

## Revisiting Argentine Spanish intonation: Córdoba and San Luis

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**ABSTRACT:** Pretonic lengthening has been reported as the most salient characteristic of Córdoba Spanish (Lang-Rigal 2014; Lenardón 2017). If the relative duration of the pretonic to the tonic is a cue to stress in Spanish (Ortega & Prieto 2011; Hualde 2015), it is worth exploring what the cues are in a variety in which pretonic syllables are longer than tonic ones. I analyze the production of oxytones, bi- and trisyllabic paroxytones and proparoxytones by six speakers from Córdoba and three from the neighbouring province of San Luis. An analysis of relative duration and intensity, as well as pitch accent types, revealed that pretonic lengthening was more prominent in and near the capital of Córdoba than in the rest of the province but was also attested in San Luis. Consistent with previous studies (Requena *et al.* 2013; Lang-Rigal 2014), participants from Córdoba showed a tendency to align the  $f_0$  peak within the stressed syllable but varied in the alignment of the peak depending on the type of word and the location. Overall results support the existence of a geographical continuum in the use of relative duration of tonic, pretonic and posttonic syllables (Vidal de Battini 1964) and reveal the need of more systematic explorations of the correlate of stress in different word types and across Argentine varieties.

**KEYWORDS:** Córdoba Spanish; Argentine Spanish; stress; acoustic correlates of stress; duration.

### 1. Introduction

This contribution is conceived as a homework, which attempts to answer a question that José Ignacio asked me a short time ago and that we are hoping to systematically investigate in the future. The question has to do with the nature of stress and

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intonation in the Spanish spoken in my native province: Córdoba (Argentina). Why was José Ignacio intrigued by Córdoba Spanish? Because, in this variety, pretonic vowels are longer than tonic ones (e.g., [pro:'βle.ma] 'problem'), and this lengthened vowel is described and indeed perceived as *the* characteristic that allows all other Argentinians to recognize the *tonada* (Lang-Rigal 2014; Lenardón 2017). If it is true that a defining characteristic of Spanish stress is that "la tónica suele ser más larga que las pretónicas" ['tonic vowels tend to be longer than pretonic ones'] (Hualde 2015: 251), what happens in a variety in which the syllable that is lengthened is the pretonic? Moreover, which are the cues to stress in words that do not have a pretonic, such as bisyllabic paroxytone words?

As it will be discussed in the next section, pretonic lengthening has been documented in literary (Mansilla 1870) and linguistic works both from an auditory (Fontanella de Weinberg 1971; Vidal de Battini 1949, 1964) and an experimental perspective. However, little is known about the acoustic cues to lexical stress and about how stress interacts with intonation. There is some ambiguity even regarding the nature of pretonic lengthening. Is the *tonada* a lexical (Yorio 1973) or a purely post-lexical phenomenon, as the term *tonada* seems to imply? Is it systematic (i.e., all pre-tonic syllables are lengthened) or is it variable? Using a corpus collected for the *Linguistic Atlas of Latin America* (Alvar & Quilis 1984), I will address some of these questions by exploring the prosody of isolated read words that differ in their stress patterns (i.e., oxytones, paroxytones and proparoxytones) and in the presence vs. absence of pretonic syllables (paroxytones only), as illustrated in (1a, b).

- (1) a. Stress patterns under study:  
 Oxytones: [a.'βril] 'April'  
 Paroxytones: ['ka.sa] 'house'  
 Proparoxytones: ['par.pa.ðo] 'eyelid'  
 b. Types of paroxytones:  
 No pretonic syllable: ['ka.sa]  
 One pretonic syllable: [sa.'pa.to] 'shoe'

Since it is not clear whether pretonic lengthening is restricted to the capital or present in the whole province (e.g., Catinelli 1985; Lenardón 2017), I will analyze recordings gathered in the North (Deán Funes), center (Córdoba) and South (Laboulaye, Villa María) of Córdoba. Moreover, since it has been proposed that this peculiar behaviour of pretonic syllables is part of a geographical continuum (Vidal de Battini 1949, 1964) in which duration may affect the tonic syllable (Buenos Aires), the posttonic (San Juan and Mendoza) or the pretonic (Córdoba), I will analyze speech samples collected in two locations in San Luis, which is the province immediately to the West of Córdoba and to the East of Mendoza and San Juan (Figure 1). This would allow us to compare this new data with previous descriptions of Buenos Aires (Colantoni 2011; Gabriel *et al.* 2010, 2013) and San Juan (Colantoni 2011) and to understand better whether duration as a cue to stress works differently in these varieties.

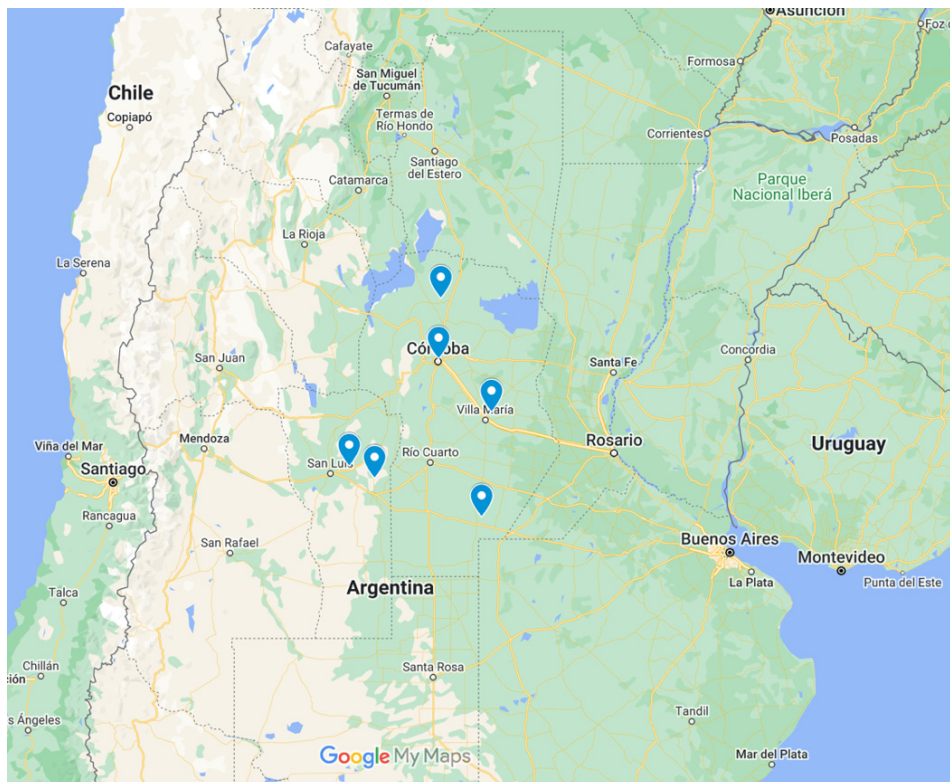


Figure 1

Map of central Argentina indicating the locations under study  
(Google, My maps)

To begin this research path, I will concentrate on the analysis of relative duration, and to a lesser extent relative intensity and pitch accent types. I will explore two alternative hypotheses. The first hypothesis is that pretonic lengthening is the result of a postlexical secondary stress, which resembles the emphatic stress discussed by Hualde (2007), only in the sense that a secondary prominence would be possible in the immediate pretonic syllable. I will consider that this hypothesis is supported if lengthening is restricted to pretonic syllables in oxytone and trisyllabic paroxytone words. The alternative hypothesis is that duration functions as an auto segment, i.e., that in Córdoba Spanish there is a constraint to lengthen the pretonic syllable, and when not available, the tonic syllable becomes longer than in other Spanish varieties. This hypothesis would be supported both if the pretonic/tonic ratio is equal or greater than 1, and if the posttonic/tonic ratio is larger than the one observed in other Spanish-speaking areas. In the rest of the chapter, I will review the findings of previous work on stress and intonation in central and Western Argentine Spanish. After that, I will present the methodology and the results of the analysis of a small

corpus of read speech. I will conclude by summarizing the findings and outlining the paths to future work.

## 2. The prosody of Córdoba and San Luis Spanish

### 2.1. Lexical stress and intonation

Research on the acoustic correlates of Spanish stress has explored the role of fundamental frequency, duration, intensity and, to a lesser extent, spectral tilt. Although there is some disagreement about the relative weight of these cues (e.g., Quilis 1981: 327-332), experimental work shows that relative duration is a reliable cue to stress (Ortega Llebaria & Prieto 2011). The generalization that stressed syllables are longer than pretonic ones (Hualde 2015) confirms Navarro Tomás' (1970: § 177-178) earlier observations that stressed syllables, although variable in length, are consistently longer than pretonic and posttonic syllables in word-internal position. Among the factors affecting the relative duration of stressed syllables, Navarro Tomás includes the type of accentual pattern (oxytone words ending in open syllables are the longest ones; accented vowels in proparoxytone words are the shortest) and the nature of accented syllables (open syllables and those ending in consonants different from /l, n/ tend to be relatively longer). Unstressed vowels do not differ systematically in length, except for those in word-final position, which are similar in length to stressed vowels in open syllables in paroxytone words. Although there is consensus that tonic vowels are relatively longer than pretonic ones, studies differ regarding the contexts and type of stressed words for which relative duration has been measured. For example, Ortega Llebaria and Prieto (2011) found that the tonic/posttonic ratios for paroxytone words are close to 1 for Peninsular Spanish. They also found that final stressed vowels in oxytone words are consistently longer than pretonic vowels, which, in both cases coincides with Navarro Tomás' findings. Delattre (1969: 75), instead, discusses the stressed/unstressed syllable ratio using data obtained from Spanish speakers of different varieties. He found that stressed syllables are 11% longer than unstressed ones, and stressed vowels are on average 5-6% longer than unstressed ones. Thus, for the purpose of our study, we will assume that in other Spanish varieties, tonic vowels are longer than pretonic ones (even pretonic vowels in word initial position; see Navarro Tomás 1970: § 178).

As concerns the specific characteristics of the *tonada*, very few points are clear. First, it is not clear whether the *tonada* is a lexical or a postlexical phenomenon, and how lexical stress interacts with sentence intonation. Most previous studies implicitly assume that pretonic lengthening applies at the lexical level. To my knowledge, Yorio (1973) is the only author who explicitly claimed that pretonic lengthening is restricted to the lexical domain, albeit with some exceptions; namely some pretonic prepositions such as *a* 'to' or *para* 'for', may lengthen (e.g., [a:] *mi* 'to me'; see Yorio 1973: 74). Berry (2015) echoes this assumption.

Researchers do agree that the *tonada* is characterized by duration and pitch. Based on auditory analyses of Córdoba speech, Vidal de Battini (1964), Fontanella de Weinberg (1971) and Yorio (1973) suggest that lengthening is accompanied by a rising pitch movement from the pretonic to the tonic. Experimental work confirms

this claim. Lang Rigal (2014) and Requena *et al.* (2013) show that there is an early peak aligned within the stressed syllable, and a low tone associated with the pretonic syllable. Additionally, Berry (2015) found that, when there is pretonic lengthening, the pitch range expands. Very little is known about the role of other acoustic cues, such as intensity. Catinelli (1985) suggests that intensity also plays a role, and that the lengthened pretonic is higher in intensity than the tonic syllable. This claim, however, has not been tested experimentally.

If pretonic lengthening is a lexical phenomenon, the next question is what happens to words that have no pretonic syllables available to lengthen. Both logical options have been proposed in previous research, with claims that the *tonada* does not apply to words without a pretonic (Yorio 1973) or that it does apply (Fontanella de Weinberg 1971).

No experimental work so far has tested whether pretonic lengthening triggers confusion in perception in cases of minimal pairs (e.g., [pa:pa] 'dad' vs. ['pa.pa] 'potato), either to speakers from Córdoba or from other Spanish-speaking regions, which would be expected if there were stress shift, as Malmberg (1950) claims. Other authors, such as Vidal de Battini (1964: 148), talk about *dislocación acentual* ('stress dislocation'), which she seems to treat as a synonym of secondary stress: "El contraste de los dos acentos en las palabras agudas, el léxico y el secundario, dan mayor realce a esta particularidad de la entonación cordobesa [...]" (1964: 148). Linguists who are native speakers of the dialect (Yorio 1973) disagree, however, regarding the existence of a stress shift, an idea that I support, since I have not witnessed examples of misunderstandings between speakers from Córdoba and other parts of Argentina. This, however, remains an empirical question.

Experimental research has revealed, though, that pretonic lengthening is the most important socioindexical cue to identify a speaker as native to Córdoba. Lang-Rigal's dissertation (2014) examined how easily speakers from Córdoba were identified by other Argentinians in comparison to those from Buenos Aires or Tucumán, and to which extent pretonic lengthening vs. other cues (i.e., pitch) were relevant for this identification. She found that speakers from Córdoba were identified as such with high accuracy and that pretonic lengthening was the most important cue for successful identification. Moreover, even manipulated speech samples from Buenos Aires speakers were identified as coming from Córdoba when the pretonic syllable was lengthened. These findings are consistent with Lenardón's (2017), who also reported better identification of Córdoba than Buenos Aires dialects, and that speakers from Córdoba are more accurately identified as such when pretonic lengthening occurs in nuclear than in prenuclear position.

This takes us to the last topic that research on the *tonada* has investigated, namely the interaction of pretonic lengthening with position in the phrase. The interest in this topic comes from Fontanella de Weinberg's (1971) observation that phrasal prominence played a role in pretonic lengthening. Paraphrasing Fontanella's use of the concept of *macrosegment*, the claim is that lengthening takes place only in nuclear positions in the IP. This claim has been tested by recent experimental work, which has revealed that the *tonada* is attested in both prenuclear and nuclear position in the IP (Berry 2015; Lenardón 2017), but it is more perceptually salient in the latter (Lenardón 2017). Berry (2015) analyzed the role of duration and pitch in

paroxytone words with one or two pretonic syllables in two positions in the phrase. He found that the *tonada* is cued both by durational changes and tonal changes (the pitch range expands when the pretonic is lengthened) in interaction with the position in the phrase (the tonic/pretonic ratio is higher in initial than in final position).

Although the prosody of Córdoba Spanish has been investigated, very little is known about the prosodic characteristics of the Spanish spoken in San Luis, and most of what is known comes from Vidal de Battini's (1949) work. According to the author, the main characteristic of the intonation of the center of the province or the *tonada puntana* is a lengthening of the pretonic syllable (as in Córdoba) with an additional lengthening of the tonic vowel. She claims (1949: 22-23) that lexical stress is cued by both higher intensity and a longer vowel, which gives the impression of a geminated vowel. She later adds (Vidal de Battini 1964: 147) that San Luis intonation also differs from Córdoba's in that the tonic vowel has a higher pitch.

Although previous research does not offer systematic information about words with different stress patterns and the role of some acoustic variables, it does raise the point that sociolinguistic (area, age, gender) and contextual (read vs. semi-spontaneous speech) variables do affect the realization of the *tonada*, as we will see in the next section.

## 2.2. Variability in the realization of the *tonada*

One of the earliest documentations of the *tonada* is found in the work of L. V. Mansilla (1870), *Una excursión a los indios ranqueles*. Mansilla, who led the expedition to the Ranqueles, a Mapuche tribe that lived in the land south of Río Cuarto, had a deep knowledge of the language spoken in the area. This is how he reproduces his interaction with a character who was coming from the "sierras" (mountains) in Córdoba:

Como usía quiera — Contestó el *Cautivo* con esa tonada cordobesa que consiste en un pequeño secreto, como lo puede ver el curioso lector o lectora, en cargar la pronunciación sobre las letras acentuadas y prolongar lo más posible la vocal o primera letra. (Mansilla 1870: 129)

This quote suggests, first, that the *tonada* was already a well-known feature of Córdoba Spanish. Second, it tells us that the speech of this character was different from the one observed in southern Córdoba, where Mansilla's camp was located, since he makes no similar comments about the speech of any other character in the text. Thus, we can conclude that the *tonada* was not equally present in the whole province in Mansilla's times, which is consistent with Catinelli's (1985) observation that the *tonada* is more prominent around the capital than in the rest of the province. Vidal de Battini (1964: 139), however, assumes that the *tonada* is a characteristic of the whole province, whose intonation differs from the *tonada puntana* (San Luis) and the *tonada cuyana* (San Juan and Mendoza). It is interesting to point out, though, that in her earlier work (Vidal de Battini 1949: 27), these three dialectal regions were grouped into one and that differences between these three prov-

inces were considered gradient. In a more recent work, Acosta (2021) proposes to reclassify San Luis as a transitional zone, since its intonation shares some features with the varieties spoken in Córdoba, San Juan and Mendoza. Lenardón (2017) presents the most comprehensive discussion of the extension and variation of the *tonada* in the province of Córdoba. In her dissertation, she reproduces a study conducted by a provincial newspaper, which reveals that the area where the *tonada* is more prominent has the capital as its epicenter (see Lenardón 2017:20). Around the capital, extending to the North and the South of the province, there is an area with a less prominent *tonada*. Finally, to the South and to the Southeast of the province there appears to be no *tonada* at all. As such, of the locations included here, we would expect to find no *tonada* in Laboulaye (Southeast), some *tonada* in Deán Funes (North) and the most prominent features of the *tonada* in Villa María and the city of Córdoba.

Geographical factors, however, interact with age, gender, and social class. It has been suggested (Berry 2015) that the extension of the *tonada* is a change in progress, which is consistent with my experience as a speaker of a Southern variety (i.e., no *tonada* in my grandparents; very little in my parents' generation and pervasive *tonada* in my generation and younger). Mixed results have been found for the variable "gender", with Berry (2015) showing that pretonic lengthening is more prominent in male than female speakers and Lenardón (2017) suggesting that differences are not significant. Features of the *tonada* appear to be more prominent in lower social classes (Lenardón 2017), albeit there are positive attitudes towards the *tonada* in the province (e.g., Catinelli 1985) and in the whole country (Lang Rigal 2014).

One final variable that affect the realization of the *tonada* is style. Yorio (1973), based on the comparison of read and conversational styles, found that the *tonada* is not present in read speech. Berry (2015), who included elicited speech and spontaneous dialogues, found no differences when comparing styles.

Once again, less is known about the extension of the *tonada puntana* and most of the information comes from Vidal de Battini's research, who in her earlier work (1949: 21) identifies three different intonations in the province. In the South, the intonation resembles the one from Buenos Aires and Southern Argentina, although she observed differences, especially in the rhythm. The central region is the locus of the *tonada puntana*, where we observe a lengthening of the pretonic and the tonic. Finally, the North of the province resembles the North of the country, where she reports a lengthening of the ante-pretonic. Since all our speakers come from the central region, we should expect to see the characteristics reported by Vidal de Battini.

### 3. Methods

The data was obtained from 10 speakers (see Table 1) who were born and raised in the locations under study, as stipulated in the project (see Alvar & Quilis 1984). All speakers had secondary education and worked either in the public administration or in small businesses. As shown in Table 1, the sample, however, is not balanced either in terms of gender or age.

**Table 1**  
Participants in the study

Participant	Gender	Town	Province	Age
C	Female	Córdoba	Córdoba	23
DFF	Female	Deán Funes	Córdoba	45
DFM	Male	Deán Funes	Córdoba	62
LF	Female	Laboulaye	Córdoba	48
LM	Male	Laboulaye	Córdoba	42
VMF	Female	Villa María	Córdoba	60
VMM	Male	Villa María	Córdoba	38
SL	Male	San Luis	San Luis	58
MERF	Female	Villa Mercedes	San Luis	34
MERM	Male	Villa Mercedes	San Luis	43

Participants were asked to answer a relatively long questionnaire, that included questions about different semantic fields (e.g., animals, body parts, games, and sports), a reading task and a grammaticality judgement task. Interviews lasted for approximately two hours. For the present study, stimuli were selected from the reading task and included oxytone words (O), paroxytone words with (P1) and without a pretonic syllable (P0) and proparoxytone (PP) words. At least five tokens per category were included for each participant (N = 323), except for the participant from San Luis, for which it was only possible to extract one proparoxytone word. When selecting the words, tokens with either underlying (*peine* ‘comb’) or phonetic ([ˈkwe.te] instead of *coheté* ‘rocket’) complex nuclei were excluded. All the vowels analyzed were in open syllables, except for oxytone words, which were all in closed syllables (*abril* ‘April’). All oxytone words were bisyllabic. As mentioned, two types of paroxytone words were included, i.e., bisyllabic words, such as *casa* ‘house’, and trisyllabic words, such as *zapato* ‘shoe’. Except for three tokens of the word *Atlántico* ‘Atlantic’, the stressed syllable in all proparoxytonic words was the first one.

Data were collected in the locations under study by the author between 1995-1997 using a tape recorder and a lavalier microphone. All recordings took place, when possible, in a quiet room.

Target words were labeled, and automatically segmented using *Praat*, version 6.1.54 (Boersma & Weenink 2022). Segmentation was manually checked. F1 trajectories were used to select the onset (F1 rise) and offset (F1 fall) of the vowel. Two acoustic parameters will be analyzed here: duration and intensity. Pretonic/tonic and posttonic/tonic duration and intensity ratios were computed for the relevant vowels in each word. Finally, pitch accents were manually labeled using the Spanish ToBI system (Elvira-García *et al.* 2016; Hualde & Prieto 2015).



4. Results

4.1. Duration

Figure 2 displays the results of the pretonic/tonic ratio by participant grouped by province. A comparison of the results obtained from Córdoba (left) and San Luis (right) shows that none of the participants from San Luis have a ratio that is equal or higher than 1, suggesting that pretonic syllables are shorter than tonic ones. Among the participants from Córdoba, we also see that the tendency is not to have an overtly long pretonic, such as the values obtained in elicited experimental speech (Berry 2015) or in narratives (Colantoni 2011). We do observe, however, that the participant from the capital displays ratios that are close (oxytones) or higher than 1 (paroxytones). This is also the case for the female participants from Deán Funes and the male participant from Villa María (see Figure 3).

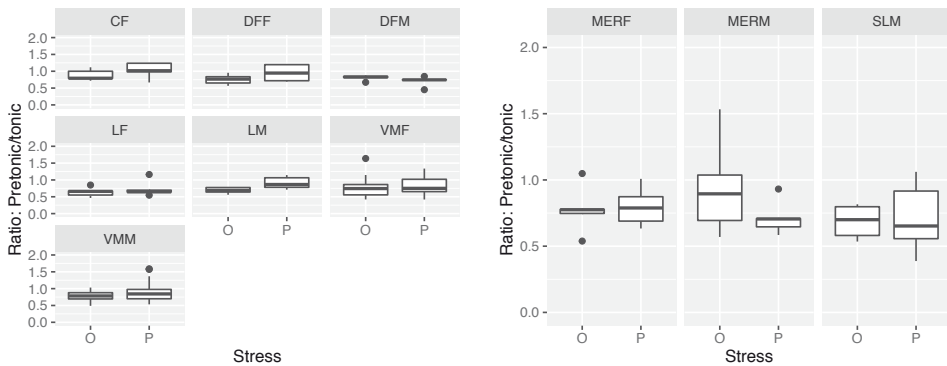


Figure 2

Pretonic/tonic duration ratio by participant.

Left: participants from Córdoba; right: participants from San Luis.

Note: O = oxytones; P = paroxytones with a pretonic syllable

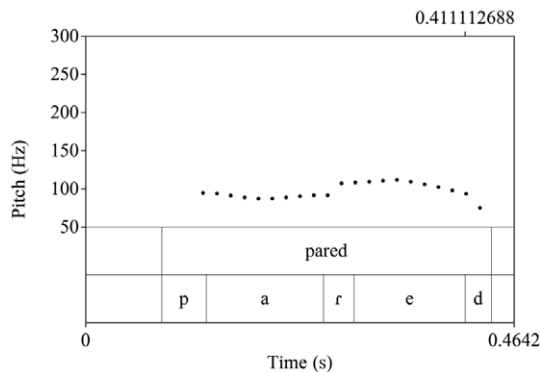
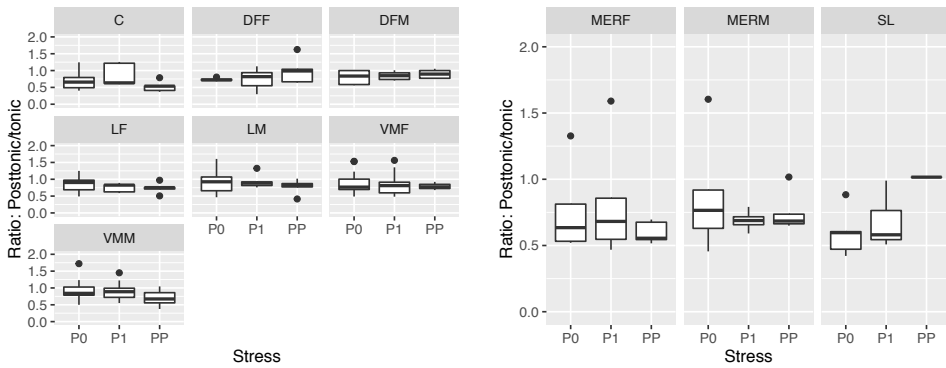


Figure 3

Pretonic vowel lengthening in the realization of the word *pared* ‘wall’, as produced by the male speaker from Villa María, Córdoba



**Figure 4**

Posttonic/tonic duration ratio by participant.

Left: participants from Córdoba; right: participants from San Luis.

Note: P0 = bisyllabic paroxytones; P1 = trisyllabic paroxytones; PP = proparoxytones

**Table 2**

Mean duration ratio and standard deviations of duration ratios by participant

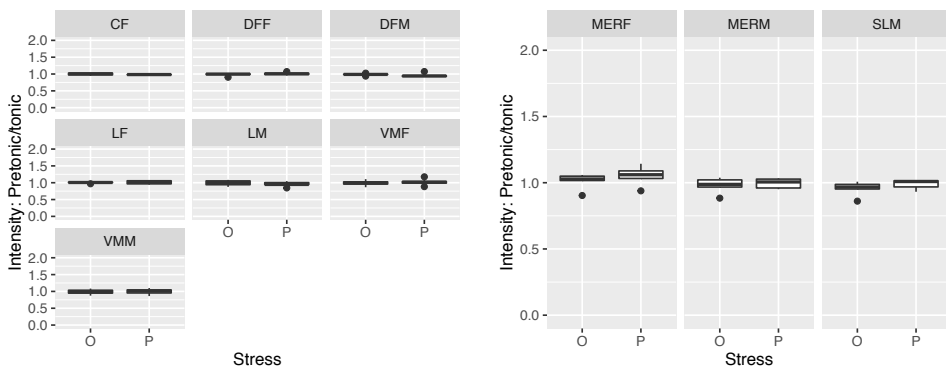
Participant	Province	Pretonic/Tonic (mean/SD)		Posttonic/Tonic (mean/SD)		
		O	P1	P0	P1	PP
C	C	0.88 (.16)	1.02 (.23)	0.71 (.33)	0.76 (.34)	0.52 (.16)
LF		0.64 (.14)	0.74 (.24)	0.86 (.28)	0.75 (.13)	0.74 (.16)
LM		0.69 (.09)	0.91 (.18)	0.94 (.43)	0.94 (.22)	0.77 (.22)
VMF		0.74 (.26)	0.81 (.27)	0.90 (.35)	0.87 (.35)	0.79 (.12)
VMM		0.78 (.14)	0.90 (.26)	0.93 (.31)	0.88 (.20)	0.70 (.25)
DFF		0.76 (.15)	0.95 (.24)	0.73 (.04)	0.75 (.32)	0.99 (.39)
DFM		0.80 (.07)	0.71 (.14)	0.79 (.21)	0.85 (.12)	0.90 (.12)
SL	SL	0.68 (.12)	0.71 (.27)	0.60 (.17)	0.68 (.20)	n.a.
MERF		0.77 (.18)	0.80 (.14)	0.76 (.35)	0.83 (.45)	0.60 (.08)
MERM		0.94 (.37)	0.91 (.13)	0.87 (.31)	0.69 (.07)	0.75 (.15)

Figure 4 presents the result for the posttonic/tonic ratio, once again displayed by participant, and grouped by province. Except for proparoxytones, all the posttonic syllables are in word-final position, where lengthening is expected to occur (Hualde 2015; Navarro Tomás 1970). As mentioned, Navarro Tomás reported that unstressed final syllables are similar in duration to stressed open syllables in paroxytone words. If this were the case, we would expect ratios close to 1. Figure 4 (left) and Table 2 suggest that this is the case for three of the participants from Córdoba. Two of the three participants who displayed pretonic lengthening (i.e., C and DFF) have the lowest posttonic/tonic ratio among those tested in the province, which suggests that the tonic syllable is extra-long. Posttonic syllables in proparoxytones have

the expected behaviour (i.e., being shorter than posttonic syllables in word final position) for 5/7 speakers. The data collected from the male speaker from San Luis reveal a pattern consistent with Vidal de Battini's claim that the tonic syllable is extra-long in the *tonada puntana*. The other two participants, however, show patterns that resemble the ones reported for Córdoba.

#### 4.2. Intensity

Previous work (Catinelli 1985) suggested that an additional characteristic of the *tonada* was a higher intensity in the pretonic than in the tonic syllable. To explore this, we examined the pretonic-tonic intensity ratio in oxytones and paroxytone words (Figure 5).



**Figure 5**

Pretonic/tonic intensity ratio by participant.

Top: participants from Córdoba; bottom: participants from San Luis.

Note: O = oxytones; P = paroxytones with a pretonic syllable

Results revealed that except for paroxytone words produced by one participant from San Luis (MERE), all participants had a similar intensity ratio across words, suggesting that intensity is not higher in pretonic than in tonic syllables.

#### 4.3. Pitch accents

The last aspect that I will analyze here are the pitch accent types associated with stressed syllables. Previous work found that lengthening was supplemented by a rising pitch movement (Yorio 1973), with a peak aligned within the stressed syllable (Lang Rival 2014; Requena *et al.* 2013). Most of the pitch accents observed in the corpus had the peak within the stressed syllable but differed in the alignment of the L tone (Figure 6). The most salient differences between speakers and provinces are observed in the realization of pitch accents in oxytones and paroxytone words (Figure 6, top). As concerns the former, the speaker from the city of Córdoba clearly differed from other speakers in her categorical preference for the L+H\* ac-

cent, which was also the most frequent in Lang-Rigal’s (2014) work. The opposite pattern, i.e., a trailing L tone, labelled as H\*+L was relatively more frequent than the previous one across participants, with the exclusion of LF, whose most frequent pattern was H\*. Although the stressed syllable in trisyllabic paroxytones is preceded by a pretonic, as in oxytones, the distribution of pitch accents differed for all participants but VMM, when compared to oxytones, being almost identical to the one found for proparoxytones.<sup>1</sup> As a group, participants from San Luis displayed an increase in the use of H\* in detriment of the use of H\*+L, which was the most frequent pattern in oxytones. Although L+H\* accents are still part of C’s inventory, it is MERF who displays the highest frequency of this type of accent. Finally, the most frequent accent type in bisyllabic words is H\*. It is interesting to observe that participants from Córdoba seem to behave more consistently as a group in the selection of pitch accents in this type of words than in the other words analyzed here (see Requena *et al.* 2013).

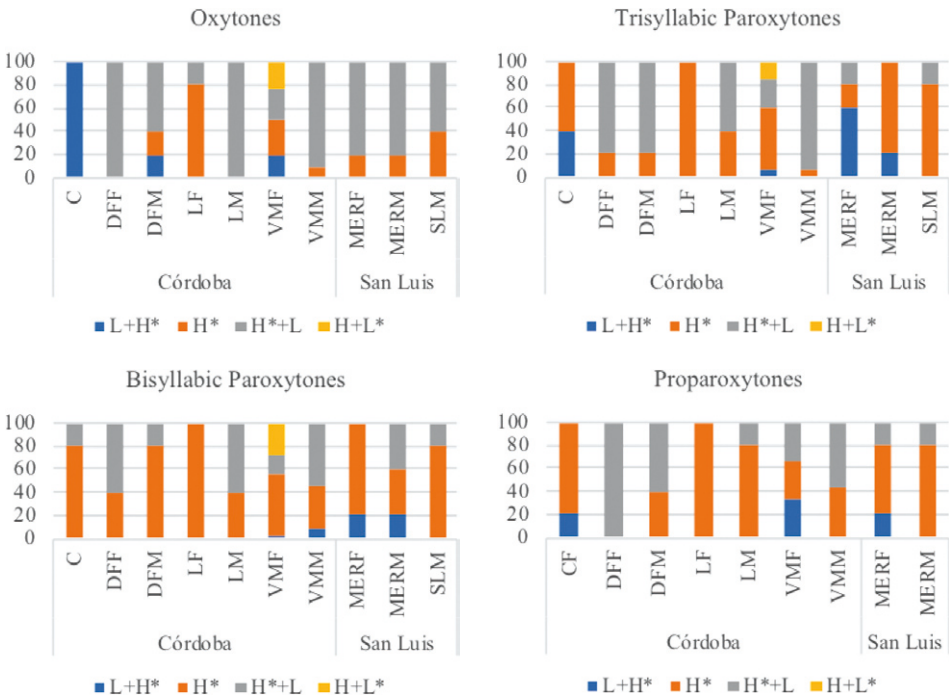


Figure 6  
Frequency of pitch accents (%) by accent type

<sup>1</sup> VMM displayed variability in her selection of accent types across different types of words.

## 5. Discussion

Of the three parameters analyzed here as possible correlates of stress, duration and pitch accents are the most informative. An analysis of duration ratios revealed pretonic lengthening in participants from and around the capital of Córdoba. For two of these participants the tonic syllable was also longer than the final unstressed syllable, suggesting that the tonic syllable is also affected in the *tonada*. Variability in the use of pretonic lengthening was also observed in narratives recorded in Southern Córdoba (Colantoni 2011), albeit for a smaller sample size. More importantly, results are consistent with Yorío's (1973) finding that the *tonada* is less prominent in reading than in conversational styles. Participants from Villa Mercedes (San Luis), particularly the male participant, resembled participants from Córdoba in their use of pretonic lengthening. This would suggest the existence of a continuum between the *tonada cordobesa* and the *tonada puntana*. The extra-long tonic vowels described by Vidal de Battini (1949) as characteristic of the *tonada puntana* were observed in the participant from San Luis both in bi- and trisyllabic oxytones and in the participant from Villa Mercedes only in the latter type of oxytones. Finally, as concerns a comparison with neighboring varieties to the West (San Juan and Mendoza) and to the East (Buenos Aires), we can tentatively conclude that lengthening of the tonic in San Luis, when compared to the posttonic, appears to be larger than the one observed in Córdoba but less prominent than the duration differences reported in San Juan (Colantoni 2011). In Buenos Aires, instead, what was reported was a lengthening of the final syllable whose duration is similar or longer than the tonic (Colantoni 2011). As such, we could argue for the existence of a geographical continuum (Vidal de Battini 1964; Acosta 2021; Lenardón 2017) in the use of duration. In our sample, however, we have a confound between location and age. Indeed, the participant from Córdoba is the youngest in our sample and the one who shows the strongest characteristics of the *tonada cordobesa*. If, as it has been argued (e.g., Berry 2015), the *tonada* is a change in progress in the rest of the province, we would need to test younger participants from the rest of the province.

Findings regarding the selection of pitch accents support the existence of a difference between the city of Córdoba and, to a lesser extent, other locations that are close to the capital, such as Deán Funes and Villa María. The most salient difference was found in oxytones where the participant from the capital had a categorical use of L+H\*. Although the expectation would have been to have similar pitch accent patterns in oxytones and trisyllabic paroxytones, given the presence of a pretonic in both cases, this was not the case. In the latter, the most frequent accent type was H\*+L. We may attribute the earlier alignment of the peak to the presence of a posttonic syllable, an explanation that would allow us to account for the similarities between trisyllabic oxytones and proparoxytones, and that is consistent with the behaviour of the speakers from San Luis. In bisyllabic paroxytones, however, the most frequent pitch accent in Córdoba, instead, is H\*. This suggests that, as in previous reports (Requena *et al.* 2013; Lang-Rigal 2014), the tendency is to have a peak within the stressed syllable, but its location varies depending on the preceding and following syllable.

The data used for this contribution is far from ideal. The wordlist included in the project was not balanced for stress type, syllable type or vowel type. Despite

our efforts, the data set is small, particularly for some subtypes of words. We do believe, though, that the systematic study of the acoustic correlates of lexical stress deserves further exploration, because the data collected here provides partial support for the hypothesis that not only the relative duration of the pretonic may differ in Córdoba Spanish but also the duration of the tonic, since for several participants, the posttonic syllable was clearly shorter. The extreme shortening of the posttonic was observed consistently in the participant from San Luis. As such, we cannot fully support the hypothesis that the cue for stress is pretonic lengthening in Córdoba Spanish, and when there is no pretonic, the tonic becomes extra-long. Some evidence supports an analysis of the *tonada* as a post lexical secondary stress, particularly the fact that pretonic rather than posttonic syllables are targeted, as it is the case with either emphatic or rhythmic stress (Hualde 2007), and its variable implementation both in terms of duration and selection of pitch accents. It is not clear, though, why the presence/absence of a secondary stress should have consequences for the relative duration of the posttonic. We can always speculate that emphatic stress opened the door to pretonic lengthening, which eventually got lexicalized. This, however, will need to be tested, not only by including minimal pairs, such as *papa* vs. *papá*, in which the vowels and the syllable type are identical but also by adding triplets and by manipulating the number of pretonic syllables (e.g., *nación* - *nacional*, 'nation', 'national') to determine if lengthening is restricted to pretonic syllables or percolates to the ante-pretonic. This would be a first step towards testing Yorio's (1973) claim that this is a lexical phenomenon. Our second step would involve expanding the research to the DP and VP by manipulating unstressed constituents before the noun and the verb, respectively.

## References

- Acosta, Mariano. 2021. *Comportamientos sonoros del habla Argentina*. Córdoba: Universidad Nacional de Córdoba undergraduate thesis. <http://hdl.handle.net/11086/21145>.
- Alvar, Manuel & Antonio Quilis. 1984. *Atlas lingüístico de Hispanoamérica: cuestionario*. Madrid: Instituto de cooperación iberoamericana.
- Berry, Grant. 2015. A quantitative account of the *tonada cordobesa*: the interplay of pitch, duration and style in the speech of Córdoba: Argentina. The Pennsylvania State University draft. <https://www.researchgate.net/publication/280837089> (12/07/ 2022).
- Boersma, Paul & David Weenink. 2022. *Praat: doing phonetics by computer*, version 6.2.23. <http://www.praat.org/> (01/05/2021).
- Catinelli, Antonio. 1985. *El habla de la provincial de Córdoba*. Córdoba: Centro de Estudios de la Lengua.
- Colantoni, Laura. 2011. Broad-focus declarative sentences in Argentine Spanish contact and non-contact varieties. In Christoph Gabriel & Conxita Lleó (eds.), *Intonational phrasing in Romance and Germanic*, 183-212. Amsterdam: John Benjamins.
- Fontanella de Weinberg, María Beatriz. 1971. La entonación del español de Córdoba, Argentina. *Thesaurus* 16. 11-21.
- Gabriel, Christoph, Ingo Feldhausen, Andrea Pešková, Laura Colantoni, Sur-Ar Lee, Valeria Arana, Leopoldo Labastía. 2010. Argentinian Spanish Intonation. In Pilar Prieto &

- Paolo Roseano (eds.), *Transcription of Intonation of the Spanish Language*, 285-317. Munich: Lincom.
- Gabriel, Christoph, Andrea Pešková, Leopoldo Labastía & Bettiana Blázquez. 2013. La entonación en el Español de Buenos Aires. In Laura Colantoni & Celeste Rodríguez Loro (eds.), *Perspectivas Teóricas y Experimentales sobre el Español de la Argentina*, 99-115. Madrid: Iberoamericana-Vervuert.
- Delattre, Pierre. 1969. *The general phonetic characteristics of languages*. Santa Barbara: University of California, Santa Barbara final report.
- Elvira-García, Wendy, Paolo Roseano, Ana María Fernández Planas & Eugenio Martínez Celdrán. 2016. A Tool for Automatic Transcription of Intonation: Eti-ToBI a ToBI Transcriber for Spanish and Catalan. *Language Resources and Evaluation* 50. 767-92. <https://doi.org/10.1007/s10579-015-9320-9>.
- Hualde, José Ignacio. 2007. Stress removal and stress addition. *Journal of Portuguese Linguistics* 5/6. 59-89.
- Hualde, José Ignacio. 2015. *Los sonidos del español*. Cambridge: Cambridge University Press.
- Hualde, José Ignacio & Pilar Prieto. 2015. Intonational Variation in Spanish: European and American Varieties. In Sonia Frota & Pilar Prieto (eds.), *Intonation in Romance*, 350-391. Oxford: Oxford University Press.
- Lang-Rigal, Jennifer. 2014. *A perceptual and experimental approach to dialect stereotypes: The tonada cordobesa of Argentina*. Austin: University of Texas doctoral dissertation.
- Lenardón, María Laura. 2017. *Understanding the tonada cordobesa from an acoustic, perceptual and sociolinguistic perspective*. Pittsburgh: University of Pittsburgh doctoral dissertation.
- Malmberg, Bertil. 1950. *Études sur la phonétique de l'espagnol parlé en Argentine*. Lund: Gleerup.
- Mansilla, Lucio. 1966 [1870]. *Una excursión a los indios ranqueles*. Buenos Aires: Kapelusz.
- Navarro Tomás, Tomás. 1970 [1918]. *Manual de pronunciación española*. Madrid: CSIC.
- Ortega Llebaria, Marta & Pilar Prieto. 2011. Acoustic correlates of stress in Central Catalan and Castilian Spanish. *Language & Speech* 54. 73-97.
- Quilis, Antonio. 1981. *Fonética acústica de la lengua española*. Madrid: Gredos.
- Requena, Pablo, Evangelina Aguirre-Sotelo & María Josefina Díaz. 2013. Alineación del pico entonacional en el español de Córdoba, Argentina. In Giselda Bombelli & Lidia Soler (eds.), *Oralidad: miradas plurilingües desde la fonética y la fonología*, 98-111. Córdoba: Buena Vista Editores.
- Vidal de Battini, Berta. 1949. *El habla rural de San Luis*. Buenos Aires: Universidad de Buenos Aires.
- Vidal de Battini, Berta. 1964. *El Español de la Argentina*. Buenos Aires: Consejo Nacional de Educación.
- Yorio, Carlos. 1973. *Phonological style in the dialect of Spanish of Córdoba, Argentina*. Ann Arbor: University of Michigan doctoral dissertation.

