

The production and perception of syntactic geminates in Spanish

The only instance of quantity differences in Spanish is the tap/trill rhotic contrast, which is found only in word-internal intervocalic position, as in *caro* ‘expensive’ vs. *carro* ‘cart’. On the other hand, sequences of identical consonants or “syntactic geminates” may arise by word concatenation as in *come nueces* ‘s/he eat walnuts’ vs *comen nueces* ‘they eat walnuts’. A question that arises is to what extent consonant length can be used to convey differences in meaning reliably in a language without word-internal geminates (see Oh & Redford 2012 for English). The possibility of such a contrast would seem particularly questionable in the case of sequences of rhotics, as in *partí rocas* ‘I broke up rocks’ (/r/) vs *partir rocas* ‘to break up rocks’ (/r-r/), since word-initial rhotics are trills, or already intrinsically long. In fact, for the rhotics, it has been claimed that there is no possible contrast of this type, so that examples like those just mentioned would always be ambiguous (Harris 1983, Quilis 1993, but see Hualde 2004).

We will report on three experiments to examine the production and perception of the singleton/syntactic geminate contrast in Spanish. In a first experiment, we asked 11 Spanish speakers to identify auditorily-presented recorded stimuli like those given above by pressing one of two buttons on a computer keyboard. For each consonant 20 stimuli were presented. Both numbers of errors and reaction times were measured. The results show that listeners identified the intended meaning with better than chance accuracy. The consonants /n/, /r/ and /s/ were chosen for the test because they can be inflectional suffixes, paradigmatically contrasting with their absence and thus giving rise to minimally contrasting utterances. Listeners were very accurate in the perception of the /n/ vs /n-n/ contrast (96% correct). For /r/ (71%), /r-r/ (71%) and /s-s/ (78%) accuracy was lower but still high. On the other hand /s-s/ was correctly perceived only 57% of the time. Reaction times were also significantly longer for /s/ and /s-s/ than for the other consonants.

In a second experiment, 4 speakers produced contrasting pairs including /n/, /l/ and /s/ as singletons and in sequences included in meaningful sentences. The results show that whereas /n/ and /l/ are reliably distinct from /n-n/ and /l-l/ in duration, there is substantial overlap between /s/ and /s-s/. Finally, for our third experiment, we artificially manipulated the duration of consonants in naturally produced tokens in steps. The results are so far consistent with the production data: for the nasal and the lateral there is a near-categorical shift whereas the perception of the /s/ vs /s-s/ contrast is much less reliable. Data analysis for this experiment is still in progress.

The difference in the reliability with which the singleton/geminate contrast in sonorants vs fricatives is produced and perceived in Spanish does not appear to reflect universal tendencies (see Kawahara 2005, but see Hardison & Saigo 2007 for /s/). Instead, we seem to have a language-particular phenomenon which is, on the other hand, consistent with the evolution of the consonant system from Latin to Spanish. Latin was a language with a robust intervocalic contrast between singleton and geminate consonants. Whereas most geminates were simplified, e.g. Lat. *gutta* > Sp. *gota* ‘drop’, Lat. *passum* > Sp. *paso* ‘step’, for the alveolar sonorants we find a different evolution, leading to the palatalization of /ll/ and /nn/, e.g. Lat. *annum* > Sp. *año* ‘year’ and the emergence of a contrastive trill. Our results show that the resistance of these consonants to degeminate (across word boundaries) is still found in the present-day language.