | 138 |      |

Compared to neutral wh- questions (Table 33), the nuclear configurations of echo wh- questions (Table 20) present the same pitch accents plus H\*, which does not appear in neutral wh- interrogatives in our corpus. Another difference is that final L + <sub>i</sub>H\* is slightly more frequent in echo wh- questions (9.5% vs. 5.7%).

The distributions of boundary tones in echo and neutral wh- questions are also similar in that L% is the most frequent tone in both cases: 52.4% (Table 21) vs. 52.6% (Table 18). One difference is that HL% is more frequent in echo wh- questions (13.3% vs. 3.8%).

**Table 32.** Final pitch accents in echo wh- questions (N = 105).

| Accent              | N   | %    |
|---------------------|-----|------|
| L*                  | 37  | 35.2 |
| H + L*              | 30  | 28.6 |
| L + H*              | 24  | 22.9 |
| L + <sub>i</sub> H* | 10  | 9.5  |
| H*                  | 3   | 2.9  |
| <sub>i</sub> H*     | 1   | 0.9  |
| Total               | 105 |      |

**Table 33.** Boundary tones in echo wh- questions (N = 105).

| Tone  | N   | %    |
|-------|-----|------|
| L%    | 55  | 52.4 |
| H%    | 22  | 21.0 |
| HL%   | 14  | 13.3 |
| L!H%  | 8   | 7.6  |
| !H%   | 4   | 3.8  |
| H!H%  | 2   | 1.9  |
| Total | 105 |      |

The second most common nuclear configuration produced in our corpus, H + L\* L%, has also been observed in two Latin American Spanish varieties included in [Prieto and Roseano \(2010\)](#), namely Venezuelan and Dominican Spanish, as well as in both GS and Galician ([Rodríguez Vázquez 2019](#)). Rodríguez Vázquez found that this contour was the most prevailing pattern in GS (90.5%). This contour, along with the most frequent L\* pitch accent in our corpus, contrasts with the <sub>i</sub>H\* L% configuration documented in Castilian Spanish for this type of sentence.

#### Emphatic and Dubitative Wh- Questions

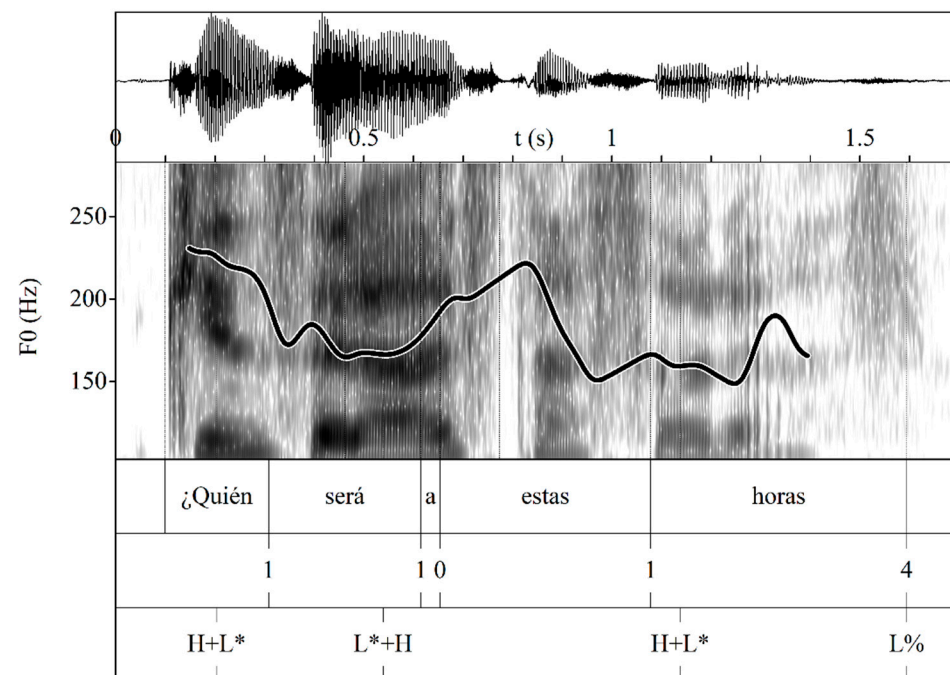
Additionally, wh- words in our corpus were narrowly focused in contexts that elicited emphasis (Context 47, see Appendix A) and uncertainty (Context 48, see Appendix A). Figure 24 presents an example.

Like echo wh- words, focalized wh- words in contexts of emphasis and uncertainty were most frequently associated with L\* + H (Table 34). Two other common accents were H + L\* and L + H\*, also the most common pitch accents associated with neutral wh- words.

**Table 34.** Pitch accents associated with the focal wh- element in emphasis and uncertainty wh- questions (N = 49).

| Accent  | N  | %    |
|---------|----|------|
| L* + H  | 17 | 34.7 |
| H + L*  | 14 | 28.6 |
| L + H*  | 12 | 24.5 |
| H*      | 4  | 8.2  |
| L + <H* | 1  | 2.0  |
| L*      | 1  | 2.0  |
| Total   | 49 |      |





**Figure 24.** Waveform, spectrogram, and F0 trace for the emphatic and dubitative wh- question *¿Quién será a estas horas?* ‘Who might be at this time?’, produced with an H + L\* L% final configuration by a 26-year-old female from Santiago.

The same final pitch accents as in echo wh- questions were observed when conveying emphasis and uncertainty (Table 35), although L + ¡H\* was more frequent in this case (14.3% vs. 9.5%).

**Table 35.** Final pitch accents in emphasis and uncertainty wh- questions (N = 49).

| Accent  | N  | %    |
|---------|----|------|
| L*      | 19 | 38.8 |
| H + L*  | 13 | 26.5 |
| L + H*  | 8  | 16.3 |
| L + ¡H* | 7  | 14.3 |
| H*      | 2  | 4.1  |
| Total   | 49 |      |

Emphatic and uncertainty wh- questions tend to end in a falling contour (Table 36), but high boundary tones were also observed, as in other types of wh- questions.

**Table 36.** Boundary tones in emphasis and uncertainty wh- questions (N = 49).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 27 | 55.1 |
| H%    | 12 | 24.5 |
| !H%   | 5  | 10.2 |
| HL%   | 3  | 6.1  |
| H!H%  | 2  | 4.1  |
| Total | 49 |      |

Imperative Wh- Questions

The intonation of imperative wh- questions in GS is similar to other biased wh- questions. Like in other biased questions, the wh- element appears with a falling H + L\* accent more frequently than in neutral partial interrogatives (Table 37). This accent is also the most frequent in nuclear position, much more than L\*, which is the preferred final accent in other types of wh- questions (Table 38). Figure 25 shows an example.

Table 37. Pitch accents associated with the focal wh- element in imperative wh- questions (N = 51).

| Accent  | N  | %    |
|---------|----|------|
| L* + H  | 15 | 29.4 |
| H + L*  | 12 | 23.5 |
| L + H*  | 11 | 21.7 |
| H*      | 4  | 7.8  |
| L*      | 4  | 7.8  |
| L + <H* | 3  | 5.9  |
| H* + L  | 2  | 3.9  |
| Total   | 51 |      |

Table 38. Final pitch accents in imperative wh- questions (N = 51).

| Accent  | N  | %    |
|---------|----|------|
| H + L*  | 21 | 41.2 |
| L + H*  | 14 | 27.4 |
| L*      | 11 | 21.6 |
| L + ¡H* | 3  | 5.9  |
| ¡H*     | 2  | 3.9  |
| Total   | 51 |      |

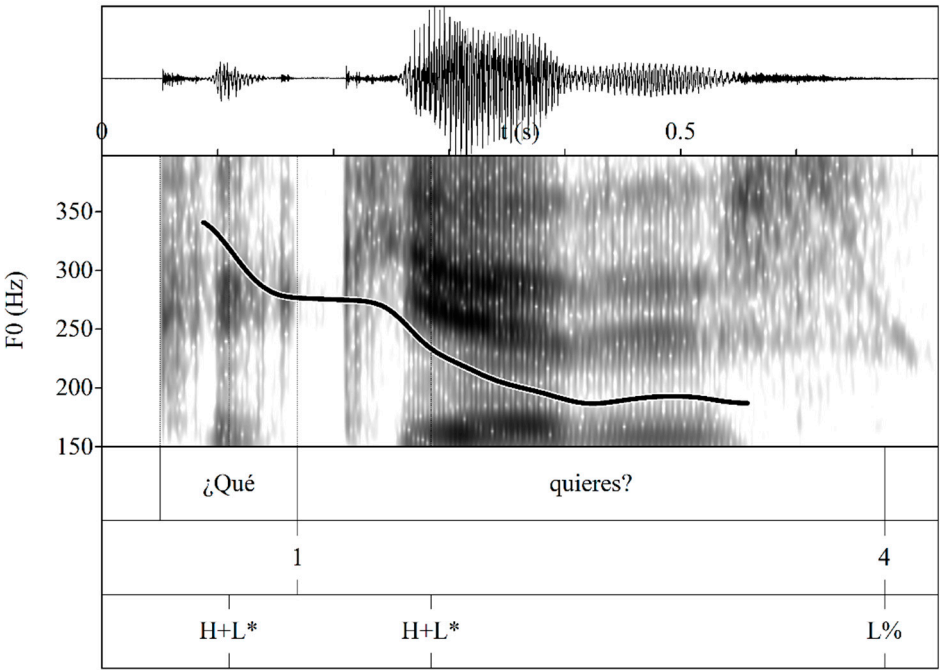


Figure 25. Waveform, spectrogram, and F0 trace for the imperative wh- question ¿Qué quieres? ‘What do you want?’, produced with an H + L\* L% final configuration by an 18-year-old female from A Coruña.

The preferred boundary tone in other interrogatives, L%, was also the most frequent (64.7%) in imperative wh- questions, although high and rising boundary tones were also observed (Table 39).

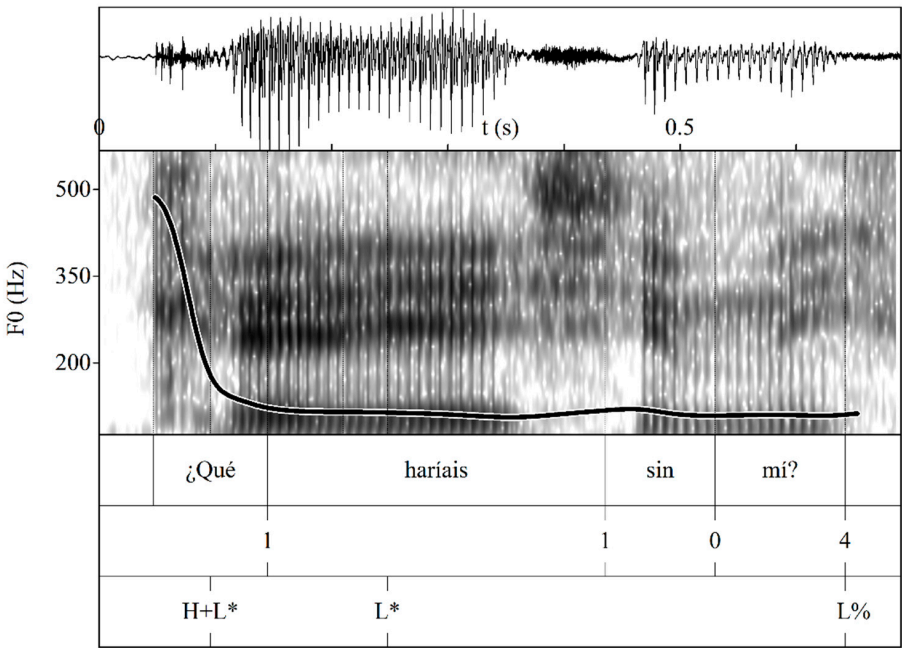
**Table 39.** Boundary tones in imperative wh- questions (N = 51).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 33 | 64.7 |
| H%    | 10 | 19.6 |
| LH%   | 3  | 5.9  |
| !H%   | 2  | 3.9  |
| L!H%  | 2  | 3.9  |
| HL%   | 1  | 2.0  |
| Total | 51 |      |

The most frequent contour in our corpus for imperative wh- questions, H + L\* L%, is the same as observed in other varieties of European Spanish, including Cantabrian (López Bobo and Cuevas Alonso 2010, albeit mainly produced with an upstep), Castilian (Estebas-Vilaplana and Prieto 2010), and Andalusian Spanish (Henriksen and García-Amaya 2012). As in the case of neutral wh- questions, Rodríguez Vázquez (2019) found that the L\* L% configuration, which accounts for 21.6% of the cases in our corpus, was the prevailing contour in both GS (95.2%, p. 106) and Galician (100%, p. 106), whereas the H + L\* L% configuration was only marginal with an imperative illocutionary force (4.8%, p. 106). Again, these differences are likely related to speakers’ sociolinguistic characteristics. Our participants were speakers of Spanish as L1 while Rodríguez Vázquez’s participants had acquired Galician as L1.

Rhetorical Wh- Questions

Wh- rhetorical questions in our corpus were produced with some version of the utterance *¿Qué haríais sin mí?* ‘What would you do without me?’. Figure 26 shows an example.



**Figure 26.** Waveform, spectrogram, and F0 trace for the rhetorical wh- question *¿Qué haríais sin mí?* ‘What would you do without me?’, produced with an L\* L% final configuration by a 19-year-old male from A Coruña.

As in the case of other wh- questions, the pitch accents associated with the wh- element varied in rhetorical questions. However, in contrast with other question types, the most frequent accent linked to this word was H + L\* (Table 40).

**Table 40.** Pitch accents associated with the wh- element in rhetorical wh- questions (N = 19).

| Accent  | N  | %    |
|---------|----|------|
| H + L*  | 6  | 31.6 |
| L* + H  | 3  | 15.8 |
| L*      | 3  | 15.8 |
| L + H*  | 3  | 15.8 |
| H*      | 3  | 15.8 |
| L + <H* | 1  | 5.2  |
| Total   | 19 |      |

Rhetorical wh- questions were also similar to other partial interrogatives in that the most common final pitch accents were L\* and H + L\* (Table 41). However, in contrast with other types of wh- questions, high and rising boundary tones combined were about as frequent as low and falling tones in rhetorical wh- questions (Table 42).

**Table 41.** Final pitch accents in rhetorical wh- questions (N = 41).

| Accent | N  | %    |
|--------|----|------|
| L*     | 10 | 52.7 |
| H + L* | 5  | 26.3 |
| L + H* | 2  | 10.5 |
| H*     | 2  | 10.5 |
| Total  | 19 |      |

**Table 42.** Boundary tones in rhetorical wh- questions (N = 42).

| Tone  | N  | %    |
|-------|----|------|
| L%    | 9  | 47.4 |
| H%    | 7  | 36.7 |
| !H%   | 1  | 5.3  |
| L!H%  | 1  | 5.3  |
| HL%   | 1  | 5.3  |
| Total | 19 |      |

The two most frequently produced configurations in rhetorical wh- questions, L\* H% and H + L\* L%, significantly differ from the intonational patterns attested in all varieties of Spanish, including the H\* !H% contour observed in Castilian Spanish (Estebas-Vilaplana and Prieto 2010) or the L\* L% contour in Cantabrian Spanish (López Bobo and Cuevas Alonso 2010).

### 6.3. Imperatives

#### 6.3.1. Commands

As shown in Table 43, commands in our corpus tend to exhibit an L\* + H or L + H\* prenuclear accent. Table 44 displays the distribution of prenuclear accents for this type of sentence in GS, with a falling bitonal accent within the accented syllable (H + L\*) and a rising bitonal accent also within the accented syllable (L + H\*) being the most frequent. The majority of utterances end with a falling boundary tone, although contours were varied (Table 45).

**Table 43.** Pitch accents associated with the penultimate stressed syllable in commands (N = 135).

| Accent  | N   | %    |
|---------|-----|------|
| L* + H  | 40  | 29.7 |
| L + H*  | 34  | 25.2 |
| L + <H* | 18  | 13.3 |
| H*      | 18  | 13.3 |
| H + L*  | 15  | 11.1 |
| L*      | 8   | 5.9  |
| H* + L  | 2   | 1.5  |
| Total   | 135 |      |

**Table 44.** Final pitch accents in commands (N = 145).

| Accent              | N   | %    |
|---------------------|-----|------|
| H + L*              | 59  | 40.7 |
| L + H*              | 37  | 25.5 |
| L*                  | 24  | 16.6 |
| L + <sub>i</sub> H* | 17  | 11.7 |
| <sub>i</sub> H*     | 8   | 5.5  |
| Total               | 145 |      |

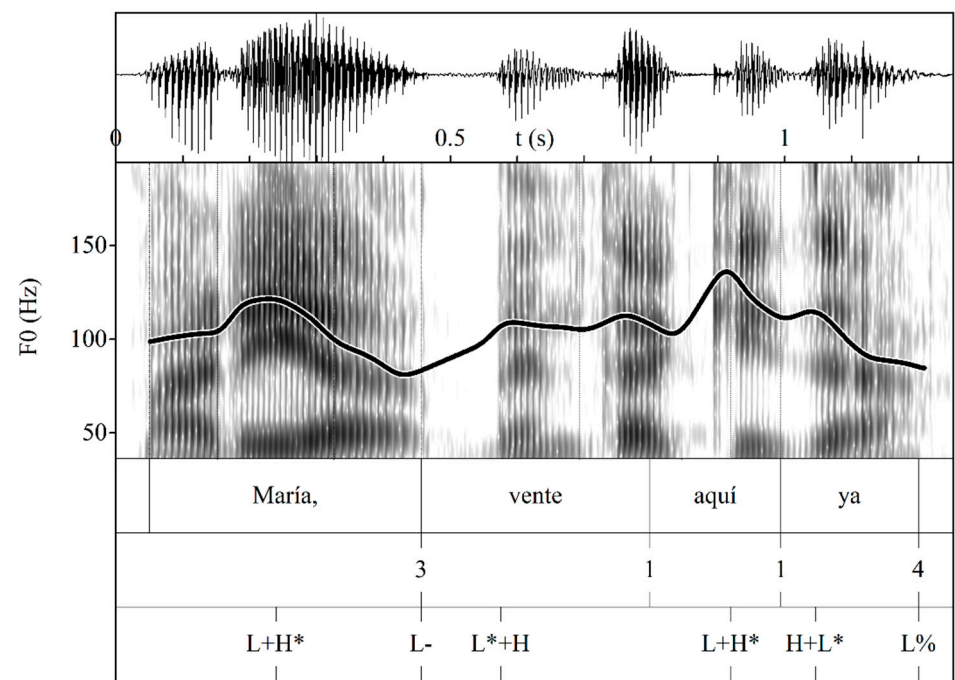
**Table 45.** Boundary tones in commands (N = 145).

| Tone  | N   | %    |
|-------|-----|------|
| L%    | 84  | 57.9 |
| H%    | 32  | 22.1 |
| HL%   | 13  | 8.9  |
| L!H%  | 8   | 5.5  |
| !H%   | 3   | 2.1  |
| LH%   | 3   | 2.1  |
| H!H%  | 2   | 1.4  |
| Total | 145 |      |

Command sentences were elicited with different degrees of illocutionary force, from a gentle command to a strong and insistent command (Contexts 63–65 in Appendix A). Regardless of the level of illocutionary force, the most common tonal configuration for the elicited contexts was H + L\* L%, as depicted in Figure 27. Other Spanish varieties, including Cantabrian (López Bobo and Cuevas Alonso 2010, though produced with upstepped <sub>i</sub>H + L\* L%), Dominican (Willis 2010), and Argentinian Spanish (Gabriel et al. 2010) express orders by means of the same nuclear configuration. This pattern differs from the L + H\* !H% contour attested in Castilian (Estebas-Vilaplana and Prieto 2010) and Andalusian Spanish (Henriksen and García-Amaya 2012).

### 6.3.2. Requests

Requests, situated at the other end of the illocutionary force, were elicited both in a formal (Contexts 61 and 62, see Appendix A) and intimate manner (Contexts 67 and 68). Similar to commands, Table 46 shows that the most frequent prenuclear accents were L\* + H and L + H\*, although L + H\* was less common in this type of sentence (19.7% vs. 25.2%). Regarding the nuclear configurations, despite Table 47 displaying that H + L\* is the most frequently produced final pitch accent, when we combine L + H\* and upstepped L + <sub>i</sub>H\*, rising accents are the most common (42.4% vs. 35.6%). As in the case of commands, requests tend to end in a falling boundary tone (Table 48), but the second most common boundary contour is a mid-tone !H% instead of the rising tone observed in commands.



**Figure 27.** Waveform, spectrogram, and F0 trace for the command *María, vente aquí ya* ‘Maria, come here right now’, produced with an H + L\* L% final configuration by a 21-year-old male from A Coruña.

**Table 46.** Pitch accents associated with the penultimate stressed syllable in requests (N = 117).

| Accent  | N   | %    |
|---------|-----|------|
| L* + H  | 37  | 31.6 |
| L + H*  | 23  | 19.7 |
| H*      | 19  | 16.2 |
| H + L*  | 16  | 13.7 |
| L*      | 11  | 9.4  |
| L + <H* | 6   | 5.1  |
| H* + L  | 5   | 4.3  |
| Total   | 117 |      |

**Table 47.** Final pitch accents in requests (N = 118).

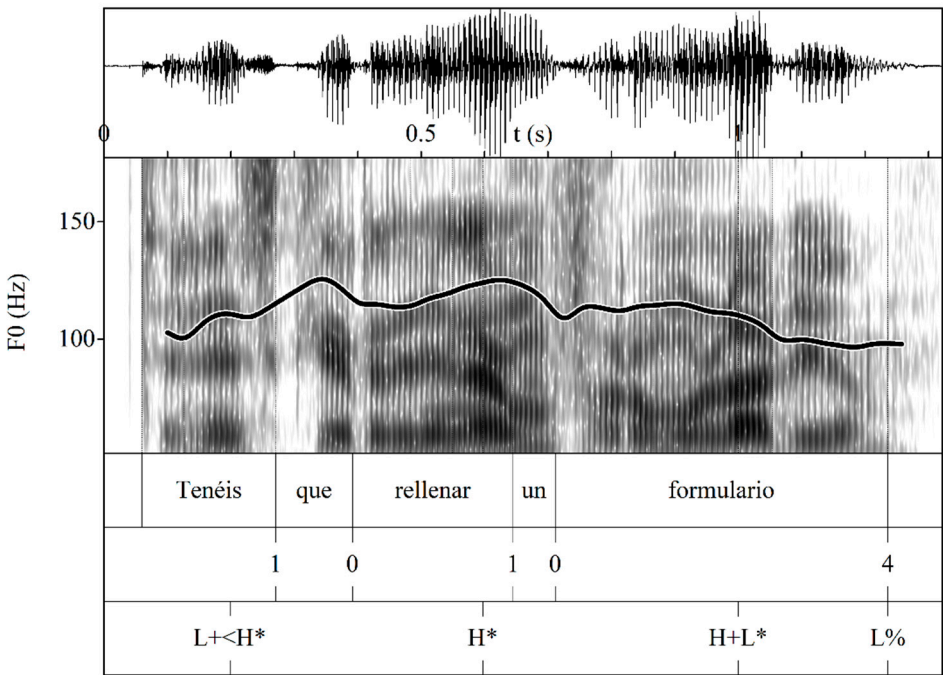
| Accent  | N   | %    |
|---------|-----|------|
| H + L*  | 42  | 35.6 |
| L + H*  | 29  | 24.6 |
| L + ¡H* | 21  | 17.8 |
| L*      | 14  | 11.8 |
| ¡H*     | 6   | 5.1  |
| H*      | 6   | 5.1  |
| Total   | 118 |      |



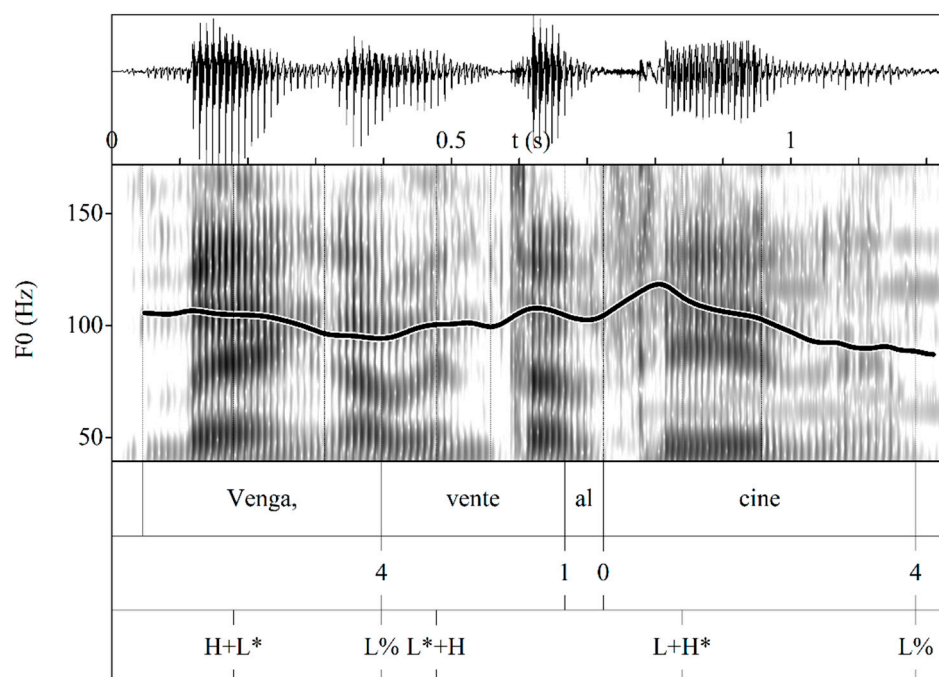
**Table 48.** Boundary tones in requests (N = 118).

| Tone  | N   | %    |
|-------|-----|------|
| L%    | 79  | 66.9 |
| !H%   | 13  | 11.0 |
| HL%   | 12  | 10.2 |
| H%    | 5   | 4.2  |
| L!H%  | 5   | 4.2  |
| ¡HL%  | 2   | 1.7  |
| LH%   | 1   | 0.9  |
| ¡H!H% | 1   | 0.9  |
| Total | 118 |      |

The most frequent intonation configuration for formal requests is not different from that observed in commands; that is, H + L\* L%, as exemplified in Figure 28. On the contrary, exhortative intimate requests, which in our corpus are produced by the speaker with the intention of convincing the interlocutor to accompany them to the movies, tend to exhibit a rising final accent L + H\*, sometimes produced with an upstep, followed by a falling boundary tone, as illustrated in the second intonation phrase in Figure 29. In this example, however, the first intonation phrase is realized as a falling bitonal final accent H + L\* followed by a falling boundary tone, as attested in formal requests and commands. The L + H\* L% configuration contrasts with that documented in Castilian Spanish, L\* HL%, which has also been observed in Puerto Rican Spanish (Armstrong 2010).



**Figure 28.** Waveform, spectrogram, and F0 trace for the request *Tenéis que rellenar un formulario* ‘You need to fill in a form’, produced with an H + L\* L% final configuration by a 49-year-old male from A Coruña.



**Figure 29.** Waveform, spectrogram, and F0 trace for the request *Venga, vente al cine* ‘Come on, come to the movies’, produced with an L + H\* L% final configuration by a 21-year-old male from A Coruña.

#### 6.4. Vocatives

Vocatives in GS tend to feature an L +  $\uparrow$ H\* final pitch accent, exhibiting a rise throughout the accented syllable to a high peak produced higher in the speaker’s pitch range. Another common configuration includes the same accent but without an upstep (L + H\*), as shown in Table 49. The three most frequent boundary tones for vocatives are H%, the bitonal HL%, and L% (Table 50).

**Table 49.** Final pitch accents in vocatives (N = 44).

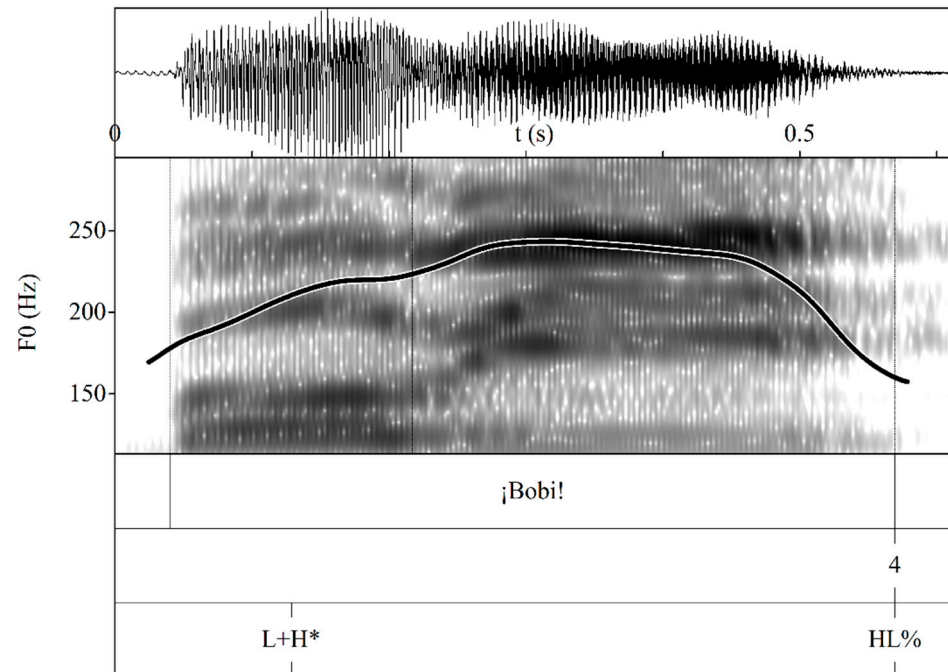
| Accent            | N  | %    |
|-------------------|----|------|
| L + $\uparrow$ H* | 22 | 50.0 |
| L + H*            | 21 | 47.7 |
| L*                | 1  | 2.3  |
| Total             | 44 |      |

**Table 50.** Boundary tones in vocatives (N = 44).

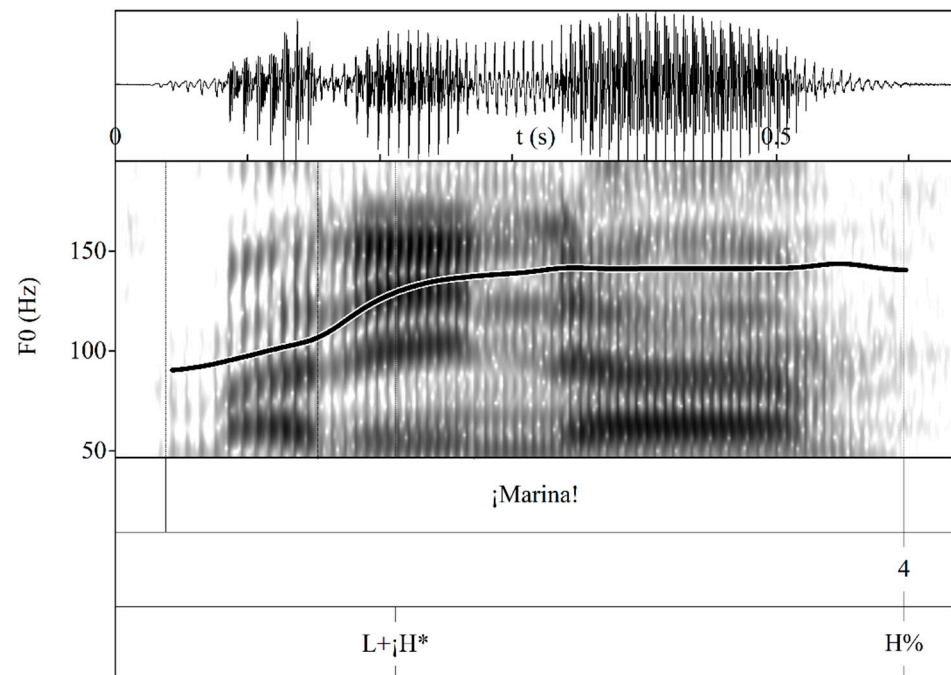
| Tone  | N  | %    |
|-------|----|------|
| H%    | 14 | 31.8 |
| HL%   | 12 | 27.3 |
| L%    | 11 | 25.0 |
| !H%   | 6  | 13.6 |
| LH%   | 1  | 2.3  |
| Total | 44 |      |

There were two contexts designed to yield a vocative, each being produced with different boundary tones. The first context (#66, see Appendix A), in which the speaker calls for a pet dog that has run off while they were walking it, tends to be realized with an HL% boundary tone. An example of this intonation pattern for pets is illustrated in Figure 30. On the other hand, the second context (#69, see Appendix A), in which the speaker is prompted to call for a friend upon entering their house and not seeing them,

more frequently presents a rising boundary tone H%, as shown in Figure 31. However, this context is also often produced with a falling boundary tone L% or a bitonal HL% boundary tone. The variation in the ending of the intonational utterances may be attributed to some speakers conveying the nuance of wondering about the whereabouts of their friend, hence realized closer to a question than a mere call.



**Figure 30.** Waveform, spectrogram, and F0 trace for the vocative *¡Bobi!*, produced by a 22-year-old male from A Coruña with an L + H\* final accent followed by an HL% boundary tone.



**Figure 31.** Waveform, spectrogram, and F0 trace for the vocative *¡Marina!*, produced with an L + ¡H\* H% final configuration by a 49-year-old male from A Coruña.

Intonation of vocatives in GS is similar to that observed in all European and Latin American varieties of Spanish. The common pattern exhibits a final L + H\* accent ending in either HL% or !H%. Two main differences, however, are that a rising tone has only been attested in Canarian Spanish (Cabrera Abreu and Vizcaino Ortega 2010) for calling over a long distance, and a falling tone has been found only for admonitory vocatives in Mexican (De la Mota et al. 2010) and Argentinian Spanish (Gabriel et al. 2010).

## 7. Discussion

Our first and second research questions were related to the main pitch accents and boundary tones observed in GS spoken as L1, as well as the relative frequency of these tonal units across various sentence types and pragmatic functions. Our third research question concerned how GS intonation compares to other Spanish L1 varieties. The hypotheses that we formulated, predicting that we would find considerable variability and examples linked to Galician prosody in previous research as well as present in other Spanish varieties, particularly those spoken in Europe, were confirmed. The Results section addresses these questions thoroughly, and due to space constraints, we will provide a concise discussion of the findings' primary implications.

To begin with, results reveal great phonetic variability across sentence types and meaning (neutral or biased), which is in line with previous research on GS intonation (Pérez Castillejo 2014; Regueira and Fernández Rei 2020). Although some sentence types present one prevailing final pitch accent and boundary tone, these patterns tend to be shared across multiple utterance types. For example, H + L\* L% is the prevailing nuclear configuration for unbiased yes–no questions, but this pattern does not happen exclusively in this sentence type. The finding that certain intonational patterns are more frequent but not exclusive of a specific sentence type coincides with what studies of other Spanish L1 varieties have found (Prieto and Roseano 2010).

We acknowledge that the wide range of patterns we observe in our study might be linked to aspects of speakers' social profiles (Regueira and Fernández Rei 2020), as well as their conscious or unconscious socio-indexical linguistic behavior (De la Fuente Iglesias 2020) at the moment the data were recorded. As we mentioned at the beginning of the paper, there is not one single way of speaking GS. Instead, it consists of a repertoire of features, some rooted in Galician and some common in other Spanish dialects, whose varying frequency can make this a distinct and recognizable form of Spanish for speakers of other varieties. However, our methodology does not allow for a sociolinguistic explanation of the variation observed. An alternative explanation is offered by Fernández Rei (2019) and Regueira and Fernández Rei (2020), who attribute the great variability of GS intonation to an ongoing process of hybridization, which may have historically originated in the language contact situation, but that now constitutes the established L1 variety for Spanish speakers of the region. Through this process, speakers may combine features traditionally associated to Galician with features traditionally considered frequent in Castilian Spanish, resulting in patterns that are not directly transferred from Galician nor exactly the same as in the Spanish spoken in other regions. For instance, the Galician tendency to shift the final accent to the wh- word (the global fall observed in Figure 25) may be combined with the final rise that is common in Castilian Spanish wh- questions (Figure 22), and these hybrid patterns are possible because of the great variability of intonational units available in GS.

Another relevant finding in our study is that a late low aligned pitch accent, represented as L\* + H, tends to be preferred for prenuclear rising accents in GS. In our study, this accent was observed extensively in statements and questions of various kinds, but it was considerably less frequent when focalized words appeared in prenuclear position (see Table 11 with *Guillermo* as the focalized word in middle and final positions). This accent also occurred in Pérez Castillejo's (2014) data, but the author considered the alignment differences in the rising movement phonetic (recall that she elicited broad focus statements and questions), which led her to label all rising accents with displaced peaks as L + <H\*, following the conventions of the time. The frequent use of L\* + H leads us to propose

that this accent behaves as the unmarked prenuclear accent in GS, similarly to how it is considered the unmarked bitonal unit in other Spanish varieties such as Dominican and Puerto Rican Spanish (Willis 2010; Armstrong 2010)<sup>7</sup>. In these Spanish varieties, as in our study, it seems that the late low aligned pitch accent might be focus-dependent, given that it is the predominant accent in broad focus declaratives, whereas  $L + <H^*$  is the prevalent accent in narrow focus declaratives. Due to its geographic proximity to Galicia, it is also noteworthy to mention that Cantabrian Spanish also has the  $L^* + H$  accent in broad focus statements (López Bobo and Cuevas Alonso 2010), although the primary pitch accent for this type of sentence remains  $L + <H^*$ . Thus, the unmarked prenuclear accent in GS is not shared with Castilian Spanish, the reference variety in Spain, but it is common in other Spanish varieties not in contact with Galician. This finding is relevant because it suggests that not all differences between Castilian Spanish and Galician Spanish are due to contact with Galician.

Another issue that warrants comment is the role of upstepped final pitch accents in statements. Castro (2003) proposed absence of declination at the end of statements as a distinct feature of GS, which is also common in Galician. Pérez Castillejo (2014) also observed absence of declination in broad focus declaratives and upstepping of the intermediate peak in sentences with three tonic syllables. Our study shows evidence of this feature in GS and adds data regarding its frequency and distribution. According to Castro (2003), in Galician, “regardless of syntactic, semantic or affective meaning, stress and pitch work together to give especial prominence to the last accented syllable in the phrase, while in Spanish pitch is mostly used to mark syntactic, semantic or affective meaning” (p. 52). This claim implies that upstepping of accents in nuclear position would not vary according to the neutral or biased nature of the utterance in GS, unlike other non-contact varieties of Spanish. In our data, however, we observed upstepped final pitch accents in both broad focus and narrow focus statements, but their frequency doubled in the latter (see Tables 3, 5 and 11). The upstepped pitch accent was also present in yes–no and wh-questions, imperatives, and vocatives with varying frequencies. It was more common in biased questions than in neutral questions, as well as more frequent in commands than requests within the imperative sentences, and it accounted for half of the final pitch accents in vocatives. These findings suggest that upstepped final pitch accents may signal sentence type or pragmatic function for some speakers in Galicia. Upstepped final accents have been reported for a few other Spanish varieties: Castilian, Puerto Rican, and Argentinian Spanish for some biased yes–no and wh- questions (Estebas-Vilaplana and Prieto 2010; Armstrong 2010; Gabriel et al. 2010), Cantabrian (López Bobo and Cuevas Alonso 2009), and Chilean Spanish (Ortiz et al. 2010), although the upstepped peak in declaratives adds a biased meaning in this variety. Thus, although upstepped final accents may be present in Galician, their existence in other non-contact Spanish varieties indicates that caution is needed when interpreting this feature of GS as exclusively contact-induced.

Overall, our findings demonstrate that some intonational patterns are common across most Spanish varieties (e.g., rising prenuclear accents and  $L^*$  final accent in broad focus statements), and some are also recurrent in neighboring varieties of Spanish, probably due to language contact with the adstrate languages of northwestern Spain (e.g., descending contours in information-seeking yes–no questions). As expected, GS presents prosodic features that are also found in Castilian Spanish (e.g., rising contours in information-seeking yes–no questions), likely because of the effect of contact with the national standard (Fernández Rei 2016). However, GS also presents features like the unmarked prenuclear accent in broad focus statements ( $L^* + H$ ) that are not shared with Castilian Spanish but that are common in other non-contact Spanish varieties. Finally, we report intonational patterns that might be specific to GS (e.g., hybrid wh- question patterns or nuclear  $H + L^*$  in contradictory statements) because they are not part of the inventories of the Spanish varieties that have been documented so far and have not been documented for Galician. However, to confirm that these features are distinct to GS, we would need a larger sample that is less biased toward Spanish L1 speakers.



## 8. Conclusions

This study investigated intonation variation in Galician Spanish spoken as L1 by documenting the inventory of pitch accents and boundary tones, along with their relative frequency and distribution in various sentence types (statements, yes/no questions, wh-questions, imperatives, requests, and vocatives) in both neutral and non-neutral contexts. Overall, results demonstrated great variability across sentence types and pragmatic meaning, revealing some tonal configurations attested in many Spanish varieties, as well as others that might be specific to GS, primarily rooted in Galician, or documented in just a few varieties. These findings constitute a step forward in our growing understanding of intonation of Spanish spoken in a shared space, providing a more nuanced characterization of GS with a comprehensive inventory of tonal units and their frequencies. However, many opportunities for future research remain, including investigating how speakers may utilize prosody to perform identity, whether specific intonational contours are associated with speakers' sociolinguistic profiles, stylistic choices, or pragmatic intentions, and whether speakers are able to perceptually recognize the observed phonological contrasts.

**Author Contributions:** Conceptualization, S.P.C.; data curation, S.P.C. and M.d.l.F.I.; formal analysis, S.P.C. and M.d.l.F.I.; investigation, S.P.C.; writing—original draft preparation, S.P.C. and M.d.l.F.I.; writing—review and editing, S.P.C. and M.d.l.F.I. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of the University of Minnesota (protocol # 1204E12766, 4/18/2012).

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data are not publicly available.

**Conflicts of Interest:** The authors declare no conflicts of interest.

## Appendix A

Discourse completion task based on [Prieto and Roseano \(2010\)](#).

### Appendix A.1. Statements

#### Appendix A.1.1. Broad Focus

|    |                                                                                                                   |
|----|-------------------------------------------------------------------------------------------------------------------|
| 1  | Mira el dibujo y di lo que hace la niña.                                                                          |
| 2  | Ana te está contando que ayer se bebió una limonada. En este momento llega otro amigo y te pregunta qué dice Ana. |
| 3  | Mira el dibujo y di lo que ves                                                                                    |
| 4  | Mira el dibujo y di lo que ves.                                                                                   |
| 5  | Di los días de la semana.                                                                                         |
| 6  | Di lo que tomaste de comida.                                                                                      |
| 7  | Imagínate que acabas de conocer a alguien de Lima y resulta que tú viviste allí muchos años. ¿Cómo se lo dirías?  |
| 8  | Estás en casa con tu hija, María, que está viendo la tele. Dile que sales un momento a merendar.                  |
| 9  | Estás enfermo y esta mañana tuviste que ir al médico. Di que fuiste a pesar de la lluvia.                         |
| 10 | Conoces a dos chicas que se llaman Marina, una rubia y otra morena. Di que hoy viste a la morena.                 |



## Appendix A.1.2. Biased

|    |                                                                                                                                                                                                                                                                 |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11 | Entras en una frutería y la frutera es un poco sorda.<br>- Quiero un kilo de limones<br>- ¿De naranjas?                                                                                                                                                         |
| 12 | Entras en una panadería y notas un olor a pan muy bueno. Díselo a la panadera.                                                                                                                                                                                  |
| 13 | Una amiga y tú estáis hablando de unos amigos que se van de viaje. Tú estás segura de que irán a Lima, pero tu amiga piensa, también bastante segura, que irán a Buenos Aires.<br>Dile, seguro, que no, que irán a Lima.                                        |
| 14 | Te han encargado comprar un regalo para alguien que no conoces mucho y te da un poco de apuro no comprarlo bien. Dile a la persona que te lo encargó que igual no le gusta el regalo que le compraste.                                                          |
| 15 | Estás con una amiga y le cuentas que María, una amiga común, está embarazada. Ella te pregunta que de quién está embarazada y tú te extrañas mucho de que no lo sepa porque todo el mundo sabe que es de Guillermo, su novio de toda la vida.<br>¿Qué le dices? |
| 16 | Te invitan a una mariscada y es la mejor que comiste en tu vida, estás encantada.<br>¿Qué dices?                                                                                                                                                                |
| 17 | Es la vez en tu vida que más frío tuviste. ¿Qué dices?                                                                                                                                                                                                          |

## Appendix A.2. Yes–No Questions

## Appendix A.2.1. Neutral

|    |                                                                                                                                                                  |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18 | Entras en una tienda y le preguntas al dependiente si tiene mermelada.                                                                                           |
| 19 | Estás en la calle y pides hora.                                                                                                                                  |
| 20 | Pide permiso para entrar en la sala donde te espera el médico.                                                                                                   |
| 21 | Llamas por teléfono a casa de una amiga que se llama María, pero no está. Más tarde llamas de nuevo, pero ella no coge el teléfono, ¿cómo preguntas si ya llegó? |
| 22 | Organizas una comida y has decidido cambiar la fecha para que todos los invitados puedan ir. Pregunta si podrán venir si la comida es el primer domingo de mayo. |
| 23 | Para postre tienes melón y helado. Pregunta a los invitados si quieren melón o helado.                                                                           |
| 24 | Tu hijo quiere visitar a su tío y tú quieres acompañarlo. Pregúntale si va a ir hoy o mañana.                                                                    |
| 25 | Vas a comprar limones para tu madre, pero no sabes cuántos quiere. Pregunta si son tres, cuatro, cinco o seis.                                                   |
| 26 | Estás buscando a María, pero no la encuentras. Ves a alguien que la conoce y después de hablar un poco sobre ella le preguntas si la vio.                        |

## Appendix A.2.2. Biased

|    |                                                                                                                                                                                                                                                                          |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27 | Estás hablando de María con alguien y oyes que entra una persona. Pregunta si es María quien entra.                                                                                                                                                                      |
| 28 | El electricista tenía que venir a las 10 pero tuviste que ir a comprar y tu hija se quedó esperándolo. Al llegar de la compra, el electricista aún no ha venido. Sorprendida preguntas si aún no llegó.                                                                  |
| 29 | Estás cenando en un restaurante. Hace mucho calor y el ambiente está cargado. A tu lado está tu hijo temblando de frío. Extrañada le preguntas si tiene frío.                                                                                                            |
| 30 | Juan dijo que iba a venir a merendar, pero quieres confirmarlo. ¿Qué le dices a Juan? (Busca confirmación.)                                                                                                                                                              |
| 31 | Antes de ir a trabajar tu hermano dijo que no se sentía muy bien. Al volver, lo encuentras en la cama temblando de frío. Ves que no se encuentra bien, pero se lo preguntas sabiendo cuál va a ser la respuesta. (Cercano a la negación, eh o verdad en posición final.) |

|    |                                                                                                                                                                                 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 32 | Te hace mucha ilusión que alguien venga a una cena que organizas. Se lo pides de manera que no pueda decir que no. (Cercano a la afirmación, eh o verdad en posición inicial.)  |
| 33 | Sabes que afuera hace mucho frío. Entra alguien bien abrigado y le preguntas si tiene frío. (Carácter hipotético, margen para responder sí o no.)                               |
| 34 | Tus nietos hacen mucho ruido y no te dejan oír las noticias (en la televisión/radio). Les pides que se callen (ruego-orden).                                                    |
| 35 | No te hacen caso y esta vez lo pides más enfadada (orden).                                                                                                                      |
| 36 | Le pides a un amigo si quiere venir a tomar una limonada contigo (invitación).                                                                                                  |
| 37 | Pide a tus sobrinos si quieren caramelos (invitación).                                                                                                                          |
| 38 | Organizas una fiesta en tu casa y tienes muchas ganas que un compañero tuyo vaya. Pídele si quiere venir. (Intención exhortativa: 'me gustaría mucho que vinieses...'.)         |
| 39 | Necesitas subir tres pisos porque te dejaste el bolso arriba. Vas con un niño pequeño y para ganar tiempo lo dejas abajo. Dile que no se mueva (ruego-orden, con partícula eh). |
| 40 | Necesitas tranquilidad, pero estás en medio de un gran alboroto. Pregunta si alguna vez habrá tranquilidad en este hogar.                                                       |

### Appendix A.3. Wh- Questions

#### Appendix A.3.1. Neutral

|    |                                                                                                                                                                                                                                      |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 41 | Pregunta qué hora es.                                                                                                                                                                                                                |
| 42 | Pregúntale la hora a una persona mayor.                                                                                                                                                                                              |
| 43 | Has subido a un monte a pie. Cuando llegas arriba te encuentras con un compañero y le preguntas de qué pueblo salió él y a qué hora salió.                                                                                           |
| 44 | Ves que María se está yendo. Pregúntale dónde va y cuándo va a volver (coordinación).                                                                                                                                                |
| 45 | La vecina te cuenta que un señor fue a revisar la instalación del gas y que no le dejó entrar porque no tenía suficiente dinero en casa para pagarle. Él dijo que volvería mañana. Pregúntale qué le dirá si vuelve (subordinación). |
| 46 | Te encuentras un paquete en tu casa y le preguntas a tu hijo, Mario, quién trajo esto (posición final, vocativo).                                                                                                                    |

#### Appendix A.3.2. Biased

|    |                                                                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 47 | Tu primo te cuenta que el avión que venía de Barcelona llegó con cuatro horas de retraso. Pregúntale, sorprendido, a qué hora acabó llegando.                                                                                                         |
| 48 | A las dos de la madrugada llaman a la puerta. Estás dormido y te despiertan. Pregunta quién será a estas horas.                                                                                                                                       |
| 49 | A las dos de la madrugada llaman a la puerta. Estás dormido y te despiertan. Esta vez sabes quién es. Pregunta quién será a estas horas.                                                                                                              |
| 50 | Tienes ganas de que unos amigos vengan a comer a tu casa. Medio suplicando (porque ya te dijeron que no pueden venir) les preguntas por qué no vienen (invitación, ruego).                                                                            |
| 51 | Alguien te tira de la camiseta un par de veces, pero cuando tú te giras no ves a nadie. Finalmente, a la tercera vez, ves que es un conocido tuyo muy pesado y hablador que siempre que te ve no te deja ir. Dile qué quiere (queja leve o protesta). |
| 52 | Le dijiste a la gente que trabaja contigo que hiciesen una cosa, pero cuando llegas descubres que no lo hicieron porque te estaban esperando. Pregúntales qué harían sin ti.                                                                          |

### Appendix A.4. Reiterative Interrogatives

#### Appendix A.4.1. Neutral

|    |                                                                                                                                                                          |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 53 | Invitaste a un amigo al cine y te dijo que no podía venir. Te parece que no lo entendiste bien. Se lo preguntas para aclararlo.                                          |
| 54 | Te dan la hora, pero no acabas de entenderla. Piensas que te han dicho que son las nueve. Vuélvelo a preguntar.                                                          |
| 55 | Te preguntaron dónde vas, pero no sabes si lo entendiste bien. Pregunta si es esto lo que quieren saber.                                                                 |
| 56 | Te preguntaron dónde vas y cuándo volverás, pero no sabes si lo entendiste bien. Pregunta si es esto lo que quieren saber.                                               |
| 57 | Te preguntaron por dónde llegaste, pero tú no sabes si te dijeron esto o si te preguntaron por dónde entraste. Pregunta si quieren saber una cosa o la otra.             |
| 58 | Te comentan que una compañera tuya, Marina, quiere ir al baile y tú sabes que no le gusta bailar. No te lo crees y preguntas si es efectivamente Marina quien quiere ir. |

#### Appendix A.4.2. Biased

|    |                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 59 | Te dicen que un compañero tuyo, Mario, se presenta de alcalde. No te lo crees y lo vuelves a preguntar.                                                                                               |
| 60 | Tu vecina te cuenta que fue a un restaurante a comer y pidió conejo con setas. Ella dice que le dieron liebre en lugar de conejo. No te lo acabas de creer. Pregúntale qué le dieron (muy extrañada). |

### Appendix A.5. Imperatives

#### Appendix A.5.1. Commands

|    |                                                                                                                                                                                |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 61 | Estás en la recepción de un hotel y entra una pareja que quiere una habitación. Diles que rellenen un formulario.                                                              |
| 62 | Ves que están un poco despistados y no lo rellenan. Vuélveselo a decir (con más insistencia).                                                                                  |
| 63 | Estás en el parque con tu nieta, María, y se te escapa. Dile que venga, que no se aleje tanto de ti.                                                                           |
| 64 | Salís del parque y se vuelve a escapar. Dile que venga (con más insistencia).                                                                                                  |
| 65 | Ahora estáis en la calle donde pasan coches y se vuelve a escapar. Tú estás muy nerviosa y le dices, enfadada, que venga y que no se separe de ti (con mucha más insistencia). |
| 66 | Estás paseando el perro, Bobi, y se te escapa. Llámalo.                                                                                                                        |

#### Appendix A.5.2. Requests

|    |                                                                                                                                         |
|----|-----------------------------------------------------------------------------------------------------------------------------------------|
| 67 | Quieres ir al cine con un amigo. Te dice que tiene trabajo, pero tú sabes que el trabajo lo puede dejar. ¿Cómo harías para convencerlo? |
| 68 | Parece que quiere ir, pero te dice que no. Insiste a ver si lo puedes convencer.                                                        |

### Appendix A.6. Vocatives

|    |                                                                                 |
|----|---------------------------------------------------------------------------------|
| 69 | Entras en la casa de una amiga tuya, Marina, pero al entrar no la ves. Llámala. |
|----|---------------------------------------------------------------------------------|

## Notes

- <sup>1</sup> In Prieto and Roseano (2010), this tone was only observed for information-seeking yes–no questions in Cantabrian Spanish (López Bobo and Cuevas Alonso 2010). The authors hypothesize that this might be a case of truncation since this tone is commonly found in oxytone words. In our corpus, H!H% appeared 26 times across various sentence types, including statements, yes–no questions, wh- questions, and commands. However, it was present in oxytone words in only 26.9% (7/26) of the cases.
- <sup>2</sup> This tone was not attested in any Spanish variety described in Prieto and Roseano (2010). In our corpus, it was present only once in requests.

- 3 As an anonymous reviewer points out, an upstepped final accent can signal a statement of the obvious in other Spanish varieties. As mentioned, the absence of declination in broad focus statements has been documented in GS before (Castro 2003; Pérez Castillejo 2014).
- 4 Not all the boundary tones combined with every final pitch accent.
- 5 Only eight tokens had a tag question.
- 6 Although 105 echo wh- questions were analyzed, some sentences had more than one focalized wh- word. That is why this number is 140.
- 7 A discussion of the potential reasons for the similarity with Latin American varieties lies beyond the scope of this paper. An anonymous reviewer offered migratory movements as an explanation, but we lack data to support this speculation.

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