

## Regional variation in Hawai'i Creole low back vowels

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Hawai'i Creole (known locally as Pidgin) is a creole spoken by some 600,000 people across the Hawaiian islands (Sakoda & Siegel 2008). Although English is the main lexifier language of Pidgin, its phonology, grammar and lexicon are distinct from that of English. Several studies have described the phonology of Pidgin, and this research has suggested two systems involving Pidgin low back vowels /a, ʌ, ɔ/: Pidgin speakers may (1) pronounce *cot* and *caught* the same in contrast with *cut*, or (2) they can pronounce *cot* and *cut* the same in contrast with *caught*. Furthermore, these vowels exhibit a large amount of inter- and intra-speaker variation (Bickerton & Odo 1976; Odo 1977; Sakoda & Siegel 2008). Together, these findings suggest that additional factors may play a role in the realization of these vowels in Pidgin. To investigate this, the present study conducted an acoustic phonetic investigation of Pidgin, and provides the first evidence of regional variation in the realizations of Pidgin low back vowels.

The current study analyzed 865 unique tokens of /a, ʌ, ɔ/ taken from sociolinguistic interviews conducted from 1973 to 1990 with ten Pidgin speakers (five males, five females). The speakers are from the islands of O'ahu, Kaua'i and the Big Island, and they were between the ages of 50 and 79 at the time of the interviews. Acoustic phonetic analysis revealed that tokens of /a, ʌ/ show consistently overlapped distributions, whereas /ɔ/ is realized in a higher, backer position for all speakers. Separate linear mixed effects models were fit to normalized values of F<sub>1</sub> and F<sub>2</sub> at the midpoint of each vowel to test the significance of gender and island of origin as predictors of vowel shift. These models corroborate that /a, ʌ/ are not significantly different from each other in F<sub>1</sub> or F<sub>2</sub>, and that /ɔ/ is significantly backer ( $p < 0.0001$ ) and higher ( $p < 0.0001$ ) than either /a/ or /ʌ/. While no significant effects for gender were found, significant effects of island of origin were found for /ʌ/—relative to Big Island speakers, Kaua'i speakers were more likely to exhibit higher ( $p < 0.05$ ) and fronter ( $p < 0.05$ ) /ʌ/, and O'ahu speakers were more likely to exhibit higher (but not fronter) realizations of /ʌ/ ( $p < 0.05$ ).

The overall finding that /a, ʌ/ cluster as a single lexical set distinct from /ɔ/ is in line with Sakoda and Siegel's (2008) claim, and is a unique finding for English-based varieties; however, this study found no evidence for the alternative pattern, where /a, ɔ/ form a single lexical set distinct from /ʌ/. Speakers from Kaua'i and O'ahu also maintain more of a distinction between /a/ and /ʌ/ than Big Island speakers, but in a way that is not characteristic of Hawai'i English. Furthermore, that Pidgin speakers maintain a distinction between /a, ɔ/ is evidence of phonological divergence between English and Pidgin, as Hawai'i English speakers exhibit completely overlapping distributions of /a, ɔ/ (Hay et al. 2013). These results provide an important first step toward a socially-informed acoustic phonetic description of Pidgin.

## References

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