

# Transfer of rising tone patterns from Swedish L1 into Spanish L2 – which are the communicative consequences<sup>1</sup>?

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## Abstract

Would prosodic transfer from Swedish L1 into Spanish L2 have any effects on communication with native Spanish speakers? The study investigates the contribution to the perceived foreign accent of the L2 prosody displayed by Swedish learners, focusing especially on the role played by rising boundary tones and their pragmatic values. Swedish L1, Spanish L1 and Spanish L2 data, analysed acoustically by Aronsson and Fant (2014), were evaluated in perception experiments with native speakers of Spanish and Swedish and the results show that the intersubjective value associated with a rising boundary tone differs depending on whether the evaluator is a native speaker of Swedish or Spanish, and that the transferred patterns not only contribute to a foreign accent, they are also capable of affecting pragmatic values.

## Background

In the request evaluated (a booking of a table over the phone), Aronsson and Fant (2014) identified a phonetic transfer into Spanish L2 of boundary rise patterns produced in Swedish L1. The present study investigates the communicative consequences of such transfer. The framework of analysis applied to interpret the results of the perception experiments, also used by Aronsson and Fant (2014), is the so-called Intersubjectivity Management Model, initially proposed by Fant (2006) and Fant and Harvey (2008) for conversational analysis. Additionally, the framework proposed by Brown and Levinson (1987) for the understanding of politeness strategies has been used to interpret some aspects of the results. The Intersubjectivity Management Model enables the separation of two different intersubjective values associated with the rising boundary tones in interactional speech, namely transactional (+/- request for information), and interpersonal (+/- friendliness/politeness)<sup>2</sup> values. The results presented by Aronsson and Fant (2014) showed

that the L2-speakers did not master the tonal differences between continuative tones and question patterns produced in Spanish L1, as used in the opening and closing unit of the request (Figure 1-2). The rise types also differed phonetically in the lengthening of the final vowels produced at the end of the rise (irrespective of whether these vowels were stressed or not (Figure 3). The rise patterns found were also produced in contexts where L1 Spanish speakers seemed to prefer falls.

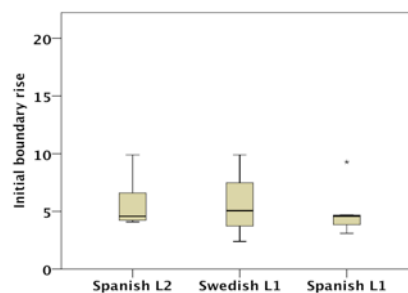


Figure 1 (cited from Aronsson and Fant 2014). Boxplot illustrating group variation in opening units.

<sup>1</sup> A more elaborated version of this paper is to be published in Spanish in *Onomázein*, Aronsson, Berit (forthcoming)

<sup>2</sup> From the point of view of politeness theory (Brown and Levinson 1986), friendliness could be seen as related to positive politeness, an act aimed to establish a positive relationship between the interlocutors

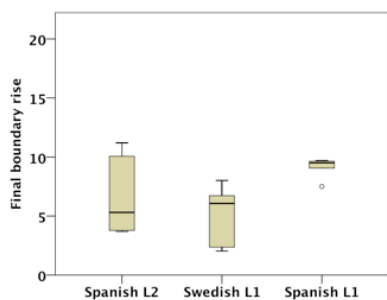


Figure 2 (cited from Aronsson and Fant 2014). Boxplot illustrating group variation in closing units.

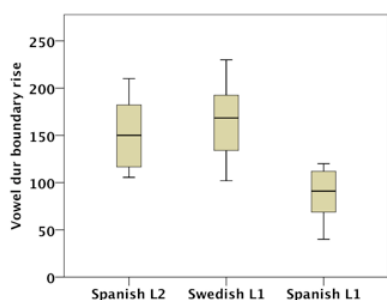


Figure 3 (cited from Aronsson and Fant 2014). Boxplot illustrating group variation for unit-final vowel duration in rises.

The underlying reasons for the transfer observed in Aronsson and Fant (2014) can be discussed in terms of different intersubjectivity-related values associated with the tonal rises:

Differences in discursive strategies between Spanish and Swedish, where open-ended ‘yes’-‘no’-questions are by default characterised by a high final rise in (Peninsular and Chilean) Spanish (Navarro 1944, Quilis 1985, 1993, Sosa 1999, Román et al. 2008), but only optionally produced in Swedish in these contexts (Bredvad-Jensen 1984, Gårding 1998, Elert 2000, Ambrazaitis 2009), were proposed as explanations to this transfer. A friendliness—rather than a purely information-seeking value, associated with final rises in both wh-questions and open-ended word-order questions (also labelled ‘yes’-‘no’ questions), has been reported by Kohler (2004) for German, and by House (2005) for Swedish. This value, as used in Swedish, by no means seems to be limited to questions, since also friendly declaratives tend to end in rises (as suggested by Hadding Koch and Studdert Kennedy 1969: 176, and discussed in terms of intersubjectivity management by Aronsson and Fant 2014).

In Spanish on the other hand, a terminal fall has instead been associated with politeness in

some interrogative types (Font-Rotchés and Mateo, 2013: 269). In Catalán, a language typologically similar to Spanish and spoken in the region of Cataluña, Spain, an increased F0 in a terminal boundary rise in yes-no-questions correlated with a lower degree of perceived politeness<sup>3</sup> (Nadeu and Prieto, 2011: 850).

Based on these findings, the paper suggests that the fundamental value of a boundary final rise in the task evaluated is that of friendliness/positive politeness in Swedish, while a final rise produced in a corresponding L1 Spanish context is mainly information-seeking.

## Aims

The main aim of the present study is to investigate possible differences in the degrees of the perceived transactional and interpersonal intersubjective values associated with a boundary fall/ rise produced in a spontaneous request in Spanish L1, Spanish L2 and Swedish L1. In order to study these values, two perception experiments with 27 native speakers of Spanish from Chile and Spain and 34 Swedish native controls were carried through. In a pre-test the study investigates the contribution of Spanish L2 boundary tone realisation to foreign accent.

## Procedure

As in Aronsson and Fant (2014) the authenticity of the dialogue has been considered an important prerequisite, and the same spontaneous task studied acoustically in Aronsson and Fant (2014) is evaluated in the present study by native speakers.

A pre-test, which assessed the possible contribution of boundary tones produced in Spanish L2 to the foreign accent perceived by the native speakers, was initially carried out to justify (or not) a further investigation of the values associated with rising boundary tones. Experiment 1 assessed the transactional (=information seeking-) and interpersonal (=friendliness-) values associated with a rising and falling boundary tone respectively, extracted from the data set and presented as tone alone without the segmental information. Experiment 2 examined whether the perceived interpersonal

<sup>3</sup> ‘Politeness’ is defined in Nadeu and Prieto (2011) basically according to Ohala’s (1986) framework, where rising F0 is believed to correlate with values such as ‘polite’ and ‘friendly’.

value (=perceived friendliness) associated with these tones differed between the groups when presented in a non-manipulated, contextualized form, in L1 and L2 Spanish and L1 Swedish. The falls and rises evaluated in L1 and L2 Spanish and L1 Swedish displayed similar tonal ranges but were characterized by a difference in duration of the final vowel produced at the end of the boundary tone, which was shorter in L1 Spanish.

## Results

### Pre-test

The results demonstrated that, regardless of the variety of Spanish used by the evaluator (Chilean or peninsular Spanish), the rising boundary tone (RBT) was the suprasegmental feature that most characterized the Spanish foreign accent of Swedish speakers. Stress placement (SP) and vowel lengthening (VL) came in second place. These categories, evaluated in the pre-test by 27 Spanish L1 speakers, were based on a preliminary initial experiment, carried through prior to the pre-test: 10 native Spanish L1 speakers were recorded while imitating and describing how the foreign accent produced in L2 Spanish sounded to them, these were not the same as in the pre-test. The subjects were asked to describe the foreign accent perceived only by reacting to what they heard, i.e. according to their previous (emotional) priming related to this kind of request, without being asked to specify whether segmental or suprasegmental features were involved and without knowing our objective. Based on these recordings the alternatives used in the pre-test were formulated and categorised into segmental and suprasegmental features respectively.

This method implies that the alternatives formulated are not phonetically precise. It would for example be possible that the final lengthening of the vowel at the end of a rising boundary tone was a contributing factor to the rise being interpreted as “foreign accented”, even though the subject him/herself failed to recognise this (untrained listeners probably perceive whole chunks rather than isolated features). In fact, in rises with similar rise range in Spanish L1 and Spanish L2, this is the only acoustically significant suprasegmental difference identified between the Spanish L1

and L2 data studied, a finding that will be further addressed below (in Experiment 2).

### Experiment 1

The results of Experiment 1 showed significant differences between the groups in the interpretation of the information seeking value perceived in the rising boundary tone: the subjects from Chile and Spain always interpreted this tone as a question while this was not always the case in the Swedish group: 30% of the Swedish subjects perceived a descending tone as an interrogative pattern (Figure 4).

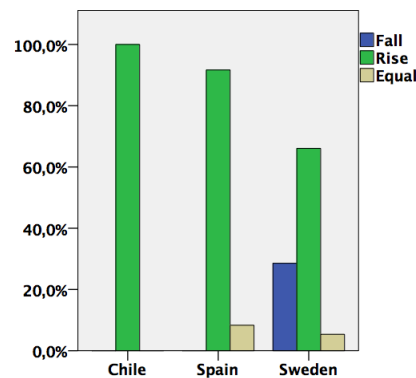


Figure 4. Distribution of the values “fall=question”, “rise=question” perceived by Chilean, Spanish and Swedish speakers.

The Swedish and Chilean group perceived a rising tone as friendlier than a descending one to a larger degree than the peninsular Spanish group did (Figure 5). The explanation I propose for this is that the speakers of peninsular Spanish perceived this pattern to be too invasive, a threat to their negative face, which is the reason why the descending pattern was preferred. It seems there is greater tolerance towards positive politeness in the Chilean and Swedish groups than in the peninsular Spanish group, whereas the latter expressed greater preference for the interlocutor not to invade their ‘private territory’. The Chilean and Swedish groups obtained very similar results, since they perceived the rising pattern as friendlier. However, it seems that the underlying reasons have their origin in a divergent definition of what is perceived as ‘friendly’: The Chilean group perceives the rising pattern to be friendlier than the descending one since it interprets the rising tone as a question, which is not so clear for the Swedish group. For the Swedish subjects the value of friendliness seems to be linked to

the rising tone itself, regardless of whether or not it is interpreted as a question.

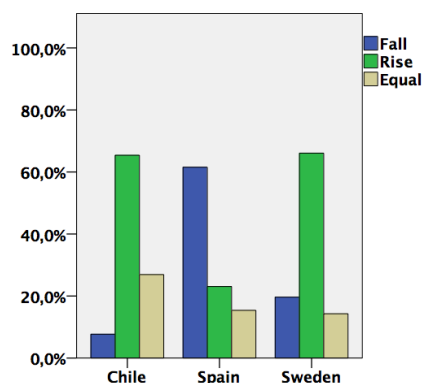


Figure 5. Distribution of the values “fall= friendly”, “rise= friendly” perceived by Chilean, Spanish and Swedish speakers.

## Experiment 2

Utterances of the same pragmatic force were used (a greeting and the final unit of the request act), and units of similar rise range were tested. What differed, however, was the duration of the final vowel of the rise/fall (longer in Spanish L2/Swedish L1). The trend observed in Experiment 2 was that, in the contextualized speech of the current task, a majority of the Spanish native speakers, both from Chile and from Spain, perceived a rising tone produced in L1 Spanish as friendlier than a falling tone, while the rising tone produced in L2 Spanish or L1 Swedish on the other hand tends to be evaluated as less friendly than the fall (Figure 6-7).

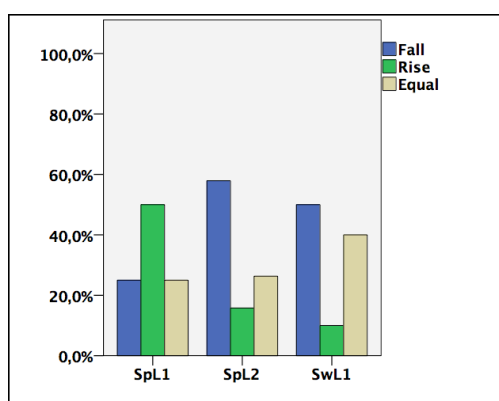


Figure 6. Speakers of Chilean Spanish: Distribution of the values “fall= friendly”, “rise= friendly” in opening units produced in Spanish L1, L2 and Swedish L1.

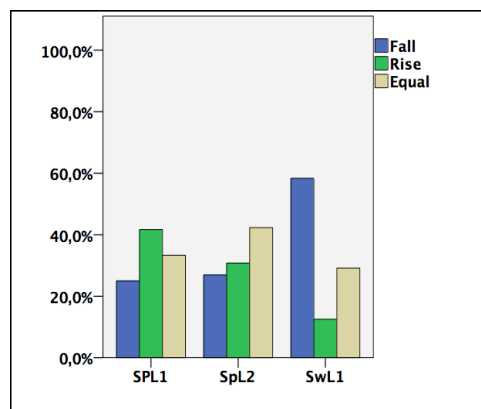


Figure 7. Speakers of Peninsular Spanish: Distribution of the values “fall= friendly”, “rise= friendly” in opening units produced in Spanish L1, L2 and Swedish L1.

This suggests that a Swedish speaker, transferring tonal patterns from the mother tongue to Spanish, risks being perceived as less friendly than a native speaker, even if in both cases the pattern were rising. Since the acoustic difference between the rising tones of L1 and L2 Spanish and L1 Swedish lies mainly in a difference in the final rising vowel (longer in L2 Spanish/L1 Swedish), we attribute this result to the greater vowel lengthening identified in L2 Spanish/L1 Swedish than in L1 Spanish.

## Conclusions

The result of the pre-test showed that the characteristics of the rising patterns in the boundary tones are not only *performed* differently from the native realizations (Aronsson and Fant 2014), they are also *perceived* as different. The foreign accent identified seems to be associated mainly (although by no means entirely) with the realisation of the rising boundary tones. Different interpretations of the intersubjective values associated with these rises are discussed as underlying explanations to the foreign accent perceived by the Spanish L1 speakers, where a rising boundary tone is interpreted as information seeking in Spanish L1 but tends to be associated with friendliness in Swedish L1. The paper suggests that the significantly longer final vowels of the rising tones produced in Swedish L1 and Spanish L2 may have increased the Spanish L1 speakers’ feelings of having their private territory invaded; they might therefore have perceived them as a greater threat to face than the descending tone. Several additional

explanations are also possible, as for example less tolerance for invasive patterns when the acoustic pattern doesn't correspond to the expected one, i.e. when it is produced by an L2 speaker. It should finally be remembered that the samples studied are small, which implies that the results should be taken with certain precaution. The values associated with the boundary tones and the communicative consequences of this type of tonal transfer should be further tested in future studies.

## References

- Ambrazaitis, Gilbert (2009). Nuclear intonation in Swedish. Evidence from Experimental-Phonetic Studies and a Comparison with German. Doctoral dissertation. Lund University, Department of Linguistics.
- Aronsson, Berit & Lars Fant (2014). Boundary Tones in Non-Native speech: the Transfer of Pragmatic Strategies from L1 Swedish into L2 Spanish. *Intercultural Pragmatics*, 12(2), 159-198.
- Bredvad-Jensen, Anne-Christine (1984). Tonal geography. Geographical variation in declarative and interrogative intonation along the west coast of Sweden. In Elert, Claes-Christian, Johansson, Irene & Strangert Eva (eds). *Nordic Prosody III*, 31-41. University of Umeå.
- Brown, Penelope & Stephen C. Levinson (1987) [1978]: *Politeness. Some Universals in Language Use*, New York: Cambridge University Press.
- Elert, Claes-Christian (2000). *Allmän och svensk fonetik* (8th ed.). Stockholm: Norstedts.
- Fant, Lars (2005). La entonación: informatividad, emotividad, dialogicidad. *Filología y Lingüística. Estudios ofrecidos a Antonio Quilis. Volumen I*, 191-218. Madrid: Consejo Superior de Investigaciones Científicas.
- Fant, Lars & Ana María Harvey (2008). Intersubjetividad y consenso en el diálogo: análisis de un episodio de trabajo en grupo estudiantil, *Oralia, Análisis del discurso oral* 11, 307-332.
- Font-Rotchés, Dolores & Miguel Mateo Ruiz (2013). Entonación de las interrogativas absolutas del español peninsular del sur en habla espontánea. *Onomazéin* (28), 256-275.
- Gårding, Eva (1998). Intonation in Swedish. In Hirst, Daniel, Di Cristo, A. (Eds.), *Intonation Systems*. Cambridge University Press, Cambridge, 112-130.
- Hadding-Koch, Kerstin & Michael Studdert-Kennedy (1964). An experimental study of some intonation contours. *Phonetica* 11. 175-185.
- House David (2005). Phrase-final rises as a prosodic feature in wh-questions in Swedish human-machine dialogue. *Speech Communication* 46. 268-283.
- Kohler, Klaus (2004). Pragmatic and Attitudinal Meanings of Pitch Patterns in German Syntactically Marked Questions. In Fant, Gunnar, Fujisaki, Hiroya, Cao, Jianfen, Yi Xu, (Eds.), *From Traditional Phonology to Modern Speech Processing. Foreign Language Teaching and Research Press*, Beijing, 205-214.
- Nadeu, Marianna & Pilar Prieto (2011). Pitch range, gestural information, and perceived politeness in Catalan, *Journal of Pragmatics* 43 (3), 841-854.
- Navarro Tomás, Tomás (1944). *Manual de entonación española*. New York: Hispanic Institute in the United States.
- Ohala, John (1984). An ethological perspective on Common Cross-Language Utilization of F0 of voice, *Phonetica* 41, 1-16.
- Quilis, Antonio (1985). "Entonación dialectal hispánica", *Lingüística Española Actual* VII, 145-190.
- Quilis, Antonio (1999) [1993]: *Tratado de fonología y fonética españolas*, Madrid: Gredos.
- Román, Domingo Montes de Oca, Valeria Cofré Vergara & Claudia Rosas Aguilar (2008). Rasgos prosódicos de oraciones sin expansión, del español de Santiago de Chile en habla femenina, *Language design. Special issue* 2, 137-146.
- Sosa, Juan Manuel (1999). *La entonación del español*. Madrid: Cátedra.

