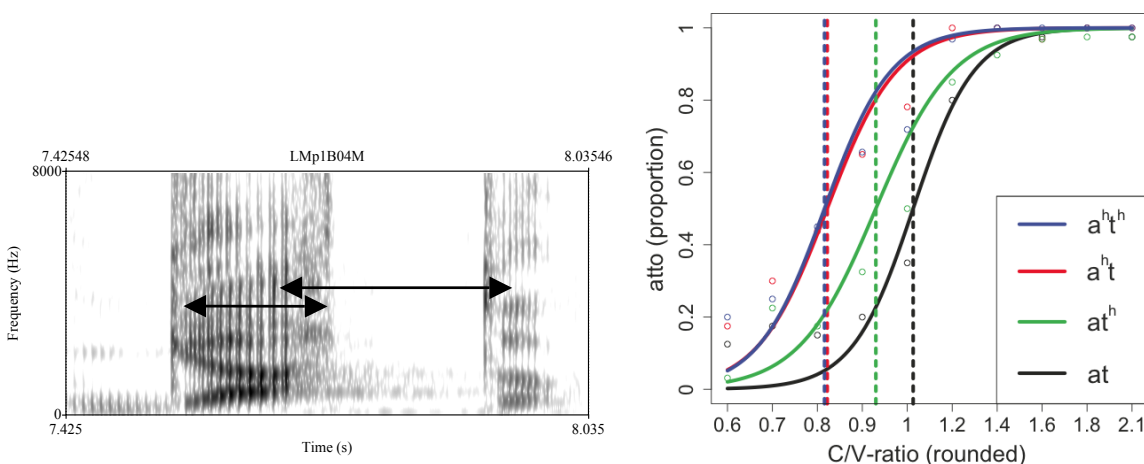


The listener and preaspiration in Italian

Recent acoustic phonetic investigations into spoken standard Italian have shown that /pp tt kk/ are optionally produced with a portion of preaspiration e.g. *fatto* [fa^ht:o] ‘done’, post-aspiration [fat:^ho] or both. This conflicts with descriptive sources, which instead all agree that voiceless stops are unaspirated in Italian (e.g. Bertinetto & Loporcaro 2005). Nonetheless, preaspiration of /pp tt kk/ is a shared tendency for native speakers from 15 Italian cities and occurs approximately one third of the time, depending on consonant place and other factors (e.g. Stevens 2010). In terms of the established phonetic cues to C-length in Italian (preceding V duration, overall C duration and C/V ratio, cf. especially Pickett et al. 1999), acoustic results to date suggest that /pp tt kk/ produced with preaspiration are more robust than plain [p: t: k:] – if, for these temporal measures preaspiration is included in the overall duration of the consonant. In other words preaspiration appears to be an enhancement of C-length on the part of the speaker. However, as Ohala (1981) and many others since have argued, sound change also crucially depends on the listener and there is evidence to suggest Italian listeners could perceive preaspirated stops as /VC/ rather than intended /VC:/. More specifically, preaspiration is very hard to hear (e.g. Bladon 1986) and in a descriptive typological study Silverman (2003) directly links this lack of perceptual salience to the diachronic instability of preaspiration as a contrastive feature, which tends to be replaced with contrastive vowel length i.e. V^hC > V:C over time. Here we propose that the tendency for native Italian speakers to realise /pp tt kk/ with preaspiration could trigger a listener-driven sound change involving degemination i.e. /VC:/ > [V^hC] > /V:C/. This proposal is also motivated by the fact that degemination has occurred almost everywhere else in Romània (although not as far as we know involving preaspiration).

Figure 1 (left): Preaspiration in *gatto* ‘cat’, which could be included as part of the vowel /a/ or the consonant /t/ as the arrows indicate. **Figure 2 (right):** Preliminary results for 5 listeners showing the proportion of “atto” responses according to C/V ratio (x-axis, cf. Pickett et al. 1999) for the 4 continua.



With these issues in mind this study tests the consequences of preaspiration and post-aspiration for native listeners and in particular whether they include preaspiration as part of the consonant or as part of the preceding vowel (cf. Figure 1) e.g. hearing *fato* rather than intended *fatto*. A forced choice perception experiment was designed involving 4 synthesized continua from [a:to] to geminate [at:o] (keeping overall duration stable) for [at], [a^ht], [at^h] and [a^ht^h]. For each stimulus listeners chose between “atto” or “ato” (phonologically legal non-words). We predict that if listeners include preaspiration in the consonant (i.e. maintenance) the C v. CC perceptual boundary should remain the same across the 4 continua whereas if they perceive preaspiration as part of the vowel, the boundary will shift to the right (i.e. more “ato” responses). Preliminary results (*n* listeners = 5) show that stops with preaspiration (cf. Figure 2) are perceived as “atto” earlier than those without i.e. listeners include preaspiration as part of the C. Post-aspiration also appears to favour the perception of a geminate. These results do not support our hypothesis that a further sound change involving listener-driven degemination, via preaspiration, is likely to take place in Italian. Instead preaspiration appears to serve as a perceptual enhancement of C-length. Further work is needed to determine whether preaspiration is a phonetic cue to geminates in its own right and whether it could develop into a stable feature in standard Italian.