Do Italian native learners expect geminate consonants in L2 French?

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Introduction. A growing body of research shows that orthography influences the pronunciation and the phonological awareness of L2 speakers. The effects of orthography may go as far as to induce phonological oppositions that are inexistent in the target language: Bassetti et al. (2018) have shown that Italian native speakers produce longer consonants (geminates) in L2 English when spelled with one vs two consonants (e.g. *finish-Finnish*, realized as [ˈfɪnɪʃ]-[ˈfɪnːɪʃ]), replicating grapheme-phoneme conversion rules of their L1. The present study is inspired by such work but focuses on Italian learners of L2 French.

Consonant duration is phonological in Italian (incl. northern varieties of Italian, cf. Mairano & De Iacovo, submitted), but not in French. Mairano et al. (2018) replicated results by Bassetti and colleagues, showing that Italian learners of L2 French produce longer consonants in correspondence of <CC> spelling (e.g. *pra*t*iquer-a*tt*irer, éta*p*e-écha*pp*e*). In this study, we investigate whether such learners *expect* longer consonants in correspondence of <CC> spelling. In order to test this hypothesis, we conducted a perception tests with 20 Italian learners at the University of Turin (B1 or above) and 20 native control speakers at the University of Paris 8.

Perception test. A cross-modal masked identification task was developed with *PychoPy* (Peirce, 2007). Audio stimuli consisted of French words uttered in isolation by a Parisian speaker with declarative intonation. All stimuli were manipulated in two ways: (i) they were partially masked by deleting either the first or the last syllable, and (ii) a target consonant was lengthened at 5 different conditions (no lengthening, +30%, +60%, +90, +120%), inspired by Rochet & Rochet (1995). We carefully selected 80 French words as stimuli with target consonants [p], [t], [l], or [m]/[n]: half of them were spelled as C (e.g. *signa*l*er*), the other half as CC (e.g. *insta*ll*er*); half were at the onset of the second syll. (e.g. *re*t*irer*), half at the onset of the last syll. (e.g. *hôpi*t*al*). Participants heard a stimulus, then saw a word on the screen and had to decide whether the audio stimulus corresponded to the word on the screen. For instance: they heard [sjonal] (manipulated with a +60% longer [n]), then saw the word *national* and had to decide whether what they heard is a possible end for *national*. 40 distractors had a real incoherence between the audio and the word on the screen (e.g. [topys] instead of [tobys] for *autobus*). We adopted a Latin Square design so that each participant would never hear the same word more than once. We expected lower accuracy and longer reaction time for stimuli with mismatching cues (i.e. long <C> and short <CC>).

Results and discussion. The results (fig. 1) suggest that Italian learners recognise <CC> words equally if pronounced with a short or a long consonant. However, accuracy decreases significantly for <C> words lengthened by 90% and 120%. This effect is smaller than expected, but the difference with respect to native speakers (who show no effect) is visible.

Reaction times (fig. 2) for Italian learners present the expected X pattern with higher values for mismatching cues and lower values for matching cues, although not all differences reach statistical significance. Again, we observe a difference with respect to native participants, for whom consonant lengthening seems to have no effect whatsoever.

The production results reported by Mairano et al. (2018) showed that Italian learners of L2 French replicated grapheme-to-phoneme conversion rules of their L1 and thereby produced longer consonants in correspondence of <CC> than <C> spelling with a ratio of 1.2 (i.e. smaller than in their L1, as already found by Bassetti et al., 2018). This happens even in word-final position, where Italian phonotactics does not license geminate consonants. It is therefore argued that the orthographic effect under scrutiny affects more strongly L2 production than L2 perception.
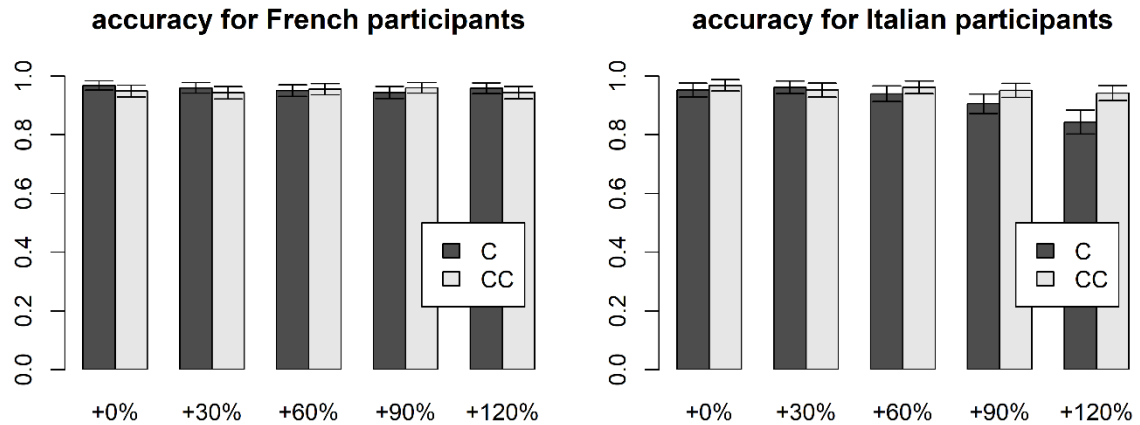
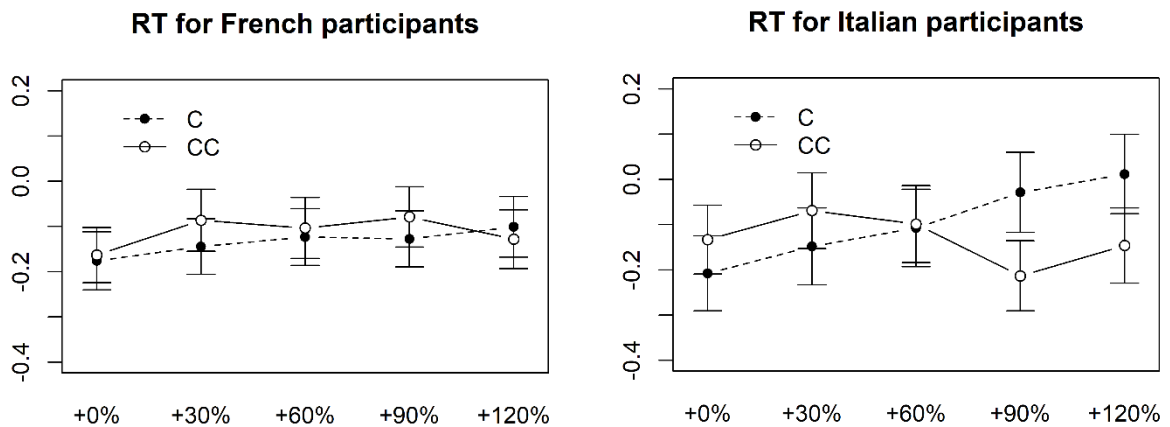*Figure 1. Accuracy (percentage of identified stimuli) in the 5 lengthening conditions for C vs CC words.*

Figure 2. Z-score transformed reaction times for the identification of stimuli in the 5 lengthening conditions for C vs CC words.

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