The weakening of syllable-final /s/ is a widespread phenomenon in the Spanish-speaking world. When what would be a standard Spanish /s/ precedes a voiceless stop in dialects with /s/-aspiration, the result is normally a pre-aspirated stop [ht]. In recent years, attention has been drawn to a change in this particular environment. For some speakers in Andalusia in southern Spain, /s/ + stop (sC) clusters are realized as post-aspirated stops. There have also been reports of /st/ being affricated to [ts]. The change appears to be most advanced in the western part of the region and to be spreading to other areas. The existing data on this phenomenon to date is largely limited to acoustic analysis of read laboratory speech.

Previous analyses of the variation in this area have analyzed it as purely phonetic: either as a simple realignment of gestural timing (Parrell 2012) or as timing adjustments of different parts of the segment (Torreira 2012).

This study uses measurement techniques outlined in Ruch and Harrington (2014) to investigate the realization of sC clusters in naturalistic data. Post-aspiration is measured by VOT on the stop, and pre-aspiration as Voice Termination Time (VTT), or the length of time between cessation of voicing and full stop closure. Sociolinguistic interviews with accompanying reading tasks were conducted with 5 young adult speakers from Western Andalusia. An additional 5 speakers drawn from the PRESEEA Málaga sociolinguistic corpus have not yet been fully analyzed. The (partial) results support a trade-off (negative correlation) between closure duration and VOT (see Figure 1). VTT shows a positive relationship with closure duration (see Figure 2). This is in line with some previous findings that the overall duration of the segment is shorter when post-aspiration replaces pre-aspiration, a fact that is at odds with an analysis based solely on gestural timing adjustments that would not result in changes in overall duration.

Following O’Neill (2009), it is argued that post-aspirated tokens are the result of the simplification of the cluster in the phonology into a single aspirated stop. Some novel support for such an analysis is the presence in the data of a number of phrase-initial tokens where the preceding vowel has been completely deleted (e.g., [tʰa] from está), all of which display long-lag VOT. It should be noted that consonant clusters with /s/ are not permitted in the onset in Spanish, and the proposed reanalysis makes that phonotactic restriction irrelevant, allowing for initial vowels to undergo lenition when the variant is /Cʰ/. In this variety, this process is inhibited when the variant is /hC/.

An additional piece of evidence for phonological reanalysis is that affrication of /st/ to [tʰ], something occurs often in the data, is not accompanied by pre-aspiration and long closures. It should be noted that, although affrication may at first glance appear to complicate the single phoneme analysis (if [ʰ] is analyzed as deriving from underlying preceding /s/), it has been argued with data from other languages that affrication of postaspirated /tʰ/ can be considered a fortition strategy (Buizza and Plug 2012). Its presence in this context as the result of such a strategy is more plausible than the scenario where /s/ is reemerging on the other side of the stop, especially considering that many aspirating speakers arguably do not have underlying /s/ in this context, but rather underlying /h/. Affrication cannot therefore be easily attributed to a phonetic process when the underlying variant is assumed to be /ht/, but is explainable if we posit /tʰ/ as a variant.

In the data, there are speakers that vary between long-lag VOT and pre-aspiration/long closures in their production of these clusters. The proposal here then is that such speakers have both /hC/
and /Cʰ/ as variants of /sC/ (along with a formal variant where the sibilant is preserved).
Although a gestural timing model can plausibly help explain the actuation of the change leading
to the current state of this variable, it does not adequately describe the variants that exist today.
An analysis with multiple variants existing in the grammar is a better fit for the data because (1) it explains why preceding vowel deletion would co-occur with long-lag VOT; (2) it explains why affrication would not occur after pre-aspirated tokens; and (3) the existence of two different phonological targets more straightforwardly accounts for the pattern of trade-off between overall segment duration and VOT than one that attributes the variation to low-level gestural realignment.

References

Emanuela Buizza and Leendert Plug. 2012. Lenition, fortition and the status of plosive

Dohotaru, Puica. 2004. Variación de -/s/ en la habla de habaneros universitarios:
Condicionamiento lingüístico y social. In S. Valdés Bernal (Ed.).

Pensamiento lingüístico sobre el Caribe insular hispánico pp. 68-110. Santo Domingo:
Academia de Ciencias de la República Dominicana.


Parrell, B. 2012. The role of gestural phasing in Western Andalusian Spanish aspiration.

Ruch, Hanna, Harrington, Jonathan 2014. Synchronic and diachronic factors in the change

Boletín de Lingüística 21, 48-65.

Torreira, F. 2012. Investigating the nature of aspirated stops in Western Andalusian Spanish.