

The Intonational Expression of Incredulity in Absolute Interrogatives in Buenos Aires Spanish

Su Ar Lee¹, Fernando Martínez-Gil², and Mary E. Beckman²

¹University of Florida and ²The Ohio State University

1. Introduction

Earlier descriptions of interrogative intonation contours in many Peninsular Spanish dialects, such as Navarro Tomás (1944) and Quilis (1981), report two kinds of differences associated with the contrast between falling and rising boundary pitch movements (BPMs; known in Spanish as *cadencia* or *tonema*). One is the distinction between pronominal interrogatives (also known as partial questions or wh-questions) and absolute interrogatives (also known as non-pronominal interrogatives, polarity questions, or yes-no questions); whereas pronominal interrogatives have falling BPMs, absolute interrogatives typically have rising BPMs. The other difference is associated with certain pragmatic functions, such as the expression of an incredulous challenging of information added to the mutual belief space (often called presumptive interrogatives); whereas pragmatically-neutral information-seeking absolute interrogatives have rising BPMs, presumptives typically have falling BPMs.

Studies of other dialects sometimes report other patterns for the BPMs of pragmatically-neutral information-seeking absolute interrogatives. For example, a falling BPM is reported for several Caribbean dialects, including Caracas (Sosa, 1991; Beckman et al., 2002) and Puerto Rico (Quilis, 1985; Sosa, 1991). The literature on Buenos Aires Spanish is mixed, with older work, such as Fontanella (1980) and Sosa (1991), reporting only rising BPMs, as in most Peninsular dialects, and more recent work reporting either only falling BPMs (Barjam, 2004), or both rising and falling BPMs, with a possible sociolinguistic relationship to the age and/or gender of the speaker (Lee, 2002, forthcoming). Given that absolute interrogatives can have the same syntax as declaratives (e.g., *¿María viene mañana?* vs. *María viene mañana.*), one might ask how these two utterance types are differentiated. Lee (forthcoming) reports differences in tone pattern for Buenos Aires Spanish (the interrogatives have a later fall, which she analyzes in terms of a HL phrase accent), in pitch range (the interrogatives have an expanded pitch range), and in downtrend (the interrogatives lack the steep downstep typical of sequences of accents in broad-focus declaratives).

This paper addresses the obvious next question: if the contrast between rising and falling BPMs on interrogatives in Buenos Aires Spanish has become associated with socio-indexical functions such as age or gender, how can speakers of this dialect express the difference that is associated with rising versus falling boundary pitch movements in earlier descriptions of many Peninsular Spanish dialects? More specifically, it examines the intonation patterns of absolute interrogatives that were elicited in the context of performed dialogues that should differentiate two pragmatic functions of interrogatives: a) pragmatically-neutral information-seeking questions, which can be referred to as ‘information questions’ (Bolinger 1989), or ‘QUERIES’ (Grice and Savino 1997) and b) presumptive questions expressing incredulity, also called ‘confirmation questions’ (Bolinger 1989), or ‘CHECKS’ (Grice and Savino 1997). The presuppositions and communicative function can vary in close relation to contextual factors. An interrogative can be uttered as an information-seeking question or as a question that expresses pragmatic meanings such as surprise and incredulity.

A pragmatically-neutral information-seeking absolute interrogative (hereafter, information question) is defined as a type of question that is uttered to seek information. In this type of question, the person asking the question does not presume anything about the answer that he or she is going to get and has no expectation about whether the answer is ‘yes’ or ‘no’. That is, these are open questions in which the speaker really does not know what the correct answer is. A presumptive absolute

interrogative (hereafter, presumptive question), on the other hand, is a question for which a particular response is expected or supposed. In this type of question, the interlocutor half knows or presumes knowledge of the answer, and is simply using the question to check the correctness of his/her assumption or to express surprise or even incredulity. Thus, these are leading questions in which the speaker is expecting a particular answer (Navarro Tomás 1944).

Previous studies observed that there are intonational differences between information questions and other types of questions in several languages. That is, depending on whether a speaker is expecting a particular response or not, there can be intonational differences of various kinds. In Bari Italian, Grice and Savino (2003) observed a difference in pitch accent choices. Information questions ('QUERIES') have a rising pitch accent (L+H*) whereas presumptive questions ('CHECK') have falling pitch accents (H*+L or H+L*). In Upper Saxon German, Kügler (2003) reports this difference with two distinct intonation patterns. Information questions have an overall rising intonation pattern and a high boundary tone, whereas confirmation-seeking questions have an overall falling pattern and a low boundary tone. Different interrogative meanings are expressed by different means, such as the use of different pitch accent, use of different boundary tone movement as it has been observed.

Previous studies of Spanish have also suggested a range of means for expressing this pragmatic distinction. For example, Navarro Tomás (1944) observed a difference in pitch range; presumptive-questions have a more elevated pitch overall, with an especially high tone on the last stressed syllable followed by a fall. Escandell-Vidal (1998) proposes that the rising terminal contour represents the unmarked case while the falling terminal contour encodes a case of marked utterances. Sosa (1999) observed that the information questions have an additional nuclear pitch rise immediately before the boundary fall in Puerto Rican and Maracucho (Caribbean variety) Spanish, whereas negative questions don't have that rise. In a study of Santiago Spanish, Chile, Cid Uribe and Ortiz-Lira (2000) observed that information questions have an amplification of the rising terminal contour relative to presumptive questions (whether those questions express doubt of expectation of a negative answer). Face and Prieto (2007) observed different pitch accent choice in Peninsular Spanish in a recent study. Information questions have an early rising pitch accent (which they analyze as L+H*) whereas 'unexpected' interrogatives have a late rising pitch accents (analyzed as L*+H).

The present study investigates how Buenos Aires Spanish speakers express differences between information seeking and presumptive questions. Section 2 describes the method used to elicit and analyze productions of these two question types, Section 3 gives information on the Buenos Aires intonation system as a whole, which is relevant both for motivating the study and interpreting the results, Section 4 describes the results, and Section 5 summarizes and concludes.

2. Method

The data examined in this study is part of larger research project of three females between the ages of 31-36, who were born and educated in the city of Buenos Aires, Argentina. They had all graduated from the same university in Buenos Aires. At the time of recording, they were in the U.S. either studying or working, but all three were native of the dialectal region in question and had lived in the metropolitan area for 26-30 years.

The materials used in this study consist of 10 target questions, which are a small subset of the data elicited from these subjects. The subjects recorded the questions using a microphone connected directly to a computer in a sound-proof chamber. They were given the scripts of short dialogues in Spanish. Each dialogue had 2 - 8 short lines, illustrated in Table 1. In addition to the target questions, there were descriptions of the situation and other parts of the dialogue, to give the intended pragmatic force. The informants read the utterance context silently and were instructed to read out loud only the target utterance.

Speakers were also provided with mini-dialogues designed in sets such as the pair in Table 1 in order to elicit lexically and grammatically identical sentences in different contexts. The first dialogue provides neutral context, while the second gives the presumptive context. Speaker B in this dialogue is surprised because she thought that Mary could not come, and asks to confirm the information. (All sets are in the Appendix.)

Dialogue 1

Absolute interrogative: neutral (Information-seeking absolute interrogative: Information question)

Dos amigas en la conversación...

Two friends talking together...

A: **¿María viene mañana?**

[Mary is coming tomorrow?]

“Is Mary coming tomorrow?”

B: Sí, viene mañana.

“Yes, she is coming tomorrow.”

Dialogue 2

Absolute interrogative: presumptive (Presumptive absolute interrogative: Presumptive question)

Dos amigas en la conversación...

Two friends talking together...

A: ¿Puedes ir al aeropuerto mañana?

“Can you go to the airport tomorrow?”

B: **¿María viene mañana?** (De sorpresa). Pensé que ella no podía venir.

[Mary is coming tomorrow?]

“Is Mary coming tomorrow? (Surprised) I thought that she couldn’t come.”

A: Sí viene mañana.

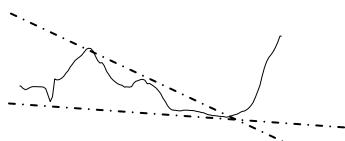
“Yes, she is coming tomorrow.”

Table 1: Sample target utterances and the dialogue contexts

3. Intonation in Buenos Aires Spanish absolute interrogatives

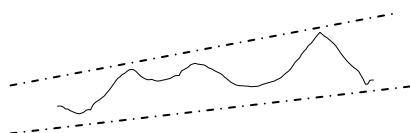
The literature on Buenos Aires Spanish absolute interrogative intonation is mixed; older work, such as Fontanella (1980) and Sosa (1991) report only rising BPMs, as in most Peninsular dialects, while more recent studies indicate either only falling BPMs (Barjam, 2004), or both rising and falling BPMs, with a possible sociolinguistic relationship to the age or gender of the speaker (Lee, 2002). Lee (forthcoming) suggests that both the rise and the fall can be used for information-seeking absolute interrogatives, and analyzes the two boundary pitch movements in terms of a difference in both the pitch accent type and in the boundary tone, as shown in Figure 1. (The overlaid lines highlight the contrasting global trends (“downstep” versus “upstep”) that can also be associated with the rise versus the fall.)

a) Contour of information question with a rising BPM



$L^* + LH\%$

b) Contour of information question with a falling BPM



$L+H^* \quad HL\%$

Figure 1: Fundamental frequency contours of information-seeking absolute interrogatives.

Figures 2 and 3 are specific examples illustrating the use of the two BPM in information-seeking questions. Both contours are examples of the target question in Dialogue 1 in Table 1. Both contours also begin the same way. That is, both utterances are produced with a prenuclear pitch accent on the initial stressed word, a L+H* type that has a rise in F_0 that starts near the beginning of the stressed syllable and ends in the post-tonic syllable.

The salient tonal difference starts at the syllable with the nuclear stress of the sentence. In the contour with the rising BPM in Figure 2, there is a L* nuclear pitch accent which is realized on the stressed penultimate syllable ‘ña’ of the final word *mañana*. The fundamental frequency then stays low into the final syllable, before the sharp upturn for the LH% boundary tone at the end of the last syllable. By contrast, in the falling BPM Figure 3, the nuclear accent is a rising pitch accent (like the pre-nuclear accent), and it is followed by a short transitional plateau before the inflection point that marks the beginning of the falling HL% boundary tone.

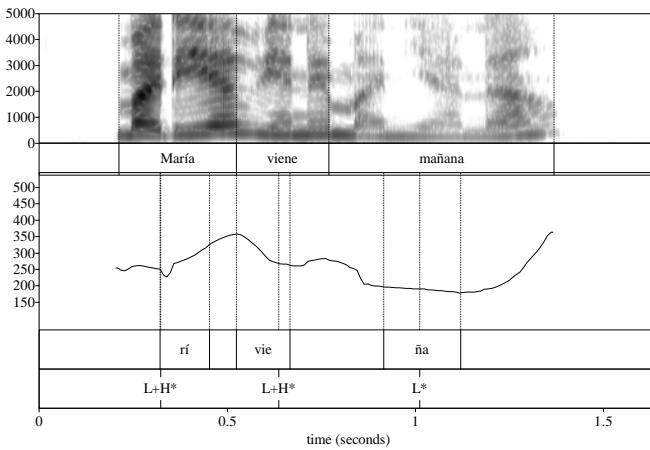


Figure 2: Information question with a rising BPM

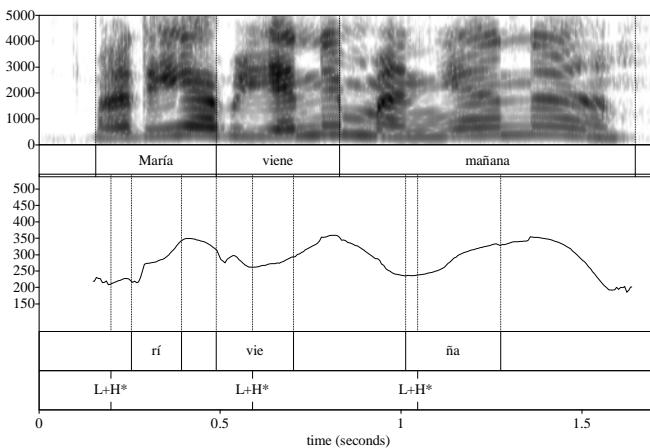


Figure 3: Information question with a falling BPM

We could ask where the falling BPM comes from. In particular, is it a sound change in progress? As noted above, earlier studies reported rising BPM in this dialect (Fontanella 1980, Sosa 1991) whereas more recent work reports either falling BPMs (Barjam, 2004), or both rising and falling BPMs, (Lee 2002, forthcoming). Lee (2002) reported that differences in usage seemed to be related to the age or gender of the speaker. Specifically, male speakers and younger speakers seem to prefer the

falling BPM. If the contrast between rising and falling BPMs on interrogatives in Buenos Aires Spanish has become associated with socio-indexical functions such as age or gender, how can speakers of this dialect express the difference between neutral and presumptive absolute interrogatives? Does the falling BPM used in information questions differ from the falling BPM used in presumptive questions? If it does, what are the differences?

4. Intonational Expression of incredulity

As Figures 2 and 3 illustrated, the pragmatically-neutral information question type shows two distinct intonational patterns in this dialect. Therefore, the pragmatic difference cannot be signaled solely by the use of the different nuclear accent types or the different following boundary tones for these two contour types in this dialect. This makes Buenos Aires Spanish different from other languages with falling BPMs in absolute questions, such as Bari Italian, where speakers choose different pitch accent types depending on the speaker's degree of confidence in the information status of the utterances (Grice and Savino 1997 and 2003).

The utterance in Figure 4 illustrates an absolute interrogative from Dialogue 2 in Table 1, where the utterance is in a presumptive context. In this context, the speaker is surprised because she thought that Mary could not come. The BPM is falling, just as in Figure 3. However, in Figure 4, the pitch range of the first pitch accent and nuclear pitch accent show a much expanded pitch range compared to the information question in Figure 3. There is an elevated pitch range overall, and an especially high target for the end of the rise for the L*+H nuclear accent and, consequently, a much sharper fall.

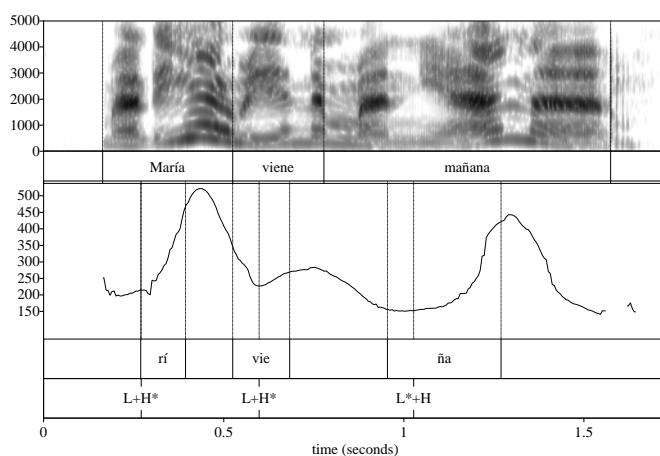


Figure 4: Presumptive absolute interrogative with a falling BPM

Figure 5 provides a more direct comparison between the two question types. The fundamental frequency contours that are overlaid in this figure are the question *¿Habló con Manolo?* 'Did you speak with Manolo?' produced once as an information question and once as a corresponding presumptive question (dialogue set 4 in the Appendix). All three speakers produced this utterance with final fall contours in both contexts. The pair here is illustrative. There is difference in global pitch range, which is expanded for the presumptive meaning as compared to the neutral information-seeking meaning. The figure also suggests that the biggest F₀ difference between information question and presumptive context is on the high tone target at the nuclear pitch accent.

The analysis of the falling BPM as a sequence of rising pitch accent and falling boundary tone is motivated by differences between the falling contour in questions and superficially similar falls in declaratives that are beyond the scope of this paper. Lee (2004) also observed a significant difference in pitch range and pitch trend between absolute interrogatives with falling BPM and declaratives. As in many other dialects of Spanish, questions are associated with higher pitch overall relative to declaratives. Both questions in Figure 5 show this global raising of pitch relative to the values that are

expected in the corresponding declarative. The presumptive question in Figure 6 seems to differ also in that it has a local expansion of the pitch range, particularly around the nuclear accent.

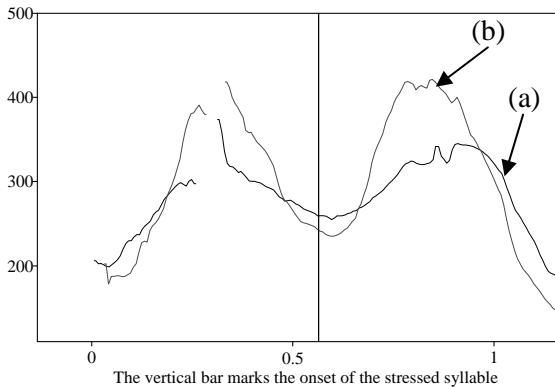


Figure 5: Overlaid pitch contours (speaker FG): a) information question *¿Habló con Manolo?* “Did you speak with Manolo?” (dark line), and b) presumptive question (light line).

Comparing longer utterances lets us observe this relationship between the global expansion and locally extreme expansion around the nuclear accent in more detail; Figure 6 gives such a comparison. The utterances are two more productions of the target questions *¿María viene mañana?* ‘Is Mary coming tomorrow?’ from the Dialogue set in Table 1.

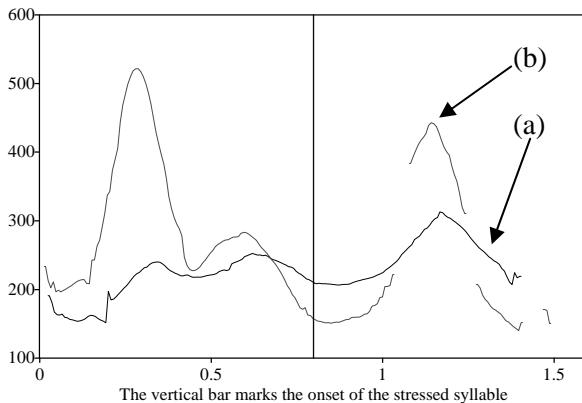


Figure 6: Overlaid pitch contours (speaker FG): (a) information question *¿María viene mañana?* “Is Mary coming tomorrow?” (dark line) and (b) presumptive question (light line).

There is a global tonal range difference between the pitch contours of the two pragmatic meanings in Figure 6, with every peak higher in the presumptive question and most of the valleys also lower. However, the differences are especially large on the first (prenuclear) accent and, particularly, on the last (nuclear) accent. Here, it becomes obvious that the difference is not a simple raising of the pitch overall, but an expansion of the tonal space. The pitch peak of the nuclear accent in the presumptive is higher than that of the information question, but also the low target that is anchored to the stressed syllable is lower.

The speaker of these utterances is one who predominantly produces falling BPM. The expansion of the pitch range in the presumptive question in Figure 6 is also especially characteristic of her utterances. Figure 7 shows further evidence suggesting that the expansion of the tonal space in the presumptive question in Figure 6 is more characteristic of speakers who produce many falling BPM.

Figure 7 overlays two utterances of *¿Le dieron el número de vuelo?* ‘Did they give him the flight number?’ (Dialogue set 3 in the Appendix) produced by a speaker who had fewer questions with a falling BPM. That is, this speaker produced a rising BPM pattern in most of her information questions, although she produced presumptive questions with final fall contours. Indeed, her information question here has a rising BPM, whereas the corresponding presumptive question has the falling BPM. In this utterance pair, the peak of the medial pitch accent in the presumptive is equal to that in the information question, and the first pitch accent of the presumptive question is not even as high as the corresponding accent peak in the information question. Instead, the biggest F_0 difference between the two question types is in the different BPMs. It seems that for this speaker, the distinction between the information question and the presumptive question is realized primarily by the contrast between the two different BPM.

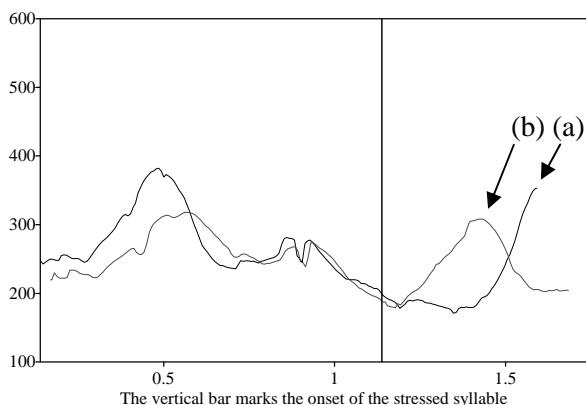


Figure 7: Overlaid pitch contours (speaker FK): a) information question *¿Le dieron el número de vuelo?* ‘Did they give him the flight number?’ (dark line) and b) presumptive question (light line).

5. Discussion and conclusion

In the present study we have described the intonation patterns of information-seeking absolute interrogatives and presumptive absolute interrogatives in Buenos Aires. In this dialect, an absolute interrogative can have either of two distinct intonational patterns — namely, a contour with a rising BPM or a contour with a falling BPM. The choice of intonation contour can reflect the difference between pragmatically-neutral information-seeking and pragmatically-marked presumptive questions. That is, for all speakers, the presumptive question has a falling BPM, but for one speaker, the information question typically has a rising BPM.

Lee (2004) observed that global tonal range contributes to the marking of sentence types. There are significant differences in global tonal range among declaratives, absolute interrogatives, and pronominal interrogatives. In this paper, we observed that pitch range can also be used to mark pragmatic differences among absolute interrogatives. The speaker who almost always uses the falling BPM for both meanings had a very expanded global pitch range on the presumptive interrogatives. This expansion was particularly extreme around the syllable with the nuclear stress. The locally extreme expansion differentiated her pragmatically marked presumptive questions from her pragmatically-neutral, information-seeking questions.

In this dialect, then, the difference between pragmatically-marked and pragmatically-neutral absolute interrogatives can be expressed by using an expansion of the global pitch range values or by using the contour with a falling BPM with a higher pitch value in the first peak and in the nuclear peak. Future work will explore the interaction of the choices that speakers make for the expression of this pragmatic function with other socio-indexical functions that also may be associated with the choice of intonation contour type.

Appendix: dialogues used to elicit the target utterances. The dialogues are arranged in each set, in the order of information question and presumptive question. The target utterances are in boldface in each dialogue.

Dialogue x.1 – Information question

Dialogue x.2 – Presumptive question

SET 1 ¿María viene mañana?

‘Mary is coming tomorrow?’

Dos amigas en la conversación...

Two friends talking together...

Dialogue 1.1

A: **¿María viene mañana?**

B: Sí, viene mañana.

A: “Mary is coming tomorrow?”

B: “Yes, she is coming tomorrow.”

Dialogue 1.2

A: ¿Puedes ir al aeropuerto mañana?

B: **¿María viene mañana?** (De sorpresa). Pensé que ella no podía venir.

A: Sí, viene mañana.

A: “Can you go to the airport tomorrow?”

B: “Mary is coming tomorrow? I thought that she couldn’t come.”

A: “Yes, she is coming tomorrow.”

SET 2 ¿Viene en avión?

‘Is she coming on an airplane?’

La familia está preparando la fiesta de Navidad...

The family is preparing the Christmas party...

Dialogue 2.1

A: ¿María viene mañana?

¿Viene en avión?

B: Sí, viene en avión.

A: “Mary is coming tomorrow?”

“Is she coming on an airplane?”

B: “Yes, she is coming on an airplane.”

Dialogue 2.2

A: ¿María viene mañana?

B: Sí, viene mañana.

¿Puedes ir al aeropuerto?

A: **¿Viene en avión?** (ella vive sólo a 300 millas de distancia)

B: Sí, la empresa le paga el viaje.

A: (de sorpresa) ¿Para visitar la familia?

B: No, viene por el trabajo.

A: “Mary is coming tomorrow?”

B: “Yes, she is coming tomorrow.

Can you go to the airport?”

B: “Is she flying?” (She only lives 300 miles away)

B: “Yes, the company is paying the trip.”

A: (surprised) “To visit the family?”

B: “No, she is coming for the work.”

SET 3 ¿Le dieron el número de vuelo?

‘Did they give him the flight number?’

En la agencia de viaje...

In the travel agency...

Dialogue 3.1

A: **¿Le dieron el número de vuelo?**

B: Sí, también le dieron el número de asiento.

A: “Did they give him the flight number?”

B: “Yes, and they gave him the seat number also.”

Dialogue 3.2

A: ¿Dónde está Manolo?

B: Manolo se fue al aeropuerto.

A: **¿Le dieron el número de vuelo?** Pensé que había dicho que tenemos que esperar hasta la semana que viene.

B: Sí, también le dieron el número de asiento. (Yo tampoco puedo creer eso)

A: “Where is Manolo?”

B: “Manolo went to the airport.”

A: “Did they give him the flight number?” (I thought that they said that we have to wait until next week)

B: “Yes, and they also gave him the seat number.” (I can’t believe that either)

SET4. ¿Habló con Manolo?

En la oficina...

‘Did you talk with Manolo?’

In the office...

Dialogue 4.1

A: Es un problema más serio de lo que pensé.

B: **¿Habló con Manolo?** Él puede ayudarnos.

A: “This problem is more serious than I thought.”

B: “Did you talk with Manolo? He can help us.”

Dialogue 4.2

A: No vamos a participar en el campeonato.

B: **¿Habló con Manolo?** No le diga nada a Manolo todavía. Él no debe enterarse de eso.

A: “We are not going to participate in the championship?”

B: “Did you talk with Manolo? Don’t tell anything to Manolo yet. He should not find out the information.”

SET 5. ¿Manolo terminó de numerar el libro?

En la oficina...

‘Did Manolo finish numbering the book?’

In the office...

Dialogue 5.1A: Tenemos que enviar todo mañana. **¿Manolo terminó de numerar el libro?**

B: Sí, lo terminó esta mañana.

A: “We have to send everything tomorrow. Did Manolo finish numbering the book?”

B: “Yes, he finished this morning.”

Dialogue 5.2

A: ¿Dónde está Manolo? Tiene que numerar el libro.

B: Salió con su amigo.

A: **¿Manolo terminó de numerar el libro?** No puedo creer que Manolo haya terminado de numerar el libro siendo tan perezoso.

B: Sí, lo terminó esta mañana. (Yo tampoco puedo creer)

A: “Where is Manolo?”

B: “He went out with his friend.”

A: “Did Manolo finish numbering the book? I can’t believe that he finished numbering the book, given that he’s so lazy.”

B: “Yes, he finished this morning. I can’t believe it either.”

References

- Barjam, John Patrick. 2004. *The Intonational Phonology of Porteño Spanish*. Master thesis, University of California, Los Angeles.
- Beckman, Mary E., and Janet Pierrehumbert. 1986. Intonational Structure in Japanese and English. *Phonology Yearbook* 3:255-309.
- Beckman, Mary E., and Gayle M. Ayers. 1997. *Guidelines for ToBI labeling, version 3.0* Ms. and accompanying speech materials, The Ohio State University.
- Beckman, Mary E., Manuel Díaz-Campos, Julia Tevis McGory, and Terrell A. Morgan. 2002. Intonation across Spanish in the tones and break indices framework. *Probus*, (special issue on intonation in Romance) 14:9-36.
- Bolinger, Dwight. 1989. *Intonation and Its Uses: Melody in Grammar and Discourse*. Stanford: Stanford University Press.
- Cid Uribe, Miriam, and Héctor Ortiz-Lira. 2000. La prosodia de las preguntas indagativas y no-indagativas del español culto de Santiago de Chile. *Lingüística Española Actual* 22:23-49.
- Colantoni, Laura, and Jorge Gurlekian. 2004. Convergence and intonation: historical evidence from Buenos Aires Spanish. In *Bilingualism: Language and cognition* 7 (2), ed. David W. Green, 107-119. London, UK: University College.
- D’Imperio, Mariapaola. 2002. Italian intonation: An overview and some questions. *Probus* 14:37-69.
- Escandell-Vidal, Victoria. 1998. The intonation and procedural encoding: the case of Spanish interrogatives. In *Current Issues in Relevance Theory*, ed. Villy Rouchota and Andreas H. Jucker, 169-203. Amsterdam: John Benjamins.
- Face, Timothy Lee, and Pilar Prieto. 2007. Rising accents in Castilian Spanish: A revision of Sp_ToBI. *Journal of Portuguese Linguistics* 7:117-146.
- Face, Timothy Lee. 2004. The intonation of absolute interrogatives in Castilian Spanish. *Southwest Journal of Linguistics* 23 (2): 65-80.
- Fontanella de Weinberg, María Beatriz. 1980. Three intonational systems of Argentinean Spanish, In *The Melody of Language. Intonation and Prosody*, ed. Linda R. Waugh, and C. H. van Schooneveld, 115-126. Baltimore: University Park Press.
- Grice, Martine and Michelina Savino. 1997. Can pitch accent type convey information status in yes-no-question? In *Proceedings of the ACL97 Workshop on Concept-to-Speech Generation System*, ed. Kai Alter, Hannes Pirker, and Wolfgang Finkler, 29-38. Madrid, Spain: Universidad nacional de Educación a Distancia.

- Grice, Martine and Michelina Savino. 2003. Map Tasks in Italian: asking questions about given, accessible and new information. *Catalan Journal of Linguistics* 2:153-180.
- Hualde, José Ignacio. 2002. Intonation in Spanish and the other Ibero-Romance languages: Overview and status questionis. In *Romance Phonology and Variation, Selected Papers from the 30th Linguistic Symposium on Romance Languages*, ed. Caroline R. Wiltshire and Joaquim Camps, 101-115. Amsterdam: John Benjamins.
- Kaisse, Ellen M. 2001. The long fall. An intonational Melody of Argentinean Spanish. In *Features and interfaces in Romance*, ed. Julia Herschensohn, Enrique Mallén, and Karen Zagona, Philadelphia: John Benjamins Publishing Company.
- Kügler, Frank. 2003. Do we know the answer? Variation in yes-no question intonation. In *Experimental Studies in Linguistics 1*, Linguistics in Potsdam 21, ed. Susann Fischer, Ruben van de Vijver, and Ralf Vogel, 9-29. Potsdam: Universitätsverlag Potsdam.
- Lee, Su Ar. 2002. The intonation of yes/no questions in Buenos Aires Spanish. Paper presented at the conference Laboratory Approaches to Spanish Phonology, University of Minnesota.
- Lee, Su Ar. 2004. Intonational patterns of statement versus questions in Buenos Aires Spanish. Paper presented at 2nd Laboratory Approaches to Spanish Phonology, Indiana University, Bloomington.
- Lee, Su Ar. (forthcoming). *Absolute interrogative intonations in Buenos Aires Spanish*. PhD dissertation, The Ohio State University.
- Navarro Tomás, Tomás 1944. *Manual de entonación española*. New York: Hispanic Institute in the United States.
- Pierrehumbert, Janet. 1980. *The phonology and phonetics of English intonation*. PhD dissertation, MIT
- Pierrehumbert, Janet and Julia Hirschberg. 1990. The meaning of intonational contours in the interpretation of discourse. In *Intentions in Communication*, ed. Philip Cohen, Jerry Morgan and Martha Pollack, 271-311. Cambridge, MA: MIT Press.
- Quilis, Antonio. 1981. *Fonética Acústica de la Lengua Española*. Madrid: Gredos.
- Quilis, Antonio. 1985. Entonación dialectal hispánica, *Lingüística Española Actual* 7:145-190.
- Sosa, Juan Manuel. 1991. *Fonética y fonología de la entonación del español hispanoamericano*. PhD dissertation, University of Massachusetts at Amherst.
- Sosa, Juan Manuel. 1999. *La entonación del español*. Madrid: Cátedra.
- Toledo, Guillermo Andrés. 2000. H en el español de Buenos Aires. *Langues et Linguistique* 26:107-27, 153.

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