

The L2 Acquisition of Buenos Aires Spanish Intonation
During a Study Abroad Semester

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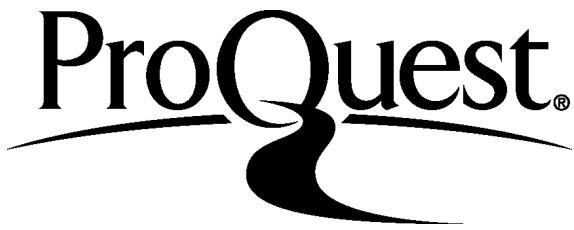
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Dedication

For Chantal and Declan

Abstract

The present longitudinal study describes and categorizes the primary changes in L2 Spanish intonation over time by 11 learners studying abroad in Buenos Aires, Argentina for one academic semester. Via the autosegmental metrical model of analysis, this dissertation classifies intonational contours for absolute interrogatives and declarative statements at the beginning and end of the semester in a variety of speech styles. It also isolates extralinguistic factors, such as attitudes and degree of social interaction, that promote or hinder acquisition of Spanish intonational norms.

Results show that learner absolute interrogative intonation is considerably different from that of their native Buenos Aires Spanish-speaking peers. At the beginning of the semester, the learner contour is classified as L*+H L* H%, which is marked by a final rising F0 movement. This contrasts with the native Buenos Aires Spanish preference L+H* L+H* L%, which is most notable for a final falling F0 contour. By the end of the semester, 9 of the 11 learners continue to produce the non-native-like rising intonation in all speech contexts. However, two learners—Eve and Samantha—begin to approximate native norms by producing an interrogative contour characterized here as L*+H L*+H L% in all speech contexts.

The learner declarative contour changes very little over time, regardless of speech context. It is analyzed as L*+H L* L%. All 11 learners produce this contour at the beginning and end of the semester. However, Eve and Samantha periodically demonstrate a handful of native-like declarative intonational characteristics when speaking in the

informal speech contexts, such as the long fall melody (Kaisse, 2001), early prenuclear peak alignment, and low phrase tones.

The analysis of extralinguistic factors reveals that the learners developed generally favorable attitudes towards *porteños*, which might promote acquisition of native intonational norms. However, learner exposure to the target language was limited by sporadic and superficial interaction with native speakers. Eve and Samantha, the learners who evidenced the most change in intonation over time, stood out from the rest of the learners by developing more robust, supportive relationships with native Spanish-speaking contacts.

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Chapter 1: Introduction

1.1 Introduction

The intonational phonology of Spanish has attracted much attention in the past two decades. Recent research has lead to phonetic treatments of well-known phenomena such as downstepping, tonal crowding, and final lowering, particularly in Mexican Spanish (Prieto, van Santen, & Hirschberg, 1995; Prieto, Shih, & Nibert, 1996; Prieto, 1998). Other scholars have focused more on the intonational characteristics of dialects of Spanish under specific pragmatic conditions, such as Face's (2002, 2004, 2005, 2006) extensive work on focus in Castilian Spanish. Even more recently, others have endeavored to explore intonation in language contact situations (Elordieta, 2003; Colantoni & Gurlekian, 2004; O'Rourke, 2005; Alvord, 2006; Pérez Castillejo, 2012). Though intonation has been a hot topic for some time, this vigor has not translated into a similar spike in second language (L2) intonation studies, especially with respect to L2 Spanish intonation.

Nibert (2005) was the first principled study of intonation by English-speaking learners of Spanish and Henriksen et al. (2010) was the first to look at L2 Spanish intonation in its developmental context. Given these recent publication dates, one may wonder why this topic has been ignored for so long. With so much yet still unknown about L1 intonation, research agendas have not yet expanded to L2 intonation. Furthermore, L2 *acquisition* of intonation is entirely different from L1 *usage* of intonation. To get at acquisition of intonation, a unique set of methodological issues must be considered, such as the length of the experimental period, whether to use longitudinal or cross-sectional data, the competence level of the student, prior L2 input, the number

and variety of tasks used to elicit data, among many potential others. Combined with the general newness of the discipline, these methodological considerations have likely contributed to the dearth of L2 intonation studies in Spanish. Perhaps just as important is the fact that intonation, in the learning environment, is almost entirely subconscious. There are no rules as to how to acquire it, interlocutors seldom correct it (as one may do for a segmental sound), and the vast majority of second language teachers do not prioritize intonation learning in the classroom. For all of these reasons, research into L2 intonation has been minimal.

The goal of this dissertation, then, is to contribute to the small body of research on L2 intonation. More specifically, it studies the acquisition of Buenos Aires Spanish (BAS) intonation by American learners of Spanish while studying abroad in Buenos Aires, Argentina. It focuses on the production of neutral declarative statements and absolute interrogatives over the course of an academic semester by intermediate learners of Spanish when immersed in the target language. Additionally, it identifies those factors that may promote or hinder acquisition of these intonation patterns. Prior research (Schumann, 1978; Isabelli, 2001; Lybeck, 2002) has demonstrated that the degree of social engagement within the target language culture and attitudes toward both the L2 society and speakers can alter the rate of acquisition of key linguistic features. It is assumed here that the acquisition of native-like intonational features is also susceptible to these factors.

1.2 Why intonation?

As Henriksen et al. (2010) point out, research on L2 intonation has lagged behind other aspects of L2 phonology for a variety of reasons, many of them already mentioned

in the previous section. Until recently, linguists lacked the technological means to carry out meaningful, objective research on intonation. The development of computer programs such as Praat (Boersma & Weenink, 2010), however, have facilitated the analysis of intonational contours, simultaneously moving the field of study away from impressionistic and oftentimes difficult-to-decipher judgments. Moreover, the emergence of the autosegmental metrical (AM) theory (Pierrehumbert, 1980; Pierrehumbert & Beckman, 1988; Ladd, 2008) and—at least for those interested in Spanish intonation—the development of the Sp_ToBI transcription convention (Beckman et al., 2002; Estebas Vilaplana & Prieto, 2008) helped to establish a common language that had sorely been lacking. While not everyone adheres to these relatively recent theoretical innovations (see Ramírez Verdugo, 2002, 2006, for instance), intonational phonology is rapidly progressing to a stage where research is becoming much more comparable and mutually intelligible, both across languages and within. It seems, then, that the time is ripe for the maturation of L2 intonation as a serious object of study.

The limitations that have delayed L2 intonation research in the past belie the importance of this research agenda, not simply because it is an unexplored territory, but also because prior empirical data suggest that proper, native-like intonation contributes significantly to how a linguistic message is received and interpreted. Anderson-Hsieh et al. (1992), for example, analyzed the relationship between native speaker judgments of non-native pronunciation and the deviance in segmental production, syllable structure, and prosody. They sought to determine if judges reacted equally to deviance in the major areas of pronunciation or if each area carried a different weight in influencing the intelligibility scores assigned to non-native English speakers. When speech samples from

L2 English speakers from a variety of backgrounds were rated by these judges, it was revealed that the phonological variable most strongly related to pronunciation scores was the prosodic variable. In other words, proper intonation contributes significantly to the formulation of a comprehensible message; conversely, poor intonation in L2 English creates intelligibility problems. They hypothesize that this is the case because intonation directs the listener's attention to the information that the speaker regards as important. Similarly, Grantham O'Brien (2004) reports that native German speakers who rated American L2 German speech samples judged the non-native speakers on the basis of stress, rhythm, and prosody, stating that individual segmental sounds were difficult to focus on. Mennen (2006) also emphasizes the importance of non-native intonation, but does so by focusing on what intonation tells the hearer about the speaker herself. Namely, it indicates key features of the speaker's identity, such as age, gender, psychological state, and sociolinguistic membership. Moreover, improper intonation may lead to or reinforce negative stereotypes that in turn lead to negative (and frequently incorrect) impressions of the speaker. For instance, she states that German learners of English often produce low, flat intonational contours that, to English-speaking ears, make them sound self-opinionated, dour, and unfriendly. It is evident, then, that there are clear practical uses for studying the acquisition of intonation.

1.3 Why Buenos Aires Spanish?

Buenos Aires Spanish—the dialect of Spanish spoken in Buenos Aires, Argentina and its surrounding areas—is the target dialect to which the L2 learners in this study were primarily exposed while studying abroad. This variety of Spanish is especially useful for a study such as this because it presents several intonational characteristics that distinguish

it quite clearly from other varieties of Spanish. Chief among these is the early realization of prenuclear (i.e. non-final) peaks within the stressed syllable in neutral declaratives; most other Spanish dialects, on the other hand, present delayed peaks that usually achieve their peak in the following unstressed syllable (Sosa, 1999; Toledo, 2000; Kaisse, 2001; Barjam, 2004; Colantoni & Gurlekian, 2004). This is illustrated below in Figures 1.1 and 1.2.

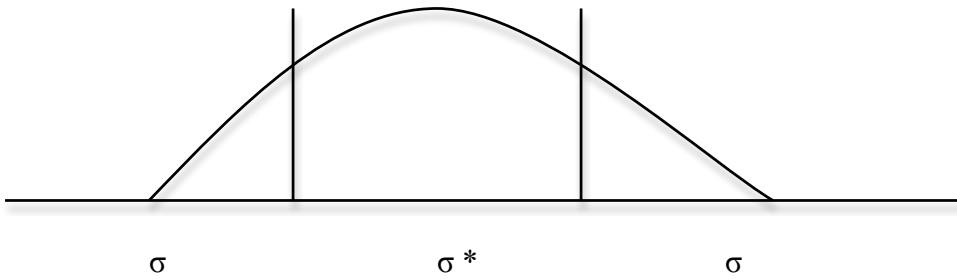


Figure 1.1 Schematization of BAS prenuclear pitch accent peak alignment in broad focus declarative utterances (taken from Colantoni & Gurlekian, 2004: 109)

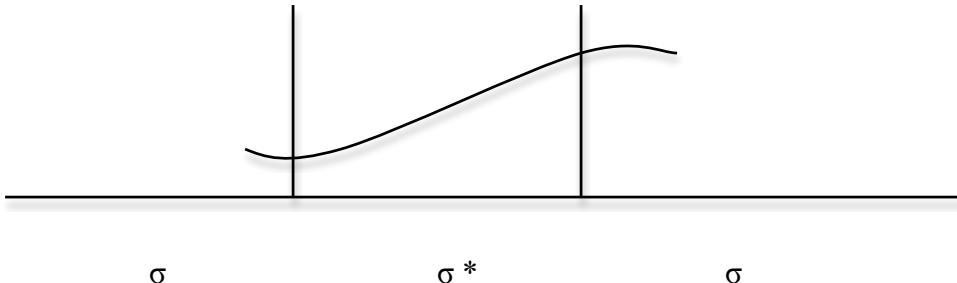


Figure 1.2 Schematization of prenuclear pitch accent peak alignment in broad focus declarative utterances in many varieties of Peninsular and Latin American varieties of Spanish (taken from Colantoni & Gurlekian, 2004: 109)

Moreover, these declarative statements are further distinguished in BAS by possessing a steep fall, especially in the nuclear (i.e. final) syllable. Kaisse (2001) has even gone so far as to call it the “long fall”¹ and claims that this is often what gives BAS its characteristic sound.

Colantoni & Gurlekian (2004) and Colantoni (2011) claim that these traits are linguistic legacies of the Spanish-Italian bilingualism that occurred as a result of the massive influx of Italian immigrants to Buenos Aires in the 19th and early 20th centuries. According to these authors, a confluence of linguistic factors, such as the typological similarities between the Spanish and Italian prosodic systems, and social factors, such as a high concentration of Italian immigrants and endogamic marriage patterns, led to a case of linguistic convergence, in which the two prosodic systems became more similar after contact. The unique sociohistorical backdrop for present day BAS intonation quite plausibly has resulted in a handful of new prosodic targets to which learners may approximate. That is, if a learner has previously been exposed to L1 input in Spanish with posttonic peaks, movement towards a native-like early peak might be a signal of intonational acquisition. More to the point, the Spanish of Buenos Aires and its surrounding areas simply *sounds* different than other varieties that students of Spanish may have encountered previously. In fact, Kaisse (2001: 147) comments: “Argentinians are usually recognizable within a few seconds of opening their mouths.”² Despite being such a unique dialect, BAS is not one to which many L2 learners of Spanish are exposed.

¹ Kaisse (2001: 147) notes that the long fall’s “most common discourse context is a discontinued or implied list...[but] it is also found in contexts where a plain declarative melody would be appropriate.”

² This certainly can be attributed to other non-prosodic linguistic features, too, of course. The voiced and voiceless prepalatal fricatives and the usage of the *voseo*, among other features, also help to distinguish Argentines from other Spanish speakers.

Consequently, when students study abroad in Buenos Aires, they have an excellent opportunity to understand how their Spanish changes over time. Will the intonational contours that they have developed before going abroad change to reflect that of their Argentinean interlocutors? Will they resist such a dramatic change? Will they even notice the intonational differences? The categorical differences that mark this language variety provide a fresh light in which to examine linguistic acquisition and accommodation to a new dialect of Spanish. In sum, it is of considerable interest to learn if students are capable of perceiving these intonational differences and if they can or are willing to approximate them.

1.4 Why study abroad?

The decision to conduct this dissertation in a study abroad (SA) context is primarily a methodological one. While it is not of primary importance here to investigate gains made while studying abroad, SA does afford the researcher the opportunity to control the input that learners receive to the largest extent possible.³ It is well known that Spanish is a language that presents considerable regional and dialectal variation. As such, throughout the course of instruction, especially at the collegiate level where learners take classes from several different instructors, learners of Spanish must continually adapt to new input varieties: one semester they take a class from a native Peninsular Spanish speaker, the next from an American graduate student, etc. Because there is no standard target intonation to which learners can uniformly aspire, it is nearly impossible to tease apart

³ One can never control the input entirely. It is certainly possible, and perhaps even probable, to encounter varieties of Spanish other than BAS while in Buenos Aires. For this reason, it cannot be assumed that the Spanish-language input will be entirely homogenous.

the various influences that have interacted to contribute to the L2 intonation contours. The SA context allows for a greater expectation that, in this case, the input will be largely BAS, in turn permitting a better understanding of those intonational features that have been acquired during the experimental period.

The SA context also allows the researcher to collect longitudinal data so that s/he can track L2 intonation as it unfolds over time. While cross-sectional data (i.e. apparent time) have been employed to model change over time in past intonational studies (see Ramsey, 1996 for an example), most likely due to the widely noted challenges of carrying out long-term studies, longitudinal studies give a more accurate and complete picture of emerging interlanguage. Therefore, this study will track learners over the course of an entire academic semester as they study abroad in Buenos Aires.

1.5 Why social networks, social engagement, and attitude?

This study will not only track the development of L2 intonation over time, but it will also attempt to account for the changes that occur. That is, instead of simply describing them, it will seek to isolate the social, psychological, and emotional conditions that come to bear upon learning in hopes of explaining the variability present in the learner data.

There exists a rich seam of research that has sought to connect gains in L2 communicative functions to the environment in which they occur. Schumann's (1978) acculturation model assumes that the social and psychological "distance" between the learner and the native-speaking population restricts L2 output. He develops a robust set of parameters upon which to measure both social and psychological distance. For example, social distance can be assessed by looking at the dominance relations between the two cultures, the integration strategies used by the second language group, the amount of

cohesiveness of the second language group, its attitudinal orientation, size, and length of residence. Psychological distance includes such notions as culture and language shock, the motivation to orient oneself to the host culture, and the desire and ability to take on a new identity (i.e. “ego permeability”—see Guiora, 1972 and Guiora et al., 1972). The relative degree of distance, both social and psychological, contributes to the variability in acquisition.

Though not dealing with L2 production, Milroy’s (1987) work in Belfast also demonstrates how distance can contribute to linguistic variability. Her social network analysis emphasizes the important role that the multiplexity (i.e. the numerous capacities in which a person is connected to another) and the density (i.e. the level of interconnectedness of group members) of the networks have on linguistic production. That is, the closer a group member’s ties are to his/her local community, the closer his/her language approximates localized vernacular norms.

And if interlanguage is indeed a natural language (see Tarone, 1979), an L2 learner’s speech patterns should also adhere to the norms of the group. Lybeck (2002) is a clear example of this. She follows the acquisition of 9 adult American female learners of Norwegian as they live abroad in Norway. Lybeck demonstrates how learners do and do not adhere to group norms on the basis of the social networks that they develop. Those participants who had supportive relationships with native speakers improved their pronunciation of Norwegian /r/ over time. Conversely, those participants who were not as integrated into native-speaking network clusters tended to diverge from Norwegian patterns in favor of a more American-like /r/.

Isabelli (2001) also considers the role played by social networks in language learning. She investigates the accuracy of tense/aspect selection and subject-verb/gender-number agreement and the development of narration and description in Spanish by 5 learners studying abroad in Argentina. But most importantly, she seeks to correlate the gains in proficiency to the patterns of social contact that the learners build while abroad. Isabelli hypothesizes that those learners who form dense, multiplex networks with other English-speakers will limit their acquisition, whereas those learners who stray from their English-speaking contacts will likely develop open, low-density networks with native speakers. Given the short-term nature of most study abroad programs, it is unlikely that they have the time to develop dense, multiplex networks. However, those bold enough to form social networks with native speakers are likely to benefit indirectly from “second order zone” contacts (i.e. those speakers whom the learner does not know personally). A thorough analysis of her participants’ social network logs and personal diaries confirm her hypotheses: Matt, the learner who demonstrated the most motivation to develop Argentine contacts, jumped 2 proficiency levels, from intermediate low to intermediate high, on the ACTFL scale; Jessica, who had little desire to interact with Argentine culture and society and hence built no native social network, started at intermediate mid and stayed there throughout the entire semester. The author concludes by stating that language acquisition in a study abroad program is a non-linear process that requires commitment on the learner’s part to participate in the target language and culture.

Although Lybeck (2002) looked at segmental features of interlanguage phonology and Isabelli (2001) was more interested in grammatical features and communicative competence, it will be assumed here that second language intonation can indeed be

informed by a social network analysis. Given that only a few studies of intonation thus far have examined Spanish in a study abroad context (see Henriksen et al., 2010 and Trimble 2013), this study will be among the first to pair L2 intonation and an analysis of social and extralinguistic factors.

Notions of identity and how they impact acquisition are also explored here, as a study abroad semester offers a unique opportunity for a learner to evaluate how s/he views his/her own identity upon coming into contact with new linguistic group. Guiora (1972) and Guiora et al. (1972), for instance, have linked “ego permeability” and an “empathetic capacity” with gains in second language pronunciation. Identity, as well as the role of social networks and attitudes, will be revisited in more detail in Chapter 6.

1.6 Research goals

As stated above, the present dissertation seeks to understand the changes in the intonational contours of American learners of Spanish as they study abroad in Buenos Aires, Argentina. Following Henriksen et al. (2010), the research is based upon the following questions:

1. What are the primary characteristics of the intonational contours for absolute interrogatives at the beginning and end of the semester? (Chapter 4)
2. What are the primary characteristics of the intonational contours for broad focus declaratives at the beginning and end of the semester? (Chapter 5)
3. Are there patterns of change that indicate that learners are moving towards a target-like intonation? (Chapters 4 and 5)
4. What, if any, social, attitudinal, or psychological factors influence the learners' change in intonation over time? (Chapter 6)

Chapter 2: Intonational Phonology

2.1 Introduction

The present chapter provides an overview of intonation and the autosegmental metrical model, the most widely used phonological model to analyze intonation. In doing so, it highlights the primary phonological constructs of the intonational contour, its hierarchical organization, and the theoretical strengths of the model. Furthermore, this chapter reviews the findings of researchers when applying this analytical model to Spanish. Given the aforementioned research goals, special attention will be paid to BAS and L2 intonation studies.

The remainder of this chapter is organized in the following way. Section 2.2 offers a general introduction to intonation. Section 2.3 provides an overview of the autosegmental metrical model of analysis. It is subdivided according to the following topics: the role of tone in AM theory (Section 2.3.1), how intonation is transcribed in this model (Section 2.3.2), the hierarchical structure of an intonational contour (Section 2.3.3), and the advantages that AM theory offers (Section 2.3.4). Section 2.4 shifts focus to Spanish intonation specifically, with subsection 2.4.1 dealing with declarative intonation and 2.4.2 addressing interrogative intonation. A review of studies of L2 intonation is given in Section 2.5 and Section 2.6 examines work performed on L1 American English intonation in order to understand how these patterns might influence L2 Spanish intonation. Section 2.7 offers a brief note on the role of the study abroad context in the current study and Section 2.8 concludes by summarizing the primary contributions of Chapter 2.

2.2 Intonation—preliminary remarks

Quilis (1999) has shown that reaching a consensus as far as what intonation exactly is has been difficult, due in large part to differing research agendas. However, it would appear that most agree that intonation can be characterized as those movements in the fundamental frequency (F0) that communicate linguistic meaning. Moreover, Quilis (1999: 410) adds that these F0 movements may also carry social and individual meaning. These melodic rises and falls of the voice, then, can create meaningful linguistic distinctions (i.e. the difference between a broad focus declarative in Spanish such as *Vas a la fiesta* “You’re going to the party” and the lexically identical absolute interrogative *¿Vas a la fiesta?* “Are you going to the party?”) as well as communicate paralinguistic information, such as the speaker’s emotional state or sex (Ladd, 2008: 3).

Intonational phonology is the discipline concerned with studying these linguistic functions and how they contribute to human communication. More specifically, it is concerned with the division of a melodic contour into distinct phonological units. This historically has not been a simple endeavor. Ladd (2008: 3) notes that the “phonetic substance of intonation somehow seems less concrete than the properties involved in consonants and vowels.” That is, commonly accepted parameters for classification, such as the place and manner of articulation for consonants and the rounding of vowels, do not suffice to describe the up-and-down fluctuations in pitch. Although various models have arisen throughout the years that attempt to identify the contrastive elements of intonation, this dissertation is couched in the autosegmental metrical model, a widely used analytical framework that has had considerable success handling intonational phenomena in many of the world’s languages, including Spanish.

2.3 The autosegmental metrical model (AM)

2.3.1 Tones in the AM model

The AM framework is an outgrowth of the seminal work of Liberman (1979) and Pierrehumbert (1980) for English intonation and Bruce's (1977) research into Swedish prosody. Subsequent work on English and Japanese by Beckman & Pierrehumbert (1986) and Pierrehumbert & Beckman (1988) added to and refined the model.

One of the primary tenets of AM theory is that an intonational contour in a given language can be divided into a string of discrete, contrastive elements, which in turn can be mapped onto the phonetic speech stream (Ladd, 2008). Intonation, then, is viewed as being phonological in that it functions contrastively. These contrastive elements are generally categorized as pitch accents and edge tones. A pitch accent is typically a pitch change that associates with a metrically strong syllable in the segmental string and serves to enhance the syllable's prominence. It is from here that the term "autosegmental" is derived for this model. Much like the tones in Yoruba that associate and re-associate to vowels (Goldsmith, 1979), the pitch accent associates with a metrically strong syllable but ultimately remains independent from it. The term "metrical" comes from the fact that the pitch accent associates with a metrically strong syllable. An edge tone is a tune that appears at the end of a prosodic phrase to signal its completion. The term "edge tone" typically refers to boundary tones and phrase accents. The former associates with the edge of an utterance and the latter marks the end of a smaller intermediate phrase that exists within the larger prosodic phrase (see Figure 2.4 below for more information). It is also important to distinguish between events (i.e. pitch accents and edge tones) and

transitions. That which is not an event is merely a transition between events and is linguistically unimportant.

2.3.2 Transcription of intonation

The pitch accents, as opposed to transitions, are the intonational events that form the analyzable elements of the contour. Pierrehumbert's (1980) work on English intonation laid the groundwork for the notation system that breaks the intonational phrase into a string of these discrete, analyzable events. Following AM theory, a pitch accent is analyzed as a sequence of High and Low tones. These H and L tones represent local fluctuations in the F0 contour relative to a speaker's baseline (i.e. a speaker's low frequency usually associated with unaccented syllables—see Bruce, 1977). Furthermore, a star is used to mark the tone that associates with the metrically strong syllable, essentially indicating which tone is most central to the pitch accent. It may be either monotonous, in which case it would receive an H* or L* analysis, or bitonal, in which case it would be marked as a combination of H and L, thus leading to a basic pitch accent inventory of L*, H*, L*+H, L+H*, H+L*, or H*+L. A non-starred tone in a sequence such as L*+H is not anchored to the prominent syllable and may (frequently, in fact) stray into neighboring unstressed syllables. A preceding non-starred tone (as in L+H*) is often referred to as a leading tone and a following non-starred tone (as in L*+H) is known as a trailing tone. Figure 2.1 illustrates how the starring notation captures distinct intonational contours.

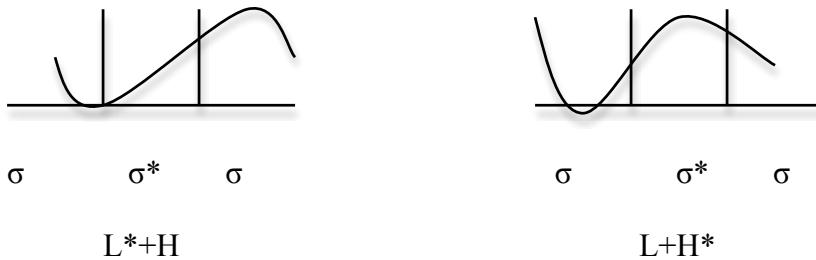


Figure 2.1 Schematic representation of L*+H and L+H* pitch accents⁴

Notice that in the L*+H pitch accent on the left the rise begins at the stressed syllable onset and the trailing H tone (i.e. the F0 peak) drifts into the following posttonic syllable. Consequently, the L tone is associated with the stressed syllable and receives the star notation. In the L+H* pitch accent on the right, the H tone (i.e. the F0 peak) is firmly planted within the borders of the tonic syllable. In contrast, the leading L tone is not associated with the stressed syllable at all, and thus it does not receive the star. The application of these alignment patterns varies from language to language and dialect to dialect, thus constituting one of the ways to distinguish dialects. For instance, prenuclear pitch accents in Castilian Spanish broad focus declaratives have been analyzed as L*+H in the past⁵ whereas the same pitch accent in BAS is typically analyzed as L+H* (see Section 2.4.1 for further discussion).

An edge tone is marked somewhat differently. For the boundary tones, a % diacritic is used to show that the tone associates with the edge of the utterance. They are typically analyzed as either L% or H%. The H% boundary tone always signals a final rise whereas the L% boundary simply indicates the absence of a final rise (with a gradual fall or a

⁴ It should be noted that the two alignment patterns presented here only offer one way in which starredness is reflected in alignment. Many other alignment patterns in Spanish dialects have been found. See Willis, 2003 and Face & Prieto, 2007 for other examples.

⁵ It should be noted that L+H* is the more common analysis in recent studies.

sustained level pitch being two concrete realizations of L%) (Ladd, 2008). The phrase accent is marked with a ‘-‘ diacritic, as in H- or L-. It will be recalled that an intonational phrase contains one or more intermediate phrases and the H- or L- phrase accents associated with them signal the end of the intermediate phrases.⁶ The intermediate phrases serve to break up the larger intonational phrase into smaller “chunks” of information (Face, 2002: 7) or into breath groups/melodic units (Alvord, 2006). The H- and L- phrase accents create a sense of disjuncture between these chunks of information that can be used to help disambiguate sentences, as will be seen below in Section 2.3.3.

Figure 2.2, reproduced from Face (2002), illustrates the structure of the intonational phrase, where T stands for “tone”.

[[.....T-][.....T-]T%]

Figure 2.2 An intonational phrase with two intermediate phrases (taken from Face, 2002: 8)

It is also important to point out that pitch accents are either prenuclear or nuclear, though no special notation is used to mark this distinction. This is largely because within the AM theory, the nuclear syllable is always the last prominent syllable in an intonational phrase, thus making it entirely predictable. This quite likely stems from a psycholinguistic principle whereby the last (i.e. most recent) intonational cue carries the most meaning (Cruttenden, 1986: 49). The prenuclear pitch accents are those that associate with all non-final stressed syllables in the intonational phrase. On the other

⁶ It is important to note, however, that some analyses do not recognize the role of phrase tones in Spanish intonation. Sosa (1991, 1999) and Beckman et al. (2002) are prominent examples. This is addressed further in Section 2.3.3.

hand, other models of intonation, such as the British tradition, assume the nuclear accent to be the most prominent pitch accent in an intonational group, in which case the nuclear accent may fall on any lexically stressed word in an utterance. But because the nuclear accent is not ascribed any special status in AM theory (unlike in the British tradition) and is merely the last accent in an intonational phrase, no special notation is needed to mark it. Figure 2.3 illustrates how the prenuclear and nuclear pitch accents are often analyzed for certain dialects of Spanish.

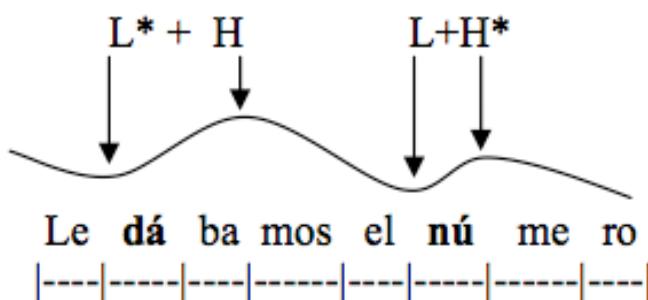


Figure 2.3 A schematic of prenuclear and nuclear syllables and their corresponding pitch accents (taken from Alvord, 2006: 20)

In this schematic representation, a rise begins near the onset of the prenuclear syllable *dá* and it reaches its peak in the following unstressed syllable *ba*. The L tone is presumed to be associated with the stressed syllable and thus it receives the star. The second tonal rise occurs at the beginning of the nuclear syllable *ní* and reaches its peak within the same syllable. The H tone is analyzed as associating with the syllable, thus receiving the star. It is clear from this schematic that (for many varieties of Spanish), the prenuclear and nuclear portions of the intonation contour behave uniquely from each other.

2.3.3 The hierarchical nature of the contour

Figure 2.4 below helps to demonstrate the hierarchical nature of the intonational phrase (IP). Immediately below it is the intermediate phrase (ip). In past literature, the status of the intermediate phrase had been called into question (Sosa, 1999; Beckman et al., 2002). Ladd (2008: 142) admits that he had believed there to be no motivation for a phrase accent at all in most European languages. Sosa (1991, 1999) claims that tonemes can be accounted for exclusively through the combination of the nuclear pitch accent and the boundary tone. It would appear, however, that much recent literature points to the very real existence of phrase accents. Hualde (2002), for instance, has shown that final peaks in Spanish tend to be aligned earlier than non-final peaks. He claims that these peaks are pushed earlier into the syllable to make room for the presence of the phrase accent in a phenomenon known as “tonal crowding”. As far as the function of these phrase accents, Nibert (2000: 18) states that they communicate a certain degree of disjunction in the speech stream. At least for Spanish, she has demonstrated convincingly how phrase accents can create meaning contrasts to help disambiguate possible confusion. For instance, the utterance $[[lilas\ y\ lirios\ amarillos]L-]L\%$ is understood to mean that both the lilies and the irises are yellow. However, the utterance $[[lilas]H-\ [y\ lirios\ amarillos]L-]L\%$ is interpreted quite differently due to the presence of the additional H- phrase accent after *lilas*. In this case, one typically interprets this to mean “lilies and yellow irises”. In essence, the disjunction in speech signaled by the H- phrase accent suffices to communicate a unique meaning that was not possible when the H- tone was absent.

Below the ip is the prosodic word (w). The ip contains any number of prosodic words, each of which has been further divided into its constituent syllables. Finally, the tone tier identifies the tones that associate to each metrically strong syllable and the edge tones that can be found at phrase boundaries.

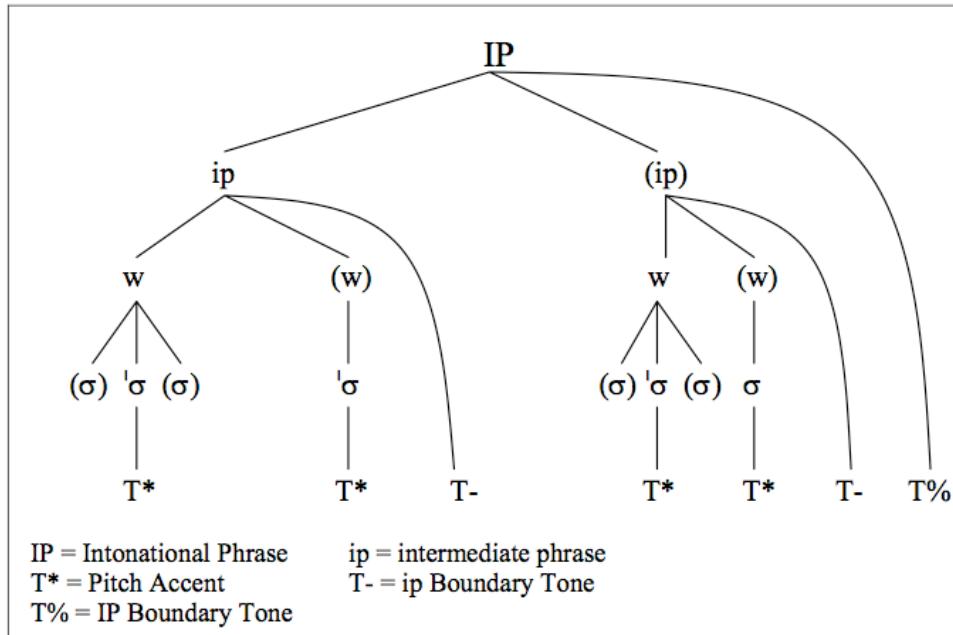


Figure 2.4 The hierarchical structure of the intonational contour (taken from Barjam, 2004:18)

2.3.4 The advantages of AM theory

This dissertation is couched in the AM framework. This decision was made in large part because of the numerous advantages offered by AM theory.

From a historical point of view, the AM model improves upon its precursors by analyzing pitch movements minimally via 2 underlying H and L tones. Cruttenden (1986) points out that other frameworks encountered trouble when attempting to determine how many meaningful levels to include in the analysis. The decision to have, say, four levels

was ultimately arbitrary because some large pitch deviations carried no meaning whatsoever whereas some small deviations did indeed convey differences in meaning (Cruttenden, 1986: 46). The fact that AM theory benefits from only two levels (H and L) means that the total tonal inventory is restricted to a minimal number of possibilities, thus preventing a proliferation of contours not observed in any of the world's languages (Ladd, 2008).

Moreover, AM theory incorporates elements of two competing models of intonation: the levels approach and the configurations approach. The levels approach attempted to analyze intonation via four levels—Low, Mid, High, and Overhigh. As indicated in the previous paragraph, this taxonomy was criticized for being incapable of capturing the realities of intonation. The configurationists, on the other hand, were interested in describing intonation as movements in pitch between levels, rather than focusing on the levels themselves. As pointed out by Ladd (2008), the AM framework assumes that there are levels but establishes an economically minimal two-level distinction—High and Low—and also assumes the existence of bitonal pitch accents, thus accounting for rises and falls between relatively high and low levels. By acknowledging primitive levels and pitch configurations (i.e. pitch accents), AM theory resolves the levels-vs-configurations debate (Ladd, 2008).

AM theory also provides an explicit set of mapping rules through which it becomes clear how the tones associate with the text (Cruttenden, 1986). These rules emerged from Goldsmith's (1979) work on African tone languages wherein he establishes a segmental tier and a tone tier. Though these two tiers remain independent from each other, they are connected via “tune-text association rules”. AM theory has applied these tune-text

association rules to represent intonational contours, as shown above. Whereas the levels and contours approaches could not map a fall onto a string of segments or syllables, AM theory explicitly anchors pitch accents to stressed syllables via its star notation.

A final strength of this model is its flexibility in capturing the intonation of many of the world's languages. As Alvord (2006) points out, languages such as Japanese, English, Spanish, Yoruba, Serbo-Croatian, Swedish, and Basque, among others, have all been analyzed under this framework, allowing for easier cross-linguistic comparisons.

2.4 Spanish intonation

While the foregoing has attempted to provide the reader with a general background of AM theory, it is also essential to offer a brief summary of the principal intonational research on Spanish. It is not controversial to state that Spanish intonation as a serious object of study begins with Navarro Tomás (1918, 1944). Although there was consistent work on intonation throughout the years, the 1990s witnessed an explosion of interest in Spanish intonation, marked by the arrival of Sosa's (1991) dissertation and the work of Prieto and her colleagues (Prieto, van Santen, & Hirschberg, 1995; Prieto, Shih, & Nibert, 1996; Prieto, 1998). Likely due to the advent of the technological means to easily carry out studies on intonation, recent years have brought forth a dramatic increase in interest in Spanish intonation, with the result being that many researchers have analyzed a variety of utterance types (i.e. declaratives, interrogatives, exclamations, etc.) in detail for a number of Spanish dialects. The following sections will summarize some of these findings.

2.4.1 Spanish declarative intonation

At least as far back as Navarro Tomás (1918), it has been observed that Spanish declaratives have a falling intonation at the end of the utterance. More revealing, however, is his observation that, when in the body of a non-biased (i.e. broad focus) declarative, the intonational contour rises on stressed syllables and that the rise often continues into the following unstressed syllables (Navarro Tomás, 1944). The subsequent work of Prieto and her colleagues on Mexican Spanish (Prieto, van Santen, & Hirschberg, 1995; Prieto, Shih, & Nibert, 1996; Prieto, 1998) and research into Castilian Spanish (Sosa, 1999; Nibert, 2000; Face, 2002, among others) has overwhelmingly confirmed these findings.

While the peak of the F0 rise in the body of the utterance may be reached just beyond the limits of the tonic syllable, more recent research shows that the nuclear syllable typically contains the F0 peak (Sosa, 1999; Face, 2003). The prenuclear and nuclear syllables, then, behave differently in Castilian Spanish. This is illustrated below in Figure 2.5.

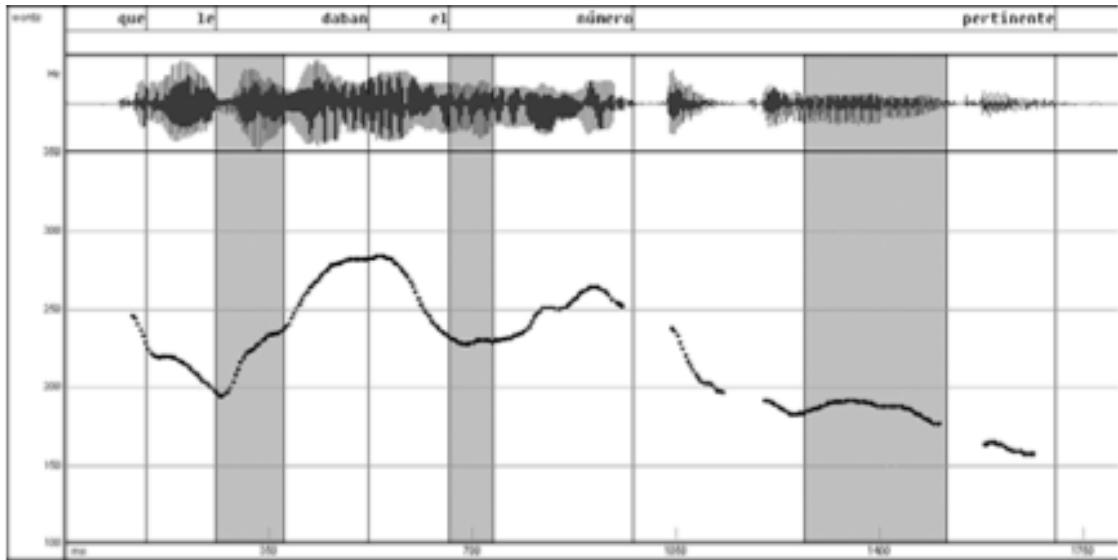


Figure 2.5 Intonation of a declarative utterance *Que le daban el número pertinente*
 ‘That they were giving him the relevant number’ (taken from Face, 2003:118)

The stressed syllables have been shaded in this figure. One can observe that the F0 rises associated with the prenuclear syllables (i.e. the first two) begin right at or very near to the beginning of the syllable itself. The F0 peak associated to the nuclear syllable (i.e. the third one) is reached within the boundaries of the syllable itself. There has been some debate as to how to phonologically analyze these facts in accordance with AM theory assumptions. Prieto (1998) and Nibert (2000) analyze the prenuclear rises as H* pitch accents due to the H tone associated with the syllables. However, others have claimed that an L*+H pitch accent analysis better captures the reality of this type of rise (Sosa, 1999, Face, 2002). The L*+H analysis better accounts for the L tone anchored to the beginning of the syllable and the trailing H tone that is permitted to drift into the unstressed syllables (but see Hualde, 2002, Face & Prieto, 2007, and Face, 2011 for alternative analyses). Subsequent revisions to Sp_ToBI—the Spanish-wide inventory of pitch accents—have recommended the application of L+H* to characterize this tonal

movement (Estebas-Vilaplana, 2008; Prieto & Roseano, 2010). The ‘>’ diacritic represents the delayed peak that occurs in posttonic syllables and the starred H indicates that it associates phonologically to the metrically strong syllable. Moreover, this pitch accent better accounts for the rising nature of the F0 in this position. The F0 rise through the nuclear syllable has been less controversial and is usually analyzed as an L+H* pitch accent, thus reflecting the H tone’s stable location within the stressed syllable itself. L*, though, has been recommended for certain dialects of Spanish and often coexists with L+H* in nuclear position.

Spanish broad focus declarative utterances are also characterized by two well-studied phenomena: downstepping and final lowering, both analyzed in-depth by Prieto et al. (1995, 1996). Downstepping is the process through which each successive F0 peak is scaled lower than that which precedes it (though Face, 2003 presents evidence that downstepping is not nearly as automatic in spontaneous speech as it is in laboratory data). This can easily be observed above in Figure 2.5. Final lowering is a phenomenon that forces the final F0 peak to be realized much lower than would normally be expected due to downstepping. In some cases, it may even appear as if there is no peak whatsoever. Final lowering is also observable in Figure 2.5—though there is a rise and fall in the nuclear syllable, it is much more reduced than the prenuclear pitch accents.

While the L*+H prenuclear pitch accent has been widely applied to Castilian Spanish and is also common to other varieties of Spanish, such as Mexican Spanish (Prieto, 1998) and Miami Cuban Spanish (Alvord, 2006), it has not been found to be adequate for other dialects. Willis (2003) finds two types of rising prenuclear pitch accents for Dominican Spanish and uses L*+H to refer to a rise composed of a sequence of a late L tone and a

late H tone. The L^{*}+H pitch accent does not appear to adequately describe tonal movement in BAS either. Toledo (2000), for example, utilizes a hybrid corpus of laboratory and spontaneous data to show that the BAS prenuclear pitch accent, unlike most other dialects, is best analyzed as H^{*}+L—a high F0 peak followed by a fall within the stressed syllable. Barjam's (2004) analysis concurs on the whole: he finds evidence for a prenuclear peak aligned within the stressed syllable, though he analyzes it differently than Toledo, using L+H^{*} instead. Although most analyses of BAS point to the early realization of prenuclear peaks within the limits of the stressed syllable, some recent research shows that H tones in broad focus declaratives may also be reached in posttonic syllables as well, and that L^{*}+H and L+H^{*} coexist in BAS (Colantoni, 2005). Estebas-Vilaplana (2010) also finds variation between early and late prenuclear peaks and proposes L>H^{*} as the default pitch accent due to this observation. Nevertheless, the majority of work on BAS commonly employs the L+H^{*} analysis to represent this pitch accent (Colantoni & Gurlekian, 2004; Gabriel, 2006; Gabriel et al., 2010; Colantoni, 2011). The standard BAS prenuclear pitch accent is schematized below in Figure 2.6.

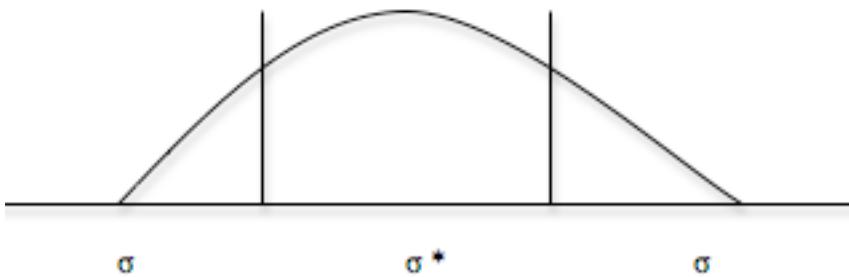


Figure 2.6 Schematization of the prenuclear pitch accent in BAS declaratives (taken from Colantoni & Gurlekian, 2004: 109)

The BAS nuclear pitch accent is configured differently as well. It has been claimed to have a “long fall” (Kaisse, 2001: 147), which has been analyzed as an H tone followed by a fall within the stressed stressed syllable to a trailing L tone—an H*+L pitch accent in AM terms. Colantoni (2011) reports that BAS nuclear pitch accents display a clear preference for steeply falling tonal movements. Moreover, the peaks are found to occur especially early, within the first half of the stressed syllable, lending credence to Kaisse’s H*+L analysis. However, Gabriel et al. (2010) analyze the BAS nuclear accent as either a low pitch accent L* or a falling accent H+L*. Estebas-Vilaplana (2010) finds no evidence of a high target before the L tone (i.e. H+L*) and rather proposes L* as the default nuclear pitch accent. Figure 2.7 provides a schematization of the nuclear accent. In sum, the standard BAS broad focus declarative statement differs in fundamental ways from those of other Spanish dialects, both in the prenuclear and nuclear portions of the utterance, and while there is some disagreement as to the best phonological analysis, there is general agreement as to the intonation patterns themselves.

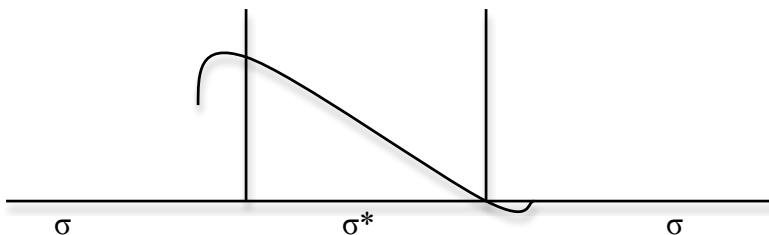


Figure 2.7 Schematization of the nuclear pitch accent in BAS declaratives (taken from Colantoni & Gurlekian, 2004: 109)

2.4.2 Spanish interrogative intonation

The present section will include a discussion of absolute interrogatives.⁷ The absolute interrogative in Spanish, to which one may respond with “yes” or “no”, is typically lexically and grammatically identical to a declarative utterance and the speech context often serves to disambiguate. The following pair of sentences illustrates this (taken from Face, 2005: 49):

- (1) a. Compró pan en el mercado. ‘*He bought bread at the market.*’
b. ¿Compró pan en el mercado? ‘*Did he buy bread at the market?*’

With respect to absolute interrogatives in Peninsular Spanish, Navarro Tomás (1944) states that there is an F0 rise associated with the first stressed syllable and that this rise typically reaches a peak that is higher than the corresponding F0 peak for a declarative utterance. Face (2004) has confirmed this via a production study. Following the first peak, the F0 contour descends throughout the body of the utterance until reaching a low tone that starts at the beginning of the stressed syllable. This tone is sustained throughout the stressed syllable until rising again to the end of the utterance. This pattern is also observable in the work of Quilis (1999) and Face (2004), but Face (2004) finds that approximately 30% of his participants’ absolute interrogative productions contain a third rising pitch accent in the medial portion of the utterance, thus breaking up the long descent described in Navarro Tomás (1944). Though a significant finding, the majority of

⁷ Pronominal interrogatives—those that begin with question words such as “Who”, “What”, “Where”, etc. in English or *Quién*, *Qué*, or *Dónde*, etc. in Spanish—will not be discussed here.

the research agrees that the F0 contour presented in Figure 2.8 represents the prototypical absolute interrogative.

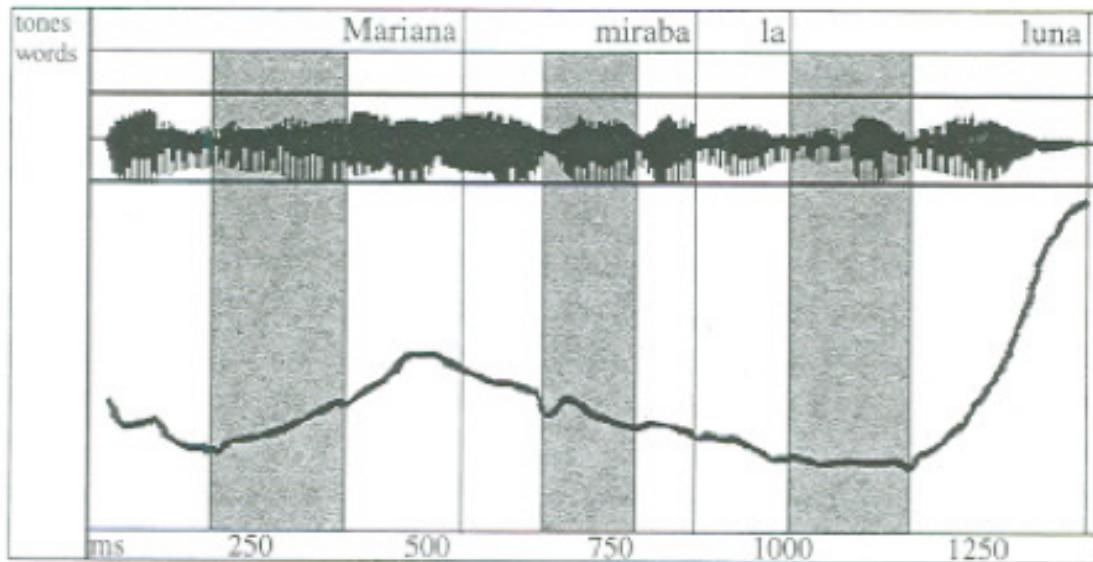


Figure 2.8 Intonation of the absolute interrogative *¿Mariana miraba la luna?* ‘Was Mariana looking at the moon?’ (taken from Face, 2004: 70)

Like nearly every other dialect of Spanish, interrogative intonation in BAS has received much less attention than that carried out for declaratives. Although there have emerged some in-depth treatments of interrogatives in BAS in recent years, many of them present conflicting results. With respect to absolute interrogatives, Fontanella (1980) and Sosa (1999) report high boundary tones, indicating a final rise for this dialect. Barjam (2004), to the contrary, states that absolute interrogatives are produced almost identically to declaratives. That is, there are F0 rises on the prenuclear pitch accents followed by a falling pattern to a low boundary tone. He claims that the key difference between absolute interrogatives and declaratives, however, is the presence of an upstepped L+^{H*}

nuclear accent, which results in a steeper fall to the intermediate phrase-boundary tone sequence L-L%. Toledo & Gurlekian (2009) and Lee (2010) both hypothesize that the lexical stress of the nuclear syllable influences the type of contour produced. That is, an interrogative with proparoxytone or paroxytone stress on the nuclear syllable (i.e. *¿La guitarra se toca con pánico/paciencia?* ‘Is the guitar played with panic/patiently’ from Toledo & Gurlekian, 2009) will result in a falling, circumflex pattern because there is enough posttonic space into which the contour may fall. However, when the interrogative bears oxytone lexical stress on the nuclear syllable (i.e. *¿La guitarra se toca con obsesión?* ‘Is the guitar played obsessively’ also from Toledo & Gurlekian, 2009), the contour is truncated in that there is not space in which a fall may occur—as such, a final rise should be observed. Gabriel et al. (2010) similarly find overwhelming evidence for final falling contours; the few cases of a final rise were also attributed to instances of truncation, following Toledo & Gurlekian (2009) and Lee (2010). It is worth mentioning that Lee (2002) has also put forth evidence that there may be sociolinguistic conditioning occurring here as well—men tend to prefer the (presumably firmer) final fall whereas women prefer the (presumably politer) rising boundary tone. Additionally, Lee et al. (2010) demonstrate that a presumptive absolute interrogative (i.e. one in which the speaker half-knows the response to the question) tends to have an expanded pitch range, when compared to the pragmatically neutral broad focus absolute interrogative. Figure 2.9 offers a schematic representation of an absolute interrogative with a falling contour.



Figure 2.9 Schematic of an absolute interrogative in BAS Spanish (adapted from Barjam, 2004: 50) Text: *¿Nadaba la nona en el lago?]]* ('Did the grandma swim in the lake?')

| | | | |
L+H* L+!H* L+^H* L- L%

2.5 L2 intonation

While it was established above that research on L2 intonation has been sporadic, there have been some notable attempts to characterize L2 contours in the past. This section will summarize the principal findings of these works.

Mennen (2004) is an important starting point for the present discussion. In this study, she examines the role that interference from both the L1 and L2 plays in the realization of pitch accents in Dutch L2 learners of Greek. Though Dutch and Greek have similar rising prenuclear pitch accents, the phonetic timing differs in the two languages. In Greek the peak of the rise occurs in the posttonic syllable (much like many varieties of Spanish). In Dutch, the peak may be aligned in the posttonic syllable as well, but only when the vowel is short; otherwise, when the vowel is long, the peak is aligned in the tonic syllable. She organized a series of experiments to determine if the Dutch learners of Greek can produce the full set of pitch realizations for both languages. She found that when the Dutch learners spoke Greek, 4 of the 5 participants aligned the F0 peak early like their monolingual Dutch peers, which Mennen interpreted as a clear case of interference from their native language. She also detected an influence of the L2 Greek on the realization of the participants' native Dutch intonation. Whereas the monolingual Dutch speakers

preserve the peak timing difference between words with short and long vowels, the same 4 out of 5 Dutch learners of Greek neutralize the timing difference. The one speaker that did not conform to the others was the participant that had been exposed to Greek at the youngest age (15 years of age). Consequently, this participant was able to produce the full range of native-like tonal movements. Mennen concludes that there is bi-directional interference in the realization of prenuclear rising pitch accents by Dutch speakers of Greek: not only does the L1 influence the L2, but the L2 influences the L1. The relevancy of this article for the present study should not be understated. Based on Mennen's findings, it seems quite likely that a learner's L1 intonation patterns will influence the intonational contours employed when speaking the L2. Therefore, we might expect the American English contours of this study's participants to impinge upon the L2 Spanish intonation they produce when studying abroad. This is an issue that will be returned to in Section 2.6.

Ramsey's (1996) dissertation on the acquisition of French intonation is another notable work. It is particularly relevant here because it is a classroom-based study carried out at the university level. She studies two participant pools: 17 beginning learners of French in a second semester course with negligible exposure to French outside of the classroom, and 18 advanced learners of French in a conversation course, also with minimal exposure to the L2 outside of the classroom. The beginning learners use all types of contours, demonstrating an unstable intonational system in which definite rules have not yet been formed. Interestingly, though, they do not mimic American English intonation when speaking French, a strong indication of an emerging interlanguage, according to Ramsey. The advanced learners, however, incorporate much more

frequently native-like French intonation contours into their L2 production. On the basis of this cross-sectional data, she concludes that learners' intonation shows gradual movement towards native-like patterns.

Kelm (1987) investigates the usage of pitch and intensity to convey contrastive focus by American learners of Spanish as compared to native Mexican Spanish-speaking counterparts. To gauge the degree of pitch deviation employed for contrastive focus in L1 and L2 Spanish, the author compares the subjects' normal tone frequency (i.e. the frequency found on the first syllable at the beginning of declarative utterances) to the contrasted tone frequency. Kelm shows that the American learners of Spanish deviate from their normal tone frequency to convey contrast much more than the native speakers of Spanish. This difference may likely result from the lexical and syntactic alterations that native Spanish speakers make to their utterances—such as the addition of words like *sólo* 'only' or *ya no* 'doesn't anymore', or through topic-comment formation—whereas native English speakers must rely more heavily on the role of intonation to convey contrastive focus, and as such transfer this tendency into their L2 Spanish. Similarly, Kelm (1995) also investigates pitch differences for both native English-speaking learners of Spanish and native Spanish-speaking learners of English. When speaking the L1, the native English speakers use a wider pitch range than do the native speakers of Spanish. However, this pitch difference is not transferred to the L2, as both groups reduce their pitch ranges in the L2, leading Kelm to conclude that a smaller pitch range serves as an indicator of lack of fluency in the L2.

Nibert (2005), a pivotal work, as it was the first principled study of L2 Spanish intonation based in the AM theory, also employs cross sectional data to investigate the

perception of intermediate phrase accents in Spanish. She tests 2 groups of adult participants: 18 advanced learners and 37 intermediate learners. The results suggest that both advanced and intermediate learners perceive and attend to a disambiguating utterance medial H- tone in Spanish. That is, in the utterance [lilas]H- [y lirios amarillos], both groups perceived the high intermediate phrase tone after *lilas*, and interpreted the sentence as meaning only the irises were yellow (*lirios amarillos*). Their interpretations of these ambiguous sentences approximated those of native Spanish speakers. However, when the syntax in the prompts became more complex, the intermediate learners struggled more than the advanced learners to approximate native speaker perceptions. Nibert states that the intermediate learners have not yet mastered the complexity of meaning that phrase tones contribute to the utterance. Furthermore, this suggests stages of acquisition of phonological elements, such as these phrase tones. The limitation, of course, with Ramsey (1996) and Nibert (2005) is that these cross-sectional data only point to theoretical acquisition, as the same participants are not being followed throughout a more extended treatment period.

Though a cross-sectional approach is much more feasible in terms of time and resources, longitudinal data have also been collected to analyze learner intonation. Ramírez Verdugo (2006) presents research on the effects of computer-assisted prosodic training over a 10-week period in which instruments were used to provide auditory and visual displays of pitch contours and structured activities based around the prosody of English. Ten Spanish learners of English received the training while an identical control group did not. The participants were recorded pre-training and post-training. While native English-speaking judges rated both groups similarly during the pre-test measurement,

only the experimental group registered significant gains in approximating native English intonation patterns. Ramírez Verdugo interprets these results as clear evidence that explicit instruction of intonation raises learners' awareness of the importance of intonation and, more importantly, that prosodic improvement is an attainable goal.

The aforementioned Henriksen et al. (2010) is an essential addition to the present discussion as it is the first study to deal explicitly with the development of L2 Spanish intonation longitudinally. The authors follow the progress of 4 learners of Spanish studying abroad in León, Spain for 6 weeks. More specifically, they analyze the global intonational movements and final boundary tones pre- and post-study abroad. They uncover two general developmental trends. One speaker did not modify her tonal patterns at all over the 6-week period. On the other hand, the three remaining speakers did modify their global contours and final boundary movements, indicating that variability had increased over time. According to the authors, these findings are in line with what is generally known about second language acquisition: when new elements are added to the interlanguage, variability increases until the more native-like element replaces the element that previously had been in use.

Trimble (2013) is another recent example of a developmental approach to the acquisition of L2 Spanish intonation. Trimble's study identifies and describe how L2 Spanish intonation changes over time in a study abroad setting and isolates L1 intonational characteristics, stylistic variation, and native speaker interaction as factors that may promote or hinder acquisition of native-like norms. The study follows 9 learners studying abroad in Mérida, Venezuela for a semester and tracks their production of Andean Venezuelan Spanish intonation for broad focus declaratives and absolute

interrogatives. One of his principal findings is that, by the end of the semester, learners have consolidated various patterns that they had used at the beginning of the semester into a preferred pattern that is employed with much more consistency. Rather than analyzing these changes via AM theory, Trimble instead classifies the preferred pattern for declarative intonation as *rising, rising, low*, though one learner preferred *high, low, low*. The author did not observe much variation with respect to absolute interrogatives over time, as 8 of the 9 learners maintained a preference for a *rising, low, rising* pattern. By the end of the semester, one learner, however, had changed from a *rising, low, rising* pattern to a circumflex final falling pattern, which is target-like. Four of the other learners employed this circumflex pattern sporadically, though it did not become their most frequent pattern. Furthermore, this increase in consistency is coupled with a reduction in features associated with their L1 English, such as high initial tones, falling prenuclear pitch accents, and slight final rises. Trimble also investigates the role of task formality and finds that those learners that have incorporated the use of the circumflex absolute interrogative pattern use it 39% of the time in informal speech, as compared to only 19% of the time in formal speech, thus harkening back to prior claims that learners pay more attention to form in formal tasks and more attention to meaning in informal tasks (see Tarone, 1979). Lastly, he also reports that the degree of native speaker interaction had a positive effect on the development of target-like intonation. Six of the learners that reported high levels of interaction with the host culture significantly outperformed the 3 learners that reported much more interaction in their L1 American English.

2.6 L1 American English intonation

As was observed in the preceding section with Mennen's (2004) study, L1 intonation may play a crucial role in the intonational production in a learner's L2. Moreover, Henriksen et al. (2010) state that a key limitation of their study was the lack of knowledge with respect to their participants' L1 Midwestern American English intonational patterns and how they may have influenced their L2 Spanish intonation. Therefore, it is worth mentioning the common characteristics of American English (AE) intonation even if the intonational peculiarities of regional AE dialects (such as the English spoken in the Upper Midwest of the United States) are unknown at present.

Pierrehumbert & Hirschberg (1990) propose two neutral declarative tonemes for AE, the first of which falls from a nuclear high tone to a low boundary tone, which they classify as an H* L- L% nuclear sequence. This contour communicates a mutual understanding on part of both the speaker and listener. The second neutral declarative toneme is similar, but is classified as H* L- H%. This contour falls from the nuclear H tone to a low phrase tone and subsequently rises again to the end of the utterance. The H% signals that the speaker is more hesitant with respect to what is being conveyed than s/he might be when employing the H* L- L% contour. These two declarative contours are displayed in Figures 2.10 and 2.11.

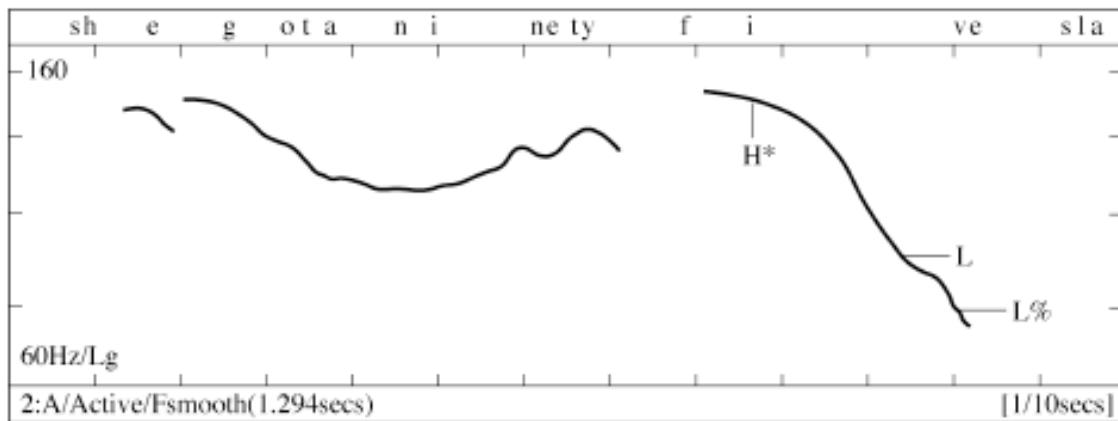


Figure 2.10 An example of an H* L- L% AE declarative contour (taken from Levis, 2002: 61)

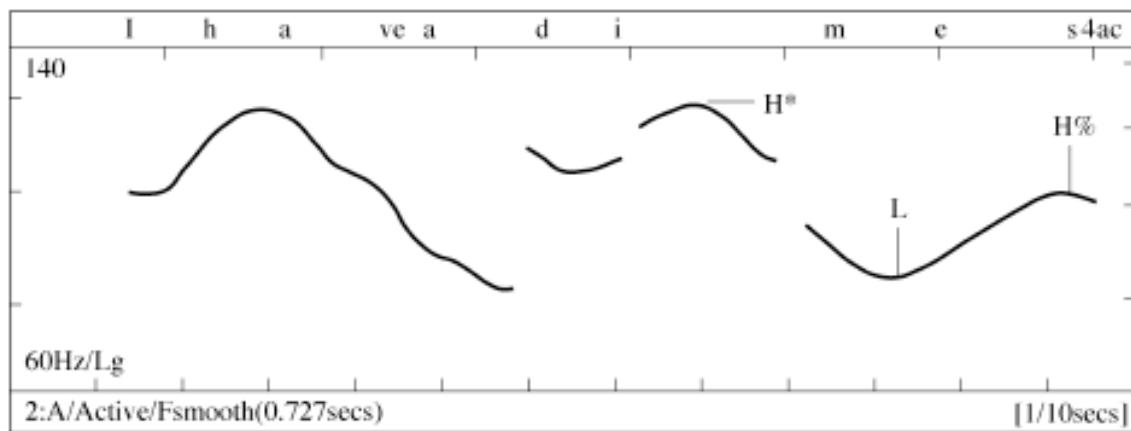


Figure 2.11 An example of an H* L- H% AE declarative contour (taken from Levis, 2002: 61)

In an examination of a large corpus of data of AE, Dainora (2001) attempts to construct a probabilistic model of intonation that assumes that, rather than occurring in free variation, pitch accents have probabilities of occurring based on that which preceded it. In accordance with prior research (cf. Cruttenden, 1986), her study reveals that, like

Spanish, AE declaratives unsurprisingly fall over the course of the utterance. Unlike Spanish, however, H* is the most common prenuclear and nuclear pitch accent in AE, followed by L+H*⁸. Liu & Xu (2007) also report that AE declarative intonation is signaled by a sequence of an H* L- L%, also in line with the analysis offered in Pierrehumbert & Hirschberg (1990). Recall that H* and L+H* are both rising pitch accents that typically reach their peaks within the tonic syllable⁹. Most Spanish varieties (but usually not BAS) present rising prenuclear L*+H/L+>H* pitch accents and an L+H* nuclear pitch accent.

As for AE absolute interrogatives, Cruttenden (1986) claims that speakers employ a high rising contour to signal this yes/no question.¹⁰ More recent research has indicated that AE also employs a low rising contour as well, traditionally only thought to be a key hallmark of British English. In fact, Levis (1999, 2002) has provided empirical evidence that AE speakers do not perceive any difference whatsoever. Likewise, Pierrehumbert & Hirschberg (1990) consider the low rise (analyzed as L* H- H%) to be the standard pattern for absolute interrogatives in AE. Hedberg & Sosa (2011: 847) found that 327 of 410 absolute interrogatives in their data were low rising (as compared to 44 high rises). With respect to AM theory, these authors analyze this question type as a series of simplex H* prenuclear pitch accents followed by the nuclear pitch accent-boundary tone sequence

⁸ Dainora's (2001) analysis relies on a corpus containing the speech of professional FM radio news announcers at Boston University. It remains unclear how these data might differ from those of the participants in the present study.

⁹ It should be noted, however, that Silverman & Pierrehumbert (1990) offer evidence that the peak alignment for prenuclear pitch accents is variable and susceptible to several prosodic factors, such as the status of the following accent and the duration of the stressed vowel.

¹⁰ This assumes that the interrogative employed is a “genuine” question seeking a yes/no response, and not when the speaker either presumes the answer or seeks a confirmation from the listener (cf. Thompson, 1995; Seong, et al., 2002).

$L^* H- H\%$ (for the low rise) or $H^* H- H\%$ (for the high rise), both of which are in accordance with Pierrehumbert & Hirschberg (1990). Seong et al. (2002) also find evidence for $L^* H- H\%$ and $H^* H- H\%$ absolute interrogative tonemes in neutral absolute interrogatives, though the contours may fall in other pragmatic conditions, such as confirmation. These contours are illustrated in Figures 2.12 and 2.13.

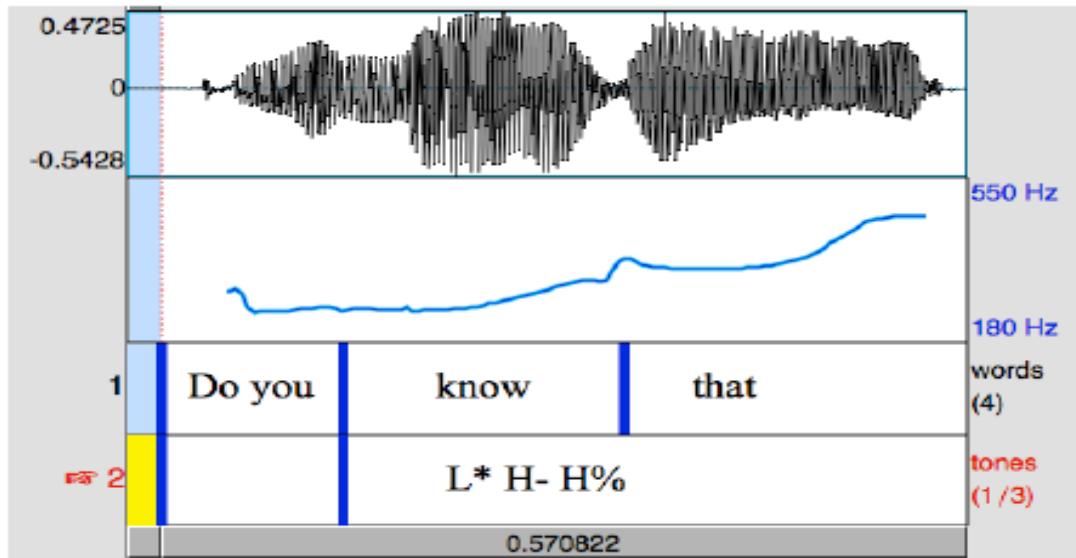


Figure 2.12 An example of the low-rising $L^* H- H\%$ AE absolute interrogative (taken from Hedberg & Sosa, 2011: 850)

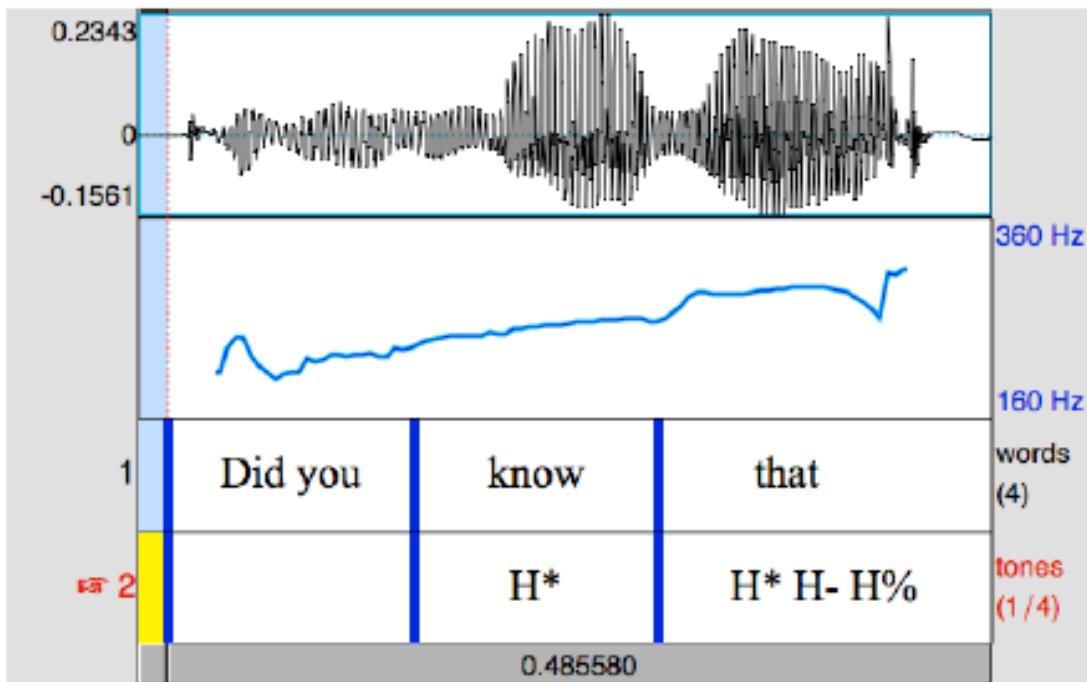


Figure 2.13 An example of the high-rising H* H- H% AE absolute interrogative (taken from Hedberg & Sosa, 2011: 850)

In sum, AE and most varieties of Spanish do not differ dramatically in terms of their global contours. The phonological and phonetic implementation of these shapes, however, is where the differences are to be found, especially with respect to BAS, the dialect of Spanish to which the participants in this study were exposed. With respect to these differences, AE speakers are prone to employ a rising contour for absolute interrogatives, while BAS speakers are more likely to produce a falling pattern (see Section 2.4). Broad focus declaratives, too, offer interesting points of comparison. Although AE and BAS speakers tend to align both prenuclear and nuclear peaks in declarative statements within the tonic syllable, the phonological status of the pitch accents themselves likely diverge. Whereas AE speakers favor simplex H* tones, BAS speakers often exhibit quick, steep F0 falls (such as H*+L) within the tonic syllable.

Although there is much more to be said on this matter, it is hoped that the foregoing has pointed to possible ways in which the subjects' L1 English intonation may influence the L2 Spanish intonation observed herein.

2.7 A brief note on L2 phonological gains in the study abroad context

This dissertation will not offer a comprehensive account of the literature on phonological gains made during an SA experience. This decision was made for a pair of reasons. Firstly, comparing the L2 gains made while abroad against those made while studying in the at-home context is not a primary goal of this investigation. As stated above, the SA context was chosen in order to maximize exposure to BAS. Though the present work certainly contributes to this field of study, the results and their applicability to SA studies are largely considered a byproduct of a different set of research questions. Secondly, only Henriksen et al. (2010) and Trimble (2013) investigate the development of L2 Spanish intonation in the study abroad context, thus limiting the number of immediately relevant antecedents for this project. Most of the remaining literature on L2 phonology and context of learning deal with the acquisition and usage of segmental sounds (Stevens, 2001; Díaz-Campos, 2004, 2006), the development of target-like fluency (Segalowitz & Freed, 2004; Segalowitz et al., 2005; Lord, 2006; Martinsen et al., 2010), the emergence of sociolinguistic awareness (Regan, 1995), or offer reviews of the state of the art of SA (Freed, 1995, 1998; Collentine & Freed, 2004; Lafford & Collentine, 2006).

2.8 Summary

This chapter has endeavored to provide an overview of intonational phonology as viewed through the AM theory. In doing so, AM theory's fundamental assumptions and theoretical constructs, and the advantages associated with them, were discussed. This chapter has also offered a review of Spanish intonation as analyzed via the AM theory. The principal findings for broad focus declaratives and absolute interrogatives were summarized, with emphasis placed on the particulars of BAS, the dialect to which the subjects in this study were exposed. While research into L2 Spanish intonation has been noticeably scant, this chapter has attempted to give a survey of some of the noteworthy research carried out in other languages. Lastly, with the aim of identifying possible influences on the L2 Spanish intonation, many of the major intonational traits of AE were reviewed.

Chapter 3: Methodology

3.1 Introduction

This chapter details the research methodology that was implemented for the current dissertation. Section 3.2 elaborates upon the production study. Within this section, there are several subsections. Section 3.2.1 and its subsections detail the elicitation tasks implemented here. Section 3.2.2 highlights the participant demographics, both for the experimental group as well as for the control group. Section 3.2.3 provides a holistic view of the way the recording session with the participants was conducted. Lastly, for the production study, Section 3.2.4 offers a detailed explanation of the acoustic measurements and data labeling procedures.

Section 3.3 and its subsections are devoted to the analysis of the extralinguistic factors that promote or hinder the acquisition of BAS intonation. Section 3.3.1 is concerned with the social networks that the learners developed with native BAS-speaking contacts during the study abroad semester, and Section 3.3.2 investigates the learners' attitudinal posture towards the target language, culture, and society.

3.2 Production study

3.2.1 Data elicitation tasks

Tarone (1979, 1983) has shown that the type of task that a learner is asked to carry out may result in systematic variability in the learner's production of phonological or syntactic phenomena. A learner's interlanguage (IL)—the developing L2—has been shown to change as the situation in which it is produced changes, leading Tarone (1979) to liken IL to a chameleon. Her observations stem from well known Labovian principles,

such as 1) there are no single style speakers, 2) there exists a continuous range of speech styles defined by the amount of attention paid to speech, 3) a speaker pays more attention to his/her speech when in formal situations (i.e. under direct observation). However, as Tarone points out, many researchers seem to forget these principles as they set up their experiments, and they often treat the IL as a homogenous, monolithic whole rather than as a variable, context-sensitive language. This study, on the other hand, attempts to heed Tarone's advice by building task variation into the methodology. With the aim of approximating a reasonable number of speech styles, three elicitation tasks were designed: a formal reading task; a semi-spontaneous information gap task; and a spontaneous sociolinguistic interview in participant dyads. These tasks are thought to represent 3 different levels of speech formality, with the reading task at one end of the spectrum (i.e. the most formal and controlled) and the sociolinguistic interview at the other end (i.e. the most spontaneous and natural). The information gap task likely falls somewhere in between these two in terms of formality of the speech event. The participants also completed a language background questionnaire. These tasks will be described in further detail in the subsections that follow.

3.2.1.1 Sociolinguistic interview

The first data elicitation task was a standard sociolinguistic interview carried out in participant pairs, with no intrusion from the researcher. While sociolinguistic interviews are common practice for analyses of sociolinguistic and language contact phenomena, intonational phonology has benefitted primarily from laboratory speech data. The ubiquity of this type of controlled, elicited data in this field of study stems from the need

to tease apart the numerous variables that can and do affect a speaker's intonation, such as syntactic structure, pragmatic meaning, the segments produced, emotion, and attitude, among many other possible factors (Face, 2010). How these factors condition the intonational contour is largely unknown at this point, and intonational phonologists have historically resorted to artificial speech prompts to reduce their effect.

However, in recent years, a push to capture data that more closely resemble spontaneous, naturally occurring speech has resulted in the implementation of new elicitation techniques, such as guided questionnaires (see Prieto & Roseano, 2010) and information gap tasks (see Simonet, 2008; Henriksen, 2010). Some researchers have undertaken the considerably difficult task of analyzing *only* naturally occurring speech data (see Face, 2003; Martín Butragüéño, 2008; Colantoni, 2011). As Face (2010) notes, the ultimate goal of a phonologist is to describe naturally occurring speech; as such, given the advances in the field of intonational phonology over the past 20 to 30 years, it is critical to undertake studies with this explicit goal in mind. This should not, however, imply the abandonment of laboratory data—it is still the case that elicited data serve to smooth out the enormous complexities present in natural speech.

Consequently, to balance out the more controlled qualities of the other elicitation tasks, the participants were grouped into pairs¹¹ and carried out their own 30-minute sociolinguistic interview in a quiet office, once at the beginning of the semester and again

¹¹ The participants were paired according to their previous experience with Spanish. That is, those participants that were enrolled in the same or similar classes were paired together so as to promote a relatively fluid conversation and an equitable linguistic dynamic in which each member felt comfortable with their own skills with respect to their partner's.

at the end.¹² The researcher explained to each pair the basic idea and provided them with a list of possible discussion topics, including items such as first impressions of Buenos Aires and its culture and language, previous travel experiences, family, favorite pastimes (beginning of the semester), as well as items such as preferred travel destinations, the positive and negative aspects of life in Buenos Aires, and what one would do upon return to the United States (end of the semester). No questions were prepared ahead of time for the participants; they were only given a list of themes and were asked to formulate on the spot the necessary questions to initiate and continue conversation. The researcher also encouraged the participants to veer away from the themes if they wished to do so. The themes were meant only to help guide the overall flow of the interview and the participants were in no way obligated to stick to them. Upon explaining all of this to the participant pairs, the researcher left the room and allowed the participants to guide their own interview with the hopes of minimizing the observer's paradox (cf. Labov, 1972). The participants were stopped after 30 minutes had elapsed and no group expressed any difficulty in communication upon reaching this point. The recording device—a Marantz PMD660 digital recorder—was stopped and they were told that they would continue with another speaking activity, which will be described below in Section 3.2.1.2.

3.2.1.2 Information gap task

After completion of the sociolinguistic interview, the learners—remaining in the same pairs as those formed for the interview—carried out the following information gap task. Taking inspiration from Simonet's (2008) methodology, a “twenty questions”-style

¹² Because there was an odd number of participants, Jonah graciously agreed to perform the paired activities twice.

interactive game was designed. The two participants were seated together and each held a sheet of paper with a unique list of 5 famous celebrities (see Appendix D for the materials used in this task). The goal of the game was to guess the identities of the celebrities on the partner’s list. To do this, one participant asked his/her partner a yes/no question in Spanish, along the lines of “Is this person a famous actress?” The partner was allowed to respond with a *sí* ‘yes’ or a *no* ‘no’ and a broad focus declarative that provided a clue to his/her partner (i.e. “No, she is a singer”¹³). The participant asking questions then refined his/her line of questioning, asking others, such as “Is she a native Spanish speaker?” until finally s/he could identify with confidence the name of the celebrity. The subjects then switched roles until all of the celebrities had been identified.

This task was designed to provide a more relaxed, fun speech event that reduced the speakers’ attention to form. Like the sociolinguistic interview, the participants completed the information gap task once at the beginning of the study abroad period and once again at the end, though the list of celebrities was unique for the beginning and end sessions. This task took approximately 15 minutes to complete. It was recorded using the same recording device listed above in Section 3.2.1.1.

3.2.1.3 Contextualized reading task

The final data elicitation task performed by the participants was the contextualized reading task. It is the most formal and controlled task carried out by the participants, and it allowed the researcher to manipulate the various factors that may influence intonation production, such as individual segments, syntactic structure, contextual cues, and

¹³ It is possible that this type of reply could be contrastively focused; that is, “singer” could be contrasted with “actress” in this example, yielding contrastive focus intonation. Those instances were discarded and left unanalyzed.

emotion, among many possible others. As such, the speech elicited from this task is laboratory-based and entirely non-spontaneous. As Alvord (2006) has pointed out, while a laboratory phonology approach such as this is eschewed in sociolinguistics and language contact for presumably failing to adequately capture natural speech, it allows the researcher to obtain a sufficient number of utterance types and to simplify the complexity inherent in intonation.

Taking inspiration from several prior laboratory-based studies of Spanish intonation (Face, 2002; Willis, 2003; Barjam, 2004; Alvord, 2006; Henriksen, 2010), a corpus of syntactically and lexically identical absolute interrogatives and broad focus declaratives was designed (i.e. *Llamó Mar* ‘Mar called’ vs. *¿Llamó Mar?* ‘Did Mar call?’). Each utterance had at least two content words, thus allowing for the analysis of both a prenuclear and a nuclear pitch accent. Furthermore, to ensure the visibility of the pitch track during the analysis stage, the sentences were constructed using only voiced consonants in the words receiving lexical stress (i.e. the target syllables). An unstressed non-content word like *para* ‘for’, on the other hand, was allowed to contain the voiceless obstruent /p/.

The utterances were arranged in 8 sets (4 declarative sets and 4 interrogative sets), with each set containing 6 unique utterances, summing to a total of 48 unique test sentences (6 utterances x 8 sets), which were randomized when presented to the participants. The complete set of test sentences can be found in Appendix E. A sample set is shown in Table 3.1.

Declarative	Absolute interrogative
a) <i>Llamó Mar.</i> ‘Mar called.’	a) <i>¿Llamó Mar?</i> ‘Did Mar call?’
b) <i>Llamaba Mar.</i> ‘Mar was calling.’	b) <i>¿Llamaba Mar?</i> ‘Was Mar calling?’
c) <i>Llama Lamar.</i> ‘Lamar is calling.’	c) <i>¿Llama Lamar?</i> ‘Is Lamar calling?’
d) <i>Llamábamos a Mar.</i> ‘We were calling Mar.’	d) <i>¿Llamábamos a Mar?</i> ‘Were we calling Mar?’
e) <i>Llamábamos a Lamar.</i> ‘We were calling Lamar.’	e) <i>¿Llamábamos a Lamar?</i> ‘Were we calling Lamar?’
f) <i>Llamábamos para Lamar.</i> ‘We were calling for Lamar.’	f) <i>¿Llamábamos para Lamar?</i> ‘Were we calling for Lamar?’

Table 3.1 A sample set of test sentences read by participants

In these groups, the number of unstressed syllables between stressed syllables (those that have been underlined in Table 3.1) has been manipulated. The a) sentence in each group contains zero unstressed syllables between the stressed syllables whereas the b) sentence contains one unstressed syllable between stressed syllables and so on until the f) sentence, in which there is a maximum of 5 intervening unstressed syllables. This was done in order to be able to observe the location of the pitch accents in various contexts, including that of tonal clash, in which two stressed syllables are found adjacent to one another. These manipulations allow one to observe which tones in the prenuclear portion of the utterance are the unanchored leading or trailing tones (i.e. unstarred) and which tones are associated to the stressed syllable (i.e. starred), in turn allowing for a phonological analysis of the pitch accent. To determine the same for the nuclear portion of the utterance, the number of unstressed syllables at the end of the utterances was manipulated as well. Table 3.1 has grouped together all of the sentences that end in

oxytonic stress. Appendix E shows that Group 2 and 3 contain final words with paroxytone and proparoxytone stress, respectively. Group 4 contains final words with paroxytone stress. This group is also unique in that it contains words with 2 prenuclear content words. These sentences were included to determine if the second prenuclear pitch accent behaved differently from the first prenuclear pitch accent.

The entire set of sentences was randomized and embedded in a Microsoft PowerPoint slideshow. Each slide contained two elements: (1) the target test sentence and (2) a context meant to both elicit the proper utterance type (i.e. declarative vs. absolute interrogative) and to ensure that the participant read the utterance in a natural, conversational way. The following offers a sample of the context that preceded the test sentence on the PowerPoint slide:

(2) *Contexto: Virginia quiere saber qué alabó Ana. Vos respondés:*

Alabó Málaga.

(‘Context: Virginia wants to know what Ana praised. You respond:

She praised Malaga.’)

As indicated above, each target sentence was meant to be read in broad focus; that is, no one portion of the utterance was meant to stand out against the others, as opposed to narrow focus, wherein one word or syntactic constituent is given special prominence (Ladd, 1980). Any utterance that was erroneously produced in narrow focus was removed from the analysis.

Each target sentence was embedded in the slideshow twice, thus resulting in a total of 1,056 test utterances (48 test sentences x 2 repetitions x 11 participants) for each

recording session. Each participant, though, completed this task on two different occasions, once at the beginning of the study abroad period and approximately four months later near the end of the study abroad semester, resulting in a grand total of 2,112 productions.¹⁴

The participants sat at an individual computer station in a quiet room at the Fundación Ortega y Gasset, Argentina. The PowerPoint presentation thanked them for their participation and proceeded to guide the participants through the task with a brief tutorial followed by several practice slides. The participants' first click brought up the context and the second click brought up the test utterance. They were instructed to read the context in silence and then produce the target sentence aloud. The practice slides were not included in the analysis. After successfully completing the practice session, the researcher left the room so that the participant could complete the task alone. The target utterances were recorded with a Marantz PMD660 digital recorder and a Shure SM10A head mounted dynamic microphone. This task took approximately 15 minutes to complete.

3.2.1.4 Language background questionnaire

The participants (see Section 3.2.2.1 below) also filled out a language background questionnaire at the beginning of the data collection process. This form asked that the participant provide information regarding his/her age, sex, current residence (in the United States), and hometown. Furthermore, in completing the questionnaire, the participants were asked to report on their language usage and language learning histories.

¹⁴ Many of these sentences were not analyzable due to participant disfluency, improper stress placement, and creaky voice.

More specifically, they identified at what age they began learning Spanish, if they spoke other languages and for how long, if any family members or friends spoke Spanish, if they had studied abroad prior to the current semester, if they were a major or minor in Spanish, etc. The complete language background questionnaire is included in Appendix A. The information provided by the participants is included below in Section 3.2.2.1.

The native-speaking control group participants (see Section 3.2.2.2 below) were also asked to fill out a language background questionnaire. The questions are somewhat different and formulated in Spanish. This can be seen in Appendix B and the information they provided is included in Section 3.2.2.2.

3.2.2 Participants

3.2.2.1 Experimental group

The learners of Spanish comprising the experimental group in this study were 11 undergraduate students of Spanish, 8 female and 3 male native speakers of American English. Native speakers or heritage speakers of Spanish were not eligible to participate in the study. None of the participants spoke a language other than English and Spanish.¹⁵ The participants were between the ages of 19 and 23, with the average age being 20. Most were recruited through the Learning Abroad Center at the University of Minnesota after they had committed to a study abroad semester in Buenos Aires, Argentina at the Fundación José Ortega y Gasset Argentina, though two were recruited on site as their home institution was not the University of Minnesota. Most of the learners in this study

¹⁵ Two additional learners—not included in the 11 students mentioned above—were immediately eliminated from participation in the study due to their linguistic backgrounds. One spoke L1 Mandarin Chinese and the other spoke Kikuyu with his parents.

had studied the equivalent of 4 semesters of Spanish prior to the study abroad trip, though two learners had completed five and two learners had completed only 2. Table 3.2 summarizes the relevant participant background information, as obtained from the language background questionnaire described in Section 3.2.1.4.

Participant¹⁶	Sex	Origin	Age	Age when started studying Spanish	Previous Study Abroad?	# Semesters of Spanish completed before trip
1. Amanda	F	Lancaster, South Carolina	20	14	No	4
2. Allison	F	St. Paul, Minnesota	21	14	Costa Rica (2 months)	4
3. Brianna	F	Sioux Falls, South Dakota	19	14	No	4
4. Morgan	F	Eden Prairie, Minnesota	21	13	Spain (2 weeks)	5
5. Jeremy	M	Green Bay, Wisconsin	20	10	No	4
6. Eve	F	Elmira, New York	20	13	No	5
7. Leah	F	Columbia, South Carolina	20	14	Spain (3 weeks)	2
8. Samantha	F	Minneapolis, Minnesota	21	11	No	2
9. Jonah	M	Minneapolis, Minnesota	19	14	Guatemala (3 weeks)	4
10. Katie	F	Roseville, Minnesota	23	16	No	4
11. Tyler	M	Minneapolis, Minnesota	21	13	No	4

Table 3.2 Summary of learner-participant background information

¹⁶ The names listed in this column are pseudonyms.

3.2.2.2 Control group

A corpus of L1 BAS speakers was included to determine if the learners of Spanish approximated native-like intonational contours over time. These participants carried out the same elicitation tasks as their Spanish learner counterparts but did so only one time. These participants were recruited with the help of the Fundación Ortega y Gasset. They were 1 female and 3 male native speakers of BAS and were between the ages of 22 and 29, with the average age being 25. As indicated above, these participants also completed a language background questionnaire to determine if any family history, language learning experience, or time spent abroad, for instance, had influenced their intonation. Some salient demographic points are included in Table 3.3.

Participant¹⁷	Sex	Origin	Age	Schooling	Profession
1. CS-1	F	Buenos Aires	26	University	Industrial engineer
2. CS-2	M	Buenos Aires	29	University	Business administration
3. CS-3	M	Buenos Aires	22	University	Student
4. CS-4	M	Buenos Aires	22	University	Student

Table 3.3 Summary of control group background information

As Table 3.3 shows, the control group participants are fairly homogenous and, generally speaking, are of the same age and socioeconomic class of the Spanish learners,

¹⁷ The control group speakers were not assigned pseudonyms so as to not create confusion in the remainder of the thesis as to who is a learner and who is a control group member.

thus forming theoretical members of a group with which the learners might attempt to establish social ties. As these native BAS speakers are all university educated, it should come as no surprise that they all report knowledge of English (but no other L2); however, only CS-1 reports using it more than 1 hour a week. Even she only reports to using it approximately 3 hours a week. As such, it does not appear that English or any other second language has influenced in any meaningful way their intonational production in Spanish. Furthermore, only CS-1 reports having ever been abroad to an L1 English-speaking country. She spent a 3-week vacation in the United States with her family. Lastly, all of the control group speakers' parents' native language was Spanish and they were all born in Argentina, with the exception of CS-2, whose father was born in Spain. Special attention was paid to CS-2's intonation for this reason, but no appreciable outside influence was noted whatsoever, as his intonation was quite consistent with that of the other control group members.

3.2.3 Recording procedure

The recording session with the learners took approximately 75 – 90 minutes. Each pair was asked to sit at a table in a quiet, private room at the Fundación Ortega y Gasset. The participants first completed the statement of informed consent, followed by the language background questionnaire, together taking approximately 10 minutes. Following these two tasks, the participants engaged in the sociolinguistic interview for approximately 30 minutes. Upon completion of this, they immediately performed the 20 questions game in the same pairs. This took approximately 15 minutes. After this task was completed, the participants were split up. Participant 1 of the pair performed the formal reading task at a computer, while participant 2 accompanied the researcher out of

the room, whereupon s/he completed a brief worksheet indicating the social contacts that s/he had made in Buenos Aires, which naturally were few as the learners had only been in the city a few days at that point. The partners then switched places, with participant 1 completing the social contact worksheet and participant 2 performing the reading task. They were then thanked for their participation and the recording session ended.

During the second round of data collection at the end of the study abroad semester, the participants also completed two additional tasks, both done in English: (1) a questionnaire in which they detailed their social network contacts while in Buenos Aires, and (2) a brief interview designed to give the researcher a sense of the social and linguistic attitudes that the participants had developed over time while in Buenos Aires and the degree to which they were motivated to continue learning Spanish. These tasks were completed in the presence of the researcher while the learner's partner was completing the formal reading task. These two tasks are explained in further detail below in Section 3.3.

The control group data were collected only once and this was done at the beginning of the learners' study abroad semester. The recording session was scheduled in identical fashion as that mentioned immediately above for the experimental group. Participants CS-1 and CS-2, a romantic couple, were grouped together, and CS-3 and CS-4, longtime friends, were paired together. These recordings were conducted in a quiet space in their private residences in Buenos Aires.

3.2.4 Acoustic analysis

The data analysis was carried out via Praat (Boersma & Weenink, 2010), a software program used for the analysis of phonetic data. Though each elicitation task was recorded

digitally as a whole sound file, individual utterances were manually extracted from the larger data set and turned into smaller, unique sound files. These smaller files were subsequently imported into Praat so that spectrograms and pitch tracks could be easily observed. From there, several measurements were recorded. First, each utterance was divided into its component words; this constituted the topmost tier of the Praat TextGrid (see Figure 3.1 below). Below this tier, the beginning and end of stressed syllables were identified and marked as S1, S2, etc. After doing this, F0 minima (i.e. valleys resulting from L tones) and maxima (i.e. peaks resulting from H tones) were located. The F0 maxima constituted the highest point achieved by the pitch contour in a pitch accent rise. The F0 minima were located by identifying an “elbow” where the contour bottomed out after a fall and before it rose again. On the third tier, F0 minima were labeled L1, L2, etc. and the maxima were labeled H1, H2, etc. The scaling and alignment for the initial and final points in the contour were recorded as well and were labeled IV (initial value) and FV (final value). Figure 3.1 illustrates the annotation and data analysis process. Moving from the top to the bottom, one can see the following: 1) a speech waveform, 2) a spectrogram with a superimposed F0 contour, 3) the individual words forming the utterance, 4) the stressed syllable boundaries, marked with S1 and S2, and 5) the F0 turning points, marked with L1 and L2 for the valleys, and H1 and H2 for the peaks, and the initial and final values, marked IV and FV, respectively.

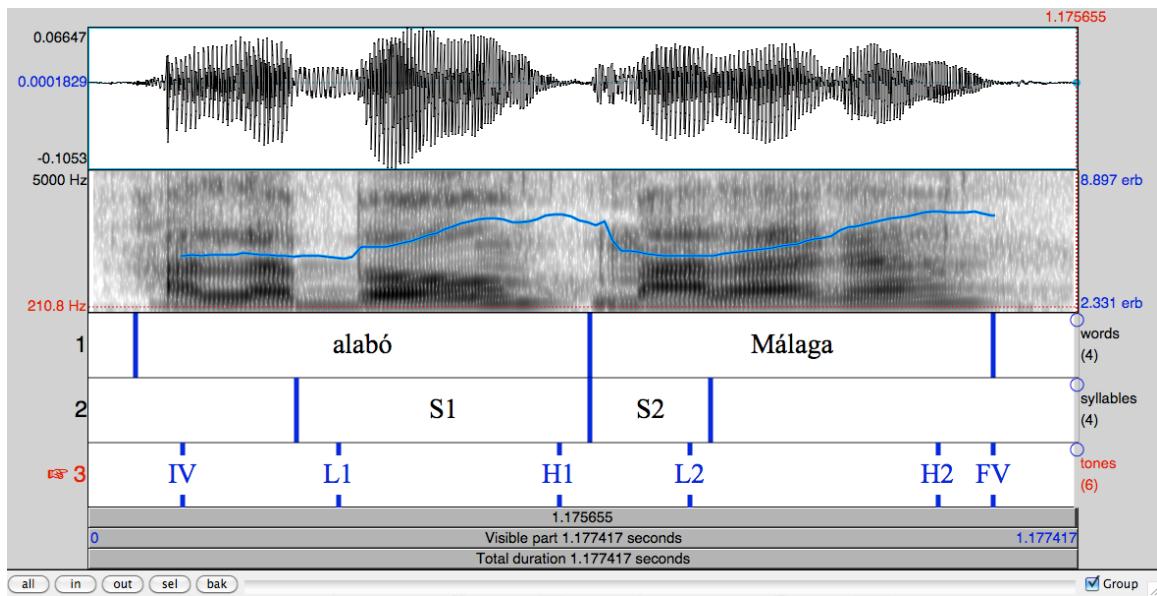


Figure 3.1 A display of a speech waveform, spectrogram and F0 contour, word boundaries, syllable boundaries, and F0 turning points for an L2 speaker of Spanish

The pertinent information gleaned from the data analysis was entered into a Microsoft Excel spreadsheet. This spreadsheet kept track of the following measurements:

1. The scaling of L and H tones for both pitch accents (in ERB)
2. The scaling difference between the L and H tones for each pitch accent (in ERB)
3. The temporal alignment of L and H tones for both pitch accents (in milliseconds)
4. The duration of each pitch rise (in milliseconds)
5. The duration of both prenuclear stressed syllables (in milliseconds)

The scaling values were measured in Equivalent Rectangular Bandwidth (ERB) units, rather than in Hertz. This decision was made for a number of reasons. As others have already pointed out (see Alvord, 2006; Ladd, 2008; Simonet, 2008; Henriksen, 2010), the ERB scale normalizes the range of frequencies that different speakers use and the overall levels achieved by different speakers. As the present study relies on data from both male

and female participants, the ERB scale allows for a better comparison of male and female data. Moreover, the ERB scale normalizes the perceptual difference between F0 levels as measured in Hz; a 50 Hz difference in the lower frequency region is not identically perceived as a 50 Hz difference in the upper frequency region (Henriksen, 2010).

3.3 Social network analysis and attitude/motivation component

Section 3.2 was concerned with the methodological decisions made for the production side of the present study. That component of the study was included here so that one may observe the changes made, if any, in the intonational contours of L2 Spanish learners over time. One does not need to undertake a study of this magnitude to know that some learners will most likely acquire more target-like intonation while others will not. How and why intonation changes, of course, requires more in-depth study and this dissertation attempts to address these potential changes. To this end, it is hypothesized here that a learner's perception of and attitude towards the target language, the target language culture and how the learner is situated within it, and the native speakers of the target language and how s/he interacts with them, all contribute to the rate of approximation towards target-like norms. In short, minimal interaction with and negative attitudes toward the host group will likely lead to negligible linguistic gains,¹⁸ whereas maximal interaction with and positive attitudes towards the host culture/speakers will result in closer approximation to native-like norms. This section details the methodology used to address these issues so that one may understand what changes occurred and why.

¹⁸ An L2 learner may even register negative gains, i.e. movement away from target norms, when negative attitudes towards the host culture develop or when a social network deteriorates. Lybeck (2002) found that the target-like pronunciation of /r/ by an L2 learner of Norwegian living in Norway worsened over time after her social network became less hospitable.

3.3.1 Social networks

At the beginning, middle, and end of the semester, each participant was asked to describe his/her social network contacts. Each participant was presented with a sheet of paper that contained a list of the possible spheres in which one might interact while abroad, such as Friends, Instructors, Romantic Partner, Neighbors, etc. (see Appendix F for the complete form). The participant was asked to list the individuals in each category with whom s/he interacted and identify their origin, in what language they communicated, and how often they came into contact with these people. A sample portion of the questionnaire has been included in Table 3.4.

Contact (name)	Relationship	Origin	Language used	Frequency of interaction
1.	<input type="radio"/> Homestay <input type="radio"/> Friend <input type="radio"/> Romantic partner <input type="radio"/> Professor/Instructor <input type="radio"/> Neighbor <input type="radio"/> Club/organization <input type="radio"/> Co-worker <input type="radio"/> Other (specify)	<input type="radio"/> Argentina (Buenos Aires) <input type="radio"/> Other Spanish-speaker (specify) <input type="radio"/> American <input type="radio"/> Other English-speaker <input type="radio"/> Other (specify)	<input type="radio"/> English <input type="radio"/> Spanish <input type="radio"/> Both <input type="radio"/> Other (specify)	<input type="radio"/> Daily <input type="radio"/> 2-3 times a week <input type="radio"/> Weekly <input type="radio"/> Weekends <input type="radio"/> Sporadic (2-3 times per month) <input type="radio"/> Rarely (1 to 2 times)

Table 3.4 Sample of social network questionnaire (adapted from Alvord, 2006)

3.3.2 Attitude/Adjustment towards BAS and Buenos Aires/Argentine culture

To get a sense of how motivated the participant was to learn and use Spanish and how s/he was oriented attitudinally towards BAS native speakers and their culture, each

participant completed a survey in English.¹⁹ This survey, adapted from Smith (1996) and Lybeck (2002), employed a Likert scale labeled “1-not at all”, “2-some”, and “3-a lot” to gauge the level of comfort and acceptance each participant felt while in Buenos Aires and the linguistic and cultural attitudes each developed towards Buenos Aires society and its residents. The numbers marked by the participants were added to obtain a final attitude score. A high score would indicate that the learner had positive impressions of the speakers, language, and culture of the host country. Recall that it is hypothesized that those individuals developing positive linguistic and cultural attitudes would be more likely to acquire BAS intonation. Low scores would indicate that the learner developed negative impressions and, according to the hypothesis put forth here, would be less likely to approximate native BAS-like intonation.

The survey also contained three open-ended questions that allowed the participant to write more extended responses that might shed even more light onto the attitudinal adjustment to Buenos Aires. These questions asked the participants to: 1) compare and contrast his/her native home culture (i.e. the United States and/or hometown) with Buenos Aires, and the personalities, beliefs, ways of life, customs in both cultures; 2) comment on personal reactions/feelings towards events that made him/her feel happy or uncomfortable to be in Buenos Aires; 3) describe his/her perspectives on host culture, people, and overall experience in Buenos Aires. The participants were reminded that they could speak freely without fear of making any “politically incorrect” statement.

¹⁹ This was completed in English so that the participant would comment as freely as possible and not avoid any subject due to linguistic insecurity in the L2.

Chapter 4: **An Analysis of Developing Learner Absolute Interrogatives**

4.1 Introduction

This chapter highlights the primary intonational characteristics of learner broad focus absolute interrogatives at the beginning of the study abroad semester, as well as those at the end of the semester in formal, read speech. It also analyzes the observed patterns of change phonologically within the current AM theory. In addition, the chapter examines the development of intonation in spontaneous and semi-spontaneous speech styles, thus providing a more complete picture of developing intonation for this utterance type.

This chapter is organized in the following way. Section 4.2 addresses learner absolute interrogative intonation at the beginning of the semester. It is further divided into several subsections. Section 4.2.1 provides a brief introduction, as well as establishing the basic intonational patterns found for the native BAS control group speakers. Section 4.2.2 describes the learner prenuclear pitch accents, while Section 4.2.3 describes the nuclear pitch accents. Section 4.2.4 offers a summary of the data at the beginning of the semester and compares learner intonation to that of the native speakers.

Section 4.3 is devoted to characterizing learner absolute interrogatives at the end of the study abroad semester. It, too, is further subdivided into several subsections. Section 4.3.1 offers a brief introduction, while 4.3.2 examines the learner prenuclear pitch accents, and Section 4.3.3 looks at the nuclear pitch accents. Section 4.3.4 provides a summary of the data at the end of the semester.

Section 4.4 addresses the development of interrogative intonation in the spontaneous and semi-spontaneous data. Section 4.4.1 offers a brief introduction, while Section 4.4.2 summarizes the major intonational patterns produced by the native BAS speakers during

a face-to-face conversation and an interactive twenty questions game. Section 4.4.3 examines the major patterns produced by the learners in these same tasks at the beginning of the semester. Section 4.4.4 looks at the intonation produced at the end of the semester using the same elicitation tasks, and Section 4.4.5 summarizes the major findings for these 2 speech styles.

Finally, Section 4.5 concludes the chapter by discussing the major findings for the acquisition of absolute interrogative intonation.

4.2 Learner absolute interrogative intonation in read speech—beginning of the semester

4.2.1 Introduction

The current section will provide a phonological analysis of L2 Spanish absolute interrogatives as the learners begin their study abroad semester in Buenos Aires. In doing so, the intonational structure of both the prenuclear pitch accents as well as the nuclear pitch accent will be examined, and the section will conclude by proposing an inventory of the standard learner pitch contours at time 1. Naturally, as the object of study here is developing intonation, it is useful to examine how the learner data compare to standard BAS intonation. Therefore, to establish a point of comparison, the section also includes data from the current study's control group participants, highlighting the standard F0 rises and falls seen in this variety of Spanish.

4.2.1.1 Standard Buenos Aires Spanish absolute interrogatives

As was shown in Chapter 2, BAS pitch contours differ notably from many other dialects of Spanish. With respect to absolute interrogatives, the pitch contour routinely

rises through the prenuclear tonic syllables and reaches its peak within or just after the tonic syllable offset, as demonstrated by Lee (2010), leading her to propose an L+H* prenuclear pitch accent. Barjam (2004) proposes an identical L+H* prenuclear pitch accent.

The standard BAS absolute interrogative is frequently produced with a nuclear rise through the tonic syllable followed by falling final intonation to a low boundary tone. Barjam has analyzed this contour as L+^H* L- L% while Lee has analyzed it as L+H* HL%. However, both Toledo & Gurlekian (2009) and Lee (2010) show that there are many instances of final rises, which is likely a product of lexical stress. Those utterances ending with oxytone stress do not leave enough room for a final fall, thus resulting in either a final rise or a truncated fall. Lee (2010) has analyzed such cases as L* LH%.

The speakers comprising the current study's control group conformed to the general patterns just described. Figure 4.1, produced by CS-1, a 25 year-old female native speaker of BAS, illustrates both the prenuclear rise in the word *alabábamos* 'we were praising' and the nuclear rise in *Málaga* 'Malaga (a city in southern Spain)', followed by the final fall.

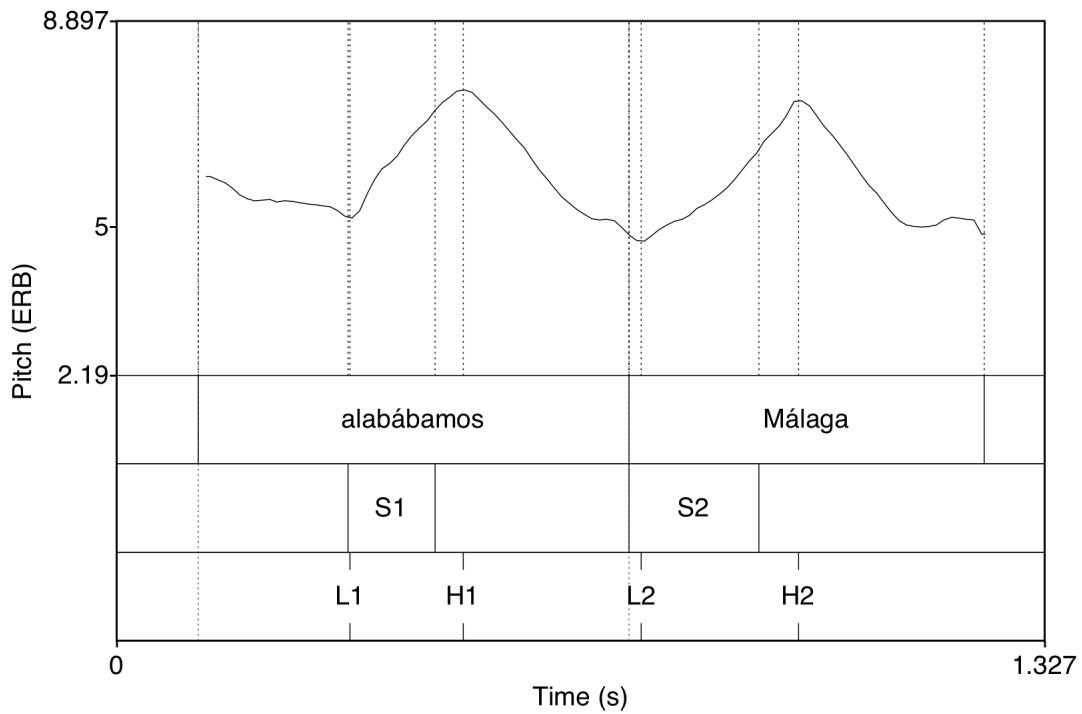


Figure 4.1 Pitch track of the native BAS falling absolute interrogative *¿Alabábamos Málaga?* ‘Were we praising Malaga?’

The top tier in Figure 4.1 shows the word and word boundaries in the utterance, while the tier below it shows the limits of the stressed syllables. Finally, the bottom tier marks the beginnings of the rises, indicated with L1 and L2, as well as the peaks, indicated with H1 and H2. In this example, L1 is aligned very near to the first stressed syllable onset and its corresponding H1 is reached after the tonic syllable. Similarly, the same general pattern is seen for the nuclear syllable; that is, L2 is aligned within the tonic syllable, just after its onset, and H2 is aligned after its offset in the posttonic syllable.

Likewise, Figure 4.2, produced by CS-2, a 22 year-old male native speaker of BAS, shows that the control group participants also produce final rises when lexical stress is utterance final.

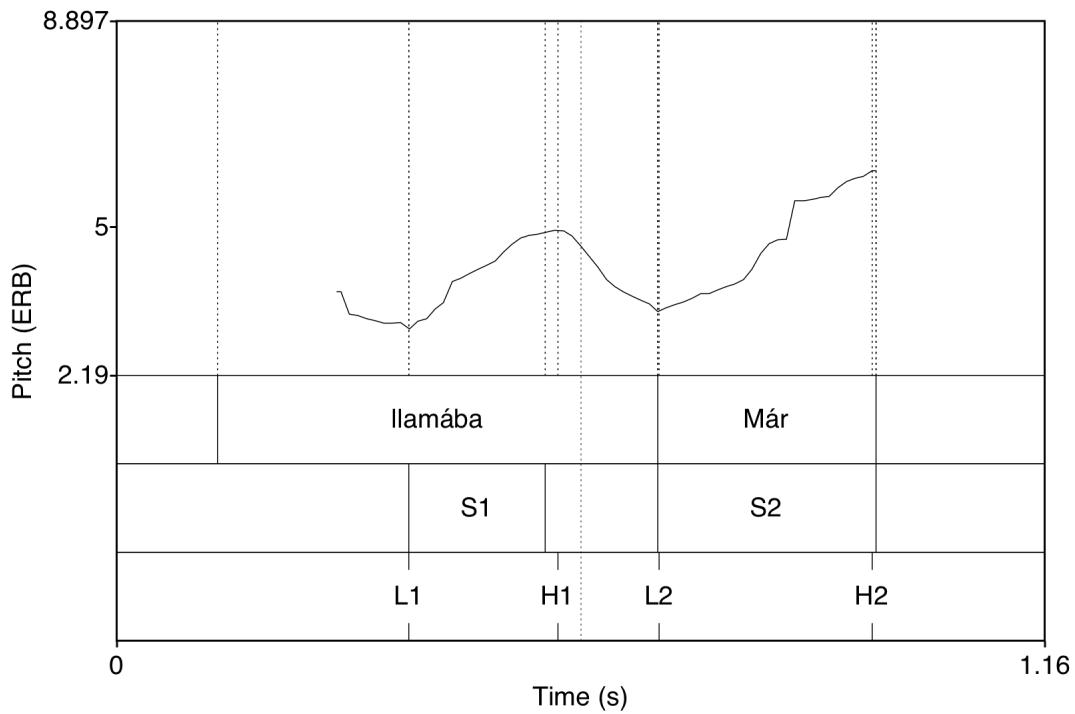


Figure 4.2 Pitch track of the native BAS rising absolute interrogative *¿Llamaba Mar?*
 ‘Was Mar calling?’²⁰

In Figure 4.2, the same prenuclear pattern from Figure 4.1 is observed. The L1 tone is located at the stressed syllable onset and its peak is found just after the stressed syllable offset. However, in the question *¿Llamaba Mar?* in Figure 4.2, a final rise is observed due to final oxytone stress. Once again, the pitch contours in Figures 4.1 and 4.2 match the basic descriptions for absolute interrogatives found in Barjam (2004), Toledo & Gurlekian (2009), Lee (2010), and Gabriel et al., (2010).

²⁰ Throughout this dissertation, the usage of accent marks in the figures does not always coincide with standard Spanish orthography. Rather, they mark the syllable that was actually stressed by the participant during articulation of the utterance.

Having established the basic patterns for BAS absolute interrogative intonation and, more importantly, the target that learners might attempt to approximate, attention will now be turned to the learner intonational patterns themselves.

4.2.2. Learner prenuclear pitch accents (time 1)

While standard BAS prenuclear pitch accents consist of a rise beginning at the tonic syllable onset and an apex located at or just after the tonic syllable offset, L2 Spanish prenuclear accents at the beginning of the semester evidence clear differences. Figure 4.3, produced by Samantha in the formal reading task, offers an illustration of a representative pitch track.²¹

²¹ Although the pitch track presented here is indeed representative of the intonation of the larger pool of participants, some considerable variation is to be expected, considering that the participants are L2 learners of Spanish. This variation will be discussed below.

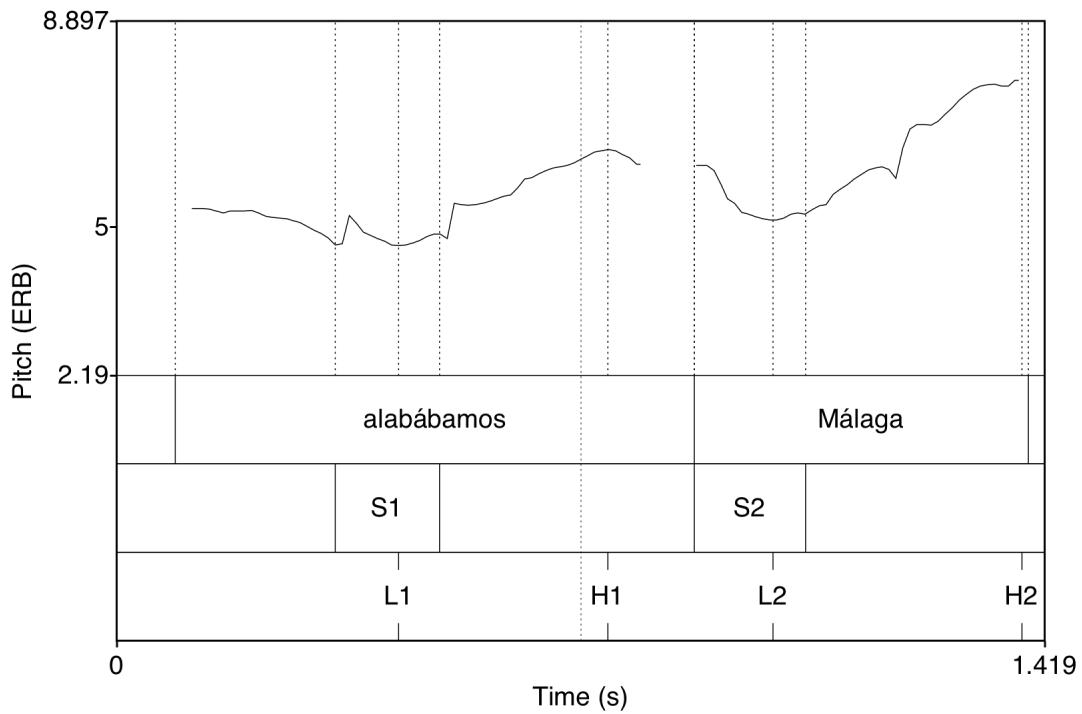


Figure 4.3 Pitch track of the L2 Spanish rising absolute interrogative *¿Alabábamos Málaga?* ‘Were we praising Malaga?’

In Figure 4.3, the first L tone is situated well within the borders of the tonic syllable, while the following H tone drifts rather far from the tonic syllable offset, almost to the end of the word *alabábamos*. To motivate an analysis of the pitch structure of this prenuclear accent, the alignment of the L and H tone relative to the stressed syllable is investigated. It will be recalled from Chapter 2 that, under AM theory, certain tones are phonologically associated to the metrically strong syllables, and these are marked with a star. These associated tones would presumably be anchored temporally to the metrically strong syllable. Consequently, if a particular tone’s alignment stays relatively fixed in various degrees of tonal crowding with respect to the tonic syllable, it is likely that this tone is phonologically associated, and thus more central to the pitch accent shape.

Conversely, if a particular tone's alignment fluctuates in different phonetic conditions with respect to the tonic syllable, it likely is a non-associated leading or trailing tone (i.e. non-starred).

To motivate a phonological structure for L2 absolute interrogatives, the data from the formal reading task at the beginning of the semester were analyzed. This includes 528 possible interrogatives across 11 speakers. A series of one-way ANOVAs were run to elicit the alignment averages for the L and H tones across various degrees of tonal crowding (i.e. the number of intervening unstressed syllables between the prenuclear pitch accent and the accent that follows). The averages in prenuclear rise time (i.e. the time elapsed between the L and H tones) and prenuclear syllable duration are also investigated.

The analysis begins by looking at the first prenuclear L tone. The data from all 11 speakers indicate that this valley tends to be situated well within the tonic syllable, as was seen in Figure 4.3. The results from the ANOVA are organized in Table 4.1.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	58	-3	69
1	64	79	64
2	67	96	61
3	66	74	65
4	66	82	55
5	63	83	56
Totals	384	70	69
$F = 20.033, p < .0001$			

Table 4.1 Alignment of L tone and the first tonic syllable. A negative value corresponds to alignment before the onset and a positive value after the onset.

Table 4.1 shows that, on average, there is a clear preference (except in tonal clash situations) for a late alignment in the middle of the syllable, anywhere from 74 ms to 96 ms after the tonic syllable onset on average. A Tukey post-hoc test reveals that those cases with zero intervening syllables are statistically significant from all other contexts ($p < .0001$). The rest of the contexts are not statistically significant from each other.

However, these averages are somewhat misleading and hide interesting patterns in the data. Many of the prenuclear valleys not in tonal clash situations also tended to align either before or just at the stressed syllable onset. A follow-up look at the data showed that of the 384 analyzable²² prenuclear L tones, 99 (26%) occur either before the onset, right at the onset, or 10 ms or less into the tonic syllable. The remaining 285 L tones (74%) occurred 11 ms or more into the tonic syllable boundaries. The majority of these 99 early L tones was realized in tonal clash (42, or 42%), which is predictable from the phonetic context. The remaining 57 (58%) were spread relatively evenly across the remaining tonal crowding contexts. Therefore, it would appear that these L tones that are realized before, at, or just after the tonic syllable onset should be considered a minor variation in alignment, rather than a secondary pattern.

While the first L tone was overwhelmingly found within the tonic syllable, the subsequent H tone was overwhelmingly located beyond the tonic syllable offset. Table 4.2 organizes the alignment of the first prenuclear H tone.

²² Due to learner disfluency, such as improper pronunciation or incorrect stress placement, or problems reading pitch contours due to creaky voice, for example, many tokens were removed during the analysis.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	61	-38	40
1	69	109	66
2	68	163	139
3	68	176	117
4	71	181	169
5	62	154	122
Totals	399	129	139
$F = 28.439, p < .0001$			

Table 4.2 Alignment of the H tone and the first tonic syllable. A negative value indicates that the alignment occurs before the tonic syllable offset (i.e. within the syllable) and a positive value corresponds to alignment after the tonic syllable offset.

Table 4.2 shows that when 0 unstressed syllables intervene between the first prenuclear syllable and the following stressed syllable, the H tone is on average located 38 milliseconds before the syllable offset. This is likely due to the phonetic pressure of the upcoming stressed syllable, which forces the early realization of the H tone. In the remaining phonetic conditions, in which there is 1 or more unstressed syllable after the tonic syllable, the H tone is allowed to drift into posttonic space. As the means show, the alignment generally strays farther from the offset as more unstressed syllables are added, from 109 milliseconds to 181 milliseconds (though the situations with 5 unstressed syllables disrupt this pattern). The fact that the H tone alignment is much more variable constitutes key evidence that the H tone is not phonologically associated with the tonic syllable.

To verify this assertion, though, it is also worth investigating the roles of the prenuclear rise time and the prenuclear syllable duration. In their investigation of

Mexican Spanish, Prieto et al. (1995) found that tonal crowding triggers an increased syllable duration that provides more room in which tones may be realized. Therefore, lengthened syllables may affect the alignment measurements of the L and H tones with respect to the onsets and offsets. If, on the other hand, syllable length remains relatively constant, and the rise time from the L tone to the H tone continues to increase as more unstressed syllables are added, this would provide more evidence that the H tone is not phonologically associated. Table 4.3 shows average syllable duration for the prenuclear syllable across several degrees of tonal crowding, and Table 4.4 organizes the rise time from the L to the H tone across the same tonal crowding contexts.

# intervening unstressed σ	Number of tokens	Mean duration (ms)	Standard deviation
0	73	227	63
1	69	177	38
2	73	178	48
3	67	178	42
4	68	180	46
5	67	172	34
Totals	417	186	50
$F = 13.977, p < .0001$			

Table 4.3 Average duration of the prenuclear stressed syllable

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	56	202	76
1	64	209	97
2	67	245	183
3	66	281	99
4	66	282	200
5	66	246	124
Totals	382	246	142
$F = 3.728, p = .003$			

Table 4.4 Rise time, in milliseconds, for the first prenuclear accent

It is clear from Table 4.3 that in the majority of tonal crowding conditions, the prenuclear syllable length is very consistent, between 172 ms and 180 ms. However, tonal clash conditions a lengthened syllable (227 ms on average), which allows more time to realize the pitch accent before needing to immediately realize the following pitch accent. A Tukey post hoc test reveals this case to be significantly different from the other contexts. Table 4.4 highlights the general tendency for the rise time to increase when there is more room (i.e. more intervening unstressed syllables). When the prenuclear syllable is followed immediately by another stressed syllable, the rise lasts on average 202 ms. The rise time increases considerably in those interrogatives with 4 intervening stressed syllables to 282 ms on average.

When examined in conjunction, Tables 4.3 and 4.4 offer further evidence that the H tone is phonologically unassociated to the tonic syllable. Although the prenuclear syllable duration stays relatively constant (except in tonal clash situations), the rise time increases, which indicates in turn that the H tone is allowed to “float” farther and farther away from the tonic syllable. This stands in clear contrast to the stable anchoring of the prenuclear L tone to the tonic syllable, as was demonstrated above. In light of these facts, it will be proposed here that the standard prenuclear pitch accent for learner interrogatives at time 1 is L*+H. According to Face & Prieto (2007) and Gabriel et al. (2010), this pitch accent predicts a late rising F0 movement that remains low during the stressed syllable, and then rises towards a high peak located well after the stressed syllable offset. Indeed, this pattern was well attested in the present data.

4.2.3 Learner nuclear pitch accents (time 1)

A basic understanding of the structure of the nuclear portion of a standard learner absolute interrogative at the beginning of the semester can be gleaned from Figure 4.3 above, which is reproduced here as Figure 4.4.

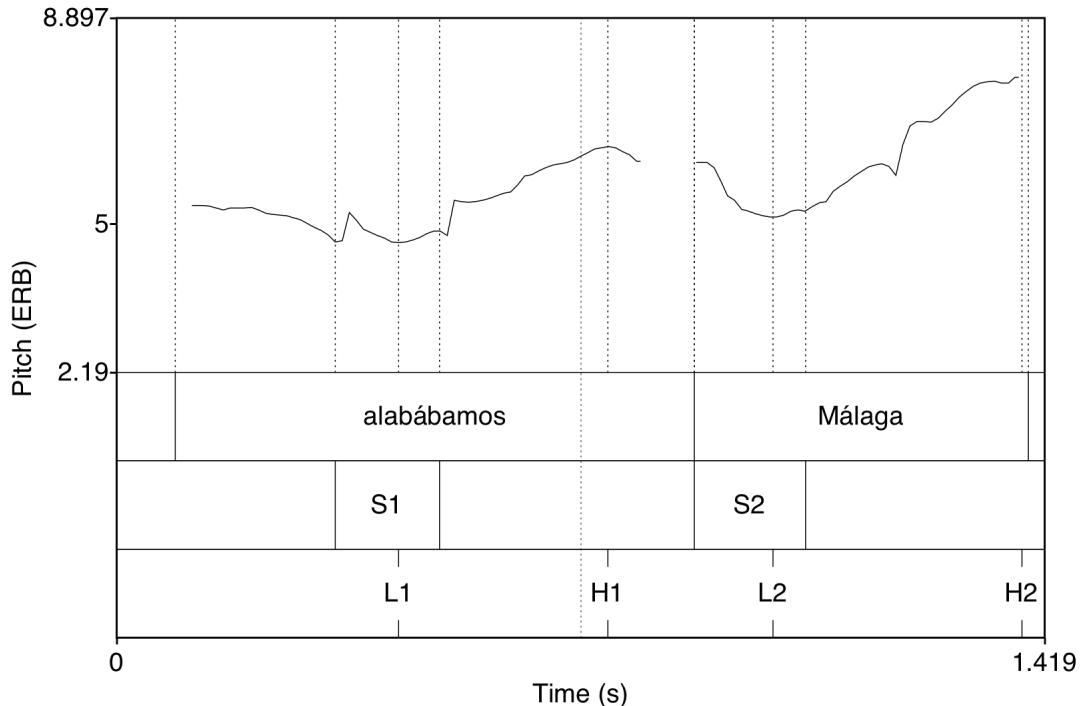


Figure 4.4 Pitch track of the L2 Spanish rising absolute interrogative *¿Alabábamos Málaga?* ‘Were we praising Malaga?’ (reproduced from Figure 4.3)

In this example, the F0 falls from the prenuclear H1 tone towards an L tone that is located well within the tonic syllable (marked here as S2). The nuclear rise starts near the end of the tonic syllable but the F0 stays quite low until after the tonic syllable offset. The contour then begins a much more pronounced rise that continues all the way to the end of the utterance, which has been labeled here as H2. In order to motivate a phonological analysis of the nuclear pitch accent, an identical series of statistical tests was performed

to determine the alignment of the valley and peaks affiliated with the nuclear pitch accent.

The alignment of the L2 tone in the nuclear syllable is presented in Table 4.5. Unlike the prenuclear syllable, which may be followed here by a maximum of 5 unstressed syllables, the nuclear syllable may be followed by a maximum of 2 unstressed syllables,²³ thus offering fewer tonal crowding conditions in which to explore the alignment of the nuclear L and H tones. It should be noted that there was frequent difficulty in analyzing the nuclear portion of the interrogative due to creaky voice or improper pronunciation, especially as pertaining to stress placement. Out of a possible 528 analyzable L tones, 99 were eliminated from analysis for these reasons, leaving a total of 429 analyzed tokens.

# utterance-final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	123	80	55
1	243	87	52
2	63	141	74
Totals	429	93	60
$F = 27.416, p < .0001$			

Table 4.5 Alignment of L tone with respect to the nuclear syllable. A positive value indicates an alignment after the onset.

Table 4.5 shows that, on average, the L tone is located after the nuclear syllable onset in all tonal crowding contexts. In cases in which there are zero or 1 final unstressed

²³ An exception can be made for prosodic words like *dádomelo* “giving it to me”, in which two clitic pronouns are affixed to a progressive verb form. In this case there are three unstressed syllables after the stressed syllable. The decision was made not to use these instances due to their relative infrequency of occurrence.

syllables, the valley is located on average approximately 80 ms within the tonic syllable. When there are 2 final unstressed syllables, the L tone is allowed to creep further into the tonic syllable (141 ms on average), likely because there is more phonetic room in which the subsequent rise may be realized. A Tukey post hoc test revealed that this relatively late alignment is statistically significant from the other two ($p < .0001$). Figure 4.4 provides visual support of this late alignment in the tonic syllable.

It is once again worth mentioning that the averages presented in Table 4.5 can hide important patterns in the data. Therefore, in each tonal crowding context, the total number of L tones that are aligned either before, immediately at, or 10 ms into the tonic syllable onset was calculated. If a high percentage of L tones actually align early in (or before) the tonic syllable, it would be possible that there is a secondary preference for alignment, and presumably an alternate phonological analysis. Therefore, the following issue was investigated in more detail. This information is grouped together in Table 4.6.

# utterance-final unstressed σ	# of total analyzed L tones	# of L tones aligned before, at, or just after tonic syllable onset	Percentage
0	123	25	20%
1	243	22	9%
2	63	1	2%
Totals	429	48	11%

Table 4.6 Number of nuclear L tones that are aligned early (before, at, or 10 ms or less after tonic syllable onset)

Of the possible analyzable 123 L tones affiliated with an utterance final stressed syllable (0 final unstressed syllables), 25 (20%) were found to be aligned early, either before, at, or just after the syllable onset. In those content words with penultimate stress (1 final unstressed syllable), 22 of the 243 tokens (9%) occurred before, at, or just after the onset. In those content words with antepenultimate stress (2 final unstressed words), only 1 of the 63 analyzable L tones (2%) was aligned before, at, or just after the onset. Lastly, when added together, 48 of the 429 analyzable L tones (11%) occurred before, at, or immediately after the tonic syllable onset. The calculations in Table 4.6, in conjunction with those in Table 4.5, demonstrate an overwhelming preference for a low valley that is realized within the borders of the tonic syllable. That the cases with 0 final unstressed syllables present the highest percentage of early aligned L tones is not surprising, due to the fact that the L tone must be retracted leftwards towards the onset to allow for as much room as possible in which to realize the subsequent final rise, given the fact that there are no following unstressed syllables in which the rise may be realized.

It is also of interest to know exactly how far into the tonic syllable these L tones tend to fall, an estimation that is difficult to gauge without a sense of the average length of the nuclear syllable. Therefore, Table 4.7 provides the average duration of the nuclear syllable in the 3 tonal crowding contexts.

# utterance-final unstressed σ	# of nuclear syllables	Mean duration (ms)	Standard deviation
0	127	309	58
1	251	196	40
2	64	181	50
Totals	442	227	71
$F = 271.572, p < .0001$			

Table 4.7 Average duration of nuclear stressed syllable

As Table 4.7 shows, the average duration of all nuclear syllables, regardless of tonal crowding, is 227 ms. This average, though, appears to be skewed by the tonal clash context, in which the syllable duration is 309 ms on average. This increased duration can be attributed to the desire to lengthen the syllable to allow room for both the L tone and the final rise to be realized. In the other contexts of tonal crowding, the syllable duration is considerably shorter, 196 ms and 181 ms. By comparing Table 4.5 (the alignment of the L tone within the tonic syllable) with Table 4.7 (the overall syllable duration), it can be seen more precisely where the L tone falls. In the cases of tonal clash, the average alignment is 80 ms into a syllable that on average lasts approximately 300 ms, nearly a third of the way into the syllable. In cases of penultimate stress, the average L tone alignment is 87 ms into a syllable that is on average 196 ms long, approximately halfway into the tonic syllable. Lastly, in those cases with antepenultimate stress, the L tone falls on average 141 ms into a syllable that on average is 181 ms long, well over halfway into the tonic syllable. These values, in concert with Tables 4.5, 4.6, and 4.7, quite clearly show that the L tone aligns with the nuclear syllable and that the pitch contour remains low throughout much of this syllable, leading to a late final rise, thus providing strong evidence for an L* or L*+H analysis. This will be discussed further below.

Attention will now be turned towards the status of a putative nuclear H tone. As Figure 4.4 shows, the basic pattern for L2 Spanish absolute interrogatives at the beginning of the semester is a final rise that begins midway through the nuclear syllable and that ends at the end of the utterance. Out of a total 528 interrogatives, 99 were eliminated due to participant disfluency or to problems with reading the pitch tracks in the final portion of the utterance. This left 429 total cases and all of them had exclusively final rises. Therefore, at the start of the study abroad semester, the participants categorically produce an interrogative intonation that does not conform to BAS norms. Moreover, it was impossible to pinpoint an easily recognizable nuclear H tone because the contours rose continuously all the way to end of the utterance.

Taking into account the strong preference for a relative late alignment of the L tone in the nuclear syllable and the presence of a categorical late rise through the nuclear tonic syllable towards a final high boundary tone, it is clear that the toneme be analyzed as L* H% or L*+H H%. The first analysis presumes that the L tone is anchored in the tonic syllable and that the F0 is low throughout this syllable. The subsequent late rise to the end of the utterance is triggered by the presence of the H%. The L*+H H% sequence, on the other hand, indicates the same general pattern, but assumes that there is a late rise triggered by a phonologically unassociated H tone before the H%. The contour then continues to rise to the end of the utterance due to the H%. These two analyses, then, both account for the L2 learner interrogative data and both predict the same general pattern, thus making it difficult to point towards a clear preferred analysis. However, in the absence of any substantial evidence for a trailing H tone, the unmarked toneme will be analyzed as L* H%.

4.2.4 Summary of learner absolute interrogative intonation in read speech (time 1)

It was shown here that L2 Spanish interrogative intonation at the beginning of the study abroad semester is noticeably different from BAS interrogative norms. BAS native speakers typically produce a rising prenuclear accent with an early peak alignment that is analyzed as L+H* (Barjam, 2004; Lee, 2010). The learner prenuclear pitch accent, on the other hand, though rising, was quite different in other key ways. The learners' primary contour was a late rising L*+H pitch accent in which the F0 stayed low through the tonic syllable but then rose to a high peak well after the tonic syllable offset. To begin to truly approximate native-like norms, the learners would need to start the prenuclear rise earlier and reach the prenuclear peak more closely to the stressed syllable offset. This, in essence, entails a leftward shift of both the L and H tones so that they occur nearer to the tonic syllable onset and offset.

With respect to the nuclear syllable, the learner interrogative intonation at time 1 diverges even more drastically from that of BAS native speakers. The underlying pattern for the BAS nuclear pitch accent is generally recognized as a rising, upstepped L+H* pitch accent, which is subsequently followed by a final fall to an L%. The learners, in contrast, favor a low contour through much of the nuclear syllable, which was analyzed here as L*, followed by a high final rise to the end of the utterance, resulting from an H%.

Figure 4.5 illustrates the primary pattern observed for learner absolute interrogatives at the beginning of the semester. This pattern is analyzed via the following sequence:

- (1) L*+H L* H%

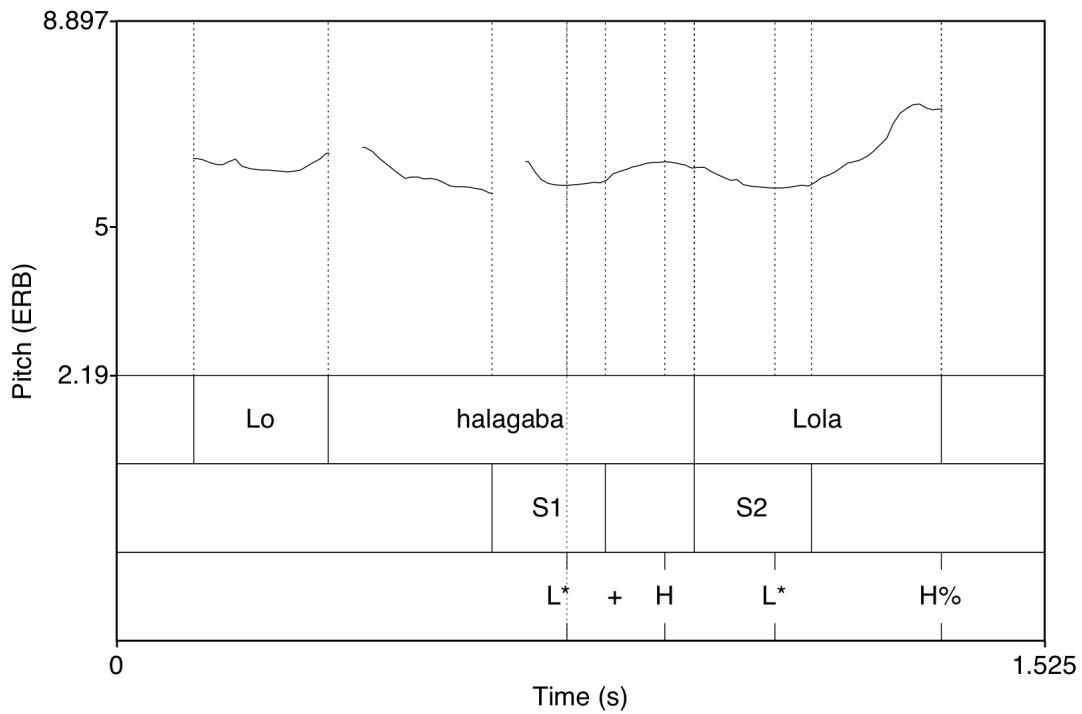


Figure 4.5 Phonological analysis of learner rising interrogative

¿Lo halagaba Lola? ‘Was Lola praising him/it?’

| | |
 L*+H L* H%

4.3 Learner absolute interrogative intonation in read speech—end of the semester

4.3.1 Introduction

The current section offers a phonological analysis based in AM theory of the learner Spanish absolute interrogatives at the end of the academic semester in Buenos Aires with the ultimate goal of identifying the primary changes that have occurred throughout the experimental period. As was done in Section 4.2, the prenuclear and nuclear portions of the absolute interrogatives are analyzed to motivate an inventory of the pitch contours at time 2. These patterns will once again be compared to those produced by the BAS native-

speaking control group participants to determine if approximation to native-like norms took place over time.

4.3.2 Learner prenuclear pitch accents (time 2)

At the beginning of the semester, learners produced a rising prenuclear pitch accent that began either at the tonic syllable onset or somewhere midway through the tonic syllable. The rising pitch accent then reached its apex in the posttonic syllable. Although this pattern was very consistent across all learners, it did not structurally resemble that of the BAS native speakers in terms of alignment of the prenuclear valley and peak. Similarly, at the end of the semester (time 2), an investigation of the average alignment of the prenuclear valley reveals clear similarities with the contours produced at time 1. Table 4.8 organizes the average alignment of the prenuclear L tone across various tonal crowding contexts with the aim of determining whether it is phonologically associated with the prenuclear tonic syllable.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	48	8	46
1	70	81	60
2	70	92	60
3	72	71	60
4	71	90	60
5	64	87	58
Totals	395	75	63
$F = 15.775, p < .0001$			

Table 4.8 Alignment of L tone and the first tonic syllable. A positive value corresponds to alignment after the onset.

Table 4.8 shows that the alignment of the L tone at time 2 is nearly identical to the alignment observed at time 1. With the exception of cases of tonal clash, the L tone is on average located within the stressed syllable, anywhere from 71 to 92 ms after the tonic syllable onset. In cases of tonal clash, however, the L tone retracts leftwards (8 ms) towards the onset, presumably to make room for the upcoming H tone. A Tukey post hoc test shows that these cases of tonal clash are statistically different from the other tonal crowding contexts ($p < .0001$). A closer look was given to the alignment data in order to determine if there was a secondary preference for early L tone realization. Of the total 395 L tones analyzed here, 93 were realized before, at, or just after (10 ms) the tonic syllable onset. A total of 33 (35%) occurred in tonal clash, which is likely conditioned by the phonetic context. The remaining 60 cases were spread out evenly across the remaining crowding contexts, thus indicating that early L tone alignment should be considered a minor variation in alignment patterns. Consequently, the preference for an L tone that is stably aligned within the tonic syllable across most crowding contexts points to a phonological association.

The subsequent prenuclear H tone, identically to what was observed at time 1, was reached in the posttonic syllable. The average alignment of this H tone is presented in Table 4.9.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	50	-41	57
1	72	96	61
2	70	160	89
3	73	200	104
4	71	191	103
5	64	195	160
Totals	400	141	128
$F = 46.744, p < .0001$			

Table 4.9 Alignment of the H tone and the first tonic syllable. A negative value indicates that the alignment occurs before the tonic syllable offset (i.e. within the syllable) and a positive value corresponds to alignment after the tonic syllable offset.

Table 4.9 shows that the H tone is overwhelmingly located beyond the stressed syllable boundaries, except in cases of tonal clash (-41 ms on average), in which it is pushed leftwards into the syllable due to upcoming phonetic pressure from the following stressed syllable. On average, the H tone is aligned anywhere from 96 to 200 ms after the offset. Moreover, it appears as if its alignment is influenced by the amount of room in between stressed syllables. When there is only 1 unstressed syllable between pitch accents, the H is aligned 96 ms after the first syllable offset. However, when there are 2 intervening unstressed syllables, the alignment is further out, at 160 ms on average. And when there are 3 or more intervening syllables, the H tone is aligned approximately 200 ms beyond the tonic syllable offset. A Tukey post hoc test reveals that the cases with 2, 3, 4, and 5 unstressed intervening syllables are not statistically different from each other. Cases with 0 and 1 are statistically different from each other and the remaining contexts as well. These data, then, offer support for a phonologically unassociated H tone that is

allowed to drift further and further away from the stressed syllable when the phonetic conditions permit it. This points to a possible L^{*}+H prenuclear pitch accent.

To provide more support for this assertion, prenuclear pitch accent rise time and syllable duration were again examined. If the stressed syllable duration remains constant, yet the rise time increases as more following unstressed syllables are added, it would lend credence to the L^{*}+H analysis hypothesized above. Table 4.10 summarizes the average prenuclear stressed syllable duration across several tonal crowding contexts, while 4.11 summarizes the average prenuclear rise times (the time elapsed from the L tone to the H tone) across the same crowding contexts.

# intervening unstressed σ	Number of tokens	Mean duration (ms)	Standard deviation
0	66	226	71
1	78	175	33
2	75	178	41
3	76	178	48
4	76	171	34
5	72	168	31
Totals	443	182	48
$F = 15.752, p < .0001$			

Table 4.10 Average duration of the prenuclear stressed syllable (time 2)

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	48	179	58
1	70	186	73
2	70	242	102
3	72	306	111
4	71	270	118
5	63	251	100
Totals	394	243	107
$F = 15.988, p < .0001$			

Table 4.11 Rise time, in milliseconds, for the first prenuclear accent (time 2)

Table 4.10 shows that the prenuclear stressed syllable duration is very consistent, except in cases of tonal crowding, in which it is predictably lengthened to allow room for a complete rise within its borders. A Tukey post hoc test reveals these cases to be significantly different from the remaining contexts ($p < .0001$).

Table 4.11 offers evidence that the rise time tends to increase as more unstressed syllables are added. A Tukey post hoc test indicates that contexts with 0 and 1 intervening unstressed syllables pattern similarly ($p = .999$), while the remaining contexts tend to group together (though contexts with 3 intervening syllables are statistically different from all other contexts with the exception of those with 4 syllables). As pointed out above, when analyzed together, these two tables demonstrate a clear learner preference for a prenuclear rise that, in general, reaches a peak that is located progressively further away from the tonic syllable offset into posttonic syllables, thus offering even more evidence that the H tone is phonologically unassociated.

Therefore, it is proposed here that the standard learner prenuclear pitch accent for absolute interrogatives at the end of the semester be analyzed as L*+H. This analysis describes a F0 contour that is low throughout the stressed syllable and whose rise begins either late in the stressed syllable or even after it altogether. It will be recalled that this was the same pitch accent analysis proposed for the absolute interrogatives at the beginning of the semester. It appears, then, that over time the learners have made very few modifications to the intonation of the prenuclear portion of these utterances. Moreover, this late rising pattern does not resemble the standard BAS prenuclear pitch accent for absolute interrogatives.

4.3.3 Learner nuclear pitch accents (time 2)

4.3.3.1 Introduction

This section will continue to analyze the development of native-like BAS intonation by focusing on the nuclear portion of the interrogatives at the end of the semester. It will be recalled from Section 4.2.3 that, at the beginning of the semester, the learners categorically produced a final rising interrogative pattern whose rise began within the nuclear tonic syllable and ended utterance finally. This general pattern was also preferred at time 2, though not as overwhelmingly as at the beginning of the semester. It will be demonstrated here that Eve and Samantha, unlike the remaining 9 participants, produced a rising contour through the nuclear syllable followed by a final fall. This falling final intonation indicates an awareness of and an approximation of native BAS interrogative norms. Figure 4.6 offers a representative sample of learner rising interrogative intonation at the end of the semester, as produced by Katie, and Figure 4.7 illustrates falling interrogative intonation at the end of the semester, as produced by Eve.

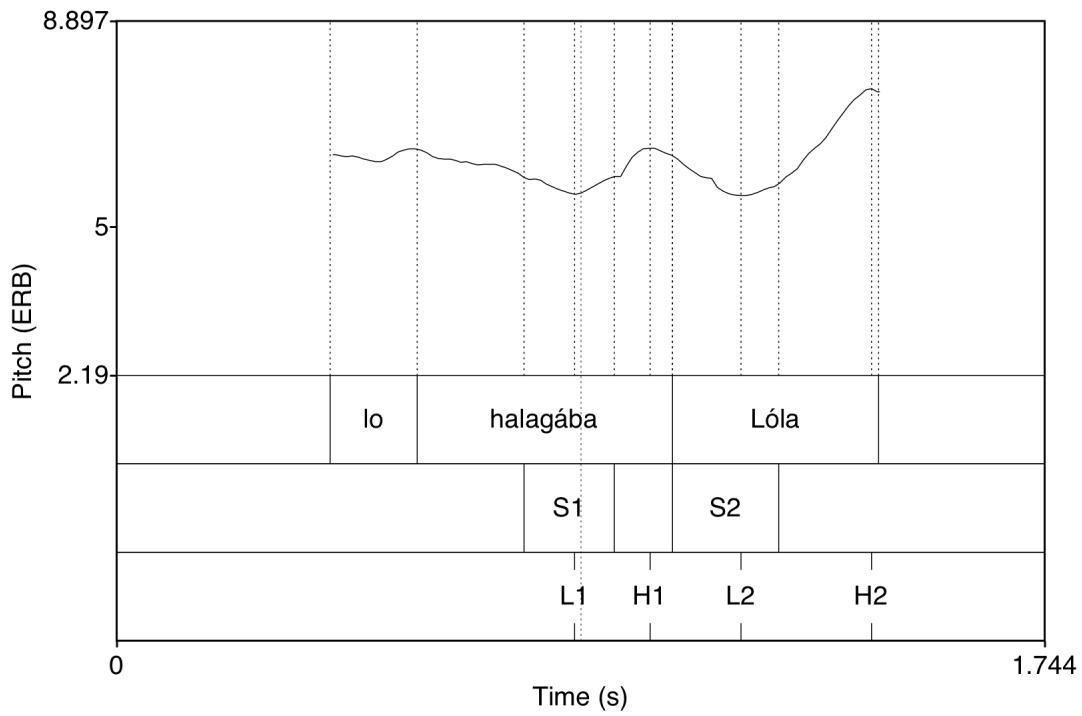


Figure 4.6 Pitch track of the L2 Spanish rising absolute interrogative *¿Lo halagaba Lola?* ‘Was Lola praising him/it?’ produced by Katie at the end of the semester.

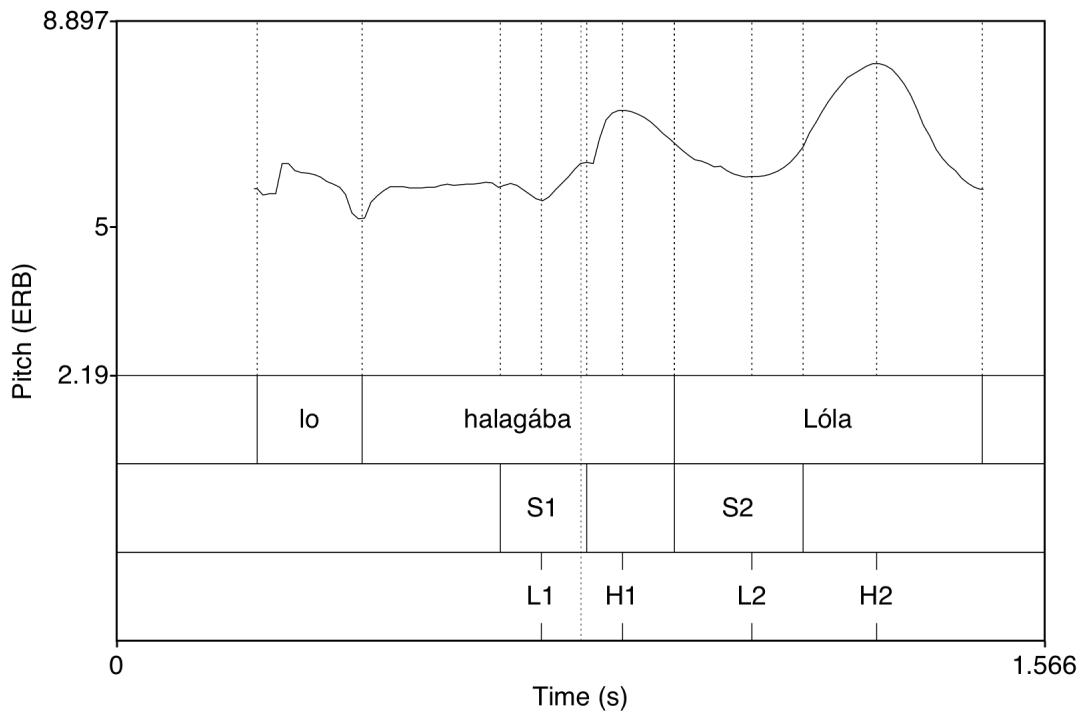


Figure 4.7 Pitch track of the L2 Spanish rising absolute interrogative *¿Lo halagaba Lola?* ‘Was Lola praising him/it?’ produced by Eve at the end of the semester.

4.3.3.2 Rising interrogative intonation (time 2)

Due to the dramatic difference noted in the toneme, the decision was made to analyze these two interrogative patterns separately. The analysis will begin by once again looking at the alignment of the L tone of only those 9 participants that overwhelmingly used the final rising contour; that is, data from Eve and Samantha are not included here. Table 4.12 organizes the alignment of the L tone pertaining to rising final contours.

# utterance-final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	104	80	68
1	182	70	63
2	56	115	63
Totals	342	80	66
$F = 10.134, p < .0001$			

Table 4.12 Alignment of L tone with respect to the nuclear syllable. A positive value indicates an alignment after the onset.

These figures show that the L tone is on average located well into the nuclear syllable. In oxytone and paroxytone stress, the L tone is aligned on average 80 ms and 70 ms, respectively, into the stressed syllable. When the nuclear syllable bears proparoxytone stress, the L tone is allowed to align later in the syllable (115 ms on average), likely due to the extra room into which the subsequent rise may fit. These alignment values are quite similar to those found in Table 4.5 for the nuclear L tone alignment at the beginning of the semester. It was determined that the late alignment of the L tone kept the F0 contour low throughout much of the nuclear syllable. It appears that this is very much the case at the end of the semester for these 9 participants as well, as can be seen in Figures 4.5 and 4.6.

It will also be recalled that the subsequent rise towards the end of the utterance at time 1 was attributed to the presence of an H%. Such a pattern is demonstrated here as well at time 2, making it difficult to pinpoint a hypothetical trailing H tone. This L* H% analysis, then, holds for the 9 participants that produced regular rising interrogative intonation at the end of the semester.

4.3.3.3 Falling interrogative intonation (time 2)

Although the L* H% toneme analysis for the majority of the learners indicates little change over time in intonation, Eve and Samantha both produced regular falling interrogative intonation at time 2, a pattern illustrated in Figure 4.7. Before, analyzing this developing pattern, it is important to establish its distribution and frequency. Table 4.13 summarizes Eve's and Samantha's distribution of the final rises and falls across the three different crowding contexts.

# utterance-final unstressed σ	Samantha		# utterance-final unstressed σ	Eve	
	# rises	# falls		# rises	# falls
0	12	0	0	7	5
1	2	22	1	2	21
2	7	4	2	3	9
Totals ²⁴	21	26	Totals	12	35

Table 4.13 Distribution of the total numbers of final rises and falls across the three different tonal crowding contexts.

Table 4.13 shows that Samantha, on the whole, produces more final falls (26) than she does final rises (21). However, it will be recalled that a certain number of final rises should be expected, especially when there are zero unstressed syllables after the nuclear tonic syllable. Rising interrogative intonation due to ultimate lexical stress is also observed in native BAS (Toledo & Gurlekian, 2009; Lee, 2010), as was shown in Figure 4.2. Of the 21 final rises that Samantha produces, 12 of them can be attributed to

²⁴ One interrogative from each participant was removed due to problems reading the pitch track.

utterance final lexical stress, and in theory would approximate native norms. The remaining 9 final rises (especially the 7 in proparoxytone stress) would not be expected in in BAS. Nevertheless, these numbers indicate that Samantha has noticed the falling interrogative pattern in BAS and has incorporated it to a large extent into her developing intonational system.

Eve, on the other hand, produces an even greater proportion of final falls (35 out of a total of 48 possible interrogatives). Of the 12 final rises that she produces, 7 of them can be attributed to lexical stress, which, once again, is also observed in standard BAS. Therefore, only 5 total final rises are in contexts (paroxytone and proparoxytone stress) where they would not be expected to occur in standard BAS. Eve, much like Samantha, and perhaps to an even further degree, has incorporated the falling question intonation into her developing Spanish in native-like ways.

But what is the phonetic nature of the emerging final interrogative fall produced by these two learners? It is of interest to know if the learners produce as drastic a final fall as that produced by the native speaking control group. Table 4.14 presents the mean scaling difference in ERB from the last high peak to the end of the fall, thus providing a sense of how far the F0 contour falls in a standard BAS absolute interrogative.

# final unstressed σ	Number of tokens	Mean difference in ERB	Standard deviation
1	47	-2.273	0.44
2	23	-2.574	0.44

Table 4.14 Scaling differential between the final high peak and the end of the fall (control group). A negative value indicates a falling contour.

It should be noted that the tonal crowding context with 0 unstressed final syllables was removed from this table, as native speakers categorically produce rises in this context, thus making it irrelevant for the discussion of final falls. In the other two crowding contexts, the rather large mean differences of -2.273 and -2.574 shows that the F0 contour falls over 2 full ERB from the nuclear H tone to the end of the utterance, indicating a substantial final fall in standard BAS.

Samantha and Eve, though demonstrating frequent final falls, do not yet convey interrogatives quite as noticeably as the native speakers. Table 4.15 summarizes the mean scaling differences between the nuclear high peak and the end of the utterance. It should be noted that all cases of final rises were eliminated from this analysis so that they would not skew the mean differences.

# final unstressed σ	Number of tokens	Mean difference in ERB	Standard deviation
1	43	-1.467	0.59
2	13	-1.199	0.61

Table 4.15 Scaling differential between the final high peak and the end of the fall (learners). A negative value indicates a falling contour.

Whereas the native speakers produced an F0 contour that fell over 2 ERB to the end of the utterance, Samantha's and Eve's interrogatives fell 1.467 and 1.199 ERB on average when the nuclear stressed syllable was penultimate and antepenultimate, respectively. While these two learners are aware of the prevalence of falling interrogative

intonation in BAS, they have yet to incorporate it to a native-like degree into their own L2 speech.

With a basic understanding of the distribution and general characteristics of the developing falling interrogative intonation, attention is now shifted to the phonological analysis of this pattern. Table 4.16 presents the alignment of the nuclear L tone for Samantha and Eve only; the data from the remaining 9 participants were not analyzed here.

# utterance-final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	24	85	40
1	48	82	43
2	23	121	53
Totals	95	92	47
F = 6.375, p = .003			

Table 4.16 Alignment of L tone with respect to the nuclear syllable. A positive value indicates an alignment after the onset.

It is clear from Table 4.16 that the nuclear L tone alignment for Samantha and Eve is nearly identical to that of the other participants. When there is 0 or 1 unstressed final syllable, the L tone is aligned 85 and 82 ms on average into the tonic syllable. When there are 2 unstressed syllables at the end of the utterance, the L tone creeps further away from the tonic syllable onset. This, much like what has been shown before, constitutes evidence of an L*.

Whereas at time 2 the other 9 participants produced a final rise that was attributable to an H%, Samantha and Eve produced a rising contour through the stressed syllable that

reached an easily identifiable H tone, which then fell again to the end of the utterance. Therefore, the status of this H tone for Samantha and Eve will now be analyzed by looking at its alignment.

# utterance-final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	24	-61	62
1	48	103	57
2	23	234	102
Totals	95	94	126
$F = 100.826, p < .0001$			

Table 4.17 Alignment of H tone with respect to the nuclear syllable. A negative value indicates an alignment before the tonic syllable offset and a positive value indicates an alignment after the offset.

Table 4.17 shows that when the tonic syllable occurs utterance finally, the H tone is, by definition, found within the syllable boundaries (-61 ms). However, when there are unstressed syllables positioned after the tonic syllable, the H tone aligns after the tonic syllable borders (103 ms and 234 ms on average). A Tukey post hoc test shows that each of these average alignments is statistically different from the others ($p < .0001$). Moreover, it shows that the H tone aligns further and further away from the tonic syllable when the phonetic conditions permit it. This points to a phonologically unassociated H tone.

Tables 4.18 and 4.19 summarize the average nuclear syllable durations and rise times for Samantha and Eve only.

# utterance-final unstressed σ	Number of tokens	Mean duration (ms)	Standard deviation
0	24	344	63
1	48	196	34
2	23	178	35
Totals	95	229	80
$F = 115.998, p < .0001$			

Table 4.18 Average duration of nuclear stressed syllable

# utterance-final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	24	199	34
1	48	218	53
2	23	291	87
Totals	95	231	69
$F = 16.535, p < .0001$			

Table 4.19 Rise time, in milliseconds, of nuclear pitch accent

These two tables support the claim that the H is phonologically unassociated. The F0 rise time, as seen in Table 4.19, increases even though the syllable duration does not, as seen in Table 4.18.

Therefore, the nuclear pitch accent produced by Samantha and Eve is analyzed here as L*+H. Furthermore, the final falling intonation that these two learners have acquired will be analyzed as resulting from a subsequent L%.

4.3.4 Summary of learner absolute interrogative intonation in read speech (time 2)

It was shown in this chapter that 9 of the 11 participants evidenced very little major change in the development of their interrogative intonation over time. These 9 learners

continued to produce the rising interrogative intonation at the end of the semester that they also employed at the beginning of the semester, which, it must be noticed, is quite different from the falling intonation that they were exposed to throughout the study abroad semester in Buenos Aires. The interrogative contour at time 2 for these participants was analyzed as L^{*}+H L^{*} H% and a representative example is shown in Figure 4.8.

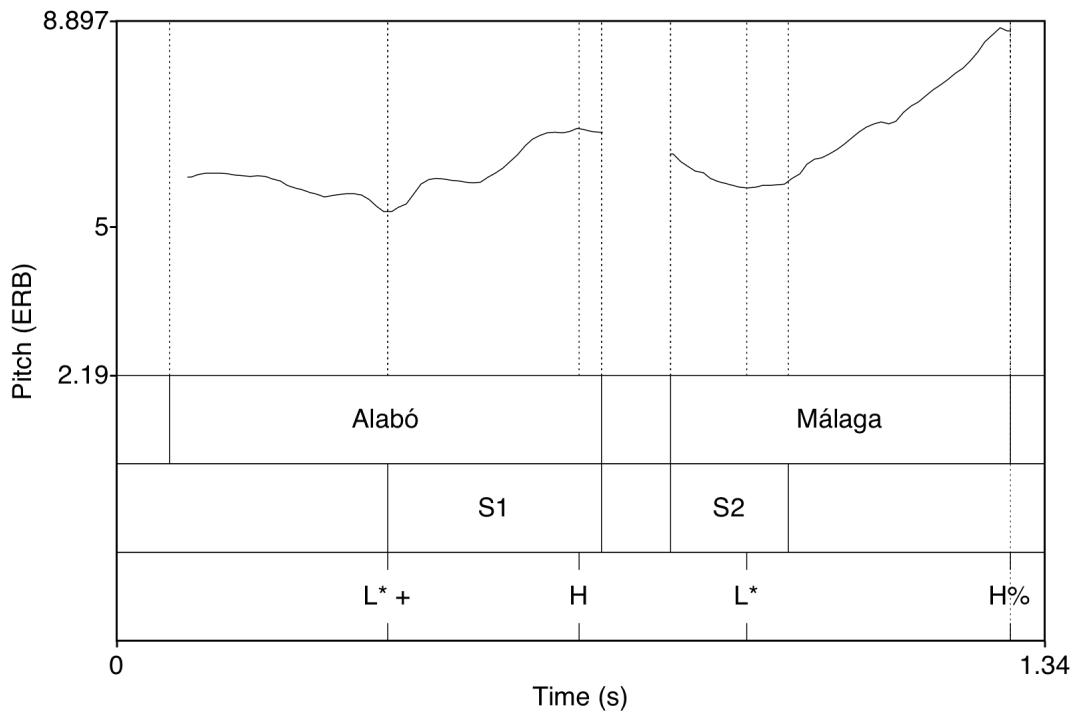


Figure 4.8 Phonological analysis of learner rising interrogative intonation

¿Alabó Málaga? ‘Did s/he praise Malaga?’

$\begin{array}{c} | \\ \text{L}^*+\text{H} \end{array}$
 $\begin{array}{c} | \\ \text{L}^* \end{array}$
 $\begin{array}{c} | \\ \text{H}\% \end{array}$

It was also shown here that 2 of the 11 participants began to regularly produce a falling interrogative contour that did begin to approximate native-like norms in some

ways. This pattern was analyzed as L*+H L*+H L% and a sample is depicted below in Figure 4.9.

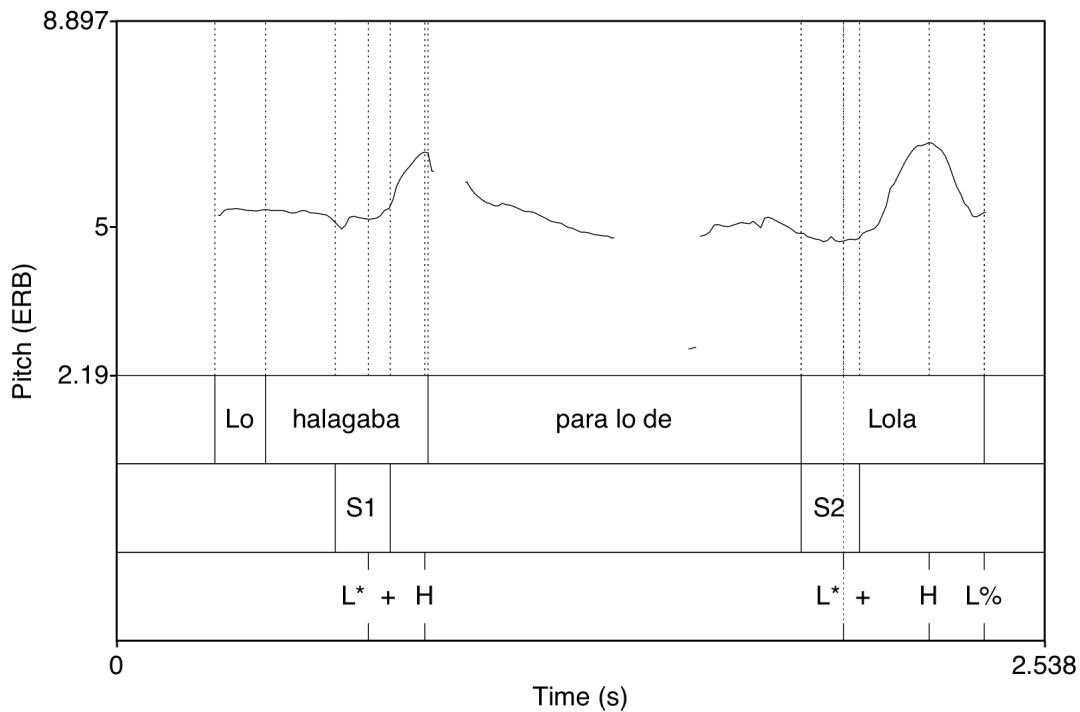


Figure 4.9 Phonological analysis of learner falling interrogative intonation

¿Lo halagaba para lo de Lola? ‘Was I praising him/it for the thing with Lola?’
 |
 L*+H | |
 L*+H L%

4.4 Learner interrogative intonation in spontaneous and semi-spontaneous speech

4.4.1 Introduction

It was shown in Sections 4.2 and 4.3 that, in the read speech style, the majority of the learners (9 out of 11) demonstrated very little approximation of native BAS interrogative patterns throughout the study abroad semester. These learners, rather, employed a non-native-like rising intonational pattern, both at the beginning and end of the experimental period. The same general trend was found in the spontaneous and semi-

spontaneous speech styles, as well. That is, all 11 learners used a rising interrogative intonation at the beginning of the semester when asking questions in conversation with their peers. By the end of the semester, Samantha and Eve—the two learners that demonstrated a clear turn towards falling interrogative intonation in formal speech—also incorporated native-like falling interrogative patterns into their conversational Spanish, thus demonstrating acquisition of native-like intonation across a continuum of speech styles. The other 9 participants, on the other hand, continued to employ a rising final intonation at the end of the semester. These points will be discussed in further detail below.

4.4.2 Native BAS interrogative F0 contours in spontaneous and semi-spontaneous speech

Before beginning a detailed discussion of learner intonation in the more spontaneous speech styles, it is important to highlight the primary patterns observed by the native-speaking control group in these same speech styles. Generally speaking, the control group participants produce contours during these tasks that conform to the observations made above in Section 4.2.1.1. That is, the hallmark characteristics of an absolute interrogative in this speech variety include a rising nuclear pitch accent whose peak is reached near the tonic syllable offset and which subsequently falls towards the end of the utterance. It must be pointed out, however, that because the participants did not read from pre-prepared materials and that the phonological context has not been controlled for whatsoever during these tasks, the contours are not as uniform as those observed for the reading task. Due to the scope of the current study, a comprehensive treatment of native BAS intonational variation is left for future research. The contours analyzed in this

subsection are intended to provide the reader with a general understanding of the prosodic patterns to which the learners may approximate.

Figure 4.10 offers an example of an absolute interrogative produced by participant CS-3 directed at CS-4 during the interview task (i.e. spontaneous speech). During this task, the two spoke about a recent soccer match and CS-3 asks his friend if a particular professional soccer player formed part of the starting eleven lineup with the question *¿Lo pusieron al titular el viernes?* ‘Did they put him in the starting lineup on Friday?’ The pitch contour is presented below.

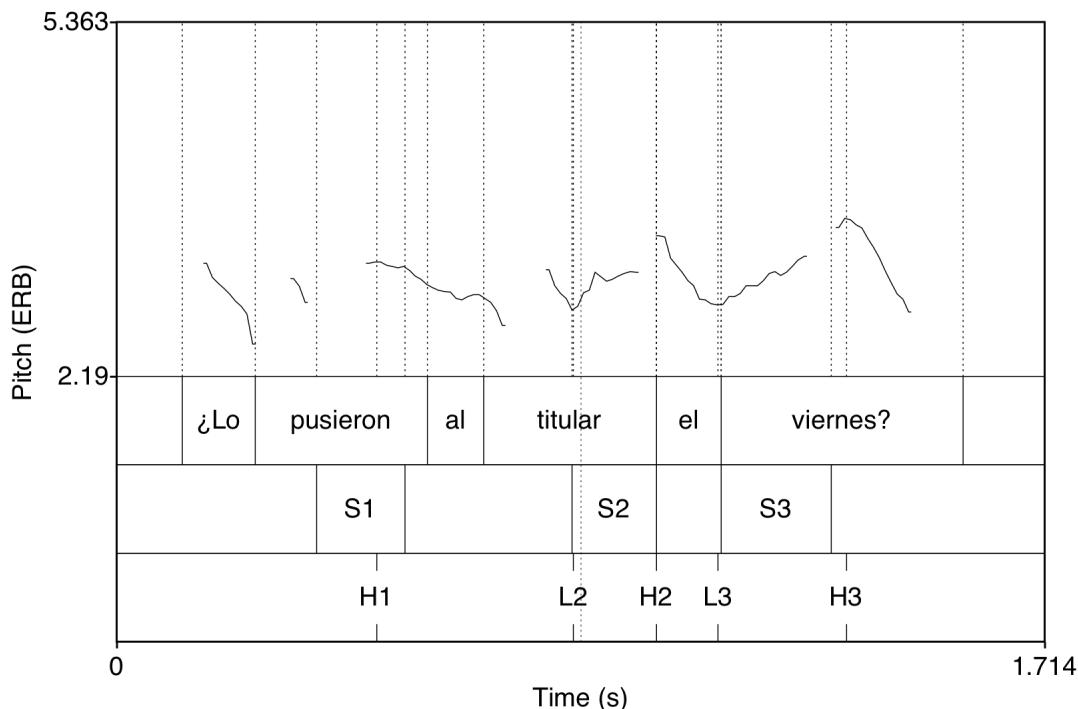


Figure 4.10 Pitch contour of the spontaneously produced absolute interrogative *¿Lo pusieron al titular el viernes?* ‘Did they put him in the starting lineup on Friday?’, by CS-3, a native BAS speaker.

Due to the uncontrolled nature of the phonological context, it is not surprising to see a pitch contour with numerous interruptions, which makes it more difficult to identify with certainty the L and H tones.²⁵ Nevertheless, it appears as if the L tones tend to align quite closely to the tonic syllable onsets and the H tones align very near to the offsets. It is also quite evident that the interrogative ends with a final fall that reaches the speaker's baseline, which was observed in Figure 4.1, as well. In general, the interrogatives produced in this speech style conform to the observations made above during the discussion on the read speech.

Figure 4.11 presents an example of an absolute interrogative produced by participant CS-1 during an interactive twenty questions game (i.e. semi-spontaneous speech). The speaker, conversing with CS-2, is attempting to guess the identity of a celebrity and inquires whether he is Argentinean.

²⁵ For this reason, the L1 tone associated with the first prenuclear syllable has not been marked in this example.

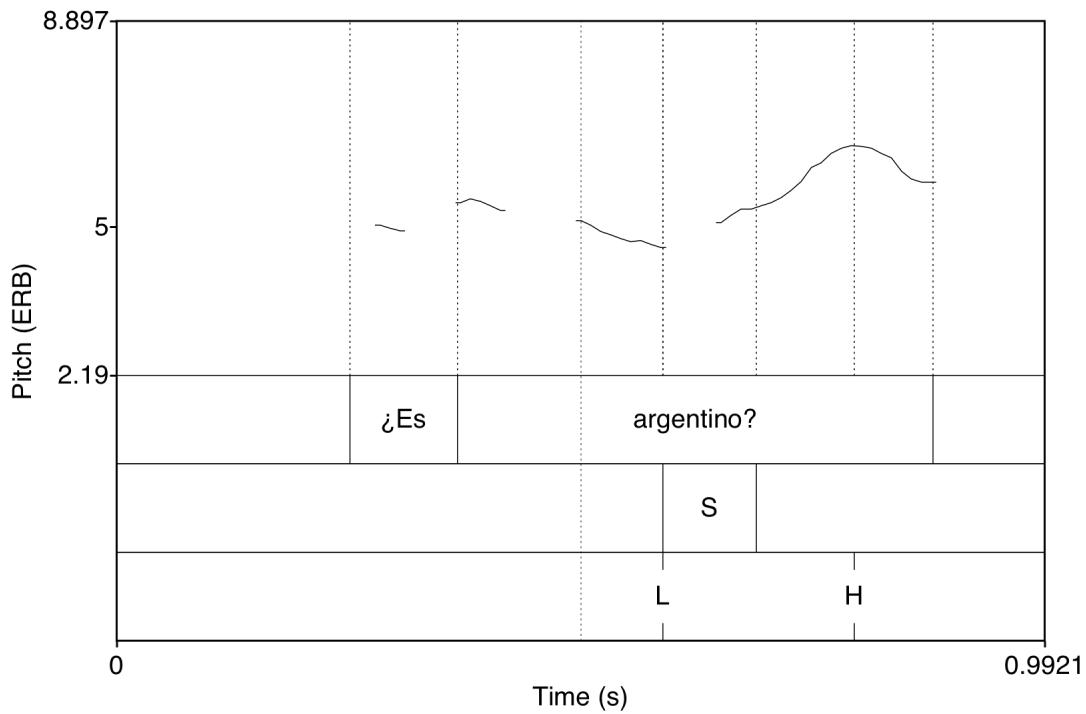


Figure 4.11 Pitch contour of the semi-spontaneously produced absolute interrogative *¿Es argentino?* ‘Is he Argentinean?’ by CS-1, a native BAS speaker.

The most noticeable tonal movement in this example is associated with the nuclear stressed syllable *ti* in the word *argentino*. The nuclear rise begins at or very near the tonic syllable onset and culminates well past the tonic offset. The F0 contour subsequently dips to a final value that is somewhat lower than the peak.

Although it has already been shown that the contours produced in the more informal contexts generally correspond to those produced in the formal context, there are a few characteristics in Figure 4.11 that stand out somewhat. Firstly, in this figure, the distance between the nuclear tonic syllable offset and the subsequent H tone is considerably farther than that which was observed during the reading task or even in Figure 4.10, in which the H tone frequently was aligned much closer to the offset. Moreover, the final

fall does not appear to be quite as dramatic as those produced during the reading task (as exemplified in Figure 4.1). Whether these characteristics are significant enough to warrant a unique phonological analysis is not pertinent here and this issue will be left for future research; however, the reader should understand that there is variation in intonational production across speech styles and that the learners may very well be able to perceive and incorporate these features into their developing Spanish.

4.4.3 Learner interrogative intonation in spontaneous and semi-spontaneous speech—beginning of the semester

This section will begin with an examination of the learner intonation produced in the sociolinguistic interview. It will be recalled that the learners performed this task in pairs. They were given a list of possible topics to discuss but were free to take the conversation in any direction that they wished. Consequently, the questions produced in this task were entirely uncontrolled phonologically. Though each interview lasted on average 30 minutes, the number of absolute interrogatives produced at the beginning of the semester—a total of 41 across all participants—was actually quite low.²⁶ Though the tokens produced are scarce, two particularly salient points emerge. Firstly, all 41 tokens have a final rise that signals interrogativity. Secondly, the prenuclear portion of the interrogative shows very little tonal movement at all, even through the stressed syllables. The contour tends to stay low and flat until it reaches the nuclear syllable, whereupon the rise commences. Both the final nuclear rise and the flat prenuclear contour are demonstrated in Figure 4.12.

²⁶ The participants often solicited information from their partners via pronominal interrogatives, which are not analyzed in this study.

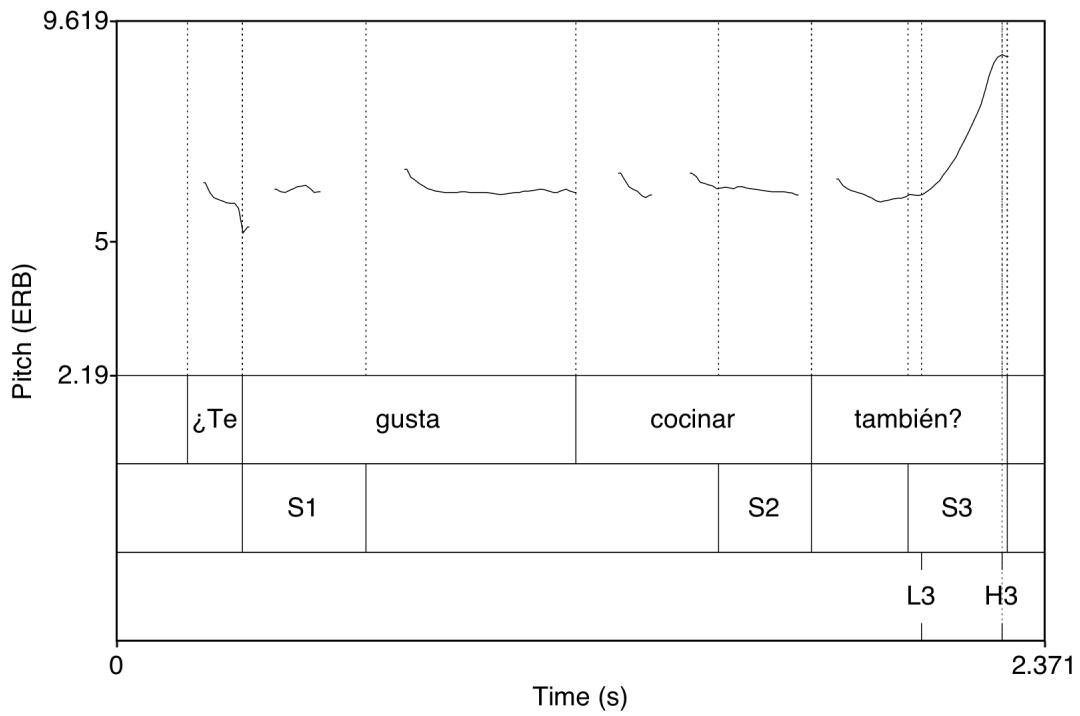


Figure 4.12 Pitch contour of the learner absolute interrogative *¿Te gusta cocinar también?* ‘Do you also like to cook?’, produced by Allison

As can be seen in this figure, it is difficult to pinpoint any appreciable L or H tone associated with the first and second stressed syllables. The only measurable tonal movement occurs near the nuclear syllable onset, in which the contour begins a sharp rise towards the end of the question. It is worth highlighting once again that this nuclear rising intonation was observed as well in the read speech. That nuclear sequence was analyzed as L* H%, and it is appropriate for this contour as well.

The flat prenuclear contour illustrated in Figure 4.12 is very common across all participants.²⁷ In fact, no pitch movement whatsoever throughout the prenuclear portion of the utterance was observed in 27 of the 41 interrogatives.

There were, however, cases of rising tonal movement in non-utterance-final position, especially when the syntactic structure of the sentences was somewhat more complex. This is illustrated in Figure 4.13.

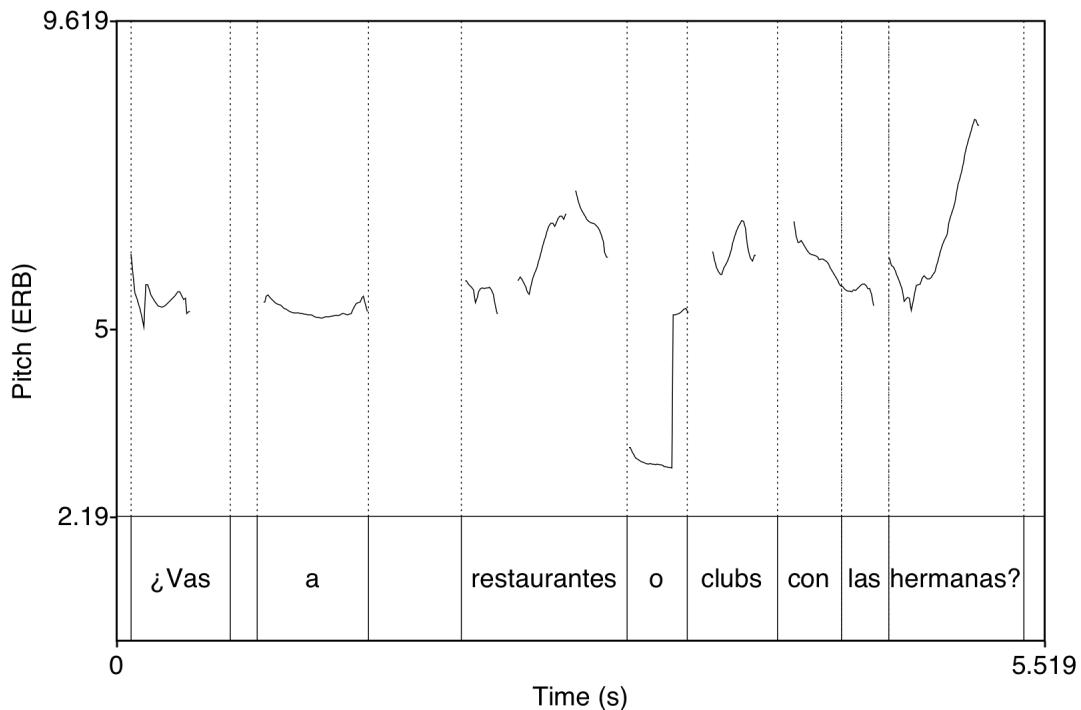


Figure 4.13 Pitch contour of the interrogative *¿Vas a restaurantes o clubs con las hermanas?* ‘Do you go to restaurants or clubs with the [i.e. your] sisters?’

In this example, Allison produces rises on *restaurantes*, *clubs*, and *hermanas*, thus demonstrating considerably more F0 movement than that found in Figure 4.12. The rise

²⁷ It must be noted that three participants—Brianna, Leah, and Tyler—did not produce any absolute interrogatives during the sociolinguistic interview at this point in the semester.

found on the utterance-final word *hermanas* is attributed to the need to signal clear interrogativity. The rises associated with non-final *restaurantes* and *clubs*, however, occur at syntactical breaks, such as before the coordinating conjunction *o* ‘or’ and the prepositional phrase *con las hermanas* ‘with the sisters’. This prosody-syntax interface accounts for the remaining 14 tokens that demonstrate more tonal movement.

Attention will now be turned to the intonational patterns produced in the semi-spontaneous 20 questions game performed at the beginning of the semester. During this elicitation task, the participants attempted to identify a list of celebrities by asking a series of absolute interrogatives, such as *¿Es una mujer?* ‘Is he/she a woman?’ or *¿Es una cantante?* ‘Is she a singer?’. It will be recalled from Chapter 3 that this task was considered semi-spontaneous due to the repetitive nature of the line of questioning, leading to the usage of routinized expressions, such as *¿Es un hombre?* ‘Is this person a man?’ or *¿Es una cantante?* ‘Is she a singer?’ Because this task by definition required the production of absolute interrogatives, a larger number—157 total, approximately 14 per participant—was produced.

The same pattern observed in the sociolinguistic interview was found in the 20 questions game as well. The participants overwhelmingly produced a flat F0 contour through the prenuclear syllables followed by a nuclear rise. Of the 157 tokens produced in the game, 148 (94%) bore both of these characteristics. The remaining 9 interrogatives that did not adhere to this preference either had prenuclear rises (6 total, or 4%) or lacked a final rise altogether (3 total, or 2%).

4.4.4 Learner interrogative intonation in spontaneous and semi-spontaneous speech—end of the semester

The learners performed the same two paired, interactive tasks at the end of the semester. This section will begin by analyzing the F0 contours produced in the interview task, and then proceed to discuss the contours produced during the twenty questions game. Samantha and Eve, the two learners who acquire native-like patterns, will be discussed separately at the end of this subsection.

The interview task once again failed to generate a substantial number of absolute interrogatives—only 33 total were analyzed across 10 speakers²⁸ and Samantha and Allison accounted for 16 of those. Given these numbers, it is difficult to generalize in meaningful ways with respect to the evolution of intonational production in this speech style. The most salient observation, however, is that by the end of the semester, 8 of the 10 participants (excluding Amanda) continued to produce a non-BAS-like final rising F0 contour to signal interrogativity.²⁹ The prenuclear portion of the interrogatives remained largely flat, lacking the tonal movements associated with stressed syllables that the native speakers regularly produce. Figure 4.14 illustrates this rising contour favored by 9 of the 11 participants. Katie produced this contour during the interview.

²⁸ Amanda did not produce any absolute interrogatives during this task.

²⁹ It will be recalled that rising final intonation is not entirely foreign to BAS. However, the BAS final rise is attributed to truncation effects, whereas the learner final rise is a product of its underlying phonological structure.



Figure 4.14 Pitch contour of the absolute interrogative *¿Tenés un restaurante favorito?* ‘Do you have a favorite restaurant?’, produced by Katie at the end of the semester.

Just as was noted with respect to Figure 4.12, it is difficult to pinpoint any clear prenuclear L or H tone. The only tonal movement present here begins at the beginning of the tonic nuclear syllable and reaches its apex very near to the end of the utterance. This flat prenuclear contour paired with a final rise accounts for 25 of the 33 interrogatives (76%) produced during this task. Samantha was responsible for the remaining 8 interrogatives that did not adhere to this pattern; instead, she produced them with a final falling contour. Despite the small sample size, it appears that the intonation has changed

very little in this speech style throughout the semester for the vast majority of the learners.³⁰

Unlike the interview, the twenty questions game obligatorily forced the usage of absolute interrogatives, leading to a larger sample size to analyze. The participants produced a total of 219 tokens, approximately 20 per participant. With the exception of Samantha and Eve, the participants show very little evidence of an evolving intonation. These 9 participants once again heavily favored a flat prenuclear contour that subsequently rose through the nuclear syllable to the end of the utterance, regardless of phonological context. Figure 4.15 demonstrates this. Leah produced this interrogative during the twenty questions game.

³⁰ Eve, whose intonation generally patterns closely to that of Samantha, only produced one interrogative in this task (whose F0 contour was almost entirely flat). It is assumed, though cannot be verified, that she likely would have produced more final falling interrogatives had her sample size been larger.

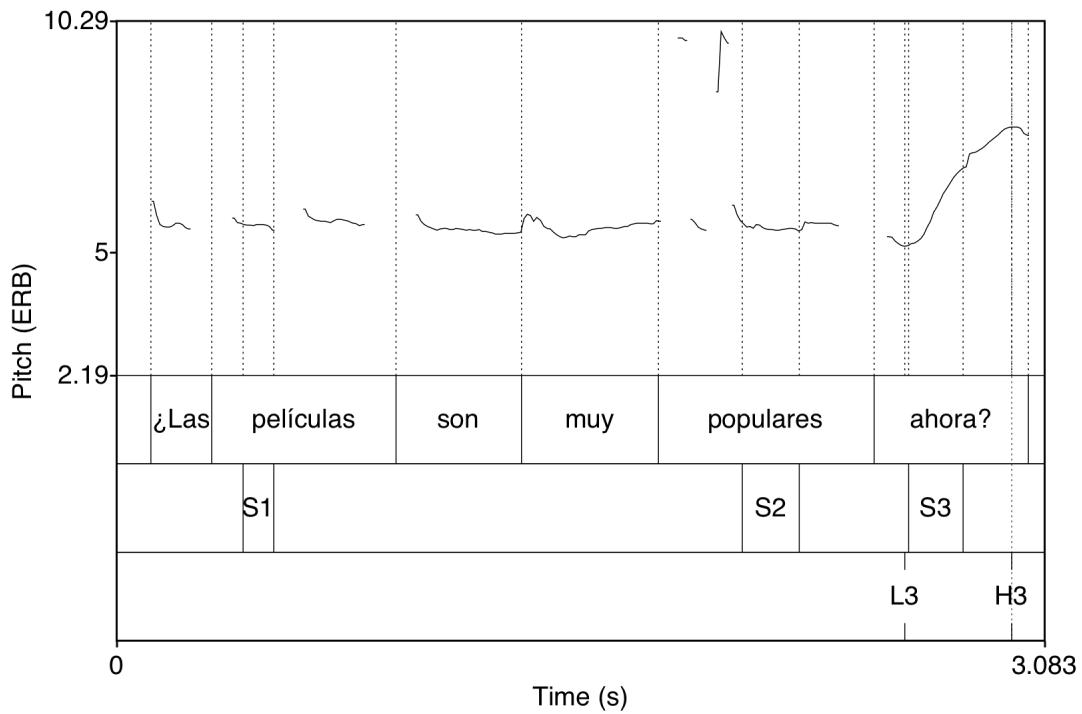


Figure 4.15 Pitch contour of the absolute interrogative *¿Las películas son muy populares ahora?* ‘Are the movies popular now?’, produced by Leah at the end of the semester.

Samantha and Eve once again distinguish themselves from the rest of the learners by producing pitch contours that bear more tonal movement in general, and, most importantly, that approximate the distinctive falling contour that is particular to BAS. Because there is clear evidence of acquisition of BAS-like intonation here, these data will be treated with more attention.

Samantha produced a total of 23 absolute interrogatives during the twenty questions game. Of those 23 questions, she produces 9 interrogatives that bear ultimate stress, which, at least for native BAS, favor the production of a final rise due to the likelihood of truncation effects (Toledo & Gurlekian, 2009; Lee, 2010). She produces a final rise on all

9 of these examples. The remaining 14 interrogatives presented the possibility for a final fall due to penultimate or antepenultimate stress on the utterance-final word. Samantha realized a fall on 5 of these 14, and a final rise on the remaining 9. Figure 4.16 offers an example of a falling interrogative that approximates a standard BAS contour quite closely, while Figure 4.17 offers an example of a non-native-like final rise.

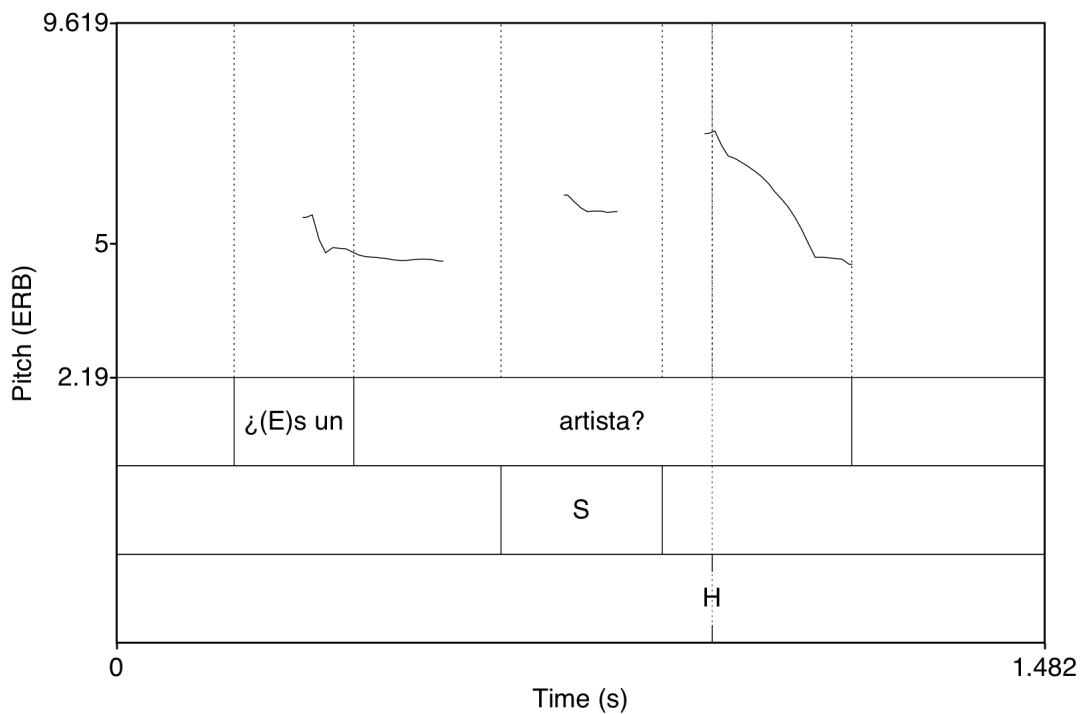


Figure 4.16 Pitch contour of the absolute interrogative *¿Es un artista?* ‘Is he an artist?’, produced by Samantha at the end of the semester.

In Figure 4.16, the pitch contour reaches a high peak after the nuclear tonic syllable offset and falls dramatically to the speaker’s baseline.³¹ While this contour does approach native norms quite closely, the contour below in Figure 4.17, also produced by Samantha

³¹ The L tone for this pitch accent is difficult to locate with certainty due to the presence of the occlusive and fricative consonants in the stressed syllable *tis* in *artista*. In any case, it is not pertinent for the present discussion.

at the end of the semester, is much less native-like, and quite similar to the intonation she produced at the beginning of the semester. The F0 contour stays low and flat through the prenuclear and nuclear syllables and only rises in the posttonic syllable towards the end of the utterance.

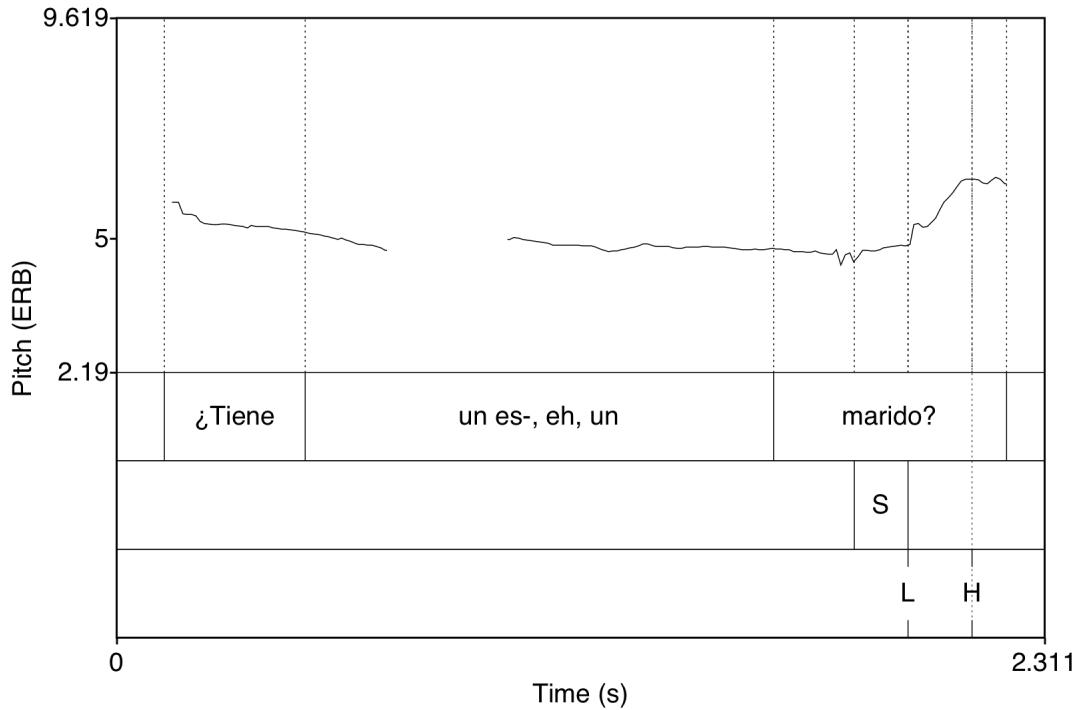


Figure 4.17 Pitch contour of the absolute interrogative *¿Tiene marido?* ‘Does she have a husband?’, produced by Samantha at the end of the semester.

Eve, much like Samantha, has incorporated a falling interrogative intonation into her developing Spanish in a variety of speech styles, including in the semi-spontaneous style that is under investigation here. She also produced a total of 23 absolute interrogatives during the twenty questions game. However, whereas Samantha varied between a final rise and final fall in those phonological contexts permitting the fall, Eve much more consistently employs the fall. Of the 17 interrogatives she produced that could

conceivably bear a final fall (due to penultimate or antepenultimate nuclear stress), she realized 15 falls and 2 rises. Of the 6 interrogatives in which a final rise could be expected (due to ultimate nuclear stress), she produced a rise on all 6. An example of Eve's falling interrogative intonation is presented in Figure 4.18.

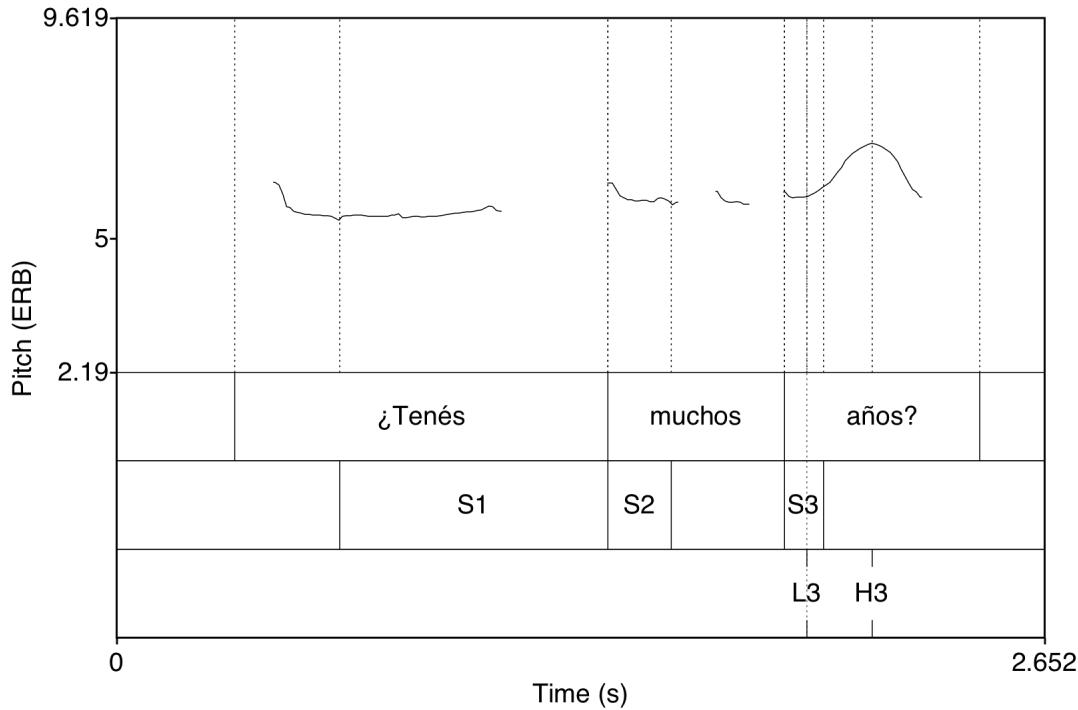


Figure 4.18 Pitch contour of the absolute interrogative *¿Tenés muchos años?* ‘Are you very old?’, produced by Eve at the end of the semester.³²

Figure 4.18 clearly shows a nuclear pitch rise that begins within the boundaries of the stressed syllable and that reaches a peak in the posttonic syllable. It subsequently falls to the end of the utterance towards the speaker's baseline. Although the prenuclear syllables

³² When attempting to guess the identity of the celebrity in the twenty questions game, most of the participants did so by inquiring about the individual indirectly in the third person. Eve, however, pretended that her partner was the celebrity and thus used second person verb forms.

lack the tonal movement that is more characteristic of native BAS speakers, the falling melody used here makes it much more difficult to identify the speaker as an American learner of Spanish.

4.4.5 Discussion and summary of L2 interrogative intonation in spontaneous and semi-spontaneous speech styles over time

It has been shown in Section 4.4 that, on balance, the acquisition of BAS interrogative norms over time is minimal when interacting with peers in communicative contexts. At the beginning of the semester all 11 participants produced an F0 contour that stayed low and flat through most of the utterance, until rising to a high boundary tone at the end, thus signaling the interrogative nature of the utterance. By the end of the semester, only Samantha and Eve had evidenced any meaningful approximation of BAS norms, which was accomplished via the production of a falling F0 contour after the nuclear rise.

Moreover, though Samantha and Eve's developing L2 Spanish intonation generally patterns quite similarly, it was shown here that the degree to which Samantha and Eve employed this newly developed falling contour differs somewhat. Eve produced a final falling interrogative contour in nearly every context in which it was appropriate, thus approximating native-like norms quite closely. Samantha, on the other hand, alternated between a non-native-like final rise and a much more native-like final fall in certain contexts, thus demonstrating a partial acquisition of BAS interrogative intonation. Eve is a more experienced Spanish speaker than Samantha in terms of classroom time logged, as the former was a fifth-semester Spanish student, whereas Samantha was only a third-

semester learner. This may help to explain Eve's more comprehensive incorporation of the falling contour. However, it is important to note that these more informal tasks generated fewer analyzable tokens than the reading task, and, consequently, these observations are made based on a very limited sample size. Future research methodologies should develop strategies that elicit larger samples of naturalistic interrogatives so as to better address the variable nature of the acquisition of intonation.

The phonological analysis of learner interrogatives was proposed on the basis of the data in the formal read speech, given the methodological benefits of the highly controlled experimental design during this task. However, it is worth mentioning that the contours produced in the informal, more spontaneous styles conform very closely to those produced during the formal reading task. This is especially true for the toneme sequences. The final rise that 9 participants produce both at time 1 and time 2 in the interactive tasks can be analyzed as resulting from the presence of an L* H% toneme sequence, just as it was for the reading task. Interestingly, many of these participants alternately produced a final toneme that is best characterized as L+>H* H%, one in which the L tone is aligned at or very near to the syllable onset thus allowing the F0 contour to rise more robustly all the way through the stressed syllable. Consequently, the pitch accent is perceived as a rising one (hence the starredness on the H tone), rather than the low tonal movement through the tonic syllable resulting from the L* nuclear pitch accent. It is unclear whether the L* H% and L+>H* H% tonemes are used contrastively or if they are minor phonetic variations. Perhaps even more importantly, neither sounds particularly BAS-like and the two pitch accents, regardless of which is employed, immediately mark the learner as a non-native speaker of Spanish.

With respect to the pitch accents produced by Samantha and Eve, the falling contour that they develop throughout the study abroad semester can be analyzed as L*+H L% both in the spontaneous and semi-spontaneous speech styles, and in the formal speech style, as elaborated upon above. Therefore, it appears that, at least at this stage in the acquisition process, the learners employ intonational patterns evenly across all speech styles, whether they are native-like or not.

Some other interesting points emerged in Section 4.4. Notably, tonal movement in the prenuclear portion of the interrogatives, at time 1 and 2, was minimal in large part, even for Samantha and Eve (see Figures 4.17 and 4.18). It is important to keep in mind that these utterances were not pre-prepared before interaction took place; as such, the learners were creating language on the spot. It is also critical to remember that these are intermediate level learners who are still in the process of learning and using correctly the mechanics of the language. Therefore, these elicitation tasks in particular require more cognitive effort from the learner and force them to balance numerous simultaneous tasks, such as ensuring proper verb conjugation, using appropriate vocabulary, stringing words together in the proper order, among other tasks. It could be that, to ensure effective communication with their peers, the learners have suppressed F0 fluctuations in the prenuclear portion of the utterance so as to reinforce the interrogative nature of the utterance, which is signaled via the final rise. In other words, native-like intonation is not prioritized when other, more immediately important communicative goals must be met first. In contrast, when the interrogatives are pre-prepared, as they were in the formal reading task, the participants are unburdened from the need to improvise in the L2 on the spot, and consequently may produce more tonal movement throughout the entire

utterance, even if those patterns do not quite meet native-like standards. Of course, this is only a partial explanation for why native-like standards are not met. There exists a whole host of other potential explanatory factors, chief among them being issues relating to personal identity (i.e. whether they're making a conscious decision to assume the voice and identity of a BAS speaker), interpersonal issues related to the interlocutor (i.e. whether they can change their speech patterns depending on to whom they are speaking), motivation to learn, and whether they are receiving a consistent and sufficient amount of input in the target language variety, among others. These considerations will be discussed in more detail in Chapter 6.

4.5 Conclusions

It was shown in this chapter that, at the beginning of the semester, none of the participants approximated standard BAS absolute interrogative intonation. Rather, all 11 subjects produced a rising pattern (analyzed here as L*+H L* H%) that has been observed to be a hallmark of standard American English, the native speech variety of these participants. In fact, the L* H% sequence analyzed here for the nuclear portion of the interrogative is nearly identical to the L* H- H% nuclear sequence proposed by Hedberg & Sosa (2011: 847) for AE absolute interrogatives. Therefore, the learners in this study have transferred their native AE intonation into their developing L2 intonational system. This, naturally, is not surprising, especially in light of Major's Ontogeny Model (1986, 2001), in which a beginning learner's interlanguage system is essentially synonymous with his/her L1. Although these learners are not beginners, it could be the case that, as intermediate learners, they are only now at a stage in their

learning in which they can begin to perceive and regularly replicate suprasegmental phenomena, especially one as traditionally under-emphasized in the L2 classroom as intonation (Kvavik, 1976). Therefore, it is not entirely surprising that intermediate learners would transfer wholesale their L1 intonation to their developing L2 Spanish at an early stage in their acquisition of intonation. To wit, Kvavik (1976: 406) states: “[I]ntonation is just about the most difficult speech habit to change.” Similarly, though not referring to intonation specifically, Guiora (1972: 144-145) claims: “Pronunciation is...the hardest [aspect] to penetrate (to acquire in a new language), and the most difficult to lose (in one’s own).”

By the end of the semester, the absolute interrogative intonation on the whole has remained largely the same ($L^*+H\ L^* H\%$), indicating little awareness of or desire to adapt to BAS norms, once again underscoring Kvavik’s (1976) statement that intonation is difficult to change. However, the turn towards a circumflex, falling absolute interrogative intonation by Samantha and Eve constitutes clear evidence of both an awareness of native patterns and an attempt to model them. This pattern was analyzed here as $L^*+H\ L^*+H\ L\%$.

It must be emphasized, however, that this emerging L2 intonation does not correlate perfectly with native BAS absolute interrogative intonation, which has traditionally been analyzed as $L+H^*\ L+;H^*\ L-\ L\%$ (Barjam, 2004; Lee 2010; Gabriel et al., 2010). This pattern describes rising prenuclear and nuclear accents which start just at the onset of the stressed syllables and which reach their apexes at or near the end of the stressed syllable. On the contrary, Samantha’s and Eve’s rises start significantly after the stressed syllable onset and proceed to reach their peaks in the posttonic syllables. Therefore, this late rise

and subsequent fall represented by L^{*}+H L% that develops in the nuclear portion of Samantha's and Eve's interrogatives could be interpreted as an interlanguage phenomenon. That is, following Major's (2001) Ontogeny Phylogeny Model, a pattern motivated by transfer (i.e. L^{*} H%) begins to fall by the wayside and is replaced by a structure that is neither a product of their L1 nor part of any input that they have presumably received from their native BAS speaking interlocutors (i.e. L^{*}+H L%). Samantha and Eve, then, appear to be further along in the process of the acquisition of Spanish intonation in that they have begun to eliminate transfer errors and have substituted them with developmental processes, which, in theory, would be substituted in turn with native-BAS-like intonation (i.e. L+_iH* L%). The other 9 participants in this study, on the other hand, have yet to begin replacing transfer processes with developmental processes, and, as such, continue to produce very non-native-like interrogatives.

It will be recalled from Section 4.3.3.3 and Table 4.13 that the emergence of Samantha and Eve's circumflex interrogative intonation is not categorical, thus highlighting the variable nature of the acquisition of intonation. Both produce rising and falling interrogatives at the end of the semester, though the newly acquired falling intonation appears to be preferred numerically. This newly preferred element appears to have almost eliminated the previous favored rising pattern altogether, at least in those situations in which falling interrogative intonation is preferred. Both Henriksen et al., (2010) and Trimble (2013), the only two previous studies to track developing intonation in L2 Spanish, have documented the tension between consistency and variability in learner intonation. With respect to the case of Samantha and Eve, the data appear to point

towards an advanced stage in the acquisition of native BAS interrogative intonation, especially in light of the sequence of grammatical learning proposed in Ellis (1999). That is, Samantha and Eve appear to be transitioning out of a stage of free variation (rising vs. falling intonation) in which the learners are not entirely aware of the functional applications of both forms, and towards a more systematic usage of these forms in accordance with target norms (Ellis, 1999: 475).³³ This variability may continue to persist as Samantha and Eve further refine their pitch accent structure to more closely resemble BAS norms in all respects, such as the alignment of the L and H tones in prenuclear and nuclear position.

³³ It is important, though, to emphasize that this is difficult to prove empirically, as data was collected only at the beginning and end of the semester; as such, the route of acquisition may only be speculated upon at this point. Therefore, future studies would do well to track learners at various stages in the experimental period.

Chapter 5: An Analysis of Developing Learner Declaratives

5.1 Introduction

The objectives for Chapter 5 are identical to those for Chapter 4, but for declarative statements, rather than absolute interrogatives. That is, the major intonational patterns for declaratives, both at the beginning and at the end of the semester, are analyzed within AM theory. The development of declarative intonation in more spontaneous speech styles is addressed as well.

This chapter is organized in the following way. Section 5.2 will investigate learner declarative intonation at the beginning of the semester. This chapter is broken down into subsections, with Section 5.2.1 offering an introduction and an overview of the major patterns found in the control group data. Section 5.2.2 analyzes the learner prenuclear accents, while Section 5.2.3 analyzes the nuclear configurations. This section concludes in Section 5.2.4 by comparing learner intonation at the beginning of the semester with that of the native BAS speakers.

Section 5.3 describes learner declarative intonation at the end of the study abroad semester. Section 5.3.1 introduces the topic and Sections 5.3.2 and 5.3.3 analyze prenuclear and nuclear pitch accents, respectively. Section 5.3.4 summarizes L2 declarative intonation at the end of the semester.

As was done in Chapter 4, developing learner intonation is also considered in more spontaneous speech styles. Section 5.4 is devoted to this endeavor. After a brief introduction in Section 5.4.1, Section 5.4.2 summarizes the major declarative patterns produced by the control group speakers during a face-to-face conversation and an interactive twenty questions game. Section 5.4.3 addresses the major declarative patterns

produced by the learners in these interactive tasks at the beginning of the semester, whereas Section 5.4.4 does the same for the end of the semester. Section 5.4.5 reviews the major findings for the spontaneous and semi-spontaneous speech styles.

Lastly, Section 5.5 draws general conclusions based on the major findings presented throughout the chapter.

5.2 Learner declarative intonation in read speech—beginning of the semester

5.2.1 Introduction

Section 5.2 offers a phonological analysis of L2 Spanish declarative statements as the participants are just beginning their study abroad semester in Buenos Aires. As was done in Chapter 4, prenuclear and nuclear configurations will be analyzed with the aim of providing an inventory of standard learner intonation at time 1. Before doing so, however, it is once again imperative to establish a native-speaking baseline to which the participants may approximate. Therefore, before discussing the learner pitch contours, attention will first be turned to the standard F0 fluctuations produced by the control group members.

5.2.1.1 Standard Buenos Aires Spanish declarative intonation

Previous accounts of BAS, as documented in Chapter 2, have focused to a large extent on the behavior of the F0 in the prenuclear accents. This is because, unlike in other dialects of Spanish, the contour rises through the prenuclear stressed syllable and reaches its peak within the tonic syllable, rather than in the posttonic (Sosa, 1999; Toledo, 2000; Kaisse, 2001; Barjam, 2004; Colantoni & Gurlekian, 2004; Gabriel et al., 2010). This

rising pattern has typically been analyzed as L+H* (Barjam, 2004; Colantoni & Gurlekian, 2004; Gabriel, 2006; Gabriel et al., 2010; Colantoni, 2011), but others have characterized it somewhat differently. For instance, Toledo (2000) labeled this pitch accent H*+L, as the contours in his data reached peaks early in the stressed syllable and subsequently fell within the same syllable. Furthermore, Colantoni (2005, 2011) and Estebas Vilaplana (2010) have emphasized the variable realization of L*+H and L+H* pitch accents in prenuclear position in BAS.

Whereas the F0 contour almost always rises in the prenuclear portion of the utterance, the nuclear portion is characterized by a falling contour (Kaisse, 2001, Colantoni & Gurlekian, 2004; Gabriel et al., 2010; Colantoni, 2011). However, there have been differing approaches to analyzing this tonal movement, with some favoring an L* (Estebas Vilaplanas, 2010), an H*+L (Kaisse, 2001), an H+L* (Gabriel et al, 2010), and even those who highlight two or more of these possibilities (Colantoni & Gurlekian, 2004; Gabriel et al., 2010). Alternatively, Barjam (2004) has argued for an underlying L+H* rising pitch accent. Another important component of the nuclear pitch accent in BAS is a lengthened nuclear syllable (Estebas Vilaplanas, 2010; Colantoni, 2011).

The native-BAS-speaking control group unsurprisingly demonstrates these patterns quite clearly. The declarative illustrated in Figure 5.1, produced by CS-1, contains both an early F0 peak realized within the prenuclear tonic syllable and a falling contour through the nuclear syllable.

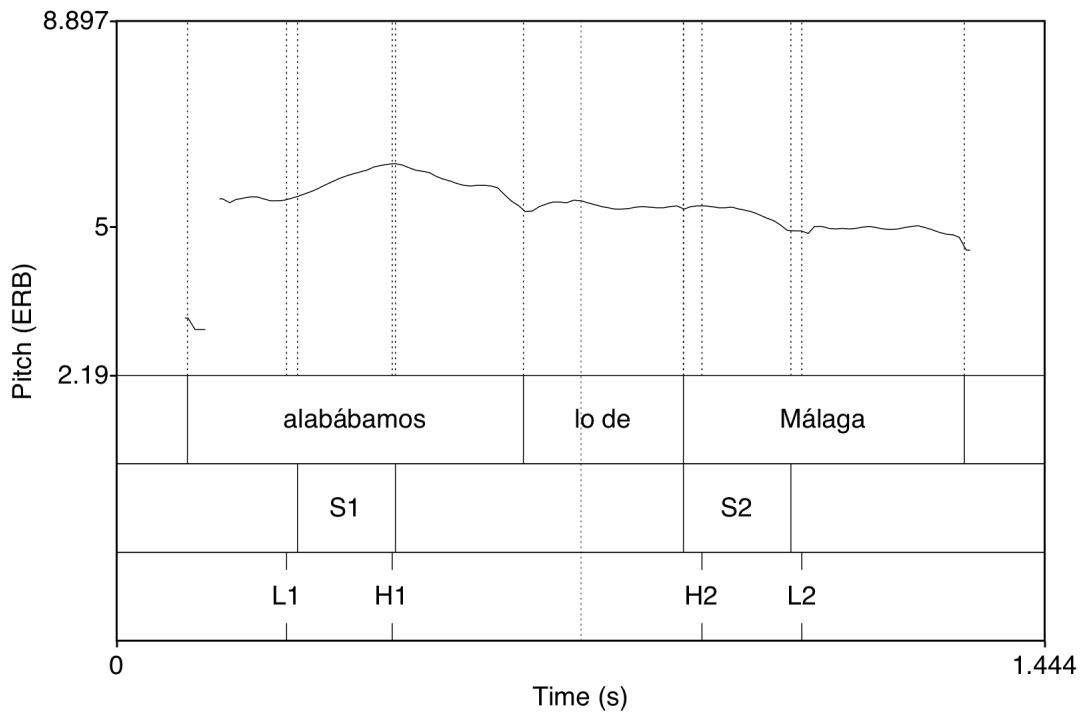


Figure 5.1 Pitch track of the native BAS declarative *Alabábamos lo de Málaga*. ‘We were praising the thing with Malaga.’

Contours such as these predominate in the control group data, thus supporting many of the previous analyses listed above to a certain extent. And though Figure 5.1 captures well many of the intonational features that previous analyses have attempted to categorize, there is some variation in the control group data that is worth mentioning, as it may come to bear upon the language produced by the learners of this study. Figure 5.2 offers a good example of such variation.

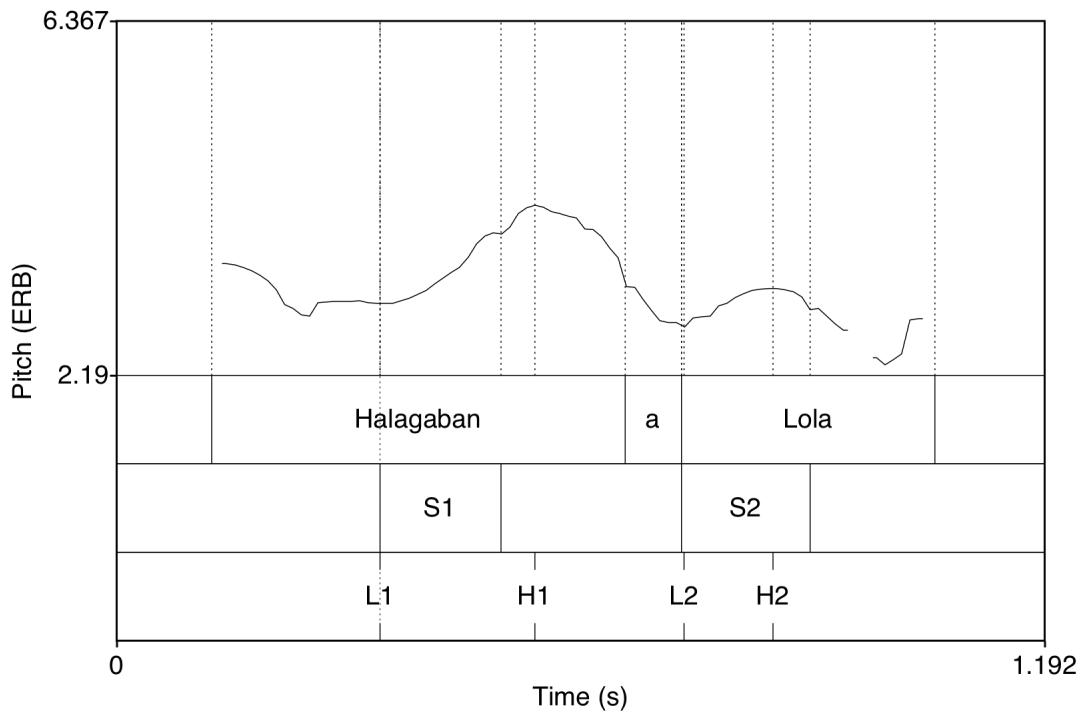


Figure 5.2 Pitch track of the native BAS declarative *Halagaban a Lola*. ‘They were flattering Lola.’

In this example, produced by CS-4, it can be seen that the first peak (H1) falls outside of the temporal limits of the first stressed syllable, thus emphasizing the variability in the prenuclear pitch accent previously noted in Colantoni (2005, 2011) and Estebas Vilaplana (2010). Moreover, in the nuclear portion of the declarative, there appears to be a rising pitch accent within the temporal limits of the stressed syllable, which could offer some support for Barjam’s (2004) proposal for an underlying rising nuclear pitch accent in BAS. It must be emphasized, however, that this variation is only sporadic in the control group data. Indeed, on the whole, these speakers largely adhere to the basic patterns previously described by other researchers on BAS.

5.2.2. Learner prenuclear pitch accents (time 1)

Whereas BAS prenuclear pitch accents in declaratives bear a rise that typically is contained within the temporal parameters of the tonic syllable, L2 Spanish prenuclear accents for the same sentence type tend to be quite different structurally, as can be seen in Figure 5.3.³⁴

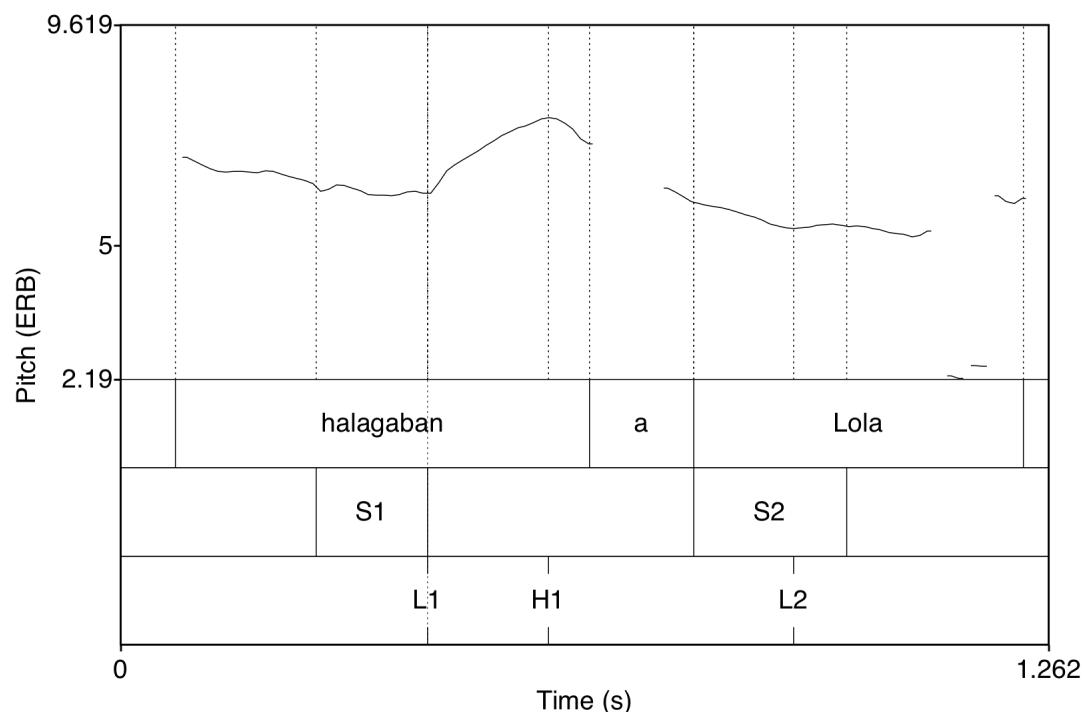


Figure 5.3 Pitch track of the L2 Spanish declarative *Halagaban a Lola* ‘They were flattering Lola.’

In this pitch track, produced by Katie, the F0 contour remains low throughout the stressed syllable (S1). The first valley (L1) is aligned with the tonic syllable offset.

³⁴ Figure 5.3 is considered here to be representative of the general tonal movement favored by the learners at time 1. However, it should be remembered that there is considerable variation across the larger participant pool. This variation will be discussed below as it becomes more relevant.

Consequently, the rise does not commence until the posttonic syllable *-ban*, whereupon it reaches its peak (H1) well after the tonic syllable. In terms of its alignment, this pattern stands in contrast to that produced by the BAS control group, whose rises typically start either before or at the tonic syllable onset and which then conclude within the tonic syllable.

It will be recalled from Chapter 4 that the L*+H analysis applied to prenuclear accents for learner absolute interrogatives at time 1 was motivated by investigating the alignment of the F0 valleys and peaks across several tonal crowding contexts. This methodology will once again be employed to motivate an analysis for learner declaratives. More specifically, 528 declarative statements produced by the 11 speakers were taken from the formal reading task. Another series of ANOVAs was run to compare alignment averages for the L and H tones across the various degrees of tonal crowding. Once again, rise time and syllable duration are also examined.

To begin the analysis, the first³⁵ prenuclear L tone alignment will be presented. This L tone, on average, tends to be situated well within the tonic syllable. Table 5.1 organizes the results from the ANOVA.

³⁵ Most of the test sentences had only one prenuclear stressed syllable. However, as shown in Chapter 3, a batch of test sentences with 2 prenuclear stressed syllables was also included to determine if the F0 behaved differently with respect to the second prenuclear syllable. During the data coding process, it was revealed that F0 gestures were extremely similar in both prenuclear syllables. Therefore, for ease of exposition, only data related to the first prenuclear syllable will be presented, and subsequent analyses will apply for both prenuclear pitch accents.

# intervening unstressed σ	Number tokens ³⁶	Mean (ms)	Standard deviation
0	52	2	60
1	63	40	64
2	57	80	75
3	65	35	57
4	65	59	75
5	59	59	70
Totals	361	46	71
$F = 8.671, p < .0001$			

Table 5.1 Alignment of L tone and the first tonic syllable. A positive value corresponds to alignment after the onset.

Table 5.1 shows that the first L tone is on average found well within the tonic syllable boundaries.³⁷ Naturally, the one exception is tonal clash, in which the L tone is retracted leftwards towards the tonic syllable onset to make room for the upcoming H tone in reduced tonal space.

Averages such as those resulting from ANOVAs can obscure potential important patterns in the data. During the analysis, it was noted informally that many L tones were realized closer to the tonic syllable onset. Consequently, a closer look was given to L tone alignment and it was shown that 165 of 361 L tones (46%) occurred before, just at,

³⁶Numerous utterances were removed due to disfluency or general improper pronunciation, thus violating the phonological contexts designed for this task, which explains the significant difference between the 528 possible task sentences and the 361 tokens analyzed here. Many of the participants had difficulty placing stress on the proper syllable in words in the first person plural of imperfect aspect (i.e. *Llamábamos*, ‘we were calling’), for instance.

³⁷ It must be noted that the 80 ms average value for 2 intervening unstressed syllables is possibly artificially high due to a flaw in experimental design. It occurred in contexts with 2 intervening unstressed syllables, and in one of those sentences, *Llama Lamar* ‘Lamar is calling’, the first stressed syllable is utterance initial, thus obligatorily pushing the first valley further into the tonic syllable than that which occurs in the remaining tonal crowding contexts.

or 10 ms or less into the tonic syllable. The remaining 196 L tones (54%) occurred 11 ms or more into the tonic syllable boundaries. Of the 165 early-realized valleys, only 33 (20%) were predictable due to tonal clash. The remaining 132 (80%) were spread fairly evenly across the remaining tonal crowding contexts. Given the fact that nearly half of all L tones are aligned near the tonic syllable onset and that they are dispersed evenly across various crowding conditions, it remains plausible that this early alignment is a unique pattern worthy of its own analysis. This will be addressed in more detail below.

The following H tone, that is, the peak of the prenuclear rise, is located significantly beyond the tonic syllable offset, as shown in Table 5.2.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	54	-41	38
1	63	96	78
2	57	138	89
3	64	151	129
4	68	123	118
5	59	131	125
Totals	365	103	119
$F = 26.747, p < .0001$			

Table 5.2 Alignment of the H tone and the first tonic syllable. A negative value indicates that the alignment occurs before the tonic syllable offset (i.e. within the syllable) and a positive value corresponds to alignment after the tonic syllable offset.

Table 5.2 shows that the H tone is situated on average 100 ms or more after the stressed syllable. Only in tonal clash contexts does the H tone fall within the tonic syllable, which is entirely predictable due the upcoming tonal pressure from the

immediately following stressed syllable. A Tukey post hoc test shows that these cases are significantly different from the remaining crowding contexts ($p < .05$). Moreover, the standard deviations presented in Table 5.2 are higher than those in Table 5.1, which indicates a more variable H alignment with respect to L alignment. Consequently, it appears as though the L tone is more stably located within the tonic syllable, and thus may be phonologically associated, whereas the H tone's alignment is more variable and consequently may be an unassociated trailing tone.

As it was done in Chapter 4, it is worthwhile to verify this proposal by examining rise time and syllable duration, as these measurements may affect the values listed in Tables 5.1 and 5.2. For instance, if a prenuclear rise duration remains constant but the stressed syllable is shortened or lengthened, the relative position of an H tone with respect to the offset will change. Table 5.3 shows average syllable duration for the prenuclear syllable across several degrees of tonal crowding, and Table 5.4 organizes the rise time from the L to the H tone across the same tonal crowding contexts.

# intervening unstressed σ	Number of tokens	Mean duration (ms)	Standard deviation
0	63	260	74
1	68	197	44
2	57	196	38
3	67	200	56
4	71	196	56
5	60	207	70
Totals	386	209	61
$F = 12.532, p < .0001$			

Table 5.3 Average duration of the prenuclear stressed syllable

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	52	224	60
1	63	252	103
2	57	254	100
3	64	318	138
4	65	266	113
5	59	279	149
Totals	360	267	118
$F = 4.490, p = .001$			

Table 5.4 Rise time, in milliseconds, for the first prenuclear accent

Table 5.3 shows that the syllable duration is largely constant—approximately 200 ms in length—except for in cases of clash, in which it is lengthened on average to 260 ms. These cases are significantly different from the other crowding conditions ($p < .0001$), as verified by a Tukey post hoc test. Table 5.4, similarly, shows a prenuclear rise time—that is, the time elapsed from the L tone to the H tone—that is fairly consistent across various phonetic conditions. Although the mean rise time varies from 224 ms to 318 ms, most of these cases are not statistically different from one another. Only the context in which 3 unstressed syllables intervene (318 ms on average) stands out as statistically different from the others. Though most of the cases may be statistically similar, it is apparent by looking at the averages themselves that the rise time increases as more unstressed syllables are inserted.

The data in these two tables help to confirm the proposal above that the L tone is phonologically associated while the H tone is not. Generally speaking, the syllable length stays the same, while the H tone is allowed to float further from the tonic syllable, as indicated by the incremental lengthening of the rise time. On the other hand, the L tone is much more stably situated between the syllable onset and offset, thus indicating a

phonological association. Therefore, L^{*}+H will be proposed as the standard L2 prenuclear pitch accent for declarative statements at time 1. It is important to recall that the data indicate that there potentially exists a secondary preference for an early-aligned L tone, near the tonic syllable onset. However, there is strong evidence here that the H tone is phonologically unassociated. The L tone, regardless of its relative alignment, appears to be phonologically associated and thus should receive starredness. An L^{*}+H pitch accent, then, is the most appropriate analysis for this sentence type at this stage of language development.

5.2.3. Learner nuclear pitch accents (time 1)

In Chapter 4, it was shown that learner nuclear configurations were remarkably consistent across all 11 participants at the beginning of the semester, though that changed somewhat by the end of the study abroad semester. For declaratives, however, nuclear patterns demonstrate noteworthy variation that must be discussed before a formal analysis is offered. The primary pattern that emerged in these data is a falling contour through the nuclear portion of the utterance. Of a total of 405 analyzable utterances,³⁸ 293 (72%) bore this falling contour. Another 36 (9%) were nuclear rises and 76 (19%) were flat contours bearing no measurable tonal movement.

The distribution of these patterns is also broken down according to learner to determine if the preferences are heavily skewed towards one or more participants. This distribution is organized in Table 5.5.

³⁸ The remaining 123 sentences were removed due to disfluency, improper stress placement, or creaky voice.

Participant	# Analyzable tokens	# Nuclear fall	# Nuclear plateau	# Nuclear rise
Amanda	46	31	11	4
Allison	44	31	1	12
Brianna	43	40	1	2
Morgan	31	8	17	6
Jeremy	15	4	9	2
Eve	48	24	23	1
Leah	39	35	1	3
Samantha	44	43	1	0
Jonah	22	8	9	5
Katie	31	28	3	0
Tyler	42	41	0	1
Total	405	293 (72%)	76 (19%)	36 (9%)

Table 5.5 Distribution of nuclear falls, plateaus, and rises according to learner

The data in Table 5.5 present the individual preferences for nuclear declarative intonation at the beginning of the semester. It shows that the overall preference for falling pitch at the end of the declarative utterance holds also at the individual level, generally speaking. There are some exceptions, though. Eve, for example, splits her total utterances almost evenly between final falls and final low plateaus. Though producing fewer analyzable utterances than some of their fellow participants, Morgan, Jeremy, and Jonah produce relatively comparable numbers of falls, plateaus, and rises alike. For her part, Allison accounts for a third of all nuclear rises in the data (12/36). The preferred pattern, then, is falling pitch at the end of the utterance, and, as such, it is this pattern that will be addressed primarily in this section. Although the rising contour and the flat F0 are less numerous in the data, they are not insignificant, and as such will be addressed after the primary analysis has been proposed.

The investigation of learner toneme structure begins by looking at Figure 5.4, which is a reproduction of Figure 5.3.

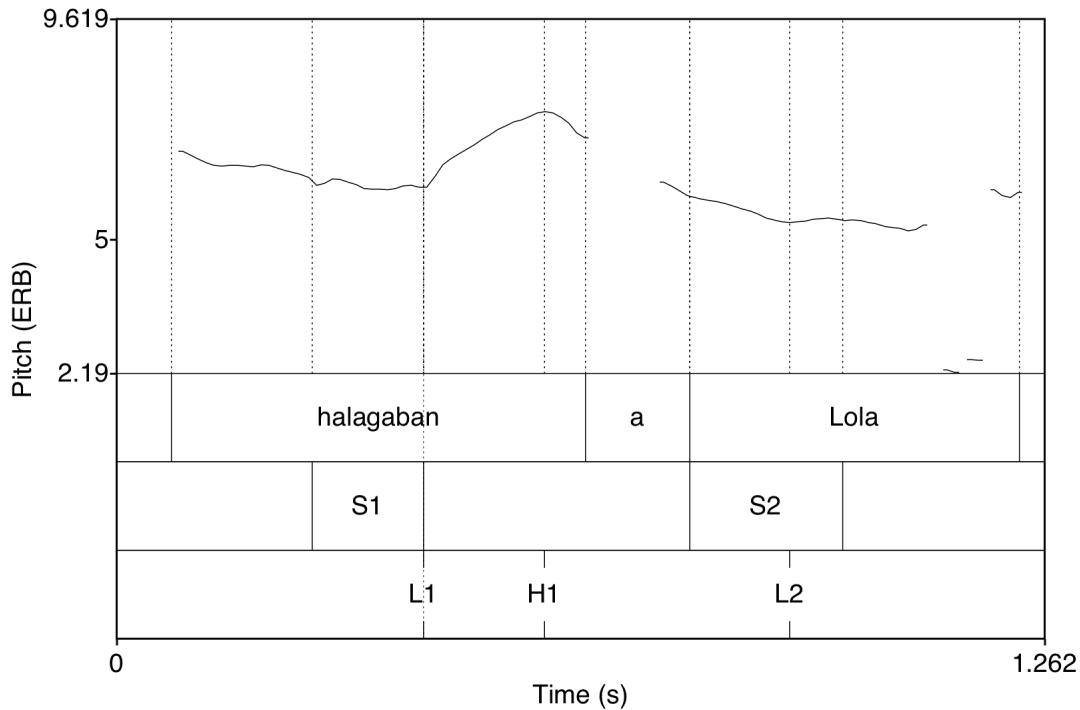


Figure 5.4 Pitch track of the L2 Spanish declarative *Halagaban a Lola* ‘They were flattering Lola.’ (reproduced from Figure 5.3)

After reaching the first peak at H1, the contour descends continuously towards the low tone L2 (though it is briefly broken up by a moment of creaky voice). The nuclear syllable, marked here as S2, contains much of that final fall, which concludes at the valley (marked as L2). The contour appears to level out somewhat as it reaches the end of the utterance, though creaky voice once again creates some difficulty in analyzing the contour. It is this continuously falling contour that predominates in the learner data,

which has previously been described by Sosa (1999) as the *tobogán*, or sliding pattern for L1 varieties of Spanish.³⁹

Table 5.6 organizes the alignment data for the L tone in the 293 utterances characterized by a falling nuclear F0 contour. As pointed out in Chapter 4, except in extreme exceptions, Spanish words may only bear antepenultimate, penultimate, and ultimate stress, thus limiting the number of unstressed utterance-final syllables to two (hence three tonal crowding contexts).

# final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	90	-136	68
1	155	-10	67
2	48	103	91
Totals	293	-30	108
$F = 185.101, p < .0001$			

Table 5.6 Alignment of L tone with respect to the nuclear syllable. A negative value corresponds to an alignment before tonic offset. A positive value indicates an alignment after the offset.

The alignment values point to an L tone alignment that is considerably conditioned by its phonetic context. When the nuclear syllable is utterance final (0 final unstressed syllables), the L tone naturally must occur within the tonic syllable (136 ms before the end of the utterance on average). However, when there is more room at the end of the utterance, the L tone drifts rightwards towards the tonic syllable offset, so much so that

³⁹ There was occasional evidence for a possible nuclear H tone that preceded the falling contour. However, these examples were not only relatively few, but the phonetic cues that might signal a putative H tone were slight and could have just as easily been standard F0 fluctuations unrelated to the presence of a tone.

when there are two final unstressed syllables, the L tone is located well beyond the nuclear syllable (103 ms beyond, on average). This points to an F0 contour that frequently slides all the way through the nuclear syllable before reaching a valley.

Naturally, there exists some variation in the realization of nuclear pitch movements and it is worth mentioning. Figure 5.5 offers an example of a nuclear falling pattern that might be analyzed quite differently than that shown in Figure 5.4. In this example, there appears to be a clear F0 peak near the beginning of the tonic syllable in the word *Málaga*.

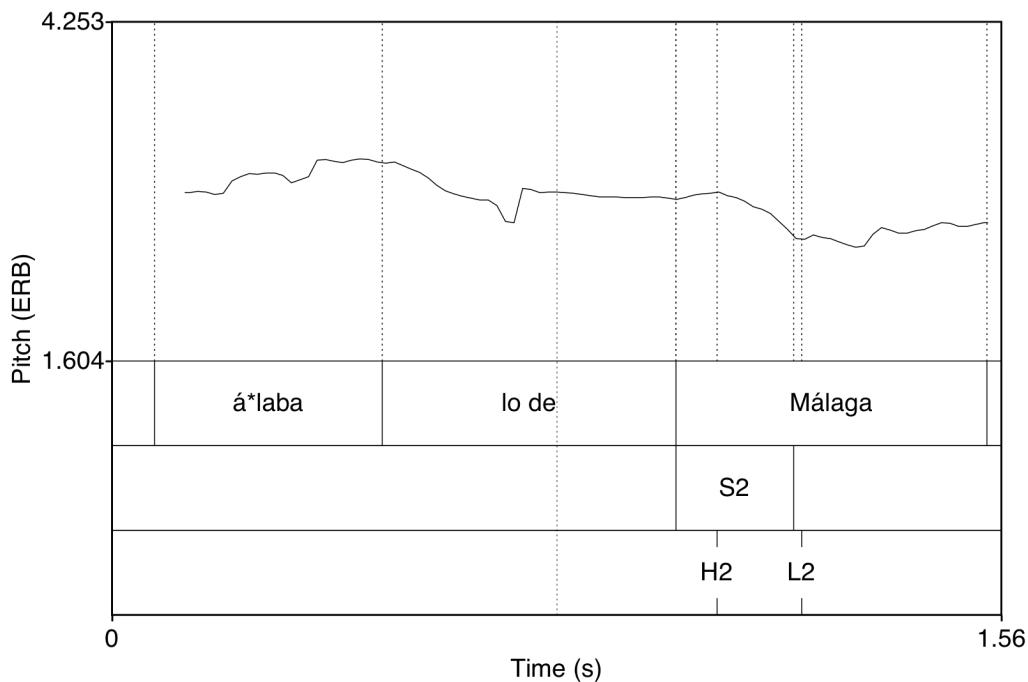


Figure 5.5 Pitch track of the L2 Spanish declarative *Alaba lo de Málaga* ‘S/he is praising the thing with Malaga’.⁴⁰

⁴⁰ The participant who produced this contour erroneously pronounced the word *alaba* ‘s/he is praising’ with antepenultimate stress, rather than penultimate. This mistake is irrelevant for the current discussion.

In this example, there appears to be a clear F0 peak near the beginning of the tonic syllable in the word *Málaga*. The F0 subsequently dips to a clear valley just beyond the tonic syllable offset. Such a contour has traditionally been analyzed as H+L*, as there are both a clear peak and a subsequent L tone. Though this type of fall does occur sporadically throughout the data, it is considered here a minor variation due to its relative scarceness relative to the continuously falling pattern shown in Figure 5.4.

Similarly, as mentioned previously, the data show 36 cases of final nuclear rises, which constitutes approximately 9% of the contours produced during this task. This variation is shown in Figure 5.6.

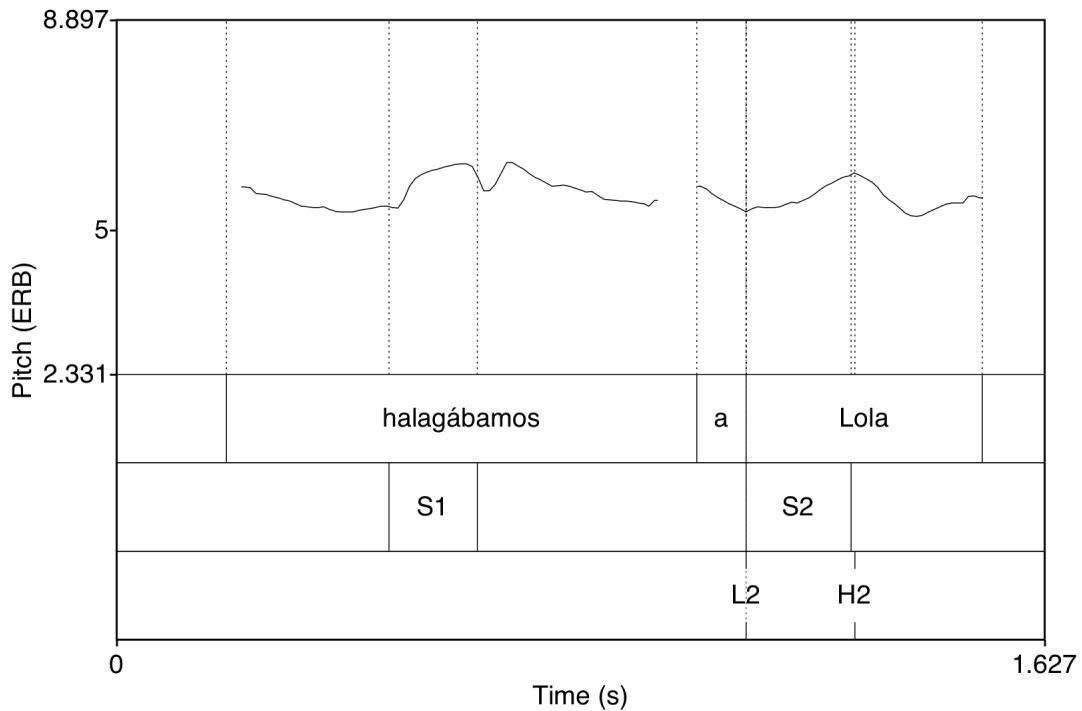


Figure 5.6. Pitch track of the L2 Spanish declarative *Halagábamos a Lola* ‘We were flattering Lola.’

In this figure, rather than falling through the nuclear syllable, the beginning of the rise coincides with the tonic syllable onset and rises through the syllable until it achieves a peak at the syllable offset, whereupon it begins a descent towards another low point, and then a slightly higher boundary tone. This type of nuclear rise, in which the H tone is aligned at or near the tonic syllable offset, has traditionally been labeled as L+H*.

Another frequent F0 gesture observed here was a low, sustained flat contour, which constituted a significant proportion of these data, namely 76 total tokens, or 19%. This flat contour was not observed in nuclear position⁴¹ in the present study's control group data, though Gabriel et al. (2010) do allow for this possibility in their pitch accent inventory. Figure 5.7 offers an example of a learner's flat F0.

⁴¹ Thornberry (forthcoming) has found evidence of a prenuclear sustained, flat F0 contour in cases of extreme tonal crowding in native BAS.

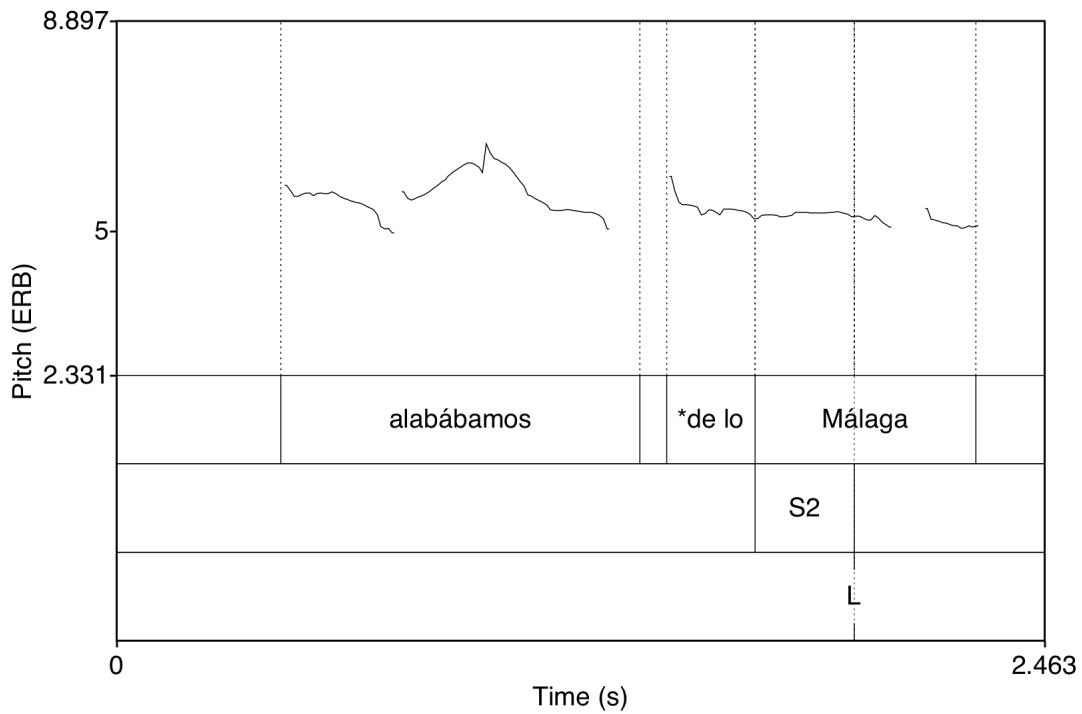


Figure 5.7 Pitch track of the L2 Spanish declarative *Alabábamos lo de Málaga* ‘We were praising the thing with Malaga.’

The F0 moves horizontally through the nuclear stressed syllable (S2) with little indication of any sort of fluctuation that might give this stressed syllable prominence. It is nearly impossible to pinpoint any clear-cut L or H tone. Therefore, following the Sp_ToBI recommendations of Estebas-Vilaplana & Prieto (2008) and Gabriel, et al. (2010), this F0 gesture is labeled L*.⁴²

⁴² This analysis is somewhat unsatisfactory as the L* label is also applied to the falling contour that appears in both the BAS control group and the learner data (see below). More importantly, perhaps, is the fact that the F0 contributes very little prominence to the stressed syllable *Má-* in *Málaga* as there is no relevant deviation from the speaker’s baseline. This points in the direction of additional correlates, such as duration, that do seem to play a role in this utterance. In fact, Hualde (2009) has proposed labeling final pitch accents in Spanish as *dur when no relevant pitch movement exists. Future studies will help to clarify this issue.

Though these variations (Figures 5.5 through 5.7) are important to mention, it is the continuously falling contour that predominates. This pattern is not dissimilar to accounts of nuclear falls in varieties of L1 Spanish (Sosa, 1999; Estebas-Vilaplana & Prieto, 2008; Estebas-Vilaplana, 2010; Simonet, 2011). Given the lack of an F0 peak, a simplex L* constitutes the most appropriate pattern for this falling pitch accent. Sosa (1999), Beckman et al. (2002), Estebas-Vilaplana & Prieto (2008), Estebas-Vilaplana (2010), and Gabriel et al. (2010) have all classified similar falling patterns in Spanish via an L* pitch accent. These latter two works specifically propose L* for nuclear pitch accents in BAS declaratives. The L* analysis is likewise the most appealing for the present L2 speaker data because there is, on the whole, no discernible preceding nuclear F0 peak to which one may apply an H tone.

Lastly, it is important to establish the boundary tones associated with the utterance-final portion of the utterance. This often proved to be a difficult task, as many of the contours were broken up by extensive use of creaky voice throughout utterance-final syllables, thus rendering these utterances useless for this purpose. In fact, only 101 utterances contained both a measurable L tone and an easily identifiable boundary tone. According to AM theory, which is based on an economically minimal number of tonal possibilities, there may be only an L% or an H%; an H% accounts for a final rise and an L% represents the lack of a final rise (Ladd, 2008). Despite the occasional preference for a slight final rise,⁴³ the contour generally falls towards a final low target, which is easily analyzable as L%.⁴⁴

⁴³ Recent Sp_ToBI revisions (Estebas & Prieto, 2008; Gabriel et al., 2010) have added new boundary tone options, such as HH%, HL%, and M%. Most of these are irrelevant for the present discussion. However, M% is an attractive possibility for some learner

5.2.4 Summary of learner declarative intonation in read speech (time 1)

Whereas learner absolute interrogative intonation was shown in Chapter 4 to differ quite dramatically from the standard native BAS pattern, learner declarative intonation is not fundamentally different from that of their BAS-speaking peers. Generally speaking, both speech varieties exhibit a rising motion through the first stressed syllable followed by a general downward trend through the nuclear syllables towards the end of the utterance.

The phonological characterization of these F0 gestures, however, do diverge somewhat. In the prenuclear syllable, BAS speakers are well known to display an early peak frequently, but not always, situated within the tonic syllable, a trait that has led most researchers to posit an L+H* for this pitch accent (but see Estebas-Vilaplana, 2010 for an alternative analysis). It was shown here that the prenuclear rising F0 gesture produced by the learners often started well within the borders of the tonic syllable and stayed relatively low until the posttonic syllable, whereupon the rise was more robustly realized. As indicated by a continually increasing rise time as more unstressed syllables were added, the H tone was not stably anchored to the stressed syllable, thus providing solid evidence that it is not phonologically associated. As a result, this pitch accent was labeled

declarative boundary tones, as a slight visual rise was noted on several contours. However, these rises were minimal, virtually imperceptible aurally, and never conveyed any utterance type other than a declarative. Therefore, M% is not selected here. However, future work should clarify how M% differs from L% or H% according to more definitive criteria.

⁴⁴ It is quite possible that the occasional final slight rise results from the task itself. That is, given the repetitive nature of the reading task, the participants' utterance-final intonation may rise due to a list effect. This possibility is corroborated to some extent below in the discussion of intonation produced in the more spontaneous speech styles, where the presumed boundary tone frequently stays low in purely broad focus declaratives, and would be more likely to receive an L% analysis.

L^*+H . To approximate native-like norms, the learners would need to retract the H tone leftwards, closer to the tonic syllable offset, rather than permitting it to drift towards the end of the word. The learners would also need to begin the rise more consistently near the beginning of the stressed syllable so that the rise is more fully realized between the syllable's onset and offset.

The analysis of the learner nuclear pitch accent was frequently complicated, both by technical difficulties in reading the pitch track and the larger degree of variability in its realization. Unlike the prenuclear pitch accent, which almost categorically was marked by a rising F0 contour, the nuclear pitch accent was variably rendered as a falling contour, a rising contour, or as a sustained flat contour. The falling contour emerged as the overall preferred contour. In particular, the F0 descended from the prenuclear H tone and continuously fell through the nuclear syllable, often to an L tone that was near the tonic syllable offset, or to one that was located beyond it. This pattern, which is also observed frequently in the control group data, was analyzed as L^* . The contour then concluded at an $L\%$.

Figure 5.8 illustrates the preferred pattern observed for learner declaratives at the beginning of the semester. This pattern was analyzed via the following sequence:

- (1) L^*+H L^* $L\%$

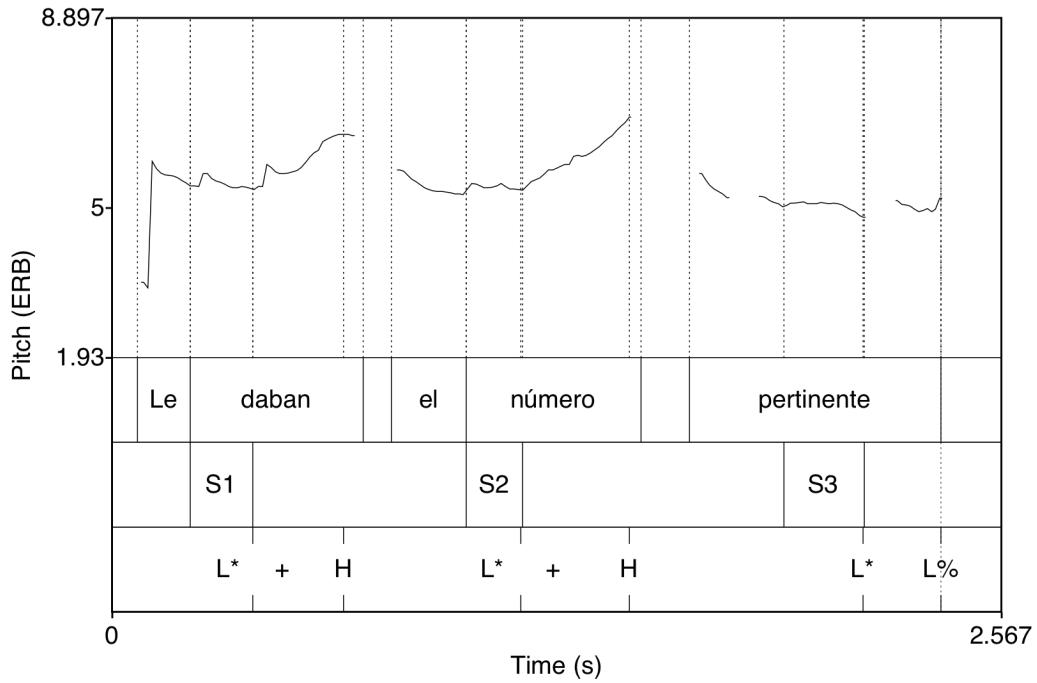


Figure 5.8 Phonological analysis of learner declarative intonation

Le daban el número pertinente ‘They were giving him/her the pertinent number.’

$\begin{array}{c} | \\ \text{L}*+\text{H} \end{array}$
 $\begin{array}{c} | \\ \text{L}*+\text{H} \end{array}$
 $\begin{array}{cc} | & | \\ \text{L}* & \text{L}\% \end{array}$

5.3 Learner declarative intonation in read speech—end of the semester

5.3.1 Introduction

The present section endeavors to provide a phonological analysis in AM theory for the intonation of declarative statements produced by learners of Spanish at the end of their study abroad semester in Buenos Aires. As before, the patterns observed in this section will be compared to those found in Section 5.2 in order to document the major changes that take place over time. Likewise, an inventory of preferred pitch accents for time 2 will be developed for both prenuclear and nuclear pitch accents. These patterns

will then be compared to those favored by their BAS-speaking peers to evaluate how closely, if at all, the learners approximate native-like norms.

5.3.2 Learner prenuclear pitch accents (time 2)

At the end of the study abroad semester (time 2), the learners continued to prefer a rising prenuclear accent. Of the 528 test items, 83 were eliminated due to complications reading the pitch track resulting from creaky voice or improper stress placement. Of these remaining 445 declaratives, 387 were rising F0 gestures (87%). The remainder was comprised of either prenuclear falls (33 total, or 7%), or flat contours bearing no discernible valley or peak (25 total, or 6%). Due to the overwhelming predominance of the rising contour, it is this pattern that is analyzed phonologically here, and the alternative contours will be left aside and considered minor variations. The analysis, as before, begins with the alignment of the prenuclear L tone with respect to the first tonic syllable. Table 5.7 organizes the average alignment of this tone across various tonal crowding contexts.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	50	2	48
1	68	59	56
2	70	84	66
3	69	64	55
4	67	65	47
5	61	56	56
Totals	385	58	60
$F = 13.804, p < .0001$			

Table 5.7 Alignment of L tone and the first tonic syllable. A positive value corresponds to alignment after the onset.

As indicated by the values listed in the “Mean” column, the L tone is typically aligned after the tonic syllable onset (i.e. within the syllable boundaries), approximately 58 ms in, as noted by the overall average at the bottom of the column.⁴⁵ Only in cases of clash can one expect the L tone to be retracted further back towards the onset, so as to make room for the upcoming F0 peak, which also must fit within the temporal limits of the stressed syllable. A Tukey post hoc test revealed these cases to be significantly different ($p < .0001$) from the others.

As these averages can obscure interesting patterns in the data, a follow-up calculation of early L tone alignment was run. Early alignment is defined once again as an L tone that aligns before, at, or 10 ms after the tonic syllable onset. It was shown that a total of 133 of 385 L tones were aligned in such a way. However, 39 of these 133 occurred in tonal clash, making them entirely predictable from the phonetic context, thus necessitating their removal from the overall total. This left 94 early-aligned L tones out of

⁴⁵ It will be recalled from Table 5.1 that the cases with 2 intervening unstressed syllables are likely artificially high due to faulty experimental design.

a total of 335 non-clashed L tones, or 28%. These calculations demonstrate that although the L tone may be aligned near the syllable onset, it is much more likely to be stably located within the tonic syllable limits, thus strongly suggesting a phonological association.

Attention will now be turned to the subsequent prenuclear peak. The average alignment data for this tone is presented in Table 5.8.

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	50	-35	54
1	67	96	60
2	70	150	89
3	69	202	107
4	67	175	105
5	61	162	94
Totals	384	132	114
$F = 51.507, p < .0001$			

Table 5.8 Alignment of the H tone and the first tonic syllable. A negative value indicates that the alignment occurs before the tonic syllable offset (i.e. within the syllable) and a positive value corresponds to alignment after the tonic syllable offset.

These results, which are quite similar to those at time 1 (see Table 5.2), indicate that the H tone is aligned beyond the stressed syllable offset, except in cases of tonal clash (-35 ms), in which it is pushed leftwards into the syllable by an immediately adjacent stressed syllable. It would also appear that a higher degree of tonal crowding (i.e. one intervening unstressed syllable) also exerts pressure on the H tone alignment, as it is aligned closer to the offset, though still beyond its boundaries (96 ms), a phonetic context

which is statistically different from the others ($p < .0001$). In the remaining phonetic conditions, the H tone is permitted to drift further from the syllable into posttonic space. These data suggest the lack of phonological association for the H tone, and point towards an L*+H analysis.

To verify that the averages presented here are not glossing over interesting patterns in the data, a follow-up calculation was performed to determine the percentage of early-aligned H tones; that is, those H tones aligned within the tonic syllable, just at its offset, or 10 ms after this offset. Although 67 total H tones indeed met one of these criteria, 48 of them were conditioned by tonal clash, and as such should not be considered representative of a trend towards early alignment. This leaves only 19 early tones out of a possible 335 non-clashed H tones, which comes to only 6% of the data, thus demonstrating a fairly insignificant trend towards a tonic F0 peak.

Prenuclear pitch accent rise time and stressed syllable duration were investigated once again to confirm the hypothesized L*+H pitch accent. Table 5.9 presents the average stressed syllable duration in various crowding contexts, while Table 5.10 summarizes the average prenuclear rise time in the same crowding conditions.

# intervening unstressed σ	Number of tokens	Mean duration (ms)	Standard deviation
0	50	232	63
1	68	171	32
2	70	173	42
3	70	168	36
4	68	168	44
5	61	175	35
Totals	387	179	47
$F = 18.795, p < .0001$			

Table 5.9 Average duration of the prenuclear stressed syllable (time 2)

# intervening unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	50	196	67
1	67	208	73
2	70	239	91
3	69	306	106
4	67	276	117
5	61	281	96
Totals	384	253	102
$F = 13.247, p < .0001$			

Table 5.10 Rise time, in milliseconds, for the first prenuclear accent (time 2)

Table 5.9 shows that the prenuclear stressed syllable duration is extremely consistent (approximately 170 ms on average) in nearly every tonal crowding condition except for tonal clash, in which case it lengthens to an average of 232 ms. This syllable lengthening is likely owed to the need to provide room for a complete rise within its temporal limits. A Tukey post hoc test verified that these cases are statistically different from the other contexts ($p < .0001$).

Table 5.10 points towards a clear trend of a lengthened prenuclear rise as more unstressed syllables are added. That is, when in more extreme cases of tonal crowding, the rise time hovers near 200 ms on average, while it approaches 300 ms when several additional unstressed syllables are added (and even surpasses 300 ms, in the case of 3 intervening unstressed syllables). When analyzed in conjunction, these two tables also point to a phonologically unassociated H tone. Although the syllable duration stays largely static in various conditions, the rise time continues to increase, indicating an unanchored F0 peak that moves farther and farther from the tonic syllable.

An L*+H analysis will be applied to the standard learner prenuclear pitch accent for declarative statements produced at the end of the semester. It will be recalled that an

L*+H pitch accent describes an F0 contour that remains low throughout the stressed syllable and whose rise either begins late in the tonic syllable or after the syllable altogether. This pitch accent was also applied to the prenuclear syllable for declaratives produced at the beginning of the semester. In a general sense, not only have the learners not made any large-scale changes to their intonation over time, they do not approximate native-like BAS norms for declarative intonation either.

5.3.3 Learner nuclear pitch accents (time 2)

The declarative nuclear configurations produced at time 2 were not as consistently realized as their prenuclear counterparts. As seen at time 1, there exists some noteworthy variation in terms of the global F0 shape, which is predictably marked by a combination of falls, low flat contours, and rises. Of the total 387 analyzable pitch contours, 272 (70%) were falls, 65 were rises (17%), and 50 were low flat contours that demonstrated no perceptible pitch deviation from the speaker's baseline (13%).

As this pitch movement is considerably more diverse than that in the prenuclear portion of the utterance, it is of interest to investigate how these contours are distributed across all participants. Table 5.11 organizes this data.

Participant	# Analyzable tokens	# Nuclear fall	# Nuclear low flat contour	# Nuclear rise
Amanda	47	33	8	6
Allison	48	45	2	1
Brianna	46	36	3	7
Morgan	37	0	0	37
Jeremy	22	20	1	1
Eve	48	20	27	1
Leah	29	22	0	7
Samantha	36	34	0	2
Jonah	21	14	6	1
Katie	39	35	3	1
Tyler	14	13	0	1
Total	387	272 (70%)	50 (13%)	65 (17%)

Table 5.11 Distribution of nuclear falls, low flat contours, and rises according to learner at time 2

This table shows that, once again, the falling nuclear F0 gesture is heavily favored both at the group and individual level. There are exceptions, though. Eve, as she did at time 1, splits her utterances between falls and low flat contours. Morgan, for her part, has only produced rises, and accounts for over half of the 65 total rising contours in the data. However, it must be stated that Morgan's rises begin at or within the nuclear tonic syllable and continue to the end of the utterance (i.e. resulting from an H%), thus resembling and sounding very much like learner interrogatives. It was not clear if this feature truly formed part of her developing declarative intonation or if she failed to distinguish between the declarative and interrogative contexts during the reading task, and subsequently produced identical intonation for both. To determine this, these utterances were compared with declarative utterances produced in the more informal tasks. Although utterance-final continuation rises are common in Morgan's data in other

degrees of speech formality, they are not interpreted as clear interrogatives, which is quite different than the very interrogative-sounding ‘declaratives’ produced in the formal reading task. Therefore, if Morgan’s 37 nuclear rising contours are removed, it leaves an even smaller percentage of rising contours in the overall data ($28/350 = 8\%$, rather than $65/387 = 17\%$). Although a detailed analysis of the changes that occurred at the individual level can be enlightening, it is not of primary importance for this discussion, not to mention the fact that only the most tenuous of conclusions could be drawn from these small sample sizes. Moreover, as has already been pointed out, the nuclear fall appears to be the most favored pattern both within and across speakers.

Figure 5.9 provides a point of departure for the phonological analysis of the learner declarative toneme structure. The pitch track presented here is the predominant pattern produced by the learners.

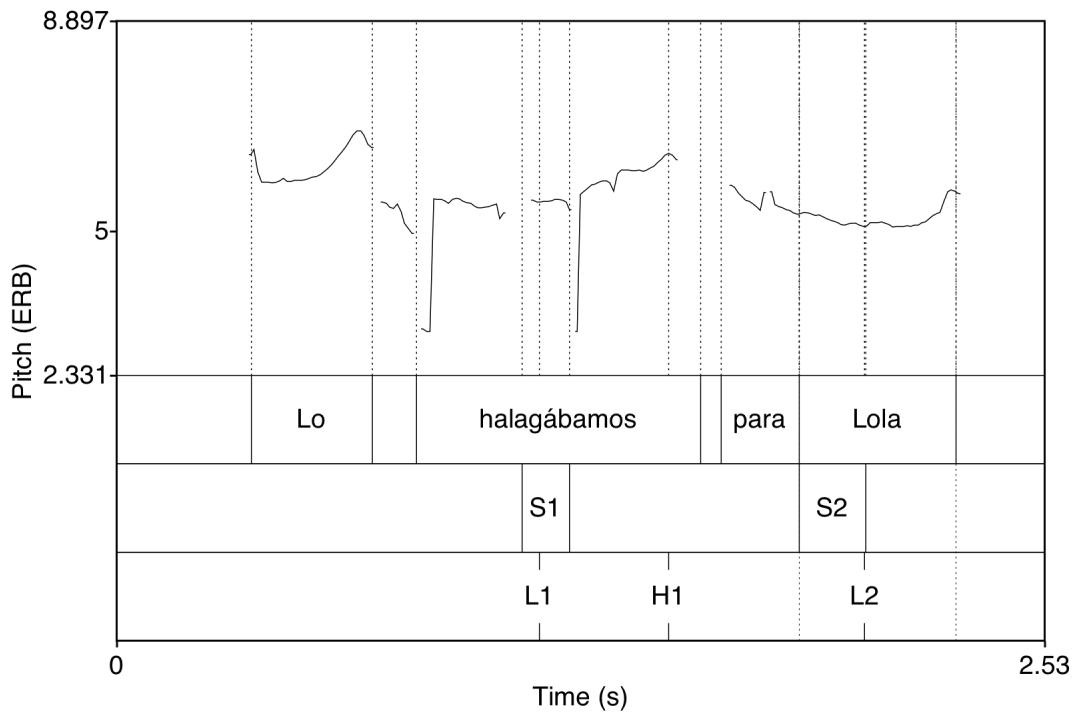


Figure 5.9 Pitch track of the L2 Spanish declarative *Lo halagábamos para Lola* ‘We were flattering him for Lola.’

In this figure, the F0 reaches a prenuclear peak (H1) near the end of the prosodic word *halagábamos* ‘we were flattering’. Although the sibilant consonant at the end of this word momentarily breaks up the pitch track, it nevertheless is clear that the F0 contour continues a fairly smooth downward trajectory through the unstressed preposition *para* ‘for’ as well as through the nuclear tonic syllable (S2) in *Lola*, whereupon it reaches a valley (L2) near the tonic syllable offset.

Table 5.12 displays the average alignment data for the L tone in 3 utterance-final tonal crowding contexts.

# final unstressed σ	Number of tokens	Mean (ms)	Standard deviation
0	80	-169	64
1	132	-25	55
2	58	46	76
Totals	270	-53	102
$F = 226.010, p < .0001$			

Table 5.12 Alignment of L tone with respect to the nuclear syllable. A negative value corresponds to an alignment before tonic offset. A positive value indicates an alignment after the offset.

These alignment values demonstrate an overall preference for the L tone to be situated within the tonic syllable (-53 ms on average). In cases of utterance-final oxytone stress (0 final unstressed syllables), the L tone is obligatorily forced into the tonic syllable, thus accounting for the mean alignment value of -169 ms.⁴⁶ When there is less upcoming pressure at the end of the utterance, the L tone slides closer to the tonic syllable offset in the case of 1 final unstressed syllable (-25 ms on average), and even beyond it, in the case of 2 final unstressed syllables (46 ms on average). These values provide numerical support for the assertion made above in relation to Figure 5.9, namely that the F0 tends to fall progressively through the nuclear syllable towards an L tone situated near the tonic syllable offset (except in cases of tonal clash, which are easily predictable from the phonetic context). These data, plus the lack of an F0 peak associated to the nuclear syllable, leads to the conclusion that this pitch accent is best characterized

⁴⁶ This value corresponds to an L tone located approximately halfway in the nuclear tonic syllable, as the average nuclear syllable length in these contexts was 346 ms long.

as L*. This accent predicts a low, falling F0 through much of the tonic syllable.⁴⁷ The other two intonational patterns mentioned in this section—the low flat contour and the rise—are analyzed as L* and L+H*, respectively. These patterns are identical to those seen at time 1 and occur with the same relative frequency. As such, they are not considered the default patterns.

Attention will now be turned to the analysis of the boundary tone. An informal look at the data showed that participants continued to end their declarative utterances with falling contour as they had done at time 1. Some slight final rises are observable, as can be seen in Figure 5.9 above. However, these rises are minimal, and aurally difficult to perceive. Moreover, those utterances bearing these small rises still retain a very declarative nature, and they do not convey hesitancy or doubt. As was done at time 1, the boundary tone is analyzed as L%.

5.3.4 Summary of learner declarative intonation in read speech (time 2)

Overall, the learners' declarative intonational production is characterized by very few large-scale modifications over time. The prenuclear pitch accent is analyzed as L*+H at both times, indicating a rise that begins late in the stressed syllable, and whose F0 peak is not achieved until the posttonic syllable, and oftentimes the end of the prosodic word itself. Because the rise is late, the F0 oftentimes remains low throughout the stressed syllable. This pattern also applies to the second prenuclear accent in those utterances that

⁴⁷ Just as at the beginning of the semester, some nuclear falls are perhaps better characterized as H+L* (see Figure 5.5), as a clearly discernible F0 peak can be found at or near the tonic syllable onset. This pitch accent is only distributed sporadically across all participants, which suggests that although it does form part of their intonational repertoire, no learner has selected it as the default nuclear contour for declaratives.

have two. This late rising pattern is not BAS-like. Rather, the control group produced a prenuclear rise that began at the tonic syllable onset and which concluded early, either in, just at, or slightly after the tonic syllable offset.

The nuclear pitch accent is also analyzed the same at both times, though more variation was observed in this portion of the utterance. Though some rises and flat, sustained contours were noted here, the learner preference by a wide margin was a progressively falling pattern that often reached a low valley near the end of the tonic syllable, thus meriting an L* analysis. Native BAS speakers also demonstrate considerable variation in nuclear position, likely making approximation of these patterns considerably more difficult. Nevertheless, the learner preference for L* does not differ fundamentally from the pattern identified in Estebas-Vilaplana (2010), though Gabriel et al. (2010) characterize it as H+L*. Finally, the learner F0 contour primarily fell to an utterance-final target that is best characterized as L%.

Unlike the native-like falling absolute interrogative intonation that Eve and Samantha began to produce at the end of the semester, all 11 speakers favored the L*+H L* L% sequence at both times, thus demonstrating little change in declarative intonation over time. This sequence is illustrated below in Figure 5.10.

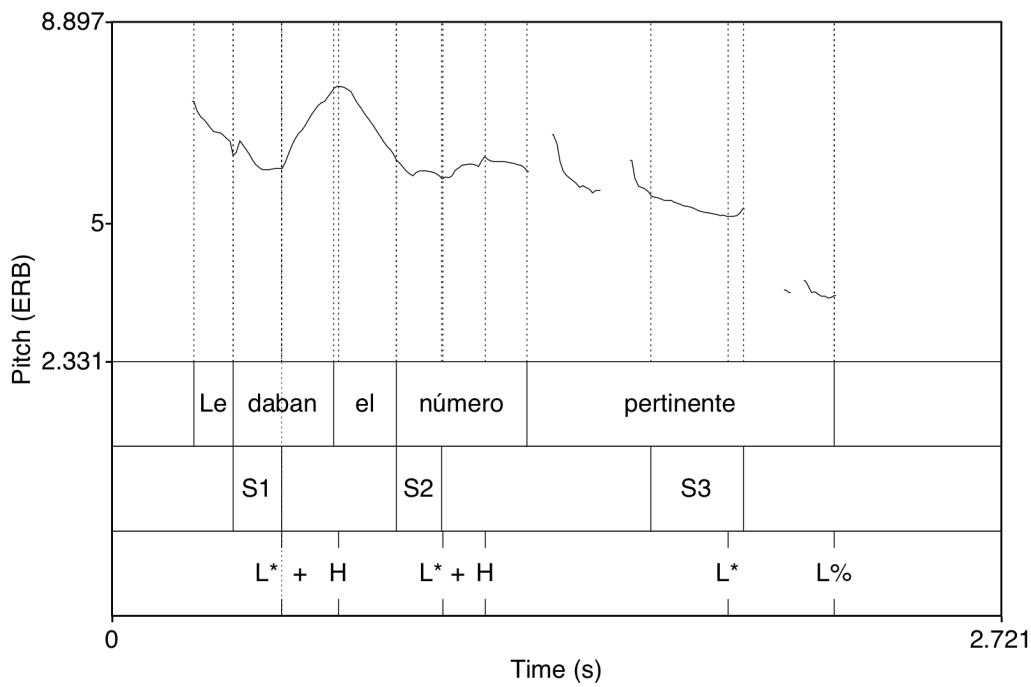


Figure 5.10 Phonological analysis of learner declarative intonation

Le daban el número pertinente ‘They were giving him the pertinent number’
 L*+H L*+H L* L%

5.4. Learner declarative intonation in spontaneous and semi-spontaneous speech

5.4.1 Introduction

It has been shown in this chapter that learner declarative intonation in read speech is uniform to a large extent across the 11 participants, both at the beginning and end of the semester, thus indicating very little change over time. The late-rising prenuclear accents were followed by a falling nuclear accent that subsequently ended at an L%. This pattern was observed in the more informal speech styles, but only sporadically. The learners instead preferred a largely flat declarative intonation, thus foregoing the more consistent rises and falls observed in the reading task, though it must be noted at the outset of this

section that extracting reliable broad focus declaratives proved to be challenging. Pitch fluctuations, as will be discussed, did occur, but they were often erratically employed and frequently related to pragmatically biased statements and/or moments of increased emotion. Nevertheless, a handful of native-BAS-like tonal movements did surface in the spontaneous and semi-spontaneous speech styles, indicating the perception and approximation of BAS intonation.

The remainder of this section begins in Section 5.4.2 with an examination of the control group's declarative F0 contours as a point of departure. The section then proceeds to Section 5.4.3 to treat informal declarative intonation at the beginning of the semester before moving on to Section 5.4.4, in which informal declarative intonation at the end of the semester is explored in detail. In a series of subsections, special attention will be paid to several particularly native-like contours. The section will conclude with a brief summary and a discussion of their relevance in Section 5.4.5.

5.4.2 Native BAS declarative F0 contours in spontaneous and semi-spontaneous speech

As was done in Chapter 4 for interrogatives, the discussion of learner declarative intonation in more spontaneous speech contexts begins with an examination of the native BAS contours to which they likely would have been exposed while studying abroad in Buenos Aires. Therefore, this section highlights some of the declarative patterns produced by the control group.

These F0 contours were unsurprisingly more difficult to analyze, as the pitch tracks were routinely broken up by voiceless consonants and, particularly, by devoicing at the end of the utterance. These technical problems result from a lack of a pre-prepared

phonological context. Moreover, the control group speakers were grouped in pairs with fellow participants with whom they were very comfortable. Although these strategies were employed to reduce attention to form and to observe language in a more natural environment, the unfortunate by-product is phonetic data that are difficult to analyze with certainty, perhaps due to under-articulation, given the high degree of familiarity between participants.⁴⁸ Nevertheless, the most notable characteristics will be discussed below, with the caveat being that variation in intonational production of native BAS speakers is an area of study worthy of its own right that cannot be given justice here.

Figure 5.11 offers a good point of departure for the discussion of standard BAS declarative F0 movements in conversation. In this example, speakers CS-3 and CS-4 are interacting during the twenty questions game. Speaker CS-3 has realized that, in addition to responding ‘yes’ or ‘no’ during this game, he must also provide his partner with a clue in the form of a declarative statement. The pitch track is presented below.

⁴⁸ For instance, many declarative contours, especially those produced in the twenty questions game, were very short, often incomplete sentences with little tonal movement.

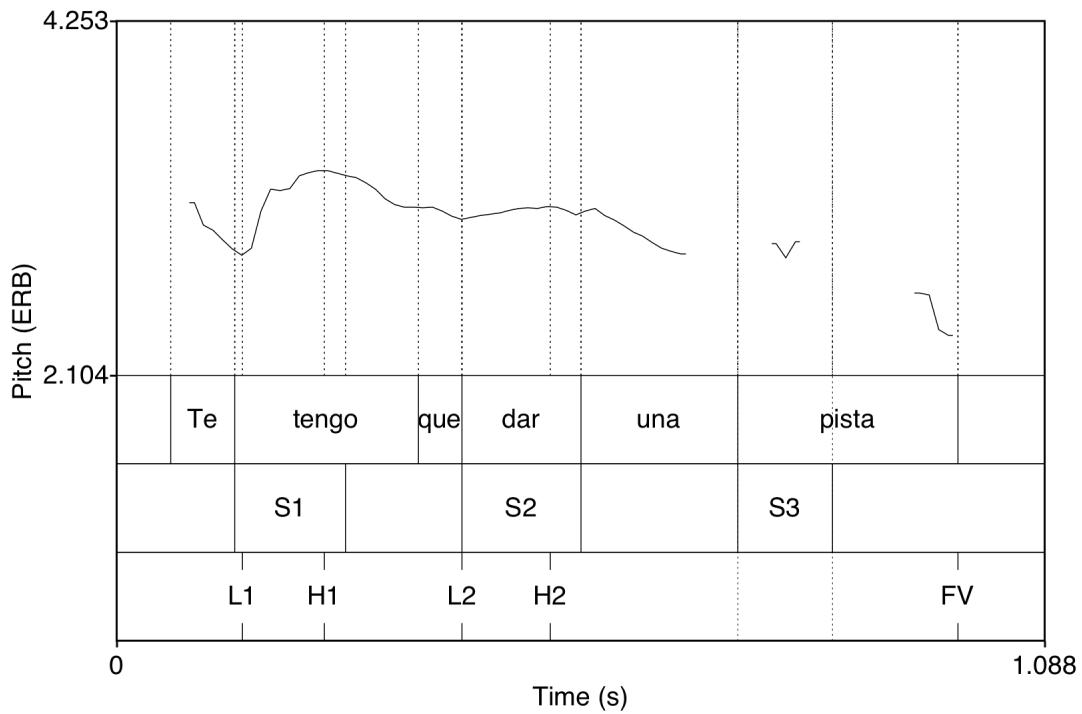


Figure 5.11 Pitch track of the semi-spontaneously produced declarative *Te tengo que dar una pista* ‘I have to give you a clue’, by CS-3, a native BAS speaker.

Both of the prenuclear F0 valleys (L1 and L2) are aligned quite closely to the stressed syllable onsets and the peaks (H1 and H2), for their part, are situated within the syllable, near the offset. These prenuclear rises, which would likely be analyzed as L+H*, are quite similar to what has previously been reported for BAS (Barjam, 2004; Colantoni & Gurlekian, 2004; Gabriel, et al., 2010; Colantoni, 2011). The pitch accent associated with the nuclear stressed syllable of the utterance, however, is not as easily analyzed due to a voiceless /p/ and an aspirated /s/. Consequently, no clear L or H is assigned here, but a pronounced downward trajectory is easily discernible. This pitch contour, then, conforms on the whole with what has been reported for both read speech and more spontaneously produced BAS declaratives (Colantoni, 2011).

Figure 5.12 presents an example of a broad focus declarative produced by CS-2 during the spontaneous interview task. The speaker, conversing with CS-1, is describing a co-worker. CS-1 teases him by asking if he finds her attractive; he responds by saying that the co-worker is not his type. This contour is shown below.

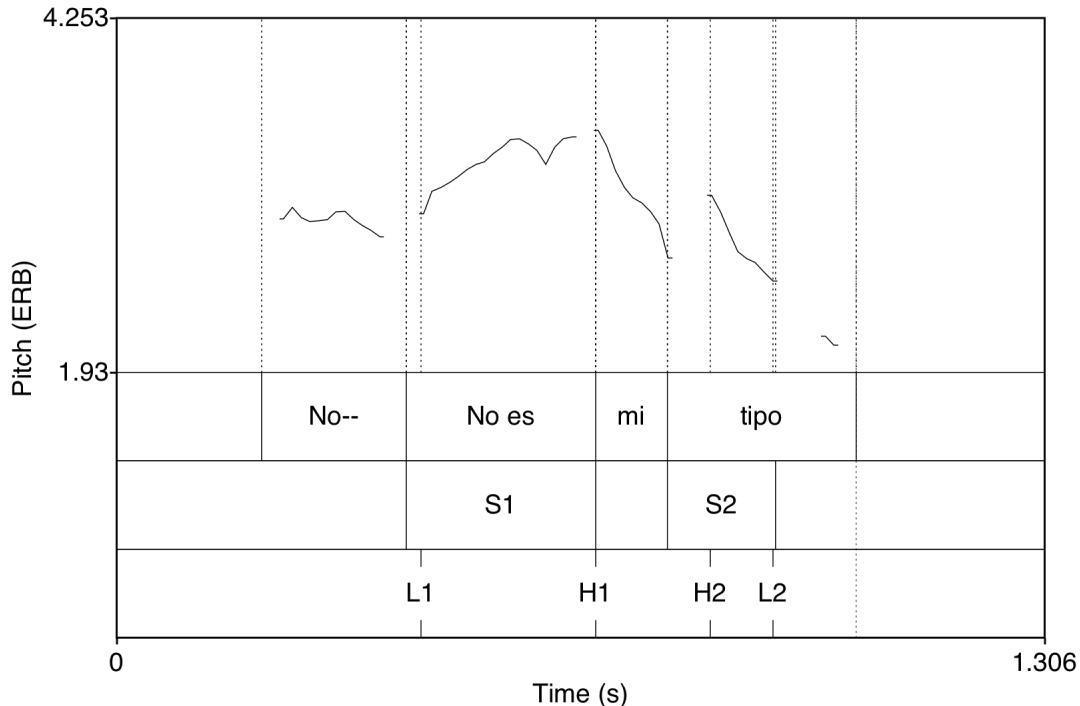


Figure 5.12 Pitch track of the spontaneously produced declarative *No es mi tipo* ‘She’s not my type’, by CS-2, a native BAS speaker.

In this example there is a noticeable prenuclear rise, which concludes just at the end of the tonic syllable.⁴⁹ The contour then pivots towards a pronounced nuclear fall. The

⁴⁹ The words *no* and *es* have been grouped together into one prosodic unit due to the extreme degree of co-articulation here, thus making the two words almost impossible to meaningfully separate.

break in the contour makes it difficult to apply a clear phonological analysis, but the degree of the downward F0 gesture is the characteristic worth highlighting here.

5.4.3 Learner declarative intonation in spontaneous and semi-spontaneous speech—beginning of the semester

The present section discusses the broad focus declarative intonation produced during the paired sociolinguistic interview. The utterances elicited during this task were as spontaneously produced as can be expected during a recorded interview. Later, attention will be given to declarative intonation produced in the twenty questions game.

Naturally, due to the free-flowing, phonologically-uncontrolled nature of the interview and the high degree of familiarity between the speakers, finding clear examples of broad focus declaratives was quite difficult, as various factors such as emotion, pragmatic context, syntactical phrasing, and linguistic insecurity in the L2, among many potential others, influenced the way that the participants articulated these utterances. For instance, final high rises were often used to signal that the participant wished to continue his/her turn at talk or that s/he was uncertain as to the truth of what s/he was saying (which was especially true at time 1 when the participants were still acclimating themselves to their new surroundings). Pronounced rises that reached peaks within the tonic syllable were employed to convey contrastive focus (i.e. to highlight one word or phrase with respect to another) or emphasis. Furthermore, a series of sustained, particularly elevated high tones was implemented to communicate a degree of emotion, such as surprise or dismay. Speakers of English will almost certainly recognize these as strategies that also are used to considerable degree in L1 English for the same purposes,

and, as such, they do not necessarily reflect intonational acquisition in L2 Spanish. Though interesting in their own right, these intonational patterns will not be addressed here.

Given the difficulty in determining what actually constituted a broad focus declarative in pragmatic terms and the obvious technical complications arising from frequently illegible pitch contours, a quantitative approach will be eschewed here in favor of presenting general trends of intonational modification over time on a case-by-case basis. Parsing the ways in which L2 learners employ intonation in various communicative encounters in an L2 has almost been completely ignored and future research would do well to address this gap in the literature. For the time being, however, a more conservative approach is required until these issues can be clarified to some extent.

A largely flat F0 movement through the entire utterance characterized declarative intonation in the interview task. The tonal movement that was observed often was so minimal that it is unlikely that it played a crucial role in providing salience to the stressed syllables. Figure 5.13 provides an example.

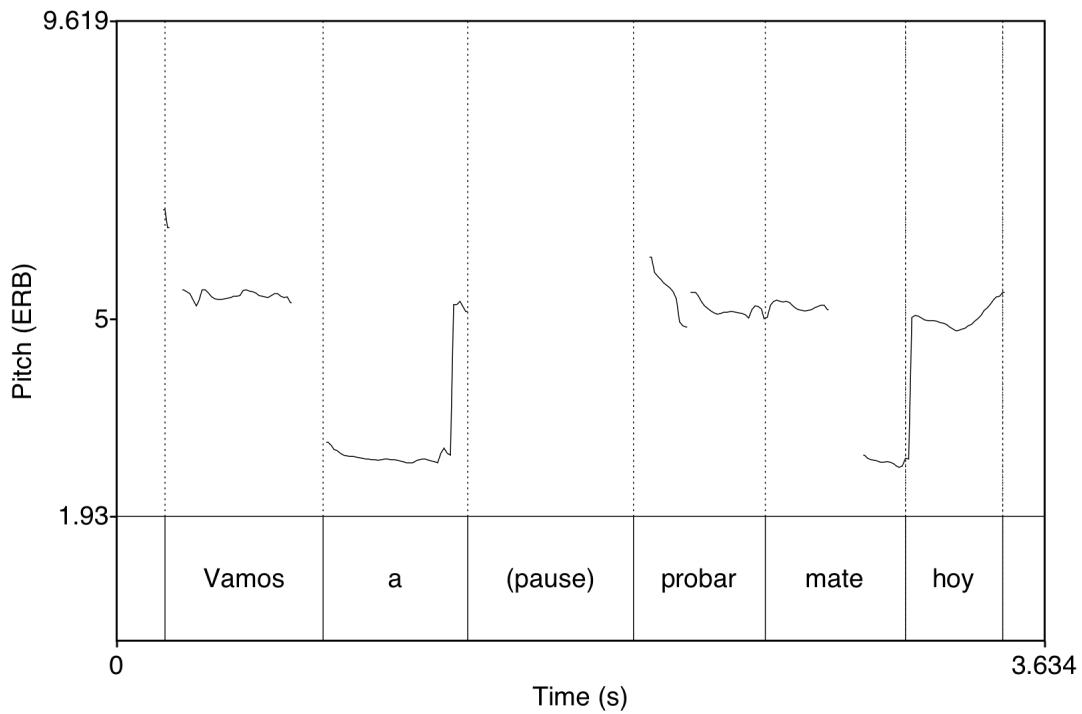


Figure 5.13 Pitch contour of the learner declarative *Vamos a probar mate hoy* ‘We’re going to try yerba mate tea today’, produced by Allison

In this figure, Allison is telling her partner Amanda that she has made plans to try *yerba mate*, a type of tea that is commonly drank in Buenos Aires (among other areas of South America). The image shows that there is very little F0 fluctuation from the speaker’s baseline. The low dips observed on *a* ‘to’ and *mate* ‘yerba mate tea’ are technical glitches owing to creaky voice. The final rise on *hoy* ‘today’, though visually perceptible, does not convey interrogativity whatsoever and appears rather to communicate a degree of excitement at the prospect of trying a particularly South American beverage.

Figure 5.14 provides another example of flat intonation. Samantha is telling her partner what she typically does in her leisure time and mentions that she watches

television programs on her computer. It is quite obvious that the only noteworthy tonal movement here is at the end of the utterance. Once again, the final rise does not convey interrogativity at all, and rather is a turn taking strategy indicating that she has not finished enumerating her leisure activities.

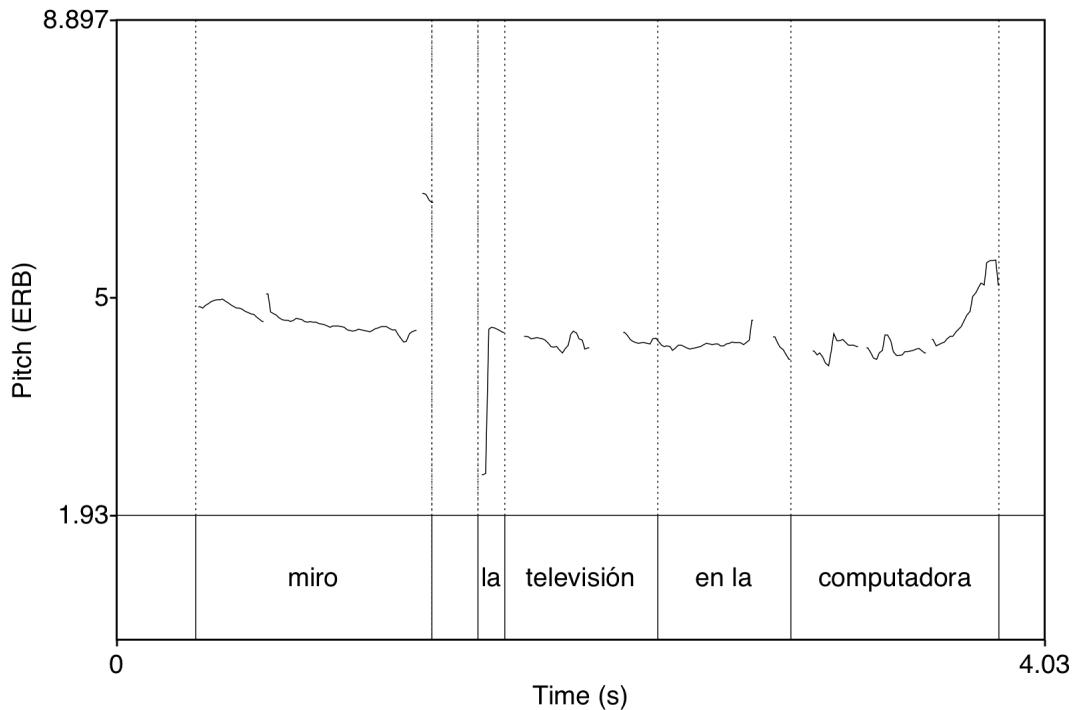


Figure 5.14 Pitch contour of the learner declarative *Miro la televisión en la computadora* ‘I watch television [programs] on my computer’, produced by Samantha

The twenty questions game also elicited very similar declarative pitch contours. Due to the rules of the game, in which the participants provided clues to help their partners guess the celebrities’ identities, the declarative statements are often short, syntactically simpler utterances, such as *Él es muy guapo* ‘He is very handsome’, or *Ella es una*

cantante ‘She is a singer’. Figure 5.15, for instance, is another pitch contour with a very flat F0 that runs throughout the entire utterance.

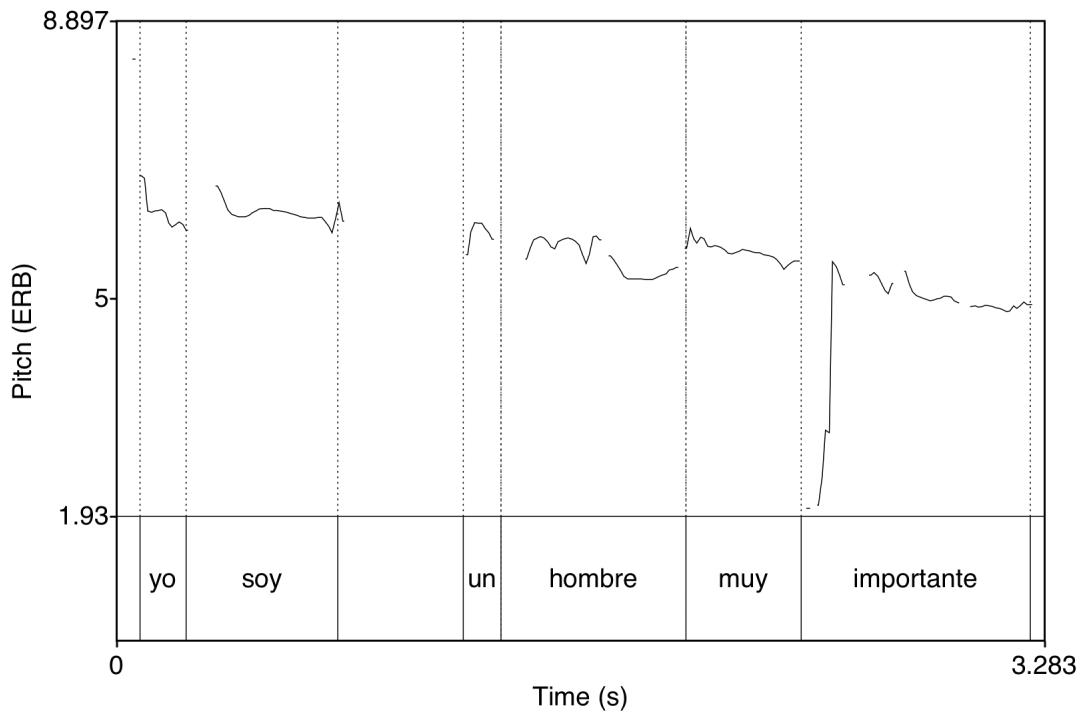


Figure 5.15 Pitch contour of the learner declarative *Yo soy un hombre muy importante* ‘I am a very important man’, produced by Eve

In this example, Eve has assumed the identity of the as-yet unidentified celebrity and is providing a clue to her partner by telling him that this person is a very important man. Though it does not have clearly defined pitch accents associated to stressed syllables, it is marked by a gradual downward trajectory which moves towards a presumed low boundary tone.

Though contours with little pitch movement do predominate at the beginning of the semester, there are examples of clearly defined pitch accents, as illustrated in Figure 5.16.

Oftentimes, these accents support the phonological analysis that was offered above for declarative intonation.

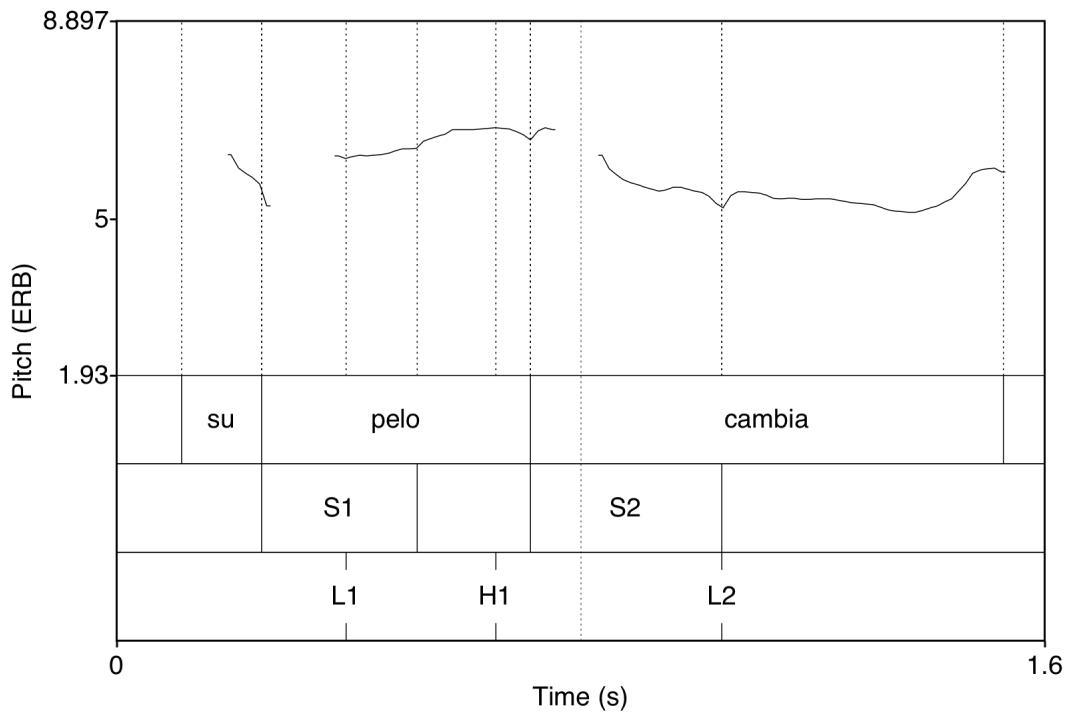


Figure 5.16 Pitch contour of the learner declarative *Su pelo cambia* ‘Her hair changes’, produced by Allison

Allison is helping her partner identify the celebrity in question by telling her that this person frequently changes her hairstyle. As can be seen in the figure, the prenuclear rise does not begin until approximately halfway through the tonic syllable. The rise reaches its apex in the posttonic syllable, almost near the end of the prosodic word. The contour then begins a fall to an L tone situated at the nuclear syllable offset.

These contours, especially the sustained, flat F0, do not correspond with native-like BAS declarative intonation. This is not surprising, as these examples come from speech produced at the beginning of the semester, before the participants had been given the

opportunity to perceive and incorporate the features of BAS to which they were subsequently exposed for the remainder of the study abroad semester. It will be shown below that certain native-like contours did begin to emerge in learner conversational speech by the end of the semester.

5.4.4 Learner declarative intonation in spontaneous and semi-spontaneous speech—end of the semester

The learners carried out the interview and twenty questions game at the end of the semester as well. During these interactive tasks, a handful of the learners evidenced an awareness of some of the prosodic characteristics of BAS and incorporated some of these features into their developing Spanish. Three key developments observed here are the emergence of a falling intonational contour that has been dubbed the “long fall” (Kaisse, 2001), the sporadic retraction of the prenuclear peaks within the tonic syllables rather than after them, and the production of a possible L- tone that one learner in particular has apparently identified as a particular BAS-like characteristic. The remainder of this section, then, will be further divided into subsections devoted to each newly developed intonational characteristic.

5.4.4.1 The emergence of the “long fall” in learner Spanish

Kaisse (2001) isolates an intonational contour that she identifies as pertaining particularly to L1 Argentinean Spanish. She dubs it the “long fall” and describes it as consisting of “a high tone on the most prominent syllable of a phrase and a fall to a low tone within that same syllable—in autosegmental terms, a H*+L pitch accent” (Kaisse,

2001: 147). Moreover, this steep fall occurs typically within a stressed syllable with lengthened duration likely due to the fact that this pattern is used contextually to convey a discontinued or implied list, though it may also be used on a standard declarative statement as well (Kaisse, 2001).

The long fall appears in Samantha's interview data at time 2 when Leah asks her what she will miss most about Buenos Aires. Samantha lists many things, such as the bars, the people, and the friends that she has made in the city. Much like a native BAS speaker might be apt to employ the long fall when articulating a list, whether implied or not, Samantha uses it as well in this context. Figure 5.17 provides an example.

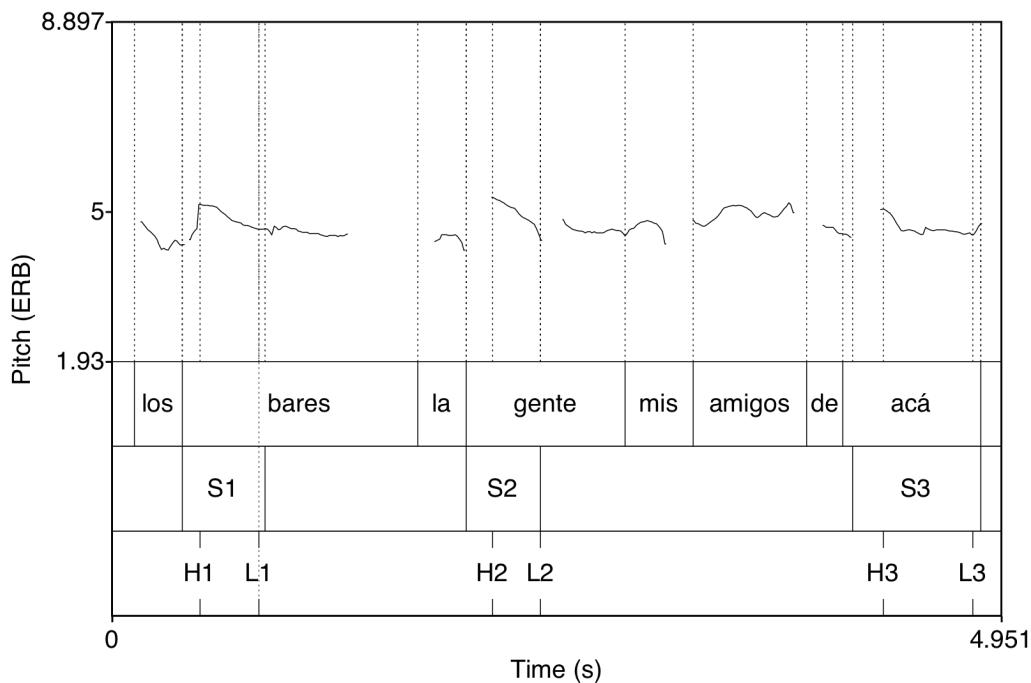


Figure 5.17 Pitch contour of the learner declarative *Los bares, la gente, mis amigos de acá* ‘The bars, the people, my friends from here [Buenos Aires]’, produced by Samantha

The figure has highlighted a series of three long falls that conform to the prosodic characteristics described in Kaisse (2001). The stressed syllables marked with S1, S2, and S3 are nuclear syllables that contain a high tone located at the beginning of the syllable that subsequently begins a relatively steep fall to a low tone also located within the tonic syllable. Additionally, these stressed syllables are lengthened considerably (S3 in particular), which creates the necessary space to include both the H and L tone within their boundaries.

Figures 5.18 and 5.19, also produced by Samantha, provide clear examples of the emergence of the long fall by the end of the semester. She is telling Leah that she often has difficulty interacting with her host family in meaningful ways, and lists the ways in which this interaction is limited, as they are often in their rooms watching television (Figure 5.18), or on the computer (Figure 5.19).

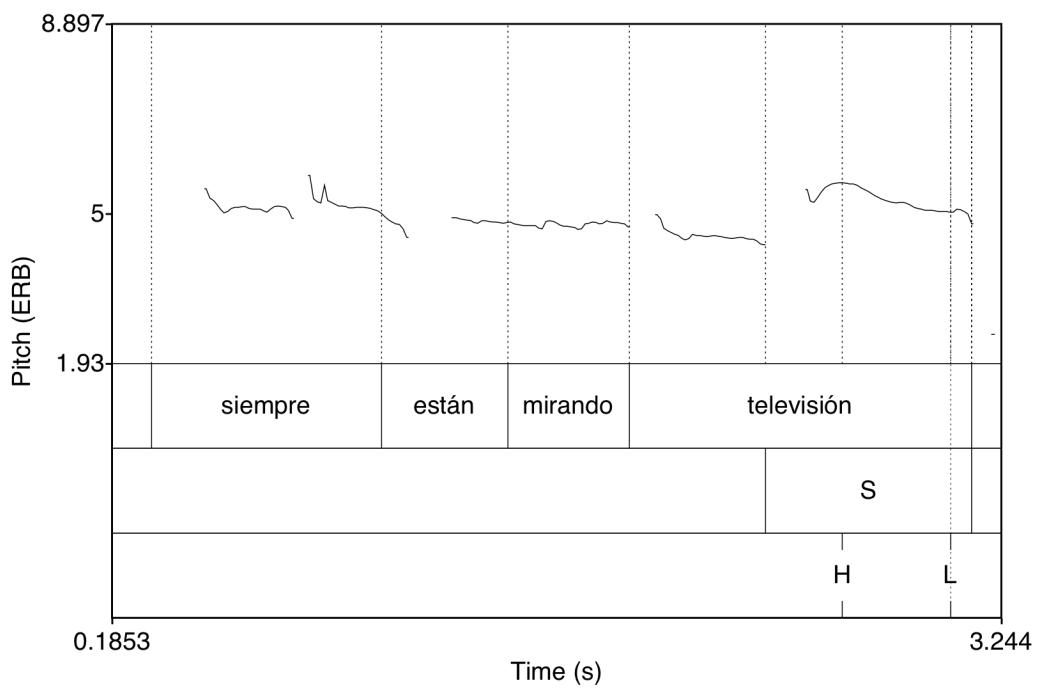


Figure 5.18 Pitch contour of the learner declarative *Siempre están mirando televisión*
 'They are always watching television', produced by Samantha

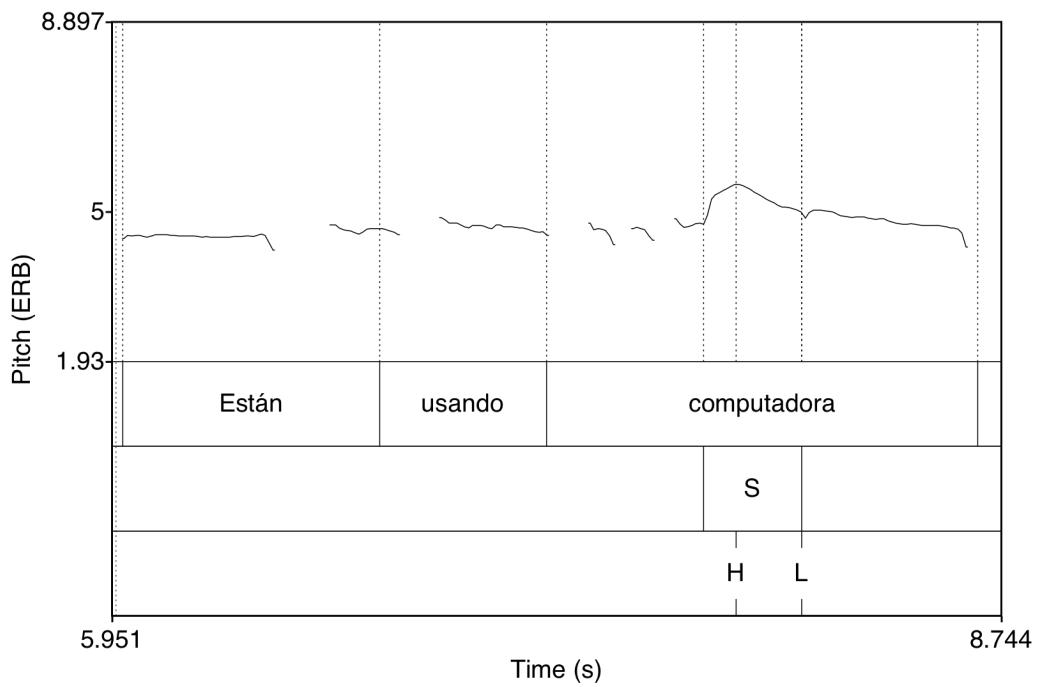


Figure 5.19 Pitch contour of the learner declarative *Están usando [la] computadora*
 ‘They are always using [the] computer’, produced by Samantha

The nuclear syllables (marked with S) on the word *televisión* ‘television’ in Figure 5.18 and *computadora* ‘computer’ in Figure 5.19 have been noticeably lengthened, especially on *televisión*. Within both of these syllables, there is a prominent H tone near the beginning of the syllable followed by a steep fall to an L tone positioned near the syllable offset. Both of these utterances are part of a list; in fact, these two examples form part of the same list that Samantha is enumerating, and were only separated into two figures for visual clarity. Therefore, these examples match all of the characteristics mentioned by Kaisse (2001) for the long fall as produced by native speakers of Argentinean Spanish.

The long fall also appears in the twenty questions game, but only once. When attempting to provide her partner with a declarative clue, Allison tells Amanda that this particular celebrity always has a love interest in his movies. Figure 5.20 demonstrates this.

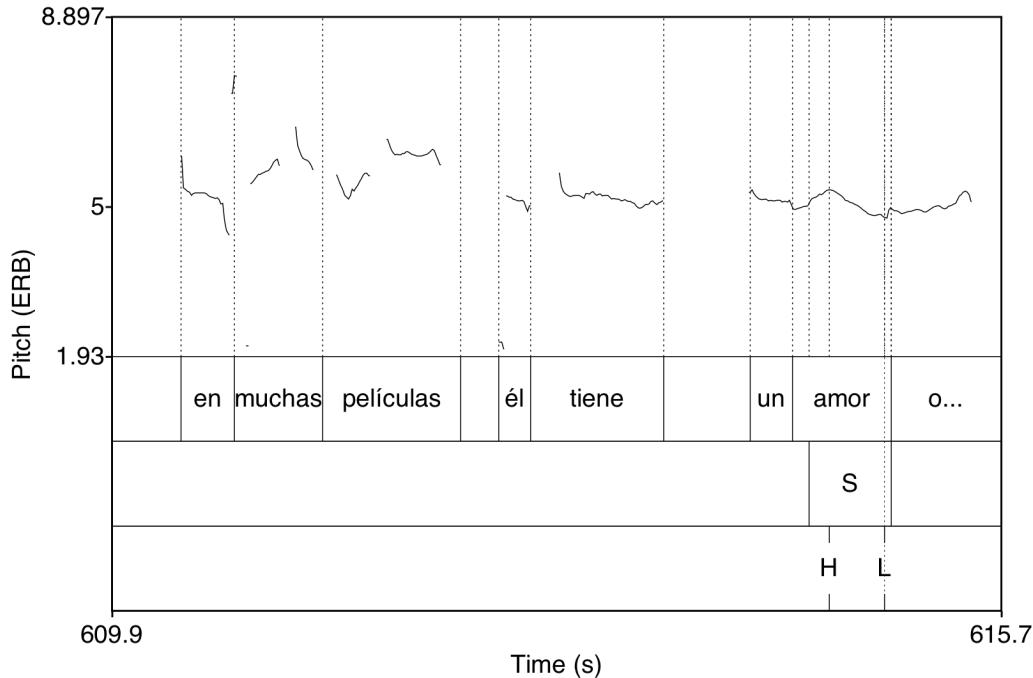


Figure 5.20 Pitch contour of the learner declarative *En muchas películas él tiene un amor, o...* ‘In many movies, he always has a love [interest], or...’, produced by Allison

Once again, the nuclear syllable in the word *amor* ‘love’ is lengthened and contains an early H tone and an L situated at the end of the same syllable. The conjunction *o* ‘or’ at the end of Allison’s statement reinforces Kaisse’s observation that the long fall is used primarily for discontinued or implied lists. Although it is not pictured here, Allison does not continue the list, and rather ends it by saying *no sé* ‘I don’t know’.

Although the instances of the long fall are not numerous—in fact, the previous four examples constitute the only clear cases—Figures 5.17 – 5.19 show that this native-like BAS intonational pattern is perceivable and replicable by learners of Spanish by the end of the semester.

5.4.4.2 Early peak alignment

It was previously mentioned both in Chapter 2 and Section 5.2.1.1 that one of the defining intonational characteristics of BAS is early peak alignment, especially in prenuclear syllables. Whereas this L+H* pitch accent is usually implemented to convey contrastive focus in many dialects of Spanish (Face, 2002), it is much more commonly used in BAS prenuclear pitch accents in broad focus declaratives (Sosa, 1999; Toledo, 2000; Barjam, 2004; Colantoni & Gurlekian, 2004; Gabriel et al., 2010).⁵⁰ This trait has been reported so frequently in the literature on BAS intonation that early peak alignment perhaps even rises to the level of a dialectal shibboleth, thus providing an opportunity to determine if learners of Spanish can perceive and acquire this linguistic feature so common to BAS.

It was shown in Sections 5.2 and 5.3 that in the formal reading task, learners routinely favored a rising prenuclear pitch accent with a late posttonic peak (analyzed here as L*+H, given the similarly late L tone) at both the beginning and end of the semester. This provides solid support that, at least in one speech style, the learners on the whole did not incorporate this feature into their L2 Spanish. However, occasional but noteworthy

⁵⁰ Once again, Colantoni (2005) and Estebas Vilaplana (2010) have found evidence for both early and late peaks in prenuclear position, perhaps suggesting that the preeminence of prenuclear L+H* in broad focus declaratives has been overstated to some degree.

examples of early peak alignment did emerge by the end of the semester in the more informal tasks, thus providing their speech with sporadic Buenos Aires “flair”.

Figure 5.21, produced during the paired interview at the end of the semester, contains several examples of rising accents with early peaks, a characteristic that is quite absent in the formal read speech produced at the same time. In this example, Samantha is telling Leah some of the aspects of Buenos Aires culture that she appreciates the most, indicating that she likes the music.

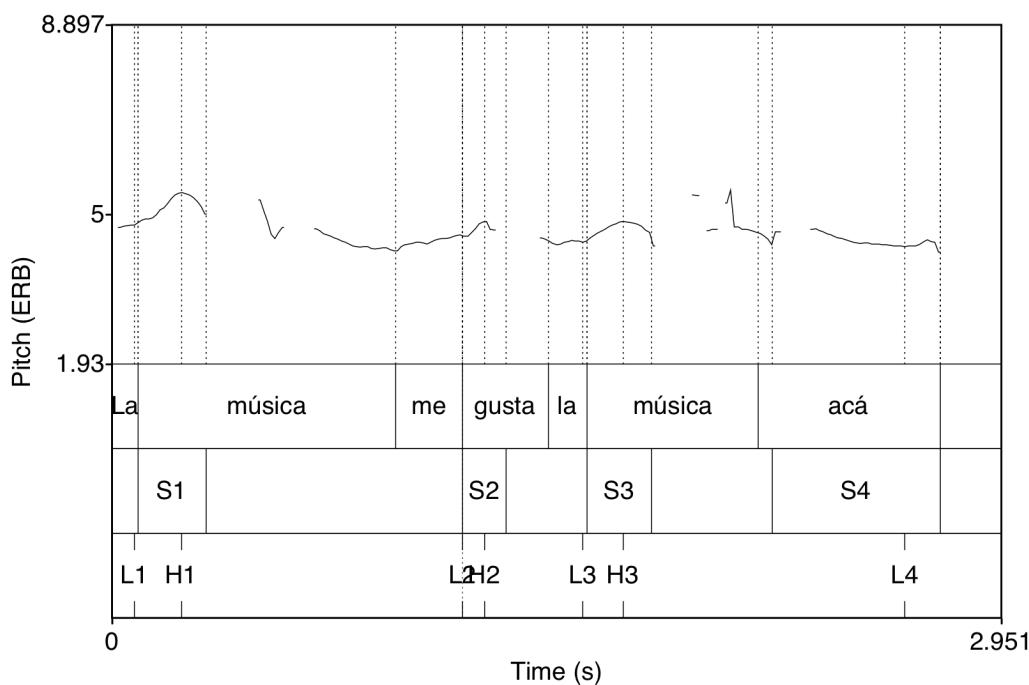


Figure 5.21 Pitch contour of the learner declarative *La música, me gusta la música acá* ‘The music, I like the music here [Buenos Aires]’, produced by Samantha

Each of the first three stressed syllables (S1, S2, S3) contains a rising pitch accent that achieves a peak within its temporal limits, indicated by the position of the H tone. It must be noted that in this speech context, Samantha is not contrasting music with any

other aspect of Buenos Aires culture, nor is she emphasizing the importance of music in general, so it does not appear that the early peaks could rightfully be attributed to contrastive or narrow focus.⁵¹ Rather, she is slowly and deliberately listing what appeals to her most about the city.

Amanda also produces one particularly significant example that contains early peaks. Even more importantly, though, this case highlights her recognition of these F0 peaks as a salient feature of BAS and one that can be acquired and used by learners to sound *porteño*. During the interview task, Amanda and Allison are discussing many of the aspects of life in Buenos Aires that they have noticed, and especially how they differ from life in the United States. They mention differences in fashion styles, the size of the apartments, and Amanda brings up the more prominent linguistic features of BAS, such as palatal variation and the Argentinean accent, the latter of which is shown in Figure 5.22.

⁵¹ It is possible that the first peak's (H1) early alignment in Figure 5.21 could be attributed to emphasis. That is, she could be emphasizing music's personal importance to her. This might also explain its somewhat elevated peak height. However, the second peak's (H2) early alignment does not sound emphatic whatsoever.

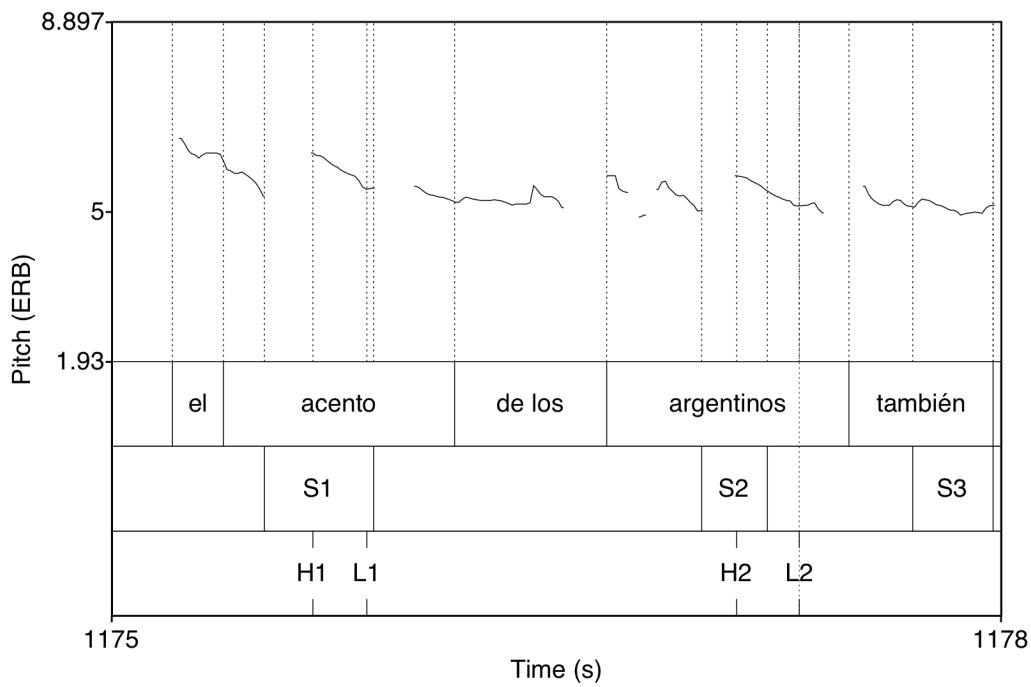


Figure 5.22 Pitch contour of the learner declarative *El acento de los argentinos también* ‘The accent of the Argentineans, too’, produced by Amanda

In this example, the peaks, marked here as H1 and H2, are particularly retracted towards the stressed syllable onset to such an extent that the accent could conceivably be analyzed as H*+L, due to the trailing L tones marked here as L1 and L2. This H*+L analysis has been previously attested in L1 BAS prenuclear pitch accents for both narrative and conversational speech data (Toledo, 2000). It is worth reemphasizing that the significance of this example lies in the fact that Amanda has not only approximated

native-like norms, but that she also has recognized this intonational feature as particularly BAS-like and a key component of the dialect.⁵²

Eve also begins to demonstrate evidence of an early-aligned H tone in her speech. However, a more detailed analysis of these peaks will be given in conjunction with other prosodic features in the following section.

5.4.4.3 The development of L- tones in declarative statements

The third primary learner feature that indicates the evolution of Spanish declarative intonation over time is the development of a low target immediately following an H tone on the same prosodic word. That is, the learners displaying this feature produce a sharp, circumflex rise-fall pattern associated to one word. This post-peak low target will be classified as an L-. It will be recalled from Chapter 2 that phrase tones can be used to chunk an intonational phrase into smaller units (Face, 2002; Alvord, 2006) or to disambiguate (Nibert, 2000). It should be noted that the issue of phrase tones was largely ignored in the formal phonological analysis of learner read speech. This decision was made due to the fact that there was very little direct evidence for their presence in the foregoing discussion and that they contributed little to a basic description of learner phonological categories. It is shown in this section, however, that these low targets add a distinct prosodic quality that cannot be attributed to transfer of L1 intonational categories, nor are they fully representative of BAS intonation.

⁵² It is telling, though, that these early peaks only appear in a case of meta-awareness of intonation and nowhere else in Amanda's data. The issue of why a learner may or may not approximate native-like intonational norms is discussed in detail in Chapter 6.

Figures 5.23 and 5.24, produced by Eve, illustrate this emerging tendency. These two examples come from the twenty questions game, in which Eve is providing her partner Jeremy with declarative clues, stating that the person in question used to be a president (Figure 5.23) and that he is an old man (Figure 5.24), though she has used first-person verb forms to adopt the identity of the individual in question.

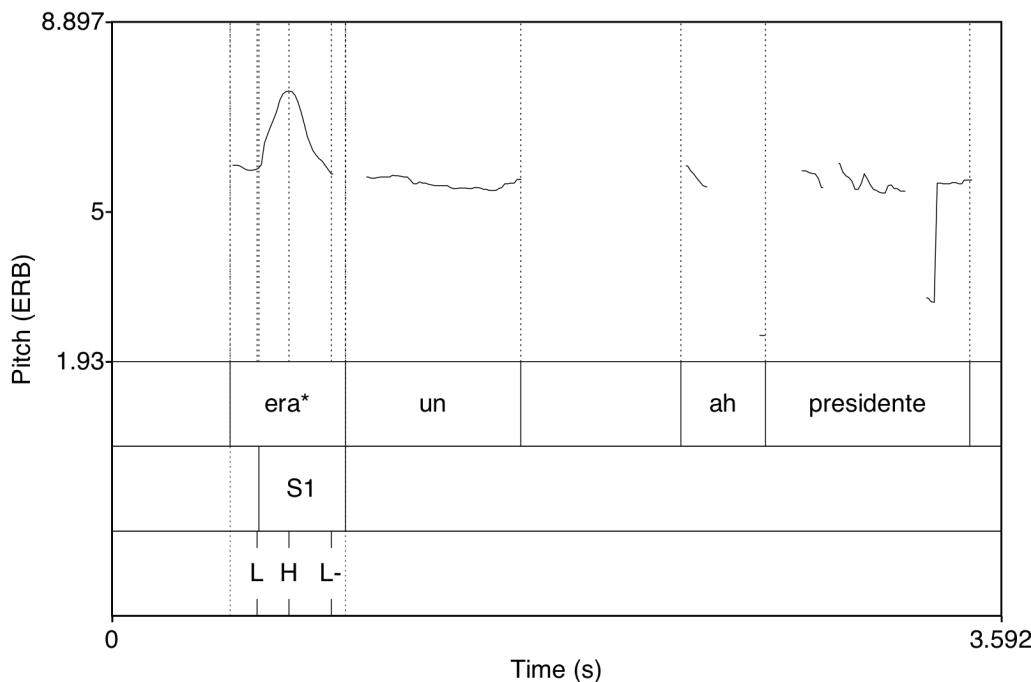


Figure 5.23 Pitch contour of the learner declarative *Erá un presidente* ‘I was a president’, produced by Eve⁵³

⁵³ The stress on the word *era* ‘was’ is improperly placed on the word-final syllable, rather than the penultimate (first) syllable. It is possible that she has shifted the stress on this word to the final syllable because she is attempting to reach an L- target situated at the word-final boundary. See footnote 20, as well.

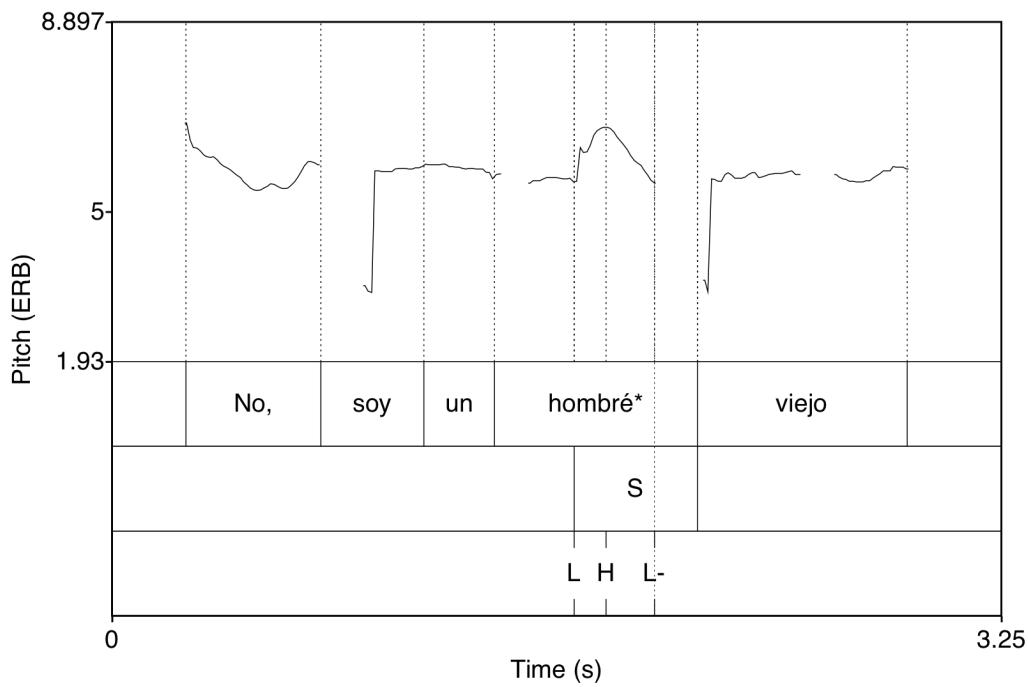


Figure 5.24 Pitch contour of the learner declarative *No, soy un hombre* viejo* ‘No, I am an old man’, produced by Eve⁵⁴

The contours presented here both reach low targets, marked as L-, quickly after the H tone. The peaks are also scaled quite high (i.e. an expanded pitch range) and are situated in the middle of the stressed syllables, giving the word special prominence, though these characteristics do not result from contrastive or narrow focus at all. Examples such as these in particular stand out significantly from the more generalized usage of a flat F0 contour.

The tendency to strive for L- targets after the peak is a feature that Eve in particular has developed over time, perhaps because she is aware that BAS makes use of pitch

⁵⁴ The stress on the word *hombre* ‘man’ is incorrectly placed on the word-final syllable, rather than on the penultimate (first) syllable. See footnote 19 above.

fluctuation to signal key elements in an utterance, and that flat pitch is very non-native-like. Figure 5.25 is perhaps the best piece of evidence for the emergence of these word-final L- tones. This example comes from the interview with Jeremy, in which they have been discussing some of the problems with living in a homestay during a study abroad semester. Eve mentions that one of the students in the group has had significant problems with the homestay environment.

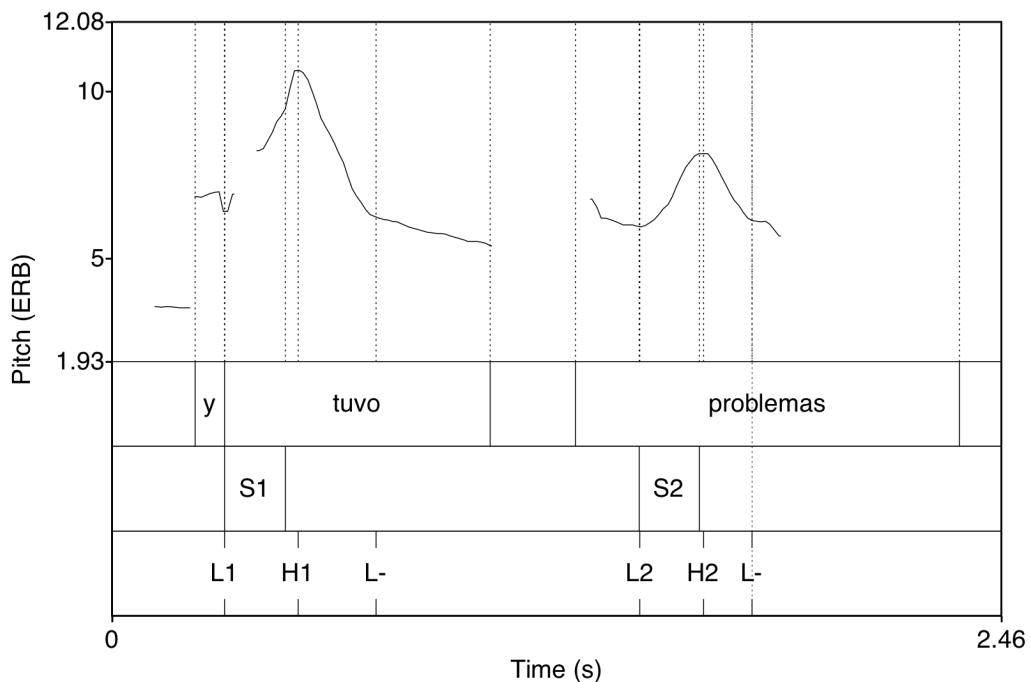


Figure 5.25 Pitch contour of the learner declarative *Y tuvo problemas* ‘And she had problems’, produced by Eve

On both content words, the F0 contour pivots dramatically towards an L- located not terribly far from the tonic syllable offset. Furthermore, the H tones are scaled extremely high on these two syllables. Her baseline is generally in the 5.5 to 6 ERB range, which contrasts notably with the scaling of the F0 peaks in this example; the first peak reaches

10.6 ERB and the second 8.2 ERB. Lastly, it must be pointed out that the H tones are retracted closer to the tonic syllable offset, thus providing more examples of BAS-like early tonic peak alignment. These three characteristics interact to result in pitch fluctuations that diverge noticeably from the L^{*}+H pitch accent noted in the read speech and the sustained flat pitch prevalent in much of the more conversational data.

These characteristics—the post-peak L-, the expanded pitch range, and the early peak alignment mentioned in Section 5.4.4.2—were not observable at time 1 in broad focus declaratives, thus indicating that these features emerged over time while Eve was immersed in the target language variety. This does not necessarily mean that they are native-like reproductions of BAS F0 contours. However, it does appear from the control group data that the emergence of the L- in Eve’s speech could very well be a melodic trait acquired through frequent exposure to BAS. The predominant prenuclear pitch accent in the learner read speech was L^{*}+H, both at times 1 and 2, in which the H tone was frequently allowed to drift to the end of the word, leaving the F0 contour quite high. However, we see in Eve’s conversational data that she is beginning to incorporate a much earlier tonic peak, which allows time for a fall to the L-. This pattern is found repeatedly in the control group read speech and can be seen in Figure 5.1 at the beginning of the chapter. Figure 5.1 has been reproduced here as Figure 5.26.

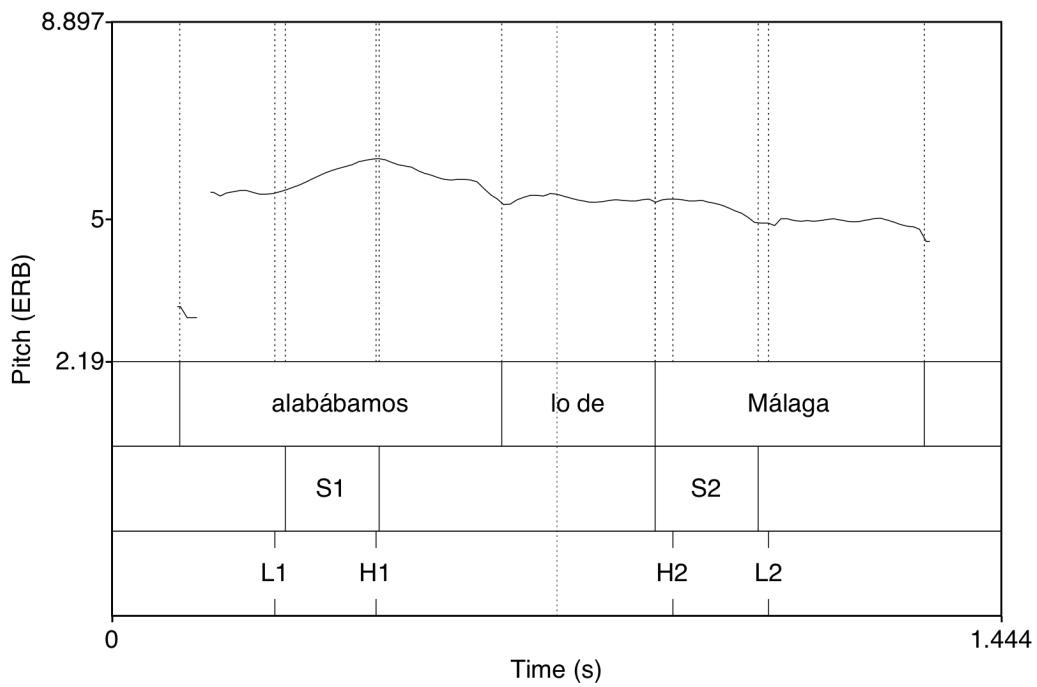


Figure 5.26 Pitch track of the native BAS declarative *Alabábamos lo de Málaga*. ‘We were praising the thing with Malaga.’ (reproduced from Figure 5.1)

Although this example comes from a formal and a more pragmatically neutral context, thus precluding the pitch range expansion seen in Eve’s patterns, it can be seen that the F0 contour rises through the prenuclear syllable and then falls again towards a low target at the end of the word *alabábamos* ‘we were praising’ before continuing on through the rest of the utterance.

5.4.5 Discussion and summary of learner declarative intonation in spontaneous and semi-spontaneous speech styles over time

Section 5.4 has shown that a sustained implementation of BAS-like declarative intonation over time in informal speech styles was limited. Most of the learners do not

make any attempt to externalize the BAS declarative intonation to which they were exposed throughout the course of the semester. The pitch contours, though often difficult to analyze in a technically principled way, are often either flat, erratic, or, in some cases, they reflect the L*+H L% sequence proposed for the formal speech, which was identified as being non-native-like.

This section, nevertheless, did present several immediately apparent cases of native-like intonational acquisition. It was shown that three primary traits emerged in the informal speech, but only sporadically: the “long fall”, early peak alignment, and the development of low phrase tones after tonic (and particularly high) peaks. Once again, Samantha and Eve, who also evidenced acquisition of interrogative intonation, demonstrated the highest degree of native-like attainment. It is interesting, however, that they keyed in on different features; Samantha developed the long fall whereas Eve preferred to produce circumflex declarative patterns via the targeting of a low phrase tone. They both recognized that early peak alignment might also sound particularly *porteño*-like as they retracted their H tones every so often, as did Amanda in a particularly revealing way (see Figure 5.22).

Despite these encouraging results in the informal data, it is important to keep in mind that these were isolated examples that emerged only sporadically. Such little change over time on a large scale perhaps points towards a difficulty in perceiving and replicating these speech patterns on a consistent basis. As mentioned in Chapter 4 with respect to interrogative intonation in these same tasks, approximating intonational norms during a spontaneous speaking task requires an extraordinary amount of effort, as these participants began the semester as intermediate-level learners and were still grappling

with verb conjugations, vocabulary usage, syntax, and the pronunciation of segmental phonological features. A suprasegmental feature such as intonation, then, may not be prioritized in spontaneous speech encounters in favor of more immediately pressing needs. It would be of considerable interest to either conduct a follow-up study on this group of learners to determine if native-like intonation (whether BAS-like or not) is attained as they continue to master the language, or to carry out a similarly designed study on a more linguistically experienced group of learners to gauge the weight of proficiency level on the development of intonational acquisition. This is an issue that will be revisited in Chapter 7.

It is also quite possible that some or all of the learners have noticed BAS intonation and have rather chosen not to sound *porteño*. It will be recalled that, in Figure 5.22, Amanda produces native-like pitch accents featuring early peaks (analyzable as H*+L) on the phrase *el acento de los argentinos* ‘the accent of the Argentineans’, thus emphasizing her awareness of, and capability to imitate, a basic BAS melody. However, this pattern is nowhere to be found in the rest of her declarative production, suggesting that she has opted not to attempt to adopt the Argentinean accent at this stage in her development. The motivations for these choices will be addressed in Chapter 6.

A final and extremely significant conclusion to be drawn from the results presented in Section 5.4 is that speech style plays a critical role in judging the degree to which learners of Spanish acquire intonation. In previous accounts of L1 Spanish intonation, formal laboratory speech was rightfully relied upon to help smooth out the enormous complexities inherent in natural speech and to control for the numerous factors that interact to affect intonation. As Face (2010) has indicated, though, the examination of

elicited, laboratory speech can only provide a partial look at an intonational system. It has been shown here that this is indeed the case, as the formal read speech evidences very little change in L2 Spanish intonation over time, whereas native-BAS-like features begin to emerge in more casual speech styles. These findings, much like those found in Trimble (2013), emphasize the importance of eliciting data via a variety of techniques to access a more complete picture of developing L2 intonation.

5.5 Conclusions

The results in this chapter have shown that, at the beginning of the semester, the learners unsurprisingly produce a non-native declarative melody in their L2 Spanish. In the reading task, all 11 subjects employ a late-rising L*+H prenuclear pitch accent followed by a falling nuclear pitch accent analyzed as L*. The utterance terminated in an L%. Though this pattern was also identified in the informal speaking tasks, thus supporting its primacy at this stage of language development, a sustained, flat contour appeared to be the contour of choice when learners were forced to create language on the spot.

The L* L% nuclear sequence does not differ fundamentally from the low-rise (L* L-H%) proposed for American English and discussed at length in Bing (1985), Bolinger (1986), Pierrehumbert & Hirschberg (1990), and Levis (2002), among others. As mentioned in Chapter 4, intonation, among other suprasegmental phenomena, is not a prioritized aspect of language pedagogy or learning, thus limiting the degree to which the learners may have already perceived intonational contrasts across languages. It is likely, then, that the learners, given their inexperience with both the target norms of BAS

intonation as well as the Spanish language in general, have relied heavily upon their L1 intonational categories at this stage. That is, transfer of L1 norms predominates at this stage.

The learner broad focus declarative melody remained largely the same at the end of the semester, particularly so in the reading task, where the basic contour was identically analyzed as L^{*}+H L^{*} L% for all 11 learners, thus indicating no large scale change in time over the course of the academic term. Nevertheless, the perception and usage of target-like norms, such as Kaisse's (2001) "long fall", early peak alignment, and the emergence of low phrase tones (in conjunction with an expanded pitch range), surfaced to a limited degree in the more informal speech tasks, as shown in Section 5.4.4, thus underscoring the important role that task and interlocutor type play in assessing the trajectory of the acquisition process.

When comparing the approximation of BAS-like absolute interrogatives and declaratives, it appears that BAS interrogative intonation is more readily incorporated into the developing system, at least insofar as Samantha and Eve, the two learners who demonstrated semi-regular target-like attainment, are concerned. Ascertaining why this might be the case is perhaps best achieved through Flege's (1995) Speech Learning Model (SLM).

This model serves to explain the age-related effects that limit full phonetic proficiency in an L2. An L2 segment (or category) that is perceived as phonetically similar to an L1 counterpart will be assimilated via "equivalence classification" (Flege, 1987) into the L1 category, thus preventing the learner from establishing a new L2 category for the segment, which in turn leads to a non-native-like articulation of this

phone. On the other hand, an L2 phone that is more readily perceivable by the learner as “new” (rather than “similar”) will not be subject to equivalence classification and a new L2 category will be likely established for it, leading to more native-like phonetic attainment of this new sound.

This model has traditionally been applied to L2 segmental phenomena, such as the L2 production of French /y/, /u/, and /t/ (Flege, 1987), and it remains to be seen how well it handles L2 suprasegmental features (Henriksen, 2014). Nevertheless, it stands to reason that the phonological categories identified here may be suitably submitted to the SLM, as they are contrastive and can be easily categorized as “similar” and “new”. Specifically, it is of considerable interest to pay particular attention to the categories that learners have established for the toneme for both absolute interrogatives and declaratives. The nuclear rise L+_jH* and L% absolute interrogative sequence employed by native BAS speakers is quite distinct from the L* H% rising sequence that learners have uniformly established at the beginning of the semester. By the end of the semester, Samantha and Eve have perceived the BAS L+_jH* L% as salient, that is, “new” in Flege’s (1987) terms, and have more readily created a new phonological category to address this newly perceived intonational unit. The newly created L*+H L% toneme category, though, is not entirely native-like and may be attributable to a developmental process resulting from the evolution of the learners’ interlanguage away from a more incipient stage (Major, 1986 and 2001).

The declarative tonemes favored in each language variety, on the other hand, are likely too perceptually similar to each other, leading to a blocking of L2 category formation via equivalence classification. That is, the native BAS L* L% declarative

toneme (alternatively H+L* L%) is perceived as similar by the learners and thus assimilated into the previously existing American English low rising L* L- H% (Levis, 2002), which in turn surfaces as the L2 Spanish L* L%, which is identical in AM terminology to the non-native-BAS-like declarative contour.

Similarly, Flege's SLM may also account for the relative lack of intonational evolution in the prenuclear portion of the utterance for both sentence types across all learners. Both the native-BAS L+H* accent and the learner L*+H accent are rising pitch accents associated to metrically strong syllables that are differentiated by the alignment of the component L and H tones. The acoustic properties of the standard BAS prenuclear pitch accent may not be perceived as “new” enough by the learners to warrant new category formation. As a result, the L*+H pitch accent predominates in learner speech at both points in the semester, for declaratives and interrogatives.⁵⁵ This suggests that equivalence classification may have blocked the development of a new L2 phonological category for prenuclear pitch accents.

It is important to note that these hypotheses, as they pertain to the SLM, are extremely preliminary, as the attainment of native-like intonation depends upon a multitude of intertwining factors. As the SLM assumes, other complicating factors may intervene to limit L2 intonational proficiency, such as the amount of exposure to the L2, the amount of L1 usage, and the age of onset of learning of the L2, among others (some of which will be addressed in Chapter 6). The suitability of the SLM to account for the evolution of L2 intonational categories over time, among many other possible

⁵⁵ This may be especially true if one considers the variation between prenuclear L+H* (early peak) and L>H* (late peak) that is said to exist in BAS broad focus declaratives (Colantoni, 2005; Estebas-Vilaplana, 2010).

suprasegmental phenomena, merits further, more direct scrutiny. For the time being, however, Flege's SLM provides a plausible, initial account for the more readily replicable BAS absolute interrogative vis-à-vis its declarative counterpart.

Chapter 6: **An Analysis of Explanatory Factors**

6.1 Introduction

The goal of this chapter is to identify and expand upon the social and affective factors that may have intervened to promote or hinder the attainment of target-like BAS intonational norms during the study abroad semester. The possible intervening factors that may affect linguistic production include motivation to learn, positive or negative attitudes, the formation of a supportive social network of native speakers, willingness to communicate, language anxiety, or the desire to adopt a new identity (i.e. “ego permeability”—see Guiora, 1972 and Guiora et al., 1972), among many potential others. Due to the scope of this project, whose focus is primarily the production study detailed in Chapters 4 and 5, the current study cannot attempt to account for the multitude of social and psychological influences on L2 Spanish intonation. Rather, this study will take a conservative, exploratory approach by investigating facets such as the (non-)development of an extensive network of native BAS-speaking interlocutors and the development of positive or negative attitudes towards the host city, culture, population, and language variety. Furthermore, pertinent factors related to the study abroad program itself, such as time spent abroad, homestay options, and group cohesion will be considered. These factors are examined here on the assumption that L2 learning is intimately intertwined with culture and personal experiences, as detailed in context-sensitive approaches to second language acquisition (see Lantolf, 1994 & 2000; Atkinson, 2002; Collentine & Freed, 2004; Norton & Toohey, 2011). As Atkinson (2002) and Collentine & Freed (2004) point out, if learning is perceived to be a cultural phenomenon negotiated between interlocutors, rather than a system of linguistic representation, assessing acquisition on

the basis of traditional metrics, such as grammatical competence, may fail to identify the strides made by study abroad learners. It is precisely for this reason that studying the development of a suprasegmental feature such as intonation, which is rarely, if ever, prioritized in the classroom, may point toward less understood learning trajectories and competencies in the L2.

The results are qualitative in nature, drawing upon the self-reported data from the 11 participants, thus allowing the participants to speak for themselves to a certain extent. Although the participants offer noteworthy insight into their own language learning process, it is hoped that future research can link self-reported qualitative data with a more rigorous quantitative approach benefiting from a larger data set and a closer eye to other explanatory variables. Specific recommendations for how this might be achieved are given in Chapter 7.

The chapter is organized in the following way. Section 6.2 provides an overview of the major variables impacting the learners' linguistic development and is subdivided according to several particularly salient factors. Section 6.2.1 is dedicated to detailing the social contacts made by participants while in Buenos Aires. Section 6.2.2 covers learner attitudes towards the host culture, language, and people and pays special attention to the role of city life, as many students mentioned this aspect in their questionnaires. Section 6.2.3 examines the role of the study abroad program itself and its ability to promote the acquisition of intonation. Section 6.3 turns attention towards Eve and Samantha, the two participants that showed the strongest and most consistent evidence of acquisition of BAS-like intonation, with the aim of identifying why these two learners in particular

stood out from the rest of the participants on this parameter. Lastly, Section 6.4 offers a brief conclusion.

6.2 Explanatory factors

6.2.1 Social contacts

The learners filled out a social contact log during the recording sessions at the beginning and end of the semester. They were also asked to complete a contact log at the midway point of the semester (after 8 weeks in Buenos Aires) to better reflect the fluid nature of evolving social networks.⁵⁶ At all three times, the log asked each learner to list the individuals with whom s/he was in contact, how often they were in contact with this person, where the contact was from, and in what language they conversed. This worksheet can be found in Appendix F.

Predictably, the learners had very few contacts at the first recording session. They invariably listed their homestay family members and fellow roommates. Typically, the participants reported daily contact in Spanish with these individuals, but some roommates were either from other countries, such as Switzerland, or were fellow Americans, usually placed in the home through different study abroad programs. However, this was not always the case, as Katie shared a homestay with another American learner at the Fundación Ortega y Gasset, and she reported daily interaction in English with this person.⁵⁷ The participants also routinely reported speaking a mixture of Spanish and English with two administrators at the Fundación on a daily (weekday) basis. Crucially, the participants also engaged in daily conversation in English amongst themselves. Given

⁵⁶ The participants provided no other data whatsoever at this midway point.

⁵⁷ This roommate's data were thrown out, as her first language was Mandarin Chinese.

their new surroundings and the intimate nature of the study abroad program,⁵⁸ the participants naturally developed a quick bond and socialized frequently during the first week.

Jonah, it is worth mentioning, stood out from the rest of the group, not because of the amount of Spanish he used, but rather the nature of his developing relationships. Jonah was the only learner who stayed in the student apartment (i.e. a non-homestay living situation). He shared this space with another fellow Fundación student, and Jonah reported speaking daily English with him.⁵⁹ He mentioned engaging in daily superficial Spanish conversation with three employees at the apartment complex, all of which were native BAS speakers.

In sum, the participants predictably have very limited social networks at the beginning of the semester, and they are organized primarily around their fellow study abroad students. Though a more precise measurement of language use was not calculated, it appears that English at least equals, if not vastly outweighs, Spanish usage at this time.

After the passing of 8 weeks, the participants once again completed a log of their social contacts. At this point, more native Spanish-speaking friends and acquaintances are reported, though they are primarily sporadic in terms of frequency of interaction (2-3 times a month). For instance, Amanda, Allison, and Leah established contact with a group of 3-4 Colombian friends with whom they always spoke in Spanish. Several of the participants—Jonah, Samantha, Katie, and Tyler—stated that they practiced their Spanish

⁵⁸ The structure of the program will be discussed further below.

⁵⁹ This learner's data were also eliminated from the study, as his first language was Kikuyu, a language spoken in Kenya.

with friends from Buenos Aires at bars and parties during the weekends, though this did not occur every weekend.

Many of the learners also established sporadic contact with speakers of Spanish (though not always BAS speakers) via a service-learning course in which the learners volunteered at different community service organizations in the city. Amanda spoke with a BAS-speaking fellow volunteer at a soup kitchen in the La Boca neighborhood 2-3 times a week. Allison volunteered once a week at a kindergarten and similarly became acquainted with a fellow volunteer who spoke native BAS. Katie developed several friendships with co-workers with diverse backgrounds: a weekly contact who spoke Venezuelan Spanish with her; a Dutch co-worker with whom she spoke English and Spanish 2-3 times a month; and 3 fellow volunteers with whom she spoke weekly in Spanish. Tyler also reported engaging in Spanish with children at an orphanage at which he volunteered.

Some acquaintances were made through a place of business. For instance, Eve engaged in daily conversation with employees at a gym that she frequented. Jonah, the learner who stayed at the student apartment, made friends with 5-6 employees at the apartment building and often sought their help when completing his Spanish homework. He spoke with them nearly daily. Samantha similarly described daily interaction with a BAS-speaking employee at her homestay apartment building. Brooke described chatting with the doorman at her homestay apartment 2-3 times per week in Spanish.

Whereas the contacts listed above are best categorized as acquaintances due to the sporadic frequency of interaction, Samantha's social contact log stands out from the rest. Though she too reported a series of acquaintances—such as a Colombian friend whom

she saw approximately every other weekend and a handful of American friends not affiliated with the study abroad program—she also began a romantic relationship with a native of Buenos Aires Province. She saw him 4-5 times per week and only spoke to him in Spanish, except when she tried to teach him English. She did not provide much more information than this, but it stands to reason that a romantic partner such as this individual would provide much richer and more consistent native BAS input that a learner such as Samantha would be more likely to approximate, as compared to the more infrequently occurring input received from fellow volunteers or apartment building employees. This may help to explain the strides that Samantha—only a third-semester learner—made in approximating BAS intonational norms.

Lastly, a few of the participants report little to no substantial change in their contacts after 8 weeks. For instance, Morgan’s network is virtually unchanged; the only new contacts that she listed at this time—aside from the previously noted homestay members and Fundación administrative staff—were professors at the Fundación, one of which taught class entirely in English.

The participants also completed a social contact log at the end-of-the-semester recording session. On the whole, the social networks that they made did not differ fundamentally from the middle of the semester to the end of the semester. In fact, Brianna, Morgan, Tyler, Eve, and Jeremy reported no change whatsoever. That is, they continued to interact sporadically in Spanish and English (though not always with native BAS speakers) with a combination of co-workers and friends, and more exclusively in Spanish with their homestay family members, professors, and employees during business interactions or when running errands. They also routinely conversed in English with their

fellow study abroad students and with a few select American friends from outside of the study abroad program. Unfortunately, Leah and Samantha failed to return to the researcher their end-of-the-semester social logs, despite repeated requests.

A handful of the participants, namely Katie, Amanda, Jonah, and Allison, did report some expansion in their social networks by the end of the semester. Jonah listed a new set of three friends from Córdoba, Argentina, and spoke to them in Spanish, but only rarely. Otherwise, his contacts remained identical and he did not report the disappearance of any individual from his social network. Similarly, Amanda listed a pair of Córdoba natives, both of whom she saw socially on a weekly basis and with whom she spoke primarily in Spanish. She maintained contact with her fellow volunteers as well as her Colombian friend, with whom she interacted in Spanish on a weekly basis. Katie highlighted the inclusion of a few new contacts that may have impacted her linguistic development, such as a fellow volunteer from Mexico, and a friend from Germany, with whom she spoke in English 2-3 times a month. She also remained in sporadic contact with a group of BAS speakers that she saw on the weekends, as well as two Colombian friends, and a Venezuelan Spanish speaker.

Allison's data at time 3 in particular are quite revealing and they will be treated in more detail. She actually reported a decline in the amount of interaction between her and her host family, and was the only learner to do so. Whereas she reported daily interaction in BAS with them at the beginning and middle of the semester, interaction fell to only 2-3 times a week for two host family members and only weekly for a host family sibling. This decline in amount and frequency of Spanish used with the host family is unsurprising in light of a statement she made regarding her mixed opinions towards her

homestay experience. She found it quite difficult to engage with the family members in meaningful ways, as they were often loud, talked over one another, and their Spanish was difficult to understand. Allison also often felt uncomfortable with some of what she perceived to be politically incorrect statements that they made about other cultures. She only talked to them at dinner, when the television was on, and, quite tellingly, she stated that she felt more like a tenant, rather than a family member. Although a more thorough discussion of the impact of emerging cultural and linguistic attitudes will be offered below, the connection between these attitudes and evolving social networks and Spanish usage with native BAS speakers is foregrounded here.

Allison's data also reveal a conscious attempt to move away from *porteño* culture and social networks in favor of more receptive Colombian interlocutors. Consequently, the network of Colombian contacts that she began to establish near the middle of the semester expanded by the end of the semester. To wit, Allison said: "I really enjoyed my experience, but found that I wasn't very interested in becoming very immersed in the *porteño* culture. I found that a lot of the young people were only interested in partying and it was hard to make a real connection with most of them. I found myself becoming good friends with a group of Colombians. They were all very sincere people and their Spanish was slower and easier for me to understand. They were also very patient with my Spanish and helped me improve a lot." At this point, she reported the inclusion of 4 additional Colombian acquaintances with whom she spoke Spanish 2-3 times per week, and another 4 with whom she engaged in conversation in Spanish on a weekly basis. Crucially, one of the original Colombian acquaintances listed at time 2 was identified at the end of the semester as a romantic partner with whom she spoke in Spanish on a daily

basis. In fact, when asked, she admitted to consciously attempting to replicate what this individual said, which clearly would not have been BAS-like. Recent studies of immersion-based learning have shown that L2 proficiency may remain idle (Isabelli, 2001) or even worsen over time (Lybeck, 2002) when integration into native-speaking social networks worsens or when negative attitudes towards the host culture develop. Although Allison's L2 intonation has not worsened over time, likely because she still has access to several native Colombian Spanish-speaking models, it is clear that approximation of BAS intonational norms is minimal.⁶⁰

To summarize, a few key trends related to evolving social networks are worth reemphasizing here. Although folk wisdom related to study abroad maintains that a learner is automatically and necessarily immersed in the target language variety, this is most certainly not the case here. Buenos Aires is a cosmopolitan metropolis that hosts a multitude of people from diverse backgrounds and languages and, to their credit, the learners actively sought out and likely benefitted in numerous ways from many such individuals. However, the friendships that they developed with European and American residents and visitors to Buenos Aires, and the tendency to speak English with these individuals, likely prevented them from immersing themselves as fully as realistically possible in BAS. The learners also came into contact quite frequently with non-BAS speakers from other regions of the Spanish-speaking world. An extensive group of Colombians, in particular, befriended a handful of the learners. It is likely that this exposure to Colombian Spanish affected the developing L2 system, though this was not measured scientifically in any way whatsoever.

⁶⁰ It must be noted, however, that Allison did produce one example of the “long fall”, a hallmark of BAS declarative intonation. See Figure 5.20 in Chapter 5 for visual evidence.

Of course, the learners did establish contacts with native BAS speakers in diverse capacities, such as with host family members, host family friends and relatives, apartment building employees, professors, fellow volunteers, and social acquaintances. These relationships likely led to positive gains in many facets of their language learning. However, with the exception of two learners who developed romantic relationships with native Spanish-speakers, it is hypothesized here that the sporadic and oftentimes superficial nature of contact with native speakers limited the learners' exposure to BAS. This may be related to a difficulty in breaking into pre-established BAS social networks, especially given the linguistic differential between a native speaker contact and an intermediate-level learner. For instance, Brianna attested that some *porteños* were not as welcoming as she would have liked. She stated that it was often difficult to get to know people spontaneously, as they already had established social groups. Insinuating oneself into these groups to such a degree as to impact a phenomenon as subconscious as intonation likely requires considerable confidence, independence, and motivation on the part of the learner.

6.2.2 Attitudes

Aside from completing the social contact logs, the learners also answered a Likert-scale questionnaire and a series of open-ended questions at the end of the semester, which were designed to elicit their impressions—positive, negative, or neutral—towards the host culture, language, and population. This was done with the intention of determining how likely the learners were to adopt a new “identity” on the basis of the degree of comfort and acceptance that they felt while in Buenos Aires. In turn, this willingness to

adopt a new identity might manifest itself in the approximation of native-like norms, such as intonation. The following will first present the results of the questionnaire and then proceed to discuss the comments made by individual learners.

The Likert-scale-based survey elicited learner reactions towards a series of questions pertaining to a sense of belonging, adjustment, and a desire to remain in Buenos Aires. The highest possible score of ‘30’ indicates that the learner marked ‘3—a lot’ for each of the 10 questions. This score would point to a very high regard for Buenos Aires society, culture, and language. The lowest possible score would be ‘10’, indicating that the participant marked ‘1—not at all’ for all 10 questions and indicates a very low regard for Buenos Aires society, culture, and language. Only one learner (Amanda) reported the maximum of ‘30’, but the average score of ‘25’ across 9 of the learners was nevertheless quite high, indicating generally favorable opinions.⁶¹ The lowest score reported (Morgan) was 18, indicating a mixed reaction. Table 6.1 lists the participants and provides the total score provided by each.

⁶¹ Leah and Samantha failed to return the questionnaire despite repeated requests from the researcher. This leaves only 9 returned questionnaires. Anecdotal evidence, however, suggests that they likely would have reported similarly high scores. Samantha, in particular, made many informal comments, both participant-to-participant and participant-to-researcher, that would indicate very favorable attitudes.

Participant	Total attitude score	General attitude
Amanda	30	Extremely favorable
Allison	25	Very favorable
Brianna	27	Very favorable
Morgan	18	Mixed
Eve	25	Very favorable
Jeremy	26	Very favorable
Leah	Not reported	Unknown
Samantha	Not reported	Unknown
Jonah	25	Very favorable
Katie	21	Somewhat favorable
Tyler	26	Very favorable

Table 6.1 The total attitude score and general attitudinal orientation for each participant. The highest possible score is ‘30’ and the lowest possible score is ‘10’.

It is also of interest to determine which questions on the survey received the highest scores. This may provide additional insight into the perceived attitudinal adjustment of each learner. The results are provided in Table 6.2.

Survey question	Total score across all participants
1. How well have you adjusted to <i>porteño</i> culture?	26
2. To what extent is your attitude toward <i>porteños</i> favorable?	22
3. How much do you attempt to interact with <i>porteños</i> ?	22
4. How well do you get along with your <i>porteño</i> homestay members/neighbors/students, etc.?	23
5. How much do you attempt to identify with <i>porteño</i> culture?	20
6. How much do you try to use Spanish?	24
7. How well are you accepted by <i>porteños</i> ?	21
8. How strong is your desire to use Spanish?	25
9. How much do you enjoy being alone with <i>porteños</i> (with no other English speakers/Americans)?	22
10. How strong is your desire to stay in Buenos Aires (if it were possible)?	19

Table 6.2 Attitude score broken down by survey question. The highest possible score is ‘30’ and the lowest possible score is ‘10’.

This table shows that the highest scores are reserved for those questions that are related to issues that are most in the learner’s control or that are internal processes. For instance, the highest score of ‘26’ is found in question 1. Although adjustment is a process that involves external factors and entities, it is an emotion that is primarily determined by internal, personalized reactions and feelings. Similarly, the next two highest scores of ‘25’ and ‘24’ are related to the learners’ motivations to use Spanish, which is determined internally to a large extent. On the other hand, many of the lower scores are found on the questions related to interpersonal relationships with *porteños*, suggesting some difficulties with establishing meaningful bonds with many native speakers of BAS. For instance, question 9, related to being alone with *porteños*, received a total score of ‘22’, pointing to some learner hesitancy with speaking Spanish without

some support from fellow English speakers, especially in light of the higher scores related to actual motivation to speak Spanish (see questions 6 and 8). Similarly, question 7, in regards to being accepted by *porteños*, received only a score of ‘21’, indicating that the learners were aware of their “foreignness” to some extent, which may have limited their ability to insinuate themselves into BAS social networks. This notion is crystallized in a response to an open-ended question made by Jeremy, which will be addressed more explicitly below. Even more revealing is the score for question 5, in which the learners were asked to rate their willingness or ability to identify with *porteño* culture. This question received a total score of ‘20’ across 9 learners, which is among the lowest overall scores, highlighting the learners’ comprehension that there were differences that separated them from *porteños* and that they did not unconditionally adopt all aspects of *porteño* culture that they perceived while abroad. However, it must be pointed out that all of the scores are fairly high, skewing closer to the maximum of ‘30’ than the minimum of ‘10’. These scores presented in Table 6.2, in conjunction with those in Table 6.1, suggest that learners as a group signal generally favorable attitudes towards both *porteño* culture and the speakers of BAS themselves.

Although the scoring system in either table is not terribly nuanced, it does provide a snapshot of attitudinal orientation. The following, however, provides a more thorough examination of detailed comments communicated to the researcher which, when paired with the scores in Tables 6.1 and 6.2, will flesh out more fully the impact that attitudes may play in the acquisition of BAS intonation.

These comments were given as responses to the questions in Appendix G. The first question asks that the respondent compare and contrast Buenos Aires culture with his/her

own home culture, according to customs, personalities, and an overall outlook on life. The question was posed in order to gauge the degree to which a learner might be willing to adopt certain cultural practices or beliefs, or even to bend the limits of his/her own identity to encompass that of a typical *porteño*. No participant expressed any overwhelming difficulty in adjusting to life in Buenos Aires, as they indicated that *porteño* culture was not altogether different from life back home. Even Amanda, who comes from a slow-paced small town in the Southern United States, said that she adapted to life quite easily. Brianna stated that her *porteño* peers had similar outlooks on life and thought that they were “laid back and fun.” Jonah, when comparing the youths of the two cultures, felt that the differences were largely superficial (i.e. rap and hip-hop music are more central to popular music in the U.S., whereas other forms of music hold more cultural currency in Buenos Aires). Tyler similarly felt that most cultural practices were on balance very similar.

The learners were quite enamored on the whole with the manner in which *porteños* interact at an individual level with others. Almost everyone mentioned that *porteños* were very open and affectionate people. Jeremy called them, in a very favorable light, “exuberant, exciting, and very opinionated.” Eve and Jeremy cited the custom of greeting one another with a kiss on the cheek and the usage of the phrase *mi amor* ‘my love’ with loved ones as positive examples of the affection shown between family and friends. Katie, Jeremy, and Jonah also praised *porteños* for their friendliness with strangers such as themselves. Katie cited an occasion in which a stranger went out of his way to accompany Katie several blocks to a bus stop because the bus route had changed due to a public protest. Jeremy also stated that many *porteños* sympathized with his occasional

difficulty communicating in Spanish and patiently helped him along. Tyler also mentioned similar qualities, and said that *porteños* were much kinder and more patient than an American would be in a similar situation. Jonah felt flattered that *porteños* were very welcoming and curious to learn about American culture.

Eve appreciated their stronger orientation towards family and friends (rather than, say, towards a job) and felt that there was less a focus on the individual in *porteño* society, as opposed to American culture, where individual achievements are too highly valued. This *porteño* attitude was also perceived by several other participants. Katie stated that *porteños* are less goal-driven than their American counterparts, the latter of which have mental checkpoints that they attempt to achieve before reaching a certain age, according to her. *Porteños*, on the other hand, put family and friends first and live more in the moment because, as she said, “things rarely end up as you thought.” Brianna also noted this “people-first” attitude and stated that *porteños* engage in much deeper, more meaningful (and even more intellectual) conversations because they valued a slower-paced life more than would an American.⁶²

However, Morgan and Allison, on the other hand, indicated that this openness often manifested itself in negative ways; they perceived some *porteños* to be too loud and opinionated, which often made them feel uncomfortable, as it limited their ability to engage in meaningful conversation in Spanish with their host family or social acquaintances. Allison, as mentioned above, said that the openness of dialogue often led

⁶² It should be noted, though, that Brianna did not necessarily feel as if she benefitted personally from this appreciation for conversation, as she said she experienced difficulty in engaging *porteños*, such as cashiers or baristas, as she was easily identified as an American. This contrasts with the positive encounters with strangers mentioned by Katie and Jeremy.

to politically incorrect statements made about other groups, which in particular made her feel uncomfortable and limited her willingness to engage in conversation.

The primary contrast between the two cultures was perceived to radiate from economic issues. Morgan, who had the most overall negative opinion of *porteño* culture, felt that both Americans and *porteños* shared similar values, but reacted to different pressures—Americans battled more with workplace-related stresses, whereas *porteños* struggled more with economic insecurity at a macro level. Eve sensed a troubling pessimism in the culture, which was fueled by economic worries and a preoccupation with the history of the country. She also sensed discrimination based on socioeconomic class, which she felt was connected to economic troubles. Jeremy noted a deep sense of patriotism in the country, but pointed out that it was balanced by a bleak outlook for the future of the country in economic terms.

In overall terms, then, it appears that the learners developed quite positive impressions of *porteños* at an individual level. They noted quite frequently that many *porteños* conveyed warmth, kindness, curiosity, and energy. These impressions are supported numerically to some extent with the scores found in Tables 6.1 and 6.2. The more worrisome aspects of *porteño* life, as perceived by the learners, however, appear to be found at a macro level, as they pertain to economic and political challenges. These overall positive attitudes, in theory, might lead to a propensity to assume the linguistic characteristics, such as intonation, of this group. As was shown in Chapters 4 and 5, however, the majority of learners demonstrated little approximation of BAS intonational norms. Why this might be the case, given the general enthusiastic opinion of Buenos Aires and its citizens, will be discussed further below.

The second open-ended question asked the learners to elaborate on any events or experiences that made them feel happy or uncomfortable while they were abroad. This question was included in order to solicit attitudes towards Buenos Aires itself. Once again, the learners reported many positive, transformative experiences. As indicated above, many enjoyed adapting to a new way of life and exploring the possibilities that a cosmopolitan city such as Buenos Aires affords. Katie cited social events as a highlight of her time in Buenos Aires. She appreciated the many surprises that she encountered there such as unexpected outdoor parties, concerts, and street performers, whereas life in Minnesota rarely caught her off-guard. Tyler likewise mentioned that there was always something to do in such a fun, exciting city. Brianna, in particular, was enthusiastic about the nightlife. It is in the bars and *boliche*s ‘nightclubs’ where she felt that she was able to establish real connections with *porteños* of her approximate age. While socializing, she got the chance to “know the truly ‘cool’ parts of *porteño* culture” and learned about the *cumbia* dance style and “how to properly include *che* into [her] dialogue.” This is a revealing statement, as the word *che* is a vocative interjection used for a variety of discourse-related purposes in Rioplatense Spanish. Brianna’s statement highlights the difficulty of using *che* authentically as a second language learner while simultaneously underscoring her willingness to learn to do so. This points, in turn, to an overarching desire on Brianna’s part to understand and approximate BAS linguistic norms.

Conversely, there were some experiences about which the participants were less than enthusiastic, which may have impacted their impression of Buenos Aires and its people, and, in turn, their learning. Several of the students were victims of theft during their time in the city, which naturally would result in a sense of fear and frustration. Allison was

unknowingly the victim of a robbery on the subway and felt very violated and embarrassed that someone was able to trick her so easily. Morgan was also pick-pocketed, and reported feeling very isolated from her life back in the U.S. as a result. Katie was the victim of both an actual robbery and an attempted robbery and, much like Allison, was shaken up by the fact that someone was able to steal her possessions with such brazenness. Eve and Amanda, though not victims of crime themselves, both reported to having always felt concerned about personal safety while out in the city. Many of the participants expressed frustration for immediately being targeted as foreigners, which may help to explain the number of thefts that they experienced. It is not difficult to see how crimes such as these, or even simply the threat of them, as well as a hyper-awareness of their own “Americanness”, could alienate them from the host culture. Fortunately, many of the learners were quick to point out that these negative experiences were vastly outweighed by other positive experiences throughout the semester.

Several of the female participants reported feeling uncomfortable as a result of unwanted sexual advances from *porteño* men. It seems that catcalling often contributed to the underlying sense of vulnerability related to the threat of crime mentioned above. Katie mentioned that catcalling was particularly off-putting and disorienting when done by an authority figure, such as a police officer. Allison was angered when she took a male friend out for a birthday dinner at a restaurant and two *porteño* men eavesdropped on their conversation throughout the entire meal. They also openly mocked her when she paid for the meal, even though it was a birthday gift to her friend. She was irate and wanted to defend herself, but felt that she could not successfully do so due to linguistic insecurity. Experiences such as these are quite reminiscent of similar comments made by

a student called Jessica in Isabelli's (2001) dissertation, which studied the development of linguistic accuracy and oral proficiency in Spanish by study abroad learners also in Argentina. In that study, Jessica mentioned in a diary that she often felt that Argentinean males objectified her while walking down the street or jogging in the park. As a result, she walled herself off from potential learning opportunities, which explained in part the little attainment she made in oral and grammatical proficiency while abroad. Polanyi (1995) also shows how interpersonal relationships between men and women while abroad may impact learning. In that study, women studying abroad in Russia scored lower on listening and oral proficiency tests due to the qualitatively different ways in which men and women use language while abroad. The author states that women are not afforded the opportunity to discuss content-rich topics, like music, politics, or economics. Rather, women are often left to ward off unwanted sexual advances from men who have different conceptions of gender relations than they do. Consequently, Polanyi hypothesizes that women often develop linguistic skills that are not best captured by standard testing procedures. These experiences, and the negative attitudes that result from them, should be considered when assessing acquisition abroad.

Lastly, several of the students expressed frustration with the instability that often formed a critical part of day-to-day life in Buenos Aires. In fact, it appears that this feature of *porteño* life is what prevented most of the students from wanting to remain in Buenos Aires beyond the semester, despite their favorable views towards the people and the overall experience abroad. Amanda, who is from a small town in the South, said that she enjoyed the challenge of the unexpected, but stated that the instability would be too much to handle over the long term; as such, a one-semester program was perfect for her.

By the end of the semester, Eve also expressed a desire to return to the U.S. due to the instability of life in the city. Large-scale power outages and strikes often left her feeling exhausted and frustrated. Tyler similarly expressed a desire to return to the U.S., but not without praising the culture and stating how much fun he had while abroad. He cited faulty infrastructure, unreliable public transportation, a lack of public amenities such as soap and toilet paper, and general substandard public sanitation as disconcerting aspects of his time in Buenos Aires.

It is quite likely that the grind of urban life in an extremely dense city such as Buenos Aires, combined with the need to remain perpetually vigilant to protect themselves from crime, left many learners feeling alienated, vulnerable, and exhausted to some degree. As such, the one-semester timeframe abroad was the right amount for some to expose them to a new culture and to enjoy the benefits of an intimate academic environment and a vibrant, engaging social life with new acquaintances. As the lukewarm ‘19’ score for question 10 in Table 6.2 shows, there is little enthusiasm to stay beyond the semester in the city. This fact may help to explain why Amanda, for instance, who is a skilled speaker for her level and one whom the other participants often tried to emulate in terms of oral proficiency, did not show more overt evidence of BAS intonational acquisition. That is, a learner who shares a similar opinion to Amanda’s may feel that his/her time in Buenos Aires is temporary (i.e. one semester only) and, as such, does not feel the need to affiliate intimately with the target culture and population, even when overall attitudes are favorable. This individual may self-identify as a foreigner (as many of this study’s learners indeed indicated) who is passing through. This attitude may offset the potential gains that may be made when positive attitudes are developed towards other aspects of

the study abroad semester. As a result, intonational approximation may be kept to a minimum, especially given the limited intermediate-level linguistic skill set that these learners possessed at the time. On the other hand, a learner who believes that s/he will be staying abroad much longer than a semester is likely to identify the immediate benefits of assimilating linguistically and culturally to a larger extent.⁶³

The final question on the attitude worksheet asked the learners whether they attempted to model their Spanish on that of someone else, such as a professor, a host family member, or a classmate. This question was posed with the intent of determining if a specific individual overtly influenced the development of their Spanish intonation. It also sought to gain insight into how porous were the limits of a learner's self identity, on the basis that someone willing to assume a *porteño* identity may also attempt to approximate linguistic norms as well. The inclusion of this question was inspired by the notion that language is socially constructed often by "internalizing" others' voices (Bakhtin, 1986; Lantolf, 2000; Marx, 2002; Norton, 2006), as well as work that specifically links identity and permeable ego boundaries with L2 pronunciation, such as Guiora et al. (1972). In this latter study, the authors state that language learning entails the adoption of a new identity and an ability to develop an "empathetic capacity" to understand another. Moreover, they propose that learner differences in second language pronunciation radiate from and reflect the degree of language ego permeability; in other words, a more flexible sense of identity may very well result in an improved second language pronunciation. To test this hypothesis, the researchers asked language learners to drink various levels of alcohol on the assumption that lowered inhibitions will lead to

⁶³ Samantha was the only participant who stayed the entire academic year. This is addressed more explicitly below.

more permeable ego boundaries, and thus better pronunciation. Guiora and colleagues found that alcohol consumption did indeed lead to better pronunciation, thus supporting their claim that second language production and ego permeability are closely related.

More recent work by Marx (2002), a first-person account of the development of L3 German linguistic abilities while abroad, also highlights the connection between identity and pronunciation, especially while the learner is abroad. While traveling in Germany, Marx developed a strong desire to reduce any trace of a non-native-like accent in her L3 and took great pleasure at not being detected as a foreigner. She also began to consciously incorporate friends' colloquialisms, which, she says, recalls Bakhtin's notion of *ventriloquation*, in which the identity is reshaped through others' voices. It is quite possible, then, that phonological acquisition can be attributed to the harnessing of knowledge through social interaction: "Speakers gain control over their mental processes as a result of internalizing what they say to others and what others say to them. Learning occurs through social interaction...Sociocultural theorists assume that the cognitive processes begin as external social mediated activity and eventually become internalized" (Lightbown & Spada, 2006: 48). Though some socioculturalists do not always pay as much attention to the nuts and bolts of acquisition, intonational learning may be a good place to begin examining the relationship between the fluidity of identity and acquisition.

Overwhelmingly, the learners failed to cite any one specific individual who served as a linguistic model, though many made vague references to attempting to sound as native-like as possible. Amanda, for instance, said "when in Rome, do as the Romans" and found the BAS accent unique and interesting, though she did not pinpoint which aspects in particular were most appealing.

A few other comments stood out. Eve frequently admitted to imitating the sounds she heard from several host family members and professors, due to the importance of sounding native-like: “I realize that I sound dumb if I refuse to talk like local people. I think you get more respect when you sound more fluent.” The relevance of this statement will be treated in more detail below, as Eve, along with Samantha, was one of the two learners to show considerable improvement in replicating BAS intonation.

Jeremy also provided key insight by explicitly referencing intonation: “I usually don’t try to imitate a specific person that I know. I will hear certain words or certain phrases that are used frequently and try to use them more often when I speak. I try to use the intonation as well, however this has been very hard to get used to.” This final sentence serves as a testimony to the difficulty of approximating intonation, even when it is perceivable, perhaps explaining to a large extent the minimal change in Jeremy’s intonation over time.

Jonah similarly provides insight into his overall lack of intonational modification over time: “At first I felt hesitant to try out an accent, mostly because my Spanish wasn’t good enough. But as time went on I would try, feeling a little almost like a ‘sell out’ or even more [like a] tourist but I have realized it really does help with the other person understanding myself. In general, people accept this and with the use of some colloquial words of Buenos Aires the conversation flows much more smoothly.” This quote is particularly revealing because it highlights the lack of linguistic proficiency that may have impacted the learners’ ability to adopt the BAS melody. Furthermore, it also points to the social dimension of language learning. That is, Jonah was acutely aware of how he might be perceived negatively as a “poseur” by native and non-native speakers of

Spanish alike if he had prematurely adopted features of a linguistic group of which he was not an authentic, initiated member. Clearly, geographically indexed features such as intonation are often rooted in notions of identity and, for much of the semester, Jonah was unwilling to restructure this identity for communicative and social gains. Over time, however, he, like Eve, realized that the incorporation of culture-specific linguistic features aided in his ability to interact meaningfully with his *porteño* interlocutors, even if this realization has not manifested itself through gains in his intonation.

The last learner comment worthy of special attention came courtesy of Allison. It will be remembered that she experienced some culture clash with *porteños* including a robbery on the subway, a humiliating experience in a restaurant, and alienation with her host family to some degree. She stated that she “wasn’t very interested in becoming very immersed in the *porteño* culture.” Rather, she found much more acceptance with a group of Colombians, one of whom became a romantic partner over the semester. She reported consciously attempting to repeat what he said in Spanish. Naturally, this intimate relationship gave her access to another variety of Spanish, which likely affected her learning. Indeed, Allison was one of the more proficient speakers of Spanish in the group of learners, but she demonstrated little attainment of BAS intonation.

To conclude this section, it is worth summarizing the main observations presented here. In general, the learners rated their experience abroad quite highly. *Porteño* interlocutors were found to be sympathetic, curious, engaging, and lively. Buenos Aires and its culture were similarly highly rated by the group, with many finding themselves to be energized by its cosmopolitan atmosphere and endless supply of opportunities, both culturally and socially. However, certain aspects of city life, such as instability and the

continuous threat of crime, appeared to alienate the learners from the host culture. Linguistic attitudes and notions of self while abroad further underscore this sense of alienation and “otherness”. For instance, Jonah’s desire to preserve his authentic American identity, as opposed to assuming an inauthentic *porteño* conception of self, could have feasibly limited his learning. Allison’s explicitly stated unwillingness to assimilate to *porteño* culture, coupled with a much more favorable view of Colombian peers and their Spanish, similarly could have eliminated the possibility of ever sounding truly like a *porteño*. On the other hand, Eve recognized the need to sublimate her American identity to some degree and adopt a BAS pronunciation if she were to engage in rewarding interactions with native-speaking interlocutors. Unsurprisingly, Eve is one of the two participants to make clearly defined strides towards incorporating BAS intonation into developing Spanish.

6.2.3 The study abroad program

The final explanatory factor explored in this chapter is the study abroad program itself, which includes the length of the stay abroad, how the classes were organized, living situations, student-to-student interactions, among other aspects. These features undoubtedly affected how the learners engaged with the target language variety, especially when these features interact with the other explanatory variables discussed previously in this chapter.

The 11 participants in this study all took classes exclusively at the Fundación Ortega y Gasset in the heart of Buenos Aires. This allowed for an intimate setting, in which class sizes were limited to only a handful of students, with some being as small as two

students. At no time did the learners ever take classes with native Spanish-speaking peers. Naturally, this intimate environment limited significantly the amount of time that they could have engaged in Spanish with the host culture. Of course, it must be remembered that these students were intermediate-level learners at the time of the study, and it is very likely that most of them were unprepared linguistically to take classes in Spanish with *porteño* peers. This setting also helped the learners to develop and strengthen tight-knit social circles amongst themselves that promoted the use of English with each other. On the social contact worksheet, several students mentioned that they often tried to communicate with each other in Spanish for extra practice, but as Jonah stated, this mode of communication was most often an English-Spanish blend, and, as Katie pointed out, Spanish conversation was less communicatively oriented and more frequently meta-linguistically oriented in that they discussed new slang terminology, for instance. However, as the discussion regarding social contacts emphasized, there existed many opportunities to develop acquaintances outside of the school-based social circles, and the students did indeed take advantage of them at times. For instance, the service-learning course fostered engagement in Spanish with fellow volunteers, even if these individuals were not always native speakers of BAS.

The option to live with BAS-speaking homestays is another aspect of the study abroad program that sheds light on the participants' intonational development. The homestay option afforded them the ability to immerse themselves both in the target language variety and culture, which in turn provided plentiful opportunities in theory to practice and refine linguistic abilities in Spanish. It is likely, however, that this outcome depends to a large extent not simply on the sheer amount of time in which they were

capable of interacting in Spanish, but also on the attitudes that each student developed towards the target language and cultures, as established above. Attitudes were largely positive and this pertains to the homestay experience, as well. However, a few of the students expressed some frustration with their homestay situation. Brianna, for instance, felt that her host mother was not hospitable enough to her liking. She felt as if house rules were not explained clearly enough and that they were applied too strictly. This left Brianna feeling confused and annoyed to such an extent that she did not attempt to reconcile the situation and simply chalked up the experience to a cultural misunderstanding. Similarly, Eve also often felt uncomfortable at her homestay, as she felt more like a tenant, rather than a member of the family. Lastly, some of the students expressed some measure of frustration with the amount and frequency of opportunities to speak Spanish with their homestay family members. Allison, like Eve, stated that she often felt more like a tenant because she rarely saw the individual homestay family members. When she did, it was during dinner where the television frequently impeded communication. Although Samantha did not return her final questionnaire, she did state during her paired, student-led interview that her home stay family members were often either absent from the home or they were sequestered in their rooms watching television or working on the computer, thus limiting interaction with her. These comments point to a discrepancy between student and host-family expectations. Whereas many students are desirous of an immersive familial experience in the home, the host families themselves may view their hosting responsibilities more as a business transaction. This potential misunderstanding may help to explain some degree of student dissatisfaction.

To conclude, it must be stated that no study abroad program can be perfect. It is true that certain aspects of this particular study abroad program, such as its intimate nature, may have contributed in some part to limiting learner exposure to BAS. Moreover, cultural differences in the homestay, which are outside the study abroad program's reach to a large extent, may also limit access and exposure to the target language and culture. However, if maximal linguistic attainment and cultural knowledge is desired, it is also true that the individual learner ultimately must take responsibility for his/her own learning, as the study abroad context offers a number of advantages that are difficult to replicate in the at-home context.

6.3 Factors influencing the acquisition by Eve and Samantha

How, then, can one account for the significant progress achieved by Eve and Samantha throughout the semester? The case of Samantha is not entirely clear, as she failed to return the questionnaire that would have provided key insight into how she acclimated to Buenos Aires. Nevertheless, it was possible to glean pertinent information both from her social contact logs, comments that she made during the student-led interviews, and anecdotal evidence gathered from conversations with the researcher. The information that she reported in her social contact log is particularly salient. First, in response to the question that asks the participant to detail with whom from the program s/he spends time, Samantha (at time 2, or 8 weeks into the semester) stated that she did not spend much time with her fellow study abroad peers because they spoke too much English. The researcher also anecdotally noted this when on site at the end of the semester. Instead of spending time with her peers, Samantha established a much wider

social network of Spanish speakers (both of BAS and of other varieties) early in the semester (i.e. by week 8) that did not depend upon the presence of other American students. For instance, in the interview at the end of the semester, she mentioned that she enjoyed walking in the city with friends or getting a drink at a bar where she knew several of the bartenders.⁶⁴ Perhaps most crucially, as was stated above, she became involved in a romantic relationship with a *porteño* man whom she saw quite frequently and with whom she spoke almost entirely in Spanish. Therefore, Samantha exposed herself more fully to the target language variety and in diverse contexts. Another key detail is that Samantha was the only learner in the program who was going to study in Buenos Aires the entire academic year, rather than just the semester. Whereas the other learners may have felt less pressure to assimilate linguistically (or otherwise) due to the short-term nature of the study abroad period, it is quite possible that Samantha was operating under different motivations, which might have compelled her to adopt BAS characteristics, such as intonation, more readily.

The significant intonational improvement that Eve made throughout the semester is initially more difficult to account for, with respect to the gains made by Samantha. Eve did not report developing the same sort of extensive network of native speakers that Samantha did. Rather, most of her native BAS-speaking contacts were sporadic acquaintances with whom she engaged in only short conversations, which included her homestay family members. She also reported spending significant time with fellow English-speaking members of the study abroad group. It will also be recalled that she

⁶⁴ The linguistic benefit of Samantha's time spent at bars in Buenos Aires may be best seen in light of Guiora et al.'s (1972) observation that alcohol can lead to a temporary change in ego boundaries, which in turn may enhance second language pronunciation.

expressed frustration at certain aspects of life in Buenos Aires, such as the unwanted sexual advances that she experienced in the street, as well as the threat of crime. These experiences, as well as a general sense of instability that she found disorienting, served to isolate her from immersing herself more fully in the city's culture, which in turn would theoretically promote linguistic dissimilation. However, at least based upon the metric of intonation, this was not observed, and other aspects of her time abroad point rather to linguistic assimilation.

It is worthwhile to point out that Eve began the semester having already completed the equivalent of a fifth-semester course, which, in terms of class hours logged, positioned her as the most experienced student in the group of participants. This background was observable by the researcher at time 1, who noted anecdotally that she lacked the pervasive foreign-accented speech that most of the other learners possessed. Though she still struggled with the grammatical and lexical aspects of producing fluid L2 speech that are typical of intermediate students, she had already developed an accent that, though not native-like, perhaps gave her an advantage as she began to receive BAS input. Though she did not report extensive social networks with many native speakers like Samantha, she did state that she spent a lot of time with one of the members of the Fundación's administrative staff, who was also a faculty member. This individual was a native BAS speaker and played an active role in the lives of the students as an advisor, confidante, and friend while they were in Buenos Aires. Eve reported speaking with her often and mainly in Spanish. It is plausible that this sort of supportive one-to-one interaction may have helped shaped Eve's emerging phonetic proficiency. This is especially significant when one recalls that Eve was one of the few students in the group

who stated unequivocally that she modeled her Spanish on the sounds that she heard from her native-speaking interlocutors, because she did not want to “sound dumb” for appearing immediately non-native. Despite some of the problematic aspects that she perceived in life in Buenos Aires, she clearly tried to gain some degree of acceptance from *porteños*, whether from the larger community or simply from this trusted friend. It is quite possible, then, that these low-risk encounters provided a supportive environment in which to rehearse and hone her developing Spanish intonation.

This section shows that there are many potential factors that may influence the acquisition of intonation. Though Eve’s and Samantha’s data show a similar overall trajectory, it appears as if each achieved this attainment through different routes. Whereas Samantha consciously immersed herself in the target culture, and even struck up a romantic relationship with a *porteño*, Eve was less willing to do so. However, though Eve’s native-speaking contacts were more limited, she compensated for this by relying heavily upon a supportive friendship that may have given her the direct input required to achieve her goal of sounding native-like. It can be stated confidently, then, that the progress observed here is due in no small measure to a significant amount of interaction with a supportive social network (see Lybeck, 2002 for similar conclusions). This is also pertinent in the case of Allison, who stated very clearly that she had little interest in engaging in *porteño* culture and rather favored a group of Colombian interlocutors whom she considered to be more sympathetic interlocutors. Like Samantha, Allison also reported developing a romantic relationship with a native speaker; however, he was a Colombian, and this sort of intimate relationship emphasizes the importance of

supportive social networks and may help to explain why Allison in particular did not approximate BAS intonational norms.

6.4 Conclusions

This chapter has shown that the learners largely considered cultural differences between the host culture and their own to be minimal. Furthermore, attitudes towards *porteños* were generally favorable, even if city life in Buenos Aires was less highly valued by the learners. These findings, in theory, would suggest a more robust acquisition of BAS intonation, as it is so closely associated with *porteño* identity. Why, then, did 9 of the 11 learners register such little change in intonation over time?

It is hypothesized here that the learners experienced considerable difficulty in breaking into pre-established social networks, which was exacerbated by linguistic insecurity, a hypersensitivity to their own Americanness (which may have emboldened the limits of their own identity), and an awareness of the transient nature of their stay in Buenos Aires.

Furthermore, the interactions that they did have with native BAS speakers may have been superficial, such as limited homestay interactions and sporadic nightlife encounters. Notably, many learners developed friendships with non-BAS speakers, whose presence likely diversified the linguistic input that these learners received, thus minimizing the effect that a more homogenous input might have had on the developing phonological system.

Many of the learners admitted to speaking English on a regular basis with a cohort of peers, both inside and outside of the classroom, which similarly curbed the potential benefits of a steadier stream of BAS input.

Though it was surmountable, as evidenced by Eve and Samantha, the intermediate level at which these learners began the semester may also have impacted the results. It is hypothesized here that the majority of the learners were simply not capable of incorporating and replicating the intonation that they heard when other, more urgent, communicative tasks were required of them, such as verb conjugations, vocabulary considerations, and subject-adjective agreement.

Eve and Samantha, on the other hand, serve to show that these variables can be combated, and, more importantly, that BAS-like intonation can be acquired over time. It is hypothesized here that these two learners did so by actively seeking out native-speaking contacts, though not necessarily in the same way. Also, it might be the case that the presence of a supportive interlocutor may significantly impact learning, as Samantha relied on a romantic partner and Eve relied on a trusted friend.

As stated at the outset of this chapter, the results related to extralinguistic factors and their impact on intonational acquisition should be considered preliminary and exploratory. The scope of this paper, which focused more attention on the production study, did not permit a more exhaustive analysis of these extralinguistic variables, important though they are. It is hoped that these findings can spark further interest in not only the acquisition of intonation and other suprasegmental features, but also in developing methods to tease apart the numerous relevant factors.

Chapter 7: Conclusions

7.1 Introduction

The current chapter concludes the dissertation by reviewing the principal findings presented in Chapters 4, 5, and 6. Section 7.2 reviews the primary research questions listed at the outset of the dissertation and is divided into four subsections, each one of which responds to the individual research questions. Section 7.3 discusses the limitations of the dissertations with the hope of identifying productive lines of research for the future. Lastly, Section 7.4 provides a final concluding statement.

7.2 Summary of research questions and principal findings

7.2.1 What are the primary characteristics of the intonational contours for absolute interrogatives at the beginning and end of the semester?

Chapter 4 provided a phonological analysis of learner absolute interrogative intonation at the beginning and end of the study abroad semester in Buenos Aires. At time 1, all 11 participants produced a non-BAS-like interrogative intonation that was marked primarily by a final high-rising F0 movement, both in formal and informal speech contexts.

In the formal context, in which data were elicited via highly controlled read speech, the standard learner contour at time 1 was analyzed as an L*+H L* H% contour. This analysis is summarized in Table 7.1 and exemplified in Figure 7.1.

Intonation pattern	AM analysis		
	Prenuclear accent	Nuclear accent	Boundary tone
Absolute interrogative	L*+H	L*	H%

Table 7.1 Phonological analysis of learner absolute interrogative intonation in a formal context at the beginning of the semester

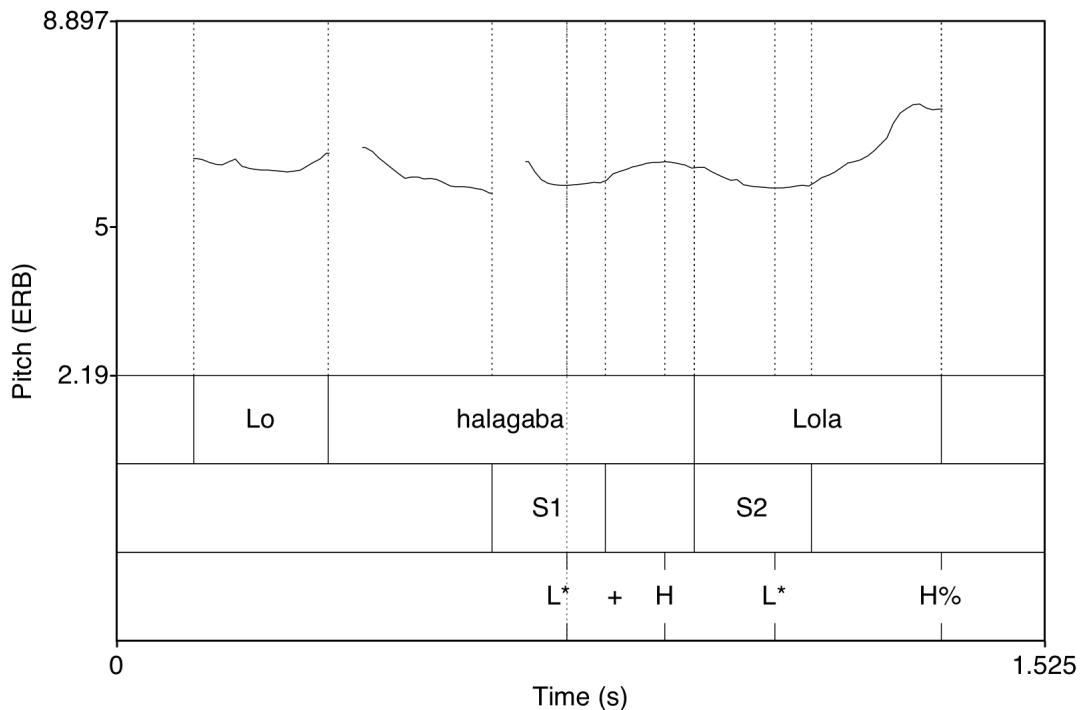


Figure 7.1 Phonological analysis of learner rising intonation (reproduced from Figure 4.5)

‘*Lo halagaba Lola?* ‘Was Lola praising him/it?’

| | |
 Lo halagaba Lola
 L*+H L* H%

This analysis describes the following F0 movements. In the prenuclear portion of the utterance, pitch stays low throughout much of the tonic syllable, resulting in a valley that is stably located within this same syllable, an observation that indicates a phonological association for this tone. The F0 then rises to a peak that is located in the posttonic

syllables. Subsequently, the contour falls again to another valley, also situated within the tonic syllable boundaries. The final rise, which does not begin until late in the tonic syllable and oftentimes near or at the tonic offset, is triggered by an H% and rises to the end of the utterance. This contrasts notably with the standard BAS absolute interrogative contour, which has recently been analyzed as L+H* L+;H* HL% (Gabriel et al., 2010). This pattern, unlike the learners', predicts not only early prenuclear peaks but also a rising nuclear pitch accent followed by a final fall.

By the end of the semester, 9 of the 11 learners continued to produce the same L*+H L* H% contour. However, 2 of the learners—Eve and Samantha—began to demonstrate modification in pitch over time. They will be treated separately in Section 7.2.3.

Investigation of pitch produced in the informal contexts largely confirmed the analysis offered in read speech. Although these contexts did not elicit significant numbers of absolute interrogative contours and complicated a formal analysis due to problems with reading the pitch contours, it was shown that a non-native-like final rise predominated once again at the beginning of the semester. Learners also tended to minimize pitch fluctuation throughout the prenuclear portion of the interrogative, thus making the final rise particularly salient.

By the end of the semester, little change was noted in the informal, interactive contexts for the majority of the learners. Contours were largely flat with the exception of a final rise that signals interrogativity. However, once again, Eve and Samantha stood out from the rest by producing falling intonation in these contexts. This, too, will be discussed in Section 7.2.3.

7.2.2 What are the primary characteristics of the intonational contours for broad focus declaratives at the beginning and end of the semester?

Chapter 5 provided an analysis of broad focus declarative intonation at the beginning and end of the study abroad semester. It was shown that intonation for this utterance type was not markedly different from that of their BAS-speaking peers. Additionally, there were no large-scale modifications made to the contour over time and the declarative contour was analyzed via the same pitch accent sequence at both the beginning and end of the semester.

In the formal speech context at times 1 and 2 for all 11 learners, the declarative contour was analyzed as an L^{*}+H L^{*} L%. This is summarized below in Table 7.2 and illustrated in Figure 7.2.

Intonation pattern	AM analysis		
	Prenuclear accent	Nuclear accent	Boundary tone
Declarative	L [*] +H	L [*]	L%

Table 7.2 Phonological analysis of learner declarative intonation in a formal context at the beginning and end of the semester

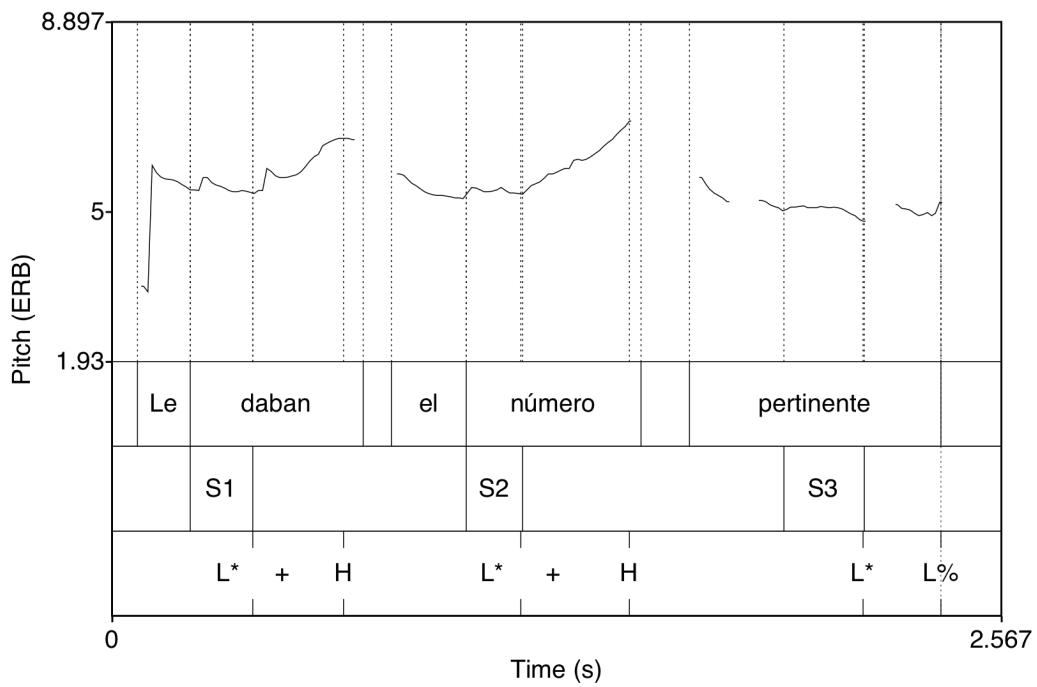


Figure 7.2 Phonological analysis of learner declarative intonation (reproduced from Figure 5.8)

Le daban el número pertinente ‘They were giving him/her the pertinent number’

L*+H L*+H L* | L%

This analysis describes the following F0 movements. Identical to the absolute interrogative intonational pattern mentioned above, the F0 contour remains low throughout much of the tonic syllable. The valley is stably located within the tonic syllable borders, often near the tonic offset. This points to a phonological association for the L tone. The contour then rises to a trailing H tone. After achieving this peak, the F0 pivots downwards toward an L tone similarly associated with the nuclear tonic syllable. Lastly, pitch remains low until the end of the utterance, which is triggered by the presence of the L%. The analysis summarized in Table 7.2 captures the learners’

overwhelmingly preferred pattern, but some variability was unsurprisingly detected in the data, such as nuclear rises or sustained, flat contours. This is to be expected, as variability is also noted in native BAS declarative intonation. As previously mentioned, this learner pattern does not differ fundamentally from the native BAS L+H* L* L% sequence. However, the learners generally have failed to incorporate the early prenuclear peak alignment favored by native BAS speakers, a characteristic that also makes BAS speakers stand out to some degree from other native Spanish speakers.

The informal speech contexts played an important role in unearthing intonational progress that may have otherwise remained hidden if not investigated explicitly. A handful of participants employed declarative intonation in revealing ways during the more communicative elicitation tasks. As they point towards acquisition of intonational norms, these data are addressed in more detail immediately below in Section 7.2.3.

7.2.3 Are there patterns of change that indicate that learners are moving towards a target-like intonation?

Chapters 4 and 5 demonstrated that the majority of learners (9 out of 11) produced largely non-native-like Spanish intonation, both at times 1 and 2. However, as mentioned above, Eve and Samantha began to produce target-like intonation by the end of the semester, primarily for absolute interrogatives, though a handful of dialect-specific declarative patterns do emerge in the informal contexts.

By the end of the semester, in the formal contexts, they both produce a falling interrogative pattern that is analyzed here as L*+H L*+H L%, which is summarized below in Table 7.3 and illustrated in Figure 7.3.

Intonation pattern	AM analysis		
	Prenuclear accent	Nuclear accent	Boundary tone
Absolute interrogative	L*+H	L*+H	L%

Table 7.3 Phonological analysis of Eve and Samantha's absolute interrogative intonation in a formal context at the end of the semester

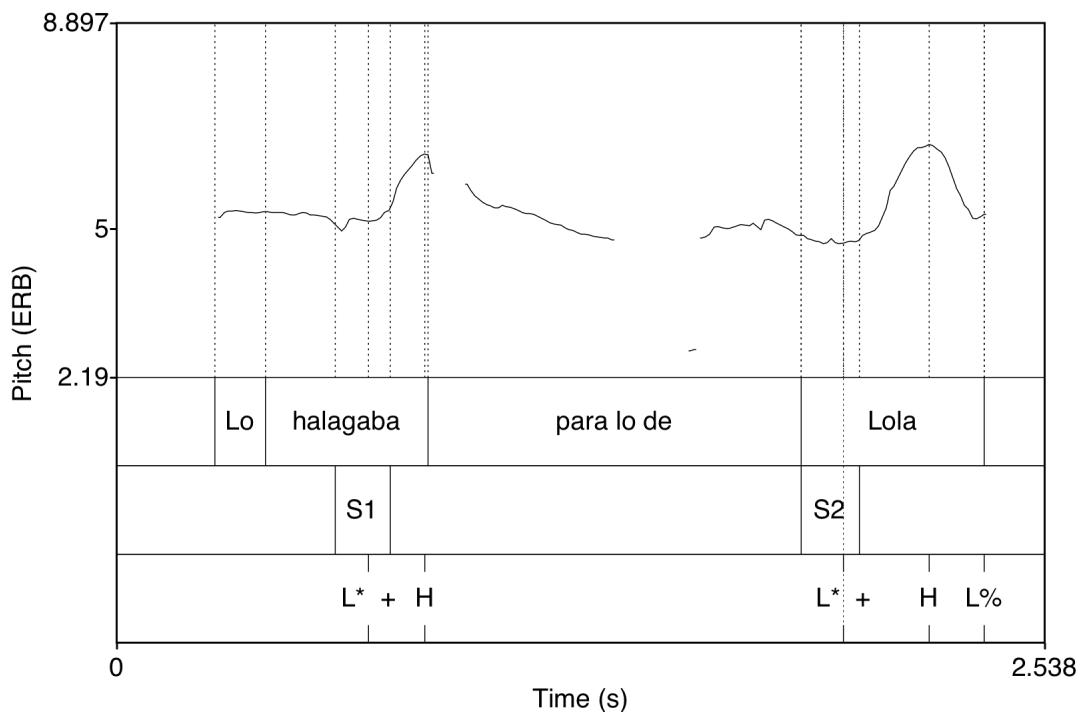


Figure 7.3 Phonological analysis of learner falling interrogative intonation (reproduced from Figure 4.8)

¿Lo halagaba para lo de Lola? ‘Was I praising him/it for the thing with Lola?’

|
 L*+H |
 L*+H |
 L%

This sequence describes a late-rising prenuclear accent followed by a similarly late-rising nuclear accent. After reaching the nuclear peak, the contour falls to the end of the utterance due to the presence of an L%. The key developments here are the emergence of

a rising nuclear pitch accent, rather than the L* favored by their fellow learners, and the falling contour, which is quite distinct from the rising pattern preferred by their American peers. These two developments are likely linked, as the rising nuclear pitch accent provides the H tone from which the falling contour may begin.

Eve and Samantha also produce the falling pattern in informal contexts at the end of the semester as well, though it was difficult to analyze with certainty due to the uncontrolled nature of these tasks. It was also shown in Chapter 4 that Eve more consistently produced the falling pattern than did Samantha, the latter of which continued to produce non-native-like rising contours from time-to-time.

Although these observations serve as evidence of intonational modification over time for both learners, the pattern they favor is not yet identical to the standard pattern produced by native BAS speakers. This contour has been analyzed as L+H* L+_jH* HL%. To more fully approximate this pattern, Eve and Samantha's rises would need to begin earlier in the tonic syllable and reach peaks more closely aligned to the tonic syllable offset, if not before it altogether. Despite these minor differences, Eve and Samantha distinguished themselves from the other learners in the group on this metric and made clear strides towards sounding like a native BAS speaker.

These two participants made less progress with broad focus declarative intonation. In fact, like the other 9 participants, they made no major shift over time for this utterance type in formal, read speech, as shown in Section 7.2.2.

The informal speech contexts, however, provided considerable insight into developing intonation, as Eve and Samantha, as well as other participants like Amanda and Allison to a smaller degree, revealed an awareness and implementation of BAS-like

intonation that were not captured in the formal speech contexts. Three particularly BAS-like patterns were identified in these learners' data by the end of the semester when interacting in less monitored speech: the long fall melody used for implied or discontinued lists (see Kaisse, 2001), early peak alignment, and low phrase tone targets, all of which contributed to make the participants sound considerably more native-like when employed. The frequency with which they emerged in the data was low, and, as such, it is necessary to remain tentative with respect to broader claims about the rate and route of acquisition. However, it is clear that researchers must consider speech style as a contributing factor when analyzing the development of L2 intonation.

Lastly, it was hypothesized that Flege's Speech Learning Model (1987 & 1995) accounted for the fact that BAS absolute interrogative intonation emerged more readily than BAS declarative intonation in Eve and Samantha's data. This is because the native BAS interrogative nuclear sequence L+H* HL% (alternatively L%) (Gabriel et al., 2010) is perceived as a new phonological category vis-à-vis the learners' initial preference for L* H%. Thus, in the case of Eve and Samantha, this new salient intonational feature is not subject to equivalence classification, which in turn leads eventually to a more native-like articulation over time. That the declarative pattern summarized in Table 7.2 persists throughout the course of the semester was also accounted for via Flege's SLM. In particular, the early-rising BAS prenuclear L+H* pitch accent is perceived as "similar" to the late-rising L*+H pitch accent favored at time 1. Therefore, equivalence classification blocks the development of the native-like L+H* phonological category, helping to explain the lack of intonational approximation for declaratives.

Nevertheless, some of the learners did show a clear awareness of certain BAS intonational characteristics, such as prenuclear L+H*, even when they did not employ them with high frequency in the data. The psychological, attitudinal, and social motivations regulating this variability were addressed in Chapter 6 and are summarized in Section 7.2.4.

7.2.4 What, if any, social, attitudinal, or psychological factors influence the learners' change in intonation over time?

Chapter 6 provided an exploratory investigation of the various extralinguistic factors that may have impacted the learners' usage of intonational norms during the study abroad semester. The chapter focused on social contacts, attitudes towards the target language variety, its speakers, and the host culture in general, as well as aspects of the study abroad program that might have conditioned or inhibited target language usage. Lastly, it attempted to explain why Eve and Samantha were more willing than their peers to adopt BAS intonation.

The self-reported data suggest that learners, as a group, developed favorable attitudes towards both their *porteño* interlocutors and the culture that they encountered while abroad. These positive attitudes would likely promote the acquisition of BAS intonation, as it is so closely tied to identity. However, as Chapters 4 and 5 showed, most of the learners showed either minimal movement towards native-like norms or no movement whatsoever.

This general lack of target-like intonational attainment for 9 of the 11 learners was attributed to several factors. First, an analysis of learner social contact logs showed that

these learners often received sporadic BAS input in the form of acquaintances with whom they engaged only periodically, or on a superficial level. Furthermore, the Spanish input that they received was often not homogenous, as the learners developed friendships with speakers of other varieties, such as Colombian, Venezuelan, or Mexican Spanish. Many of their social contacts were also English speakers, such as their fellow study abroad peers, whom they saw frequently in and out of school, as well as visitors to Buenos Aires from other parts of the world. Moreover, the study abroad program itself was intimate in nature and did not “mainstream” the students with *porteño* peers, thus limiting BAS input. In sum, the learners’ exposure to BAS through social contacts was frequently limited or mixed which may have helped to hinder approximation.

Secondly, certain aspects of city life in Buenos Aires may have also contributed to alienate learners from the BAS-speaking community, such as the threat of crime, general frustration resulting from instability, and, for many of the women in the group, frustration with unwanted sexual advances.

Identity issues and linguistic insecurity may have come into play as well, as evidenced by Jonah’s comment that he did not want to appear like a “sell out” for adopting another culture’s way of speaking. Many learners were sensitive to how they stood out as Americans and it is hypothesized here that the learners did not feel overly compelled to change the way they spoke given the short-term nature of the study abroad program.

Lastly, it is probable that the intermediate Spanish level at which the learners began the semester contributed to the lack of major changes. Intonation, a suprasegmental

feature, was likely not prioritized when other, more pressing communicative needs needed to be met, such as proper verb usage or appropriate vocabulary choices.

Eve and Samantha, however, did demonstrate notable achievement in intonational acquisition, though they may have done so via unique strategies. Samantha often isolated herself from the group to some extent to maximize Spanish usage and she attempted to broaden her BAS-speaking social networks. She even began a romantic relationship with a *porteño* man, which likely provided a supportive environment in which to practice new phonological features. Eve did not establish as many *porteño* contacts as Samantha, but was initially more proficient in Spanish at the beginning of the semester and similarly developed a supportive friendship with a native-speaker. Unlike many of the other participants, Eve also expressed a clear interest in sounding native-like. These factors may have interacted to push her towards native-like intonational standards.

7.3 Limitations and future research

Though this study has shed considerable light on an understudied area, there remains an urgent need to continue this line of research. The mechanisms—both internal and external, linguistic and extralinguistic—governing the perception and usage of Spanish intonation by L2 learners have been largely ignored, despite the need to address these issues in a systematic way. To a large extent, this gap in the literature is understandable. For instance, the technological means to reliably analyze pitch contours have only recently become widely available. Even still, these new advancements cannot automatically disentangle the intertwined factors that considerably complicate the analysis of intonation and other suprasegmental phenomena, a fact which may also help to explain the delayed interest in this field. However, despite the challenges inherent in

this endeavor, the time is right for more focused investigation into this and other related topics. The remainder of this section, then, points to the limitations of this study and offers recommended areas for future research so that these critical issues may begin to be addressed.

Situating the present research in a study abroad context in Buenos Aires was a calculated decision, as this variety of Spanish has been shown to distinguish itself (both from American English and other varieties of Spanish) in part via several prosodic features, thus offering a promising opportunity to track the emergence and development of these geographically indexed intonational patterns. Naturally, other varieties of Spanish present similar opportunities, as Trimble's (2013) work on the acquisition of Venezuelan Spanish has shown. Examining the approximation of other regionally marked L1 Spanish intonational patterns, such as Puerto Rico pronominal questions (cf. Armstrong, 2010), may provide a chance to view acquisition of intonation from a different angle.

The primary focus of the current study was the production experiment detailed in Chapters 4 and 5. Although the objective of Chapter 6 was to account for why certain changes in intonation were observed, this was considered to be exploratory research with the understanding that further research would be needed in this area. Therefore, future researchers would do well to expand and refine the approach offered here. In particular, a more complete analysis of developing social networks would likely contribute significantly to an understanding of why intonation in an L2 improves or regresses over time, or if it develops at all (see Isabelli, 2001 and Isabelli-García, 2006 for examples of how social networks have been examined in a Spanish study abroad context).

Furthermore, affective variables, such as attitudes, were addressed here, but not in a principled way. Future methodologies should incorporate strategies to pinpoint variables such as self-confidence, motivation, language anxiety, and willingness to communicate, among others (see Young, 2014 for a recent overview of work done on affective factors in learner language).

Like any study, the strength of the conclusions presented here is tempered somewhat by certain aspects of the experimental design. For instance, as mentioned in Chapter 4, eliciting absolute interrogatives in informal speech contexts was often difficult. The participants produced many pronominal interrogatives during the spontaneous interview (which were not studied here), but absolute interrogatives were far more sporadic. Although the semi-spontaneous twenty questions game by definition managed to elicit examples of absolute interrogatives, they were often quite routinized expressions such as *¿Es un hombre?* ‘Is it a man?’ that were oftentimes said so frequently that they became reduced because both the speaker and the interlocutor were expecting them, thus impacting the intonation of those utterances and calling into question their reliability for experimental purposes. Though it is often difficult to predict what learner participants will provide in terms of speech data, especially in more spontaneous tasks, it is critical to consider new and varied strategies and their suitability for eliciting particular utterance types.

Similarly, the research design grouped the participants into learner dyads, thus providing only a partial look at their intonation. As they were only recorded when they were interacting with their fellow study abroad learners, it is presently unknown how they may or may not have modified their intonation when speaking with native BAS speakers.

Including native speaker interlocutors is an especially important next step, as this component may contribute to a richer understanding of SLA principles, as variationist perspectives on SLA have shown. For instance, Tarone & Liu (1995) have shown convincingly that the rate and route of acquisition of new second language linguistic forms are sensitive to the different interactional contexts in which learning takes place. These authors show via a longitudinal study that a young learner of English named Bob often produced much more complex syntactic structures when in conversation with the researcher than in conversation with peers or teachers. More complex ‘stage 5’ interrogative forms also emerge in interaction with the researcher before simpler ‘stage 3’ structures develop in other contexts, thus circumventing a supposed universal sequence of acquisition of interrogative forms. Tarone & Liu hypothesize that Bob pushes the limits of his interlanguage when he is with the researcher, thus making it more permeable to change. The researcher’s intensive usage of complex structures then created opportunities for Bob to begin using these forms himself, a situation which may serve as a relative analog for the immersion setting of the current study. Although Tarone & Liu’s study did not deal with study abroad, it highlights the importance of considering both the context of learning and the external social demands that are often placed upon the learners when interacting. Intonational forms produced in interaction with fellow L2 learner peers, then, may likely diverge considerably from forms produced in conversation with native-speaking interlocutors.

The current study is also limited by the participant pool, which restricts the ability to generalize the results detailed here. The data were elicited from a relatively homogenous group of 11 intermediate learners. Access to a larger study abroad participant pool would

allow for stronger conclusions and would facilitate an analysis of additional factors. For instance, it would be of considerable interest to investigate how linguistic proficiency level at the time of arrival in the host country impacts intonational attainment. It was seen here that, on the whole, intermediate learners evidence little change in Spanish intonation over time. Would advanced study abroad learners acquire native-like intonation more quickly and completely than their intermediate and beginning counterparts?

This study is also limited by the time constraints of the experimental period. The two recording sessions took place within one academic semester, once at the beginning, and once near the end of the semester. A third recording session carried out midway through the semester likely would have provided a clearer picture of when certain L2 intonational features began to emerge. Furthermore, a longer experimental period, such as a yearlong study abroad program, would allow for a more detailed examination of evolving intonation. Anecdotal evidence gleaned from learner comments suggest that several felt as if they were just beginning to feel comfortable linguistically by the end of the semester. Comments such as these point to a lost opportunity to study intonational development after the learners had established a certain degree of confidence and familiarity with their surroundings. Similarly, the participants were only recorded while abroad in Buenos Aires, thus permitting an examination of their linguistic development exclusively within that semester. Although longitudinal studies present significant challenges in terms of participant retention, future studies should strongly consider including a post-experimental follow-up study to determine if any intonational gains are retained when the students are no longer immersed in the target language and host culture.

As Trimble (2013) and Henriksen (2014) emphasize, the addition of a perception study could provide a fruitful avenue of research for the acquisition of Spanish intonation. This component would help to gauge the psycholinguistic reality of certain prosodic features such as pitch accents (L^*+H vs. $L+H^*$ vs. $L+>H^*$) or phrase accents in learner speech (Henriksen, 2014). In the context of this study, the inclusion of a perception test could also help to establish the nature of the relationship between perception and production of target-like intonational forms. In Chapter 5, it was speculated via Flege's (1987, 1995) Speech Learning Model that some of the learners approximate native-like interrogative norms more readily than declarative norms due to the former's relative perceptual saliency (i.e. that falling interrogative intonation is classified by learners as "new", rather than the "similar" classification applied to declarative intonation). Verification of this and similar hypotheses is likely only achievable through a focused perception-based protocol. Additionally, this research agenda could elucidate why learners choose to employ or avoid the intonational categories that they have perceived while abroad in the host culture. For instance, in one particularly interesting case, Amanda appears to have perceived H^*+L pitch accents as particularly *porteño*-esque, but fails to use them in the remainder of her speech data.

There exist a whole host of other possibilities that would surely contribute to establishing a more thorough picture of emerging L2 Spanish intonational proficiency. This study analyzed only broad focus declaratives and absolute interrogatives, but other sentence types, such as pronominal interrogatives, and pragmatic conditions, such as contrastive or narrow focus, deserve attention. At present, almost nothing is known about how learner intonation is modified in these sentence types and pragmatic conditions.

Intonational phrasing in L2 Spanish is also worthy of scrutiny. Nibert (2005), for instance, has demonstrated the importance of investigating intermediate phrase tones and their usefulness in linguistic disambiguation in L2 Spanish. It was shown here that by the end of the study abroad semester Eve's F0 often reached low phrase tones on certain key words, thus imbuing her Spanish with a unique melody that it did not possess at the beginning of the semester. Phrase tones were largely ignored in this study, but Eve's intonational development suggests that exploring how learners use these tones merits further attention.

Lastly, an intriguing line of research that remains almost wholly unstudied is the link between L2 intonational production and explicit instruction. Research into the instruction of segmental features has received the lion's share of attention and has also been shown to be quite beneficial to learners, so much so that Lord & Fionda (2014) state that the key question is no longer whether Spanish pronunciation instruction is worthwhile, but rather how to teach it or when to begin teaching it. For this reason, then, the time is right to consider these very questions as they pertain to intonational and other suprasegmental features. It will be recalled from Chapter 2 that Ramírez Verdugo (2006) has demonstrated the usefulness of this line of research. This study gauges the degree to which explicit prosodic instruction raises learner awareness to the role of intonational form and meaning in spoken discourse and whether native Spanish-speaking learners of English exposed to this training improve their intonational production over a 10-week experimental period. She finds that an experimental group, as judged by native English speakers, improved significantly more in global intonational production in the L2 than did a control group, which received no explicit instruction. Moreover, the experimental

group reported via questionnaires that they understood better the value of intonation for effectively communicating in the L2. The control group, on the other hand, appeared not to notice intonational features in English, as there was little change over the experimental period. A study of this kind geared towards intonational awareness in Spanish would be tremendously valuable, both for populations learning in at-home contexts as well as for study abroad or other immersion contexts, as the latter contexts have been shown to contribute significantly to acquisition (see Simões, 1996; Díaz-Campos, 2004 & 2006; Lord, 2006 & 2010).

7.4 Final remarks

Though the preceding section has shown how much work remains to be done in this burgeoning area, this dissertation has contributed an important step towards filling these gaps. The formal phonological analyses offered in Chapters 4 and 5, the first of their kind for learner language, provide a glimpse into the structure of L2 intonation as produced by American students of Spanish. This aspect of L2 speech has been understudied for far too long, especially given its importance in communicating messages. Henriksen (2014) recently addressed the almost total lack of understanding of prosodic categories for L2 learners of Spanish. Consequently, it is hoped that the descriptive power of the AM-based analyses given here serve as a preliminary contribution towards meeting this need and that it fuels future research that can add to a better understanding of these linguistic constructs.

Furthermore, the examination of social and psychological factors such as social networks and attitudes links extralinguistic factors with internal processes, hopefully

providing a more thorough account of L2 acquisition of intonation generally. The social component of the current dissertation was not as robustly defined as the more purely linguistically oriented objectives; as such, conclusions reached here remain tentative pending future research. However, it is hoped that the findings presented here can spur interest in others who can develop and refine approaches that will result in a better understanding of how external factors can and do interact with internal processes to impact L2 intonation and other prosodic features.

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Appendix A: Language Background Questionnaire—L2 Spanish learners

Please complete the following questionnaire by providing details related to the languages you speak/study.

A. Personal information

1. Name: _____
2. Telephone: _____
3. Sex: Male Female
4. Date of birth: _____
5. Place of birth/Hometown: _____
6. Place of residence (in U.S.) _____
7. How long have you lived here (see #6)? _____
8. What university do you attend? _____

B. First language information

1. What language(s) do you speak natively? _____
2. What language(s) did you speak growing up at home? _____
3. What are the native language(s) of your mother and father?
Mother: _____
Father: _____
4. Where are your mother and father from?
Mother: _____
Father: _____

C. Second language information

1. What second language(s)—other than Spanish—do you speak? _____

2. How old were you when you began to learn and use Spanish?
-

3. Where did you learn Spanish (i.e. in high school, college, Peace Corps, etc.)?
-

4. Prior to this experience, have you studied abroad in another country? If so, where?
-

5. Have you ever traveled to another Spanish-speaking country?
-

If so, which countries?

How many times?

For what purpose?

How long were you there?

6. Are you a Spanish major or minor? If so, which one?
-

7. Are all of your classes taught in Spanish? If not, please indicate how many are taught in Spanish.
-

8. How often (in hours per day) do you speak Spanish outside of the classroom setting?
-

9. In what contexts do you speak Spanish outside of the classroom?
-

Thank you for completing this survey!

Appendix B: Language background questionnaire—L1 Buenos Aires Spanish-speaking control group (adapted from Henriksen, 2010)

A. Datos personales

1. Nombre: _____
2. Número de teléfono: _____
3. Sexo: Hombre Mujer
4. Fecha de nacimiento: _____
5. Lugar de nacimiento: _____
6. Lugar de residencia actual: _____
7. ¿Cuánto tiempo lleva viviendo aquí? _____
8. Profesión: _____
9. Nivel de escolaridad: Primaria Secundaria Universidad

B. Primera(s) Lengua(s)

1. ¿Cuál es (son) su(s) lengua(s) maternal(es)? _____
2. ¿Aprendió su(s) lengua(s) maternal(es) de nacimiento? Sí No
3. Si respondió “No”, explíquelo por favor: _____
4. ¿Qué lengua(s) hablaba en casa de niño/a? _____
5. ¿Cuál es (son) la(s) lengua(s) maternal(es) de su madre y padre?
 - a. Madre: _____
 - b. Padre: _____
6. ¿De dónde son sus padres?
 - a. Madre: _____
 - b. Padre: _____

C. Segunda(s) Lengua(s)

Si habla otras lenguas además de la primera, responda a lo que sigue en relación a su segunda o tercera lengua.

1. ¿Habla otra lengua además del castellano? ¿Cuál(es)?

 2. ¿Cuántos años tenía cuando empezó a aprender esta(s) lengua(s)?

 3. ¿Dónde empezó a aprender esta(s) lengua(s)?

 4. ¿Ha pasado tiempo en alguna región donde esta lengua sea la lengua nativa?

- ¿Dónde? _____

¿Por cuánto tiempo? _____

5. Aproximadamente, ¿cuántas horas a la semana habla esta(s) lengua(s)?

6. ¿En qué contextos habla esta(s) lengua(s) (escuela, trabajo, casa, con amigos, etc.)?

7. Actualmente, ¿está matriculado/a en algún curso de esta(s) lengua(s)?

¿Dónde?

¡Gracias por su participación!

Appendix C: Temas para la conversación entre estudiantes

- i. De dónde eres/Dónde vives (en Estados Unidos)
 - a. Lo bueno vs. lo malo de tu ciudad/pueblo natal
 - b. Compañeros/as de cuarto
- ii. Hobbies/actividades en el tiempo libre
 - a. Música favorita/instrumentos
 - b. Programas de televisión favoritos/¿Por qué?
 - c. Películas favoritas/ ¿Por qué?
 - d. Deportes/Equipos favoritos/Juegos Olímpicos en Londres 2012
 - e. Arte/Artistas
 - f. Videojuegos
 - g. Libros favoritos
- iii. Carrera/especialización en la Universidad
 - a. Clases favoritas/menos preferidas—¿por qué?
 - b. Planes después de graduarse
- iv. Trabajos (en el pasado)
 - a. Obligaciones
 - b. Lo bueno vs. lo malo del trabajo
- v. Familia
 - a. Nombres, edades
 - b. Actividades/preferencias de ellos
- vi. Comida
 - a. Comida favorita/platos favoritos
 - b. Restaurantes favoritos
 - c. Cómo preparar tu plato favorito
- vii. Viajes
 - a. Visitas a otros países/ciudades en el mundo
 - i. Dónde, cuándo, por cuánto tiempo
 - ii. Lo que hiciste en _____.
 - iii. Comparación con Buenos Aires
 - b. Describe una vacación memorable
- viii. Buenos Aires
 - a. ¿Por qué Buenos Aires?
 - b. Impresiones de ciudad/argentinos/español argentino
 - c. Lo que quieras aprender sobre la cultura
 - d. Semejanzas/diferencias – Buenos Aires vs. Estados Unidos
 - e. Preocupaciones/inquietudes

Appendix D: Information gap task

Vos tenés una lista de 5 celebridades; tu compañero también tiene una lista de celebridades pero se compone de individuos diferentes. Estas personas famosas son cantantes, actores de Hollywood y deportistas conocidos, entre otras posibilidades. Necesitás adivinar las identidades de las celebridades en la lista de tu compañero/a haciéndole preguntas de “sí” o “no”. Él o ella te responderá afirmativa o negativamente y después te dará una pista en la forma de una afirmación. Después de haber adivinado correctamente la identidad de una persona, vos responderás a las preguntas de tu compañero/a. Túrnense hasta que todas las personas hayan sido identificadas. Seguí el modelo:

MODELO: Persona A: ¿Es una mujer?
Persona B: No. Es un hombre.
Persona A: ¿Es un cantante famoso?
Persona B: No. Es un jugador de fútbol.
Persona A:

Lista 1:

1. Madonna
2. Barack Obama
3. Oprah Winfrey
4. Brad Pitt
5. LeBron James

Lista 2:

1. Jennifer López
2. Lionel Messi
3. Angelina Jolie
4. Michelle Obama
5. Lady Gaga

Appendix E: Formal reading task target sentences.

Absolute interrogatives:

Group 1—0 unstressed syllables at the end of the utterance

- a. *¿Llamó Mar?*
‘Did Mar call?’
- b. *¿Llamaba Mar?*
‘Was Mar calling?’
- c. *¿Llama Lamar?*
‘Is Lamar calling?’
- d. *¿Llamábamos a Mar?*
‘Were we calling Mar?’
- e. *¿Llamábamos a Lamar?*
‘Were we calling Lamar?’
- f. *¿Llamábamos para Lamar?*
‘Were we calling for Lamar?’

Group 2—1 unstressed syllable at the end of the utterance

- a. *¿Lo halagó Lola?*
‘Did Lola flatter him?’
- b. *¿Lo halagaba Lola?*
‘Was Lola flattering him?’
- c. *¿Halagaban a Lola?*
‘Were they flattering Lola?’
- d. *¿Halagábamos a Lola?*
‘Were we flattering Lola?’
- e. *¿Lo halagábamos para Lola?*
‘Were we flattering him for Lola?’
- f. *¿Lo halagaba para lo de Lola?*
‘Was I praising him for the thing with Lola?’

Group 3—2 unstressed syllables at the end of the utterance

- a. *¿Alabó Málaga?*
‘Did s/he praise Malaga?’
- b. *¿Alaba Málaga?*
‘Is s/he praising Malaga?’
- c. *¿Alabábamos Málaga?*
‘Were we praising Malaga?’
- d. *¿Alaba lo de Málaga?*
‘Is s/he praising the thing with Malaga?’

- e. Alabábamos lo de Málaga?
‘Were we praising the thing with Malaga?’
- f. Se alaba para lo de Málaga?
‘Is s/he being praised for the thing with Malaga?’

Group 4—three content words

- a. Le da números pertinentes?
‘Is s/he giving him/her pertinent numbers?’
- b. Le daba números pertinentes?
‘Was s/he giving him/her pertinent numbers?’
- c. Le dababan el número pertinente?
‘Were they giving him/her the pertinent number?’
- d. Le dábamos el número pertinente?
‘Were we giving him/her the pertinent number?’
- e. Se lo daba para el número pertinente?
‘Was s/he giving it to him/her for the pertinent number?’
- f. Se lo dábamos para el número pertinente?
‘Were we giving it to him/her for the pertinent number?’

Broad focus declaratives:

Group 1—0 unstressed syllables at the end of the utterance

- a. Llamó Mar.
‘Mar called.’
- b. Llamaba Mar.
‘Mar was calling.’
- c. Llama Lamar.
‘Lamar is calling.’
- d. Llamábamos a Mar.
‘We were calling Mar.’
- e. Llamábamos a Lamar.
‘We were calling Lamar.’
- f. Llamábamos para Lamar.
‘We were calling for Lamar.’

Group 2—1 unstressed syllable at the end of the utterance

- a. Lo halagó Lola.
‘Lola flattered him.’
- b. Lo halagaba Lola.
‘Lola was flattering him.’
- c. Halagaban a Lola.

- ‘They were flattering Lola.’
- d. Halagábamos a Lola.
‘We were flattering Lola.’
 - e. Lo halagábamos para Lola.
‘We were flattering him for Lola.’
 - f. Lo halagaba para lo de Lola.
‘I was praising him for the thing with Lola.’

Group 3—2 unstressed syllables at the end of the utterance

- a. Alabó Málaga.
‘She praised Malaga.’
- b. Alaba Málaga.
‘She praises Malaga.’
- c. Alabábamos Málaga.
‘We were praising Malaga.’
- d. Alaba lo de Málaga.
‘She praises the thing with Malaga.’
- e. Alabábamos lo de Málaga.
‘We were praising the thing with Malaga.’
- f. Se alaba para lo de Málaga.
‘She is praised for the thing with Malaga.’

Group 4—3 content words

- a. Le da números pertinentes.
‘S/he is giving him/her pertinent numbers.’
- b. Le daba números pertinentes.
‘S/he was giving him/her pertinent numbers.’
- c. Le daban el número pertinente.
‘They were giving him/her the pertinent number.’
- d. Le dábamos el número pertinente.
‘We were giving him/her the pertinent number.’
- e. Se lo daba para el número pertinente.
‘S/he was giving it to him/her for the pertinent number.’
- f. Se lo dábamos para el número pertinente.
‘We were giving it to him/her for the pertinent number.’

Appendix F: Social contact while in Buenos Aires

Please list the primary individuals with whom you came into contact while in Buenos Aires. Indicate the type of relationship you had with this person, where he/she is from, the language used when interacting with him/her, and how frequently you interacted with him/her.

Contact (name)	Relationship	Origin	Language used	Frequency of interaction
1.	<input type="radio"/> Homestay <input type="radio"/> Friend <input type="radio"/> Romantic partner <input type="radio"/> Professor/Instructor <input type="radio"/> Neighbor <input type="radio"/> Club/organization <input type="radio"/> Co-worker <input type="radio"/> Other (specify) _____	<input type="radio"/> Argentina (Buenos Aires) <input type="radio"/> Other Spanish-speaker (specify) <input type="radio"/> American <input type="radio"/> Other English-speaker <input type="radio"/> Other (specify)	<input type="radio"/> English <input type="radio"/> Spanish <input type="radio"/> Both <input type="radio"/> Other (specify)	<input type="radio"/> Daily <input type="radio"/> 2-3 times <input type="radio"/> a week <input type="radio"/> Weekly <input type="radio"/> Weekends <input type="radio"/> Sporadic (2-3 times per month) <input type="radio"/> Rarely (1 to 2 times)
2.	<input type="radio"/> Homestay <input type="radio"/> Friend <input type="radio"/> Romantic partner <input type="radio"/> Professor/Instructor <input type="radio"/> Neighbor <input type="radio"/> Club/organization <input type="radio"/> Co-worker <input type="radio"/> Other (specify) _____	<input type="radio"/> Argentina (Buenos Aires) <input type="radio"/> Other Spanish-speaker (specify) <input type="radio"/> American <input type="radio"/> Other English-speaker <input type="radio"/> Other (specify)	<input type="radio"/> English <input type="radio"/> Spanish <input type="radio"/> Both <input type="radio"/> Other (specify)	<input type="radio"/> Daily <input type="radio"/> 2-3 times <input type="radio"/> a week <input type="radio"/> Weekly <input type="radio"/> Weekends <input type="radio"/> Sporadic (2-3 times per month) <input type="radio"/> Rarely (1 to 2 times)

- 1. When speaking Spanish, do you attempt to sound like anyone on this list in particular? Is there anyone on this list that forms a native-speaking model for your Spanish?**

Appendix G: Adjustment to Buenos Aires (“porteño”) Spanish and culture

In this survey, please answer some questions about your stay in Buenos Aires. For each question, please place an ‘X’ under the column that best reflects your feelings.

	1- not at all	2 - some	3 - a lot
1. How well have you adjusted to “porteño” culture?			
2. To what extent is your attitude toward “porteños” favorable?			
3. How much do you attempt to interact with “porteños”?			
4. How well do you get along with your “porteño” homestay members/neighbors/students, etc.?			
5. How much do you attempt to identify with “porteño” culture?			
6. How much do you try to use Spanish?			
7. How well are you accepted by “porteños”?			
8. How strong is your desire to use Spanish?			
9. How much do you enjoy being alone with “porteños” (with no other English speakers/Americans)?			
10. How strong is your desire to stay in Buenos Aires (if it were possible)?			

Please respond to the following questions (in English) as completely as possible.

1. Please compare and contrast your home culture with that of Buenos Aires.
Consider the following points of comparison:
 - a. Customs/common practices of members of both cultures:
 - b. The typical personalities of members of both cultures:
 - c. Beliefs/outlooks on life of members of both cultures:
2. Please detail any experiences/events that made you happy or uncomfortable to be in Buenos Aires. Why did you feel this way? How did you react to these situations?
3. Please describe your perspectives on the host culture, “porteños” themselves, and the overall experience of studying and living in Buenos Aires.