

LING 112: Historical Linguistics  
Professor Jonathan Manker  
Teaching Fellow Martín Fuchs

By submitting this essay, I attest that it is my own work, completed in accordance with University regulations. – Jackson Petty

Across the Islands: Lexical and Phonetic Variation in Hawai‘ian Dialects  
by Jackson Petty

**TABLE OF CONTENTS**

1. Introduction.....	3
Terminology .....	3
Data & Methodology .....	4
2. History.....	5
The Hawai‘ian Language.....	5
Ni‘ihau .....	6
Revitalization .....	8
3. Phonetics & Phonology .....	10
Phonetic Variation.....	10
Exploration of [t ~ k] Variation in the Definite Article.....	11
Orthographic Influence .....	13
4. Lexical & Semantic Variation.....	14
5. Motivations for Distinction.....	16
Linguistic & Geographic Isolation.....	16
Sociolinguistic Variables.....	17
Future Trends .....	18
6. Conclusion .....	19
References.....	21

## 1. INTRODUCTION

In the past 40 years, the Hawai‘ian language has undergone a remarkable transformation. Poised in the 20<sup>th</sup> century to become an artifact relegated to the Museum of Extinct Languages, education and revitalization efforts (‘Aha Pūnana Leo 2017) have resurrected an almost-lost language into one with a growing number of native and L2 speakers each year (Hawkins 1999). Taught in schools and spoken in homes, Hawai‘ian has become a model for many native language revival programs to varying degrees of success (Cowell 2012). But while this Revived Hawai‘ian enjoys usage throughout the state of Hawai‘i, the late 20<sup>th</sup> century saw a distinction emerge between it and another variety; across the waters, on the secluded island of Ni‘ihau, native speakers of Hawai‘ian carry on a spoken tradition that remains unaffected by the linguistic and political developments of the previous two centuries. In this paper, we explore the differences between Revived and Ni‘ihau Hawai‘ian, and investigate the possible motivations for these distinctions, including geographic and linguistic isolation, the development of a distinct sociolinguistic identity, and cultural stasis when compared to the rest of Hawai‘i.

In order to understand the differences between the Revived and Ni‘ihau varieties, it is necessary to understand some history and characteristics of the language, as well as some historical, geographic, and political considerations which surround and necessarily influence Hawai‘ian’s development; Section 2 reviews this requisite background information. Sections 3 and 4 discuss distinctions between the two dialects at the sound and word levels respectively, focusing mostly on phonetic and lexical differences. Any discussion of these differences would be incomplete without mentioning the possible causes for such divergence. While such hypotheses are necessarily speculative, and the broader question of how small differences propagate to form distinct dialects and to change language over time are certainly active areas of research, we will address several possible motivations in Section 5, including geographic isolation, sociolinguistic identity, and the influence of English on Revived Hawai‘ian. Finally, Section 6 presents conclusions and offers potential avenues of future investigation into the divergence of Hawai‘ian dialects.

### Terminology

In order to differentiate between the two varieties of the Hawai‘ian language studied in this paper, we will use *Revived Hawai‘ian* to mean the dialect which has developed out of the Hawai‘ian Language Revitalization Movement from the 1980s on. *Ni‘ihau Hawai‘ian* will mean

the dialect of Hawai‘ian spoken on the island of Ni‘ihau. These terms are not standard, and are unlikely to be seen outside of the context of this comparison. When discussing language acquisition, L1 or native speakers have spoken Hawai‘ian since birth, while L2 speakers acquired it later in life after learning to natively speak another language—in the context of this study, usually English. When necessary, phonemic transcriptions of words will appear between slashes /·/, allophonic or phonetic transcriptions will appear between braces [·], and orthographic representations of words will appear between angle brackets ⟨·⟩. Reconstructed sounds are preceded by asterisks (\*).

### **Data & Methodology**

The sources used in the paper can be divided into two main categories. First is the literature reviewed to gain an understanding of Hawai‘ian’s history, phonology, and writing, along with historical documents of cultural importance, such as the language policies of Hawai‘i throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries. Also included are accounts of the revival process and curricula from Hawai‘ian immersion schools. Equally important to this literature is the data analyzed in sections 3 and 4 to qualify the differences present between Ni‘ihau and Revived Hawai‘ian. These sources comprise a corpus of written and spoken content in both the Ni‘ihau and Revived dialects, as well as current U.S. Census data to correlate these findings with population and development statistics for the State of Hawai‘i, and data from UCLA regarding the frequency of phonemes present across different languages. This paper does not rely heavily upon mathematical analysis, with the exception of the glottochronological analysis of Hawai‘ian’s age presented in Section 2 and the frequency analysis of /t/ and /k/ phonemes in Section 3; in these cases, the mathematics used to justify these findings is noted.

## 2. HISTORY

### The Hawai‘ian Language

Hawai‘ian belongs to the Polynesian family; spanning the width of the Pacific Ocean, these closely related island languages are scattered over the *Polynesian Triangle*, an area of more than 2 million square miles formed by connecting the most distant islands where the eponymous languages are spoken: to the east, Easter Island; to the west, New Zealand; and to the north, Hawai‘i. The common ancestor of the various Polynesian languages likely originated somewhere in the Pacific and, over the course of several hundred years, spread outwards as Polynesian peoples migrated between islands. From the first settlement of Hawai‘i, likely around 900–1300 CE<sup>1</sup>, until the expeditions of James Cook in the 18<sup>th</sup> century, Hawai‘ian developed in relative isolation from non-Polynesian languages (Wilmschurst et al. 2011; Elbert 1953). The maritime barriers of the Pacific Ocean served to forestall contact with outside peoples and languages until 1778.

Like other Polynesian languages, Hawai‘ian exhibits several unique characteristics of note, including a small phonetic inventory, a strict syllable structure, and a lack of native writing system. Revived Hawai‘ian has only 8 phonemic consonants while maintaining a larger diversity of vowels; Lyovin, Kessler, and Leben find that Hawai‘ian exhibits 25 contrastive vowels based on a 5-vowel base system with additional contrast provided by length and diphthongs (2017). The syllable structure of Hawai‘ian permits V and CV syllables, with no consonant clusters present in the language (Elbert and Pului 1979). Like all other Polynesian languages—with the possible exception of Rapa Nui’s *Rongorongo* (Fischer 1998)—the modern orthography for Hawai‘ian was first introduced after contact with European explorers who used the Latin script to record the language.

As with all language, the history of Hawai‘ian is inseparable from that of the Hawai‘ian people. From the time of its settlement until the late 18<sup>th</sup> century, Hawai‘i existed as a set of chiefdoms which gradually grew in size and power (Kamakau 1992). Mirroring this was an increase in population; by the late 1770s, it is estimated that the islands supported between 200,000 and 600,000 people (Dye 1994). In 1778, contact with European explorers and diseases

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<sup>1</sup> The lower bound on this range (900 CE) comes from a glottochronological analysis by Elbert in 1953 of the various Polynesian languages, and was originally published as between 930 CE and 1300 CE. Work by Wilmschurst et al. in 2011 proposes a much tighter range of between 1200 and 1290 CE through analysis via radiocarbon dating.

brought a sharp decline in population and an increase in political unity. While the native population of the islands was cut in thirds in the two decades following Cook's landing, by 1795 Hawai'i became a unified polity under King Kamehameha I. Under his rule, the Hawai'ian language flourished. After missionaries introduced ways of writing the once oral language with the Latin script, Hawai'ian found a new medium of expression. Newspapers, books, and laws were published in Hawai'ian. The Kingdom of Hawai'i was a literate society, and its language was spoken and read on nearly every inhabited island (Lichtenstein 2008).

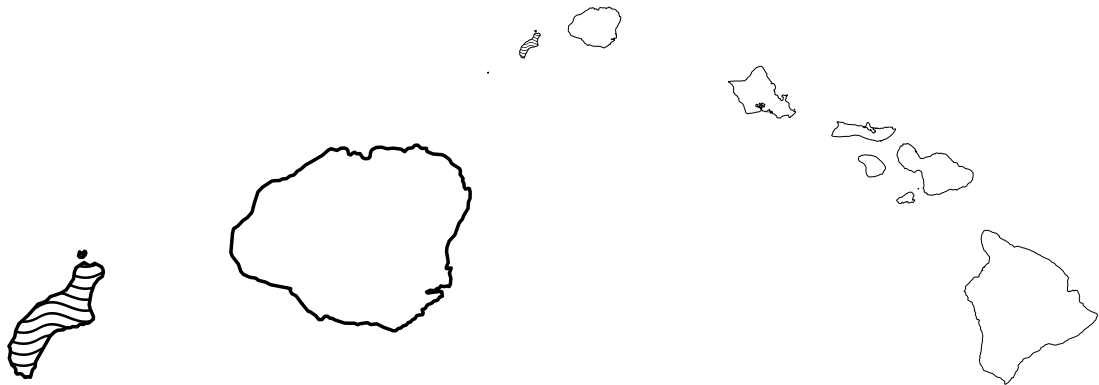
This lasted until 1893, when American rebels, acting in the interests of their sugar plantations and by members of the U.S. Government, overthrew the Kingdom of Hawai'i and sought annexation by the United States 5 years later. Prior to contact with British and American groups, Hawai'ian was the sole language spoken on the Pacific archipelago. In the century after European contact was established, usage of English grew on the islands; it became a co-official language of the Kingdom, and in 1896, Hawai'ian education was banned in both public and private institutions (Legislature of the Republic of Hawaii 1896). For the next century, the use of Hawai'ian would be suppressed by policies of linguistic imperialism. When annexed by the United States, the ban on Hawai'ian was kept in place and would remain so for 90 years. The effects of this suppression were far reaching: as fewer and fewer children were educated in their native language, and the pressures to speak only English grew, the once omnipresent use of Hawai'ian as a native language waned quickly. By the 1980s, fewer than 50 children spoke Hawai'ian as their native language across the entire state (Kawai'ae'a et al. 2007).

### **Ni'ihau**

Lying to the far north and west of the state of Hawai'i, Ni'ihau is one of the smallest islands in the Hawai'ian archipelago with a history unto itself. While the rest of the island chain traded hands between the sovereign Kingdom of Hawai'i and the annexed state, Ni'ihau has been privately owned by a single family since before the revolution. Purchased by the Sinclair family for \$10,000 in 1864, the island has remained in the possession of the Sinclairs (now known as the Robinsons) for over 100 years. At the time of purchase, a small group of around 300–400 native Hawai'ians lived on the island. These people, and their descendants, have continued to live on the island in relative isolation from the rest of the world. In the early 20<sup>th</sup> century, the Sinclair family closed the island to most outside visitors, and access to the island only resumed

in 1987; even now, one needs special permission to visit, and contact with the native residents of the island is negligible (Ramones 2014).

The result of this self-imposed isolation was a unique environment for linguistic development. Today, the roughly 170 native inhabitants (U.S. Census Bureau 2010) speak a language which has developed with minimal influence from the outside world. The meager infrastructure on the island, or lack thereof, helped to preserve the cultural and linguistic diversity of the island, as did its privately held status. The Sinclair-Robinson family has acted as a steward for the island and its people. While government language policies were used to suppress the speaking of Hawai‘ian by banning its use in public schools between 1896 and 1986, this practice had little effect on the oral tradition of Ni‘ihau; the lone public school serving the entire island, Ni‘ihau High & Elementary, is not actually located on the island of Ni‘ihau (Hawai‘i State Department of Education 2017), but on the neighboring island of Kaua‘i, shown below in Figure 1.



*Figure 1: Left is a map of Ni‘ihau (shaded) and Kaua‘i. Right is a map of Hawai‘i, with Ni‘ihau shaded in the upper left.*

Due to the arid climate and small area of the island, the population of Ni‘ihau has never risen far above its current levels. As a result, while Hawai‘ian as a native language was quickly dying out in the rest of the state throughout the 20<sup>th</sup> century, it survived in the voices of only a few hundred speakers on this tiny island. It was in this limbo that the Hawai‘ian language existed for over 100 years.

## Revitalization

The tide against Hawai‘ian language suppression began to turn in the 20<sup>th</sup> century, culminating in 1986 with the passage of new laws which nullified the previous policies of mandating English language education (‘Aha Pūnana Leo 2017; Kawai‘ae‘a et al. 2007). Since the 1980s and 1990s, the *Pūnana Leo* schools (Hawai‘ian for “language nest”) have offered instruction for kindergarten through high school students (‘Aha Pūnana Leo 2017) via immersion programs in Revived Hawai‘ian. As summarized by Cowell, the Hawai‘ian Model for language revitalization involves creating immersion programs for children prior to formal schooling which teach aspects of language and native culture, fostering the political will within communities to support revival efforts, and working with institutions of higher education to develop programs that can produce educators who can effectively teach the language; these steps all work towards the ultimate goal of creating a generation of L2 speakers who can then raise their children as L1 speakers of a native language (2012).

Critically, the Pūnana Leo schools and other attempts at native language revival in Hawai‘i have necessarily started with very few educators and policy directors who were native speakers of Hawai‘ian. While Hawai‘ian did not go extinct over the century between the overthrow of the Kamehameha government and the creation of immersion schools, very few groups outside of the Ni‘ihau community remained native speakers of the language (Omandam 2000). Although early parts of the immersion program drew upon speakers from Ni‘ihau, the phonetic qualities of the language taught to students did not adapt to those of the Ni‘ihau dialect, and so the variant of Hawai‘ian which would come to be spoken by the students of the Pūnana Leo schools developed in isolation from the only remaining pocket of native Hawai‘ian speakers the world over.

Nonetheless, the model has served very well for creating a new generation of native speakers of Revived Hawai‘ian; with over 26,000 speakers (both native and L2) Hawai‘ian has managed to bounce back from the brink of linguistic extinction, escaping the fate of many of North America’s native languages in the 19<sup>th</sup> and 20<sup>th</sup> centuries (U.S. Census Bureau 2015). In the wake of this success, parallels can easily be drawn between Hawai‘ian and the most notable example of linguistic revival: Modern Hebrew. Save for religious ceremonies, Hebrew was a dead language in the 19<sup>th</sup> century, and had been so for over 1500 years until the efforts of Eliezer Ben-Yehuda. By the mid 1900s, Modern Hebrew was spoken as a native language in Israel, and



is today the first language of over 8 million people (Freeburg 2013). Just as Hawai‘ian is taught in the Pūnana Leo, Hebrew is taught in specialized schools known as *Ulpan* (Duman 1990). The Hawai‘ian movement also shares with the Hebrew revival strong cultural and political support by peoples and communities.

But while it now enjoys status as a living language, the Modern Hebrew spoken today is very different from the Hebrew spoken two millennia ago. With Ancient Hebrew gone for a millennium and a half and Biblical Hebrew confined to the liturgical study of the Torah, Modern Hebrew’s first speakers were not infants but adults proficient in German, Yiddish, and Russian. As a result, the phonology and grammar of Modern Hebrew differs greatly from that of Ancient Hebrew, exhibiting distinct European influences in pronunciation and construction (Bolozky 1997). Just as the revival process changed the way Hebrew was spoken, efforts to revive Hawai‘ian have resulted in a language with key distinctions from what it once was. By comparing Revived and Ni‘ihau Hawai‘ian, as well as historical evidence of how Hawai‘ian was spoken on the islands prior to the revival movement, we can get an idea of how pervasive these changes are and what their causes may be.

### 3. PHONETICS & PHONOLOGY

#### Phonetic Variation

The most notable distinction between Ni‘ihau and Revived Hawai‘ian is the realization of the /t ~ k/ and /l ~ r/ phonemes. As mentioned previously, Hawai‘ian is rather unique among the world’s languages for having so few contrastive consonants. The two bolded phonemes in the table below, /t ~ k/ and /l ~ r/, are of particular interest to this paper.

	<i>Labial</i>	<i>Alveolar</i>	<i>Velar</i>	<i>Glottal</i>
<i>Nasal</i>	/m/	/n/		
<i>Plosive</i>	/p/	<b>/t ~ k/</b>		/ʔ/
<i>Fricative</i>				/h/
<i>Sonorant</i>	/ʋ/	<b>/l ~ r/</b>		

*Table 1: Consonant Inventory of Hawai‘ian*

In Revived Hawai‘ian, /t ~ k/ is realized as [k], while in Ni‘ihau Hawai‘ian, the single phoneme has multiple allophonic expressions. When explorers first landed on Ni‘ihau and Kaua‘i, they noted the use of [t] in place of the [k] used on other islands (Schütz 1995). A similar pattern is found in the realization of the /l ~ r/ phoneme, pronounced as [l] in Revived Hawai‘ian and exhibiting variation between [r] and [l] in the Ni‘ihau dialect. While an allophonic sound change in a particular dialect is not out of the ordinary in any way, the modern pronunciation of /t ~ k/ on Ni‘ihau does offer a new insight. Today, both [t] and [k] are found in Ni‘ihau Hawai‘ian, indicating the development of variable pronunciation of the /t ~ k/ phoneme. Given the limited availability of data on Ni‘ihau pronunciation from between 1788 and 1864, it is difficult to ascertain exactly when the allophonic distinction between [k] and [t] in ‘standard’ and Ni‘ihau Hawai‘ian emerged.

Irrespective of the time when this change occurred, we can make predictive statements about whether the ‘last common ancestor,’ so to speak, of the two dialects should be reconstructed as having /\*t/ or /\*k/. Among Polynesian Languages, Revived Hawai‘ian is unique in having /k/ but no /t/ (Hockett 1976). Hockett’s comparison of Polynesian languages reveals a correspondence between Revived Hawai‘ian /k/ and Eastern Polynesian /t/, and

between Revived Hawai‘ian /ʔ/ and Eastern Polynesian /k/. This suggests that Proto-Eastern Polynesian developed into the Hawai‘ian we see today through the following process:

$$^{**}t \rightarrow ^{*}t \rightarrow \begin{cases} t \sim k & \text{Ni‘ihau Hawai‘ian} \\ k & \text{Revived Hawai‘ian} \end{cases} \quad ^{**}k \rightarrow ^{*}\text{ʔ} \rightarrow \text{ʔ} \quad \text{Both,}$$

where (\*\*) is the sound in Proto-Eastern Polynesia and (\*) is the last common ancestor of Ni‘ihau and Revived Hawai‘ian. This partial preservation of /t/ in Ni‘ihau suggests that the dialect is more conservative than Revived Hawai‘ian, where /t ~ k/ is pronounced as [k] uniformly. While it is not unusual for different dialects or closely related languages to exhibit correspondence between slightly different sounds, the Hawai‘ian /t ~ k/ distinction is notable. The lack of distinct /t/ and /k/ phonemes is unusual among the world’s languages. Using data from the UCLA Phonological Segment Inventory Database, we see that /t/ (voiceless alveolar plosive) is found in around 40.13% of the worlds languages, /t̚/ (voiceless dental plosive) appears in 23.50% and /t̚ ~ t̚/ (voiceless dental/alveolar plosive, distinct from the regular alveolar & dental mentioned previously) occurs in about 33.70% of languages. Altogether, around 91.35% of the worlds languages contain some /t/ segment<sup>2</sup>. Even more common is /k/, which appears in roughly 89.40% of the languages surveyed. Combining these two phonemes, we see that the list of languages which contain /k/ but not /t/ in some capacity is exceedingly small; only Hawai‘ian, one language out of the 451 recorded in the database, matches this description, indicating that it is extremely rare for the phonological system exhibited by Revived Hawai‘ian to occur.

### Exploration of [t ~ k] Variation in the Definite Article

We survey samples of Ni‘ihau Hawai‘ian to explore the variation in [t] and [k] in the singular definite article. This pattern was chosen because the exhibited variation between [t] and [k] allophones form a minimal pair. In Revived Hawai‘ian, the singular definite article (the) is realized in two forms: [ke] and [ka]. As noted in (Lyovin, Kessler, and Leben 2017), articles are proclitic in Hawai‘ian, the form varying with the initial sound of the word it precedes; [ke] is usually found before words beginning with /a, e, o, k/ and sometimes before words beginning

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<sup>2</sup> We calculate the likelihood of a language containing any of these sounds by considering the independent probability that a given language from our dataset contains one of the phonemes, and account for languages which have multiple /t/ phonemes:

$$P(t_1 \vee t_2 \vee t_3) = \sum P(t_i) - \sum P(t_i \wedge t_j) + P(t_i \wedge t_j \wedge t_k) \approx 91.35\%.$$

with /p ʔ/, while [ka] is usually used in all other cases. In Ni‘ihau Hawai‘ian, both of these forms are present, along with two additional allomorphs [ta] and [te]. Consider the following examples of Ni‘ihau glosses containing definite articles.

- (1) a. ta                    noʔo.noʔo  
          DEF.ART.SG   reflection  
          “the reflection”
- b. ta                    ʔimi  
          DEF.ART.SG   seek  
          “the search”
- c. ta                    ʔite  
          DEF.ART.SG   knowledge  
          “the knowledge”
- d. ka                    naʔau.ao  
          DEF.ART.SG   understanding  
          “the understanding”

In Revived Hawai‘ian, we would expect to see [ka], [ka], and either [ka] or [ke] in examples (1a–c). The following example, from recordings of a Ni‘ihau speaker describing the process of making a specific type of lei necklace, also exhibit the [ka ~ ta] variation in Ni‘ihau Hawai‘ian (Ni‘ihau Cultural Heritage Foundation 2009a).

- (2) a. ta                    tui        ʔana    i        ta                    lei    pu:pu:  
          DEF.ART.SG   string   NMZ   IO   DEF.ART.SG   lei   shell  
          “stringing a shell lei”

For Example 2, the expected corresponding articles in Revived Hawai‘ian are [ka] and [ka]. Comparing examples (1a) and (1c), we see that the allomorphs of [ka] and [ta] precede words with an initial /n/. In the absence of conditioning environment, this supports the idea that [t] and [k] exist in free variation in Ni‘ihau Hawai‘ian.

### Orthographic Influence

The fact that [t] and [k] Hawai‘ian are pronounced according to the sounds of the characters in the Latin script is not a coincidence; Hawai‘ian has no native writing system except the Latin orthography first introduced by missionaries, mainly for the purpose of translating the Bible. Although these early transcriptions varied slightly, the first standard orthography was developed in 1977 (Kawai‘ae‘a et al. 2007). Important to the discussion of allophonic variation, this orthography chose ⟨k⟩ to represent the /t ~ k/ phoneme. Compare the ⟨Tamehameha⟩ of 1824 with the now standard ⟨Kamehameha⟩ (Wise and Hervey 1952). On Ni‘ihau, however, the writing system preserves the distinction between [t] and [k] by including both ⟨t⟩ and ⟨k⟩. Consider the following excerpt from “Ta Pute Limahana,” by Ke Kula Niihau O Kekaha Learning Center, exhibiting a distinction between ⟨ta⟩ and ⟨ka⟩.

“Hoonaauao ana, I mea e loa ai **ta** noonoo maitai e pili ana no **ta** imi mau ana I  
**ta** ite me **ka** naauao.”

There are other differences between the orthographic conventions of Ni‘ihau and Revived Hawai‘ian which can be seen in the above example, including the use of double letters instead of a macron to indicate vowel length and the lack of an ‘okina (‘) to mark the glottal stop. However, based on analysis of spoken Ni‘ihau, these do not appear to contribute to any phonetic distinction between Ni‘ihau and Revived Hawai‘ian.

In the above example, both ⟨ta⟩ and ⟨ka⟩ represent the same word, the Hawai‘ian word for the, indicating that in Ni‘ihau Hawai‘ian, ⟨t⟩ and ⟨k⟩ exist in free variation with one another. This supports the phonetic analysis of the [t ~ k] variation. In Ni‘ihau Hawai‘ian, free variation exists between the allophones [t] and [k], but no phonemic distinction has developed; while these sounds are distinct, native Ni‘ihau speakers do not contrast the two, as evidenced by the presence of what would otherwise be considered minimal pairs [ta] and [ka], both in writing and in pronunciation.

#### 4. LEXICAL & SEMANTIC VARIATION

In addition to developing curricula for schools, the Hawai‘ian language revival movement sought to increase the viability of Hawai‘ian as a daily language by developing its vocabulary to include modern words. Owing to Hawai‘ian’s limited number of native speakers and the century-long gap between when it was last widely spoken and when it was revived, all dialects of Hawai‘ian had semantic gaps in the language (Porzucki 2016). In such an instance, lexical voids can be filled by importing loanwords from nearby languages (Campbell 2013), by speakers naturally developing new words as the need becomes apparent, or through the creation of an official lexicon with updated terminology (Amery 2001). The first scenario was unsuitable to ‘Aha Pūnana Leo and others who worked to revive the language, since it would mean speaking a language which consisted of a great number of loan words from a language which had been systematically forced upon native speakers for 90 years. The second scenario was improbable, since the native speakers numbered few and such developments would happen over long periods of time and would likely result in different words for the same concept, as speakers independently filled semantic gaps with different terms. So, in 1987, the Hawai‘ian Lexicon Committee was founded to produce a corpus of new vocabulary suitable for Revived Hawai‘ian (Kimura and Counciller 2009).

This first committee was comprised of 7 members, mostly from rural parts of Hawaii, and had a single member from Ni‘ihau (Kimura and Counciller 2009). Although it was hoped that the presence of a diverse array of speakers on the committee would lead to a widely applicable vocabulary, the cultural divide between the Ni‘ihau community and the goals of the committee prevented many of the new words from becoming widely used (Porzucki 2016). As a result, the efforts to create new vocabulary failed to integrate with the Ni‘ihau community for several reasons. First, many new words were not seen as truly Hawai‘ian by Ni‘ihau residents (Porzucki 2016). Among the new words proposed by the committee, many dealt with technological innovations which had no analogue in traditional Hawai‘ian. Compare the following table of words matched with their English translation.

<i>English</i>	Loanword	Neologism
<i>Computer</i>	kamepiula	lolo uila
<i>Cell phone</i>	kelepona kelulā	kelepona lawe lima
<i>Air Conditioning</i>	mikini hō‘olu ea	—
<i>Radio</i>	—	pahu ho‘olele leo
<i>Hamburger</i>	—	‘i‘o pipi i wili ‘ia
<i>Aquarium</i>	—	pahu aniani no ka i‘a

*Table 2: Revived Hawai‘ian-English Dictionary Entries. Data from (‘Aha Pūnana Leo and Kuamo‘o 2003; Kimura and Counciller 2009).*

All entries in the first column of Hawai‘ian words represent ‘Hawai‘ianized’ English words, loanwords from English changed to match Hawai‘ian phonology. The first group of words all contain a loanword variant in Revived Hawai‘ian, along with another proposed word which represents a semantic translation of the English word. For example, the word for *computer* is either *kamepiula*, an adaptation of the English word, or *lolo uila*, which translates to “electric brain” (‘Aha Pūnana Leo and Kuamo‘o 2003). The second group of words in Table 2 are not loanwords, but longer phrases accepted as translations. According to Kimura and Counciller, these types of neologisms are often cumbersome to use on account of their length, and often fall into disuse compared to older Hawai‘ian words (2009). Unsurprisingly, many of the words in Hawai‘ian which derive from English loanwords or calques (such as *mikini hō‘olu ea*, lit. ‘machine which cools the air’), are related to technological developments not present in the late 1800s (Campbell 2013), when Hawai‘ian began to lose its status as a spoken language.

Second, the necessity for which new words were needed differed greatly between Ni‘ihau and the rest of the state. Kimura finds that concepts such as “evolution” and “air conditioning” were difficult to find translations agreeable to the native speakers, while Ni‘ihau residents were concerned with more quotidian words, such as terms relating to *bicycle* (*paikikala* in Revived Hawai‘ian, *paisikala* in Ni‘ihau Hawai‘ian), like *pale kaea* (*fender*) and *kukuna kaea* (*spoke*) (Kimura and Counciller 2009; Porzucki 2016).

## 5. MOTIVATIONS FOR DISTINCTION

In order to account for the differences outlined in previous sections, we propose the following motivations for phonetic and lexical distinction between Ni‘ihau and Revived Hawai‘ian.

### **Linguistic & Geographic Isolation**

As noted in Section 2, Ni‘ihau Hawai‘ian had already developed allophonic variation of /t ~ k/ by the time European contact was made in the late 1700s. Ni‘ihau’s small population and location far from major Hawai‘ian population centers has allowed it to retain this distinction. With no more than 300 speakers living in the Ni‘ihau community at any given time, it is less likely for internal variation to develop among speakers, since there are fewer opportunities for sound changes to develop (Bromham et al. 2015); any which do come about are also more likely to spread throughout the community, resulting in a linguistic sprachbund with unique characteristics and internal homogeneity, distinct from the other islands.

Equally important is the lack of contact with English during the past hundred years. While Ni‘ihau speakers continued as they had since the early part of the first millennium, native speakers of Revived Hawai‘ian emerged in a very different environment, one permeated by English. Children who grew up speaking Revived Hawai‘ian did so learning from speakers whose native language was likely English, which may have contributed to the loss of free variation in the /t ~ k/ phoneme in Revived Hawai‘ian. These teachers and students likely speak a language which preserves phonemic contrast between /t/ and /k/, and so would be less likely to interpret these as a single phoneme with multiple pronunciations, even though Hawai‘ian has only one. This a priori familiarity with the sounds of English may have made it less likely for L2 and L1 speakers of Revived Hawai‘ian to exhibit phonological interference from English, resulting in the change from the variable /t ~ k/ to /k/, realized only as [k]; such a conclusion about phonetics is in line with Shatz’s grammatical and syntactical analysis of L1 French, German, Italian, Japanese, Portuguese, Russian, and Spanish speakers during the process of English acquisition (2016). While (Lord 2008) shows that L2 speakers may acquire native-like phonologies of a language, we argue that the lack of a pre-existing phonology for Revived Hawai‘ian during the revival movement means that English phonology was more likely to contribute to Revived Hawai‘ian phonology than would otherwise be expected. This finding is concurrent with Bolozky’s 1997 analysis of Modern Hebrew Phonology, and Eckman and



Iverson's examination of phonological change in second language acquisition (Eckman and Iverson 2015).

While touched upon briefly in Section 2, it is also important to note here that the presence of government language policies on the main islands of Hawai'i greatly impacted the development of Hawai'ian; without the suppression of Hawai'ian among children in schools, Revived Hawai'ian would not exist. The private ownership of Ni'ihau and the non-interference in the lives of the residents of the island by the English-speaking owners had the opposite effect for Ni'ihau Hawai'ian as it did for the Hawai'ian of the 1890s spoken elsewhere throughout the state. The lack of infrastructure and preservation of cultural practices on Ni'ihau allowed its language to remain untampered with by government policies or encroaching development, at least until recent memory. This in turn nullified the need for many of the new words created in Revived Hawai'ian and contributed to the lexical differences between the two.

### **Sociolinguistic Variables**

Additional insight into the distinction between Ni'ihau and Revived dialects can be gleaned from identifying the sociolinguistic factors influencing Hawai'ian's development. Augmenting Ni'ihau's language is the sense of cultural identity found on the island. Ni'ihau is known for its distinctive shell lei, a type of necklace made with beaded shells on a string, similar to the flower lei found elsewhere in Hawai'i (Ni'ihau Cultural Heritage Foundation 2009a). For many years, the island also had distinctive mats woven from *Makala*, a sedge once common to the small lakes on Ni'ihau (Hitt 2016). Mirroring these traditions is an identity unique to the language. Speakers of Ni'ihau Hawai'ian often refer to it as *'Ōlelo Ni'ihau*, which is translated as either the Ni'ihau dialect or the Ni'ihau language. Although the distinctions between Revived Hawai'ian and the Ni'ihau dialect outlined in this paper are small, relative to the distinctions made between Hawai'ian and other Polynesian languages, the variation which does exist serves as a source of linguistic identity for Ni'ihau speakers. This can be seen through a number of sources. First, we look at the underlying motivation for the establishment of Ni'ihau Hawai'ian focused schools in the 1990s. While the Hawai'ian Revitalization movements of the 1980s onward saw great success in establishing Hawai'ian language curricula for schools, parents of native Ni'ihau speakers still saw their children at a disadvantage in both public schools and 'Aha Pūnana Leo schools (Omandam 2000), as they could not learn their own language. In 1993, these parents pulled many of their children from schools in Kaua'i and founded what would become a charter

school for “students whose primary language is the Niihau dialect of Hawaiian” (KANAKA PCS 2007). Identification with the Ni‘ihau dialect may also contribute to its prestige in the eyes of Ni‘ihau residents, while lowering it for other speakers; this may partially explain the tensions between Ni‘ihau speakers and the Hawai‘ian immersion schools, as detailed in (Porzucki 2016).

### **Future Trends**

If the proposed factors outlined above are at least partially responsible for the distinction between Ni‘ihau and Revived Hawai‘ian, then it is likely that the current state of differentiation will not hold. Ni‘ihau and her people are becoming less and less geographically and linguistically isolated as time goes on. With the establishment of schools for Ni‘ihau children on the neighboring island of Kaua‘i and the lack of economic opportunity for people on Ni‘ihau, many residents are either leaving or spending significant amounts of time away from the isolated community which fostered the unique dialect (Ni‘ihau Cultural Heritage Foundation 2009b). Increasingly, speakers of Ni‘ihau are being exposed to both English and Revived Hawai‘ian, while the number of native speakers of the Ni‘ihau dialect is falling. If these trends continue, the linguistic communities of Ni‘ihau and Revived Hawai‘ian will likely become increasingly connected and upset the status quo.

## 6. CONCLUSION

After reviewing historical records of spoken Hawai‘ian and examining spoken records of both Ni‘ihau and Revived Hawai‘ian, we corroborate the retention of Proto-Eastern Polynesian */\*t/* as [t ~ k] in Ni‘ihau Hawai‘ian, while being leveled to [k] in Revived Hawai‘ian. We also note perceived incorrectness by Ni‘ihau speakers of some words that are standard in Revived Hawai‘ian. This distinction is supported through orthographic and phonetic analysis of Ni‘ihau and Revived Hawai‘ian source material. Finally, we propose that the linguistic and geographic isolation of the island of Ni‘ihau, along with the impact, or lack thereof, on Ni‘ihau speakers of government language suppression policies during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries in part motivated the distinction between the two dialects, while a small population and the formation of a distinct sociolinguistic identity served to cement these variations among speakers.

As with any quantitative study, a larger sample size is always beneficial when trying to analyze data. While a large corpus exists for phonetic and lexical analysis of Revived Hawai‘ian, the private nature of the island and small number of native speakers make it difficult to find a large corpus of written or spoken Ni‘ihau from a large number of native speakers. Having on-island access to Ni‘ihau residents would greatly improve the accuracy of any findings, and would be able to more concretely support or refute the proposals made in this paper. As a result of the limited access to written and spoken Ni‘ihau Hawai‘ian, much of the data used to compare Ni‘ihau and Revived Hawai‘ian in this paper comes from a limited number of sources; most notably Kimura and Counciller 2009, Porzucki 2016, ‘Aha Pūnana Leo and Kuamo‘o 2003, KANAKA PCS 2007, and Niihau Kekaha - Hawaii State Public Charter School Commission 2005. Additional limitations come from the narrow scope of assessment with regards to phonetic variation; for space and time constraints, this paper looked most closely at allomorphic variation among definite articles in Ni‘ihau and Revived Hawai‘ian. While similar variation is noted in many other words, a more thorough investigation of the [t ~ k] variation would certainly be prudent. The data used for statistical analysis in Section 3 did survey a large number of languages, but widening the scope to include even more would help improve its predictive accuracy.

Further inquiry and analysis of a larger corpus of Ni‘ihau Hawai‘ian could shed light on whether or not the presence of the [k] allophone of /t ~ k/ in Ni‘ihau Hawai‘ian results from influence from either Revived Hawai‘ian or English, or whether this free variation developed

independently. Owing to its geographic isolation, the Ni‘ihau dialect may have diverged from the varieties spoken on other islands well before the imposed language suppression policies of the 19<sup>th</sup> century, and so it cannot be said for certain whether or not this allophonic variation was present before the decline of spoken Hawai‘ian on the other islands. Additionally, this paper did not explore any possible syntactic or grammatical differences between Ni‘ihau and Revived Hawai‘ian, and we were not able to find any research surrounding this topic, so exploration in this area might be useful in determining the extent to which the two varieties of Hawai‘ian differ. Finally, the changing sociolinguistic relation between Ni‘ihau and Revived Hawai‘ian speakers presents an opportunity to study the impact that Revived Hawai‘ian and English have on Ni‘ihau Hawai‘ian, and vice-versa.

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