

# The Acquisition of the Phrase Accent by Intermediate and Advanced Adult Learners of Spanish as a Second Language

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## 1. Introduction

The acquisition of intonation by adult learners is one of the least explored areas of second language acquisition (SLA) research. While some studies have been carried out on the L2 acquisition of French intonation (cf. Konopczynski 1998, Ramsey 1997), few studies seem to exist on the acquisition of Spanish intonation by adult learners. Elliott (2003), for example, a recent review of the literature on the SLA of Spanish phonology, makes no mention of empirical research on the acquisition of intonation, although there have been various studies on the acquisition of individual Spanish sounds (e.g., Elliott 1997, González-Bueno 1997, and Zampini 1994, 1998a, 1998b, to name a few).<sup>1</sup> This paucity of SLA research on Spanish intonation is in part due to the less transparent nature of the structure and meaning of intonation in general (as opposed to the structure of the segment or the syllable, for example). Even for the trained linguist, a comprehensive analysis of the contrastive elements or tones that comprise the various intonation patterns of a language is a challenging endeavor. Nevertheless, over the past decade significant progress in the understanding of the phonology of Spanish intonation has been made within the autosegmental-metrical (AM) approach to intonation, which was developed in works such as Pierrehumbert (1980), Beckman and Pierrehumbert (1986), Pierrehumbert and Beckman (1988), and Pierrehumbert and Hirschberg (1990). Some studies on Spanish tonology within the AM framework are Sosa (1991, 1999), Prieto et al. (1995, 1996), Prieto (1998), Nibert (1999, 2000), Hualde (2000), and Face (2001, 2002a, 2002b). As the inventory of underlying tonal categories in Spanish becomes better understood, substantial progress in SLA research on Spanish intonation can follow.

The present study represents a small step in this direction. Specifically, it is the application of the work outlined in Nibert (1999, 2000) to the SLA context. The two aforementioned studies present experimental evidence for two hierarchical levels of phonological phrasing beyond the level of the prosodic word in Spanish intonation, namely, the intermediate phrase and the intonation phrase, constituents which likewise underlie English intonation (cf. Beckman and Pierrehumbert 1986, Pierrehumbert and Beckman 1988). An intermediate phrase minimally contains one pitch accent T\* and is delimited by a phrase accent T- at its right edge (i.e., [T\* T-]). An intonation phrase minimally contains one intermediate phrase and is marked by a boundary tone T% at its right edge (i.e., [[T\* T-] T%]). In Spanish, these two distinct levels of phrasing are exploited to create meaning contrasts. For example, the utterance [[*lilas y lirios amarillos*]-L-]L%, realized with one intermediate phrase, conveys the meaning ‘yellow lilies and irises,’ where both flower types are yellow. In contrast, the utterance [[*lilas*]-H- [*y lirios amarillos*]-L-]L%, with two intermediate phrases, means ‘lilies and yellow irises,’

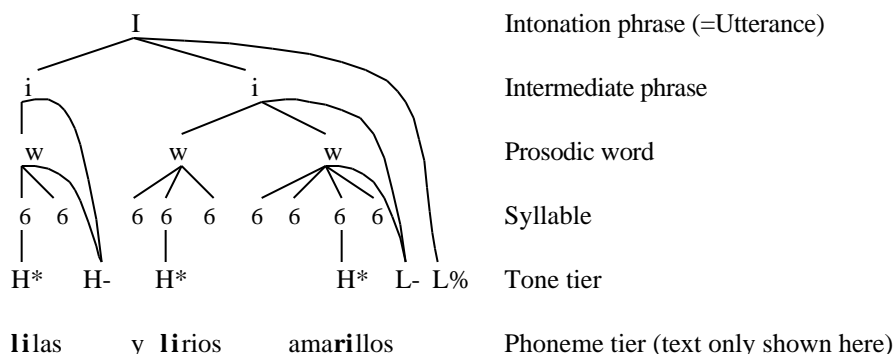
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<sup>1</sup> In general, theories of the acquisition of L2 phonology address the level of the segment (e.g., the equivalence classification hypothesis explored in Flege 1987) or the assignment of stress (e.g., Dresher and Kaye 1990, especially as regards the L1 acquisition of this domain) and do not incorporate intonation (refer, for example, to the phonological parameters of Universal Grammar (UG) outlined in Ayoun 2003:73-5).

where only the irises are specified for color. Figure (1) illustrates within the AM framework the intonation structure underlying this second reading, where elements on the tone tier are linked autosegmentally to constituents in the prosodic hierarchy.

- (1) Intonation structure: associations between tonal elements and constituents in the prosodic hierarchy



Given the non-transparent nature of intonation, coupled with the fact that this aspect of Spanish phonology is rarely taught overtly in the second language classroom (at least in the United States, within the approach of Communicative Language Teaching), the questions of if and how well non-native speakers of Spanish interpret meaning contrasts created through intermediate phrasing choices in the language came to mind. More specifically, the two research questions explored in this study are: 1) do intermediate and advanced learners of Spanish as a second language perceive disambiguating H-phrase accents in intonation contours?; and 2) employing the results of Nibert (1999, 2000) as a reference point, do these learners assign the same meanings to contours as those assigned by native Spanish listeners?

## 2. Test design and methodology

The intonation contours examined in Nibert (1999, 2000) originate from three male native speakers of Peninsular Spanish. Specifically, the data set consists of groups of minimal pairs of F0 contours, the term *minimal pair* being employed similarly as in segmental phonology. The F0 contours of a group represent different intonation renditions of a single text. Each F0 contour in a group differs minimally, i.e., in *one way* and *one way only*, from at least one other contour in the same group. Thus, a group is a series of minimal pairs of F0 contours of the same segmental make-up. For ease of reference, such a group will be referred to as a *minimal group*. An example of a minimal group is presented in (2).

- (2) An example of a minimal group, using the text *lilas y lirios amarillos*

Tonal structure of the intonation contours:	Possible meanings:
a. [[lilas] [y lirios amarillos]] H- L- L%	→ A. 'lilacs and yellow irises'
b. [[lilas y lirios] [amarillos]] H- L- L%	→ B. 'yellow lilacs and yellow irises'
c. [[lilas y lirios amarillos]] L- L%	→ A or B. No disambiguating medial H- phrase accent is present.

Each text used to elicit the contours had the potential to generate a number of intonation renditions by containing a syntactic and/or semantic ambiguity that might be clarified by intermediate phrasing choices. Syntactic ambiguities arose from the conjunction *y* ('and') and the preposition *de*, which in Spanish can mean either 'of' or 'from.' Semantic ambiguities were related to the information structure and the overall function of the text. Disambiguation in the contours occurred through the three native speakers' intermediate phrasing choices, which varied in a number of ways: 1) by the absence vs. the presence of a phrase accent; 2) by the position of the phrase accent in the F0 contour; 3) by the presence of H- vs. L-; and 4) in the case of an intermediate phrase in intonation phrase-final position, by the presence of H- or L- in combination with each boundary tone H% or L%. These first two ways are illustrated in the minimal group just presented in (2).

The perception test used to explore the meanings assigned to these contours included five minimal groups. These groups involved a total of nineteen utterances, taken from all three native speakers. Test items were created by pairing each utterance with each of the proposed possible meanings in its minimal group. For example, the minimal group shown in (2) includes three F0 contours or tunes (labeled 'a', 'b', and 'c' for ease of reference) potentially corresponding to one or both of two meanings (labeled A and B). By pairing each utterance with each meaning, six utterance-meaning correspondences were generated: 1) tune 'a'-meaning A, 2) tune 'a'-meaning B, 3) tune 'b'-meaning A, 4) tune 'b'-meaning B, 5) tune 'c'-meaning A, and 6) tune 'c'-meaning B. By making such pairings for all five minimal groups of utterances, a total of 67 correspondences were generated. Each constituted an item on the perception test. The order of the test items was randomized. In this order, the appropriate utterances were transferred from computer to cassette tape. The use of the cassette tape assured for equal, consistent conditions across test sessions.

The response booklet for the perception test consisted of three parts: 1) a language background questionnaire, 2) test instructions and four practice items, and 3) the 67 test items. These three parts together required approximately thirty-five minutes to complete. Each individual practice and test item required twenty seconds and was structured as follows. After the item number prompt was heard on the cassette tape, five seconds of silence elapsed to allow subjects to read a meaning written in the response booklet. An example of how this information was presented appears in (3). This sample test item is number 38 and corresponds to the tune 'a'-meaning A correspondence from the minimal group presented earlier in (2).

(3) An example of a perception test item in the response booklet

38. This utterance refers to two types of flowers: lilacs (=lilas) of some unknown color, and yellow irises (=lirios).

yes

no

After the aforementioned five seconds of silence, the corresponding utterance (e.g., tune 'a' in the case of item number 38) was heard a first time, followed by a few seconds of silence, and then a second time. Ten seconds of silence then followed to allow subjects to circle one of two possible responses: 'yes' if the meaning given was a possible interpretation of the utterance heard, or 'no' if it was not a possible interpretation of the utterance heard. Subjects were asked to respond to all items (i.e., to not leave any blank).

In Nibert (1999, 2000), the subjects for this perception test were thirty-three native speakers of Peninsular Spanish. The results clearly indicate that the phrase accent is used and perceived by native speakers of Spanish in order to clarify the meaning of utterances with potential syntactic or semantic

ambiguities.<sup>2</sup> The results obtained from this group of thirty-three native speakers serve as the reference point for assessing the results obtained in the present study.

Subjects in the present study were two different groups of adult learners of Spanish as a second language with English as a first language. The perception test was administered to them following the same procedures just described. The first non-native group consisted of 18 advanced-level learners while the second group consisted of 37 intermediate-level learners. The advanced level is defined as the ability to understand and maintain a conversation in Spanish with near-native proficiency, while the intermediate level is defined as the ability to understand and maintain a conversation in Spanish with good proficiency. The advanced learners ranged in age from 20 to 44; however, 61% of them were between the ages of 20 and 24. The intermediates ranged in age from 18 to 27, but 87% of them were between the ages of 19 and 22. Furthermore, as regards the number of years of formal study of the Spanish language, the advanced learners showed a range of 1 to 16.5 years; however, 78% of them clustered around the more narrow span of 5 to 10.5 years. In the intermediate group, the learners had formally studied the Spanish language for 2 to 11 years; however, 76% of them clustered around the more narrow span of 5 to 9 years, not unlike the advanced group. The aspect that most distinguishes the advanced group from the intermediate one is time spent abroad in a Spanish-speaking country. All subjects in the advanced group spent time abroad, ranging from 1 month to 2 years, with 17% having spent between 30 and 45 days, 39% having spent between 3 and 6 months, 28% having spent over 6 and up to 12 months, and 17% having spent over a year and up to 2 years. In the intermediate group, time abroad ranged from 0 days to 6 months, with 30% having spent no time at all, 35% having spent 2 to 30 days for tourism, and the remaining 35% having spent between 3 and 6 months.

### 3. Results and discussion

The prediction (as regards the perception test design) was for all subjects to respond either ‘yes’ or ‘no’ to each test item. A ‘yes’ response indicated that the meaning given was a possible interpretation of the utterance heard, and a ‘no’ response indicated that it was not. The actual number and percentage of ‘yes’ responses obtained for each item were recorded in the cells of data tables. A separate table was created for each minimal group, and each table cell represented one item or utterance-meaning correspondence from the perception test. A key to the information given in each cell is provided in (4).

#### (4) Key to cell data

Symbols:	
y=X	<-- number of yes responses
%	<-- percentage of the responses that were yes

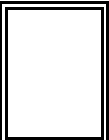
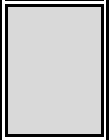
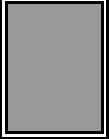
Furthermore, each cell is coded by a particular shade to evaluate categorically the subjects’ responses to the correspondence. Three categories were established, indicated by a light, medium, or dark shading. Based on our samples, if a correspondence was accepted by subjects 33 1/3% or less of the time, it was given a light shading. If a correspondence was accepted by subjects more than 33 1/3% and up to 66 2/3% of the time, it was given a medium shading. If a correspondence was accepted by subjects more than 66 2/3% of the time, it was given a dark shading.

In the dark category, the percentage of subjects who responded ‘yes’ is significantly *greater* (statistically) than 50% (=chance, or randomness), at a p .05. In other words, in this category, there

<sup>2</sup> As an aside, it should be noted that although Face (2002a), in opposition to Nibert (2000) and Hualde (2000), argues against the use of a low phrase accent (L-) to account for focus in declarative F0 contours in Spanish, the use of a high phrase accent (H-) in utterance-medial position to convey other meanings is not examined, whereas this context is a central focus in Nibert (1999, 2000).

is only a 5% chance that, using an entire population-- as our data is based only on a small sample of them--, the 'yes' responses would be *only 50% or less*, and not the higher percentage actually obtained from the sample. Similarly, in the light category, the percentage of subjects who responded 'yes' is significantly *less* (statistically) than 50%, at a  $p < .05$ . In other words, there is only a 5% chance that, using an entire population, the 'yes' responses would result to be *50% or more*, and not the lower percentage actually obtained from the sample. While we can draw strong conclusions about the acceptability of a correspondence marked dark or light (=clearly *acceptable* or *not acceptable*, respectively), we cannot be sure about the acceptability of one with medium shading, since the 'yes' responses were too close to 50%, or chance, to confidently say. Thus, the phrase accent variants are clearly crucial to meaning in the cases marked light or dark. The above information and the shadings used are summarized in (5).

(5) Key to cell shading

Shades:	If the percentage of <i>yes</i> responses falls within the range of:
	<-- 33 1/3% (~33%) or less: is a strong <i>no</i> to a correspondence; % who responded <i>yes</i> is significantly <i>less</i> (statistically) than 50% (=chance), at a $p < .05$
	<-- more than 33 1/3% up to 66 2/3% (~67%): is a weak response to a correspondence; % who responded <i>yes</i> is too close to 50% for a confident reading
	<-- more than 66 2/3% (~67%): is a strong <i>yes</i> to a correspondence; % who responded <i>yes</i> is significantly <i>greater</i> (statistically) than 50%, at a $p < .05$

The results from two of the five minimal groups now will be presented and discussed. The experimental design for the first minimal group was shown earlier in (2) and is repeated below in (6) for ease of reference.

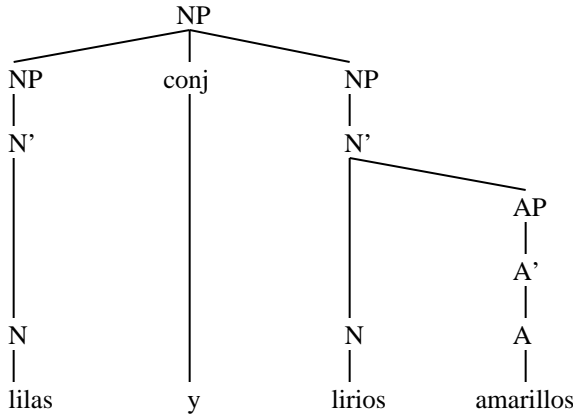
(6) Minimal group 1: *lilas y lirios amarillos* (literally, 'lilies and irises yellow')

Tonal structure of the intonation contours:	Possible meanings:
a. [[lilas] [y lirios amarillos]] H-                      L- L%	→ A. 'lilacs and yellow irises'
b. [[lilas y lirios] [amarillos]] H-                      L- L%	→ B. 'yellow lilacs and yellow irises'
c. [[lilas y lirios amarillos]] L- L%	→ A or B. No disambiguating medial H- phrase accent is present.

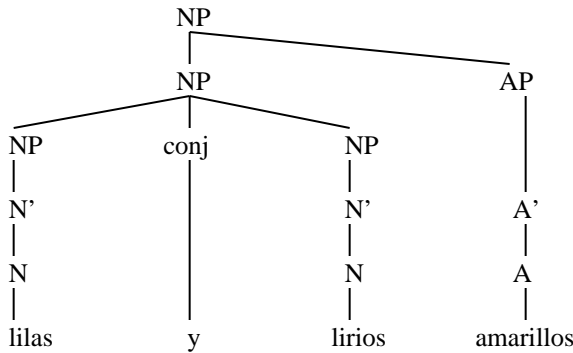
The text *lilas y lirios amarillos* is syntactically ambiguous because of the conjunction *y*, which allows the scope of modification of the adjective phrase (AP) *amarillos* to extend beyond the adjacent noun to the first one as well. Two possible interpretations, or readings, are created from this ambiguity. In reading A, the AP *amarillos* refers to only the adjacent noun *lirios*; in other words, it

has a narrow scope of modification. In reading B, *amarillos* refers to both noun phrases (NPs) or flower types, and the AP has a wide scope of modification. The syntactic tree configurations corresponding to these possible meanings are given in (7). In these and subsequent syntactic figures, we follow standard assumptions about phrase structure held within X-bar theory (where X''= XP), as presented, for example, in Haegeman (1991).

(7) a. Meaning A: *amarillos*= narrow-scoped



b. Meaning B: *amarillos*= wide-scoped



Three different intonation patterns, or tunes, mapped onto the text were tested for meaning correspondence. Tune 'a' contains a H- phrase accent after *lilas* that sets the word off from the remainder of the utterance. Native Spanish speakers assign only reading A to this tune, interpreting that *amarillos* refers to *lirios* only. Tune 'b' has a H- after the word *lirios* that sets *amarillos* off from both nouns preceding it. Native speakers accept only meaning B for this tune. Tune 'c' contains no utterance-medial phrase accent to disambiguate its meaning, yet native speakers assign it only one reading: meaning B. As Nibert (1999, 2000) explains in detail to account for this result, in an absence of tonal information indicating otherwise, a default meaning creating symmetry is assigned to conjunct structures. In the case of tune 'c', the wide-scoped meaning B is assigned exclusively because, of the two possible meanings, it is the only one where the coordinated NPs are modified in a symmetrical or equal fashion by the AP *amarillos*.

The native speaker results just discussed, along with the results for the two groups of L2 learners, are presented in the tables in (8) below. In these and subsequent tables, the possible meanings considered appear in columns and are labeled with capital letters. The tunes examined appear in rows and are labeled with small case letters. The intermediate and intonation phrase structure posited for each tune also is indicated, with w= a prosodic word, H= a high tone, and L= a low tone. The tone appearing outside of all bracketing is the boundary tone (T%) marking the right edge of the intonation

phrase, while all other tones are phrase accents (T-) marking the right edges of intermediate phrases. This labeling makes it easy to see how the placement of the phrase accent (i.e., the grouping of prosodic words into intermediate phrases) and the use of H- vs. L- vary over each tune.

The first table in (8a) shows the previously discussed responses of the native speakers, the second table (8b) shows the responses of the advanced L2 learners, and the third table (8c) presents the responses of the intermediate L2 learners.

(8) Results for minimal group 1: *lilas y lirios amarillos* (literally, ‘lilies and irises yellow’)

a. Results obtained from 33 native speakers of Peninsular Spanish

		M E A N I N G	
		A irises= yellow	B both flower types= yellow
T U N E	a [[w] <sub>H-</sub> [w w] <sub>L-</sub> ] <sub>L</sub> %	y=31 <b>94%</b>	y=3 9%
	b [[w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=8 24%	y=32 <b>97%</b>
	c [[w w w] <sub>L-</sub> ] <sub>L</sub> %	y=8 24%	y=31 <b>94%</b>

=6

b. Results obtained from 18 advanced-level learners of Spanish as a second language

		M E A N I N G	
		A irises= yellow	B both flower types= yellow
T U N E	a [[w] <sub>H-</sub> [w w] <sub>L-</sub> ] <sub>L</sub> %	y=16 <b>89%</b>	y=4 22%
	b [[w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=7 39%	y=18 <b>100%</b>
	c [[w w w] <sub>L-</sub> ] <sub>L</sub> %	y=3 17%	y=13 <b>72%</b>

=6

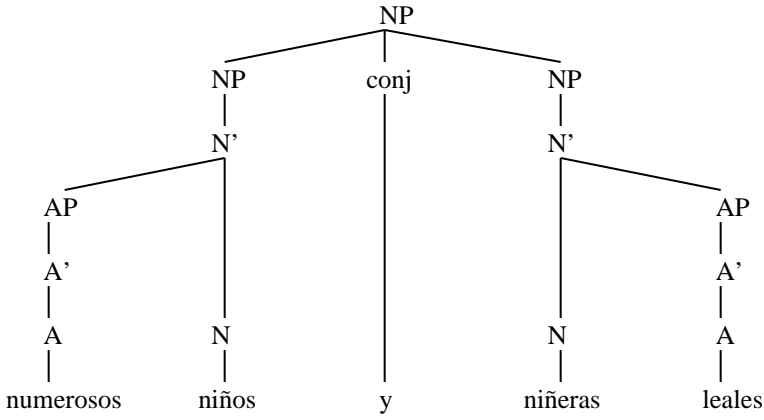
c. Results obtained from 37 intermediate-level learners of Spanish as a second language

		M E A N I N G	
		A irises= yellow	B both flower types= yellow
T U N E	a [[w] <sub>H-</sub> [w w] <sub>L-</sub> ] <sub>L</sub> %	y=34 <b>92%</b>	y=5 14%
	b [[w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=11 30%	y=36 <b>97%</b>
	c [[w w w] <sub>L-</sub> ] <sub>L</sub> %	y=8 22%	y=35 <b>95%</b>

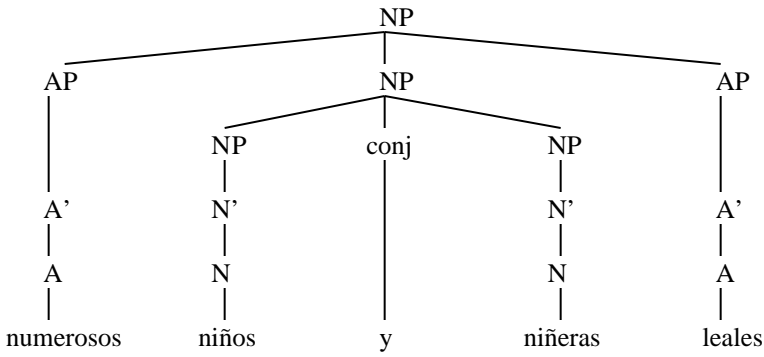
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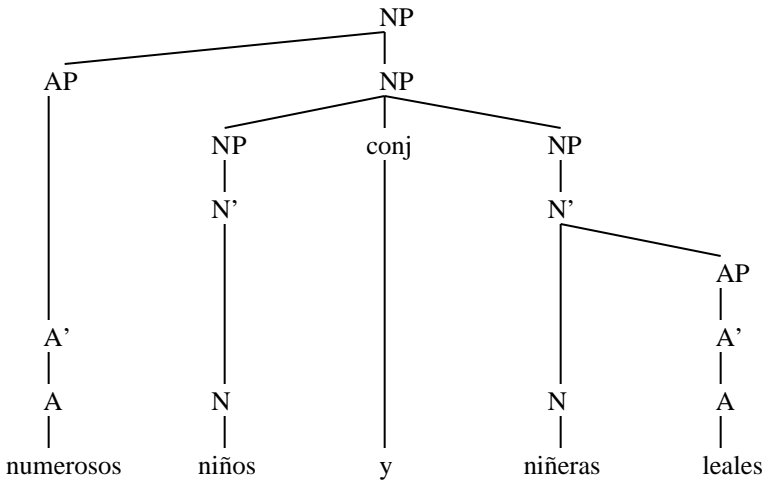
(10) a. Meaning A: *numerosos*= narrow-scoped; *leales*= narrow-scoped



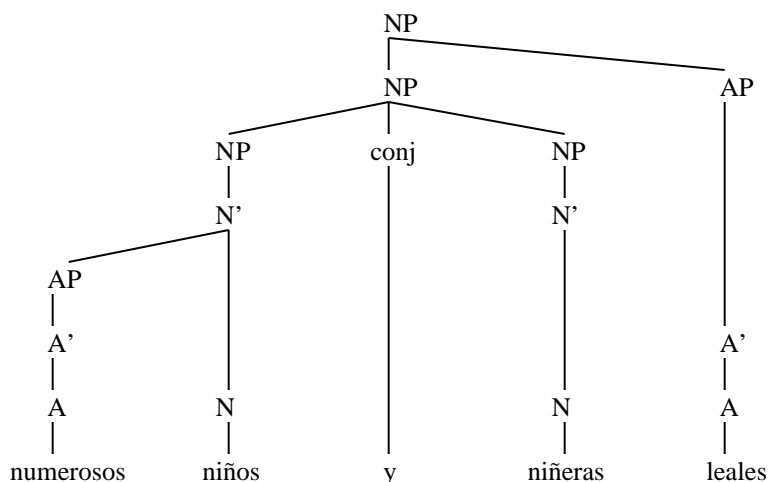
b. Meaning B: *numerosos*= wide-scoped; *leales*= wide-scoped



c. Meaning C: *numerosos*= wide-scoped; *leales*= narrow-scoped



d. Meaning D: *numerosos*= narrow-scoped; *leales*= wide-scoped



Five different intonation patterns were tested for correspondence with these meanings. Tune ‘a’ contains a H- phrase accent after the first two words, *numerosos niños*. Native Spanish speakers assign only meaning A to this tune, giving each AP a narrow scope of modification. Tune ‘b’ has two non-final phrase accents, a H- after *numerosos* and a H- after *niñas*. These tones separate the nouns from their adjacent adjectives, giving both APs a wide scope of modification. Indeed, native speakers accepted only meaning B for this tune. Tune ‘c’ contains a H- only after the adjective *numerosos*, and tune ‘d’ has one only after *niñas*. Assuming a preference for symmetry in the modification of conjuncts, the native speaker results indicate that the presence of a H- near only one AP suffices to widen the scope of modification of the other AP as well. In other words, the perception of one H- between an N and its adjacent AP is enough evidence to discard meaning A and opt for the only other symmetrical possibility, meaning B. Native speakers give strong acceptance only to meaning B for both tunes ‘c’ and ‘d.’ Meanings C and D are not preferred since they both involve asymmetrically modified conjunct structures. Lastly, for tune ‘e,’ with no utterance-medial phrase accent, native speakers tend toward an acceptance of both symmetrical meanings A and B. While the acceptance rates obtained are not in the dark range, their position high in the medium range shows a tendency much more in the direction of possible than not possible. This medium shading suggests that native listeners extract meanings A and B less easily when an intonation phrase does not contain more than one intermediate phrase. Summarizing the native speaker results, an utterance-medial H- phrase accent disambiguates the syntax of conjunction where: 1) a marked, asymmetrically modified conjunct structure is involved, as in minimal group 1’s tune ‘a,’ or 2) more than one symmetrically modified conjunct structure is involved, and thus clarification is needed, as in all tunes for minimal group 2.

The native speaker results for minimal group 2 are displayed in (11a) below, while tables (11b-c) present the results for the two groups of L2 learners.

(11) Results for minimal group 2: *numerosos niños y niñeras leales* (literally, ‘numerous children and nursemaids loyal’)

a. Results obtained from 33 native speakers of Peninsular Spanish

		M E A N I N G			
		A num.= child.; loyal= nurse.	B num.= both; loyal= both	C num.= both; loyal= nurse.	D num.= child.; loyal= both
T U N E	a [[w w] <sub>H-</sub> [w w] <sub>L-</sub> ] <sub>L</sub> %	y=30 <b>91%</b>	y=4 12%	y=4 12%	y=6 18%
	b [[w] <sub>H-</sub> [w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=2 6%	y=32 <b>97%</b>	y=2 6%	y=4 12%
	c [[w] <sub>H-</sub> [w w w] <sub>L-</sub> ] <sub>L</sub> %	y=8 24%	y=26 <b>79%</b>	y=14 42%	y=7 21%
	d [[w w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=2 6%	y=29 <b>88%</b>	y=9 27%	y=13 39%
	e [[w w w w] <sub>L-</sub> ] <sub>L</sub> %	y=21 64%	y=17 52%	y=7 21%	y=9 27%

=20

b. Results obtained from 18 advanced-level learners of Spanish as a second language

		M E A N I N G			
		A num.= child.; loyal= nurse.	B num.= both; loyal= both	C num.= both; loyal= nurse.	D num.= child.; loyal= both
T U N E	a [[w w] <sub>H-</sub> [w w] <sub>L-</sub> ] <sub>L</sub> %	y=18 <b>100%</b>	y=4 22%	y=1 6%	y=3 17%
	b [[w] <sub>H-</sub> [w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=1 6%	y=18 <b>100%</b>	y=3 17%	y=3 17%
	c [[w] <sub>H-</sub> [w w w] <sub>L-</sub> ] <sub>L</sub> %	y=2 11%	y=15 <b>83%</b>	y=3 17%	y=6 33%
	d [[w w w] <sub>H-</sub> [w] <sub>L-</sub> ] <sub>L</sub> %	y=1 6%	y=14 <b>78%</b>	y=9 50%	y=6 33%
	e [[w w w w] <sub>L-</sub> ] <sub>L</sub> %	y=14 <b>78%</b>	y=6 33%	y=3 17%	y=3 17%

=20

c. Results obtained from 37 intermediate-level learners of Spanish as a second language

		M E A N I N G			
		A num.= child.; loyal= nurse.	B num.= both; loyal= both	C num.= both; loyal= nurse.	D num.= child.; loyal= both
T U N E	a [[w w] <sub>H</sub> - [w w] <sub>L</sub> ]-L <sub>L</sub> %	y=33 89%	y=6 16%	y=4 11%	y=4 11%
	b [[w] <sub>H</sub> - [w w] <sub>H</sub> - [w] <sub>L</sub> ]-L <sub>L</sub> %	y=1 3%	y=33 89%	y=13 35%	y=13 35%
	c [[w] <sub>H</sub> - [w w w] <sub>L</sub> ]-L <sub>L</sub> %	y=19 51%	y=27 73%	y=18 49%	y=9 24%
	d [[w w w] <sub>H</sub> - [w] <sub>L</sub> ]-L <sub>L</sub> %	y=10 27%	y=20 54%	y=25 68%	y=6 16%
	e [[w w w w] <sub>L</sub> ]-L <sub>L</sub> %	y=28 76%	y=19 51%	y=9 24%	y=10 27%

=20

Table (11b) shows that the advanced-learner interpretations of tunes ‘a’ through ‘d’ all closely approximate native speaker judgments. As for tune ‘e,’ the learners strongly accepted meaning A, whereas the native speakers showed only a tendency in the direction of its acceptance. The tune ‘e’-meaning B correspondence is the only one pointing to some degree of difference between these two groups. The advanced learners rejected it, whereas the native speakers were not clear on its rejection or acceptance. Recall that given our earlier assumptions about the preference for symmetry in the modification of conjunct structures, an acceptance of both meanings A and B is predicted for tune ‘e.’ Yet, without the presence of a medial H- phrase accent in tune ‘e’ as a cue, the advanced learners did not interpret as possible a wide scope of modification for both the prenominal and postnominal APs. Given that English does not allow for postnominal AP placement, not to mention the co-occurrence of prenominal and postnominal APs, it is not surprising that a reading of this type is difficult to uncover without the help of a H- phrase accent serving as an intonation cue.

The results in table (11c) from the intermediate learners show that their responses also approximate native speaker judgments, albeit to a lesser degree than the advanced learners. Like the advanced learners, the intermediates reveal native-like intuitions regarding a narrow scope of modification for both APs, represented by the correspondence of both tune ‘a’ and tune ‘e’ with meaning A. As regards the interpretation of tunes ‘b’ through ‘d’ involving a wide scope of modification for both APs, however, the intermediate learners show less competence. While they accurately accepted meaning B for tunes ‘b’ and ‘c,’ they missed the mark on 6 of the other 10 correspondences for tunes ‘b’ through ‘d,’ resulting in many medium shadings. Thus, even with the help of a H- phrase accent serving as an intonation cue, a wide scope of modification for both the prenominal and postnominal APs was challenging for the intermediate learners, and they allowed for other, asymmetrical interpretations, such as meanings C and D.

#### 4. Conclusions

The composite results from minimal groups 1 and 2 point to various generalizations regarding the L2 acquisition of Spanish intermediate phrasing by L1 English speakers. As regards the first research question posed in Section 1, the results indicate that both advanced and intermediate learners perceive and attend to disambiguating, utterance-medial H- phrase accents in Spanish. Both groups accurately assigned meaning to the intonation contours in minimal group 1, for instance, which varied only in

terms of the absence versus presence or the placement of H-. Had these learners not perceived and attended to the H- phrase accents in the aural input, their responses would have shown a predominance of medium shadings (indicating chance), or perhaps a predominance of dark shadings for meanings A and B simultaneously for each tune (indicating the indiscriminate acceptance of all possible symmetrical meanings based solely on syntax and semantics and not tone).

As regards our second research question, the meaning assessments made by both advanced and intermediate learners approximate native speaker judgments, albeit to different degrees. For minimal group 1, with a text reflecting relatively simple syntax (i.e., one postnominal AP), both groups of learners accurately assigned meaning to the intermediate phrasing possibilities tested. For minimal group 2, on the other hand, with a text reflecting a more complex syntax (i.e., the co-occurrence of a prenominal and a postnominal AP), the interplay of intermediate phrasing choices with syntax and the symmetry constraint was beyond the competence level of the intermediate learners' interlanguage grammar. These learners assigned more meanings than were possible-- in other words, they were less restrictive in their interpretations and overgenerated possible meanings. In contrast, the advanced learners demonstrated native-like competence in their interpretation of the utterances in minimal group 2. Thus, while the H- phrase accent (i.e., its phonetic form) clearly is perceived by both groups of learners, the full complexity of the meaning it contributes is not mastered at the intermediate stage of L2 acquisition, although it is so at the advanced stage.<sup>3</sup> These results point to different stages of development for the acquisition of intermediate phrasing marked by a H- phrase accent in Spanish. According to Elliott (1999, 2003), there is preliminary evidence of a natural order of L2 sound acquisition and "an interlanguage phonological system similar to those found in the acquisition of morphemes and other grammatical structures" (Elliott 2003:38). Given acquisition orders, one would expect various stages of development for any given phonological category, as well.

Lastly, the results from the advanced learners reveal a native-like level of attainment in the L2 acquisition of intermediate phrasing (marked by H-) in Spanish intonation. Said native-like competence was demonstrated, despite the fact that the intermediate phrasing choices interacted with syntactic structures not present in the L1, and despite the lack of any instruction about the structure of Spanish intonation, and despite the sure scarcity of positive evidence from previous input regarding the types of meaning contrasts provoked by utterance-medial H-. Within generative theory, these findings lend support to the perspective that there is full access to Universal Grammar (UG) during the L2 acquisition process (for detailed discussion, see White 2003, for example).<sup>4</sup> However, our results shed no light on the debate over whether full access occurs with L1 transfer (the Full Transfer Full Access Hypothesis) or not (the Full Access without Transfer Hypothesis) (again, see White 2003). With this issue in mind, our perception test subsequently will be administered to beginning learners of L2 Spanish as well, in order to examine the initial state of L2 acquisition as regards intermediate phrasing in Spanish. Obviously, the present study represents only a small step in understanding the acquisition of Spanish tonal categories by adult L2 learners, and this area of research is fertile ground for much future work.

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<sup>3</sup> Collentine (1998), in his discussion of the L2 acquisition of the Spanish subjunctive, points out that it entails two different processes-- competence both in form and meaning-- and that, therefore, these should be measured separately in experiments. The results from the intermediate learners in the present study lend further support to this proposal, since the "form" H- and the full complexity of its meaning seem to be mastered in stages.

<sup>4</sup> For studies on the SLA of Spanish syntax that support this perspective, see, for example, Montrul and Slabakova (2001) and Valenzuela (2002). In Montrul and Slabakova (2001), near-native speakers of Spanish demonstrated unconscious knowledge of subtle meaning differences between preterite and imperfect verbal forms, even though their L1 English does not mark aspect similarly. In Valenzuela (2002), learners demonstrated native-like competence with respect to the properties of topic constructions in Spanish, even though these properties are not instantiated in their L1 English.

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