



Teaching and Learning L2 Spanish Intonation: Technology and Classroom Instruction

Angela George¹

University of Calgary, Canada¹

Abstract

The present study investigates the effects of explicit instruction on the production of dialectal differences in information-seeking yes/no questions (There is a meeting tomorrow?) and neutral broad-focused declarative statements (There is a meeting tomorrow.), which can be distinguished using intonation cues. For example, in Puerto Rican Spanish yes/no questions end with a low tone, while in North-Central Spain they end with a high tone. While learners of Spanish have been known to increase accurate production of target-like intonation patterns in study abroad contexts ([1], [2], [3]), it is unclear if they can do so as a result of training in the classroom. To address this question, 10 advanced L2 Spanish (L1 English) read 14 short scenarios, and after each one produced a target utterance for a total of 14 utterances including 7 absolute interrogatives, 3 information-seeking pronominal interrogatives (distractors), and 4 neutral broad-focused declarative statements. These recordings occurred before and shortly after receiving 30 minutes of in-class instruction on intonation as part of an advanced Spanish course at a large university in the USA. This instruction utilized visuals (map and Praat spectrograms) and their accompanying recordings from the Interactive Atlas of Spanish Intonation housed online. The instructor explained the differences in the intonation contours of the three types of utterances eight macrodialects of Spanish. While the participants listened to the recordings, with the help of the labeled spectrograms, they identified the high and low tones throughout the utterances. Comparisons to English were also made. The participants also completed a Spanish proficiency test and a background questionnaire in which they indicated the dialect they were attempting to speak. The data are compared to eight L1 Spanish speakers of different varieties of Spanish who read the same scenarios and produced the same utterances. The results show a high degree of individual variation, with some effect of instruction on the production of these variable intonation patterns. This presentation will also address ways to improve this instruction and incorporate it in the language classroom.

Keywords: L2 pronunciation, Online atlas, L2 Spanish intonation.

1. Introduction

In English, a yes-no question is distinct from a statement not only due to intonation (high (H%) vs. low boundary tone (L%), respectively), but also due to word order. This is not the case in Spanish, where intonation may be the only cue to distinguish a question from a statement when the word order remains the same [4]. As a result, second language (L2) learners of Spanish with an English first language (L1) cannot use the same information in their L1 to distinguish statements from yes-no questions. That is, they cannot solely rely on word order, but they need to primarily use intonational cues. On the other hand, wh-questions follow similar syntactic and intonational patterns in English and Spanish, so the L2 learners do not have to rely on intonation.

In Spanish, native speakers exhibit regional variation in their intonational patterns (e.g., [5]). This leaves unclear how learners of Spanish will develop their intonation, particularly in places with Spanish-speakers from a variety of geographic origins. Acquisition of Spanish supra-segmental phonology (syllables, stress, tone, intonation, etc.) is less researched than segmental phonological features (voice onset time) [6], leaving room for research on the production of intonation by L2 speakers. The current paper addresses this issue by determining the effects of a pedagogical intervention involving explicit instruction on intonational variation in Spanish. This intervention involves the use of the Interactive Atlas for Spanish Intonation [5]. This atlas is housed on a website, where upon clicking on a city on a map, a series of recorded utterances appears, detailing the way most speakers in that city pronounce each utterance. This is particularly useful for seeing and hearing regional differences in Spanish intonation.

2. Background

L2 intonation has not been widely studied in Spanish. Nibert [7], [8] found that L2 learners at the intermediate and advanced level could accurately perceive syntactically ambiguous sentences. Most



L2 Spanish intonation studies focus on study abroad, where learners can target the intonational patterns of locals. Study abroad has resulted in more target-like production of declaratives absolute interrogatives and wh-questions by learners in Spain [9], broad focus declaratives and absolute interrogatives in the Andes of Venezuela [3] and absolute interrogatives in Buenos Aires, Argentina [10].

The usefulness of explicit instruction for learning pronunciation in the Spanish classroom has been debated, with one side stating that input alone may be sufficient to improve pronunciation accuracy and the other side noting the benefits of pedagogical interventions [11]. Explicit instruction has been shown to help with perceiving some regional features and not with others in L2 learners Andalucía, Spain [12]. However, explicit instruction did not aide in the production of declaratives and absolute interrogatives in L2 learners in Valencia, Spain [1]. This could be because the intervention was perception based and the data collected was production based. Previous theories on phonological L2 learning do not focus on intonation [1]. There is a need to address variation in language input and how this affects production. To address these issues, the current study poses the following research question: What are the effects of explicit instruction in the classroom on the production of intonational patterns of absolute interrogatives, information-seeking pronominal interrogatives, and neutral broad-focused declarative statements?

3. Methods

The participants completed a background questionnaire in which they provided information about their previous experiences learning Spanish and the dialect of Spanish they attempt to use when speaking. They then completed a Spanish proficiency test. All participants were adults taking an advanced Spanish course at a university in the Southeastern USA. Prior to receiving any instruction about intonation, the participants completed a pretest, where they produced 14 utterances.

A few days later, the participants received explicit instruction on intonation, which involved viewing spectrograms and listening to recordings from the Interactive Atlas of Spanish Intonation (found here: <http://prosodia.upf.edu/atlasentonacion>). This instruction consisted of a presentation of the spectrograms of three sentence types in each dialect by highlighting the overall contours and differences in pitch accents and boundary tones. The students listened to each example and the professor explained the pitch accents and boundary tones of each utterance as shown on the spectrogram. This instruction lasted about 30 minutes.

One week after this instruction for the post-test, participants produced the same 14 utterances as before. The productions were analyzed in Praat using the tones and break indices model for Spanish, or Sp_ToBI [13] and were coded for boundary tones and pitch accents. Ten participants completed both the pre and post-test recordings and all but one were L1 English speakers. The other's L1 was French. Their ages ranged from 21 to 42 and they spent between two and nine years learning Spanish. Their scores on the grammar-based proficiency test ranged from 52% to 96%.

4. Findings and Discussion

The results of any differences found in the pre and post-test are shown in Table 1. The Spanish proficiency test score is also listed. Overall, participants changed the most in their production of wh-questions, followed by absolute interrogatives, and changed the least in their production with declaratives. This shows that instruction only has a slight effect on the production of variable intonational patterns, since wh-questions do not vary. The reason for such low numbers of change could be because the students are already at a more advanced stage in their learning of Spanish and have already cemented in their brain the earlier learned form in alignment with the sociolinguistic variationist model for SLA [14].

This research presents similar findings to that of Craft (2015) who found no effect of explicit instruction on the production of declaratives or absolute interrogatives for L2 learners studying abroad. To summarize the findings in light of the research question, explicit instruction provides almost no effect on the production of declaratives, minimal effects on the production of absolute interrogatives, and some effect on the production of wh-questions.



Table 1. Differences from pre-test to post-test

Participant Code F = female M = male	Proficiency score	Absolute Interrogatives (N = 3)	Declaratives (N = 4)	Wh-questions (N = 7)
4F	52%	0 different	1 different	1 different
5F	76%	0 different	0 different	6 different
6F	92%	0 different	2 different	1 different
7M	84%	3 different	0 different	3 different
8M	48%	2 different	0 different	2 different
10M	92%	1 different	0 different	4 different
11M	96%	2 different	0 different	3 different
12F	76%	0 different	0 different	5 different
14F	N/A	0 different	0 different	1 different
16M	N/A	0 different	0 different	2 different
		Total: 8 (33%)	Total: 3 (7.5%)	Total: 28 (40%)

5. Conclusions

This study shows that the use of an online atlas for explicit instruction on variable intonational patterns can be useful for L2 learners, particularly in the production of wh-questions. Future studies may use a similar pedagogical intervention for beginning and intermediate learners, which may lead to more robust results. One limitation of this study is that the intonational patterns of the L1 were not obtained, so it is unclear how the L1 influenced the L2 patterns. Future pedagogical interventions could include students' comparing their recordings to the one's in the online atlas to determine which dialect they most closely resemble.

References

- [1] Craft, J. "The Acquisition of Intonation by L2 Spanish Speakers While on a Six Week Study Abroad Program in Valencia, Spain", Unpublished Master's Thesis, Florida State University, Tallahassee, 2015.
- [2] Henriksen, N., Geeslin, K., & Willis, E. "The development of L2 Spanish intonation during a study abroad immersion program in Leon, Spain: Global contours and final boundary movements", *Studies in Hispanic and Lusophone Linguistics*, 3(1), 2010, pages 113–162.
- [3] Trimble, J. "Acquiring Variable L2 Spanish Intonation in a Study Abroad Context", Unpublished doctoral dissertation, University of Minnesota, Minneapolis, 2013.
- [4] Hualde, J. I. and Prieto, P. "Intonational variation in Spanish" In: Frota, S. and Prieto, P. (eds). *Intonational variation in Romance*, Oxford, Oxford University Press, 2015, pages 350–391.
- [5] Prieto, P. & Roseano, P. (coords). "Atlas interactivo de la entonación del español", http://prosodia.upf.edu/sp_tobi/en/labeling_system/labeling_system.html, 2009-2013.
- [6] Henriksen, N. "Suprasegmental phonology in second language speech", In K. Geeslin (ed.), *The Handbook of Spanish Second Language Acquisition*, Chichester, UK, Wiley Blackwell, 2014, pages 166-182.
- [7] Nibert, Holly J. "The acquisition of the phrase accent by intermediate and advanced adult learners of Spanish as a second language." In David Eddington (ed.), *Selected Proceedings of the 6th Conference on the Acquisition of Spanish and Portuguese as First and Second Languages*, Somerville, MA, Cascadilla Proceedings Project, 2005, pages 108-122.
- [8] Nibert, Holly J. "The acquisition of the phrase accent by beginning adult learners of Spanish as a second language", In Manuel Díaz-Campos (ed.), *Selected proceedings of the 2nd conference on laboratory approaches to Spanish phonetics and phonology*, Somerville, MA, Cascadilla Proceedings Project, 2006, pages 131-148.
- [9] Henriksen, N., Geeslin, K., & Willis, E. "The development of L2 Spanish intonation during a study abroad immersion program in León, Spain: global contours and final boundary movements", *Studies in Hispanic and Lusophone Linguistics*, 3(1), 2010, 113-162.
- [10] Thornberry, P. "The development of L2 Buenos Aires Spanish interrogative intonation: evidence from nuclear configurations", Presentation, Washington, D.C., Georgetown University, 2014.
- [11] Lord, G. & Fionda, M. (2014). "Teaching pronunciation in second language Spanish", In K. Geeslin (ed.), *The Handbook of Spanish Second Language Acquisition*, Chichester, UK, Wiley Blackwell, 2014, pages 514-529.



- [12] Rasmussen, J. & Zampini, M. "The effects of phonetics training on the intelligibility and comprehensibility of native Spanish speech by second language learners", In John Levis & Kimberly LeVelle (Eds.), *Proceedings of the 1st Pronunciation in Second Language Learning and Teaching Conference*, Ames, Iowa, Iowa State University, 2010, pages 38–52.
- [13] Beckman, M., Díaz-Campos, M., McGory, J. T., & Morgan, T. A. "Intonation across Spanish, in the Tones and Break Indices framework", *Probus*, 14(1), 2002, 9-36.
- [14] Tarone, E. "Sociolinguistic approaches to second language acquisition research— 1997–2007", *Modern Language Journal*, 91, 2007, 837–848.