

The effect of lexical stress and social factors on the emergence of post-aspiration in Granada Spanish

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This study examines the effect of lexical stress and social variables of the speaker on the production of /s/ + voiceless stop clusters in Granada Spanish.

In Andalusian Spanish, syllable-final /s/ is usually lenited (e.g., *pasto* ['pahto]), a process known as /s/-aspiration. The phonetic consequences of /s/-aspiration are multiple and may affect contiguous vowels and consonants. For Andalusian Spanish the production of /s/ + voiceless stop sequences has been shown to vary with the age and origin of the speaker. Younger and Western Andalusian speakers tend to produce /s/ + voiceless stop sequences with post-aspiration ([ˈpat^ho]) or affrication ([ˈpat^so]), and older and Eastern Andalusian speakers with pre-aspiration and a long stop closure ([ˈpahtːo]; Moya Corral 2007; O'Neill 2010; Ruch & Harrington 2014), suggesting a sound change from pre- to post-aspiration in Andalusian Spanish. As for linguistic factors, Torreira (2012) hypothesised that post-aspiration should be longer in unstressed syllables due to more coarticulation in prosodically weak contexts. This hypothesis was not confirmed in his study, but in subsequent work by Horn (2013) on Seville Spanish.

In this study, we investigate the role of lexical stress on the spread of post-aspiration in Granada Spanish – an Eastern Andalusian variety which has been shown to be in an initial stage of the sound change from pre- to post-aspiration (Ruch & Harrington 2014). Following previous work, we expected that younger speakers would produce a longer post-aspiration than older speakers, and that post-aspiration would be longer in unstressed (e.g., *pasto* [ˈpa.t^ho]) than in stressed syllables (e.g., *pastón* [pa.ˈt^hon]). We further hypothesised that pre-aspiration would be longer in stressed (e.g. *pasto* [ˈpah.to]) than in unstressed syllables (e.g., *pastón* [pah.ˈton]).

11 word pairs with lexical stress either preceding or following /s/ + voiceless stop (e.g., *raspa* - *raspar*; *pasto* - *pastón*; *tasca* - *atascar*) were recorded in two repetitions and a randomised order for 29 speakers from Granada. 15 speakers were younger, 14 older than 45 years, and about half of each group had a completed university degree. We measured the duration of pre-aspiration, stop closure, and post-aspiration. Although pre- and post-aspiration duration showed a trend in the expected direction, only pre-aspiration duration was significantly affected by age ($p < 0.05$). Unexpectedly, educational level appeared to be a better predictor of post-aspiration and closure duration than age: Speakers with a higher educational level produced a significantly longer post-aspiration ($p < 0.05$) duration and a shorter stop closure ($p < 0.01$), and showed a trend towards a longer pre-aspiration. While no systematic effect of lexical stress on pre-aspiration duration was observed, post-aspiration duration was significantly longer in unstressed than in stressed syllables ($p < 0.001$). Further analyses showed that closure duration was longer in words with the *pasto* stress pattern than in words with the *pastón* stress pattern, contrary to Torreira's (2012) findings for Western Andalusian Spanish where stop closure was found to be longer in *pastón* than in *pasto*.

The result that post-aspiration was more likely to occur in unstressed syllables is compatible with Torreira's (2012) suggestion that post-aspiration results from coarticulation of the glottal opening gesture (for /s/) with the stop closure gesture (for /p, t, k/, respectively). The finding that speakers with a higher educational degree tended at the same time to produce a longer pre-aspiration and a shorter stop closure suggests the emergence of post-aspiration may be favoured in Granada if pre-aspiration, resulting from /s/-lenition, has not (yet) been assimilated to the following stop closure.

References

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