Estudios de Fonética Experimental
Journal of Experimental Phonetics
ISSN: 1575-5533 · ISSN-e: 2385-3573

The intonation of Spanish spoken in Bucaramanga (Colombia)

Yeimy J. Roberto [1] 0000-0001-7879-7791

[1] Florida State University (USA)

DOI: 10.1344/efe-2023-32-43-66

Corresponding address: yjr19@fsu.edu

Received: 30/11/2021 Accepted: 29/04/2022 Published: 11/05/2023

Roberto, Y. J. (2023). The intonation of Spanish spoken in Bucaramanga (Colombia). *Estudios de Fonética Experimental*, *32*, 43–66. https://doi.org/10.1344/efe-2023-32-43-66

ABSTRACT

This paper presents the characteristics of the intonation of Spanish spoken in Bucaramanga, Colombia, a variety considered as "strong and rude". Spontaneous, semi-spontaneous and read utterances from four participants were analysed acoustically. After stylisation with MOMEL, the data was tagged according to the Sp_ToBI system, within the Autosegmental-Metrical model. The declarative, interrogative, and exhortative contours were compared with the intonational inventories available for Spanish. The results confirm prior dialectal boundaries based on lexical data and supports the dichotomy between coastal and mountain varieties in the dialects of Spanish spoken in Colombia.

KEY WORDS

intonation; intonation inventory; Spanish; pitch accents; melodic contours

L’entonació de l’espanyol parlat a Bucaramanga (Colòmbia)

RESUM

Aquest article presenta les característiques de l’entonació de l’espanyol parlat a Bucaramanga (Colòmbia), una varietat considerada “forta i grollera”. S’han analitzat acústicament diferents enunciats espontanis, semi-espontanis i llegits produïts per quatre participants. Les produccions van ser estilitzades amb el sistema MOMEL i etiquetades segons el sistema Sp_ToBI, en el marc del model Mètric-Autosegmental. Els contorns declaratius, interrogatius i exhortatius es van comparar amb els inventaris entonatius disponibles per a l’espanyol. Els resultats confirmen les fronteres dialectals descrites anteriorment a partir de dades lèxiques i van a favor de la dicotomia entre les varietats costaneres i de muntanya en els dialectes de l’espanyol parlat a Colòmbia.

MOTS CLAU

entonació; inventari entonatiu; espanyol; accents tonals; contorns melòdics

1. Introduction

Bucaramanga, situated on the eastern range of the Andes, is the fifth densest city in Colombia. The capital, Santander, is recognised as a thriving city with tough, loud-speaking inhabitants perceived as arrogant or rude, although their intonation style is "frank and direct" (López de Mesa, 1934). This way of speaking has been described as a circumflex final intonation with "musical elements" (Flórez, 1964, p. 92) based on observations documented in the *Atlas Lingüístico-Etnográfico de Colombia* (ALEC, Rivas Saconni, 1959).

Despite its singularity, only a couple of studies have documented Bucaramanga Spanish. Rincón (2004, 2014, 2021) has explored the city's Spanish from geodialectal, segmental, and sociolinguistic perspectives. And Flórez (1964), who made some comments based on information from neighbouring, more rural villages, explored during the data collection for ALEC.

However, despite having regional recognition for its genuine, expressive nature, this variety has not been explored in intonational terms. In Colombia, studies of this type have concentrated on cities such as Medellín (Muñetón Ayala, 2016; Muñetón Ayala & Dorta, 2015, 2017; Muñoz-Builes, 2013, 2020, 2021, Osorio & Muñoz-Builes, 2011; Velásquez-Upegui, 2013) and Bogotá (Díaz-Campos & Tevis McGory, 2002; Hernández Rodríguez et al., 2014, Muñetón Ayala & Dorta, 2017, 2021; Sierra Moreno, 2018; Sosa, 1999; Velásquez-Upegui, 2013). Other cities which have been explored are Buenaventura (Payeras, 2001), Quibdó (Mena Mena, 2014), Cali, and Cartagena (Velásquez-Upegui, 2013).

The results presented here were motivated by intonational studies such as that of Prieto and Roseano (2010), and descriptions of intonation of four cities in Colombia by Velásquez-Upegui (2013).

This exploratory description of the intonation of Spanish spoken in Bucaramanga offers an inventory of tonemes observed in declarative, interrogative, and exclamative statements. The tags used here come under Autosegmental Metrical Phonology framework (Pierrehumbert, 1980), using the Spanish Tone and Break Indices (Sp_ToBI by Aguilar et al., 2009; Estebas-Vilaplana & Prieto, 2008; and Hualde & Prieto, 2016). The results provide a description of a previously unstudied variety, contributing an inventory to the existing collection of intonational studies, and corroborating the existing dialectal classification of Colombia by providing the necessary suprasegmental documentation.

2. Background

2.1. Classification of phrases in Spanish

Considering that "intonation is the linguistically meaningful, socially representative, and individually expressive function of the fundamental frequency at the sentence level" (Quilis, 2015, p. 77), the present project views these three aspects as integral parts of the descriptive task presented here. Furthermore, these three linguistic functions of intonation were considered when classifying the different utterances analysed. Firstly, the distinctive function, which enables the classification of the utterances as declaratives, interrogatives, and command statements, relates to the premises proposed by O'Connor and Arnold (1973): the premise which deals with meaning (i.e. the possibility of differentiating an utterance semantically or pragmatically by its intonation) and the systematic premise (i.e. the existence of intonational configurations with a defined semantic effect). In other words, intonation allows a given intonational configuration to change a statement's grammatical meaning (Hidalgo Navarro, 2006; Quilis, 2015; RAE-ASALE, 2011; Sosa, 1999). For example, by contrasting a declarative statement with an interrogative statement: *viene*↓/ *¿viene?*↑ ['She/he's coming↓/ Is she/he coming?↑'] (Quilis, 2015, p. 77). This contrast is possible given that declaratives in Spanish generally present a falling intonation, whereas non-pronominal interrogatives generally present a rising intonation. Another general

characteristic of Spanish intonation is the use of falling intonation with question words such as *qué* ('what'), *quién* ('who'), *cuál* ('which'), *cómo* ('how'), *cuánto* ('how much'), *cuándo* ('when'), *dónde* ('where'), (Quilis, 2015, p. 79), as their grammatical meaning is defined by a question indicator.

Regarding the demarcative function of intonation, it enables the identification of prosodic groups which facilitate the interpretation of the message by the listener (Hidalgo Navarro, 2006; Quilis, 2015; RAE-ASALE, 2011; Sosa, 1999). The third linguistic function of intonation is the focus function. This function enables the ranking of broad focus and contrastive focus statements, drawing the listener's attention to a particular segment (Prieto, 2003).

That said, since intonation can also transmit sociolinguistic information representative of the individual and their environment (Quilis, 2015) and considering the relationship between this and geographic areas and social groups (RAE-ASALE, 2011), the description of intonational patterns has been used to characterise the intonation of varieties of Spanish spoken across the world. For example, varieties of Spanish spoken in Madrid, Cantabria, Canarias, Dominican Republic, Puerto Rico, Venezuela, Ecuador, Chile, Argentina, and Mexico listed in Prieto and Roseano (2010).

Regarding the expressive function of intonation, Quilis (1993) recognises a change in vocal tone and tension, fundamental frequency, intensity, and duration, without affecting the basic linguistic function. For Hidalgo Navarro (2006), this is the secondary modal function of intonation, which "acts here as the transmission vehicle for the emotive content of speech" (2006, p. 28). In other words, despite finding individual differences in expressive utterances, the description of data is trustworthy from a functional linguistic perspective.

2.2. The evolution of Spanish intonation analysis

The study of intonation in Spanish started with the *Manual de entonación del español* ('Manual of Spanish Intonation') (Navarro Tomás, 1948). Based on recordings of read speech from the *Archivo de la Palabra de Madrid* (The Word File), Navarro Tomás described the general characteristics of Spanish, reviewed Latin American studies on the topic, compared Spanish to other European languages, and provided the fundamentals of Hispanic intonation studies. For example, definitions such as the melodic unit, intonation, and the phonology of an utterance, among others, are based on statistical observations. For the author, the phonic group is defined as "the portion of speech between two pauses" (1946, p. 30) with an initial inflection which includes the unstressed syllables preceding the first stressed syllable in the group. He used the term *cuerpo melódico* ('melodic body') to refer to the section spanning from the first syllable to the unstressed syllables preceding the final stressed syllable. He described the final syllable and the following unstressed syllables in the phonic group as the *final inflection*. He named the movement present in the final inflection *toneme* and classified five types of movement according to direction and amplitude. Therefore, for the cadent movement, characteristic of declarative statements, he described a pronounced fall specific to this type of statement.

According to Navarro Tomás, the semi-cadent toneme is realised in utterances which do not express confidence in the proposed idea by falling slightly in the realisation of the phonic group. The anti-cadent toneme refers to the rising movement which is characteristic of non-pronominal interrogatives. The semi-anti-cadent toneme presents a slight rise used to signal the continuation of the flow of information. Finally, the suspension toneme occurs when a phonic group is interrupted or to indicate that it is continued within another phonic group, without involving a final rise or fall.

This way of interpreting intonation is complemented at the end of the 20th century when analytic models appear, and which, enabled by technology, allow for the acoustic categorisation of melodic movements which had previously been based on the perception and observation of investigators. For example, the study of American English intonation by Pierrehumbert (1980), who presents the Autosegmental-Metrical model (AM Model), revolutionises the manner of describing and annotating the different intonational contours through phonological units which follow rules in order to be phonetically realised.

Under the AM model, nuclear pitch accents and boundary tones are considered phonological units. The phonetic rules are related to intonational patterns described using the tagging system ToBI (Tones and Break Indices). For 1999, Sosa adapted this model to the study of Spanish intonation and developed the basic concepts: "just as much the phonetic (that which is circumstantial to speech) as the phonological (systematic and inherent)" (1999, p. 92). The phonetic level is expressed through the fundamental frequency (F0) and demonstrates the implementation of the underlying tones, described at the phonological level.

The Sp_ToBI tagging system was adapted according to the typical configurations of Spanish intonation. Sosa (1999) proposes possible configurations of Spanish and offers supporting material for these configurations. This material includes an approximation of the intonation of Peninsular Spanish (Seville, Barcelona, Pamplona, and Madrid) and Latin American samples (Buenos Aires, Bogotá, Mexico City, San Juan de Puerto Rico, Caracas, Havana, and Lima).

The Sp_ToBI tagging system uses the phonological values H and L, assigned based on the fundamental frequency (F0) on the stressed syllable. The H (High) movement represents a rising or high F0 movement, whereas L (Low) represents a falling or low movement. To associate one of these values with the stressed syllable an asterisk * is used, which represents the F0 movement observed in the stressed syllable. The percentage sign % is used to represent the final movement of an utterance.

Although this description of the tag functioning seems simple, it was following its implementation that discrepancies were found, such as the alignment of the highest F0 point and the stressed syllable. Face (2001) explores the relationship between the number of unstressed syllables after the stressed syllables (post-stressed) and the F0 realisation. In order to do so, the author took into account the connection between the highest F0 point and the utterances with a prominent syllable (contrastive focus statements) or the utterances with neutral intonation (broad focus). This study is based on 288 samples analysed under the framework of the AM model, and the Sp_ToBI system obtained from statements read by two women and one man from Madrid. The results demonstrate that alignment in broad focus statements depends on the number of unstressed syllables which follow the stressed syllable, showing a preference for a shifted peak as the number of unstressed syllables increases. A greater alignment of the stressed syllable and the most prominent F0 point is observed in contrastive focus, and furthermore, even where there is an increase in unstressed syllables, there is a 50% recurrence within the stressed syllable.

This concern for broad focus and contrastive focus statements is also addressed by Martín Butragueño (2005). In his work, the author examines the relationship between the prosodic focus and the syntactic focus. From a questionnaire developed by two male and two female speakers from Mexico City, the author analyses 200 phrases under the AM model and makes use of the Sp_ToBI tagging system. In general, the prosodic focus is documented as L+H*, even though there are other ways to show emphasis without using this contour. On the other hand, the data show the use of other strategies such as word order, or the grouping and division of boundaries in the phrase to indicate syntactic focus.

In Beckman et al. (2002) a framework for ToBI for Spanish is defined; a complex task, given that it

entails agreeing upon parameters for a language spoken by over 580 million people (Fernández Vítores, D., 2020). In this proposal, boundary tones, the relationship between the lexical stress of Spanish and the tones bound to the stressed syllable are defined, and the breakdown rate is disputed. For the authors, the final movements of the statement or break indices should follow the following parameters: 0 for syllable reduction between vowels, 1 for boundaries between "ordinary" words, and 4 for an intonational pause movement. In addition, the analysis levels are established: *Word tier* for orthographic transcription, *syl tier* for syllable transcription, *break index tier* to signal the boundary levels, and *tone tier* to label F0 movements according to phonological values H and L.

Prieto (2003) provides a review of the basic concepts of the AM model. In it she defines the linguistic profile of intonational patterns as "defined models used to express the communicative intentions of the speaker" (2003, p. 18). Regarding the analysis of intonation, the author recognises that the phonetic axis and the phonological axis are yet to be reconciled. Furthermore, she brings the semantic axis into the discussion as the communicative effects of the phonological units in the phrases are yet to be established. During the same year, Martínez Celdrán and Fernández Planas (2003) studied 58 affirmative and interrogative statements read by eight Spanish speakers.

Among the most notable findings, the authors discover that L*+H is the predominant structure for syllables preceding the stressed syllable (the pretoneme or prenuclear stress) and that interrogative sentences feature a greater height than the affirmatives in the middle of the statement, in other words in prenuclear position, supporting Navarro Tomás' (1948) observations about a higher body in interrogative statements. On the other hand, due to conflicts which arose when assigning labels to the movements, the authors recommend that the 1.5 semitone difference (t'Hart, Collier, & Cohen, 1990) is considered for clarifying ambiguous cases in which the images or perception do not allow for labelling, as well as ensuring that measurements are taken of the vowel in the stressed syllable.

The decision to stylise the statements in this paper is supported by Beckman and Venditi's (2011) article in which they discuss three aspects which complicate the study of intonation: firstly, the phenomenon of laryngealised voice which can create an obstacle when obtaining the fundamental frequency at certain points in the recording; secondly, the source of the sample is unclear and the possible effects of this; and thirdly, the micro-prosodic effects caused, for example, by occlusive consonants. To deal with these problems, the authors propose the stylisation of the melodic curve with the lowest number of strokes possible without losing its perceptual equivalent. In this case, the statements were stylised with the MOMEL algorithm (Hirst, 2011).

Meanwhile, other authors propose improvements to the system. For example, Face and Prieto (2007) propose a new review of Sp_ToBI. Having applied the proposal in samples of Peninsular Spanish, the result indicates that the L*+H and L+H* configurations are of a phonological nature and are related to the broad or contrastive focus of the statement, respectively. In cases in which the configuration does not correspond to the F0 movement, it is associated as an allophone of phonological value.

On the basis of this proposal, Face (2005) studies the perception of the high tone at the start of the sentence to determine statement type in Peninsular Spanish. The results confirm the observations of Navarro Tomás (1948) and Martínez Celdrán et al. (2003–2020) on interrogative statements, which demonstrate a higher tone than the affirmative statements at the start of the utterance, allowing for early identification.

In Estebas-Vilaplana and Prieto (2008), the inventory of configurations for pitch accents and boundary tones is based on 280 semi-spontaneous utterances of Peninsular Spanish and Mexican Spanish, also taking into account traditional studies and articles published up to this point. In this version, L*

is considered a pitch accent, the option of a shifted peak (L+>H*) is added, and the range of boundary tones is widened to include bi- and tritonal tones. The following year, Estebas-Vilaplana (2009) studies the boundary tones of Peninsular Spanish. Estebas-Vilaplana proposes two new levels so as to record the phenomena observed in the 240 read statements: L% for declarative statements, H% for the contour of vocatives, and the newly proposed M% for incomplete lists, and HH% for reiterative questions. The use of the mid-tone (M%) is supported by observations made in studies such as those of Navarro Tomás (1948) and Quilis (1993).

On a worldwide scale, the development of intonational studies under the AM model is growing considerably. Jun (2007) publishes a compendium of these works, among which are featured Italian (It_ToBI), Serbo-Croatian (SC_ToBI), Mandarin (M_ToBI), Cantonese (C_ToBI), Chickasaw (CH_ToBI), and Bininj Kunwok, an indigenous Australian language also known as Mayali (BGW_ToBI). In the second version, Jun (2014) includes the intonation of European Portuguese, Catalan, Standard Bengali from Bangladesh, Tamil, Georgian, Mongolian, Western Greenlandic, Dalabon, Jamaican Creole, Papiamento of Curaçao, Dutch, Lebanese and Egyptian Arabic, Basque, and Japanese dialects. Jun asserts that the reaches of this tool in the future will enable intonational comparison between the different languages which have utilised it, in addition to expanding to fields such as syntactic-phonological maps, discursive structure, semantic/pragmatic meaning, sentence processing, sociolinguistics, and speech technology.

Hualde and Prieto (2016) acknowledge the ToBI system as a specific phonological representation of each language. However, they recognise that in studies of Spanish the labels have been used, at times, phonologically, and at other times phonetically. In order to facilitate comparisons between different varieties, as well as strengthening the possible phonological paradigms, the authors propose its use on both levels, one phonological and one phonetic, during labelling. In their proposal, the authors present six schematic representations for considering peak alignment in a stressed syllable, which are used in the tagging of the data presented here.

2.3. Colombian Intonation

Within the first descriptions of intonation in Colombia using the methodology previously described, a comparison exercise began with readings recorded by one male and one female speaker from Argentina, Colombia, Costa Rica, Chile, Mexico, Puerto Rico, Spain, and Venezuela (Díaz-Campos & Tevis McGory, 2002). The results confirm differences in the alignment of the accent peaks and suggest an approximation to the dialectal differences, as well as highlighting the need for studies focusing on the communicative function of intonation.

Toledo (2007) studies prenuclear pitch accents in the samples read by speakers from Argentina, Colombia, Cuba, Uruguay, and Madrid. The results confirm that the tone is anchored to the metrically strong syllable, being that the tonal prominence is produced in the development of this stressed syllable. For 2008, the author carried out a study on the intonational phrase using material read by Gabriel García Márquez and concluded that the L*+H pattern is not the only pattern for non-final pitch accents, just as the L+H* pattern is not the only pattern for final pitch accents. Also found were differences of a discrete nature between tonemes with a continuity marker (L*+H H– and L+H* H–) and tonemes with a conclusion marker (L* L– L% and L+H* L– L%). These results demonstrate a wide variety in prenuclear and nuclear pitch accents, allowing the author to question, on the basis of data from read speech, the proposed tonemes for these cases.

In 2011, the AMPER Project (Atlas Multimedia de la Prosodia del Espacio Románico), coordinated by Eugenio Martínez Celdrán from Barcelona and, for Latin American Spanish, by Yolanda Congosto Martín from Seville, was made up of 18 working groups based in 16 universities, 10 in Spain, five in

Latin America, and one in Norway. The Latin American participants are: Argentina, Bolivia, Chile, Cuba, Costa Rica, Guatemala, and Venezuela. Colombia has joined the group through the works of Muñoz-Builes (2013), and Muñetón Ayala and Dorta (2015) on the intonational contours of speakers from Medellín, offering a first approximation to the prosodic description of the country's Spanish using the AMPER methodology.

Part of the methodology used to describe the intonation of Bucaramanga Spanish is based on the methodology of Romano and Contini (2001), who propose four methods of data collection: a reading of carefully chosen phrases, a situational survey, directions using a map, and free conversation. This proposal arises from the absence of studies which integrate dialectal geolinguistics and the study of intonation.

In 2013, Velásquez-Upegui describes the intonational patterns of Spanish as spoken in the cities of Bogotá, Cali, Cartagena, and Medellín. The methodology of this study follows the parameters of the ATLES project, with two male and two female speakers from each city. In addition to offering an inventory of the intonational contours of Colombian Spanish from each of the cities studied, Velásquez-Upegui provides a very interesting conclusion: the dialectal particularities are found in neutral utterances, whereas in the non-neutral phrases the priority is pragmatic intention. This result could guide intonational studies of dialectal interest towards a specific type of statement, enabling a more precise analysis of the sociolinguistic function of intonation.

Additional research work to highlight regarding the study of Spanish spoken in Bucaramanga was developed by Rincón (2014). Since 2000, the author has worked to update and expand the data presented for this dialect by Flórez (1965). From the description of the phonological, morphosyntactic, lexical, and pragmatic features of speech from this city, the results complement and validate the dialectal classification of Mora et al. (2004) as an Andean dialect. The results of the present study are intended to contribute to studies of this type through the description of the intonation of Spanish as spoken in Bucaramanga as a sample of the dialect of Santander and to complement the linguistic information already available on Colombian Spanish.

3. Methodology

3.1. Participants

In general, intonational studies deal with a limited number of participants given that each individual contributes a large amount of data. For example, Sosa (1999) characterises the speech of Colombia through the speech of just one speaker from Bogotá. For the present project, 4 participants were included, two men and two women, between 25 and 35 years old, from the city of Bucaramanga, middle class, and with parents from the same city.

All participants had university level studies at the time of the survey. In addition, Table 1 shows other characteristics such as sex, age, knowledge of other languages (under the European Reference Framework B1 and B2 correspond to intermediate levels), and the number of utterances contributed.

Participant	Gender	Age	L2	# statements
1	male	31	English B2	131
2	female	25	Italian B2	104
3	male	27	English B1	143
4	female	35	English B1	121

Table 1. Participant characteristics.

3.2. Materials and procedure

The data for this study is based on four recordings of roughly one hour in length. These recordings include all four activities. The first activity entails a reading of a dialogue used by Velásquez-Upegui (2013), adapted to include the preferred second person singular pronoun of speakers from Bucaramanga: *usted* (Rincón, 2014).

For the second activity two maps were used: one with a defined path, and another with no path at all. In this activity, participants had the option to play the role of the person giving directions, as well as the role of the person receiving directions to complete the map. In the first round, the maps are identical, but in the second round they differ when it comes to small details; for example, in one map there is a kindergarten where in the other a barbershop appears in the same location. These intentional differences encourage a greater exchange of spontaneous utterances.

The third activity is based on a survey of 71 situations used by O'Rourke (2010) in the description of the intonation of Ecuadorian Spanish. The survey is made up of contexts described to the participant in order to obtain specific utterances (declarative, interrogative, vocative, and hortatory statements). Implementation requires an experienced interviewer with the skills to prompt the expected utterance. To this end, 6 previous trials were carried out, from which the following adjustments were proposed to optimise the procedure. Firstly, recording took place in soundproofed recording booths to ensure the elimination of background noise or circumstantial noise. Secondly, the vocabulary was adjusted to expressions closer to those found in regional speech (such as the use of '*usted'*), and, thirdly, the 71 original contexts were linked to images which ensured reasonable sequences grouped into scenarios. As a result, the quality of the sentences was improved, and the interview duration decreased.

For the final part, a brief free interview was administered to verify the vocal range in spontaneous speech, and the respective sociolinguistic data from each participant. Recording took place in the laboratory of Instituto Caro y Cuervo and in the recording room in Bucaramanga. Participants took part in the study voluntarily, having given informed consent.

3.3. Analysis

The interviews were carried out in properly enclosed, soundproofed rooms, two in a recording room in the city of Bucaramanga, and the remaining two in the phonetics laboratory at the Instituto Caro and Cuervo in the city of Bogotá. Table 2 reports the number of utterances analysed per participant.

For the recordings, a unidirectional SHURE PG48 microphone and a TASCAM DR-01 recorder were used. The conversion from stereo to mono and the segmentation of utterances into individual recordings were carried out in the program *Audacity*. The program *Praat* (Boersma & Weenink, 1992–2014) permitted the synthesis of the fundamental frequency with the algorithmic modelling application proposed by Hirst (2011) (MOMEL). Additionally, automatic alignment of sound with orthographic segments was carried out using *EasyAlign* (Goldman, 2011).

Finally, the data were manually labelled according to the parameters of the tagging tool Sp_ToBI proposed in Aguilar et al. (2009), Estebas-Vilaplana and Prieto (2008), and Hualde and Prieto (2016).

One criterion taken into account in cases in which the F0 curve showed an ambiguous movement, such as a slightly rising movement or a slight fall at the end of the phrase, was the comparison between the hertz at the central point of the vowel in the stressed syllable and the hertz at the end of the toneme's intonational curve. The difference was converted into decibels in order to verify whether it surpassed 1.5 semitones, established as the minimum change which must occur so as to be auditorily perceived (Martínez Celdrán et al., 2003–2020; 't Hart, Collier, & Cohen, 1990).

Participant	Declaratives	Interrogatives	Commands
1	24	42	7
2	31	33	4
3	44	42	16
4	23	48	6
Total	122	165	33

Table 2. Number of statements analysed.

After labelling the contours of each type of sentence in Excel, the most frequent in each category were selected. The following section presents the representative contours. Taking into account the exploratory nature of this work, the possibility of finding different contours in future explorations will not be dismissed.

4. Results

4.1. Declarative statements

Of the 109 phrases analysed, 40 fall under the category of declarative statements from the reading activity, 33 from the map activity, and 38 from the situational interview. Table 3 shows the classification and most frequent intonational contour for each category, as well as a representative diagram of the movement.

In order to define the declarative statements, the distinctive function of intonation was taken into account. In this way, the utterances were considered declaratives due to the contrast between the common falling movement of the intonational curve of these statements and the rising movement present in the non-pronominal interrogative statements.

Moreover, the focus function facilitated the distinction between broad focus declaratives, which do not show a meaningful tonal movement at any point in the utterance, and contrastive focus declaratives, which show a movement within the intonational curve which highlights a specific element within the utterance. This was also determined based on the definition of neutrality by the *Nueva Gramática de la Lengua Española* ('New Spanish Language Grammar') which states that "The speaker's intent is purely informative" (RAE-ASALE, 2011, p. 456). Statements which transmit information without emphasising any one element fall under the category of broad focus declaratives.

Of the 77 cases analysed, 35% presented a L+H* nuclear pitch accent, and 32% present a pitch accent stressed syllable (H+L*). 90% of cases end with a low boundary tone (L%). Figure 1 illustrates this falling contour with the second most typical nuclear pitch accent for this type of statement.

Moreover, 8 utterances in the category of contrastive focus declaratives were analysed; the examples which use the intonational curve to emphasise one part of the utterance demonstrate a preference for the nuclear pitch accent (L+H*) in 5 of the samples, with a L% boundary tone in 6 cases. This contour is exemplified in Figure 2.

This same undulating movement was observed in the 6 list statements analysed. In Figure 3, the rising (L+H*) movement is visible in each of the utterance's intonational units. Furthermore, in the first tonal movement a low joining accent (L–) is present, whereas in the second and third unit a high joining accent (H–) is observed. The phrase ends with a low boundary tone (L%).

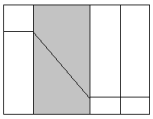
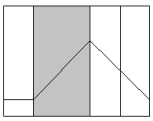
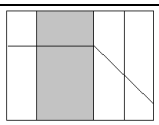
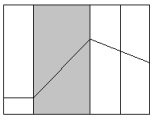
Classification	Example	Sp_ToBI	Diagram
Broad focus	*Una muchacha comiendo una mandarina.* 'A girl eating a mandarin'	H+L* L%	
Contrastive focus	*Pasas por debajo del bar Marina.* 'You go under the Marina Bar'	L+H* L%	
List	*Porque son solo historias como la bruja, la llorona o el duende.* 'Because they're only stories like the witch, the Llorona or the gnome.'		
Doubt	*...y quiero saber si te gusta.* '…and I want to know if you like (it).'		
Emphatic	*No, qué rabia.* 'No, how enraging.'	H* L%	
Obvious	*Pues de Guillermo.* 'Well, it's Guillermo's (obviously).'	L+H* L%	

Table 3. Intonational contours representative of the declarative statements.

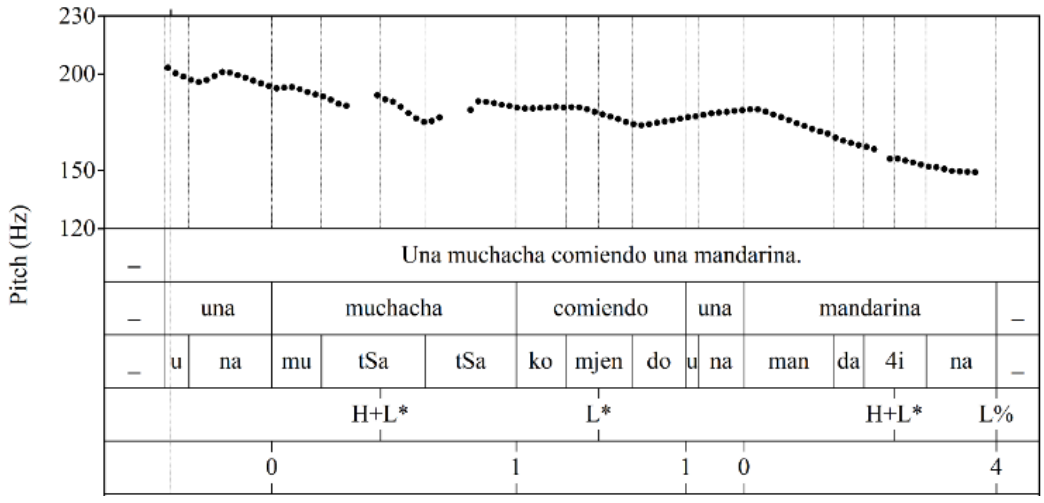


Figure 1. Melodic profile of a broad focus declarative statement: 'A girl eating a mandarin'.

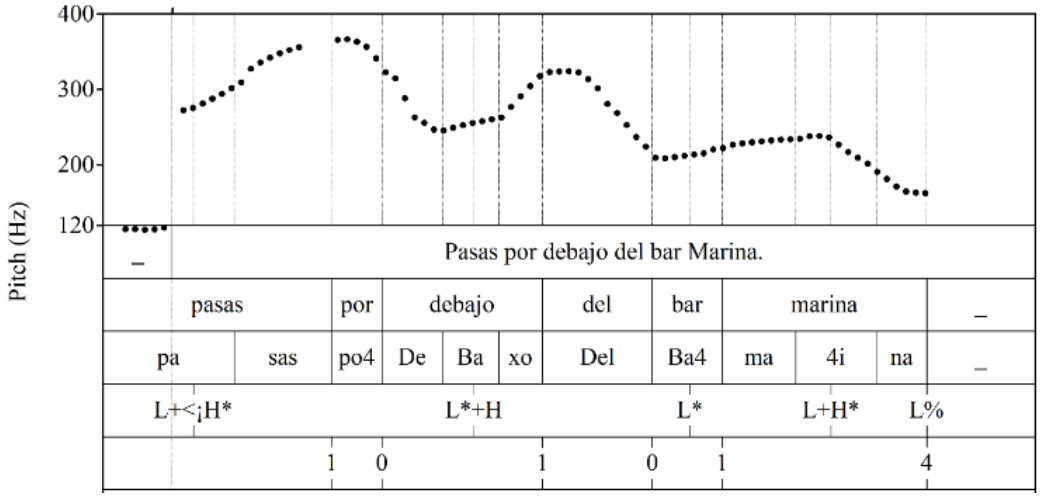


Figure 2. Melodic profile of a contrastive focus declarative statement: 'You go under the Marina Bar'.

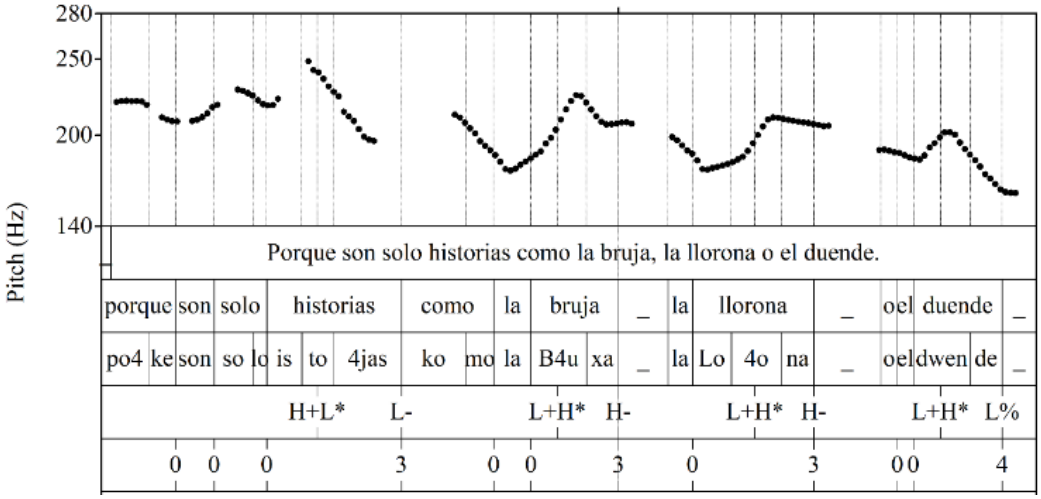


Figure 3. Melodic profile of a declarative list statement: 'Because they're only stories like the witch, the Llorona or the gnome'.

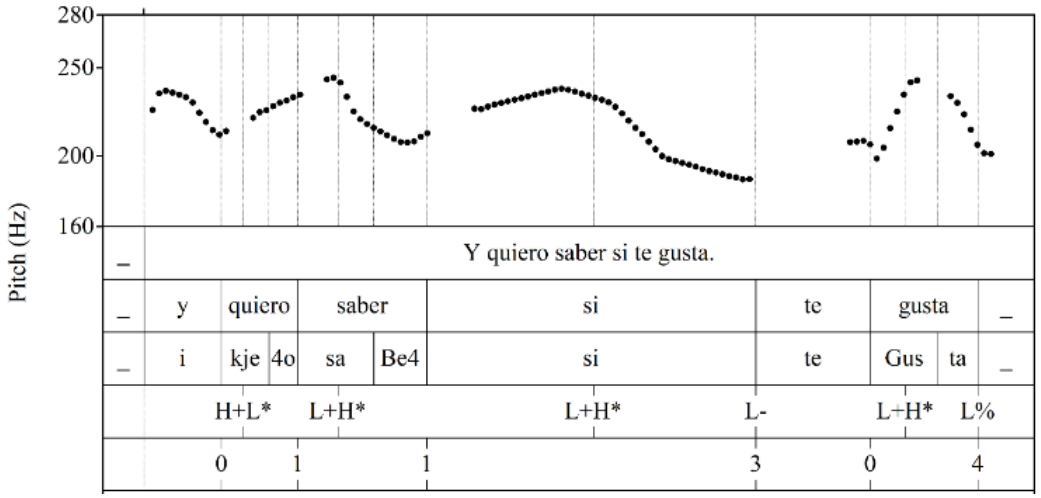


Figure 4. Melodic profile of a declarative statement of doubt: 'and I want to know if you like (it)'.

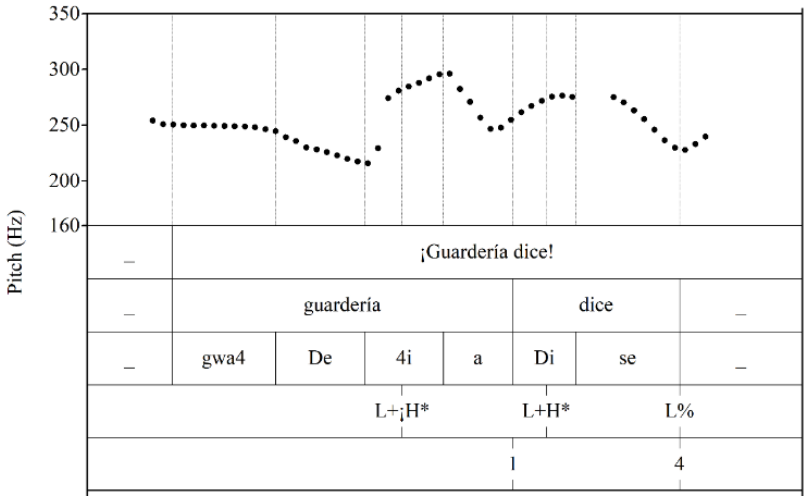


Figure 5. Melodic profile of an emphatic declarative statement: 'It says kindergarten'.

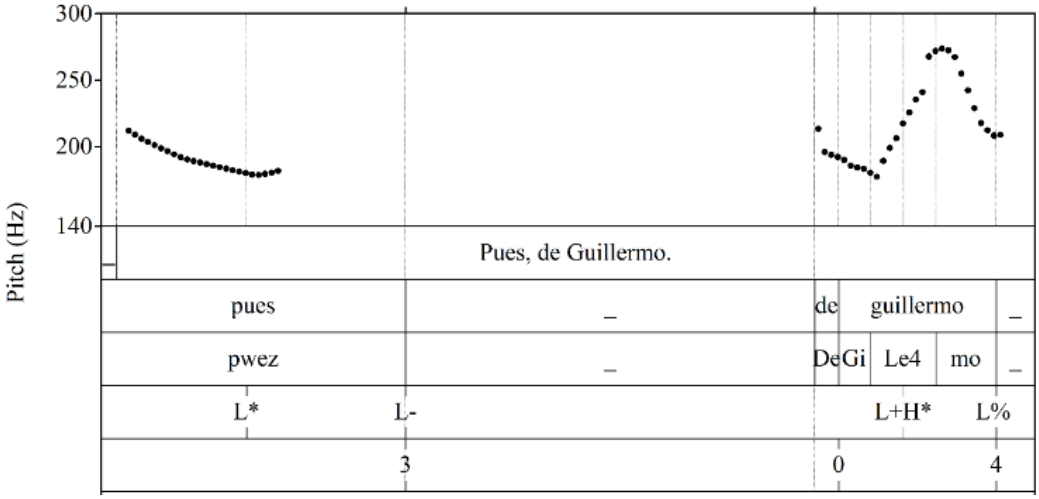


Figure 6. Melodic profile of a declarative statement of obviousness: 'Well, it's Guillermo's (obviously)'.

Like contrastive focus and list statements, statements of doubt also present a rising nuclear pitch accent (L+H*) in both of its intonational units. In this case, both the joining tone and the final tone are low (L– and L% respectively) (Figure 4). Elsewhere, the 4 emphatic samples use high, contrastive movements. The data present bitonal boundary tones and other cases of stepping in prenuclear position as shown in Figure 5: a stepped prenuclear pitch accent (L+¡H*) precedes the nuclear pitch accent (L+H*) ending in a low boundary tone (L%).

Regarding the statement of the obvious in Figure 6, two intonational units are observed. The first contains a low L* tone and concludes with a mid low L– tone which contrasts with a broader undulating movement in the second tonal unit, in which the nuclear pitch accent is labelled as L+H*, and the phrase ends with a low boundary tone L%.

4.2. Interrogative statements

For this section, of the total 148 utterances considered, 106 were collected during the situational activity, 11 interrogative utterances from the map activity, and 31 from the reading activity.

As with the section dealing with affirmative statements, Table 4 shows the intonational contours of the most frequent pronominal interrogative utterances in the category, along with an example, the melodic contour notation and an illustrative diagram of the contour.

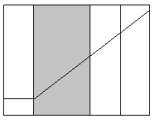
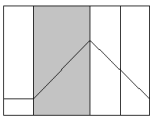
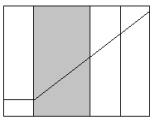
Classification		Example	Sp_ToBI	Diagram
Pronominal Interrogatives	**Echo**	*¿A quién sería el peor personaje?* 'Who would be the worst character?'	L+H* H%	
	Broad focus	*¿Cuál ruido?* 'What noise?'	L+H* L%	
	Rhetorical	*¿Para dónde va?* 'Where are you going?'		
Non-pronominal Interrogatives	**Broad focus**	*¿A quién sería el peor personaje?* 'Who would be the worst character?'	L+H* H%	
	Echo	*¿Escuchó ese ruido?* 'Did you hear that noise?'		
	Imperative	*¿Cuatro me dijo?* 'Did you say four?'		
	Exhortative	*¿Se pueden callar?* "Can you (plural) shut up?"		
	Confirmative	*¿Vamos a comer algo?* 'Shall we go and eat something?'		

Table 4. Intonational contours representative of pronominal and non-pronominal interrogative statements.

4.2.1. Pronominal echo, incredulity, and rhetorical interrogative statements

Figure 7 presents a typical example of the intonational movement of pronominal echo interrogatives.

Of the 25 available samples, 52% present a rising nuclear pitch accent (L+H*) and 72% conclude in a high H% boundary tone. This contour coincides with the characteristics of the non-pronominal interrogative statements described in previous studies (Sosa, 1999; Prieto & Roseano, 2010).

In contrast to this rising contour, the 34 pronominal interrogative utterances showed a preference for a low boundary tone in 52% of cases. Figure 8 shows a pronominal interrogative utterance with a rising melodic contour in the stressed syllable (L+H*) and a final low movement (L%).

In the same way, Figure 9 presents a pronominal rhetorical interrogative which uses the same configuration presented in Figure 8. These interrogative statements present a L+H* nuclear pitch accent, with a final falling movement, labelled as a L% boundary tone.

4.2.2. Non-pronominal interrogative statements

In general, in the 43 non-pronominal interrogative utterances, a rising nuclear pitch accent (L+H*) was observed in 62% of cases. A high boundary tone (H%) was produced in 79% percent of cases, as observed in Figures 10, 11, and 12. Despite the fact that the statements do not belong to the same classification, they share the same contour.

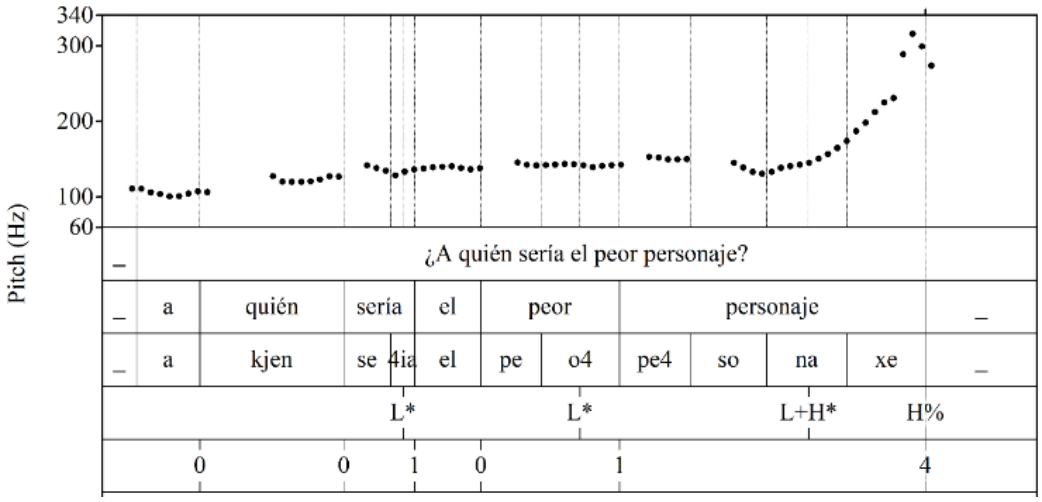


Figure 7. Melodic profile of a pronominal echo interrogative: 'Who would be the worst character?'.

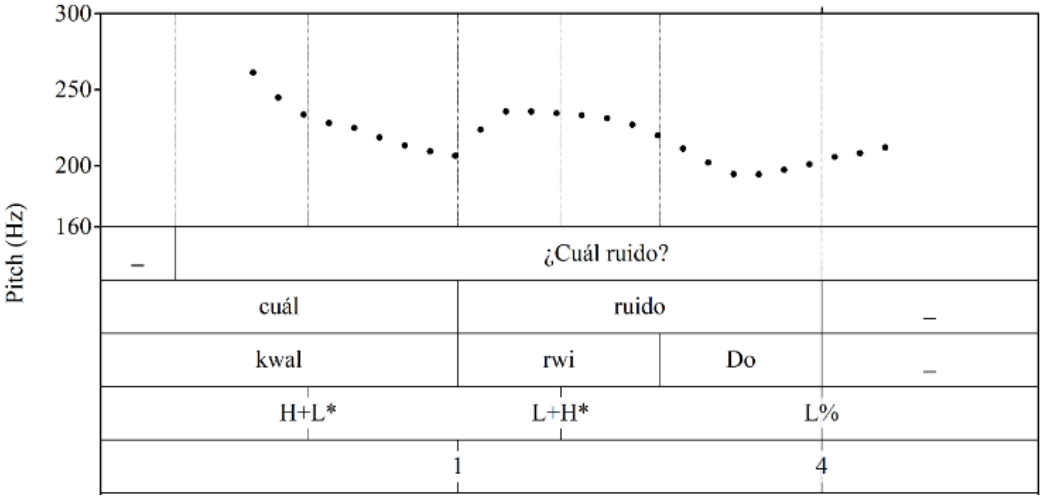


Figure 8. Melodic profile of a broad focus pronominal interrogative: 'What noise?'.

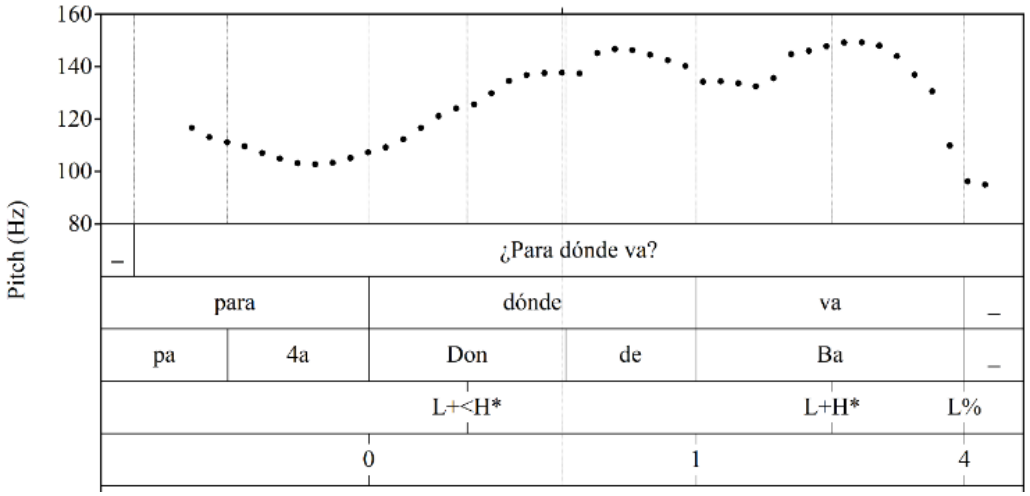


Figure 9. Melodic profile of a rhetorical pronominal interrogative: 'Where are you going?'.

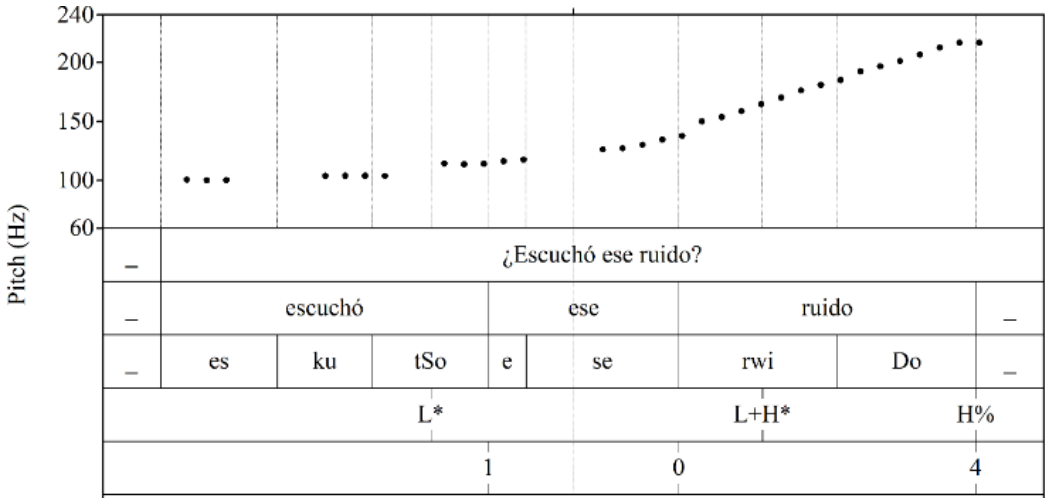


Figure 10. Melodic profile of a broad focus non-pronominal interrogative: ‘Did you hear that noise?’.

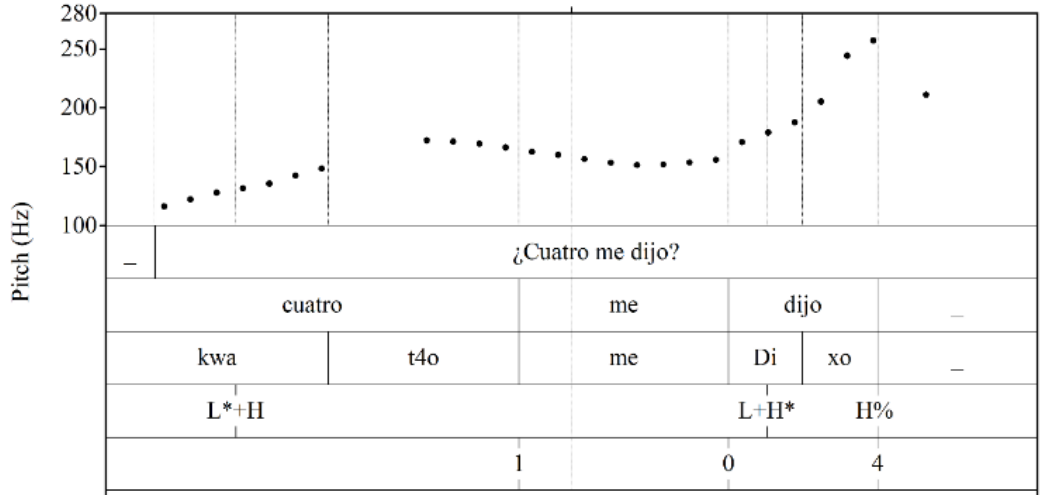


Figure 11. Melodic profile of a non-pronominal echo interrogative: ‘Did you (formal) say four?’.

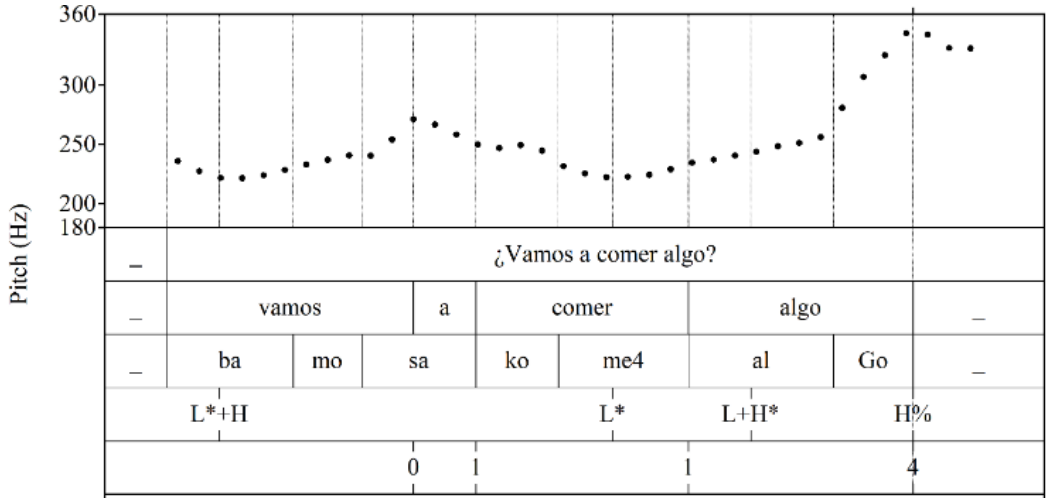


Figure 12. Melodic profile of a non-pronominal exhortative interrogative: ‘Shall we go and eat something?’.

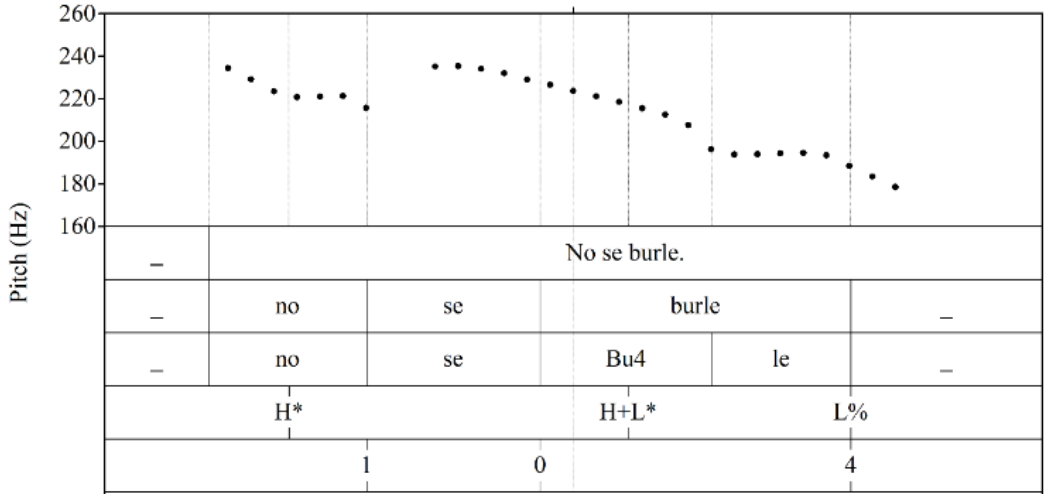


Figure 13. Melodic profile of a command statement: 'Don't make fun'.

4.3. Command statements

This section includes the analysis of 32 command statements collected from the situational interview. In general, these statements present a wide variety of nuclear pitch accents, of which the falling accent (H+L*) is present in 10 of the statements analysed. Elsewhere, the boundary tones of command statements are, for the most part, falling (L%), as is the case for 26 of the utterances. Figure 13 presents a command statement utterance in which the prenuclear peak appears to be shifted to the following syllable or it may be a micro-melodic effect of the voiceless fricative, followed by a falling nuclear pitch accent (H+L*) which concludes in a low boundary tone (L%).

5. Analysis and Discussion

In the previous section, examples were presented of statements which are representative of the intonational curve in Spanish spoken in Bucaramanga. In this section, the results indicated here are compared with those offered in previous works.

As a first step, the neutral declarative statements in the data of Spanish spoken in Bucaramanga present a falling tone (H+L*) and culminate in a low tone (L%). This movement is similar to that described for Bogotá (Díaz Cabrera et al., 2017; Dorta, 2018; Muñetón Ayala & Dorta, 2017; Sierra Moreno, 2018; Velásquez-Upegui, 2013). Other Colombian varieties have reported similar patterns: Cali (Dorta, 2018; Velásquez-Upegui, 2013), Quibdó (Mena Mena, 2014), and Barranquilla (Dorta, 2018). Furthermore, they coincide with varieties from the Dominican Republic (Willis, 2010), Puerto Rico (Armstrong, 2010), Argentina (Gabriel et al., 2010), and Mexico (Martín Butragueño et al., 2010). Additionally, they coincide with almost all data from the AMPER project (Martínez Celdrán & Fernández Planas, 2003–2020) for this type of statement, except Bilbao, Oviedo, Mérida, Montevideo, Santiago de Chile, and Tarapoto. In the same way, this result coincides with the fall described for this type of statement by Navarro Tomás (1948), Quilis (1993), and Sosa (1999).

Regarding the non-neutral declarative statements from the sample, these present a rising pitch accent (L+H*) and end with a low boundary tone (L%). This contour coincides in category with the varieties described for Medellín and Cartagena in Velásquez-Upegui (2013), and the varieties of Castilla (Estebas-Vilaplana & Prieto, 2010), Cantabria (López-Bobo & Cuevas-Alonso, 2010), the Canary Islands (Cabrera Abreu & Vizcaíno Ortega, 2010), Dominican Republic (Willis, 2010), Puerto Rico (Armstrong, 2010), Venezuela (Astruc et al.,

2010), Ecuador (O'Rourke, 2010), Chile (Ortiz et al., 2010), Argentina (Gabriel et al., 2010), and Mexico (Martín Butragueño et al., 2010).

Furthermore, this result is in accordance with the definition of non-neutral declaratives by the Nueva Gramática (2011), which states that "they are segments which are highlighted or emphasised within a message" (2011b, p. 2984) and here the use of the intonational curve for this purpose is observed. The contour of the list statements shows the same contour as the non-neutral declarative statements as only the final tonal unit, that which corresponds to a non-neutral statement, is taken into account.

The statements of doubt presented a wide variety of tonal movements, the most frequent being the accent previously described for the non-neutral statements. These results coincide with the wide variety of contours described for this type of statements in Prieto and Roseano (2010), as eight of the ten varieties described present different intonational contours. This difficulty could be motivated by the different pragmatic strategies employed by each variety of Spanish to achieve the communicative objective of this type of statement. In other words, this configuration requires further exploration as the samples still show little regularity.

On the other hand, the emphatic declarative statements present the same configuration as the non-neutral statements, differing in the use of a wider intonational field. This condition is reflected in the use of stepping to label the most frequent nuclear accent (L+¡H*) and coincides with the contour present in the variety of Chile (Ortiz et al., 2010). Upstepping (¡H) is also observed in Venezuelan Spanish (Astruc et al., 2010), and downstepping (!H*) in Spanish spoken in the Canary Islands (Cabrera Abreu & Vizcaíno Ortega, 2010). These notations with stepping imply a wide range in the intonational curve which needs to be reflected in the Sp_ToBI labelling. In Cali Spanish (Velásquez-Upegui, 2013) the use of (L+H*) is observed for this type of statement (classified as Surprise or Gratitude), whereas in varieties from Bogotá, Medellín, and Cartagena, the neutral toneme (H+L* L%) is observed for this same classification.

The statements of obviousness also show a wide variety among the data. One of the statements presents a low boundary tone (L%) which coincides with the varieties of Cali and Cartagena (Velásquez-Upegui, 2013), Castilla (Estebas-Vilaplana & Prieto, 2010), Cantabria (López-Bobo & Cuevas-Alonso, 2010), the Canary Islands (Cabrera Abreu & Vizcaíno Ortega, 2010), Puerto Rico (Armstrong, 2010), and Mexico (Martín Butragueño et al., 2010). However, as with the statements of doubt, it is necessary to explore more statements of this type so as to find more representative data.

The pronominal interrogative statements generally presented two types of intonation contour. The first, present in the pronominal echo interrogatives, consists of a rising pitch accent (L+H*) which culminates in a high boundary tone (H%). This same high boundary tone coincides with varieties from Bogotá (Díaz Cabrera et al., 2017; Dorta, 2018; Sierra Moreno, 2018; Sosa, 1999; Velásquez-Upegui, 2013), Cali (Dorta, 2018; Estupiñan, 2015; Velásquez-Upegui, 2013), and Barranquilla (Dorta, 2018). Regarding other varieties, this characteristic is shared by the intonation of the Canary Islands (Cabrera Abreu & Vizcaíno Ortega, 2010) and Chile (Ortiz et al., 2010). This high conclusion is considered a sample of politeness according to Quilis (1993).

When it comes to the nuclear pitch accent, this contour coincides with Spanish from Medellín and Cali (Velásquez-Upegui, 2013). Spanish from Ecuador (O'Rourke, 2010) presents the same nucleus (L+H*); however, a mid boundary tone (M%) is described for this variety. In Mexican Spanish (Martín Butragueño et al., 2010), the nuclear pitch accent is the same (L+H*), but it presents a bitonal boundary tone (HL%). In the case of the Canary Islands, they also resemble each other, although this variety presents upstepping in the nuclear pitch accent (¡H* L%).

In the same way, the pronominal interrogative statements of disbelief feature the same contour (L+H*) with a final fall (L%), which also appears in this category for the varieties from the Canary Islands (Cabrera Abreu & Vizcaíno Ortega, 2010) and Mexico (Martín Butragueño et al., 2010). It differs from the Spanish spoken in Bogotá in the nuclear pitch accent, with a low tone associated with the stressed syllable reported for Sierra Moreno (2018) and Velásquez-Upegui (2013).

Regarding the pronominal rhetorical interrogative statements, this tonal configuration (L+H* L%) appears both in the data for Spanish spoken in Bucaramanga and the varieties spoken in Cali and Medellín (Velásquez-Upegui, 2013). The same movement pattern was observed in the variety from Chile (Ortiz et al., 2010). However, the investigators assign the upstepping label in order to portray the wide tonal field which uses the intonation curve for its development. However, it is appropriate to review a larger volume of statements which confirm this intonational movement, given that the data offer other possible contours for this type of statement, such as mid (M%), high (H%), upstepped (¡H%), and bitonal (HL%) boundary tones.

When it comes to the non-pronominal interrogative statements, the intonational curve present in all categories is, for the most part, rising, from the pitch accent (L+H*) to the high boundary tone (H%). For example, the non-pronominal neutral interrogative statements coincide with varieties from Cali (Dorta, 2018; Estupiñán, 2015; Velásquez-Upegui, 2013) Bogotá (Muñetón Ayala & Dorta, 2021; Sierra Moreno, 2018, Velásquez, 2013), women from Barranquilla (Dorta, 2018) as well as the variety from Chile (Ortiz et al., 2010). On the other hand, of the 32 cities studied in the AMPER project (Martínez Celdrán & Fernández Planas, 2003–2020), the configuration for this type of statements differs from the following 8 varieties: Laredo, Oviedo, Palencia, San Cristóbal de la Laguna, Caracas, Havana, Mérida, and Montevideo, with these varieties ending in a fall.

For the non-pronominal echo interrogatives, this intonational contour coincides with varieties from Bogotá and Cali (Velásquez-Upegui, 2013). However, there is no similarity to the other varieties described. On the other hand, the contour of non-pronominal interrogative statements of disbelief are also present in the varieties of Spanish spoken in Bogotá and Cali (Velásquez-Upegui, 2013), and in Castilla (Estebas-Vilaplana & Prieto, 2010), although the label used for the boundary tone is (HH%).

Regarding the non-pronominal imperative interrogative statements, the configuration (L+H* H%) coincides only with the variety from Ecuador (O'Rourke, 2010). On the other hand, when it comes to the exhortative interrogative statements, this configuration presents itself in the varieties spoken in Bogotá and Cali (Velásquez-Upegui, 2013) and in Chilean Spanish (Ortiz et al., 2010). Furthermore, in the non-pronominal confirmative interrogative statements, this same configuration is observed in the varieties of Bogotá and Cali (Velásquez-Upegui, 2013). However, with the varieties from Castilla (Estebas-Vilaplana & Prieto, 2010), Dominican Republic (Willis, 2010), and Mexico (Martín Butragueño et al., 2010) it coincides in the boundary tone.

To conclude this section, the command statements present a falling intonational configuration (H+L* L%) which coincides with the neutral declarative statements, as stated by Navarro Tomás (1948), differing through a wider tonal field. This contour is also found in Spanish from Cantabria (López-Bobo & Cuevas-Alonso, 2010), Dominican Republic (Willis, 2010), in the variety from Ecuador (O'Rourke, 2010), where it occurs in statements of request, rather than a command. This is also similar to Argentinian Spanish (Gabriel et al., 2010). Interestingly, these similarities do not occur in the Spanish of Bogotá, Medellín, Cali, or Cartagena.

6. Conclusions

As a general conclusion, this initial description of the intonation of the Spanish of Bucaramanga contributes to the knowledge of intonational studies on Spanish as spoken in Colombia. Furthermore, it contributes to the consideration of intonational features in the dialectal characterisation of the Santander region and brings new configurations to the general repertoire of the intonation of Colombian Spanish.

According to the results, the intonation of Bucaramanga Spanish is more intonationally similar to the varieties of Cali and Bogotá. On this basis, the variety studied here could be included as one of those described as central, proposed by Velásquez-Upegui (2013), given that it also differs from the peripheral dialects from Medellín and Cartagena in that it does not show the same level of similarities to these dialects.

Regarding other international varieties, the intonation of Bucaramanga Spanish coincides with Chilean Spanish in 7 aspects, and with Mexican Spanish in 6. This conclusion on the similarity between the intonation of Bucaramanga and the results presented in Prieto and Roseano (2010) is limited in scope and is intended only to demonstrate that the singularity of dialects based on a phonological tagging system such as Sp_ToBI (Aguilar et al., 2009; Estebas-Vilaplana & Prieto, 2008; and Hualde & Prieto, 2016) prevents a purely dialectal categorisation.

Further studies regarding descriptions of Bucaramanga Spanish should work with a larger data set to allow for the observation of regular contours in neutral declarative statements, as focused and emphatic statements use the intonational curve for pragmatic purposes, which mask the possible dialectal movements present in the fundamental frequency. In the data, it was observed that the statements which were a product of the map activity are ideal for this type of analysis, due to the fact that the participants were concentrating on achieving the proposed objective (to reach the goal), thereby removing challenges arising from the recording environment, microphones, and the pressure to produce careful speech for the recordings.

Acknowledgments

This study is derived from the master's thesis to complete the master's degree from the Instituto Caro y Cuervo (2018). With special thanks to my thesis director, Dr. Correa of the ICC, and my current director Dra. González of FSU for the corrections of the manuscript; also, to the anonymous readers for their observations, which enormously strengthened the contribution offered here.

References

Aguilar, L., De-la-Mota, C., & Prieto, P. (Eds.) (2009). *Sp_ToBI Training Materials* [Web page]. http://prosodia.upf.edu/sp_tobi/

Beckman, M., Díaz-Campos, M., McGory, J. T., & Terrell, M. (2002). Intonation across Spanish, in the Tones and Break Indices framework. *Probus*, *14*(1), 9–36. https://doi.org/10.1515/prbs.2002.008

Beckman, M., & Venditi, J. (2011). Intonation. In J. Goldsmith, J. Rigle, & A. Yu (Eds.), *Handbook of Phonological Theory* (2nd ed.) (pp. 485–532). Blackwell.

Boersma, P., & Weenink, D. (1992–2014). *Praat: Doing phonetics by computer* (Version 5.3.68) [Computer program]. https://www.praat.org/

Díaz-Campos, M., & McGory, J. T. (2002). La entonación en el español de América: Un estudio acerca de ocho dialectos hispanoamericanos [Intonation of Latin American Spanish: A study of eight Latin American dialects]. *Boletín de Lingüística*, *18*, 3–26.

Díaz Cabrera, C., Muñetón Ayala, M., & Dorta, J. (2017). Estudio comparativo de la entonación en habla formal femenina de Caracas y Bogotá [Comparative study of intonation in feminine formal speech of Caracas and Bogotá]. *Revista Internacional de Lingüística Iberoamericana*, *29*, 237–156. https://doi.org/10.31819/rili-2017-152910

Dorta, J. (Ed.) (2018). *La entonación declarativa e interrogativa en cinco zonas fronterizas del español: Canarias, Cuba, Venezuela, Colombia y San Antonio de Texas* [Declarative and interrogative intonation in five Spanish border zones: Canarias, Cuba, Venezuela, Colombia y San Antonio de Texas]. Peter Lang. https://doi.org/10.3726/b12056

Estebas-Vilaplana, E. (2009). Cuatro niveles de altura tonal en la frontera de frase en español peninsular [Four levels of tonal height at the phrase boundary in Peninsular Spanish]. *Onomázein*, *20*, 11–32. https://doi.org/10.7764/onomazein.20.01

Estebas-Vilaplana, E., & Prieto, P. (2008). La notación prosódica del español: Una revisión del SpToBI [Prosodic notation of Spanish: a review of SpToBI]. *Estudios de Fonética Experimental*, *17*, 263–283.

Estupiñán, E. J. (2015). Patrones melódicos interrogativos del español de Cali en habla espontánea [Melodic patterns of interrogatives in spontaneous speech of Cali Spanish]. *Phonica*, *11*, 47–63. https://doi.org/10.1344/phonica.2015.11.47-63

Face, T. L. (2001). Focus and early peak alignment in Spanish intonation. *Probus*, *13*, 223–246. https://doi.org/10.1515/prbs.2001.004

Face, T. L. (2005). F0 peak height and the perception of sentence type in Castillian Spanish. *Revista Internacional de Lingüística Iberoamericana*, *6*, 49–66.

Face, T. L., & Prieto, P. (2007). Rising accents in Castilian Spanish: A revision of Sp_ToBI. *Journal of Portuguese Linguistics*, *6*(1), 117–146. https://doi.org/10.5334/jpl.147

Fernández Vítores, D. (2020). El viaje internacional del español [The international journey of Spanish]. *Encuentros en Catay*, *33*(33), 392–417. https://ec.catayacademica.com/index.php/ec/article/view/118

Flórez, L. (1964). El español hablado en Santander: Notas de pronunciación [Spanish spoken in Santander: Notes on pronunciation]. *Anuario de Letras: Lingüística y Filología*, *4*, 71–94. https://doi.org/10.19130/iifl.adel.4.0.1964.180

Flórez, L. (1965). *El español hablado en Santander* [Spanish as spoken in Santander]. Imprenta Patriótica del Instituto Caro y Cuervo.

Goldman, J.-P. (2011). EasyAlign: An automatic phonetic alignment toon under Praat. In P. Cosi, & R. De Mori (Eds.), *Proceedings of InterSpeech 2011* (pp. 3233–3236). International Speech Communication Association. https://doi.org/10.21437/Interspeech.2011-815

Hernández Rodríguez S. M., Alers Valentín, H., & Soto-Barba, J. (2014). Análisis contrastivo de la entonación del español bogotano y del español de San Juan en frases entonativas simples [Contrastive analysis of the intonation of Spanish of Bogotá and San Juan in simple intonational phrases]. *Forma y Función*, *27*(2), 157–181. https://doi.org/10.15446/fyf.v27n2.47670

Hidalgo Navarro, A. (2006). *Aspectos de la entonación española: Viejos y nuevos enfoques* [Aspects of Spanish intonation: Old and new approaches]. Arco Libros.

Hirst, D. (2011). The analysis by synthesis of speech prosody. *Journal of Speech Sciences*, *1*(1), 55–83. https://doi.org/10.20396/joss.v1i1.15011

Hualde, J. I., & Prieto, P. (2016). Towards an International Prosodic Alphabet (IPrA). *Laboratory Phonology*, *7*(1), Article 5. https://doi.org/10.5334/labphon

Jun, S.-A. (2007). Prosody Typology. In S.-A. Jun (Ed.), *The Phonology of Intonation and Phrasing* (pp. 430–458). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199249633.003.0016

Jun, S.-A. (2014). *Prosodic Typology II: The Phonology of Intonation and Phrasing* (1st ed.). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199567300.001.0001

López de Mesa, L. (1934). *De cómo se ha formado la nación colombiana* [On how the nation of Colombia was formed]. Librería Colombiana.

López-Bobo, M. J., & Cuevas-Alonso, M. (2010). Cantabrian Spanish Intonation. In P. Prieto, & P. Roseano (Eds.), *Transcription of intonation of the Spanish language* (pp. 49–85). Lincom Europa.

Martín Butragueño, P. (2005). La construcción prosódica de la estructura focal en español [The prosodic contruction of the focus structure in Spanish]. In G. Knauer, & V. Bellosta von Colbe (Eds.), *Variación sintáctica en español: Un reto para las teorías de la sintaxis* (pp. 117–144). De Gruyter. https://doi.org/10.1515/9783110923353.117

Martínez Celdrán, E., Fernández Planas, A. M., Romera Barrios, L., & Roseano, P. (Eds.). (2003–2020). *Atlas Multimedia de la Prosodia del Espacio Románico* [Multimedia Atlas of Prosody of the Romance Space] [Web page]. http://stel.ub.edu/labfon/amper/

Mena Mena, W. (2014). *Características de la entonación en el habla de Quibdó* [Characteristics of the intonation of Quibdó Spanish] [Master's dissertation]. Universidad Nacional de Colombia. https://repositorio.unal.edu.co/handle/unal/51300

Mora, S., Lozano, M., Ramírez, R., Espejo, M. B., & Duarte, G. E. (2004). *Caracterización léxica de los dialectos del español de Colombia según el ALEC* [Lexical characterisation of Colombian dialects of Spanish according to the ALEC]. Publicaciones del Instituto Caro y Cuervo.

Muñetón Ayala, M. A. (2016). La F0, duración e intensidad de las oraciones interrogativas absolutas en un informante varón de Medellín [F0, duration and intensity of absolute interrogative statements of a male speaker from Medellín]. *Estudios de Fonética Experimental*, *25*, 167–192.

Muñetón Ayala, M., & Dorta, J. (2015). La entonación declarativa e interrogativa en el español colombiano de Medellín: Voz femenina vs. Masculina [Intonation of declarative and interrogative statements in Colombian Spanish of Medellin: Female vs. male voices]. *Boletín de Filología*, *50*(2), 103–122. https://doi.org/10.4067/s0718-93032015000200005

Muñetón Ayala, M., & Dorta, J. (2017). Límite prosódico y sintagmático: Estudio comparativo entre zonas de Colombia e Islas Canarias (España) [Prosodic and syntagmatic limits: Comparative study among various areas in Colombia and in the Canary Islands (Spain)]. *Estudios Filológicos*, 59, 85–109. https://doi.org/10.4067/s0071-17132017000100005

Muñetón Ayala, M., & Dorta, J. (2021). Estudio preliminar de la entonación bogotana en un corpus SVO de hablantes sin estudios superiores: F0, duración e intensidad [Preliminary study of intonation of Bogotá in an SVO corpus of speakers without higher education: F0, duration and intensity]. *Lingüística*, *37*(1), 57–78. https://doi.org/10.5935/2079-312x.20210005

Muñoz-Builes, D. M. (2013). *Análisis prosódico de un informante de Medellín en el marco de la metodología del proyecto AMPER (Atlas Multimedia de Prosodia del Espacio Románico)* [Prosodic analysis of a speaker from Medellín in the framework of methodology from the AMPER Project (Multimedia Atlas of Prosody of the Romanic Space)] [Master's dissertation]. Universidad de Antioquia. https://hdl.handle.net/10495/1904

Muñoz-Builes, D. M. (2020). Configuraciones nucleares en la entonación del español de Antioquia, Colombia [Nuclear configuration in the intonation of Spanish of Antioquia, Colombia]. *Anuario de Letras: Lingüística y Filología*, *8*(2), 39–64. https://doi.org/10.19130/iifl.adel.2020.2.24872

Muñoz-Builes, D. M. (2021). Variación diastrática de la entonación femenina en el español colombiano de Medellín [Social variation in female intonation in Colombian Spanish of Medellín]. *Lengua y Habla*, *25*, 201–222.

Navarro Tomás, T. (1946). *Estudios de fonología española* [Studies of Spanish phonology]. Syracuse University Press.

Navarro Tomás, T. (1948). *Manual de pronunciación española* [Manual of Spanish pronunciation]. Hispanic Institute in the United States.

O'Connor, J. D., & Arnold, G. F. (1973). *Intonation of Colloquial English* (2nd ed.). Longman.

O'Rourke, E. (2010). Ecuadorian Andean Spanish Intonation. In P. Prieto, & P. Roseano (Eds.),

Transcription of Intonation of the Spanish Language (pp. 227–253). Lincom Europa.

Osorio, G. M., & Muñoz-Builes, D. (2011). La entonación del enunciado interrogativo en el español de la ciudad de Medellín [Intonation of interrogative satement in the Spanish of Medellín]. *Lingüística y Literatura*, *60*, 209–226. https://doi.org/10.17533/udea.lyl.12579

Payeras, J. (2001). The role of intonation in the structuring of discourse: Evidence from Colombian Spanish. In J. Gutiérrez-Rexach (Ed.), *Meaning and the Components of Grammar* (pp. 115–131). Lincom Europa.

Pierrehumbert, J. (1980). *The phonology and phonetics of English intonation* [Doctoral Dissertation]. Massachusetts Institute of Technology. http://hdl.handle.net/1721.1/16065

Prieto, P. (2003). Teorías lingüísticas de la entonación [Linguistic theories on intonation]. In P. Prieto (Ed.), *Teorías de la entonación* (pp. 13–34). Ariel.

Prieto, P., & Roseano, P. (Eds.). (2010). *Transcription of Intonation of the Spanish Language*. Lincom Europa.

Quilis, A. (1993). *Tratado de fonología y fonética españolas* [Treaty on Spanish Phonetics and Phonology]. Gredos.

Quilis, A. (2015). *Principios de fonología y fonética españolas* (11th ed.) [Beginnings of Spanish phonetics and phonology]. Arco Libros.

Real Academia Española y la Asociación de Academias de la Lengua Española. (2011). *Nueva gramática de la lengua española*. Espasa Calpe.

Rincón, L. M. (2004). *Middle-class Spanish of the city of Bucaramanga, Colombia*. [Doctoral dissertation]. Ball State University. https://cardinalscholar.bsu.edu/handle/handle/180079

Rincón, L. M. (2014). *Así se habla el español en Bucaramanga* [This is how Spanish is spoken in Bucaramanga]. El Libro Total.

Rincón, L. M. (2021). Estudio de espacialidad del español rural de Santander (Colombia): Contextualización teórica y conceptual [Study of spatiality in the Spanish of rural Santander (Colombia): Theoretic and conceptual contextualisation]. *Forma y Función*, *34*(1), Article 3. https://doi.org/10.15446/fyf.v34n1.81256

Rivas Sacconi, J. M., & Sánchez Arevalo, F. (1959). Atlas Lingüístico-Etnográfico de Colombia: Investigaciones [Linguistic-Ethnographic Atlas of Colombia: Investigations]. *Thesaurus: Boletín del Instituto Caro y Cuervo*, *14*(1–3), 342–344.

Roberto Avilán, Y. J. (2018). *Acercamiento a la entonación del español de Bucaramanga* [Approach to the intonation of Spanish spoken Bucaramanga] [Master's dissertation]. Instituto Caro y Cuervo. http://bibliotecadigital.caroycuervo.gov.co/id/eprint/1307

Romano, A., & Contini, M. (2001). *Un progetto di atlante geoprosodico multimediale delle varietà linguistiche romanze* [A project of a multimedia geoprosodic atlas of the Romance linguistic varieties]. In E. Magno Caldognetto & P. Cosi (Eds.), *Multimodalità e multimedialità nella comunicazione* (pp. 121–126). Unipress.

Sierra Moreno, P. A. (2018). *Descripción de la entonación del español hablado en Bogotá* [Description of the intonation of Spanish spoken in Bogotá] [Master's dissertation]. Instituto Caro y Cuervo. http://bibliotecadigital.caroycuervo.gov.co/id/eprint/1309

Sosa, J. M. (1999). *La entonación del español: Su estructura fónica, variabilidad y dialectología* [Spanish intonation: phonic structure, variability and dialectology]. Cátedra.

't Hart, J., Collier, R., & Cohen, A. (1990). *A perceptual study of intonation: An experimental-phonetic approach to speech melody*. Cambridge University Press. https://doi.org/10.1017/cbo9780511627743

Toledo, G. (2007). Acentos prenucleares: Evidencia sobre el español [Prenuclear accents: evidence for Spanish]. *Language Design*, *9*, 5–34.

Toledo, G. (2008). Fonología de la frase entonativa [Phonology of the intonational phrase]. *Estudios Filológicos*, *43*, 207–222. https://doi.org/10.4067/s0071-17132008000100015

Velásquez-Upegui, E. (2013). *Entonación del español hablado en Colombia* [Intonation of the Spanish spoken in Colombia] [Doctoral disser-

tation]. El Colegio de México / Centro de Estudios Lingüísticos y Literarios. https://hdl.handle.net/20.500.11986/COLMEX/10001010