

On Intonation's Relationship with Pragmatic Meaning in Spanish

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1. Introduction

The majority of studies addressing Spanish intonation, including work dating as far back as that of Navarro Tomás (1918, 1944) as well as studies conducted using the Autosegmental-Metrical (AM) model of intonational phonology (Ladd 1996, Pierrehumbert 1980, Pierrehumbert & Beckman 1988), have dealt with declaratives or interrogatives produced in a laboratory setting. Such laboratory speech has been elicited via techniques such as reading sentences, story retelling, dialogue games and map tasks (Face 2003). Although much has been learned regarding the phonetics and phonology of laboratory speech declaratives in Spanish, most previous studies, until very recently, have ignored the intonation of spontaneous speech. Face's (2003) study, which is one of the few accounts of spontaneous speech intonation in Spanish, shows that distinct phonetic trends occur in this more natural speech style's declaratives, when compared to those of laboratory speech. He shows why such studies are crucial to understanding intonation by stating, "but while lab speech is invaluable in intonational studies, it cannot be assumed that the intonation patterns produced in lab speech are an accurate representation of the intonation patterns of spontaneous speech" due to the "intertwining factors in spontaneous speech that can affect the intonation of an utterance" (Face 2003:116). The "intertwining factors" refer to aspects such as emotions, turn-taking, and consideration of the other interlocutor, among others, that appear in natural speech and not in more scripted speech styles. Moreover, an interesting idea arises from the results of this study in the form of a proposal for future research, which is exploring the relationship between intonation and pragmatic meaning in spontaneous speech.

The present study, which uses this research proposal as a point of departure, investigates the phonetic properties and phonological phrasing of declaratives belonging to the five pragmatic categories of speech acts set forth by Searle (1977): representatives, directives, commissives, expressives, and declarations. These five categories are defined as follows: representatives are subjective assertions or beliefs about the world, such as an opinion of the United States government; directives are used to get the hearer to perform an action, meaning they are a type of indirect imperative, such as someone stating their need for money to their parents due to too many monthly expenses; commissives are promises, such as someone assuring their friend they will be at a party; expressives reveal inner states of speakers that do not convey anything new about the world, such as apologies or congratulatory remarks; declarations signal changes in a state of affairs, such as a woman telling her boyfriend that she would like to end their relationship. Specifically, the goals are to determine if the phonetic properties explored by Face (2003) (downstepping, final lowering, fundamental frequency (F0) rises through stressed syllables and F0 peak alignment) are manifested differently based on pragmatic context. In terms of phonological phrasing choices in unscripted speech, the goal of this paper is to evaluate a part of the MIN-N-PHP (rapid speech) constraint proposed by Prieto (2004) in her investigation of laboratory speech, which posits that a maximum of four prosodic words (PWs) can be contained within a phonological phrase (PPh). This constraint is a

* I would like to thank Travis Bradley and two anonymous reviewers for their very helpful suggestions regarding a previous version of this paper, which led to significant improvements. Any errors contained within the paper remain my own.

focal point because it is specific to rapid speech, which is the type of laboratory speech most closely resembling spontaneous speech. The present study attempts to show the validity of this idea in unscripted speech while also extending the analysis of phrasing in unscripted speech to the relationship between phonological phrasing choices and pragmatic meaning. While the data is elicited in an experimental setting, it differs from laboratory speech in that subjects respond freely rather than being provided with a script to read. In this way, while not being truly spontaneous, it is expected that the unscripted data collected in this study will be closer to spontaneous end of the speech style continuum. Overall, this unique approach to studying spontaneous speech intonation seeks to fill in remaining gaps in intonation research on Spanish.

The major findings reveal that expressives, which are the most emotionally charged and shortest declaratives included in this study, tend to almost never be deaccented, meaning they rarely lack an F0 rise through a stressed syllable. Also, utterances belonging to this pragmatic category show high levels of early F0 peak alignment, which can be attributed to emphasizing words or to the presence of phrase boundaries. Declaratives conveying old or known information, such as representatives and expressives, are found to contain downstepped F0 contours, while low levels of emotion, such as in representatives, appear to provoke final lowering. For phonological phrasing, the findings presented here illustrate that the PW/PPh limit proposed by Prieto (2004) for rapid laboratory speech is also valid for unscripted speech, and presumably for spontaneous speech as well. Finally, increased emotions as well as decreased utterance length are among the factors that cause the length of PPhs to decrease.

The remainder of this paper is divided as follows: Section 2 mentions previous studies dealing with the phonetic, phrasal and pragmatic concepts relevant to this study. Section 3 details the method used to collect the unscripted speech samples. Section 4 analyzes the pitch contours and phrasing of the samples according to pragmatic category. Section 5 discusses how the phonetics and phrasing of the declaratives are affected by pragmatic meaning. Finally, Section 6 summarizes the value of the present study to Spanish intonation research and provides future research considerations emerging from this study.

2. Previous studies

2.1 Related phonetic concepts

Studies such as Quilis (1985, 1993), Sosa (1999), Beckman et al. (2002) and Hualde (2003) have catalogued the characteristics of F0 contours in a variety of dialects of Spanish.¹ Also, the behavior of phonetic variables at syntactic boundaries has been explored by those such as Garrido et al. (1995), and Llisterri et al. (1995), among others. The study previously mentioned, conducted by Face (2003), compares the phonetic properties of downstepping, final lowering, F0 rises through stressed syllables and F0 peak alignment in the declaratives of spontaneous speech versus those of laboratory speech. The detailed results of the study are closely related to the present investigation and therefore will be addressed in Section 5 of this paper. Downstepping, which has been studied in detail by Prieto et al. (1995, 1996) and Beckman et al. (2002), among others, occurs when F0 peak heights continually decrease throughout portions of an utterance. Face (2003) presents examples of this downstep pattern in laboratory speech as well as in spontaneous speech, but shows that it is more common in the former type of speech. Final lowering, detected by both Prieto et al. (1996) and Face (2001b), is a phenomenon in which the final (i.e., nuclear) peak of an utterance is much lower than predicted by downstepping. Face (2003) claims that in laboratory speech, final lowering can result in the absence of the nuclear F0 peak, meaning this peak is impossible to measure. Furthermore, as pointed out by Face (2003), an F0 increase through stressed syllables preceding the final stressed syllable (i.e., prenuclear position) and F0 reaching its peak in the post-tonic syllable (i.e., peak displacement) are two ideas that were pointed out for most Spanish declaratives as far back as Navarro Tomás (1944). The former idea is important in that the F0 rise has been found to demark stressed syllables, as opposed to the F0 peak (Garrido 1996). It should also be pointed out that nuclear peaks, F0 peaks associated with intonationally narrow focused or contrastively focused items (i.e., highlighted in discourse), and

¹ Sosa (1999), Beckman et al. (2002) and Hualde (2003) also discuss the phonological implications of the manifestations of F0 contours in Spanish with reference to the AM framework.

oxytonic peaks tend to align with stressed syllables rather than exhibiting peak displacement (de la Mota 1997, Face 1999, Face 2001b, Hualde 2002, Llisterri et al. 1995, among others). However the reason for this difference between prenuclear and nuclear/focused/oxytonic peaks is not of fundamental importance to the present study (all studies just mentioned, except Face 2003, deal only with laboratory speech).

A related study conducted by Hirschberg et al. (2004) examines the role of downstepped contours in conveying discourse topic structure as well as in signaling a contrast between new and given information in English. This study, which compares downstepped contours in read and spontaneous speech, reveals that such contours are found to occur more in read speech, but that they signal the ending of a topic and are used to present given information in both speech styles.

2.2 Phrasing

Prosodic phonology (Nespor & Vogel 1986, Selkirk 1984, Selkirk 1986), which considers the relationship between syntax and prosody, posits the hierarchical prosodic structure shown in (1). This representation has greatly contributed to intonation research in the past few decades.

(1) Prosodic Hierarchy

IP	Intonational Phrase (Major Phrase)
PPh	Phonological Phrase (Minor Phrase)
PW	Prosodic Word
F	Foot
σ	Syllable

The various levels in (1) are defined by Selkirk (1984) as follows: an IP is a unit that corresponds to a portion of a sentence associated with a characteristic intonational contour or melody; a PPh denotes any level of prosodic constituent structure that may include one or more major category words (lexical categories of noun, verb, adjective, and adverb, from Chomsky 1965); a PW is a phonologically relevant idea that plays a metrical role in describing main word stress; F refers to a suprasyllabic unit smaller than the word that helps describe stress patterns, however, Selkirk (1984) also notes that there is little evidence that this unit is a relevant domain for phonological rules; finally, the σ is the smallest prosodic constituent.

Prieto (2004) examines patterns of phonological phrasing in Peninsular Spanish via a reading task containing 86 structurally different utterances.² While making reference to the hierarchy shown in (1) and using the Optimality Theory (OT) (McCarthy & Prince 1993) approach to phonology, this study considers the rankings of a series of size and eurhythmic constraints that interact to determine the phonological phrasing of Spanish declaratives in slow, normal, and rapid speech. Some examples of prosodic well-formedness constraints used are: MAX-BIN (IP Head), claiming that a PPh heading an IP must be binary; MIN-BIN, pointing to a minimality requirement on the prosodic parsing of utterances; WEIGHT-BAL, stating a requirement on the balanced weight of PPhs; and MIN-N-PHP (rapid speech), which minimizes PPhs per IP in fast speech and also posits that PPhs do not exceed 4 PWs. In terms of accounting for PPhs when looking at F₀ contours, Prieto (2004) states that Spanish speakers prominently stress or accent the last tonic syllable of a PPh and that optionally native Spanish speech has a rise at the right boundary of a PPh, even though a phrasing break is perceptible without this rise. The phrasing data given in the study supports that well-formedness constraints have a crucial role in phrasing decisions, while quite frequently ranking higher than syntactic constraints. Overall, the study suggests that a complete theory of prosodic phrasing must realize that prosody (and eurhythmicity), syntax, and linguistic variation all interact in determining phrasing decisions.

² Other investigations of phrasing decisions in Romance based on syntactic and prosodic restrictions include Ghini (1993a, 1993b) for Italian, Frota (2000) for European Portuguese, Elordieta et al. (2003) for Catalan, Spanish and European Portuguese, Sandalo and Truckenbrodt (2003) for Brazilian Portuguese, D'Imperio et al. (In press) for Catalan, European Portuguese, Italian and Spanish, and Prieto (In press) for Catalan.

Furthermore, Hansson (2003) explores the distribution and phonetic realization of prosodic phrase boundaries in spontaneous speech in Swedish via production and perceptual experiments. The study shows that F0 is used to signal coherence even across prosodic boundaries and that tonal coherence signals dominate strong boundary signals in spontaneous speech. The perceptual judgments reveal that the main acoustic correlate to boundary strength in spontaneous speech is pause length and that a prior distinction made between strong and weak prosodic boundaries in read speech is inadequate for spontaneous speech.

2.3 Pragmatics

Very few studies of the relationship between spontaneous speech intonation and pragmatics in Spanish have been realized.³ Hidalgo Navarro's (1998, 2001) work on colloquial Peninsular Spanish describes how tonal rises and falls serve particular pragmatic functions, such as emphasizing words, giving orders and expressing humor, among others. These studies also indicate that pragmatic categories of interrogatives are differentiated based on tonal rises or falls. For example, interrogatives carrying humoristic or ironic connotations have a final rise, whereas those leading to a topic change tend to have a final fall.

Finally, Payà (2003) looks at the prosody of parenthetical insertions in Catalan spontaneous speech. She finds that the pitch contours of these structures relate to formality and discourse typology (narrative vs. dialogue) and concludes by typologically classifying these insertions based on a "completion of information" function or a "modalisation" function.

3. Methods⁴

The collection of unscripted speech declarative data in the present study is inspired by a methodology used by Hualde (2002) in which a native speaker linguist produces intonation patterns they envision for certain contexts, in a laboratory setting. Face (2003) mentions that although this may appear to be a contrived method of data collection, it is an effective way of producing isolated examples. The speaker used in this study is of the Madrid dialect of Peninsular Spanish. She was provided with three situations for each of the five pragmatic categories and was then asked to produce appropriate sentences for each context. For example, in the representatives category the subject was told to give her opinion about the war in Iraq, and she responded with a subjective assertion about this issue (the data according to pragmatic category is in the appendix of this paper). After the recordings were conducted via the Speech Analyzer software package, all data was played back to the speaker in order to confirm that she perceived them as characterizing her natural speech. After the data was obtained, it was analyzed in order to see whether downstepping, final lowering, F0 rises through stressed syllables, F0 peak alignment, and phonological phrasing vary according to pragmatic conditions.

As far as the phonetic features are concerned, it is important to mention that Face's (2003) data comes from a corpus compiled by the Computational Linguistics Laboratory of the Universidad Autónoma de Madrid and that this corpus contains spontaneous speech from sources such as radio shows, television shows or teachers interviewing students. His study uses 150 utterances taken from this corpus with the majority being produced by an interviewee as opposed to an interviewer. Therefore, a valid comparison between the present study and Face's (2003) study can be made, due to the fact that both consist of isolated examples of unscripted speech. They are also similar in that most data is obtained in the form of answering questions (in the case of the present study, answering questions of how the speaker would react to a given circumstance), with the difference being that the speaker in the present study produces what she believes her reaction to a situation would be in a given context, as opposed to the speakers in the corpus who were actually in a natural context. However, the

³ For details on focus and information structure in lab speech in Romance, see de la Mota (1995), García-Lecumberri (1995), Beckman et al. (2002) and Hualde (2002) for Spanish, Frota (2000) for European Portuguese, and D'Imperio (1997) and Avesani and Vayra (2003) for Italian.

⁴ I am grateful to Pilar Prieto for her useful suggestions dealing with pitch accent analysis.

fact that the speaker in the present study is a non-naïve, linguist subject that has knowledge of intonation patterns in Spanish makes the isolated examples of unscripted speech that she produced representative of her natural speech and therefore comparable to those produced in the corpus used by Face (2003).

As previously shown by Prieto (2004), tonal marking can be used to indicate a right-edge PPh boundary. In order to divide PPhs in the present study, such tonal marking was sought out, followed by a perceptual test in which another native speaker of Peninsular Spanish listened to all the unscripted declaratives and circled the words she perceived as emphasized or stressed. The emphasized words play an important role in the separation of PPhs, since Prieto (2004) claims that Spanish speakers place a prominent stress or an accent on the last tonic syllable of a PPh. PWs in the utterances were counted by looking for F0 rises through stressed syllables and by carefully listening for pitch accents (the investigator and another native speaker of Peninsular Spanish). Once PWs and PPhs were accounted for, the number of PWs/PPh was counted in order to evaluate Prieto's (2004) MIN-N-PHP (rapid speech) restriction on the maximum number of PWs/PPh. Finally, PPh length was examined according to pragmatic category.

4. Results

4.1 Downstepping

An analysis of the F0 contours for the utterances belonging to the five pragmatic categories reveals that downstepping occurs between pauses in all representatives, all expressives and in one directive. This means that in these examples, downstepping appears to take place within PPhs, since pauses have been shown to be indicative of PPh boundaries. An example of such a pattern is shown in Figure 1.

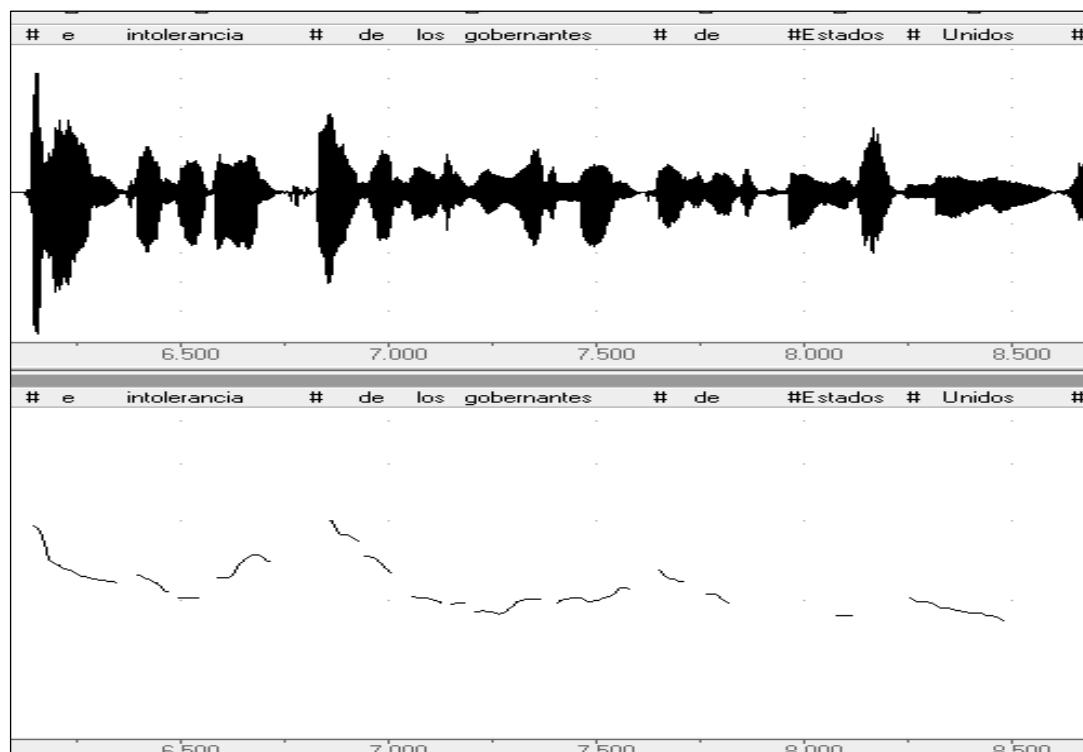


Figure 1: A portion between pauses showing downstepping in a representative, taken from the unscripted utterance, *La guerra de Irak, me parece que es fruto de la ignorancia e intolerancia de los gobernantes de Estados Unidos* ('It seems to me that the war in Iraq is a product of the ignorance and intolerance of the US government')

The majority of the utterances belonging to the other pragmatic categories do not show downstepping, possibly due to the fact that unscripted utterances are often grouped into shorter chunks, as Face (2003) points out. The reason for downstepping or a lack thereof in the present study will be discussed shortly.

4.2 Final lowering

This phenomenon appears in all examples of representatives, but not in declaratives of any other pragmatic category examined. Figure 2 illustrates final lowering in a representative.

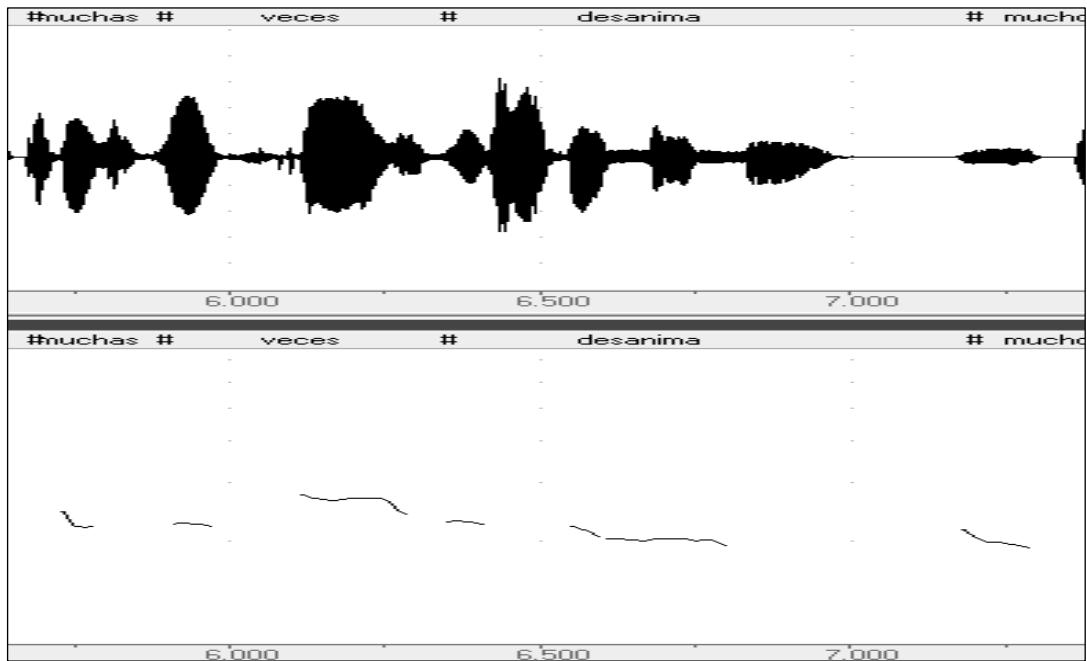


Figure 2: A representative showing final lowering in the unscripted utterance, *Pues la vida de estudiante graduado en Estados Unidos es muy estresante y muchas veces desanima mucho* ('The life of a graduate student in the US is very stressful and often very discouraging')

4.3 F0 rises through stressed syllables/deaccenting

Utterances belonging to all five pragmatic categories exhibit deaccenting but expressives rarely exemplify this trend. Table 1 shows the percentage (%) of stressable words that do not have an F0 rise through the accented syllable.

Pragmatic Category	% of deaccented words
Representatives	23 (7/30)
Directives	25 (6/24)
Commissives	20 (6/30)
Expressives	8 (1/12)
Declarations	28 (9/32)

Table 1: Deaccented words according to pragmatic category

4.4 F0 peak alignment

All of the utterances contain some words in which F0 peaks align with tonic syllables, with expressives showing the highest rate. In this case, nearly all the F0 peaks in expressive utterances are associated with tonic syllables. Table 2 provides the results for this phonetic property for all five

pragmatic categories. Only prenuclear peaks associated with non-oxytonic words are considered since nuclear and oxytonic peaks tend to normally align with tonic syllables, as previously mentioned.

Pragmatic Category	% of F0 peaks aligning with tonic syllables
Representatives	23 (5/22)
Directives	14 (2/14)
Commissives	26 (6/23)
Expressives	89 (8/9)
Declarations	29 (6/21)

Table 2: F0 peak alignment with tonic syllables according to pragmatic category

4.5 Phonological phrasing

The results of the perceptual test show that 96% of all words perceived as emphasized occur just before the right edge of a PPh boundary (i.e., where there is a continuation rise or just before a break in the F0 contour). Furthermore, Table 3 categorizes the 58 PPhs by number of PWs.

PWs	PPhs/58
1	14
2	25
3	12
4	7

Table 3: PPhs may contain between 1 and 4 PWs, with 2 PWs being the most common

Table 4 illustrates the average number of PWs/PPh according to pragmatic category.

Pragmatic Category	Average Number of PWs/PPh
Representatives	3
Directives	2
Commissives	2
Expressives	1
Declarations	2

Table 4: Average number of PWs/PPh by pragmatic category (PWs are rounded since fractions of words are not possible)

5. Discussion

Sections 5.1-5.4 compare the results obtained in the present study to those of Face (2003), in which he compares the intonation of laboratory speech to that of spontaneous speech. Section 5.5 explains the data on phonological phrasing in the present study in relation to Prieto's (2004) study.

5.1 Downstepping

Face (2003) states that although downstepping is characteristic of declaratives in laboratory speech, it does not occur in all examples of spontaneous speech in his study. He points out that in laboratory speech, this trend had been found to be an indicator of conveying old information. However, he states that the pragmatic function of employing downstepping in spontaneous speech declaratives remains unclear, and therefore leaves this idea open for further research.

The data in the present study show that representatives and expressives most commonly exhibit downstepping. Pragmatically speaking, this result indicates that downstepping is used in expressions that communicate old information. This is the aspect of representatives and expressives that distinguishes them from the three other pragmatic categories of speech acts. The concept of old information is relevant to representatives due to the fact that the subject used in the study is a colleague

of the investigator. Since she knew the investigator, and they were both familiar with each other's views on the topics used to obtain examples of representatives, such as the war in Iraq, the Madrid train bombings and life as a graduate student in this country, these particular utterances were probably produced as old or known information. In the examples of expressives, this first word of each utterance is the most prominent and emotionally charged, and is followed by old information in the form of a reason for the congratulatory remark or apology, which is why downstepping occurs.

5.2 *Final lowering*

Face (2003) notes that final lowering is not as common in spontaneous speech as in laboratory speech. He claims that this phenomenon seems to occur in spontaneous speech when information is repeated or predictable. Contrary to final lowering, he finds that F0 rises are more common at the end of spontaneous speech declaratives. He discusses the prominence of word final position, but also maintains uncertainty as to the pragmatics behind such a high F0 peak at the end of some spontaneous speech utterances.

In the present investigation, final lowering is found but final F0 rises are absent. After producing the representatives, the speaker informed me that she attempted to only state her opinion, and did not use an argumentative or very passionate tone when making her claims. Since representatives are the only utterances that show final lowering, it seems that a lack of emotion in the form of assertions about general topics (as opposed to addressing specific people) is the pragmatic component that yields this F0 trend. Of the five pragmatic categories examined, representatives are the utterances least involving the other interlocutor, which is a factor that could determine the appearance of final lowering. Conversely, utterances belonging to the other four pragmatic categories, all of which lack final lowering, have specific relevance to the hearer's life. Also, as stated in the previous section, the investigator knew the speaker, meaning she could have produced representatives in the form of repeated information, which would confirm Face's (2003) finding for final lowering in spontaneous speech.

5.3 *F0 rises through stressed syllables/deaccenting*

In terms of F0 rises through stressed syllables, Face (2003) notes that there are few cases in laboratory speech where this pattern does not occur. However, in spontaneous speech, he finds that it is more common to find examples of deaccented words. In the aforementioned study, it is found that 30% of accentable words in spontaneous speech in prenuclear position do not have a pitch accent, but the questions of what types of words are deaccented, as well as the pragmatic function of this process, are left open to investigation.

The frequency of deaccented words found in the present study hovers around 30% for four of the five pragmatic categories, which is a figure that is consistent with Face's (2003) results. The deaccented words found in the data collected are single nouns when modified by prepositional phrases (PPs), quantifiers, stressable prepositions, demonstrative adjectives, and infinitival complements, although each type of word does not appear to correlate to specific pragmatic categories. These words are deaccented because they are of secondary communicative importance, meaning they are not the most crucial in understanding the underlying message of the utterances. Examples of items found in the present study that lack an F0 rise through the stressed syllable are shown in (2).

- (2) Deaccented words (indicated by an underline)
 Noun modified by a PP: billete de avión ('plane ticket')
 Quantifier: muchas veces ('many times')
 Prepositions: dentro de dos semanas ('within two weeks')
 Demonstrative adjectives: esta situación ('this situation')
 Infinitival complements: no voy a poder terminar ('I am not going to be able to finish')

The one deviant group, expressives, tends to favor accented words because the utterances belonging to this group contain words that carry high emotional energy. Also, since expressives are the shortest in length of all the utterances, they overall contain fewer words that could possibly carry a pitch accent.

5.4 F0 peak alignment

Face (2001a, 2001b, 2002), Hualde (2002) and Nibert (2000), among others, show that in cases of focus in laboratory speech declaratives, the F0 peak is realized in the tonic syllable, as opposed to the post-tonic. However, Face (2003) points to the fact that Ocampo (2003) recognizes the difficulties of accounting for focus in spontaneous speech utterances due to their subjective nature in which contrastive features and the new vs. old information distinction, among other factors, are at times hard to determine. In his concluding remarks, Face (2003) suggests that pragmatic conditions other than focus may be responsible for F0 alignment in the stressed syllable, such as signaling a speaker's attitude or emphasizing a change of subject.

F0 alignment with the stressed syllable is most frequently found in expressives in the present study. This pattern is attributed to the fact that of the five pragmatic categories, expressives entail the highest level of emotion (excitement or lament). Furthermore, in general, the items that were perceived as emphatic by the subject that listened to the utterances tend to have F0 peaks that align with the tonic syllable. Therefore, this alignment strategy is associated with marking high prominence in discourse. Face's (2003) idea that this strategy is associated with a speaker's attitude in spontaneous speech also appears valid. In the data collected, words that express opinions such as *estresante* ('stressful'), when referring to life as a graduate student, and *locos* ('crazy') when discussing a group of people also demonstrate F0 alignment with the stressed syllable. It is noteworthy that these examples were also perceived as emphasized by the subject that listened to the utterances. Therefore, overall, the overlapping ideas of attitude and emphasis appear to contribute to the manifestation of prenuclear F0 peaks in the tonic syllable. As the following section will show, PPh boundaries also seem to affect the alignment of F0 peaks.

5.5 Phonological phrasing

The fact that there are no PPhs longer than four PWs shows that the results obtained in this study support Prieto's (2004) PPh length constraint. This finding shows that a limit on PWs/PPh does appear to be in place for unscripted speech as well. Also, the results illustrate that two PWs is the most common PPh length. This lack of minimizing the number of PPhs per IP is due to the high level of emotion involved in many of the utterances used, which leads to more focused words, and thus more PPhs, as will be shown.⁵ Overall, this restriction indicates that ideas suggested in laboratory speech experiments can be invaluable to newly developing proposals in the area of unscripted speech.

The connection between PPh boundaries and focalizing items arises from the results of this study. This is due to the fact that in the perceptual test, 49/51 items that were marked as emphasized or highlighted occur at the right edges of PPhs, which reveals that in unscripted speech, placing a PPh boundary directly after a word is a strategy used to show the prominence of this word in discourse.

Finally, the results in this study suggest that PPh length does vary based on pragmatic meaning. Representatives, the least emotional of the five pragmatic categories, have the longest PPh length, averaging three PWs/PPh. On the other hand, expressives, which entail the highest level of emotion and have a high percentage of apparently focalized items, tend to have the shortest PPhs, averaging about one PW/PPh. This finding indicates that extralinguistic factors such as emotion, that are absent in scripted laboratory speech, play a crucial role in unscripted speech. The data on expressives also indicates that shorter utterances tend to have fewer PWs/PPh.

⁵ Face (2002) suggests that the individual phrasing of words can be a focusing device. Beckman et al. (2002) show that this strategy may be more useful in determining narrow focus in utterance-final position since early F0 peak alignment is expected in this context even when the word is not focused.

6. Conclusion

The present study has delved into areas of unscripted speech intonation research in Spanish that have yet to be addressed. While using Face (2003) and Prieto (2004) as a point of departure, the investigation has uncovered that certain phonetic and phrasal properties of unscripted speech declarative intonation can vary according to pragmatic meaning. The principle factor that causes such variation is the emotional load of an utterance. Other important factors affecting the F0 contours of the utterances include the speaker's attitude toward a topic, old versus new information, emphasis or communicative prominence of an item, and utterance length.

Although new findings have been revealed in this study, much future research remains necessary in the area of unscripted speech intonation in Spanish. Since the data set used in this study is somewhat limited, it is necessary to next include more speakers, of more dialects, involved in more complex interactions, in addition to variables such as age, language contact, and bilingual abilities. Also, more pragmatic contexts need to be examined, since this preliminary look at the relationship between intonation and pragmatics has shown that emotions, attitudes and information structure tend to vary based on pragmatic function. Other phonetic variables, such as intensity and duration of stressed syllables, especially in focused words, that have been found to be significant in some studies dealing with laboratory speech should also be evaluated in unscripted speech. Finally, as we learn more about the phonetics and pragmatics of unscripted speech intonation in Spanish, it is critical to begin developing a phonological analysis of this speech variety. Overall, this study is an innovative means to studying unscripted speech in Spanish, however, it is clear that this area of research is in its beginning stages and therefore still requires much attention.

Appendix

1) Representatives

a) Situation: What would you say if you were asked your opinion on the war in Iraq?

Response: *La guerra de Irak, me parece que es fruto de la ignorancia e intolerancia de los gobernantes de Estados Unidos.*

‘It seems to me that the war in Iraq is a product of the ignorance and intolerance of the U.S. government.’

b) Situation: What would you say if you were asked your opinion about the train bombings in Madrid?

Response: *Pues el atentado de Madrid, pienso que lo han hecho un grupo de locos que han tomado como excusa el integrismo islámico.*

‘I think that the terrorist attacks in Madrid were done by a group of crazy people who have used Islamic fundamentalism as their excuse.’

c) Situation: What would you say if you were asked about life as a graduate student in the USA?

Response: *Pues la vida de estudiante graduado en Estados Unidos es muy estresante, y muchas veces desanima mucho.*

‘The life of a graduate student in the U.S. is very stressful, and often very discouraging.’

2) Directives

a) Situation: How would you get your brother to study for an exam?

Response: *Oye Juanjo, que tienes que estudiar para el examen que es dentro de dos semanas.*

‘Listen, Juanjo, you need to study for the exam that’s less than two weeks away.’

b) Situation: What would you say to your mother if you needed money for a plane ticket?

Response: *Oye mamá que me tienes que dejar dinero para el billete de avión que este año es super caro.*

‘Listen mom, you need to give me money for the plane ticket because it is super expensive this year.’

c) Situation: How would you get your brother to leave your room?

Response: *Bueno Juanjo te quieres ir de mi habitación por favor.*

‘Look Juanjo, please leave my room.’

3) Commissives

- a) Situation: How would you tell a professor you need to turn a paper in late?
Response: *Quería decirle que no voy a poder terminar el trabajo a tiempo porque me estoy preparando una conferencia, y se lo puedo entregar como dentro de dos semanas.*
'I wanted to tell you that I won't be able to finish the paper on time because I'm getting ready for a conference...I can turn it into you within two weeks.'
- b) Situation: How would you promise a friend that you will be at his party?
Response: *Pues claro que voy a ir a tu fiesta hombre, como voy a faltar, si estoy deseando ir.*
'Of course I'm going to your party, I'm not going to miss it, I really want to go.'
- c) Situation: How would you assure a friend you will pay them back soon?
Response: *Oye, los cien dólares que te debo te los doy en cuanto cobre.*
'Listen, I'll give you the 100 dollars I owe you when I get paid.'

4) Expressives

- a) Situation: How would you apologize for bumping into someone?
Response: *Perdón perdón, que no me he dado cuenta.*
'Excuse me I didn't realize you were there.'
- b) Situation: How would you congratulate a friend for passing an exam?
Response: *Felicidades, que ya me he enterado de que has aprobado.*
'Congratulations, I found out that you passed.'
- c) Situation: How would you apologize if you accidentally hit someone?
Response: *Perdona, te he hecho mucho daño.*
'Sorry I hurt you.'

5) Declarations

- a) Situation: How would you indicate that the class you are teaching is over?
Response: *Chicos ya hemos terminado por hoy, o sea que hasta mañana.*
'Students, we're done for today, so I'll see you tomorrow.'
- b) Situation: How would you tell your boyfriend that he cannot live with you anymore?
Response: *Oye, mira que a partir de julio va a venir una amiga mía a vivir conmigo y entonces junio es el último mes en el que puedes estar aquí.*
'Listen, my friend is coming to live with me in July, so June is the last month that you can be here.'
- c) Situation: How would you break up with your boyfriend?
Response: *Mira, creo que es mejor que dejemos de vernos porque esta situación no puede seguir así.*
'Look, I think it's best that we stop seeing each other because this situation can't continue like this.'

References

- Avesani, Cinzia, and Mario Vayra. 2003. Broad, narrow, and contrastive focus in Florentine Italian. Proceedings of the XVth International Congress of Phonetic Sciences, vol. 2, ed. by Maria Josep Solé, Daniel Recasens, and Joaquín Romero, 1803-6. Barcelona: Futurgraphic.
- Beckman, Mary; Manuel Díaz-Campos; Julia Tevis McGory; and Terrell A. Morgan. 2002. Intonation across Spanish, in the Tones and Break Indices framework. *Probus* 14.9-36.
- Chomsky, Noam. 1965. Aspects of the theory of syntax. Cambridge, MA: MIT Press.
- de la Mota, Carme. 1995. La representación gramatical de la información nueva en el discurso. Barcelona: Universitat Autònoma de Barcelona dissertation.
- de la Mota, Carme. 1997. Prosody of sentences with contrastive new information in Spanish. Intonation: theory, models and applications, an ESCA workshop, ed. by Antonis Botinis, Georgios Kouroupetroglou, and George Carayiannis, 75-78. Athens, Greece: ESCA.
- D'Imperio, Mariapaola. 1997. Breadth of focus, modality, and prominence perception in Neapolitan Italian. The Ohio State University Working Papers in Linguistics 50.19-39.
- D'Imperio, Mariapaola; Gorka Elordieta; Sónia Frota; Pilar Prieto; and Marina Vigário. In press. Intonational phrasing in Romance: the role of syntactic and prosodic structure. *Prosodies*, ed. by Sónia Frota, Marina Vigário, and Maria João Freitas. The Hague: Mouton de Gruyter.

- Elordieta, Gorka; Sónia Frota; Pilar Prieto; and Marina Vigário. 2003. Effects of constituent length and syntactic branching on intonational phrasing in Ibero-Romance. *Proceedings of the 15th International Congress of Phonetic Sciences*, vol. 1, ed. by Maria Josep Solé, Daniel Recasens, and Joaquín Romero, 487-90. Barcelona: Futurgraphic.
- Face, Timothy. 1999. A phonological analysis of rising pitch in Castilian Spanish. Columbus: The Ohio State University, ms.
- Face, Timothy. 2001a. Focus and early peak alignment in Spanish intonation. *Probus* 13.223-46.
- Face, Timothy. 2001b. Intonational marking of contrastive focus in Madrid Spanish. Columbus: The Ohio State University dissertation.
- Face, Timothy. 2002. Local intonational marking of Spanish contrastive focus. *Probus* 14.71-92.
- Face, Timothy. 2003. Intonation in Spanish declaratives: differences between lab speech and spontaneous speech. *Catalan Journal of Linguistics* 2.115-31.
- Frota, Sónia. 2000. Prosody and focus in European Portuguese: phonological phrasing and intonation. New York: Garland.
- García-Lecumberri, María Luisa. 1995. Intonational signalling of information structure in English and Spanish: a comparative study. London: University College of London dissertation.
- Garrido, Juan M. 1996. Modelling Spanish intonation for text-to-speech applications. Barcelona: Universitat Autònoma de Barcelona dissertation.
- Garrido, Juan M.; Joaquim Llisterri; Carme de la Mota; Rafael Marín; and Antonio Ríos. 1995. Prosodic markers at syntactic boundaries in Spanish. *Proceedings of the XIIIth International Congress of Phonetic Sciences*, vol. 2, ed. by Kjell Elenius and Peter Branderud, 370-3. Stockholm: KTH and Stockholm University.
- Ghini, Mirco. 1993a. Phonological phrase formation in Italian. Toronto: University of Toronto thesis.
- Ghini, Mirco. 1993b. P-phrase formation in Italian: a new proposal. *Toronto Working Papers in Linguistics* 12.41-77.
- Hansson, Petra Anna. 2003. Prosodic phrasing in spontaneous Swedish. Lund, Sweden: Lunds Universitet dissertation.
- Hidalgo Navarro, Antonio. 1998. Expresividad y función pragmática de la entonación en la conversación coloquial: algunos usos frecuentes. *Oralia* 1.71-93.
- Hidalgo Navarro, Antonio. 2001. Modalidad oracional y entonación: notas sobre el funcionamiento pragmático de los rasgos suprasegmentales en la conversación. *Moenia* 7.271-92.
- Hirschberg, Julia; Agus Gravano; Ani Nenkova; Elisa Sneed; and Gregory Ward. 2004. Uses of the H*!H*L-L% contour in read and spontaneous speech. Paper presented at the 9th Conference on Laboratory Phonology, Urbana-Champaign, IL.
- Hualde, José Ignacio. 2002. Intonation in Spanish and the other Ibero-Romance languages. *Romance phonology and variation*, ed. by Caroline Wiltshire and Joaquim Camps, 101-15. Philadelphia: John Benjamins.
- Hualde, José Ignacio. 2003. El modelo métrico y autosegmental. *Teorías de la entonación*, ed. by Pilar Prieto, 155-84. Barcelona: Ariel.
- Ladd, Robert. 1996. *Intonational phonology*. Cambridge, UK: Cambridge University Press.
- Llisterri, Joaquim; Rafael Marín; Carme de la Mota; and Antonio Ríos. 1995. Factors affecting F0 peak displacement in Spanish. *EUROSPEECH '95 proceedings*, ed. by José M. Pardo, Emilia Enríquez, Javier Ortega, Javier Ferreiros, Javier Macías, and Francisco Valverde, 2061-4. Madrid: ESCA.
- McCarthy, John, and Alan Prince. 1993. Generalized alignment. *Yearbook of Morphology*, ed. by Geert Booij and Jaap Van Marle, 79-153. Dordrecht: Kluwer.
- Navarro Tomás, Tomás. 1918. *Manual de pronunciación española*. Madrid: Centro de Estudios Históricos.
- Navarro Tomás, Tomás. 1944. *Manual de entonación española*. New York: Hispanic Institute in the United States.
- Nespor, Marina, and Irene Vogel. 1986. *Prosodic phonology*. Dordrecht: Foris.
- Nibert, Holly J. 2000. Phonetic and phonological evidence for intermediate phrasing in Spanish intonation. Urbana-Champaign: University of Illinois dissertation.
- Ocampo, Francisco. 2003. On the notion of focus in spoken Spanish: an empirical approach. *Theory, practice, and acquisition*, ed. by Paula Kempchinsky and Carlos Eduardo Piñeros, 207-26. Somerville, MA: Cascadilla Press.
- Payà, Marta. 2003. Prosody and pragmatics in parenthetical insertions in Catalan. *Catalan Journal of Linguistics* 2.207-27.
- Pierrehumbert, Janet. 1980. *The phonology and phonetics of English intonation*. Cambridge, MA: MIT dissertation.
- Pierrehumbert, Janet, and Mary Beckman. 1988. *Japanese tone structure*. Cambridge, MA: MIT Press.
- Prieto, Pilar. 2004. *Phonological phrasing in Spanish*. Barcelona: Universitat Autònoma de Barcelona, ms.

- Prieto, Pilar. In press. Syntactic and eurhythmic constraints on phrasing decisions in Catalan. *Studia Lingüística* 59.
- Prieto, Pilar; Holly Nibert; and Chilin Shih. 1995. The absence or presence of a declination effect on the descent of F0 peaks?: evidence from Mexican Spanish. *Grammatical theory and Romance languages*, ed. by Karen Zagona, 197-207. Philadelphia: John Benjamins.
- Prieto, Pilar; Chilin Shih; and Holly Nibert. 1996. Pitch downtrend in Spanish. *Journal of Phonetics* 24.445-73.
- Quilis, Antonio. 1985. Entonación dialectal hispánica. *Lingüística Española Actual* 7.145-90.
- Quilis, Antonio. 1993. *Tratado de fonología y fonética españolas*. Madrid: Gredos.
- Sandalo, Filomena, and Hubert Truckenbrodt. 2003. Some notes on phonological phrasing in Brazilian Portuguese. *D.E.L.T.A.* 19.1-30.
- Searle, John. 1977. A classification of illocutionary acts. *Proceedings of the Texas Conference on Performatives, Presuppositions, and Implicatures*, ed. by Andy Rogers, Bob Wall, and John P. Murphy, 27-45. Washington D.C.: Center for Applied Linguistics.
- Selkirk, Elizabeth. 1984. *Phonology and syntax: the relation between sound and structure*. Cambridge, MA: MIT Press.
- Selkirk, Elizabeth. 1986. On derived domains in sentence phonology. *Phonology Yearbook* 3.371-405.
- Sosa, Juan Manuel. 1999. *La entonación del español: su estructura fónica, variabilidad y dialectología*. Madrid: Cátedra.

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