

L2 Italian and L2 Spanish vocatives produced by L1 Czech learners: Transfer and prosodic overgeneralization

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ABSTRACT

The present paper investigates prosodic properties of (neutral) vocatives in L2 Italian and L2 Spanish produced by L1 Czech learners. Since Czech, Italian as well as Spanish vocatives are predominantly realized with a rising pitch accent (L*+H, L+H*) followed by a mid-tone target (!H%), *positive transfer* or native-like production in L2 would be expected. Interestingly, whereas the L2 Spanish vocatives were realized with a target-like pattern, almost half of the L2 Italian vocatives were produced with H*+L L%, a pattern that is found neither in L1 Czech nor in L1 Italian vocatives. This finding is interpreted as a case of *prosodic overgeneralization*: Since the H*+L is detected in other (mostly biased) types of utterances in both L1 and L2 Italian, the learners overuse this pitch accent, considering it to be a “typically Italian” pattern. Additionally, differences in duration cues between the two L2 varieties are discussed.

Keywords: Vocative, intonation, L1 Czech, L2 Italian, L2 Spanish

1. INTRODUCTION

Pronunciation in a foreign or second language (L2) is a crucial part of phonological competence and important not only for the learners’ intelligibility but also for assessment of their oral skills. To date, the production of L2 vocatives (greeting calls) has received very little attention. The present study fills this gap by investigating F0 patterns and durational cues of vocatives in two Romance languages produced by L1 Czech speakers, with a particular focus on the role of L1-based cross-linguistic influence (CLI) and similarity between the L1 (Czech) and the target languages (Spanish and Italian). Specifically, it examines how two groups of learners with the same L1 acquire tonal and duration properties of vocatives in two typologically related languages, both of them being similar to the L1 in terms of phonological realization of “calling” tonal patterns (a rise followed by a mid-tone target). Based on this main similarity, we would expect native-like production or *positive transfer*. However, there are also some differences between the

languages which may result in incorrect L2 speech production or *negative transfer* (see, e.g., [20], [14], [5]). Interestingly, some of the L2 vocatives were realized here with an H*+L pattern that cannot be attributed to transferred L1 features or native-like production. This finding will be interpreted as a case of *overgeneralization*, another phenomenon related to second language acquisition (see, e.g., [4]). I call *prosodic overgeneralization* an erroneous use of L2 tonal and durational patterns that are present in the target language but in different contexts. As we will see, this applies especially to Italian.

2. INTONATION OF VOCATIVES

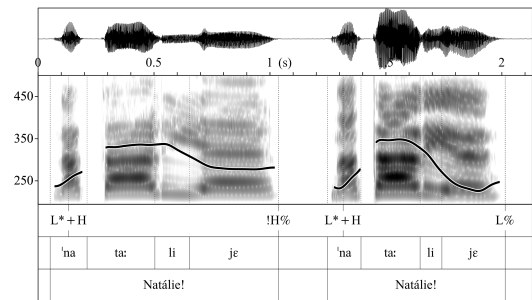
According to [12], many European languages (e.g., Dutch, English, French, German, Hungarian) use a calling contour ending in a downstepped high tone, tagged as !H%. Another vocative contour ends also in HL% (e.g., Central Catalan) or L% (e.g., Portuguese) (see [6]). Additionally, languages may display more than one nuclear configuration for different types of calling chants (e.g., [1], [3]). For instance, in Polish, L% is used only for urgent calls, whereas routine calls are realized with !H-H% ([1]; for further discussion of the prosodic complexity of vocatives see, e.g., [9] and references there). The following sections present the tonal inventory of Czech (2.1), Italian (2.2), and Spanish (2.3) vocatives, which are based on results from previous literature as well as our own recordings of L1 speakers participating in the present study.

2.1. Czech vocatives

(Neutral) vocatives such as initial calls found across different Czech dialects typically end in a mid-level plateau or a low tone: L*+H !H%, and L*+H L%, respectively (*Fig. 1*). Czech is a head/edge-prominence language (see [15] in line with [10]) and the main stress is always on the first syllable. In vocatives, the tonic syllable is phonetically realized with a smooth rise (or a low plateau) and followed by a high plateau on the posttonic syllable (tagged as L*+H). However, the H is “flexible” in Czech, as its location may change according to the length of a vocative. If the vocative has three or more syllables, the high peak is usually aligned with the second

syllable or even later. But if the vocative has only two syllables, the rise and high peak are mostly aligned with the first syllable ([L+H*]). Unlike Romance languages, Czech also presents a vocative case-marker, but the calling “chant” still represents a crucial strategy to express a vocative.

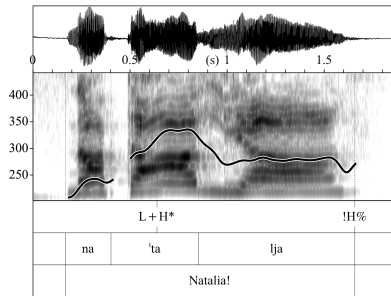
Figure 1: Waveform, spectrogram, and F0 trace of the vocative *Natálie!* (L1 Czech) produced with L*+H !H% (left) and L*+H L% (right).



2.2. Italian vocatives

Initial calls observed in most Romance varieties, including Italian, have a L+H* !H% pattern that corresponds to a rising tone on the stressed syllable followed by a sustained mid boundary tone (Fig. 2). Besides this pattern, its variant L+H* H!H% has also been reported ([7]), since a high tone may be found in the posttonic syllable with the mid tone realized after the highest point. Moreover, in some Italian varieties L+H* L% (e.g., Pisa) or even H+L* L% (e.g., Pescara) are found (ibid.).

Figure 2: Waveform, spectrogram, and F0 trace of the vocative *Natalia!* (L1 Italian) produced with L+H* !H%.

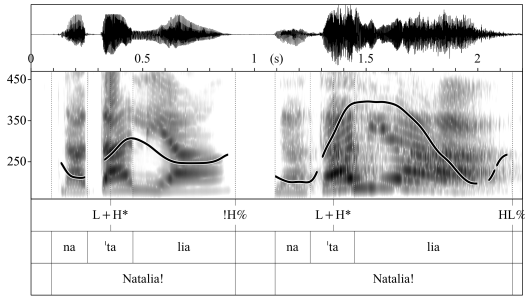


2.3. Spanish vocatives

Similarly to Italian, Spanish vocatives are characterized by a rising movement (L+H*) on the stressed syllable followed by a sustained mid boundary tone (!H%) that lasts until the end of the utterance. The last syllable generally has a longer duration and is realized with greater intensity ([8]) (Fig. 3, left). A variant of a nuclear configuration

involves a L+H* nuclear accent followed by a HL% boundary tone (Fig. 3, right). The latter contour has been observed in different Spanish dialects and is mostly used for insistent calls ([17]).

Figure 3: Waveform, spectrogram, and F0 trace of the vocative *¡Natalia!* (L1 Spanish) produced with L+H* !H% (left) and L+H* HL% (right).



3. HYPOTHESES

The null hypothesis is that there will be no differences between the L2 varieties since Czech vocatives are phonetically similar to Italian and Spanish vocatives. Based on the cross-linguistic differences, the following hypotheses are posed:

- (H1) Since L1 Czech vocatives may end in L%, this boundary tone will be found in the L2s too.
- (H2) L2 Spanish learners will produce HL%, a pattern absent in L1 Italian.
- (H3) L2 Italian learners will produce longer (open) stressed syllables (*Nata:lia!*), in accordance with the lengthening rule applied in L1 Italian.

4. DATA AND METHODS

4.1. Speakers

For the purposes of the present study, 20 L2 Spanish learners and 20 L2 Italian learners were recorded in an experiment, described below. The participants were all adults, mostly students at Charles University in Prague and Masaryk University in Brno. (They were speakers of two main dialect groups of Czech, but no clear differences in their L1 vocatives were detected.) None of them was aware of the purpose of the study.

Regarding their L2 proficiency, half were intermediate and half were advanced learners. However, proficiency did not seem to play any role in the present phenomenon, since no significant differences or preferences between the two levels could be observed in the vocatives. Additionally, 12 native speakers, six L1 (Northern and Central) Italian speakers and six L1 (Peninsular) Spanish speakers were recorded in the same experiment. The

L2 learners were also recorded in their L1 in a very similar experiment designed for Czech (see [15]).

4.2. Material and procedure

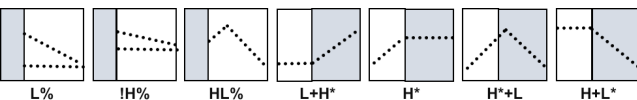
Following and modifying the methodology of the *(Inter-)Fonología del Español Contemporáneo* corpus project ([18]), the present study gathered data by means of an hour-long production experiment consisting of a repeating task, a reading task, a semi-directed conversation, and a so-called *discourse completion task* (DCT), developed for intonation research (see [6], [17], [19]). In this inductive method, the speaker is asked to imagine a daily situation and then react appropriately to it. For the purposes of this study, I selected only the context in (1), which was intended to prompt the production of a vocative.

- (1) Context: *You see Natalia, a friend of yours, on the other side of the street. Call her.*
Expected response: *Natalia!*

4.3. Analysis and measurements

First, all files were transcribed and segmented by performing an acoustic analysis in Praat ([2]). Second, tonal events were labelled using the ToBI annotation system based on the AM-model of intonation ([16]) (see [17] for Spanish ToBI; [7] for Italian ToBI; [15] for a preliminary ToBI proposal for Czech). Since we were dealing with L2 data, the labels were applied phonetically and merely for practical purposes, that is, to help systematize and compare the patterns found in the data. In total, three different boundary tones (BT) and four types of a nuclear pitch accent (NA) were present in the data (a H+L* pattern occurred only once) (Fig. 4).

Figure 4: Schematic representations of boundary tones and pitch accents detected in the L2 data.



Third, the following measurements were performed: (1) the duration of the whole vocative (*Natalia*), (2) the duration of the accented syllable (*ta*), and (3) the duration of the last syllable of the utterance (*lia*) (in proportion to the whole word). Finally, a chi-squared test for the categorical variables (tonal events) was run and linear mixed-effect regression models were used to compare duration across groups, with DURATION as the dependent variable, LEARNER VARIETY and NUCLEAR CONFIGURATION as fixed effects, and PARTICIPANTS as random effect.

5. RESULTS

The results show an interesting tendency. Starting with nuclear pitch accents (Table 1), we observe a noteworthy difference between the two learner groups (χ^2 , $p < .05$). The rising pitch accent (L+H*) was clearly the predominant pattern in L2 Spanish, whereas the H*+L, non-existent in L1 Czech, was the most frequent in L2 Italian. The H* accent corresponds phonetically to the Czech pattern (L*+H) seen in Fig. 1. We found further differences in the realization of boundary tones (Table 2): The L2 Italian vocatives ended predominantly in a low tone (L%) whereas the L2 Spanish vocatives ended in a rise-fall (HL%) (χ^2 , $p < .05$) (see Fig. 5 for a combination of BT and NA).

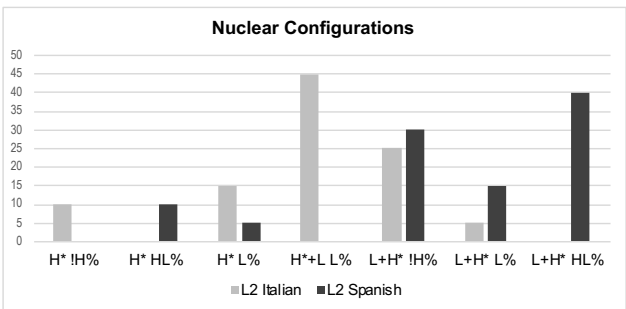
Table 1: Inventory of L2 nuclear pitch accents.

Nuclear pitch accents	L2 Italian	L2 Spanish
H*+L (H+L*)	45%	0%
L+H*	30%	85%
H*	25%	15%
Total (n)	20	20

Table 2: Inventory of L2 boundary tones.

Boundary tones	L2 Italian	L2 Spanish
!H%	35%	30%
L%	65%	20%
HL%	0%	50%
Total (n)	20	20

Figure 5: Inventory of L2 nuclear configurations.



The analysis of duration revealed some differences in speech rates too (Fig. 6, Fig. 7). Whereas the tonic syllable (*ta*) tended to be longer in L2 Italian than in L2 Spanish (median: L2 Italian 39.81ms, L2 Spanish 28.11ms; $p < .005$), we find the opposite trend in the last syllable (*lia*) (median: L2 Italian 45.09ms, L2 Spanish 56.00ms; $p < .005$) (no differences were observed in the first syllable *na*). Notice that the L2 Italian group behaved differently not only from the L2 Spanish group, but also from our L1 controls. Regarding the full duration of the vocative, there were no essential differences between the two L2 varieties.

Figure 6: Durational proportion of the tonic syllable *-ta-* in the L2 varieties and L1 controls.

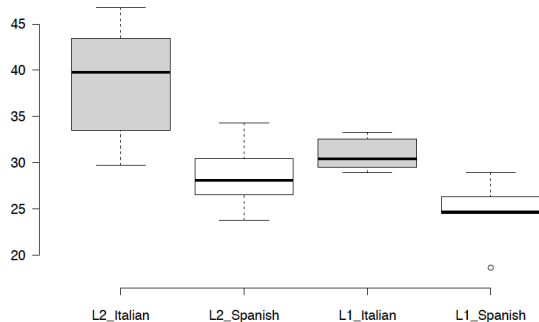
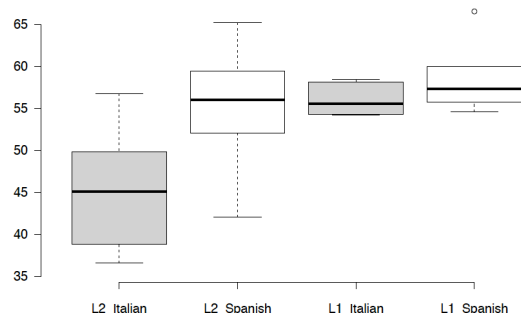


Figure 7: Durational proportion of the post-tonic syllable *-lia* in the L2 varieties and L1 controls.



6. DISCUSSION & CONCLUSIONS

Although the default L+H* !H% contour was found in both L2 varieties, it was not the predominant pattern. In general, there were more differences than similarities between the learner groups. This means that different L1 learners of the same L2 perceive and produce the target language differently. Our first prediction (H1), that the L2 vocatives would be realized with L%, was only partially confirmed. L% was found in L2 Spanish as well as in L2 Italian, where it was clearly more frequent. However, its realization may be connected indirectly with the falling H*+L pattern rather than being a simple case of L1 transfer. As for HL% (H2), this boundary tone was, in effect, found only in L2 Spanish in combination with H* or L+H*. Its presence may be a product of the nuclear “delayed” peak observed also in longer L1 Czech words. Finally, the last prediction (H3) was confirmed too: The duration of the stressed syllable was longer in L2 Italian than in L2 Spanish. This means that learners of Italian are sensitive to durational cues in that language.

In summary, the current study demonstrates that L2 learners do not only transfer L1 features (Fig. 8) and/or create mixed CLI patterns. The most striking result here is the H*+L in L2 Italian, interpreted as a case of prosodic overgeneralization (Fig. 9), since it occurs neither in L1 Italian nor in L1 Czech vocatives. Nevertheless, the H*+L was found in

nuclear position in different biased sentences in L2 as well as L1 Italian (e.g., echo polar questions, statements of the obviousness, focus). The learners seem to use this pattern together with an exaggerated lengthening of the stressed syllable as a kind of “Italianized” feature. Interestingly, the L2 Italian learners commented elsewhere in the experiment that the Italian “sing-song” melody is very important for a native-like production. None of the L2 Spanish learners made such comments regarding Spanish. Some issues that merit further exploration are (1) how native speakers/hearers perceive non-native vocative patterns; (2) the extent to which implicit and explicit phonological awareness (see [11]) plays a role in L2 speech; (3) in which other cases overgeneralized patterns occur and why; and (4) how the present findings can be integrated into theories of L2 prosody acquisition (see, e.g., [13]).

Figure 8: Example of transfer. The vocatives *Natalia!* (L2 Italian) and *Natálie!* (L1 Czech) produced by the same female speaker.

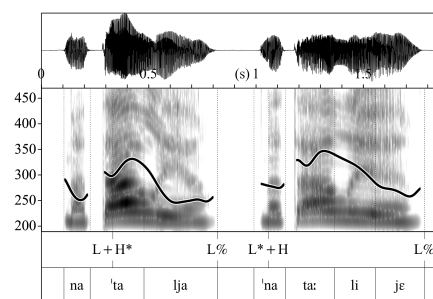
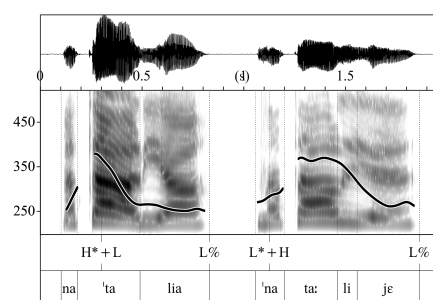


Figure 9: Example of prosodic overgeneralization. The vocatives *Natalia!* (L2 Italian) and *Natálie!* (L1 Czech) produced by the same female speaker.



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