

Bay Area Spanish: Regional sound change in contact languages
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The California Vowel Shift (CVS) was first described in 1987 ([1]) and includes fronting of English /u/ and /o/, raising and backing of /a/, and backing and lowering of /i/. Additionally, the compression of the vowel space has been observed as another feature of CVS ([2]). Several studies ([3], [4], [5], [6], [7]) have examined the relationship between ethnicity and participation in these regional sound changes, particularly with Chicano English speakers, and found that these speakers did, in fact, participate in regional sound change previously only attributed to Anglo American speakers. The conclusions drawn by these studies indicate that the relationship between ethnicity and CVS is vowel-dependent, but they challenge the notion that ethnic identity alone is the conditioning factor for participation in local sound change, and advocate for future analyses of social class, gender, language proficiency, community-specific categories, and orientation towards regional identity as correlates of sound change participation.

The present research aims to provide empirical data to address the gap in the literature regarding the influence of regional sound change on contact languages. According to the Speech Learning Model ([8]), the L1 and L2 are not two separate phonological systems, and composite L1-L2 vowel categories may form if an L1 and L2 vowel category are perceived to be equivalent. Applying this theory to bilingual Spanish-English speakers in California that receive input from CVS-affected English (whether Anglo English or Chicano English), L1 and L2 vowel categories perceived as equivalent will assimilate, namely /i/, /u/, /o/, and /a/. Accordingly, this study investigates whether CVS changes in progress in English are also present in assimilated vowel categories in California Bay Area Spanish.

Data for the present study are drawn from six speakers, stratified by age (18-26 years, 41+ years), from the Corpus of Bay Area Spanish ([9]). Six-minute segments of sociolinguistic interviews were transcribed and formant measurements from the midpoint of 6,026 Spanish vowels were extracted and normalized with line-fitting ΔF method ([10]). Formant data for /i/, /a/, /o/, and /u/ were submitted to linear fixed effects regression models in R ([11]) with age group as a fixed effect. For holistic measures of the vowel space, the vowel space area and vowel space dispersion were calculated for each speaker and submitted to linear fixed effects regression models, with age as a fixed effect.

Significant fronting of /o/ and backing and lowering of /i/ were observed in apparent-time (Fig. 1), and are changes in progress that are also occurring in CVS. Additionally, vowel space dispersion significantly decreases in apparent-time (Fig. 2), aligning with the compression of the vowel space observed in CVS. These results suggest that regional sound changes may influence the production of contact languages and provide evidence for perceptual category assimilation among Spanish-English bilinguals in the Bay Area. These results additionally broaden the scope of regional sound change studies by removing the historically Anglo-centric focus. Future studies should incorporate the data from more speakers and explore how the aforementioned set of social factors may be linked to the presence of regional sound changes in contact languages, which ultimately underscores the mechanisms of bidirectionality in language contact settings ([12]).

Figure 1.

Bay Area Spanish Changes in Apparent-time

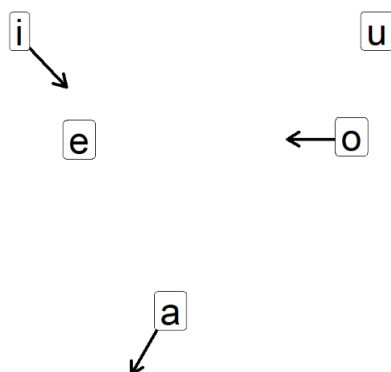
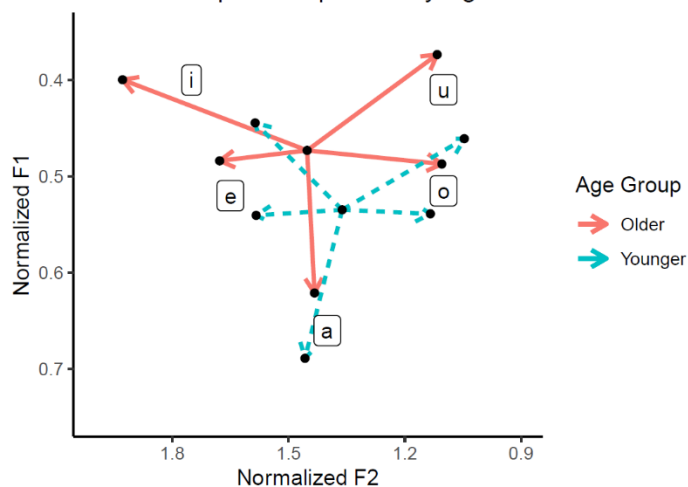


Figure 2.

Vowel Space Dispersion by Age



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