

Vowel intrusion between plosive-liquid consonant clusters in Tagalog

Cross-linguistically, a vocalic sound may be inserted between consonant clusters either phonologically or phonetically. Hall (2006) categorized this phenomenon into two types: (1) phonological insertion or epenthesis to repair illicit structures and (2) phonetic insertion or intrusion as a result of phonetic transition or a retiming of articulatory gestures of two consonants. The latter can be observed even in languages that phonologically allow consonant clusters, such as Spanish and French (Colantoni & Steele, 2005; Ramírez, 2006). Researchers gave some accounts for this vowel intrusion, employing the framework of Articulatory Phonology (Browman & Goldstein, 1986). As articulatory gestures can be seen as phonological units, for instance, Bradley (2006) argued that vowel intrusion is produced as a result of articulatory configuration when articulations of a consonant overlap the tongue body gesture of a vowel. Figure 1 shows representation of this mechanism: the two solid lines represent each consonant gesture and the dotted line represents overlapping of gestures, which allows a vocalic element [ə] to be perceived. Hall (2006) echoes with his idea that consonant clusters that have taps or flaps can frequently be intruded by a vocal sound for perceptual motivation, discussing that a retiming of articulatory gestures of two consonants may produce a vocalic sound between consonant clusters without being a phonological entity.

This paper deals with the vowel intrusion between consonant clusters consisting of plosives and liquids (henceforth, plosive-liquid clusters) in Tagalog. Tagalog, whose basic syllable structure is CV(C), allows consonant clusters such as CCV phonologically. Such clusters are limited to plosive-liquid clusters, only found in loanwords from Spanish and English (e.g., /trabaho/ *trabaho* ‘work’ or /doblado/ *doblado* ‘doubled’) due to the language’s constant contact with such languages (Schachter & Otones, 1972). Recently, Kurusu (2022) revealed through an acoustic analysis that they may also be intruded by vowels, as shown in Figure 2. He also revealed that consonant clusters formed by plosives and rhotic /r/ are more frequently intruded by a vocalic sound (82% of all the tokens) while only 6% of tokens from consonant clusters formed by plosives + lateral /l/ show intrusive sounds.

While Kurusu’s (2022) study is the first attempt to have identified vowel intrusion between plosive-liquid clusters, he has not given any further analysis. This paper, therefore, aims to examine the following research questions:

RQ1: What phonetic environment does trigger vowel intrusion between plosive-liquid clusters more frequently?

RQ2: Does vowel intrusion in Tagalog align with the cross-linguistic patterns of vowel intrusion discussed under the framework of Articulatory Phonology?

To address the research questions above, an acoustic experiment and analysis are conducted. Five native Tagalog speakers were asked to produce words that contain consonant clusters formed by plosives (/p/, /b/, /t/, /d/, /k/, and /g/) and liquids (/r/ and /l/) embedded in a carrier sentence. From here, a total of 720 tokens are extracted and analyzed using Praat (Boersma & Weenink, 2024).

As for QR1, this paper reveals that vowel intrusion occurs more frequently (i) when plosives are coronal than labial or dorsal, and (ii) when plosives are voiced rather than voiceless, which are comparable to the findings of previous studies on plosive-liquid clusters in Spanish (Colantoni & Steele, 2005; Ramírez, 2006). As for QR2, the paper also argues that vowel intrusion in Tagalog aligns with the cross-linguistic patterns of vowel intrusion discussed under the framework of Articulatory Phonology, as intrusive vowels in Tagalog exhibit similar characteristics of those discussed in Bradley (2006), such as (a) their variable duration, (b) their similar but not identical formant structure to the tautosyllabic nuclear vowel, and (c) their greater frequency before /r/ than /l/. Finally, this study provides two implications. First, it is novel to find out that phonetic driven vowel intrusion may also

occur in Tagalog, contrary to the fact that Austronesian languages tend to prefer simpler syllable structures so that often employ epenthesis to repair illicit structures both diachronically and synchronically. Second, this is a great addition to the typological study of vowel intrusion to consonant clusters because consonant clusters in Tagalog are more marked than those in the languages previously examined as they are exclusively found in loanwords.

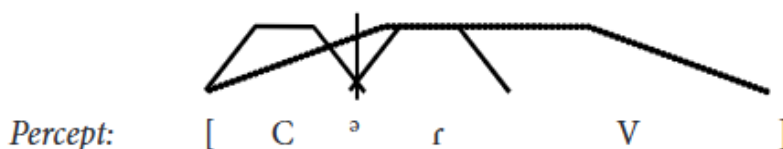


Figure 1 Representation of vowel intrusion between a consonant cluster in gestural model

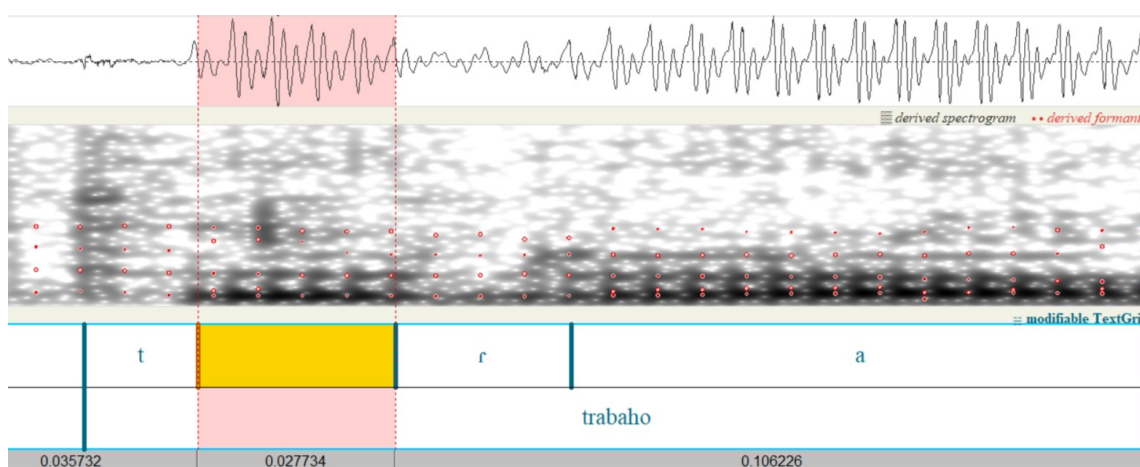


Figure 2 Vowel intrusion between /tr/ cluster in *trabaho*

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