SPEAKER ETHNICITY, LANGUAGE BACKGROUND, AND THE PRONUNCIATION OF HAWAIIAN PLACE NAMES[1]

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ABSTRACT

Residents of Hawaiʻi exhibit a great deal of variation in their pronunciation of place names that have a Hawaiian origin. Using wordlist data, we investigate whether the phonetic realization of Hawaiian place names is linked to speaker ethnicity (i.e., whether the speaker has Native Hawaiian ancestry) and/or language background (i.e., whether the speaker speaks Hawaiian). We focus on two linguistic variables: the glottal stop, which is phonemic in Hawaiian, and the realization of the vowel /o/. The results provide evidence that both factors are linked with which phonetic variants are used; speakers who are Native Hawaiian and speakers who can speak at least some Hawaiian produce more Hawaiian-like realizations of the place names compared with other speakers in the study. We

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argue that the various phonetic realizations are indexed to social meanings, and that anglicized variants can make a claim that Hawai'i is Western and a part of the United States, whereas Hawaiian variants can reject this claim in what Herman (1999) refers to as reconquest. Further, we argue that variants can do the social work of anti-conquest and reconquest even when it is not the intent of the speaker.

INTRODUCTION

Speakers manipulate linguistic forms to construct their social world, a process that is mitigated through sets of beliefs about language referred to as language ideologies (Woolard, 1998). Language ideologies, which include concepts such as standardness, are community-based beliefs that are constructed by the speakers themselves. The linguistic variants that tend to be associated with standardness in a society are those that tend to be used by those who have power in that society. The relationship between language and power is especially apparent in postcolonial societies because colonization results in both language contact and social change. Colonialists gained control not only of the place and the people who lived in that place, but of the people's languages and language varieties (Woolard, 1998: 25).

In Hawai'i, evidence of the link between power and language can be found, amongst other things, in place names. Some places have been named or renamed with words with a Western origin to appeal to tourists. For example, a place traditionally referred to as *'Ohe'o* and that was considered *kapu* (taboo) (Pukui, Elbert & Mookini, 1974: 168) began to be referred to as *Seven Sacred Pools*, reportedly a moniker made up by a nearby hotel in an effort to attract tourists[3]. In addition, many places have been named or renamed to honor *haole* (white) men who were directly involved in Hawai'i's colonization. For example, McKinley High School is named after the 25th President of the United States under whom Hawai'i was annexed to the United States under protest. Likewise, Cook Point, a point in the northern end of Kealakekua Bay, was named after the British explorer Captain Cook, whose crew members were known for committing atrocities throughout Polynesia.

In addition to renaming places, Hawaiian place names are commonly produced with anglicized realizations, where the names sound more like English and less like Hawaiian (Pukui, Elbert, & Mookini, 1974: 239; Romaine, 2002),

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[3] http://mauiguidebook.com/road-to-hana-maui/road-to-hana-sites-to-see-maui/seven-sacred-pools/, retrieved June 13, 2019.

by Locals and non-Locals alike[4]. For example, the city of Honolulu is some-times pronounced [hanəlulu] instead of the Hawaiian [honolulu]. Because of the link between colonization and the production and pronunciation of place names, many Hawaiians and non-Hawaiians feel a visceral reaction to the way a place name is pronounced, with some feeling that the anglicized variants butcher the language (Oliveira, 2009: 110-112) while others feel Hawaiian realizations sound hypercorrect and affected (Romaine, 2002: 205). We hypothesize that, as a result, the pronunciation of Hawaiian place names can be used to make claims about who has or should have power in Hawaiʻi.

In this chapter, we examine the phonetic realizations of two variables, /o/ and the glottal stop, in place names that have a Hawaiian origin. We present wordlist data from Local speakers, investigating linguistic and social factors that appear to influence their phonetic realizations. The results are considered within the context of anti-conquest and reconquest (Herman, 1999). Through anti-conquest and reconquest, Local speakers can either acknowledge the place names' indigenous origins and implicitly associate the places with the indigenous culture by pronouncing the place names as Hawaiian (i.e., reconquest) or they can make alternative claims (e.g., Hawaiʻi as property of the United States and English as the rightful language of the islands) by using Anglicized pronunciations of the place names.

Language in Hawaiʻi

Today Hawaiʻi is ethnically and linguistically diverse, a result of over two centuries of immigration, colonization, and occupation[5]. Prior to this extensive language contact, people in Hawaiʻi spoke only Hawaiian, a Polynesian language with a (C)V syllable structure, phonemically-contrastive binary vowel length, and eight consonant phonemes, including the glottal stop (Schütz, 1981; Parker Jones 2017).

In the late 1700s and throughout the 1800s, people from all over the world began to come to Hawaiʻi as visitors or immigrants, many arriving to take advantage of the fur, sandalwood, and whaling trades, and others arriving as

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[4]   Here, we use the term 'Local' to refer to people who are from Hawaiʻi. It should be noted that 'Local' is not the same as 'Hawaiian', which in Hawaiʻi refers to people who have Native Hawaiian ancestry.

[5]   Settlement and contact prior to written records remains a topic of debate beyond the scope of this paper. For reference, radiocarbon data suggests a date between 1219 and 1266 AD as a date of prehistoric settlement (Wilmshurst, Hunt, Lipo; Anderson, 2011).

missionaries. Beginning in 1835, the first sugarcane plantations drew laborers primarily from China, Portugal, and several Pacific Island nations. In the late 1800s, Japanese laborers arrived in large numbers, followed by Filipino laborers in the early 1900s. Because so many different languages came into contact on the plantations, pidgins arose whereby workers could communicate with one another. In the mid-1800s, a pidgin developed that was lexified primarily by Hawaiian (Sakoda & Siegel, 2003:5). As political and economic power in Hawai'i shifted away from its original inhabitants, however, plantation workers began to use pidgins that were heavily lexified by English. Somewhere between 1900 and 1930, the primarily English lexified Hawai'i Creole, known locally as Pidgin, became the most widely used creole language (Roberts, 2004: 331; Tamura, 1993: 51), and it is still spoken in the islands today.

The Hawaiian language suffered during the late 1800s. The visitors and immigrants had brought previously unknown diseases to the islands, contributing to a drastic decline in the population of Hawaiians. In 1887, King Kalākaua was held at gunpoint and forced to sign what came to be known as the Bayonet Constitution, effectively relinquishing his power as monarch. After Kalākaua's sister, Queen Lili'uokalani, rejected the constitution upon becoming queen, a group of American businessmen – with the support of U.S. soldiers – overthrew the Hawaiian monarchy. In 1896, the Hawaiian language was banned in schools and public places[6] and English became the official language of Hawai'i. By the 1970s, the number of Hawaiian speakers was estimated to be around 2,000 (Warner, 2001: 135-6), though some estimates (e.g., McCarty & Lee, 2015: 346) are even lower. With the number of Hawaiian speakers dwindling, the language was in danger.

The status of Hawaiian began to change in the 1970s with the resurgence of interest in Hawaiian language and culture (Kanahele, 1979; Oliveira, 2014). Evidence of this Hawaiian Renaissance is found in several key events linked with the celebration and promotion of traditional Hawaiian life and worldviews: the revamping of the Merrie Monarch Festival in 1971, the first voyage to Tahiti of the canoe, Hōkūle'a, in 1976, and the establishment of the Office of Hawaiian Affairs in 1978[7]. The renewed interest in Hawaiian culture also extended to

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[6] Act 57, sec 30 of 1896 Laws of the Republic of Hawai'i: An Act to Create an Executive Department to be known as the Department of Public Instruction; to Define its Duties and Powers: and to Repeal the Following Laws. Laws of the Republic of Hawaii passed by the Legislature at its Session, 1896. 57§30 (1896).

[7] OHA (Office of Hawaiian Affairs) website, accessed on 24 April 2015, from http://www.oha.org

language; Hawaiian language classes at the University of Hawai'i and in high schools became filled beyond capacity, and, in 1978, English and Hawaiian became co-official languages of Hawai'i. The movement continues today in what Ka'iama describes as a series of episodes where progress is "slow, steady, purposeful, and focused" (Ka'iama 2014: 112).

The Hawaiian language revitalization movement has had many successes. Indeed, for many endangered language communities – especially for those in the United States – Hawaiian "serves as a model and a symbol of hope" (Hinton, 2001:131). The number of fluent speakers, however, remains small. While Hawaiian is an official language of the state and there has been a resurgence of interest to learn Hawaiian, most people in Hawai'i – including many Hawaiians – cannot speak the language. For many people, the language lives in Hawaiian music, in select words or phrases, and in place names (Romaine, 2002: 194).

Place Names in Hawai'i

Western conceptions of the relation between people and place are different than Hawaiian ones. Prior to Western influence, land was not owned. Instead, people had stewardship over the land, whereby people took care of the land, and the land took care of the people (Holmes, 2000: 44-46). Each Hawaiian island was divided into *moku*, which were divided into smaller sections called *ahupua'a*. Most *ahupua'a* extended from the mountains to the sea, and were sufficient to sustain the people living in the area. Names were given to many different aspects of the geography, such as rock formations and gulches, many with spiritual significance. Place names are prominent in genealogies and play a central role in narratives and personal introductions. They are often involved in word play and double entendre, and are commonly found in *oli* (chants), *mele* (songs), and *'ōlelo no'eau* (proverbs, poetical sayings, and riddles) (Pukui, 1983). Traditionally, places were rarely named after a person, and when they were, it was to denote a connection of the person to the land rather than to serve an honorific function, as is common in the West (Herman, 1999: 84).

During and following colonization, the land was commodified and divided into sections that disrupted the ahupua'a and, therefore, the Hawaiian way of life. Most Hawaiians ended up with little to no land and could no longer live in the places they had always known. Due to the increasing presence and power of Westerners in Hawai'i, even spaces that previously had Hawaiian names in whole or in part were given English ones. For example, *Lē'ahi* is the traditional name of the highest peak of what most people today refer to as Diamond Head (Pukui et

al., 1974: 130) and *Puʻuloa* is the traditional name for Pearl Harbor (Pukui et al., 1974: 200-201). Through the process of land seizure and (re)naming, Americans actively worked toward transforming a Hawaiian space into an American one.

After the annexation of the Hawaiian Islands by the United States, many place names were given Hawaiian names. However, this naming was done according to an American system of geographical knowledge and little understanding of the Hawaiian language. Herman (1999) argues that Americans reappropriated traditional Hawaiian names of rock formations, island divisions, and subdivisions to name streets and other symbols of American colonialism, and that, through doing so, they instantiated a form of anti-conquest in which the American colonial system offered a token of respect for Hawaiian culture while simultaneously denying the Hawaiian people sovereignty or political power. Anti-conquest is often unconscious; the people doing it generally believe they are genuinely showing respect. Even when unconscious, however, it is still damaging. When preexisting place names are reappropriated, the link between the original place and the meaning behind its name is weakened, and the story behind the link is no longer retrieved in the memories of people who say the name. Likewise, new Hawaiian-sounding names (e.g., *Hawaiʻi Kai* instead of the traditional *Maunalua*) can symbolically represent changes in the ecology and physical features of the place as well as changes in economic and political power (Solomon, to appear). Herman offers "The Aloha State" as the ultimate example of anti-conquest; it includes the word *aloha* to invoke the image of "a native culture that is gracious, warm, charming, welcoming" while simultaneously and explicitly making a claim to Hawaiʻi as a state, property of the United States (Herman, 1999:93).

Anglicized realizations of Hawaiian place names, which are common among Hawaiʻi Locals, can also be viewed as examples of anti-conquest (Oliveira 2009). In some cases, speakers who produce anglicized variants may be attempting to produce them as Hawaiian, but are unable to do so because they do not speak Hawaiian. However, many speakers who use anglicized realizations appear to make no attempt to pronounce the place names as Hawaiian words; they either have no desire to learn the Hawaiian pronunciation or else they know what the Hawaiian pronunciation is, but they do not use it consistently or at all. Indeed, some Local people have a negative reaction to the Hawaiian pronunciation, interpreting Hawaiian realizations as sounding hypercorrect and affected, an interpretation which arises because the anglicized variants have become the norm (Romaine, 2002: 205). While unintentionally for most people, the anglici-

zed realizations are effectively serving the function of anti-conquest, "allowing" the Hawaiians to have Hawaiian place names while simultaneously stripping the places of one more part of their Hawaiian-ness.

Herman also discusses the concept of reconquest, in which speakers use place names to make claims about Hawai'i as Hawaiian. The example he provides is Pukui and Elbert's (1966) dictionary-style book *Place Names of Hawai'i*, which lists Hawaiian place names and provides explanations and translations. This book – and the expanded edition that followed (Pukui et al., 1974) – serve as excellent examples of how people can reclaim their connections to the land by returning to a precolonial understanding of places and the important role those places play in Hawaiian life, culture, and worldview. Other examples of reclaiming the connections to the land include the installation of signs denoting pre-colonial geographic divisions (Chang, 2014) and the ongoing movement to reclaim sacred places such as *Kaho'olawe* and *Mauna Kea*[8].

As with anti-conquest, pronunciation can contribute to efforts of reconquest. Hawaiian pronunciations of Hawaiian place names can allow a speaker to make a claim about Hawai'i as Hawaiian, a phrase that likely has different meanings for different people. First, some speakers might use the Hawaiian pronunciations to demonstrate that they treat and view the land in ways that are consistent with traditional Hawaiian values. Secondly, Hawaiian pronunciations could be used to recognize the historical traditions of the place and show respect to the Hawaiian people. In addition, Hawaiian pronunciations might be used to express a desire for Hawai'i to gain independence from the United States, where the pronunciations of place names are a form of resistance (cf. Kearns & Berg 2002: 287). Hawaiian pronunciations of place names might index all of these meanings or only select ones, depending on the speaker and the situation. In this paper, we use the umbrella term *Hawai'i as Hawaiian* to refer to the multitude of social meanings that might be indexed. We argue that by using more Hawaiian-like pronunciations and pushing toward a better understanding of the meanings behind place names, Hawaiians are engaging in reconquest of their homeland. Thus, we argue that anglicized and Hawaiian realizations of Hawaiian place names are examples of anti-conquest and reconquest, respectively: speakers can make claims about

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[8]   There is a long-standing and on-going dispute between astronomers who use the mountain, Mauna Kea, as a viewing space and Native Hawaiian activists in the Kū Kia'i Mauna movement, for whom the mountain is one of the most sacred places in Hawai'i. Following the arrests of protesters in the spring of 2015, the mountain and debate received worldwide attention (Herman, 2015).

their stance on Hawai'i as Hawaiian depending on the phonetic variants they use to pronounce Hawaiian place names.

While there are many ways in which speakers anglicize Hawaiian words, we focus on two in this paper: alternative realizations of the vowel /o/ and the omission of the glottal stop. The glottal stop is a consonant in Hawaiian, so pairs such as *kou* ([kou] 'your') and *ko'u* ([koʔu] 'my') have different meanings and different numbers of syllables (Schütz, 1994: 143) although there can be variation in some lexical items, such as *kāua* 'you and me/I', which can be pronounced [kaːua] or [ka'ua] (NeSmith 2005). Phonetically, the sound is variably realized as creak or a stop (Parker Jones 2017), with evidence that it is usually realized as creak in spontaneous speech (Drager, Chun Comstock & Kneubuhl, 2017: 77). Early missionaries who developed the writing system for Hawaiian did not include the glottal stop in the orthography. Since then, scholars have recognized the glottal stop as a consonant, and some members of the Hawaiian speaking community have pushed for it to be represented as an inverted apostrophe, referred to as an 'okina[9], while others – particularly those who learned Hawaiian through an unbroken chain of intergenerational transmission – prefer the words to be written without an 'okina. A great deal of debate has centered around the glottal stop (Romaine, 2002) and, consequently, people throughout the islands – regardless of their ethnicity or language background – are aware that it exists and that it can be represented with an 'okina.

A sound that has received much less attention is /o/, as in the word *Honolulu*, which native speakers of Hawaiian realize as a rounded close-mid back vowel [o] that is monophthongal. In some Locals' anglicized productions of Hawaiian words, the vowel [o] is reduced to a schwa, realized as a diphthong, or realized as an entirely different vowel (e.g., /a/ in [hanəlulu]). The non-Hawaiian realizations of this vowel are especially intriguing because, like in Hawaiian, this vowel is realized as back and monophthongal in both Hawai'i English (Kirtley, Grama, Drager & Simpson, 2016) and Pidgin (Grama, 2015), the two most widely spoken language varieties in Hawai'i. This suggests that the realizations are not anglicized according to the closest vowel in the speakers' variety of English or the English-lexified creole but that the speakers are either approximating diphthongal variants found in the continental United States or are changing the vowel identity altogether. While many instructors of beginner Hawaiian language classes explicitly instruct their students to produce [o] in place names like Honolulu, this variable has received much less attention in the media, is not as marked in the

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[9] Older names for the sound and/or symbol include kai'i, kai'i'ī, and 'u'ina (Schütz, 1994: 146).

spelling, and is overall less noticed than the glottal stop.[10] As such, speakers are likely to pay less attention to /o/ than the glottal stop in tasks where the glottal stop is written and, therefore, speakers who use anglicized realizations in spontaneous speech may be less likely to shift to Hawaiian realizations during a wordlist task such as that used in the current study.

We hypothesized that a speaker's ability to speak Hawaiian would be linked with whether or not they produced the more Hawaiian-like realizations of the glottal stop and /o/. Because of the potential for the pronunciation of place names to play a role in anti-conquest and reconquest, we also hypothesized that speakers who are Native Hawaiian would produce more tokens with Hawaiian realizations than the non-Hawaiian speakers.

METHODS

Data Collection

The data analyzed for this paper are taken from SOLIS, a multi-language archive of conversation and interview data that is housed at the University of Hawai'i at Manoa and is overseen by the first author. Speakers are recruited from the community by word of mouth and from the university campus through a participant pool, and several of the authors of this paper are among the interviewers. As part of the interviews conducted for inclusion in SOLIS, participants read several wordlists, one of which contains names of places from around Hawai'i. These names have a Hawaiian origin and demonstrate variation in how they are realized. The words were read in isolation and in a fixed order. The results reported in this paper focus entirely on the place names from this wordlist data and, specifically, on the analysis of two linguistic variables: /o/ and the glottal stop. The place names subject to the analysis are given in Table 1.

When designing the wordlist, we chose to represent the *'okina* (glottal stop) and *kahakō* (macron indicating vowel length) in the wordlist because wordlists elicit careful, self-conscious speech, and we wanted to examine which speakers would choose to produce the glottal stop when given every opportunity to do so. Speakers were instructed to read the place names as they would normally say them, but we anticipated that at least some speakers would shift toward a

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[10]   It is our belief that this variable is not entirely below the level of consciousness when in place names; if someone were asked to imitate a White American, they would probably produce alternative variants of /o/. However, /o/ is not as marked as the glottal stop.

more Hawaiian-like pronunciation than they use in everyday speech. This is not an undesired effect because we were explicitly interested in the ways in which speakers might use these variables to do social work, such as constructing their ethnic identities or taking a stance on Hawai'i as Hawaiian. Future work will examine variation of the variables in spontaneous speech.

Table 1: Hawaiian place names collected and analyzed,
for the glottal stop, /o/, or both variables.

place name	analyzed for
Hawai'i	glottal stop
Hawai'i Kai	glottal stop
Kaua'i	glottal stop
Lā'ie	glottal stop
Lāna'i	glottal stop
Līhu'e	glottal stop
Ni'ihau	glottal stop
Wai'alae	glottal stop
Wai'anae	glottal stop
Kaho'olawe	both
Kāne'ohe	both
O'ahu	both
Hilo	o
Honolulu	o
Kona	o
Moloka'i	o

The Speakers

The analysis was conducted on wordlist data from 55 participants, all of whom were born and raised in Hawai'i and took part in the interviews between 2009-2014. Demographic information about the participants (e.g., whether they speak Hawaiian) was gleaned from a combination of information provided on an information sheet and during the interview. On the information sheet, participants were asked to list their ethnicities as well as indicate information about their age and gender.

People who reported speaking any Hawaiian were categorized as Hawaiian speakers for the purposes of this study. In addition, participants were categorized depending on whether they listed Hawaiian among their ethnicities.

Table 2 shows the number of participants by their ethnicity and whether they could speak Hawaiian. The table also divides speakers into categories based on their self-reported age and gender: younger men and women (YM and YW) were born between 1975 and 1995, which means they were born during or after the Hawaiian Renaissance of the 1970s. In contrast, the older participants (OM and OW) were born between 1924 and 1969, prior to when the Hawaiian Renaissance had really blossomed. The mean and median ages of each group are shown in Table 3.

Table 2: Summary of participant demographics by their ability to speak Hawaiian and their ethnicity, shown separately for by the participant's age-gender group: younger women (YW), older women (OW), younger men (YM), and older men (OM).

Language background	Hawaiian ethnicity	YW	YM	OW	OM	Total
speaks Hawaiian	Hawaiian	6	6	1	2	15
	non-Hawaiian	2	0	0	0	2
cannot speak Hawaiian	Hawaiian	8	3	6	1	18
	non-Hawaiian	5	6	5	4	20
Total		21	15	12	7	55

Table 3: The minimum, maximum, mean, and median ages of participants at the time of participation, by gender and age group. Median ages are shown in parentheses.

age/gender group	min	mean (median)	max	N
YW	18	21 (22)	24	21
YM	18	22 (21)	35	15
OW	40	66 (64)	91	12
OM	48	62 (58)	76	7

Auditory Analysis

Two listeners conducted auditory analysis on each variable, categorizing each token as one of five realizations. All tokens for which was disagree-

ment were then re-coded by the first author using auditory analysis. Two tokens were removed prior to analysis because there was disagreement among all three coders. Tokens with background noise that obstructed the target sound were also not included in the analysis.

The glottal stop was initially coded as being realized as: a stop, creak, mild creak, no glottal quality, and other (e.g., a small number of participants produced Niʻihau as [nihiʔau]). For simplicity, these more detailed categories were condensed into two: any glottal quality versus none or other. Thus, realizations coded as having either a glottal stop, creak, or mild creak are treated as realizations of the glottal stop. This division makes the most sense given that many speakers of Hawaiian realize the phoneme as creak in at least some phonological environments (Parker Jones 2017: 104-5). Eleven tokens were removed from the 660 collected tokens (55 speakers x 12 words), and a total of 649 tokens were used for the analysis of the glottal stop presented herein.

/o/ was initially coded into one of five categories: monophthongal, slightly diphthongal, very diphthongal, schwa, and any other vowel. For the analysis presented here, these were collapsed into a binary distinction between whether a token was realized as the monophthongal back vowel [o] versus any other realization. Words containing more than one instance of /o/ were coded as "other" if either /o/ was realized as anything other than [o]. 14 tokens were removed, and a total of 371 tokens were analyzed for /o/.

RESULTS

Glottal Stop

For the production of the glottal stop, we observed a difference between the participants who speak some Hawaiian and those who do not; Hawaiian speakers realized the glottal stop in 83% of tokens, whereas participants who do not speak Hawaiian produced it in only 58% of tokens. This difference is evident in Figure 1. Also evident in Figure 1 is that, among those who do not speak Hawaiian, ethnicity is linked with rates of glottal stop production; speakers who are Native Hawaiian produced a higher percentage of tokens with the glottal stop.

Figure 1: Box and whisker plots showing the percentage of each speaker's tokens in which the glottal stop was realized. The speakers' percentages are shown separately for those who speak some Hawaiian (right panel) and those who do not (left panel), and for whether the speaker is Native Hawaiian or not.
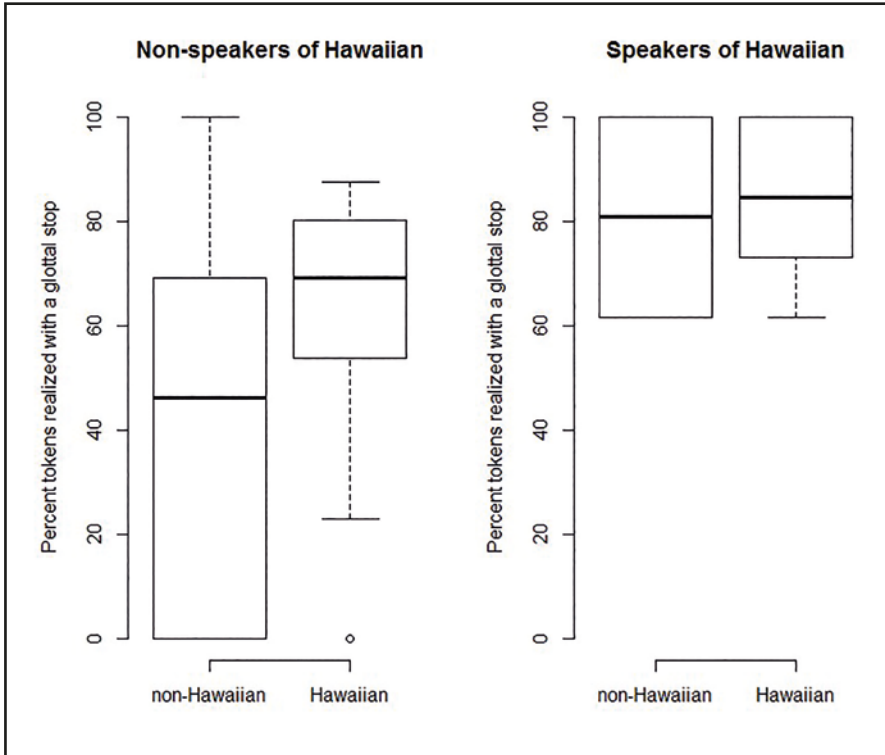
The intraspeaker variation observed appears to be partially conditioned by the lexical item, and may be linked with the following phonological environment. As shown in Figure 2, the glottal stop is most likely to be realized in the data when preceding the high front vowel /i/ and less likely to be realized when preceding /a/. Since only a small number of lexical items are included in each phonological environment in this study, further work is required to determine whether this tendency is generalizable to place names not included in our wordlist.

Figure 2: Box and whisker plot showing the percentage of each speaker's tokens followed by /a/, /e/, /i/, and /o/ in which the glottal stop was realized.
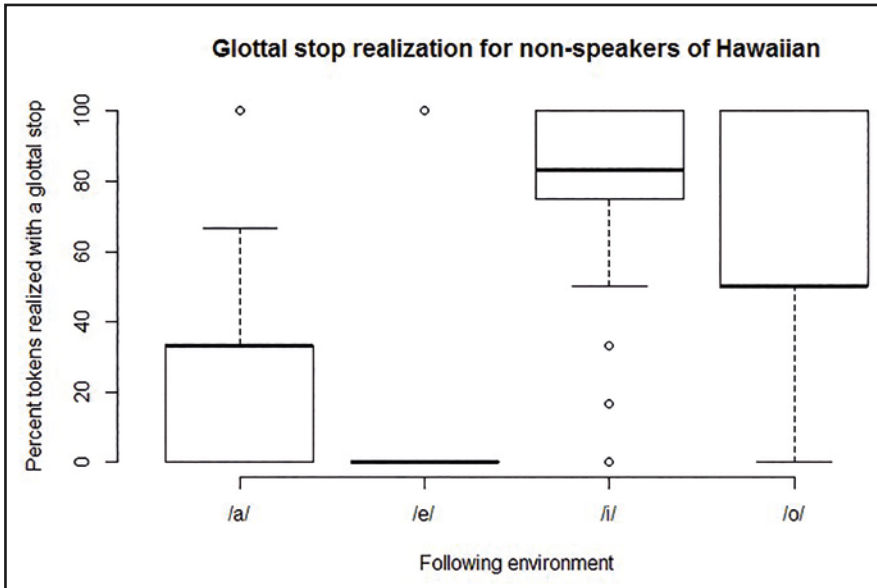
To test the statistical significance of the trends evident in Figures 1 and 2, binary logistic regression models were fit to the data using the lme4 package (Bates, Maechler, Bolker & Walker, 2015) in R (R Core Team, 2014). The binary variable of whether or not the glottal stop was realized (Glottal.presence, henceforth) was treated as the dependent variable, and both speaker and item were included as random intercepts. Random slopes were not included due to non-convergence as a result of data sparsity. Tested in the model were the speaker's self-reported ability to speak at least some Hawaiian (Speak.Hawaiian), whether the speaker was Native Hawaiian (Native.Hawaiian), following environment (Following.vowel), and the speaker's age and gender. Due to sparseness of the data and unbalanced cells, the model is overfit with both social factors included, so the model was trimmed of Native.Hawaiian, as it was the weaker predictor. Neither age nor gender reached significance in the model.

Table 4: Output of logistic regression model fit to the binary dependent variable of whether or not the glottal stop was realized: model = glmer(Glottal.presence ~ Following.vowel + Speak. Hawaiian + (1|speaker) + (1|item), data=Glottal.data, family=binomial).

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	-1.5549	0.6145	-2.53	0.0114
Following.vowel = e	-0.5878	1.0876	-0.541	0.5889
Following.vowel = i	3.6075	0.7056	5.113	<.0001
Following.vowel = o	2.3815	0.8849	2.691	0.0071
Speak.Hawaiian = y	2.4234	0.5819	4.165	<.0001

The output of the model is shown in Table 4. Following.vowel was found to have a significant effect, whereby a glottal stop is more likely to be realized when followed by either /o/ (p<.01) or /i/ (p<.0001) compared with /a/. The glottal stop is also significantly more likely to be realized if the participant can speak at least some Hawaiian (p<.0001).

The realization of /o/

The speakers produced a variety of different realizations for /o/. The most common anglicized realizations were [a] and schwa, as in [hanəlulu] for Honolulu. The distribution of [o] varied by item. Among the words tested, *Kona* and *Kahoʻolawe* were most often realized with the back monophthongal variants, with even the non-Hawaiian speakers pronouncing /o/ as [o] in these words over 80% of the time. The word *Honolulu* had the largest number of alternative forms; non-speakers of Hawaiian realized /o/ as [o] only 32% of the time. For most items, the most common alternative realization was a vowel other than [o] (most often [a], [ʌ], or [ə]) but in the word *Hilo*, the vowel was often realized as diphthongal.

Figure 3: Box and whisker plots showing the percentage of each speaker's tokens realized as [o]. The speakers' percentages are shown separately for those who speak some Hawaiian (right panel) and those who do not (left panel), and for whether the speaker is Native Hawaiian or not.
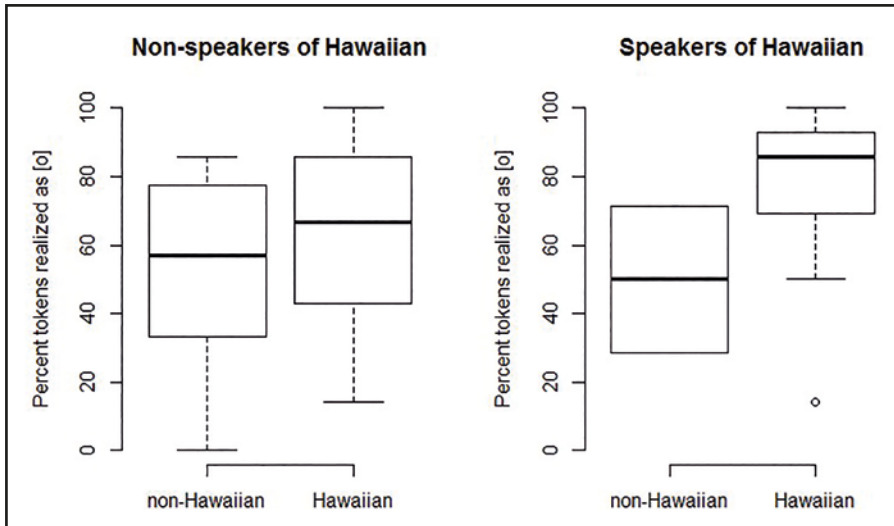
The results indicate that speaker ethnicity played a role in whether /o/ was realized as [o] or not. As shown in Figure 3, speakers who are Hawaiian were more likely to realize /o/ as [o] compared to speakers who are not Hawaiian, regardless of whether or not they could speak Hawaiian. Among Hawaiians, there may also be a link between /o/ realization and whether they speak Hawaiian or not. However, a larger and more balanced sample is needed to confirm this.

Binary logistic regression models were fit to the binary variable of whether or not the /o/ was realized as [o] (O.realization). Speaker and item were included as random intercepts. Tested in the model were Speak.Hawaiian, Native.Hawaiian, as well as the speakers' age and gender categories. Due to sparseness of the data, the model would not converge with all social factors included, so only the strongest predictor, Native.Hawaiian, was retained in the model.

Table 5: Output of logistic regression model fit to the binary dependent variable of whether or not the /o/ was realized as [o]: model = glmer(O.realization ~ Native.Hawaiian + (1|speaker) + (1|item), data=O.data, family=binomial)

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	0.0937	0.6192	0.151	0.8797
Native Hawaiian = y	1.3650	0.5110	2.671	0.0076

The output of the model, shown in Table 5, indicates that the tendency for speakers who are Hawaiian to produce /o/ as [o] more often than speakers who are not Hawaiian is statistically significant ($p<.01$).

DISCUSSION

The results provide evidence that both linguistic and social factors influence the realization of place names that have a Hawaiian origin. The realization of the glottal stop was found to be most closely linked with language background and the following phonological environment, whereas /o/ realization was found to be most closely related to the speaker's ethnicity.

Why have we observed a difference in /o/ realization across ethnicities? One possible interpretation is that Hawaiians have more exposure to Hawaiian pronunciation of the place names as a result of their family histories (e.g., grandparents who speak Hawaiian); the pronunciation of place names may be passed down even if the language as a whole is not. Those with Hawaiian ancestry may also use a greater number of Hawaiian words and phrases in day-to-day speech and have more exposure to Hawaiian through, for example, Hawaiian festivals, gatherings, and school-related events. Another possibility is that these realizations are actively used to construct the speakers' ethnicities, which may in turn be linked with the speakers' stances on the position of Hawai'i as Hawaiian. It seems most likely to us that it is some combination of these interpretations: people with Hawaiian ancestry are more likely to have had exposure to the Hawaiian pronunciations of these place names, and then they actively use these variants to construct their Hawaiian-ness in interaction and to take stances on Hawai'i as Hawaiian. For many years, Hawaiians were made to feel ashamed of their culture by those in power (Silva, 2004; Marshall, 2006) and were blamed for the decimation of their own culture (see e.g., Kroeber 1921: 130). However, the Hawaiian Renaissance, the sovereignty movement, and related movements to reclaim sacred spaces have fostered and continue to foster cultural pride amongst those with Hawaiian ancestry; Hawaiian culture is a key part of what it means to be Hawaiian (Osorio 2001: 362). Using Hawaiian pronunciations of Hawaiian place names can demonstrate pride in one's ethnic heritage and can serve to underscore a speaker's sense of place and cultural identity.

Why then have we not observed an equivalent difference across ethnicities for the glottal stop? We believe this is a combination of two factors. The first is that we observed a strong effect of Hawaiian language background, whereby people who had studied Hawaiian were more likely to produce the glottal

stop, regardless of their ethnicity, and their production of the glottal stop is near ceiling. The second is that Locals have more metalinguistic awareness about the glottal stop than about /o/; most Locals are aware that the glottal stop is a sound in Hawaiian, but there is little metalinguistic discussion around /o/, and the difference is especially notable during our task since the glottal stop was represented in the orthography but people spell the place names with the letter <o> even when they do not pronounce the sound as [o]. Taken together, this would mean that any speakers who were predisposed to produce the variables with Hawaiian realizations would likely try to produce the glottal stop, and those who had studied Hawaiian were especially capable of producing it as a result of their training. In contrast, /o/ was likely realized as [o] primarily by the speakers who tend to produce it as [o] in the place names in spontaneous speech.

The written cue for the glottal stop provided all of the speakers with the opportunity to produce it in the place names. So why did some speakers produce zero to few instances of the glottal stop? For some speakers, not realizing the glottal stop could be a reflection of their inflexibility in changing the pronunciations of place names from those that they learned when they were young. For other speakers, it may be a reflection of their resistance to the Hawaiian renaissance and the reconquest of place names. Further research is required to explore these different possibilities, but it is important to keep in mind that, while the use of the anglicized variants may sometimes be unintentional, they are doing the work of anti-conquest through maintaining the status quo as Western and reinforcing many Americans' assertion that Hawai'i is Western and a part of the United States.

CONCLUSION

We have demonstrated that there is considerable variation in the way that Hawai'i Locals pronounce place names of Hawaiian origin and that this variation is linked with both a speaker's ethnicity and their ability to speak Hawaiian. We have further suggested that this variation could meaningfully reflect speakers' attitudes towards Hawaiians' claims to place. Through producing more Hawaiian-like realizations, speakers can acknowledge the indigenous origins of these place names as well as implicitly associate the places with Hawaiian people and culture. Future work that includes an analysis of more spontaneous contexts would shed light on how speakers use phonetic variation in place names to perform acts of identity and solidarity.

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