

**GUATEMALAN SPANISH IN CONTACT:  
PROSODY AND INTONATION**

**EL ESPAÑOL GUATEMALTECO EN CONTACTO:  
PROSODIA Y ENTONACIÓN**

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*Artículo recibido el día: 10/05/2020*  
*Artículo aceptado definitivamente el día: 25/07/2020*  
*Estudios de Fonética Experimental, ISSN 1575-5533, XXIX, 2020, pp. 153-194*



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### ABSTRACT

This study forms part of the Geoprosodic project: the Geoprosodic and Sociodialectal Study of North American Spanish. The main objective of this project is to describe and compare the prosody of three geographical areas, Los Angeles, Mexico and Guatemala, that are closely related historically, socially and linguistically due to the contact established over time and the coexistence of people and cultures. The sole aim is to examine the prosodic differences between the Spanish spoken by Latin American people living in Los Angeles (mainly Mexicans, Salvadorans and Guatemalans) and the Spanish spoken by those who have never left their native countries, and to compare whether the spatio-temporal distance of the former and their immersion in a different sociolinguistic sphere, in contact with the English language and other varieties of Spanish, have brought about differences of a geoprosodic nature. In this case, the study focuses on the Guatemalan Spanish of various speakers. From a methodological point of view, the research is linked to the international project AMPER. The analytical methods of AMPER are followed and the research is limited to the study of female intonation and sentences with a subject–verb–object (SVO) structure from corpus 1 (declaratives and absolute interrogatives). The results of this research corroborate the initial hypothesis and establish the melodic differences between both groups of speakers, particularly regarding declaratives.

Keywords: *prosody, pitch, Guatemalan Spanish, Spanish of Los Angeles, declaratives, absolute interrogatives.*

### RESUMEN

Este estudio se inserta dentro del proyecto GEOPROSODIC, *Estudio geoprosódico y sociodialectal del español americano septentrional*, que tiene como principal objetivo describir y contrastar la prosodia de tres ámbitos geográficos íntimamente relacionados desde el punto de vista histórico, social y lingüístico, como resultado del contacto establecido a lo largo del tiempo y de la convivencia de pueblos y culturas —Los Ángeles, México y Guatemala—. La intención no es otra que estudiar las diferencias prosódicas que existen entre el español de los hispanos que residen en Los Ángeles (conformado fundamentalmente por mexicanos, salvadoreños y guatemaltecos) y el español de aquellos mismos que no han salido de sus países de origen, y constatar si la distancia espacio-temporal de los primeros y su inmersión en un ámbito sociolingüístico distinto, en contacto con la lengua inglesa y con otras variedades del español, han propiciado diferencias de carácter geoprosódico. En esta ocasión, el estudio se centra en el español guatemalteco de unos y otros hablantes. Desde el

punto de vista metodológico, la investigación está vinculada al proyecto internacional AMPER, por lo que se siguen los protocolos de análisis en él diseñados, y queda circunscrito al estudio de la entonación femenina y a los enunciados con estructura SVO del corpus 1 (declarativas e interrogativas absolutas). Los resultados de esta investigación nos han permitido corroborar la hipótesis de partida y determinar las diferencias melódicas que existen entre ambos grupos de hablantes, especialmente en lo que afecta a las declarativas.

Palabras clave: *prosodia, melodía, español guatemalteco, español de Los Ángeles, declarativas, interrogativas absolutas.*

## 1. INTRODUCTION

### 1.1. Considerations of a sociolinguistic and dialectal nature

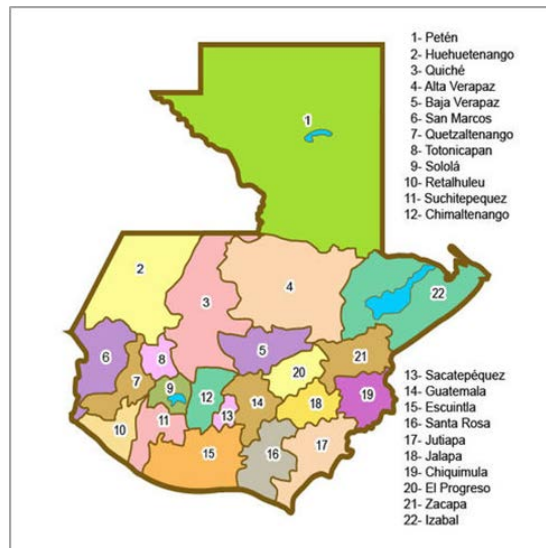
Along with Belize, Guatemala comprises the northern border of Central America. To the northwest, it borders Mexico, mainly the states of Chiapas, Campeche and a small part of Tabasco; to the northeast it borders Belize; and to the south it borders Honduras and El Salvador (Map 1). The geographical continuity between Mexico, Guatemala, Honduras and El Salvador is established through the Cordillera Central, specifically by what is also known as the Sierra Madre de Chiapas or just the Sierra Madre in Guatemala. This mountain range runs in a northwest-southeast direction for over 600 km along the Pacific coast.



Map 1. *Map of the situation (source: Google).*



Map 2. Political map of Guatemala: departments (source: Google Images).



Map 3. Political map of Guatemala: departments (source: Google Images).

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This connection was supported historically by the superior court known as the Real Audiencia de Guatemala, created by royal charter on 20 November 1542. The court covered the area that is currently Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica and the Mexican state of Chiapas.<sup>1</sup>

From a territorial perspective, Guatemala is divided into eight regions, twenty-two departments and three hundred and forty municipalities (Maps 2 and 3).

From a sociocultural perspective, Guatemala is home to people with a wide range of identities, resulting from a long, complex historical process,<sup>2</sup> as in the other Latin American countries. Socially, the Guatemalan population is comprised of four groups: white (Spanish or Creole); Mestizo or Ladino; a population of African origin; and the indigenous population, which is the majority. This ethnic and cultural diversity is also expressed in language, as would be expected, and has led to a multilingual country.<sup>3</sup> In Guatemala, a total of 22 languages of Mayan origin are spoken<sup>4</sup> along with three languages of different origins: the Xinka language,<sup>5</sup> which is another pre-Hispanic language spoken in the south-eastern zone of the country; the Garifuna language, resulting from interethnic relationships between Caribbean Indians, the Arhuaco Indians from South America and the black population from Africa, and spoken on the Atlantic coast; and Spanish, particularly present in urban areas and spoken by 93% of the population. Although Spanish became the country's official language in 1965, subsequent language policy

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<sup>1</sup>*Leyes de Indias* (facsimile edition, 1791) and Muñoz Paz *et al.* (2006).

<sup>2</sup> See the work of Ramírez Luengo (2004), among others.

<sup>3</sup> For more detailed information on the demography of Guatemala's language communities, see Verdugo (2009:852-874).

<sup>4</sup> Achi', Akateko, Awakateko, Chaltiteko, Chuj, Ch'orti', Itza', Ixil, Kaqchikel, K'iche', Mam, Mopán, Popti (Jakalteko), Poqomam, Poqomchi', Qánjob'al, Q'eqchi', Sakapulteko, Sipakapense, Tektiteko, Tz'utujil and Uspanteko. Due to the high number of Mayan languages, Nahuatl of Uto-Aztecan origin was used by the elite as a vehicular language (Luján Muñoz, 2008). For more detailed information on the municipalities and departments in which each of these languages is spoken, see the following link: <http://www.mineduc.gob.gt/digebi/mapaLinguistico.html>, as well as Verdugo (2009:860-864).

<sup>5</sup> The Xinka territory occupies the departments of Santa Rosa, Jutiapa, Jalapa, part of Escuintla, El Progreso, Zacapa, part of Chiquimula, part of the department of Guatemala and part of the department of Mazatenango.

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actions made bilingual education official in 1987. According to the Commission for the Officialization of Indigenous Languages of Guatemala (1998), cited by Verdugo (2009:865), three groups of speakers could be identified: the monolingual Mayan-speaking population; the bilingual population (Mayan–Spanish) with stable diglossia; and the monolingual Spanish-speaking population. According to the Cervantes Institute Report 2018, currently 78.30% of the population (16,838,489 inhabitants) are native Spanish speakers: a total of 13,184,537 would correspond to what is known as the native command group (*grupo de dominio nativo*, GND), and the remaining 3,653,952 belong to the limited competence group (*grupo de competencia limitada*, GCL).<sup>6</sup>

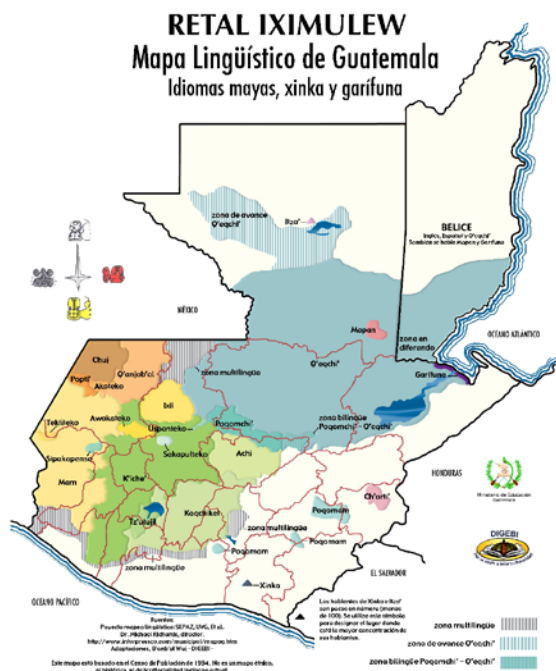
As a result of the above, the language map of Guatemala is extremely complex from the perspective of dialect (Map 4).

According to Herrera Peña (1993:2–3), cited by Utgård (2010:50), two large zones exist: western, populated by Ladinos and Mayan speakers and closer to the Spanish spoken in the Mexican Plateau; and eastern, mainly populated by descendants of Spanish immigrants who arrived centuries ago. In the eastern zone, the Spanish is closer to that of Central American Spanish, especially that of Honduras or El Salvador. The southern and northern area (Petén) would have a combination of various forms, as a result of the coexistence of speakers from the two zones mentioned above.

This distribution of areas coincides with that expressed by speakers resident in Guatemala City, the capital, when they were asked about what regions of the country “speak the same as you”. They felt that their speech was closest to that of the western region and most different from that of the eastern region. Likewise, when they were asked about “countries that speak similarly to Guatemala”, the order of their responses was: Mexico, El Salvador and Costa Rica (Acevedo and Quesada, 2014: 645–648, 653).

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<sup>6</sup> 1. The percentage of native Spanish speakers corresponding to each country has been extracted from Moreno Fernández (2014:32–33). 2. In the native command group, bilingual people are counted as Spanish speakers. Monolingual speakers of other languages are not included. 3. The limited competence group includes second- and third-generation Spanish speakers in bilingual communities, bilingual users of mixed varieties of languages and foreign people with a mother tongue other than Spanish who reside in a Spanish-speaking country (Cervantes Institute Report 2018:6).



Map 4. *Language map of Guatemala.*<sup>7</sup>

In traditional dialectology, the delimitations established in American Spanish, although partial, provisional and very limited, tend to situate Guatemalan Spanish with Mexican Spanish and Central American Spanish.<sup>8</sup> In his 1921 study, Henríquez Ureña associated it with that established as zone I, which groups bilingual regions of the south and southwest of the United States with Mexico and the republics of Central America. Subsequently, in 1964, José Pedro Rona situated Guatemalan Spanish in what he calls zone 2, which joins the south of Mexico and

<sup>7</sup> Map adapted from that in the *Mapa lingüístico de Guatemala*, Michael Richards, dir. (2003). Proyecto mapeo lingüístico. Materials prepared with funding of the United States Agency for International Development (USAID/Guatemala), p. 43. Source: <http://www.mineduc.gov.gt/digebi/mapaLinguistico.html>.

<sup>8</sup> For more detail on these proposals, see Moreno Fernández (1993).



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the areas that border Guatemala (Yucatán, Tabasco, Chiapas and Quintana Roo) with Central America and the western half of Panama. A decade later, Zamora Munné (1979–1980), used three determining characteristics – the realization of /x/ (velar or glottal), the realization of the final /-s/ (conserved or weakened) and voseo – to position Guatemalan Spanish in what he considers zone III, along with Central America, the regions bordering Mexico and the western half of Panama (which coincides, broadly speaking, with what had already been indicated by Rona). According to this last proposal, this area shares phenomena such as yeísmo, velarization of /-n/, retention of /-s/ (west and centre of Guatemala and Costa Rica), assibilation of the trill /r/ and phenomena related to /-l/ and /-r/ (in Panama). Finally, Katrine Utgård made a proposal in her master’s thesis (defended in 2006 and described in an article in 2010), written from a geolinguistic, multidimensional perspective. Considering that a deeper study was lacking and according to results obtained in her research on the phonetics of Guatemalan Spanish,<sup>9</sup> she proposed as an initial hypothesis that Guatemalan Spanish should be more closely associated with zone II of Zamora Munné, which was limited to Mexico only (except the east coast and regions bordering Guatemala). Utgård considered that the few cases of aspiration or loss of /-s/ in the final position and the glottal realization of the /x/ meant that Guatemalan Spanish should be disassociated from Central American Spanish and associated with Mexican Spanish. Beyond these proposals, the few diachronic and synchronic studies undertaken on Central America or on Guatemalan Spanish provide an incomplete view of the complex dialectal reality they contain.

In terms of the Guatemalan population in the USA, specifically in Los Angeles,<sup>10</sup> statistical data provided by the Census Bureau 2018 show that, as a result of various migratory trends in the last two centuries, the number of individuals from Central America has increased. However, in the last decade, percentages have shown a drop of 33%.

According to the same source,<sup>11</sup> the total number of Central Americans in the USA is 5,221,000, approximately 8.9% of the total number of Hispanics living in this

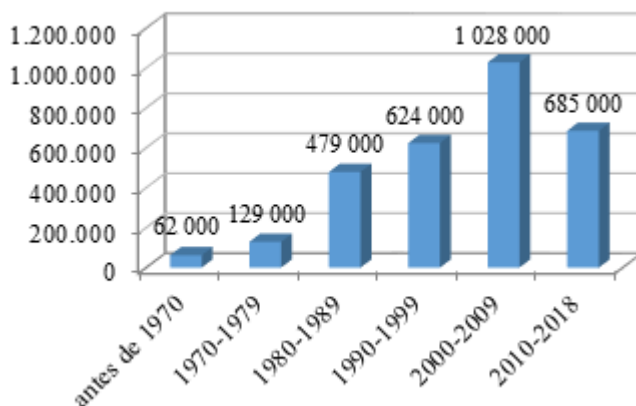
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<sup>9</sup> One result of this research are the 61 maps in the *Atlas Fonético Pluridimensional de Guatemala* (Utgård, unpublished), as well as part of the *Atlas Lingüístico de América Central* (ALAC), coordinated by M.Á. Quesada Pacheco.

<sup>10</sup> Hereafter, when necessary, the city or county of Los Angeles will also be referred to by the abbreviation LA.

<sup>11</sup> See note 13 below.

country (59,227,000<sup>12</sup>). A total of 58% of them are first generation (3,026,000), 35.8% are second generation (1,868,000) and 6.3% are third and subsequent generations (327,000).



Graph 1. *Population from Central America*<sup>13</sup>

Of these over 5 million inhabitants, it is estimated that 20% (1,044,209) are from Guatemala, the rest are mainly from Honduras and El Salvador. If we concentrate on the state of California, the number drops to a total of 332,737 individuals. If we look at the next level and focus on the County of Los Angeles, the numbers drop to 66,000.

## 1.2. Prosodic features of Guatemalan Spanish: Preliminary studies

In correlation with the lack of studies on this variety of Spanish, and from a geoproisodic perspective, we only have Katrine Utgård's research for her doctoral

<sup>12</sup> A total of 18% of the population of the USA (323,156,000).

<sup>13</sup> Graph created by the author from the data provided in Table 10. *Year of Entry of the Foreign-Born Population by Sex and Hispanic Origin Type: 2018*, calculated only on the first generation. Source: US Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2018. Internet release date: August 2019. <https://www.census.gov/content/census/en/data/tables/2018/demo/hispanic-origin/2018-cps.html>

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thesis.<sup>14</sup> Only one paper from this thesis has been published to date (Utgård, 2014), focused on the acoustic analysis of declarative and absolute interrogative sentences with paroxytone structure (*La cantante platica con paciencia* [the singer talks with patience]) within the area of the AMPER international project. This research was carried out in the five dialect areas into which the country can be divided (according to the data provided by Herrera, 1993; Lipski, 2005<sup>4</sup>[1996]; and that of its author after a language survey carried out expressly). Two survey points were selected in each dialect area (urban and rural): the central zone (Guatemala City and Chinautla), the western zone (Huehuetenango, Colotenango and Chiantla), eastern zone (Zapaca and Aldea de Palma, Río Hondo), the southern coastal zone (Retalhuleu and Nuevo San Carlos) and the Atlantic coastal zone (Puerto Barrios and Santo Tomás de Castilla). The ten informants who were surveyed were all female, monolingual speakers of Spanish, second generation and with a medium level of education (they had completed upper secondary school). The results obtained by Utgård<sup>15</sup> revealed that the intonation of Guatemalan Spanish follows the same constants as general Spanish, with declaratives in cadence and absolute interrogative sentences in anti-cadence. Therefore, Guatemalan Spanish is closer to Mexican intonation than to that of Central America and the Caribbean.

### 1.3. Methodology

Based on the above, we only selected female informants from the Guatemalan population resident in Los Angeles, so that we could compare our results with those obtained in Guatemala by Katrine Utgård. The data on Guatemalan Spanish of LA were obtained from speakers from Guatemala (four in total) who have been resident in this county for over 20 years, are first-generation immigrants, bilingual in Spanish and English and with a medium level of studies.<sup>16</sup> Given that the results reflect the same (similar and comparable) melodic constants, the data provided in

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<sup>14</sup> Thesis registered in the University of Bergen (Norway) and currently being developed as part of the Geoprosodic project. The thesis tutor is Professor Miguel Ángel Quesada Pacheco (University of Bergen), and the supervisors are Yolanda Congosto Martín (University of Seville) and Gjert Kristoffersen (University of Bergen). The thesis is entitled *Prosodic aspects of spoken Spanish in Guatemala: a dialectological study*.

<sup>15</sup> A detailed analysis of these results can be found in Section 3 of this article.

<sup>16</sup> To date, four informants have been analysed. We aim to expand the field of study to obtain information on women with a high level of education, monolingual Spanish women, women who are second- and third-generation immigrants, and men.

this paper correspond to informant AT71 (according to the code system established in AMPER-Spanish) from the municipality of San Sebastián in the Retalhuleu department. In her words, she feels that her Spanish has changed considerably over the years since her arrival in Los Angeles at the age of 19.

To carry out the research, we selected corpus 1 from the four corpuses designed in the international AMPER project. Corpus 1 is a fixed corpus obtained through the reading process. It was selected because it is the most appropriate for calculating the objective distances between speakers. Of the 126 phrases (in their three repetitions) with a broad focus analysed for each informant (63 declaratives and 63 absolute interrogatives), we chose for this study utterances without expansion with a simple subject–verb–object (SVO) structure.

For the acoustic analysis, the methodological guidelines developed in AMPER were followed, which have been widely disseminated in many previous papers.<sup>17</sup> Two programs were used for the instrumental analysis: Goldwave 4.25 for audio signal editing (segmentation, optimization and file labelling) and AMPER06, created in the Matlab environment for acoustic analysis (Fernández Planas, 2005; López Bobo *et al.*, 2007). The latter provides the F0 values for each vowel in three points of development: start, centre and end (in Hz and St), the average intensity (in dB) and the average duration (in ms), to generate a text file with quantitative data for each utterance, as well as the average of the three repetitions that are analysed. For the process of prosodic annotation, the intonation analysis model Sp\_ToBI was used (Estebas Vilaplana and Prieto Vives, 2008).<sup>18</sup> The proposal of pitch accents and boundary tones has a phonetic basis, for which the perceptual threshold was considered to be 1.5 semitones (Pamies Bertrán *et al.*, 2002).

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<sup>17</sup> As the most immediate reference, see Fernández Planas (2005). The website of the AMPER Spain and Latin American project, [http://stel3.ub.edu/labfon/amper/cast/amperespana\\_grupos.html](http://stel3.ub.edu/labfon/amper/cast/amperespana_grupos.html), provides links to all the websites of the over 30 teams involved in this international project, which contain information on many of the published studies.

<sup>18</sup> Updated versions of Sp\_ToBI are available for the intonation labelling (Hualde & Prieto, 2015; Hualde & Prieto, 2016; Prieto & Roseano [eds.], 2010). However, we considered that we should use the labelling that is currently used in the Geoprosodic project (Estebas Vilaplana and Prieto Vives, 2008), to avoid errors or confusion in the consultation or comparison of the results of this research and those of previous studies (including those cited in the paper Congosto Martín 2017, 2019).

## 2. ACOUSTIC ANALYSIS AND RESULTS

The utterances were grouped according to the accent structure that they share in the prenuclear zone, so that the speakers' melodic behaviour could be studied in depth. Three groups of phrases were established: those that have an oxytone, paroxytone and proparoxytone subject. Each group includes three types of utterances that have accent differences in the nuclear zone.

Once the melodic curves had been designed with the software, the pitch movements were defined by associating them with identifying prosodic labelling and drawing up the corresponding inventory of movements. This was then used to determine the underlying configurations or prosodic patterns.

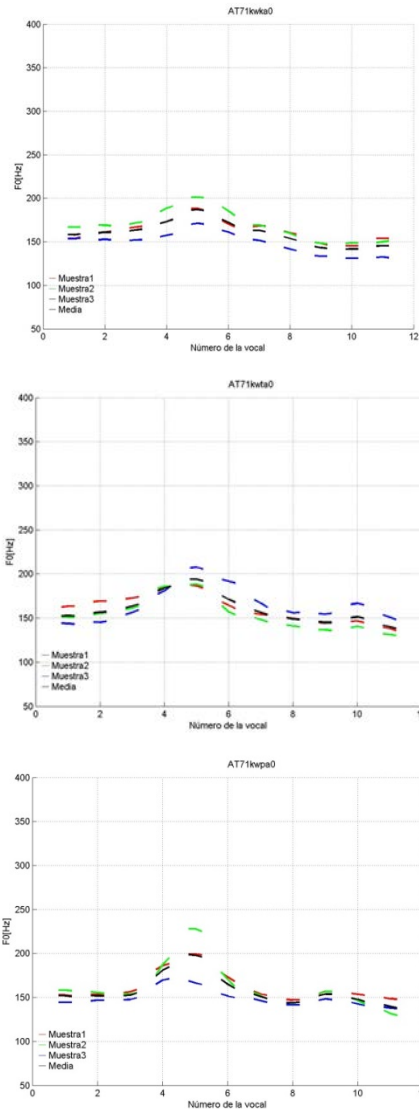
### 2.1. Declaratives

#### 2.1.1. *Phonetic description: pitch accents, boundary tones and pitch ranges*<sup>19</sup>

##### 2.1.1.1. Melodic contour of declaratives with an oxytone subject (O)

The intonation curves of declaratives with an oxytone subject (Figures 1–3) start slightly below the speaker's average tone (-0.5 St), and never surpass the perceptual threshold. There is an initial tone [%M] with phonetic variation [%MH] when the rise in tone occurs from the start of the curve progressively and continuously without prolonged maintenance of the initial average tone. The rise in tone culminates in a first and only pitch peak that always coincides with the start of the verb. Therefore, this is a rising bitonal pitch accent with a displaced F0 peak [L+>H\*]. The rise is greater in utterances with a proparoxytone (4.5 St) and paroxytone (4.1 St) ending than in the oxytone (2.9 St). Then, there is a gradual drop in tone until the end of the utterance, which we label with a low nuclear accent [L\*], followed by a monotonal boundary tone [L%] in the paroxytone and proparoxytone ending. The last tonic is always expressed, sometimes very subtly as in the oxytone ending (0.4 St), and in other cases in a slightly more significant way (0.7 St in the paroxytone ending and 1.1 St in the proparoxytone ending). However, this expression is not relevant perceptually as it does not surpass the threshold of 1.5 St. The fall in tone from the pitch peak to the end of the utterance is smaller in final oxytone words (4.8 St) than in final paroxytone and proparoxytone words (5.9 and 6 St, respectively).

<sup>19</sup> For greater speed and efficiency of reading, the following abbreviations are used in this paper in addition to the conventional abbreviations of the subject: O (oxytone), P (paroxytone), PP (proparoxytone), I (start), F (end) and P (peak). The values in the figures are given in Hz.



Figures 1–3. *Melodic curves of the utterances El saxofón se toca con obsesión/paciencia/pánico (The saxophone is played with obsession/patience/fear).*

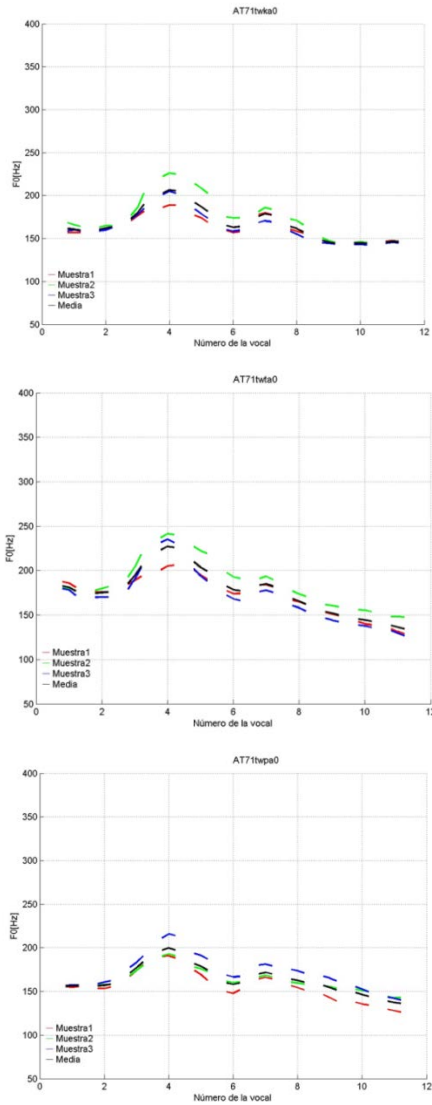
### 2.1.1.2. Melodic contour of declaratives with a paroxytone subject (P)

Curves with a paroxytone subject (Figures 4–6) start slightly above or below the speaker's average tone but always below the perceptual threshold (-0.5 and 0.6 St), as in the previous utterances. Therefore, the above considerations are maintained: there is an initial tone [%MH] or [%M], to which we add the configuration [%ML] when a slight fall is observed. Then, a rise in F0 (4 St) begins that again culminates in the post-tonic syllable of the first pitch accent.

This coincides with the end of the phonic word and at the boundary between the noun phrase and the verb phrase. Therefore, peak delay [L+>H\*] is again observed in all circumstances, regardless of the type of final accent. Then, a fall in tone begins until the tonic syllable of the verb, with a value equivalent to that found in the previous rise (4 St).

Therefore, the trough coincides with the speaker's base tone, and again rises to F0 in the post-tonic syllable of the verb (1.6 St in the oxytone ending, 0.6 St in the paroxytone ending and 1.5 St in the proparoxytone ending), to form an [L\*] accent or, if applicable, a low accent on the stressed syllable, followed by a rise in the post-tonic syllable [L\*+H].

Subsequently, the tone falls again until the end of the utterance. On this occasion, there is no alteration before the last tonic syllable in the utterance. Therefore, the prosodic annotation continues to be [L\*] or [L\*L%]. The fall in tone from the first maximum peak to the end of the utterance is greater in the paroxytone ending (9 St), followed by the proparoxytone (6.6 St) and the oxytone (6 St).



Figures 4–6. *Melodic curves of the utterances La guitarra se toca con obsesión/ paciencia/pánico (The guitar is played with obsession/patience/fear).*



### 2.1.1.3. Melodic curves of declaratives with a proparoxytone subject (PP)

In declarative sentences with a proparoxytone subject (Figures 7–9), the path of the F0 curve starts slightly below the average tone of the speaker, without surpassing the limits of the perceptual threshold (-1.2 ~ -0.08 St). We again consider it as [%MH], as subsequently a rise in tone occurs, in this case more abrupt than on previous occasions given the immediate presence of the tonic syllable.

This rise culminates in the post-post-tonic syllable of the first pitch accent, again at the end of the phonic word and at the syntactic boundary between the subject and the verb with significantly higher values (4.9 St in the oxytone ending, 6.6 St in the paroxytone ending and 5.9 St in the proparoxytone ending). Therefore, this is again a bitonal rising accent with a displaced F0 peak that we label as [L+><sub>i</sub>H\*].<sup>20</sup>

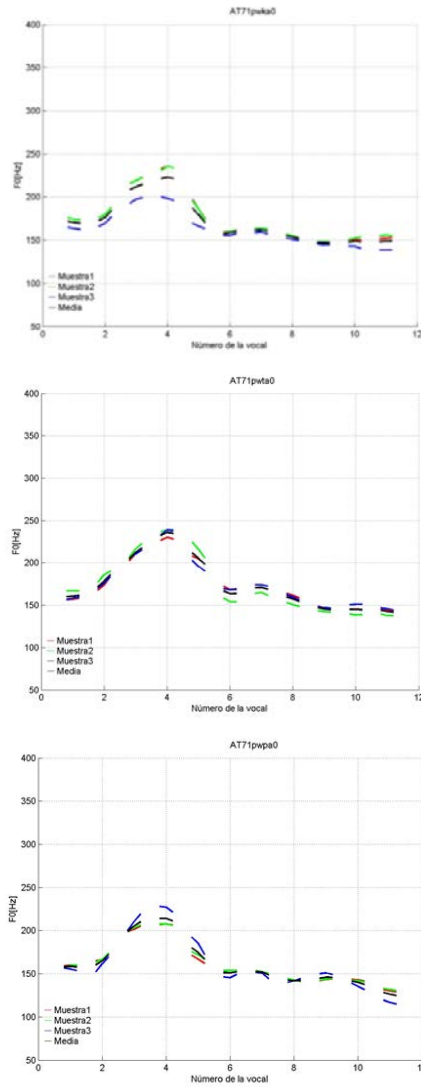
Then, there is a pronounced fall in tone to the tonic syllable of the second pitch accent [L\*] (5.8 St in the oxytone ending, 6.4 St in the paroxytone ending and 6 St in the proparoxytone ending), where it is slightly halted by a faint rise that occurs in the post-tonic syllable of the verb (0.7 St).

This moderates the fall, which becomes more gradual until the end of the utterance is reached. In the nuclear zone, the presence of the tonic syllable is expressed, but not perceptively (0.5 St in the proparoxytone ending).

Again, the fall in tone is maintained in the last section. According to the above, the nuclear configuration continues to be [L\*] or [L\*L%]. In terms of the pitch range, the fall in tone from the maximum peak to the end of the utterance is greater in the proparoxytone ending (9.3 St), followed by the paroxytone (8.8 St) and the oxytone (7 St).

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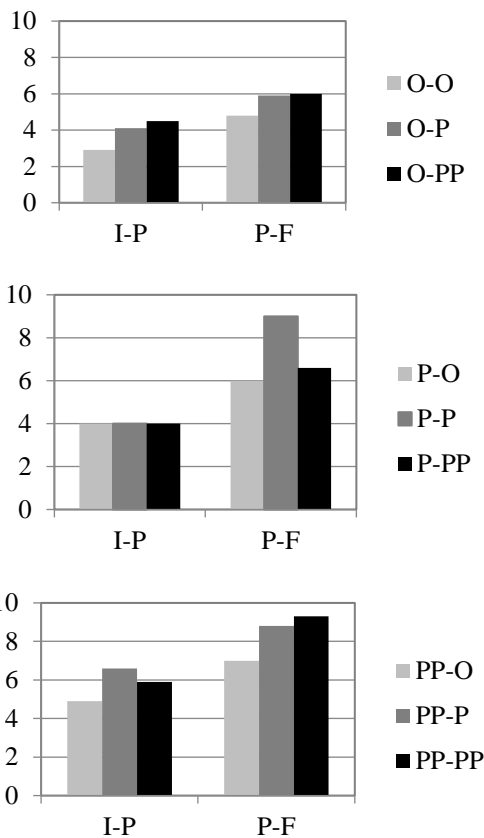
<sup>20</sup> We use the sign (<sub>i</sub>) not only to denote upstep between F0 peaks (Hualde 2003: 166), but also to indicate that in delayed peaks, the tone continues to rise to the post-post-tonic syllable. In other words, it has a rising progression in the two subsequent atonic syllables (unlike when the tone rises to the post-tonic syllable [L+>H\*] to then drop in the post-post-tonic).



Figures 7–9. *Melodic curves of the utterances El órgano se toca con obsesión/paciencia/pánico (The organ is played with obsession/patience/fear).*

2.1.1.4. Pitch range

The data obtained in the acoustic analysis show (see graphs 2–4<sup>21</sup>) that the oxytone accent in both subject and object entails rises (I-P) and falls (P-F) in tone that are less pronounced than the paroxytone or proparoxytone accent. In addition, the data confirm that utterances with a proparoxytone subject (PP-O/PP-P/PP-PP) generally have the greatest rises and falls in tone, at the start and end of utterances.



Graphs 2–4. *Declaratives. Pitch range: start (I) – peak (P)/peak (P) – end (F).*

<sup>21</sup> Graphs 2–4 reflect the differences in st (vertical axis).

### 2.1.2. Prosodic annotation

The table below (Table 1) summarises the phonetic interpretation of the pitch accents and boundary tones described above. As can be seen, the differences mainly occur in the prenuclear zone of the curve; a zone that is particularly sensitive to dialectal and sociolinguistic variation of the language. In the first pitch accent, the speakers vary between a rising pitch accent with a displaced peak, which is predominant when the subject is oxytone and paroxytone, and a rising accent with a displaced peak and rising progression (i) in the case of a proparoxytone subject. We also find variation in the second pitch accent. In this case, the variation is between a low monotonal pitch accent due to a progressive fall in F0 (in utterances with an oxytone and proparoxytone subject), and a low bitonal pitch accent with a rise in the post-tonic syllable (in the case of paroxytone subjects). The pitch accents at the end of the intonational phrase are [L\*] (with a final oxytone word) and [L\*L%] (with final paroxytone and proparoxytone words), in accordance with the general pattern of Spanish for this type of utterances.

Declaratives					
Accent	Initial tone %	First accent	Second accent	Nuclear accent	Final tone %
O-O	%MH	L+>H*	L*	L*	---
O-P	%MH	L+>H*	L*	L*	L%
O-PP	%M	L+>H*	L*	L*	L%
P-O	%MH	L+>H*	L*+H	L*	---
P-P	%ML	L+>H*	L*	L*	L%
P-PP	%M	L+>H*	L*+H	L*	L%
PP-O	%MH	L+> <sub>i</sub> H*	L*	L*	---
PP-P	%MH	L+> <sub>i</sub> H*	L*	L*	L%
PP-PP	%MH	L+> <sub>i</sub> H*	L*	L*	L%

Table 1. *Declaratives. Inventory of pitch accents and boundary tones.*

### 2.1.3. Melodic pattern and linguistic significance

If we establish the relationship between accent, syntactic structure and sentence mode, we can conclude that in the Guatemalan Spanish of LA the intonation curve of broad-focus declaratives without expansion follows the general pattern of Spanish: with a rise in tone up to a first peak, in this case always delayed and characteristic of pre-nuclear accents, followed by a gradual fall until the end of the utterance. This fall may be smooth, more abrupt or staggered, depending on the accent structure of the subject and object. The presence of the last tonic syllable does not alter the path (Figure 10).

Accent pattern:<sup>22</sup> L+>H\* [var. L+>H\*] / L\* [var. L\*+H] / L\* [var. L\*L%]

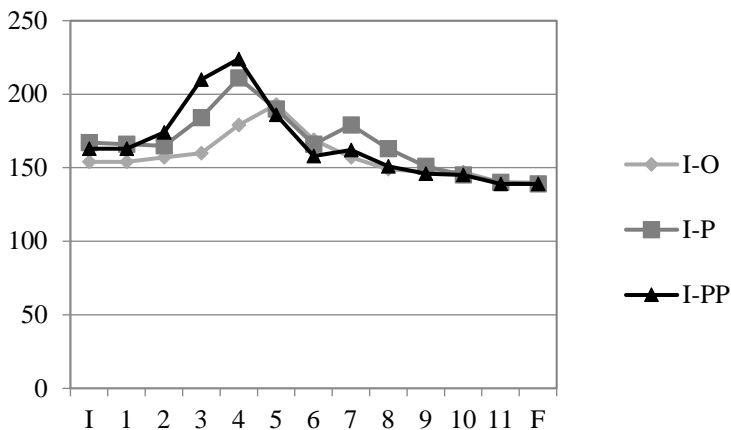


Figure 10. *Declaratives. Diagram of melodic curves according to initial accent (I): oxytone (O), paroxytone (P) or proparoxytone (PP).*

<sup>22</sup> From this diagram, all considerations relating to the initial boundary tones, given that these are only conceived phonetically.

## 2.2. Interrogative sentences

### 2.2.1. Phonetic description: pitch accents, boundary tones and pitch ranges

#### 2.2.1.1. Melodic contour of interrogatives with an oxytone subject (O)

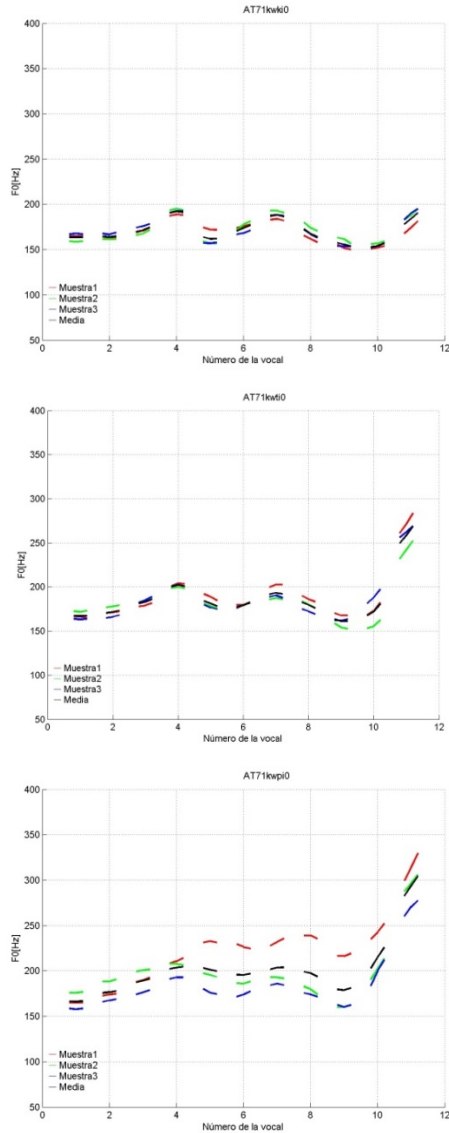
Interrogatives with an oxytone subject (Figures 11–13) always start below the speaker's average tone,<sup>23</sup> with an [%M] initial tone in oxytone endings and [%L] in paroxytones and proparoxytones, followed by a progressive rise of F0 that culminates in the tonic syllable of the utterance. Therefore, it is a rising pitch accent [L+H\*]. The greatest rise occurs in utterances with final proparoxytone (3.5 St) and paroxytone (3.3 St) words, and the smallest occurs in utterances with oxytone endings (2.8 St). However, the differences are minimum. Then the tone falls and rises again until the post-tonic syllable of the verb. In oxytone endings, the fall in tone causes a trough that coincides with the pre-tonic syllable of the verb (a fall of 3 St and a rise of 2.6 St).

Therefore, we can state that the accent is rising with a displaced peak [L+>H\*]. In the case of paroxytone endings, a fall in F0 also occurs, but is prolonged until the tonic syllable (a fall of 2.1 St and a rise of 1.3 St). Consequently, we consider that it is a low accent with a rise in the post-tonic syllable [L\*+H]. In proparoxytone endings, there is a slight undulating melodic movement between the tonic and post-tonic syllables, but it is below the perceptual threshold (a drop of 0.8 St and a rise of 0.7 St).

Therefore, this is an accent [H\*] that maintains the pitch height at the centre of the curve. After the post-tonic syllable of the verb, the melodic curve falls again in oxytone endings to the pre-tonic syllable (3.5 St), and then rises in the final tonic syllable (3.6 St). The result is a nuclear tone [L+H\*]. In paroxytone endings, the tone also falls to the pre-tonic syllable (3.1 St), and then rises in the tonic syllable (3.7 St). However, it continues to rise significantly in the post-tonic syllable (5.1 St). Therefore, we label it [L+H\*H%]. In proparoxytone endings, the tone falls to the tonic syllable (2.3 St) and then rises continuously in the final atonic syllables (9.3 St). Therefore, it is a [L\*+HH%] accent.

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<sup>23</sup> The distance gradually increases: it is smaller when the final accent is oxytone and greater when it is proparoxytone (-0.67 / -1.75 / -3.12 St, respectively).



Figures 11–13. *Melodic curves of the utterances ¿El saxofón se toca con obsesión/paciencia/pánico? (Is the saxophone played with obsession/patience/fear?).*

### 2.2.1.2. Melodic contour of interrogatives with a paroxytone subject (P)

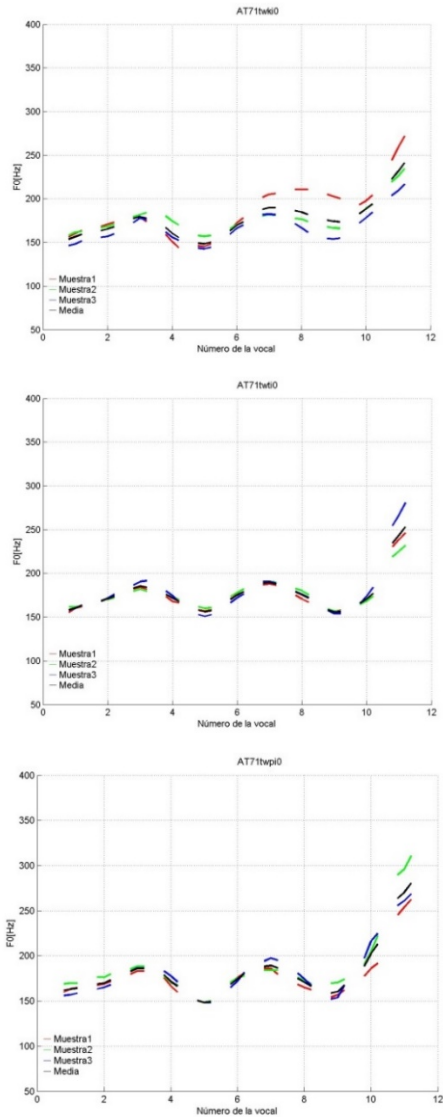
In statements with a paroxytone subject (Figures 14–16), the F0 curve starts its path below the speaker's average tone [%L], which is always above the perceptual threshold (-1.8 St). It then rises (2.4 St oxytone endings, 2.5 St paroxytone endings and 2.2 St proparoxytone endings) to the first tonic syllable of the utterance, to form in this way a first pitch accent [L+H\*]. Then, the tone falls to the pre-tonic syllable of the verb (3.3 St oxytone endings, 3 St paroxytone endings and 5 St proparoxytone endings). A new rise occurs that culminates in the post-tonic syllable (4.2 St oxytone endings, 3.4 St paroxytone endings and 4.2 St proparoxytone endings). This leads us to a second pitch accent with a displaced F0 peak [L+>H\*]. Subsequently, the tone falls again to the pre-pre-tonic syllable in oxytone endings (1.5 St), the pre-tonic in paroxytone endings (3.4 St) and the tonic in proparoxytone endings (2.9 St) from which a final rise occurs, which is smaller in oxytone endings (5.6 St) and greater in paroxytone (7.7 St) and proparoxytone (9.6 St) endings. This leads us to a pitch movement in the nuclear zone that is similar to that produced in statements with an oxytone subject: [L+H\*] / [L+H\*H%] / [L\*+HH%], respectively.

### 2.2.1.3. Melodic contour of interrogatives with a proparoxytone subject (PP)

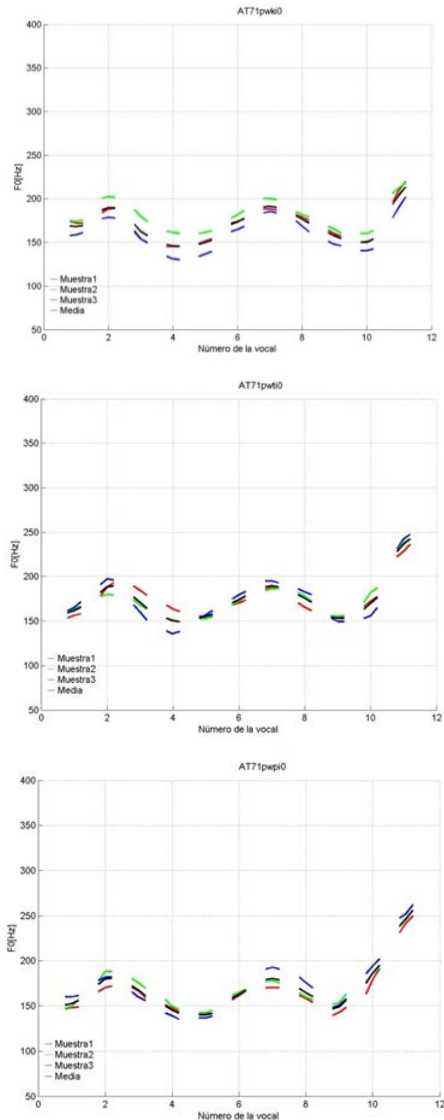
The intonation curves of this type of utterances (Figures 17–19) tend to start below the speaker's average tone [%L], and surpass the perceptual threshold, particularly in paroxytone (-1.5 St) and proparoxytone endings (-1,8 St). Then, an immediate rise of F0 occurs in the subsequent syllable: the tonic syllable of the first pitch accent. This rise is smaller in utterances with an oxytone ending (2 St) than in the two remaining types (3 St). In all cases, it is a rising accent [L+H\*]. Subsequently, F0 starts a fall (of 4.3 St on average) that culminates, apart from some exceptions,<sup>24</sup> in the post-post-tonic syllable, and then rises again (4.4 St on average) until the post-tonic syllable of the verb. Therefore, it is labelled as a rising accent with a displaced F0 peak [L+>H\*]. Then F0 falls again: in oxytone and paroxytone endings, up to the pre-tonic syllable (4.2 St and 3.7 St, respectively) and in proparoxytone endings up to the tonic syllable (3.3 St), to then start a last rise (in oxytone endings the rise is 6 St, in paroxytone endings it is 8 St and in proparoxytone endings it is 9.3 St). Therefore, the same accent patterns are repeated in the endings [L+H\*] / [L+H\*H%] / [L\*+HH%], respectively.

<sup>24</sup> In proparoxytone endings, this fall is sometimes prolonged until the first atonal syllable of the verb.





Figures 14–16. *Melodic curves of the utterances ¿La guitarra se toca con obsesión/paciencia/pánico? (Is the guitar played with obsession/patience/fear?).*



Figures 17–19. *Melodic curves of the utterances ¿El órgano se toca con obsesión / paciencia / pánico? (Is the organ played with obsession/patience/panic?).*

## 2.2.1.4. Pitch range

The data obtained from the acoustic analysis show (see Graphs 6–8 and Table 2) that the difference in values between both peaks (P1 and P2) are minimum (and in some cases non-existent) in all types of utterances and the perceptual threshold is never surpassed (from 0 to 0.9 St maximum).

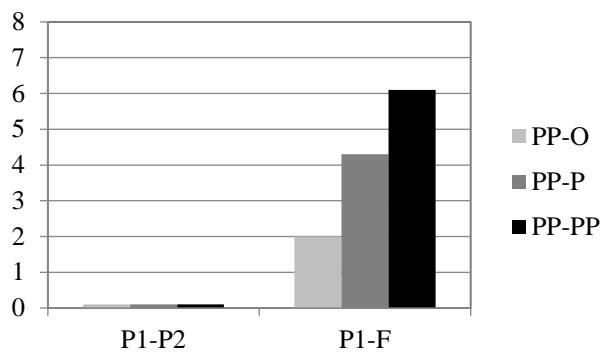
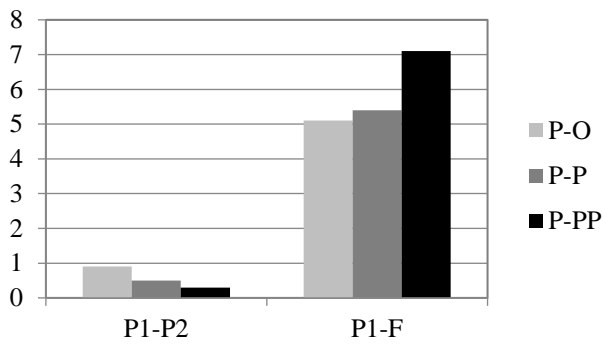
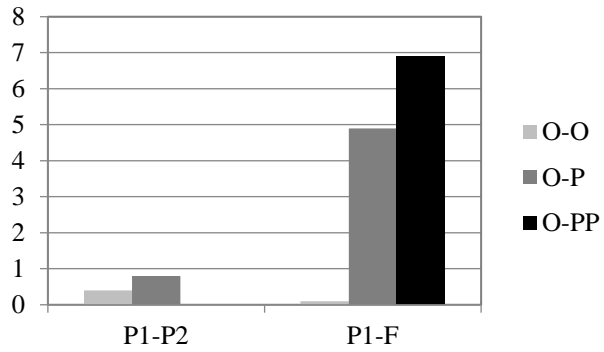
In contrast, the difference between the first peak and the final rise (P1 – F) is significant, and always lower in oxytone endings (2.4 St de media), followed by paroxytone endings (4.9 St on average) and proparoxytone endings (6.7 St on average).

However, in utterances with an O-O accent structure, the final height does not tend to surpass the previous height (Graph 6). In terms of the difference between the two troughs, the second tends to reach lower values than the first in utterances with an oxytone subject (1.4 St) and slightly higher values than the first in paroxytone (1.3 St) and proparoxytone subjects (0.8 St).

This indicates that the lowest point in the curve occurs in the nuclear zone when the subject is oxytone and in the prenuclear zone when it is paroxytone or proparoxytone.

Subject O	Ac-cent	P1-P2	P1-F	Subject P	Ac-cent	P1-P2	P1-F	Subject PP	Ac-cent	P1-P2	P1-F
	FO	0.4	0.1		FO	-0.9	-5.1		FO	-0.1	-2.0
FP	0.8	-4.9	FP	-0.5	-5.4	FP	-0.1	-4.3			
FPP	0	-6.9	FPP	-0.3	-7.1	FPP	-0.1	-6.1			

Table 2. Differences in St between P1 – P2 / P1 – F.



Graphs 6–8. Interrogative sentences. Pitch range: P1 – P2 / P1 – F.

### 2.2.2. Prosodic annotation

The table below again summarises the phonetic interpretation of the pitch accents and boundary tones described previously. In the interrogatives, the behaviour of the speakers is totally systematic at the start of the curve with a first rising bitonal pitch accent without peak displacement. In the central zone, a rising delayed pitch accent predominates. However, in utterances with an oxytone subject, the results reflect behaviour that varies between a rising bitonal pitch accent, a low bitonal pitch accent with a rise in the post-tonic syllable and the high monotonal pitch accent. In terms of the nucleus, the accent pattern corresponds systematically to that established for these types of utterances and highlights the accent differences between them. The only notable factor is again how, unlike in oxytone and paroxytone endings, in proparoxytone endings the final rise always coincides with the last tonic syllable of the utterance.

Interrogatives					
Accent	Initial tone %	First accent	Second accent	Nuclear accent	Final tone %
O-O	[%M]	[L+H*]	[L+>H*]	[L+H*]	---
O-P	[%L]	[L+H*]	[L*+H]	[L+H*]	[H%]
O-PP	[%L]	[L+H*]	[H*]	[L*+H]	[H%]
P-O	[%L]	[L+H*]	[L+>H*]	[L+H*]	---
P-P	[%L]	[L+H*]	[L+>H*]	[L+H*]	[H%]
P-PP	[%L]	[L+H*]	[L+>H*]	[L*+H]	[H%]
PP-O	[%M]	[L+H*]	[L+>H*]	[L+H*]	---
PP-P	[%L]	[L+H*]	[L+>H*]	[L+H*]	[H%]
PP-PP	[%L]	[L+H*]	[L+>H*]	[L*+H]	[H%]

Table 3. *Interrogatives. Inventory of pitch accents and boundary tones.*

### 1.3.1. Melodic pattern and linguistic significance

If we again establish the relationship between accent, syntactic structure and sentence mode, we reach the conclusion that in Guatemalan Spanish of LA the

intonation curve of absolute interrogative statements shows in the prenuclear zone two peaks of a similar pitch height with two troughs and a rising ending, which is lower in final oxytone words (5 St on average) and higher in paroxytones (8 St on average) and proparoxytones (9.4 St on average) (see Figure 20).

Accent diagram:<sup>25</sup>

- First pitch accent: L+H\*
- Second pitch accent: L+>H\* [var. L\*+H] [var. H\*]
- Third pitch accent: L+H\* (FO) - L+H\*H% (FP) - L\*+HH% (FPP)

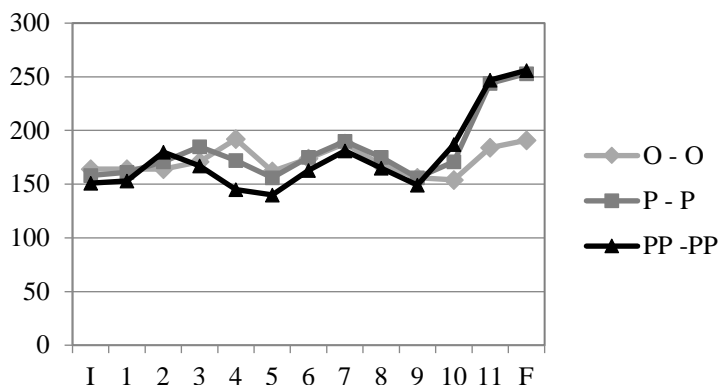


Figure 20. *Absolute interrogatives. Diagram of melodic curves according to the initial accent (I): oxytone (O), paroxytone (P) or proparoxytone (PP).*

### 2.3. Declaratives vs. interrogatives

If we carry out a process of abstraction, diminish particularism and try to obtain the resulting curve for each mode, we can make the following observations:

- 1) The intonation curve of declaratives follows the pattern of standard Spanish: with a first maximum peak followed by a continuous fall in tone (which could be more or less staggered in some cases).

<sup>25</sup> All considerations relating to initial boundary tones are eliminated from this diagram, as these are only conceived phonetically.

- 2) The intonation curve of interrogatives follows the same trend as that of speakers of Mexican origin who live in Los Angeles (Congosto Martín, 2019) and in other areas of America, for example, Bolivia (Congosto Martín, 2007 and 2011a), with two pitch peaks in the prenuclear zone, in this case of a similar height, and a rising end.

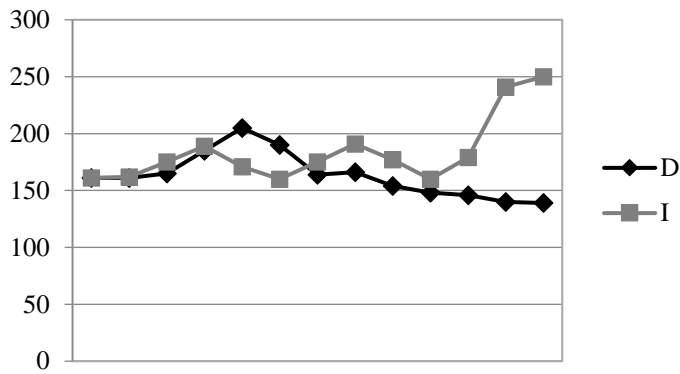


Figure 21. *Diagram of melodic curves. Declaratives (D) vs. absolute interrogatives (I) of the Guatemalan Spanish of Los Angeles.*

### 3. DECLARATIVES AND INTERROGATIVES OF THE GUATEMALAN SPANISH OF LOS ANGELES VS. GUATEMALA: COMPARATIVE STUDY<sup>26</sup>

#### 3.1. Declaratives

If we compare the intonation curves of utterances with a P-P accent structure (Figure 5) of the Guatemalan Spanish of LA and the Guatemalan Spanish of Guatemala (Figures 22–26), we can see that the differences affect both the prenuclear and nuclear zones. Compared to the intonation patterns described previously, those of Guatemalan Spanish have three peaks, correlating with the three pitch accents that the utterances contain.

<sup>26</sup> In line with the description in Section 1.3, the comparative study is limited to utterances with an SVO syntactical structure with three paroxytone pitch accents.

A detailed analysis of the figures reveals that:

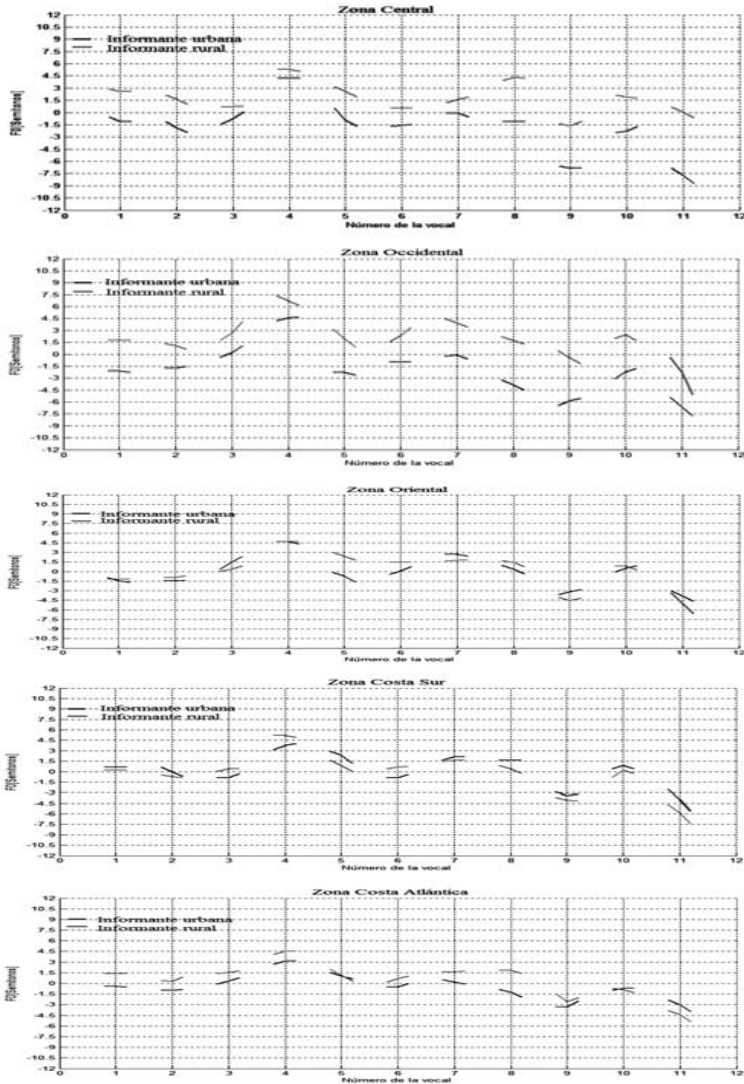
- The first peak always falls on the post-tonic syllable of the subject. Therefore, it is a rising accent with a displaced or delayed F0 peak [L+>H\*], in accordance with the pitch configuration of Spanish in general and Guatemalan Spanish of LA in particular, in the prenuclear zone.
- The second pitch peak has phonetic variation. Variant 1) Low accent [L\*]: on the Atlantic coast (urban area) and in the eastern zone (rural area). Variant 2) low accent on the stressed syllable with a rise in the post-tonic syllable [L\*+H]: in the central zone (urban area) and even up to the post-post-tonic syllable (rural area) and on the south coast (urban and rural areas).<sup>27</sup> Variant 3) rising accent with a post-tonic peak [L+>H\*]: in the western zone (rural and urban area), the eastern zone (urban area) and the Atlantic coast (rural area). In this case, the intonation pattern of (P-P) structures of Guatemalan Spanish of LA coincides mainly with variant 1: Guatemalan Spanish of the Atlantic coast, Puerto Barrios, in the Izabal department (urban zone); and the eastern zone, Aldea la Palma, Río Hondo, in Zapaca department (rural area). That is, it coincides with zones where, according to Lipski (2005<sup>4</sup>[1996]: 283), the “*popular Spanish* of Guatemala” is spoken, close to the borders with Honduras and El Salvador (Maps 2 and 3) where monolingual use of Spanish predominates, as all varieties have a low accent [L\*] (see Figure 5).<sup>28</sup>
- Finally, more significant differences can be seen in the nuclear accent, given that the rise that occurs on the last tonic syllable of the utterance. This forms a rising pitch accent with the trough aligned with the start of the syllable and the F0 peak aligned with the tonic syllable, followed by a fall in tone on the final atonal syllable [L+H\*L%], compared to the [L\*L%] pattern of Guatemalan Spanish of LA.

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<sup>27</sup> When the subsequent rise to the post-tonic or post-post-tonic syllable is above the perceptual threshold.

<sup>28</sup> However, the accent label [L\*+H] present in the central zone and the southern coast of Guatemala (zonas in which, according to Lipski (2005<sup>4</sup>[2016]) what he calls “Guatemalan Spanish” is spoken, a term that represents the “[...] monolingual Spanish spoken by the middle and upper class of Guatemala City and the surrounding uplands”) is not far from the Guatemalan declaratives of LA (see Table 1 and considering that informant AT71 who serves as a reference is from Retalhuleu department, on the south coast).





Figures 22–26. Intonation curves of declaratives with P – P accent structure La cantante platica con paciencia (The singer talks with patience) (figures taken by Utgård 2014: 394).

Table 4 shows the prosodic annotation.

Guatemalan Spanish (P-P declaratives)			
Accent structure	First accent	Second accent	Nuclear accent
Los Angeles	L+>H*	L*	L*L%
Guatemala	L+>H*	L* L*+H L+>H*	L+H*L%

Table 4. *Intonation pattern. Declaratives (P-P). Guatemalan Spanish LA vs. Guatemala.*

### 3.2. Interrogatives

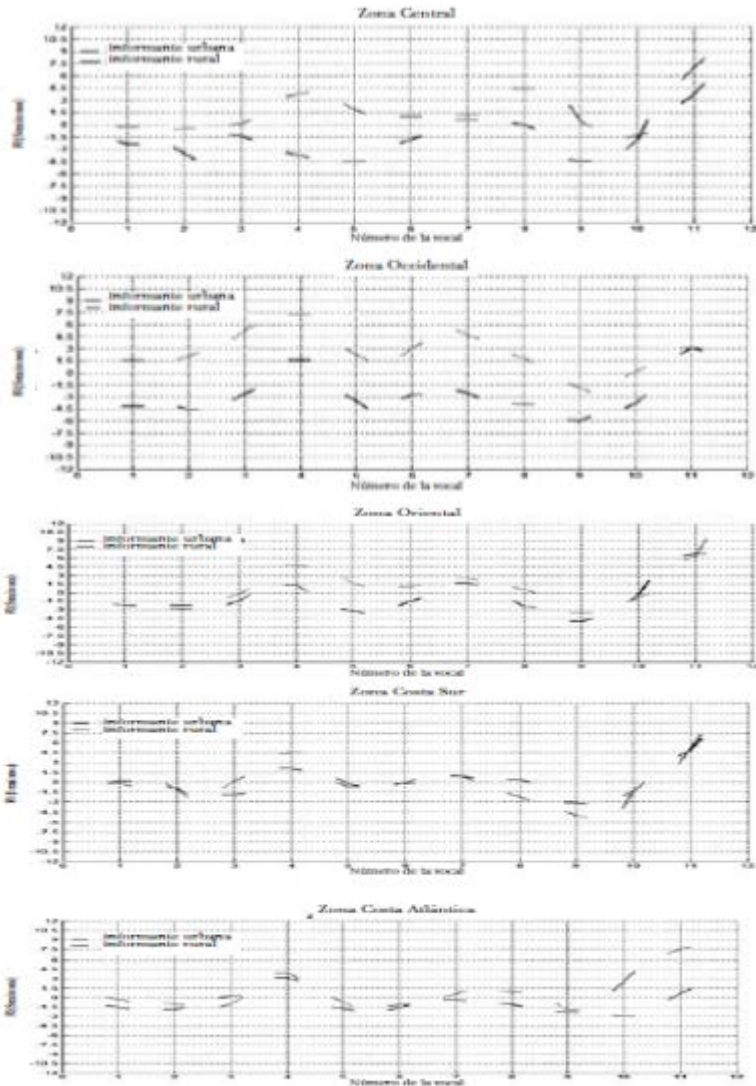
If we compare the intonation curves of interrogative statements with a P-P structure of LA (Figure 15) with those of informants who live in Guatemala (Figures 27–31), we can see that:

- In the first pitch accent, two different behaviours are seen: peak displacement in the post-tonic syllable in Guatemalan Spanish and an aligned peak in Guatemalan Spanish of LA.
- In the second pitch accent, the behaviour is similar in both geographic places: peak displacement to the post-tonic syllable.<sup>29</sup>
- In the nuclear accent, similar behaviour is detected: final in anti-cadence with its point of inflection, apart from some exceptions, in the pre-tonic syllable.

Guatemalan Spanish (P-P interrogatives)			
Accent structure	First accent	Second accent	Nuclear accent
Los Angeles	L+H*	L+>H*	L+H*H%
Guatemala	L+>H*	L+>H*	L+H*H%

Table 5. *Intonation pattern. Interrogatives (P - P). Guatemalan Spanish of LA vs. Guatemala.*

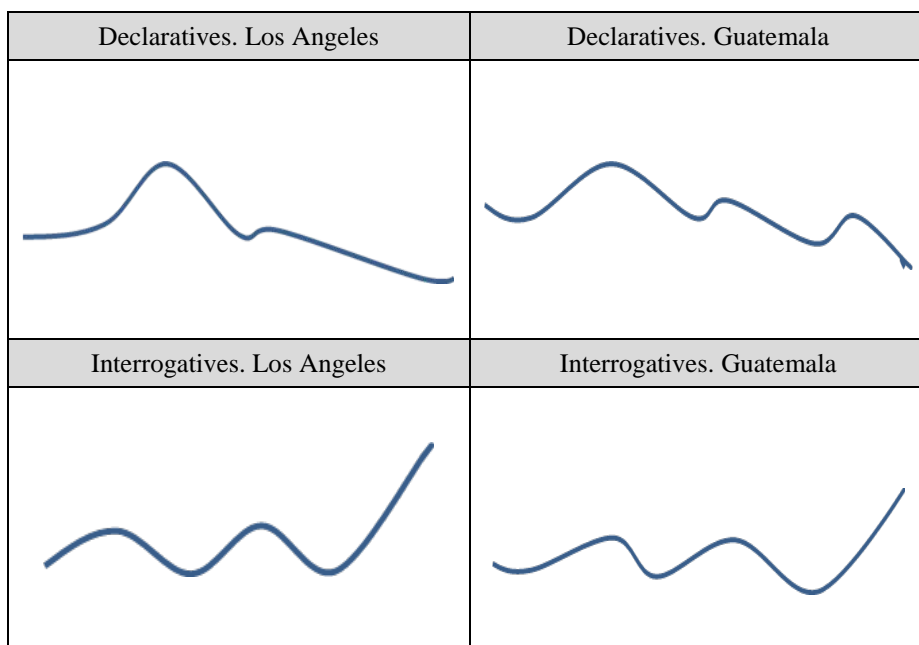
<sup>29</sup> In one case only, on the post-post-tonic syllable (central zone, rural area).



Figures 27–31. Intonation curves of interrogative statements with P – P accent structure *La cantante platica con paciencia* (*The singer talks with patience*) (figures taken by Utgård, 2014: 398).

### 3.3. Declarative sentences vs. interrogative sentences, Los Angeles-Guatemala

If we compare the melodic curves obtained in the two geographical areas using representative diagrams (Figures 32–35) for both types of utterances, we can observe in greater detail the aspects described in previous sections. The focus is on the degree of similarity and differences between the intonation of Spanish spoken by Guatemalans who have lived for over twenty years in contact with the Anglo-Saxon and Hispanic population (mainly of Mexican origin) in LA and that of those who live in Guatemala.



Figures 32–35. *Diagrams of pitch movements.*

## 4. CONCLUSION

After a process of abstraction to remove particularisms of a phonetic nature, the results of an acoustic analysis of declarative and absolute interrogative intonation of women of Guatemalan origin (by reading a text) led us to determine the following.

- Female intonation. Guatemalan Spanish of Los Angeles
  1. Initial accent. Again the curves of the types of utterance have different pitch movements: bitonal pitch accent with a displaced F0 peak /L+>H\*/ in declaratives and a bitonal pitch accent with an aligned F0 peak /L+H\*/ in interrogatives.
  2. Central accent. The differences persist: predomination of a low monotonal accent /L\*/ in declaratives, compared to a bitonal pitch accent with a displaced F0 peak /L+>H\*/ in interrogatives.
  3. Final accent. Both curves reflect the general nuclear pattern of Spanish: in declaratives, the pitch movement is always falling /L\*/ (FO), /L\*L%/ (FP-FPP); in interrogatives, it is always rising, which maintains what was confirmed in previous studies (Congosto Martín 2019): /L+H\*/ (FO); /L+H\*H%/ (FP); /L\*+HH%/ (FPP).
  4. In short, the melodic contours of declarative statements have a first maximum peak (associated with the first pitch accent) followed by a progressive fall in tone to the end of the utterance. The contours of absolute interrogatives have two peaks (associated with the first and second pitch accent) and a rising end (smaller in FO and greater in FP and FPP).

- Female intonation. Guatemalan Spanish of Los Angeles vs. Guatemala

From a partial comparison established between certain speakers from the same place who live in different countries, it can be concluded that:

1. The most significant differences are seen in declaratives. While the intonation of Guatemalans who live in LA has a melodic contour with a first initial peak followed by a continuous fall in tone until the end of the utterance, that of Guatemalan speakers who have not left Guatemala tends to have three pitch movements, in correlation with the accent structure of the utterance.
2. Despite these differences, declaratives show certain proximity between Guatemalan speakers of LA and those of the northeast and Atlantic zones of Guatemala, close to Honduras and El Salvador, and in some cases with

speakers of the southern zone. In all of these areas, a monolingual Spanish population predominates.

3. Apart from differences in whether there is a delay in the first pitch accent, all the curves for interrogatives follow the same pattern, that of standard Spanish, with an end in anti-cadence.

From the perspective of dialect, beyond the features that were found and the limitations due to the partial comparative study that was carried out, we can reach the conclusion that:

1. In declaratives, the Guatemalan intonation of Los Angeles is close to that of areas of Guatemala where the monolingual use of Spanish is predominant (whether it is *popular Spanish* in the Atlantic and eastern zones or *Spanish of the middle and upper class* in Guatemala City and the south, which is perhaps the least marked).
2. In interrogatives, the Guatemalan intonation of Los Angeles and Guatemala differs from intonation patterns registered in other varieties of Central American and Caribbean Spanish, such as that of Costa Rica (Congosto Martín 2009, 2011a) and Cuba (Dorta 2018) with falling or circumflex endings. Instead, it is closer to the intonation pattern of Mexican Spanish, from Mexico and LA (Congosto Martín 2011b, 2017, 2019), in terms of the rising nuclear zone and the prenuclear zone.

As stated at the start of this paper, the results obtained in this and similar research are derived from reading studies. Clearly, other less controlled forms of production could lead to different intonation characteristics (Face 2003). However, we will keep this assumption for future studies, when we will work with Corpus 2 (induced), 3 (map-task) and 4 (spontaneous) of AMPER and have reliable data from the same informants in different communication situations.

*ACKNOWLEDGEMENTS: This study is part of the research that is being carried out in the framework of the Geoprosodic project, attached to the National Programme for Fostering Excellence in Scientific and Technical Research – State Subprogramme of Knowledge Generation of the Spanish Government’s Ministry of Economy and Competitiveness, Spanish State Research Agency, within the National Research and Development Plan (2016-2019, 2015 call). Ref.: FFI2015-68508, led by the author of this paper as principal investigator. Equally, we want to thank the two anonymous evaluators for their comments and suggestions, as well as the journal Estudios de Fonética Experimental for providing the opportunity to disseminate the results of this research.*

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