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DESCRIPTIONS AND GENERALIZATIONS OF KWARA'AE SURFACE FORMS*

JEFFREY HEINZ
jheinz@humnet.ucla.edu

Speakers of Kwara'ae pronounce individual words in the language in two different ways. These two speech styles are related by CV metathesis; $C_1V_1C_2V_2$ sequences in the Citation speech style are pronounced as $C_1V_1V_2C_2$ sequences in the Normal speech style. Previous research has assumed that the Normal form is derived from the Citation form. This paper lays out in detail the patterns found in the surface forms of both the Citation and Normal forms without the assumption that the Normal form is derived form the Citation form. By casting this assumption aside, we are able to characterize the legal and illegal surface structures of each speech register independent of the other.

1. INTRODUCTION

1.1. CV Metathesis in Kwara'ae

Kwara'ae is an Austronesian (Eastern Oceanic, Southeastern Solomonic) language spoken on the island of Malaita in the Solomon Islands. There are approximately 30,000 native speakers (Grimes 2003) which makes it the largest indigenous language in the Solomon Islands. Unless otherwise indicated, the data presented here comes from Sophie Streeter, a native speaker of Kwara'ae.

Most words in Kwara'ae have two remarkably different pronunciations.

(1)	Citation	Normal	
	ˈlo.ʔi	ˈloi̯ʔ	'snake'
	ˈbu.ri	ˈbu̯ir	'behind'
	ˈbo.re	ˈbo̯er	'although'

These two allomorphs are related by CV metathesis; a process which can be described as $C_1V_1C_2V_2$sequences becoming $C_1V_1V_2C_2$ sequences. In (1) the segments of the final CV syllable of the Citation form have switched positions in the Normal form.

What makes Kwara'ae unique is that CV metathesis may occur in non-wordfinal positions (2) and more than once in a word (3).[1] This is unlike CV metathesis in Rotuman, in which metathesis

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[1]There is an explanation of morphology in the appendix.

only occurs at most once per word, and usually at the right word boundary. (Churchward 1940, Cairns 1977, McCarthy 2000, Norquest 2001).

(2)	Citation	Normal	
	ˈʔa.ko.ˌfi.a	ˈʔaok.ˌhiɛ	‘to heat it’
	ˈsa.fi.ˌta.na	ˈsaih.ˌtaˑn	‘center’
	bo.ˈle.bo.ˌle.a	ˈboel.bo.ˌlea	‘crazy’
	ke.ˈba.ke.ˌba.ʔa	ˈkeab.ke.ˌbaˑʔ	‘dumbo shaped’ (of ears)

(3)	Citation	Normal	
	ˈke.ta.ˌla.ku	ˈkeat.ˌlauk	‘my height’
	ˈsi.na.ˌfi.da	ˈsiɛn.ˌhiɛd	‘to share them’
	da.ˈro.ʔa.ˌni.da	ˈdaor.ʔa.ˌŋiɛd	‘to share them’
	ˈra.ʔe.ˌra.ʔe.ˌna.ʔa	ˈraeʔ.ˌraeʔ.ˌnaˑʔ	‘incline, slope’

Finally, many words have a third, previously unreported, allomorph, which I will call the Focus Final form. It occurs as the last word in a focused phrase (as described in section 4).

(4)	Citation	Normal	Focus Final	
	ˈle.ʔa	ˈleaʔ	ˌlea.ˈʔa	‘good’
	ˈsi.na	ˈsiɛn	ˌsiɛ.ˈna	‘sun’
	fi.ˈʔi.ta.ˌta.li	ˈfiˑʔ.ta.ˌtail	ˌfiˑʔ.ta.ˌtai.ˈli	‘hibiscus (bush)’

This allomorph can be identified by partial metathesis of the final vowel. Unlike the complete metathesis in the Normal form, partial metathesis spreads the final vowel across the last consonant instead of moving it; i.e., a $C_1V_1C_2V_2$ sequence becomes a $C_1V_1V_2C_2V_2$ sequence.

It remains a challenge for phonology to understand why and how the Citation, Normal and Focus Final forms are related by CV metathesis synchronically. How can we predict the loci of metathesis? Is CV metathesis a process of copy and deletion or something else? What is the role of stress in this process? How does CV metathesis fit into the broader picture of phonological phenomena? In order to answer these questions, it is important to first know as many facts as possible about the surface forms of the Citation, Normal, and Focus Final forms. The purpose of this paper is to provide those facts, and consequent generalizations, that allow one to begin to answer the questions above.[2]

Prior to this research, there are eight documented cases of previous field research of Kwara’ae that I am aware of.[3] There are two slim grammars from the 1930s that were written by missionaries

[2] An analysis of the data presented here can be found in Heinz (2004).

[3] In each case, the fieldwork took place in a Kwara’ae community in the Solomon Islands. This leaves my field research as the only one that took place outside of the Solomon Islands (My consultant and I worked primarily in the Pasadena public libraries).

(Ivens 1931, Deck 1934).[4] In the late 1970s and the early 1980s, further work was conducted by Gary Simons (1977) and Ho-Min Sohn (1980). Don Laycock's 1982 study of CV metathesis in Austronesian included Kwara'ae, though his data was drawn from the studies already mentioned. Andrew Pawley reportedly conducted fieldwork on Kwara'ae around then as well; some (all?) of his notes are first published in (Blevins and Garrett 1998). Kwara'ae was also one of the languages in Darrell Tryon and B.D. Hackman's 1983 Solomon Island language survey. David Gegeo, a native speaker of Kwara'ae, and Karen Watson-Gegeo conducted a study of Kwara'ae children's language in 1986. Since that time there has been little linguistic work on Kwara'ae, but there has been a small but productive industry producing Kwara'ae texts to record the traditions of the Kwara'ae people. This task has been undertaken by Ben Burt, an anthropologist at the British Museum, and his Kwara'ae colleagues 2001, 1990.[5] A number of the researchers above also thank David Gegeo for the insights he has brought them regarding Kwara'ae.

Since Sohn's 1980 SPE-style[6] analysis, there have been three other analyses. Blevins and Garrett's influential 1998 paper introduced some new data from Andrew Pawley (mentioned above), though the others (Norquest 2001, 2003, Baird 2002) relied on data in the works previously published.

I have benefited greatly from all of this previous research, but many questions remain. For example, the Citation form is often mentioned as a pronounced form, but it has not been studied to the same extent as the Normal form. This has led to at least one missed fact regarding modern Kwara'ae, which is that the stress patterns of the Citation and Normal registers are different.

The goal of this paper then is to offer a detailed description of the surface patterns of the Citation, Normal, and Focus Final forms, and to state the generalizations that any adequate phonological analysis of CV metathesis in Kwara'ae should address. Special attention is paid to the stress pattern since recent research suggests that the stress pattern conditions the locations of CV metathesis (Blevins and Garrett 1998, Norquest 2001, Baird 2002). Additional attention is paid to vowel length, an issue unclear in previous research.

1.2. Background

There is no difference in meaning among the three forms in examples (1)-(3). Their only difference, apart from their pronunciation, is their use. Uncontroversially, the Normal form is the speech register used in regular discourse.[7]

The Focus Final form is also part of regular discourse; it will be discussed in section 4. Therefore, even though there may be as many as three allomorphs for a particular word, there are only two speech registers: Citation and Normal.

[4] I have not gotten my hands on (Ivens 1931); I cite it from Simons (1977).

[5] Ben Burt has generously provided me with a word list he has compiled, as well as with notes and additions he has made to Deck's 1934 grammar in the course of his work.

[6] The Sound Pattern of English, (Chomsky and Halle 1968).

[7] The Normal form has also been called has been referred to as the short form (Sohn 1980) and the discourse form (Norquest 2001, 2003).

The Citation form is the speech register used in traditional songs and for clarification.[8] Gegeo and Watson-Gegeo (1986:19) write that these forms are also used in calling out routines (a songlike speech style):

> Calling out is used in three main ways in adult Kwara'ae discourse. First people call out for practical reasons in running a household, such as to locate a missing person or to bring a family member home for a meal. Secondly, a Kwara'ae man or woman working in the bush and hearing someone working nearby but out of sight will call out to seek identification of the other person. Thirdly, people call out from house to house, or as someone passes on the path, as a strictly social activity. They ask polite questions, or joke, tease and engage in pleasant banter.

The Citation register is not used exclusively in calling out routines; rather, it is often used in alternation with the Normal register. As Gegeo and Watson-Gegeo (1986:p. 24) point out, this is useful for the Kwara'ae learner:

> One question that intrigued us was how children learn to produce alternation of [Citation and Normal] forms and to infer underlying [Citation] forms from metathesized and contracted [Normal] forms. We have found that calling out is an important routine in this regard. In calling out the underlying form of the word is often used in alternation with the metathesized or contracted form, especially if the addressee does not hear the first time.

The examples they provide are one word utterances. Even if entire sentences are not spoken in the Citation form (and my consultant assures me no one does this), a child who is given several examples of two allomorphs may very well develop a mapping between the two forms and later apply it to new vocabulary.

1.3. Reasons Kwara'ae CV Metathesis is Synchronic

There are at least three reasons to think that CV metathesis is a synchronic process. First, every word in the language has both a Citation form and a Normal form, including morphologically related words.[9]

(5)

Citation	Normal		Citation	Normal	
ˈsu.li	ˈsu͡il	'bone'	su.ˈli.ku	ˈsu.li͡uk	'my bone'
ˈʔo.so	ˈʔɔ͡ːs	'a lie'	ʔo.ˈso.ʔa	ˈʔo.ˌso͡ʌʔ	'guile'
ˈfa.ŋa	ˈha͡ːŋ	'to eat'	fa.ˈŋa.ʔa	ˈha.ˌŋa͡ːʔ	'feast'
ˈi.hu	ˈi͡uh	'hair'	i.ˈhu.la	ˈi.ˌhu͡ʌl	'hairy'

[8]The Citation form has also been called the long form (Sohn 1980), historical form (Simons 1977, Blevins and Garrett 1998), or underlying form (Sohn 1980, Gegeo and Watson-Gegeo 1986).

[9]An appendix which describes the known morphology is included at the end of this paper.

Loanwords also have undergone this transformation, which indicates that CV metathesis is productive.

(6)

Citation	Normal	
ˈbi.ta	ˈbiɛt	'Peter'
ˈha.re	ˈhaer	'Harry'
ˈre.sa	ˈreas	'razor'
ˈbe.ba	ˈbeab	'paper'

Finally, $C_1V_1C_2V_2$ sequences in surface forms are absent in Normal discourse. This fact must be accounted for by the grammar since surface $C_1V_1C_2V_2$ sequences make up well-formed words in most languages. $C_1V_1C_2V_2$ sequences may be eliminated as possible underlying forms stipulatively, but this offers nothing in the way of explanation, and is odd, given the fact that such sequences are abundant in the Citation register, not to mention most other languages. Another way requires the grammar to derive legal surface forms from any possible underlying form, e.g. in Optimality Theory, this is called the principle of a rich base (Prince and Smolensky 2004).

1.4. Overview

Sections 2 and 3 describe the legal surface forms of the Citation and Normal forms, respectively. The summaries of these sections review the relevant generalizations. Section 4 describes the distribution and surface patterns of the Focus Final forms. Section 5 summarizes the main findings of these sections and discusses the issues that analyses must address.

2. THE CITATION REGISTER

This section describes the surface patterns of the Citation form. When giving examples I include the related word in the other register for comparison.

2.1. Consonants

The following table gives the phonemic inventory for the consonants of the Citation form.

(7)

	labials	coronals	velars	labialized velars	glottal
stops	b	t d	k g	k^w g^w	ʔ
fricatives		s			h
nasals	m	n	ŋ	$ŋ^w$	
liquids		l			
trills		r			

The examples in (8) exhibit the contrast between the velars and labialized velars in the Citation form.[10]

(8)		Citation	Normal	
	a.	fu.ˈŋu.a	ˈhu.ŋuʌ	‘to fill it’
	b.	ˈŋʷa.ʔi	ˈŋʷaiʔ	‘bag’
	c.	fi.ˈku.a	ˈhi.ˌkuʌ	‘to gather together’
	d.	ˈʔa.kʷa	ˈʔa.kʷa	‘to recover’[11]

The [w] cannot be a semivowel formed from the vowel [u] because we would expect such glide formation in ‘to fill it’ and ‘to gather together’ above. Because the distribution of [w] is limited to post-velar environments previous researchers decided not to treat it as a glide of the vowel [u], but to instead include the class of labialized velars as I have above.

Finally, glottal stops are contrastive, even initially as the examples below demonstrate.

(9)		Citation	Normal	
	a.	ˈʔa.si	ˈʔaih	‘to fall’
		ˈa.si	ˈais	‘sea’
	b.	ˈʔe.ˈke	ˈʔɛˑk	‘shame’
		ˈe.ta	ˈeat	‘one’
	c.	ʔi.ˈli.a	ˈʔi.ˌliɛ	‘to dig’
		i.ˈli.a	ˈi.ˌliɛ	‘to try’
	d.	ˈʔo.lo	ˈʔɔˑl	‘to cut’
		ˈo.lo	ˈoˑl	‘to swallow’
	e.	ˈʔu.ˈna.ri	ˈʔu.ˌnair	‘like this’
		ˈu.nu	ˈuˑn	‘light’

2.2. Semi-vowels

There are no semivowels in the Citation form. The semivowel [j], which I write as [i̯][12], does not occur in surface Citation forms at all. As for the semivowel [w], it can be claimed that the contrast between plain velars and labialized velars is really a contrast between [u] and [w] in only one environment, the post-velar environment. This is an equally fit description of the facts for

[10]It is interesting to note that overwhelmingly in the examples of [w] and [u] in post velar environments, [w] or [u] is followed by [a]. A search through my own word list revealed that out of 92 words with [u] or [w] following a velar, there was only one, *kui* ‘dog’, followed by a vowel other than [a] (1.1%). Similar results are obtained by a search through Ben Burt’s wordlist (2004). Out of 485 words with [u] or [w] post-velarly, only twenty followed these with a vowel other than [a] (4.1%).

[11]There are no labiovelars word-finally in the Normal form. This suggests that metathesis does not occur in this word to avoid a word-final labiovelar.

[12]I choose to use the subarch to indicate semi-vowels because of the exixtence of the mid-semivowels [e̯] and [o̯]in the Normal form. Similarly, I will use [u̯] as an equivalent of the semivowel [w].

the Citation form. However, there is some evidence from the Normal form which suggests that a labialized velar is the best characterization since it is a single segment, and not a sequence of a plain velar followed by a high rounded semivowel. This will be discussed in section 3.1.

2.3. Vowels

There are five vowels in the Citation form: [i,u,e,o,a].

(10)

	front	back
high	i	u
mid	e	o
low	a	

Word-initial vowels, like those in (9) have a breathy quality. Note that word-initial vowels are not voiceless; in fact, there are no voiceless vowels in the Citation form.

Long Vowels

Simons (1977) claims that there is a surface vowel length difference in Kwara'ae for each of the vowels above. However, the minimal pairs he cites are not true minimal pairs, because the stress pattern is different in the words. Stress usually falls on the penult in the Citation form, but for some words, it falls finally (as described in section 2.5). For example, the words 'father' and 'raw' are two of the words Simons presents as evidence for a long vowel contrast (p. 8).

(11)

Citation	Normal	
ˈma.ʔa	ˈmaˑʔ	'father'
ma.ˈʔa	ma.ˈʔa	'raw'

Simons proposes that in the Citation form, the final vowel of 'raw' is long, but that the final vowel of 'father' is short. However, although these pairs must have different underlying representations, it is not the case that the only featural difference between the two words is the length of the final vowel since the stress pattern is different. Thus, these pairs are not evidence for a vowel length contrast; since the final syllable of 'raw' may be lexically stressed.

Simons also writes that "A lengthened vowel may affect the stress pattern and can often be identified in this way" (p. 7). This statement can plausibly be interpreted to mean that it is not easy to hear a durational difference and that Simons employs vowel length to account for aberrant stress patterns. Support for this interpretation comes from the fact that the every pair Simons presents to make his case have stress on different syllables as in (11).

This skepticism may be unwarranted in light of the fact that recent Kwara'ae texts authored by Kwara'ae speakers use a macron to indicate vowel length in some words (Alasa'a et al. 1990,

Kwa'ioloa and Burt 2001). However, the decision to use a macron in Kwara'ae orthography is based on the work in Simons (1977). Ben Burt, an anthropologist at the British Museum, relies on his Kwara'ae co-authors to identify which vowels should have a macron; he says that he is not linguistically trained and does not listen for them (p.c.). Although I very much would like to give the authors of the above texts the benefit of the doubt and say surface long vowels exist, I do not perceive the lengthened vowels, nor does my consultant who uses no macrons or double vowels in her orthography. For all of these reasons, I think it is important to find minimal pairs which could only differ in length, and not stress, to settle the issue.

In order to find them, it is important to look for a surface length contrast in stressed positions (since underlying long vowels attract stress). A survey of a Kwara'ae word list (Burt 2004) revealed that out of 4679 words, 362 are marked for vowel length (7.7%). 257 of these long vowels are in positions that would otherwise not be stressed; i.e. they are aberrantly stressed words. This leaves 105 words in which a vowel length distinction might be measurable if a minimal pair can be found.

I have not yet found such a minimal pair, but the two words for 'father' and 'raw' do form a true minimal pair in the Focus Final form where primary stress is final and complete metathesis is blocked (as described in section 4). When these words are placed in the Focus Final position, primary stress falls on the final syllable for both words.

(12)

UR	Citation	Normal	Focus Final	
/maʔa/	ˈma.ʔa	ˈmaʔ	ˌma.ˈʔa	'father'
/maʔaa/	ma.ˈʔa	ma.ˈʔa	ˌma.ˈʔa	'raw'

It is possible now to compare the length of the vowel of the primary stressed syllable [ʔa].

What follows is a brief description and result of a preliminary phonetic study whose goal is to determine if there is surface vowel length contrast in words with underlying long vowels.

To measure the duration of the vowels, I put the words into the sentences below, and recorded seven of them in random order interspersed with filler sentences.

(13) a. [na ma.ʔa]$_{focus}$ neˈʔ ŋʷae̯ ʔi roˈʔ.ki sa.e̯an rɔˈd.
the father that danced to yesterday in night
'It is the father who danced last night.'

b. [i̯ɛʔ ma.ʔa]$_{focus}$ neˈʔ nau̯k ʔei̯n.
fish raw that I ate
'It is raw fish that I ate.'

The average duration of the final vowel in seven tokens for 'father' was 108.16 milliseconds, whereas the average duration of the final vowel in seven tokens for 'raw' was 132.44 milliseconds.

A t-test made with two groups of seven tokens each shows that this difference is significant (P = 0.0097). In other words, a more accurate transcription of the Final Focus forms for 'father' and 'raw' is [ˌma.ˈʔa] and [ˌma.ˈʔaː]. It is probably reasonable to extend the surface length facts to their Citation and Normal counterparts.

(14)

UR	Citation	Normal	Normal]$_{focus}$	
/maʔa/	ˈma.ʔa	ˈmaʔ	ˌma.ˈʔa	'father'
/maʔaa/	ma.ˈʔaː	ma.ˈʔaː	ˌma.ˈʔaː	'raw'

These results are welcome because they suggest that an underlying vowel length contrast is realized as such on the surface.

Although I have not verified a surface long vowel contrast everywhere where one is claimed, I think it is now reasonable to accept Simons's (1977) claim that there is a long vowel contrast. Also, I will assume that speakers' use of macrons in Ben Burt's wordlist correctly identifies long vowels, and I will use the diacritic [ˑ] to indicate these presumed long vowels in my transcriptions of Citation forms.

There are still many questions to be answered regarding long vowels. These will be discussed in section 3.2.

2.4. Syllable Structure

The syllable structure of the Citation form is straightforward. All syllables are open and consonant clusters are prohibited everywhere. In cases where there are adjacent vowels, they are heterosyllabic.

(15)

	Citation	Normal	
a.	me.ˈa.na	ˈmean	'his, her, or its tongue'
	ˈne.i.ˌri.a	ˈneiˌriɛ	'this one'
b.	fu.ˈi.ni	ˈhuin	'those'
	tu.ˈhu.a	ˈtuˌhuʌ	'to chop it'
c.	i.ˈo.lo	ˈiɔˑl	'canoe'
	i.ˈli.a	ˈiˌliɛ	'to try it'
d.	ˈdo.e	ˈdoe	'great, big'
	ʔo.ˈdo.a	ˈʔoˌdoa	'wall'

The sole exception is when the first vowel of two adjacent vowels is [a]. In this case, there is diphthong formation, by which I mean the two vowels are not heterosyllabic. They are in the same syllable and the vowel sound consists of a contour from the first vowel to the second vowel.

	Citation	Normal	
	ˈma.na.ˌtai̯.da	ˈman.ta.ˌi̯ɛd	‘to pity them’
(16)	ˈfi.ŋi.ˌfau̯	ˈhiŋ.ˌhau̯	‘skirt’
	ʔa.ˈfae̯	ˈʔa.ˌhae̯	‘sour’
	ˈfao̯.lo	ˈhao̯l	‘new’

2.5. The Stress Pattern

Stress in Kwara’ae (both Citation and Normal forms) is indicated by intensity and loudness as opposed to duration. Stress in the Citation form is rhythmic; generally, secondary stress falls on the penultimate and alternating syllables leftward. Main stress falls on the leftmost stressed syllable.[13]

(17)	C. Pattern	Citation	Normal	
	ˈ ˌ	ˈka.do	ˈkao̯d	‘thin’
	ˌ ˈ	ma.ˈda.mo	ˈma.ˌdao̯m	‘moon, month’
	ˈ ˌ ˌ	ˈke.ta.ˌla.ku	ˈke̯at.ˈlau̯k	‘my height’
	ˌ ˈ ˌ ˌ	da.ˈro.ʔa.ˌni.da	ˈdao̯r.ʔa.ˌni̯ɛd	‘to share them’
	ˈ ˌ ˌ ˌ	ˈra.ʔe.ˌra.ʔe.ˌna.ʔa	ˈrae̯ʔ.ˌrae̯ʔ.ˌnaˈʔ	‘incline, slope’

Syllables with diphthongs are more prominent than others. If the final syllable is CVV (i.e. has a diphthong), it receives stress, as do alternating syllables to its left.

(18)	C. Pattern	Citation	Normal	
	ˌ ˈ	ʔa.ˈfae̯	ˈʔa.ˌhae̯	‘sour’
	ˈ ˌ ˈ	ˈfi.ŋi.ˌfau̯	ˈhiŋ.ˌhau̯	‘skirt’
	ˈ ˌ ˈ	ˈta.ʔi.ˌfau̯	ˈtai̯ʔ.ˌhau̯	‘all, every’

If a word is composed of a CVV syllable followed by two CV syllables, or a CVV syllable followed by another CVV syllable, then stress falls on adjacent syllables.

(19)	C. Pattern	Citation	Normal	
	ˈ ˌ ˌ	ˈmau̯.ˌri.ʔa	ˈmau̯.ˌri̯ɛʔ	‘life’
	ˈ ˌ ˌ	ˈsae̯.ˌle.ʔa	ˈsae̯.ˌlea̯ʔ	‘happy’
	ˌ ˈ ˌ ˌ	li.ˈmau̯.ˌmu.lu	ˈli.mau̯.ˌmul	‘your (pl.) hands’
	ˈ ˌ	ˈkai̯.ˌdai̯	ˈkai̯.ˌdai̯	‘these times’

[13]Norquest (2001) presents forms with a different stress pattern, for example Citation [ˌŋo.ri.ma.ˈdi.ko] Normal [ˌŋo͡ir.ma.ˈdjok] ‘kind of edible grub’. I observed no forms with this pattern. They might belong to another dialect; Norquest does not say.

If, however, a word is composed of a CVV syllable separated from the final word boundary by a single (C)V syllable, secondary stress falls on the penultimate syllable and alternating syllables to the left.

(20)	C. Pattern	Citation	Normal	
	◡◟◡	ˈma.na.ˌtai̯.da	ˈmaˑn.ta.ˌi̯ɛd	'to pity them'
	◡◟◡	ˈfa.ʔa.ˌtai̯.na	ˈfaˑʔ.ta.ˌi̯ɛd	'to show it'

There are no instances where CVV syllables fail to receive primary or secondary stress in the Citation form.

Aberrant Stress Patterns and Long Vowels

There are some words in the Citation form that do not follow the regular stress pattern described above.

(21)	Citation	Normal	
	ka.ˈfa	ˈka.ˌfa	'to comb it'

There is another word 'comb' pronounced Citation [ˈka.fa] (cf. Normal [ˈkaˑh]), where stress falls on the penultimate syllable. The proposal offered here is that these two forms share the same root /kafa/ 'comb', but 'to comb it' has the additional third person singular object suffix /-a/. There is a third person singular suffix /-a/, which is clearly present in the word 'to steal' below.

(22)	Underlying	Citation	Normal	
	/bili/	ˈbi.li	ˈbiˑl	'to steal'
	/bili-a/	bi.ˈli.a	ˈbi.ˈli̯ɛ	'to steal it'

With this knowledge, it is reasonable to say that the Citation form of the verb [ka.ˈfa] 'to comb it' is derived from an underlying form /kafa-a/. The stressed [fa] syllable of the Citation surface form [ka.ˈfa] should be identified then as a CVV syllable because it behaves like other CVV syllables with respect to stress; i.e. it should be transcribed [ka.ˈfaˑ]. Of course, the word for 'comb' is pronounced [ˈka.fa] in the Citation form because its underlying form is /kafa/.

The broader claim that I making, however, is that it is descriptively adequate to represent underlying long vowels as two identical adjacent vowels. Although it is monomorphemic, the underlying form of 'raw' [ma.ˈʔaː] (cf. Normal [ˈma.ˌʔa]) is /maʔaa/. Just as in the case with 'comb' above, the grammar distinguishes between this underlying representation and /maʔa/, which surfaces as Citation [ˈma.ʔa] and Normal [ˈmaˑʔ] 'father'.

That underlying long vowels can be expressed in this way is plausible for another reason. There are no Citation surface forms like [ka.ˈfa.a] or [ma.ˈʔa.a]. Again, according to the principle of a rich base(Prince and Smolensky 2004), we must consider what the grammar does with underlying forms like /kafaa/ and /maʔaa/. The claim here is that the grammar does not map them to the same outputs as it maps /kafa/ and /ŋaʔa/, but to [ka.ˈfaˑ] and [ma.ˈʔaː], respectively.

Identical adjacent underlying vowels (i.e. long vowels) affect stress assignment in the same way non-identical adjacent underlying vowels do. The words with so-called aberrant stress actually follow the regular stress pattern; they just have long vowels in the syllables which attract stress. It is expected then that every aberrantly stressed word should have a measurable long vowel. All the words that are aberrantly stressed that I have come across are in fact marked with a macron in Ben Burt's word list.

2.6. A Minimal Word Condition

There are many [CV] words on the surface, but they are grammatical words that cannot be stressed in Normal speech.

(23)

Citation	Normal		
/ʔi/	ʔi	ʔi	'to'
/na/	na	na	'the'
/ta/	ta	ta	'a'
/fu/	fu	ma	'of'

There are no CV content words, however. Content words that in my initial consultant work I transcribed as CV in all likelihood have a long vowel. (24) presents some such content words, with longer words in which they occur.

(24)

	Citation	Normal	
a.	ˈŋuˑ	ˈŋuˑ	'to sing'
	ˈŋu.ˌa.ʔa	ˈŋu.ˌu̯ʌʔ	'singing'
b.	ˈruˑ	ˈruˑ	'thing'
	ˈu.si.ˌruˑ	ˈwis.ˌruˑ	'necklace'
c.	ˈʔuˑ	ˈʔuˑ	'louse'
	ˈʔuˑ.la	ˈʔu.ˌu̯ʌl	'of, with lice'

A long vowel in the content word accounts for the metathesis pattern in the related words. If the root was CV, we would expect Normal forms *[ˈŋwaʔ], *[ˈu.si̯ur], and *[ʔu̯ʌl] by the grammar given in the sections below. Additional corroboration for the vowel length distinction between content words and grammatical words is that the words in (24) are spelled with a macron by Ben Burt's Kwara'ae colleagues, whereas the ones in (23) are not.

Thus, content words in the Citation form appear to meet a minimum prosodic requirement (McCarthy and Prince 1986). Since grammatical words do not bear stress, but content words do, I will assume that grammatical words are unable to bear stress because they fail to meet the minimal prosodic standard.[14]

2.7. Summary

The Citation register has five short vowels, five long vowels which can be represented underlyingly as two identical adjacent short vowels, and sixteen consonants which combine to form open syllables. Diphthongs are allowed only if its first element is [a]. Stress is completely predictable in the Citation form. Stress falls on the penult and alternating syllables to the left unless there is a diphthong, which may change the pattern since CVV syllables attract stress. Long vowels on the surface reasonably accounts for aberrantly stressed words.

3. THE NORMAL REGISTER

How the Normal register is related to the Citation register is not a settled matter. Although we often describe a Normal form by pointing to the places in its corresponding Citation form where metathesis has taken place, we should not necessarily conclude that the Normal form must be derived from the Citation form. Since most dialogue occurs in the Normal form, it is not unreasonable to think that the children are exposed to a word in the Normal form before they learn the Citation form. Therefore, this section provides a description of legal surface Normal forms on their own terms.

3.1. Consonants

Inventory

The consonantal inventory of the Normal form is identical to the one for the Citation register with one change. The labial fricative [f] in the Citation form corresponds to the laryngeal fricative [h] in the Normal form.

(25)

Citation	Normal	
ˈfo.ga	ˈhoag	'break '
ˈka.fo	ˈkaoh	'water'
ˈfa.faˌ.ro.ŋo	ˈhaˑhˌ.roˑŋ	'to eavesdrop'

[14] An alternative explanation is that grammatical words are not required to bear stress, and are therefore allowed to be subminimal.

Aspiration in Word Final Stops

Word final stops are often pronounced with quite a bit of aspiration.

(26)

Citation	Normal	
ˈʔa.ba	ˈʔaˑbʰ	‘arm’
ˈʔa.to	ʔaot̚ʰ	‘difficult’
ˈro.do	ˈrɔˑdʰ	‘night’
ˈnau̯.ku	ˈnaukʰ	‘I’
ˈŋʷa̯.ʔi	ŋʷe̯ˑʔʰ	‘bag’

The aspiration of glottal stops is often realized as a voiceless vowel, see section (40). However, I do not consider the aspiration following non-laryngeal stops to be voiceless vowels because the qualities of the aspiration are not so clear. The transcriptions in this paper will leave out the diacritic [ʰ] because it does not mark a phonemic contrast.

Labiovelars

There has been some disagreement about the status of labiovelars in the Normal form. Sohn (1980) claimed that the labiovelars were not contrastive in the Normal form. This is because vowel hiatus is prohibited in the Normal form (see section 3.2 below), and [u] occurs in complementary distribution with [w]. In other words, Sohn was claiming that the contrast between [u] and [w] no longer exists because it gets washed out by the fact that /u/ surfaces as [w] whenever its followed by a vowel, post-velar environments notwithstanding. Consequently, the Normal form does not need to distinguish between the hypothetical underlying forms /ŋua/ and /ŋʷa/ since both would surface as [ŋwa].

Under this point of view, the Normal form of ‘bag’ should be transcribed as [ˈŋwai̯ʔ] instead of the transcription given in (27).

(27)

Citation	Normal	
fu.ˈŋu.a	ˈhu.ˌŋwʌ	‘to fill it’
ˈŋʷa.ʔi	ˈŋʷai̯ʔ	‘bag’

I agree with Sohn that the absence of vowel hiatus in the Normal form calls into question the need to distinguish between velars and labiovelars underlyingly. However, there is some evidence from metathesis patterns that the distinction needs to be maintained. In general, as indicated by comparing the Citation and Normal forms in (28), underlying forms like /CVVCVCVCV<u>CV</u>/ surface as [CVVCVCV<u>VC</u>], but underlying forms like /CV<u>CV</u>CV<u>CV</u>/ surface as [CV<u>VC</u>CV<u>VC</u>].

(28)

	Citation	Normal	
a.	ˈmau.ri.ˌla.ku	ˈmau.ri.ˌlauk	'my being alive'
	ˈli.a.ta.ˌla.na	ˈli̯a.ta.ˌlaˑn	'to look for a person'
b.	ˈke.ta.ˌla.ku	ˈke̯at.ˌla̯uk	'my height'
	ˈsi.na.ˌfi.da	ˈsi̯ɛn.ˌhi̯ɛd	'to shine on them'

Now consider the word *kwa'iso'i* 'to cut wood'. If this word is underlyingly /kuaʔisoʔi/, we expect that its Normal surface form would not metathesize the first /ʔi/ in the surface form; i.e. Normal [ˈku̯a.ʔi.ˌso̯iʔ]. However, if it were underlying /kʷaʔisoʔi/, then we would expect the /ʔi/ to metathesize yielding Normal [ˈkʷa̯iʔ.ˌso̯iʔ]. In fact, the /ʔi/ does metathesize, suggesting that the labiovelar contrast is maintained in the Normal form.[15]

(29)

Citation	Normal	
ˈkʷa.ʔi.ˌso.ʔi	ˈkʷa̯iʔ.ˌso̯iʔ	'to cut wood'

For this reason, I claim the contrast still exists in the Normal form.

3.2. Vowels

Diphthong Formation

Unlike the Citation form, vowel hiatus is prohibited and vowel clusters are common. This section will describe the kinds of vowel clusters present in the Normal form. In the discussion below, V_1 and V_2 refer to a V_1V_2 cluster. These vowel clusters are diphthongs; that is, there are two elements, or targets, in the course of pronouncing the diphthong.

If the adjacent vowels are of different heights, then the higher vowel is realized as a semivowel.

[15]The word *kwa'iso'i* is the only word I found that I could test in this way.

(30)

	Citation	Normal	
a.	ˈga.li	ˈgai̯l	‘around’
b.	ˈma.ʔu	ˈmau̯ʔ	‘fear’
c.	ˈʔa.fe	ˈʔae̯h	‘wife’
d.	ˈsa.lo	ˈsao̯l	‘sky’
e.	ˈne.i.ˌri.a	ˈnei̯.ˌri̯a	‘this one’
f.	sa.ˈte.mu	sa.teu̯m	‘your chin’
g.	ˈke.ta	ˈke̯at	‘tall’
h.	ˈlo.ʔi	ˈloi̯ʔ	‘snake’
i.	na.ˈʔo.ku	ˈna.ˌʔou̯k	‘before me’
j.	ka.ˈfo.la	ˈka.ˌho̯al	‘watery’
k.	ˈsi.ko	ˈsi̯ok	‘nine’
l.	a.ˈsi.la	ˈa.ˌsi̯ɛl	‘sweet’
m.	ˈtu.ke	ˈtu̯ɛk	‘to play about, to mess around’
n.	fa.ˈʔu.ta	ˈha.ˌʔu̯ʌt	‘which, how, why’

There are some unattested combinations: neither /ie/ nor /uo/ are attested anywhere.

Also notice that when V_1 is high and V_2 is not, the quality of V_2 on the surface may be altered. If V_1 is [i] and V_2 is [a], then V_2 is realized as [ɛ].[16] When V_1 is [u], if V_2 is [a], then V_2 is realized as [ʌ]. If V_1 is [u] and V_2 is [e], then V_2 is realized as [ɛ].

Additionally, there is some free variation: if V_2 = [e], [i] or [u], sometimes the vowel combination can be realized as a single vowel. I have included two normal forms below because I have heard tokens of both kinds, and do not have the sense of which is more frequent (my guess is that it depends on the rate of speech).

(31)

	Citation	Normal (Coalescence)	Normal (Diphthong Formation)	
a.	ˈsa.te	ˈsæˑt	ˈsae̯t	‘chin, beard’
b.	ˈma.ʔi	ˈmeˑʔ	ˈmai̯ʔ	‘come’
c.	li.ˈma.ku	ˈli.ˌmoˑk	ˈli.ˌmau̯k	‘my hand’

If V_1 and V_2 are of the same height, then the first one is realized as a semivowel.

[16] There are some tokens where instead of [ɛ], there is [ə]; i.e. [ˈi.ˌsjəl] and [ˈa.ˌŋjət]. This suggests that there is some free variation between [ɛ] and [ə]. I transcribe these vowels as [ɛ] because in my judgment this realization of the vowel occurs more frequently.

(32)

	Citation	Normal	
a.	ˈle.ʔo	ˈl͡eoʔ	'suicide by hanging'
b.	ˈni.u	ˈn͡iu	'coconut'
c.	ˈsu.i	ˈs͡ui	'to finish'
d.	ˈdo.e	ˈd͡oe	'great, big'

In general, diphthongs with the low vowel [a] (as either the first or second element) sound the same regardless of whether they occur in open or closed syllables. But other diphthongs sound different in open syllables as compared to closed syllables. For example, the [e͡a] sequence found in [ˈk͡eat] 'tall' is not the same as in the one in [ˈb͡oel.bo.ˌl͡ea] 'crazy'. In [k͡eat], the [e͡] sound is short and brief, whereas in [e͡], it is more drawn out.[17] Generally, this holds true of other diphthongs with no low vowel.

Adjacent Identical Vowels

When $C_1V_iC_2V_i$ sequences metathesize, do these vowels coalesce to a short vowel yielding $C_1V_iC_2$, or, by virtue of now being adjacent, is their vowel length longer yielding $C_1V_iV_iC_2$? My transcriptions use a [ˑ], presuming a slightly lengthened vowel.

(33)

	Citation	Normal	
a.	ˈki.ni	ˈkiˑn	'female'
b.	ˈma.na	ˈmaˑn	'her, his, or its eye'
c.	ku.ˈku.du	ˈku.ˌkuˑd	'basket'
d.	ˈde.ŋe	ˈdɛˑŋ	'shrimp'
e.	ˈmo.ko	ˈmɔˑk	'smell'

Similar transcriptions to those in (33) are given by Sohn (1980). Simons (1977) and Tryon and Hackman (1983) do not use the diacritic [ˑ] to indicate that these vowels are longer in length. Nobody has justified their use or non-use of the diacritic. The question regarding vowel length is difficult to answer because all closed syllables in the Normal form are derived from a /(C_1)$V_1C_2V_2$/ sequence. We can only find a minimal CVC-CVVC pair if the first C is a actually a semivowel. For example, the Citation form of the word 'canoe' is [i.ˈo.lo]. Its Normal pronunciation is [i͡ɔl]. If there were another word whose Citation pronunciation were [ˈi.lo], then we would expect its Normal pronunciation to also be [i͡ɔl]. Measuring the duration of the nuclei of these two Normal form words, one from underlying /iolo/ and one from underlying /ilo/, should tell us whether or not the nuclei in the examples in (33) are long.

I have not found any pairs like the one just described, so whether or not the vowel is long in an environment of metathesis is currently unknowable. Without any evidence bearing on this point, it seems reasonable for those trying to model the above data to choose whichever transcription

[17] Sometimes I am tempted to transcribe such diphthongs as bisyllabic, especially when they occur word-finally like [l͡ea] in 'crazy'.

makes the analysis simpler. In this paper, I will assume that the vowels are longer to indicate an environment of metathesis.

Also note that adjacent identical mid vowels lower slightly. This lowering is likely to be a consequence of the coda, as opposed to them being adjacent. This is because words with long vowels do not lower [e] or [o] in open syllables. For example, [ˈbeˑ.ˌbeˑ] 'vulva (impolite)' is spelled *bēbē*, and [ˈkoˑ.ˌŋi̯ɛ] 'bake it in a stone oven' is spelled *kōngia* in Ben Burt's wordlist. Further evidence comes from examples like those in (34) which exhibit lowering, even though there is no reason to believe that there are two identical adjacent vowels making up the nucleus of the Normal form.

(34)

	Citation	Normal	
a.	ˈi.ro	ˈjɔr	'to check out'
b.	ˈo.ne	ˈo̯ɛn	'sand'
c.	ˈo.re	ˈo̯ɛr	'to be left out'

There is one (observed) lexical exception to this. The complementizer 'that' is regularly pronounced [ŋeˑʔ] (cf. Citation [ˈne.ʔe]).

Diphthong Summary

The following table summarizes the complex nuclei found in the Normal form, indicating the two underlying vowels that surface as the complex form.

(35)

$C_1V_1V_2C_2$		V_2				
		i	u	e	o	a
V_1	i	iˑ	i̯u	⊘	i̯o	i̯ɛ (i̯ə)
	u	u̯i	uˑ	u̯ɛ	⊘	u̯ʌ
	e	e̯i	e̯u	ɛˑ (eˑ)	e̯o	e̯a
	o	o̯i	o̯u	o̯e, u̯e	ɔˑ	o̯a
	a	a̯i, e̯i, eˑ	a̯u, oˑ	æ, a̯e	a̯o	aˑ

⊘ = *unattested*
Nuclei in () are underrepresented
Nuclei following a ',' occur in fast speech

The unattested patterns are mysteries. The most represented member of each cell is associated with a unique V_1V_2 pair.[18] However, if we consider the free variation and the lexical exceptions, this is no longer the case. For example an /ai/ combination in fast speech may be pronounced in the same manner as an underlying /ei/ combination, or the same as vowel found in the lexical exception

[18]This raises the possibility that the V_1 and V_2 are recoverable from the diphthong which in turn begs the question whether speakers can "undo" metathesis.

[ˈneˑʔ] 'that' (cf. Citation [ˈne.ʔe]). To my ear, the nuetralization appears complete in such cases, though whether or not it truly is would have to be subjected to rigorous phonetic examination.

Triphthongs

In $C_1V_1V_2C_2V_3$ forms, C_3V_3 always metathesizes, potentially yielding a triphthong. However, depending on the quality of the vowels, different strategies are adopted to avoid a triphthong.

If V_1 is not low and V_2=V_3 then V_1 glides, and V_2 and V_3 coalesce.

(36)

	Citation	Normal	
a.	fu.ˈa.da	ˈhu͡ad	'to her, him, or it'
b.	fu.ˈa.ra	ˈhu͡ar	'crocodile'
c.	fu.ˈi.ri	ˈhu͡ir	'that'
d.	bi.ˈa.la	ˈbi͡al	'smoke'
e.	ni.ˈa.ʔa	ˈni͡aʔ	'she, he, or it'
f.	fi.ˈo.lo	ˈhi͡ol	'hungry'

Evidence that V_2 and V_3 coalesce into a single vowel comes from the following pair.

(37)

	Citation	Normal	
a.	fi.ˈo.lo	ˈhi͡ol	'hungry'
b.	ˈsae.ˌfi.lo	ˈsa͡e.ˌhi͡ol	'to ask'

The word 'hungry' and the second syllable of 'ask' have the same pronunciation. If metathesis preserved the length contrast, then we would expect 'hungry' to be pronounced *[ˈhi͡oˑl] and not [ˈhi͡ol]. In fact, neither I nor the speaker could identify a length difference between the word 'hungry' and the second syllable of 'ask'.[19]

Also note that under either representation there appears to be nuetralization; e.g. a [$CV_1V_2CV_2$] and [$C_1V_1C_2V_2$] Citation forms share the same [$C_1V_1V_2C_2$] Normal form. Whether or not the nuetralization is complete is a question for further phonetic investigation.

If V_1 is low and V_2=V_3 then V_2 and V_3 coalesce.

[19]This has not been subjected to rigorous phonetic measurement, however. Also, this form appears to be another exception to the proposal that the coda is responsible for mid-vowel lowering because this form is pronounced with an [o], and not a [ɔ].

(38)

	Citation	Normal	
a.	ˈfau̯.ku	hau̯k	‘to me’
b.	ˈnau̯.ku	nau̯k	‘I’
c.	ˈfao̯.lo	hao̯l	‘new’
d.	ˈkai̯.li	kai̯l	‘you all (excl.)’

All of the above are expected. But interestingly, if V_2 is not low, and $V_2 \neq V_3$ then V_2 glides; i.e. metathesis creates a new syllable.

(39)

	Citation	Normal	
a.	ˈtai̯.da	ˈta.ˌi̯ɛd	‘to sew them’
b.	ˈma.na.ˌtai̯.da	ˈman.ta.ˌi̯ɛd	‘to pity them’
c.	ˈmae̯.ʔa	ˈma.ˌe̯ɛʔ	‘death’
d.	ˈmau̯.ri	ˈma.ˌwir	‘life’
e.	ˈsae̯.na	ˈsa.ˌe̯ɛn	‘in it’
f.	ˈuɾ.la	ˈu.ˌu̯ʌl	‘of lice’

This observation is most readily related to the observation that there are no words composed of a heavy syllable followed by a light syllable (see below).

There are some cases where a triphthong is unavoidable. If V_1 is high, V_2 is low and V_3 is high then V_1 and V_3 form glides.

(40)

	Citation	Normal	
a.	fu.ˈa.mu	ˈhu̯au̯m	‘to you’
b.	fu.ˈa.ku	ˈhu̯au̯k	‘to me’

No other combinations of V_1, V_2, and V_3 are attested.

Voiceless Vowels

Voiceless vowels occur optionally in the Normal form, primarily word finally after the laryngeals [ʔ] and [h], and somewhat less regularly word-finally after the continuants [l] and [s].

(41)

	Citation	Normal	
a.	bi.ˈli.ʔa	ˈbi.ˌliɛ̯ʔɛ̯	'stealing'
b.	ˈi.du.ˌfa.ʔi	ˈi̯ud.ˌhei̯ʔɪ̯	'always'
c.	ˈma.ʔu	ˈmau̯ʔu̯	'fear'
d.	ˈu.ʔa	ˈu̯ɛʔɛ̯	'crab'
e.	ˈʔa.fe	ˈʔae̯he̯	'wife'
f.	ˈka.fo	ˈkao̯ho̯	'water'
g.	ka.ˈta.fo	ˈka.ˌtao̯ho̯	'papaya'
h.	ˈbu.su	ˈbuˑsu̯	'to burst'
i.	li.ˈmau.ˌmu.lu	ˈli.mau.ˌmuˑlu̯	'your (pl.) hands'

The voiceless vowels are the result of the contour of the tongue and the position of the mouth and lips at the time the laryngeal (or continuant) is pronounced. These vowels are not contrastive; they are optional and the quality of the vowel is always identical to that of the previous vowel, or if the previous vowel was a diphthong, to its second element. Because of this, and since they are invisible to stress, I do not think they make up the nuclei of a syllable. Instead, their characteristics are indicative of what has been called intrusive vowels (Hall 2003).

Blevins and Garrett (1998) present unpublished data circa 1982 attributed to Andrew Pawley showing a similar distribution of voiceless vowels in the Normal form. In this data, voiceless vowels occur in the Normal form following any consonant except nasals, as long as V_2 is higher or the same height as V_1. The data in (42) and (43) comes from Blevins and Garrett (1998:530).

(42)

Citation	Normal	
fusi	huisi̯	'cat'
kado	kaodo̯	'thin'
sata	saˑta̯	'name'

The examples in (42) differ from my data where the voiceless vowels only occurs after larygneals. In (43), Blevins and Garrett observed that if the diphthong was a rising one, voiceless vowels did not occur.

(43)

Citation	Normal	
lifa	liəh	'teeth'
uta	wət	'rain'
ʔasufe	ʔasuəh	'rat'

This last claim also does not conform exactly to my data. In (42) above, the words [ˈbi.ˌliɛ̯] 'steal it' and [ˈu̯ɛʔɛ̯] 'crab' are rising diphthongs, but the voiceless vowel still occurs.

The overall picture that emerges, however, is in line with their claim that the voiceless vowels are a residue of the former vowel. The speaker I work with most likely belongs to the next generation of speakers than the ones Pawley worked with over twenty years ago. Because her speech contains optional voiceless vowels in fewer positions overall, its reasonable that her speech pattern reflects another stage of the decline of the final vowel.

As with aspiration after word final consonants (see section (25), I will not be writing voiceless vowels in my transcriptions.

Summary of the Normal Register Vowels

The surface vowel inventory of the Normal form is much more varied than that of the Citation form. This is because CV metathesis creates vowel clusters, which result in diphthongization, glide formation, height changes, and coalescence. The dominant factor in glide formation in a diphthong is vowel height; higher vowels are realized as semivowels. A second factor is precedence order, when vowel heights are the same, the first vowel in the sequence is realized as a semi-vowel. It is unknown whether identical vowels made adjacent by metathesis are realized as long or short on the surface.

Triphthongs are attested, but marked; a common strategy to avoid them involves glide formation and resyllabification. Voiceless vowels are attested but only after laryngeals.

In general, the properties of these vowel clusters are predictable from combinations of the five vowels [i,u,e,o,a] found in the Citation form. Thus, the phonemic inventory of the Normal form vowels appears the same as that of the Citation form.

3.3. Syllable Structure

In the Normal form, consonant clusters, vowel clusters, and closed syllables are typical. These are the consequences of CV metathesis. Throughout the discussion I will use the terms V_1 and V_2 to refer to the vowels in a $C_1V_1C_2V_2$ sequence in the Citation form that is $C_1V_1V_2C_2$ in the Normal form. I use G to refer to a semivowel in onset position. I will also use V to refer to semivowels and vowels that are not in onset position.

The syllable types found in the Normal form are V, CV, GV, CVV, GVC, CVVC, and CVVVC.

(44)

Citation	Normal		
ˈli.u	li̯u	‘very’	CVV
ˈŋe.la	ŋe͡al	‘child’	CVVC
fu.ˈa.na	ˈhuau̯m	‘to her, him or it’	CVVVC
i.ˈfu.da	ˈi.ˌhu̯ad	‘their hair’	V.CVVC
ˈtai̯.a	ˈta.i̯ɛ	‘to sew it’	CV.GV
ˈtai̯.da	ˈta.i̯ɛd	‘to sew them’	CV.GVC
ˈfi.ŋi.ˌfau̯	ˈhiˑŋ.hau̯	‘skirt’	CVVC.CVV

It will be useful to classify the syllable types to expedite discussion. I will call (C)V and GV syllables light, and all other syllable types heavy.

The distribution of light syllables is severely restricted. This follows if CV metathesis prevents underlying $C_1V_1C_2V_2$ sequences from surfacing faithfully. (C)V syllables may occur as the first syllable only if they are followed by a heavy syllable or by a GV syllable (45).

(45)

	Citation	Normal	
a.	si.ˈlo.lo	ˈsi.ˌlɔˑl	'to be harsh with words, to rouse'
b.	bo.ˈbe.ʔa	ˈbo.ˌbea͡ʔ	'fat'
c.	a.ˈsi.la	ˈa.ˌsi͡ɛl	'sweet'
d.	ˈtai͡.a	ˈta.i͡ɛ	'to sew it'
e.	su.ˈi.a	ˈsu.i͡ɛ	'to finish it'
f.	di.ˈu.a	ˈdi.u͡ʌ	'to crack it'

Light syllables exist as the second syllable only if they are preceded by a heavy syllable, and followed by a heavy or GV syllable (46).

(46)

	Citation	Normal	
a.	ke.ˈba.ke.ˌba.ʔa	ˈkea͡b.ke.ˌbaʔ	'dumbo-shaped' (for ears)
b.	si.ˈsi.hu.ˌla.ʔa	ˈsi͡ˑs.hu.ˌlaʔ	'goosebumps'
c.	ˈma.na.ˌtai͡.a	ˈmaˑn.ˌta.i͡ɛ	'to pity him, her or it'
d.	ma.ˌla.ga.ˌu.a	ˈmaˑl.ˌga.u͡ʌ	'to ruin it'

GV syllables are attested only word-finally. Normal form words with this final GV syllables correspond to Citation words which end in a sequence of three adjacent vowels. This suggests that this is similar to the process of triphthong avoidance. Light syllables have not been found in any other environments.

Heavy syllables are found everywhere except in one position. There are no disyllabic words in which the first syllable is heavy and the second syllable is light.[20]

The unusual distribution of light syllables can be understood if there is a process actively preventing them from surfacing faithfully to their underlying positions, such as CV metathesis. Similarly, the relatively free distribution of heavy syllables is also a consequence of this process.

Lastly, onsetless syllables are not allowed except in the initial syllable, owing to the process of hiatus resolution discussed in section 3.2.

[20]There are two counterexamples to this: *to'oba* 'down there' is pronounced [ˈtoʔ.ba] Citation [to.ˈʔo.ba], and *lo'oba* 'other side, over there' is pronounced Normal [ˈloʔ.ba] and Citation [lo.ˈʔo.ba]. These are the only two exceptions I am aware of.

3.4. The Stress Pattern

Like the Citation form stress pattern, the stress pattern in the Normal form is also predictable, though it differs from the Citation form stress pattern in an important way. Unlike the Citation form, in the Normal form main stress always falls on the initial syllable.

(47)		Citation	N. Pattern	Normal	
	a.	ˈka.do	ˊ	ˈkao̯d	‘thin’
	b.	ma.ˈda.mo	ˇˊ	ˈma.ˌdao̯m	‘moon, month’
	c.	ˈke.ta.ˌla.ku	ˊˊ	ˈke̯at.ˈlau̯k	‘my height’
	d.	da.ˈro.ʔa.ˌni.da	ˊˇˊ	ˈdao̯r.ʔa.ˌni̯ɛd	‘to share them’
	e.	li.ˈmau̯.ˌmu.lu	ˇˊ	ˈli.mau̯.ˌmuˑl	‘your (pl.) hands’
	f.	ˈra.ʔe.ˌra.ʔe.ˌna.ʔa	ˊˊˊ	ˈrae̯ʔ.ˌrae̯ʔ.ˌnaʔ	‘incline, slope’

Heavy syllables always bear secondary stress except in one class of words: ˇˊ. For example, note that the second syllable in ‘your (pl) hands’ is unstressed [ˈli.mau̯.ˌmuˑl]. Other words like this one are:

(48)		Citation	N. Pattern	Normal	
	a.	a.ˈŋi.a.ˌŋi.la	ˇˊ	ˈa.ˌŋi̯ɛ.ŋi̯ɛl	‘tearful’
	b.	ʔa.ˈʔai̯.ˌki.na	ˇˊ	ˈʔa.ʔai̯.ˌki̯ɛn	‘aunts (collective)’
	c.	i.ˈli.a.ˌla.na	ˇˊ	ˈi.li̯ɛ.ˌlaˑn	‘his trying’

Light syllables bear stress only if they are in certain positions. For example, in (47) we see they bear stress if they make up an initial (main stressed) syllable. There are two other kinds of words which have initial stressed CV syllables. The first is when they precede a heavy syllable in disyllabic words (49).

(49)		Citation	Normal	
	a.	ˈfi.ku.ˌa.ʔa	ˈhi.ˌkua̯ʔ	‘gathering of them together’
	b.	ˈho.ni.ˌa.ra	ˈho.ˌni̯ar	‘Honiara’ (capital city of the Solomon Islands)
	c.	ˈka.li.ˌo.ko	ˈka.ˌli̯ok	‘clothes’

The second is in (50), we see that they can also bear stress in the case where they precede a word final GV syllable.

(50)		Citation	N. Pattern	Normal	
	a.	ˈma.na.ˌtai̯.a	ˊˇ	ˈmaˑn.ˌta.i̯ɛ	‘to pity her, him, or it’
	b.	ˈla.la.ˌgau̯.a	ˊˇ	ˈlaˑl.ˌga.wʌ	‘to ruin it’
	c.	ˈfu.li.ˌruˑ.a	ˊˇ	ˈhu̯il.ˌru.wʌ	‘to establish something’

The stress pattern in (50) provides a useful diagnostic for the light/heavy distinction made among syllables earlier. Since trisyllabic words ending in two light syllables stress the second syllable and not the last, but those ending in a light syllable followed by a heavy stress the final syllable and not the penultimate, the labels 'light' and 'heavy' can be substantiated.

(51)

	Final Syllable	Normal		(cf. Citation)
a.	CV	ˈma.ˈn.ˌta.i̯ɛ	'to pity her, him or it'	ˈma.na.ˌtai̯.a
b.	GVC	ˈma.ˈn.ta.ˌi̯ɛd	'to pity them'	ˈma.na.ˌtai̯.da
c.	CGVC	ˈba.ˈb.li.ˌli̯uk	'my cheek'	ba.ˈba.li.ˌli̯.ku
d.	CVGC	ˈma.ˈn.ta.ˌlau̯k	'my thinking'	ma.ˈna.ta.ˌla.ku
e.	CVVC	ˈsi.ˈs.hu.ˌla.ˈʔ	'goosebumps'	si.ˈsi.hu.ˌla.ʔa
f.	CGV	ˈbo̯el.bo.ˌle̯a	'crazy'	bo.ˈle.bo.ˌle.a

3.5. Summary of the Normal Register

While words in the Normal form draw from the same phonemic inventory as words in the Citation form, words in the Normal form have more complicated phonotactics. The distribution of light syllables is restricted. In fact sequences of CV syllables, .e.g. $C_1V_1C_2V_2$, are unattested, unless C_2 is a semivowel. Heavy syllables are freely distributed, except that heavy-light words are prohibited. Complex nuclei and consonant clusters are common. Main stress is on the initial syllable, and heavy syllables bear (secondary) stress, except in non-final position when following an initial light syllable. Accounting for the absence of $C_1V_1C_2V_2$ forms should not be overlooked in an analysis of the Normal form.

4. Focus Final Forms

This section describes the third allomorph of the Kwara'ae paradigm found in the focus position of the Normal form. This form, which I call the Focus Final form, is part of the Normal speech register. It is found in regular discourse at the right boundary of the focus position. Focus in Kwara'ae can be likened to clefting in English in which objects and other arguments of the verb which are normally post-verbal move to a pre-subject position in the left periphery. We will see that, phonologically, the Focus Final form is distinguished by partial metathesis and primary stress word finally.

4.1. Identifying Focus Final Position

Kwara'ae is a language with SVO basic word order. First, consider where stress falls on the word *'ifita'i* 'bed' (Normal [ˈʔih.ˌtei̯ʔ] Citation [ˈʔi.hi.ˌta.ʔi]) when it is in the usual post-verbal object position.

(52) kiɛr so.ŋeiʔ leaʔ [na ˈʔiˑh.ˌteiʔ].
they make well the bed
'They skillfully built the bed.'

Objects and other arguments of the verb can precede the verb if they are placed in the focus position. In the examples below, the word [neˑʔ] is a complementizer, which follows the focus position. (53) demonstrates the Focus Final form for the word *'ifita'i* 'bed'.

(53) [na ˌʔiˑh.teiˌ.ˈʔi]$_{focus}$ neˑʔ kiɛr so.ŋeiʔ leaʔ aˑn.
the bed that they make well to
'It is the bed that they skillfully built.'

Notice that the pronunciation of 'bed' is different in the Focus Final position. Primary stress is on the final mora of the allomorph, and the metathesis is only partial. This suggests that the stress pattern and the metathesis pattern are related.

Adjectives typically follow the nouns they modify in Kwara'ae. Therefore, it is possible to see that this Focus Final stress applies only to the syllable immediately preceding the right phrasal boundary of the focused constituent and not to all the content words in the focused constituent. In (54) and (55) below, compare the pronunciations of the adjectives meaning 'heavy'.

(54) a. ki.ra so.ŋeiʔ leaʔ [na ˈʔiˑh.ˌteiʔ kul].
3p make well the bed heavy
'They skillfully built the heavy bed.'

b. [na ʔiˑh.teiʔ ku.ˈlu]$_{focus}$ neˑʔ kiɛr so.ŋeiʔ leaʔ aˑn.
the bed heavy that they make well to
'It is the heavy bed that they skillfully built.'

To complete the picture, we will add the adverb 'very' to the above sentences. In Kwara'ae adverbs follow the adjectives they modify. The Citation form of 'very' is [ˈli.u], but its Normal form is [ˈliu]. In both of the two sentences below, notice that 'very' is pronounced as it is in the Normal form.

(55) a. ki.ra so.ŋeiʔ leaʔ [na ˈʔiˑh.ˌteiʔ kul liu].
3p make well the bed heavy very
'They skillfully built the heavy bed.'

b. [na ʔiˑh.teiʔ kuˑl ˈliu]$_{focus}$ neˑʔ kiɛr so.ŋeiʔ leaʔ aˑn.
the bed heavy very that they make well to
'It is the heavy bed that they skillfully built.'

The three allomorphs of the examples above are summarized in the following table.

(56)

	Citation	Normal	Normal]$_{focus}$	
a.	ˈʔi.hi.ˌte.ʔi	ˈʔiˑh.ˌtei̯ʔ	ˌʔiˑh.tei̯.ˈʔi	‘bed’
b.	ˈku.lu	ˈkuˑl	ˌku.ˈlu	‘heavy’
c.	ˈli.u	ˈli̯u	li̯u	‘very’

4.2. Phonological Properties

Here are some more examples of words with all three allomorphs.

(57)

	Citation	Normal	Normal]$_{focus}$	
a.	ˈle.ʔa	ˈlea̯ʔ	ˌlea̯.ˈʔa	‘good’
b.	ˈsi.na	ˈsi̯ɛn	ˌsi̯ɛ.ˈna	‘sun’
c.	fi.ˈʔi.ta.ˌta.li	ˈhiˑʔ.ta.ˌtai̯l	ˌhiˑʔ.ta.ˌtai̯.ˈli	‘hibiscus (bush)’
d.	ˈbu.lu.ˌbu.lu	ˈbuˑl.ˌbuˑl	ˌbuˑl.bu.ˈlu	‘star’

All the Focus Final Forms in (57) exhibit primary stress on the final syllable. This is in contrast to the Citation and Normal forms in which primary stress falls on the leftmost stressable syllable (in the Normal form this is always the initial syllable).

In the Focus Final form, the vowel qualities of the last two vowels are not independent from each other. The quality of the second element of the diphthong before the final vowel is predictable from the first element of the diphthong and the final vowel. Similarly, the final vowel is predictable from the preceding diphthong. This suggests that in the Focus Final form, the final vowel and the second element of the preceding diphthong are derived from the same vowel.

4.3. Exceptions to Focus Final Forms

Although many words undergo the Focus Final alternation, there are a number of words that do not. Most of these words can be identified as those taking the possessive suffixes.

(58)

	Citation	Normal	Normal]$_{focus}$	
a.	li.ˈma.ku	ˈli.ˌmau̯k	ˈli.ˌmau̯k	‘my hand’
b.	ʔa.ˈba.mu	ˈʔa.ˌbau̯m	ˈʔa.ˌbau̯m	‘your arm’
c.	i.ˈfu.na	ˈi.ˌhu̯ʌn	ˈi.ˌhu̯ʌn	‘her, his, or its hair’
d.	sa.ˈta.ka	ˈsa.ˌta̯ˑk	ˈsa.ˌta̯ˑk	‘our names’
e.	sa.ˈte.da	ˈsa.ˌte̯ad	ˈsa.ˌte̯ad	‘their chins’

It is not the case that suffixes in general block partial metathesis of these forms because other words that have [-CV] suffixes do exhibit partial metathesis in this position. The following words

all take the nominalizing suffix [-ʔa].

(59)

	Citation	Normal	Normal$_{focus}$	
a.	ˈmae.ʔa	ˈma.ˌe͡aʔ	ˌma.e͡a.ˈʔa	‘death’
b.	ʔo.ˈso.ʔa	ˈʔo.ˌsu͡ʌʔ	ˌʔo.ˌsu͡ʌ.ˈʔa	‘guile’
c.	bi.ˈli.ʔa	ˈbi.ˌli͡ɛʔ	ˌbi.ˌli͡ɛ.ˈʔa	‘thievery, stealing’

One possibility is that the possessive suffixes are not morphemes, but clitics. Because their junctural properties are more like word boundaries than morpheme boundaries, these suffixes form their own prosodic unit. Because these clitics are [CV], they are smaller than a minimal word, and are therefore unable to bear stress as discussed in section 2.6.

Additional words that do not exhibit partial metathesis in Final Focus position are question words and the word meaning ‘instead’.

(60)

	Citation	Normal	Normal]$_{focus}$	
a.	a.ˈŋi.ta	ˈa.ˌŋi͡ɛt	ˈa.ˌŋi͡ɛt	‘when’
b.	fa.ʔi	ˈheˑʔ	ˈheˑʔ	‘where’
c.	ˈla.la	ˈlaˑl	ˈlaˑl	‘instead’

Since the word for ‘instead’ is usually used to express contrastive focus in Kwara’ae, and since question words may be thought to also constitute a different kind of ‘focus’, it is reasonable to exclude these cases since the ‘focus’ they express is likely to be different than the one expressed by the Focus Final form (e.g. Lee (2001) argues that question words and focused elements belong to different syntactic positions).

4.4. Optional Partial Metathesis

Recent inquiries have revealed that partial metathesis is optional. Forms may have one of two pronunciations in this position. For example, the word [ˈmau̯ˌri͡ɛʔ] (cf. Citation [ˈmau̯.ˌri.ʔa] ‘life’) may be pronounced in the Final Focus position as [ˌmau̯.ri͡.ˈʔa], in addition to [ˌmau̯.ˌri͡ɛ.ˈʔa]. In other words, it may be that every Focus Final form may also be pronounced with no metathesis at the right edge, as well as with partial metathesis. I have yet to verify that this is possible for every word looked at already. No matter the distribution of these variants, one thing is clear: Primary stress is at the right edge, and complete metathesis is not allowed.

4.5. Summary of the Focus Final Forms

Focus Final forms are the last word in a clefted phrase. In this position primary stress is rightmost, and total metathesis is blocked. Partial metathesis of the final vowel commonly occurs, but appears

optional in some cases. There are some words that undergo no total or partial metathesis and thus are exceptions, but it appears that they can be accounted for by other factors.

5. CONCLUSIONS

The purpose of the present study was to demonstrate the character of surface forms in the Citation and Normal forms, including the Focus Final form. These are the facts upon which an analysis must be based. Analyses which wish to relate the loci of CV Metathesis to the stress pattern must take into account the different stress patterns found in the two registers. They must be able to account for the vowel quality changes found in the Normal Form as well as the prohibition of heavy-light words, and the general absence of $C_1V_1C_2V_2$ sequences in the Normal form. Additionally, an analysis will have to account for the partial metathesis found in the Focus Final form; ideally, this should fit neatly into the rest of the analysis.

Since not all facts are in, there is room to make specific predictions. For example, it is still as yet unknown whether vowel length is neutralized in a Normal form which corresponds to a $C_1V_1C_2V_2$ sequence, where $V_1 = V_2$. The stress pattern of longer words in the Normal form is unknown as are reduplicative and compounding patterns. Here, analyses are free to make predictions to be measured against future empirical observations.

Appendix: A Brief Overview of Morphology

Appendix A.1. Nominal Morphology

Possessive Suffixes

There are six suffixes in common use which mark possession on certain nouns.

(61)

	singular	plural
1st	-ku	-ka
2nd	-mu	-(u)mulu
3rd	-na	-da

The suffixes in (61) only attach to a class of body-part nouns.

(62)

	Underlying	Citation	Normal	
a.	/suli/	ˈsu.li	ˈsu͡il	‘bone’
b.	/suli-ku/	ˈsu.li.ku	ˈsu͡.ˌliuk	‘my bone’
c.	/suli-mu/	su.ˈli.mu	ˈsu.ˌliu͡m	‘your bone’
d.	/suli-na/	su.ˈli.na	ˈsu.ˌliɛ͡n	‘its bone’
e.	/suli-ka/	su.ˈli.ka	ˈsu.ˌliɛ͡k	‘our bones’
f.	/suli-umulu/	su.ˈli.u.ˌmu.lu	ˈsu.liu͡.ˌmuˑl	‘your (pl.) bones’
g.	/suli-da/	su.ˈli.da	ˈsu.ˌliu͡d	‘their bones’

The same suffixes are also used with prepositions.

(63)

Underlying	Citation	Normal	
/naʔo/	ˈna.ʔo	ˈnaoʔ	‘before’
/naʔo-ku/	na.ˈʔo.ku	ˈna.ˌʔou͡k	‘before me’
/naʔo-mu/	na.ˈʔo.mu	ˈna.ˌʔou͡m	‘before you’
/naʔo-na/	na.ˈʔo.na	ˈna.ˌʔo͡an	‘before it’
/naʔo-ka/	na.ˈʔo.ka	ˈna.ˌʔo͡ak	‘before us’
/naʔo-umulu/	na.ˈʔo.u.ˌmu.lu	ˈna.ʔou͡.ˌmuˑl	‘before you (pl.)’
/naʔo-da/	na.ˈʔo.da	ˈna.ˌʔo͡ad	‘before them’

Adjectival Suffixes

Some nouns become adjectives with addition of /-la/.

(64)

Underlying	Citation	Normal	
/kafo/	ˈka.fo	ˈkao͡h	‘water’
/kafo-la/	ka.ˈfo.la	ˈka.ˌfo͡al	‘watery’
/ʔuu/	ˈʔuˑ	ˈʔuˑ	‘lice, louse’
/ʔuu-la/	ˈʔuˑ.la	ˈʔu.ˌu͡ʌl	‘of lice, lousy’

Appendix A.2. Verbal Morphology

Transitive suffixes

Many nouns, adjectives, and intransitive verbs become transitive verbs by adding the appropiate transitive suffix. These suffixes are usually of the form [-Ci]. Some examples are given below (the /-a/ is the object suffix, see (66) below).

(65)

	Underlying	Citation	Normal	
a.	/iru/	ˈi.ru	jur	'wind'
	/iru-fi-a/	ˈi.ru.ˌfi.a	ˈjur.ˌhi͡ɛ	'to blow it'
b.	/tala/	ˈta.la	ˈtaˑl	'road'
	/tala-ʔi-a/	ˈta.la.ˌʔi.a	tal.ʔi͡ɛ	'to lead it'
c.	/ʔako/	ˈʔa.ko	ˈʔao͡k	'hot'
	/ʔako-fi-a/	ˈʔa.ko.ˌfi.a	ˈʔao͡k.ˌhi͡ɛ	'to heat it'
d.	/doʔo/	ˈdo.ʔo	ˈdɔˑʔ	'to burn'
	/doʔo-fi-a/	ˈdo.ʔo.ˈfi.a	ˈdɔp.ˌhi͡ɛ	'to burn it'

However, these suffixes may be inappropiately named since at least one may attach to a verb which is already transitive because it takes the object suffix.

(66)

Underlying	Citation	Normal	
/li-a/	ˈli.a	ˈli͡ɛ	'to look at it'
/li-si-a/	li.ˈsi.a	ˈli.ˌsi͡ɛ	'to see it'

Also, sometimes, there appears to be a transitive suffix, though it is not clear if there is an independent root, or if there is one, the semantic connection is tenuous. For example, Normal *salofia* 'to sweep it', may have an underlying form /salo-fi-a/. However, the only root I am aware of with the underlying form /salo/ is *salo* 'sky'.

Object Suffixes

Transitive verbs are required to take an object suffix. The 3rd singular object suffix is [-a]. The third person plural suffixes are [-da] and [-ʔi].

(67)

	Underlying	Citation	Normal	
a.	/salo-fi-a/	ˈsa.lo.ˌfi.a	sao͡l.hi͡ɛ	'to sweep it'
	/salo-fi-da/	ˈsa.lo.ˌfi.da	sao͡l.hi͡ɛd	'to sweep them'
b.	/olo-mi-a/	ˈo.lo.ˌmi.a	ˈɔˑl.mi͡ɛ	'to swallow it'
	/olo-mi-da/	ˈo.lo.ˌmi.da	ˈɔˑl.mi͡ɛd	'to swallow them'
c.	/doʔo/	ˈdo.ʔo	ˈdɔˑʔ	'to burn'
	/doʔo-fi-a/	ˈdo.ʔo.ˈfi.a	ˈdɔp.ˌhi͡ɛ	'to burn it'
	/doʔo-fi-da/	ˈdo.ʔo.ˈfi.da	ˈdɔp.ˌhi͡ɛd	'to burn them'
	/doʔo-fi-ʔi/	ˈdo.ʔo.ˈfi.ʔi	ˈdɔp.ˌhiˑʔ	'to burn them'

If the third person singular object suffix is used, an overt object is optional. On the other hand, if either of the third person plurals is used, then can be no overt object.

Almost all transitive verbs can only take the third person suffixes above; a few such as *to'o* 'to get, have, try' can take the possesive suffixes as object suffixes .[21] In the following examples, this verb means 'to meet' because of the previous word *dao* 'arrive'.[22]

(68) 'I Bioro dao to'oku.
the Bioro arrive have-me
Bioro met me.

Here are the possible object suffixes for *to'o*.

(69)

Underlying	Citation	Normal	
/toʔo-ku/	to.ˈʔo.ku	ˈto.ˌʔo͡uk	'to meet me'
/toʔo-mu/	to.ˈʔo.mu	ˈto.ˌʔo͡um	'to meet you'
/toʔo-na/	to.ˈʔo.na	ˈto.ˌʔo͡an	'to meet it'
/toʔo-ka/	to.ˈʔo.ka	ˈto.ˌʔo͡ak	'to meet us all (incl.)'
/toʔo-mulu/	ˈto.ʔo.ˌmu.lu	ˈtɔˑʔ.ˌmuˑl	'to meet you all (excl.)'
/toʔo-da/	to.ˈʔo.da	ˈto.ˌʔo͡ad	'to meet them'

Nominalizing suffixes

There are three nominalizing suffixes, /ʔa/, /aʔa/, and /la/. The first of these is the most common and shown below.

(70)

	Underlying	Citation	Normal	
a.	/masa/	ˈma.sa	ˈmaˑs	'to play'
	/masa-ʔa/	ma.ˈsa.ʔa	ˈma.ˌsaʔ	'game, playing'
b.	/ago/	ˈa.go	ˈao͡g	'to hide'
	/ago/	a.ˈgo.ʔa	ˈa.go͡aʔ	'hiding'
c.	/rao/	ˈrao͡	ˈrao͡	'to work'
	/rao-ʔa/	ˈrao͡.ʔa	ˈra.ˌo͡aʔ	'work, job'

The suffix /aʔa/ only seems to occur after minimal words ending in [u].

[21] This word may have a variety of meanings. Ben Burt's word list (2004) defines it as follows: 'get, have, possess, hit the mark, attempt, succeed; deliberate, strong, still, sharp (of knife); belong (of objects), related (of people); exact, proper, ... ; normal, quiet, regular'.

[22] The word *saka* 'emerge, come out of' may also precede *to'o* with the resulting verbal complex also meaning 'meet'.

(71)		Underlying	Citation	Normal	
	a.	/ŋuu/	ˈŋu	ˈŋu	'to sing'
		/ŋuu-aʔa/	ˈŋu.ˌa.ʔa	ˈŋu.wʌʔ	'singing'
	b.	/muu/	ˈmu	ˈmu	'to break (snap)'
		/muu-aʔa/	ˈmu.ˌa.ʔa	ˈmu.wʌʔ	'snapping'
	c.	/siu/	ˈsi.u	ˈsju	'to wash, to take a bath'
		/siu-aʔa/	ˈsi.u.ˌa.ʔa	ˈsi.ˌwʌʔ	'washing, bathing'

Although it is tempting to analyze this morpheme into two parts, i.e /-a-ʔa/, where the first /-a/ is the object suffix, there are two reasons not to. First, the meanings of the above word do not contain the 'it'; i.e. *ngua'a* does not mean 'singing of it' or 'singing of something'. Secondly, there is no suffix /-daʔa/, which takes the plural object suffix.

The suffix /-la/ is always accompanied by one of the possessive suffixes.

(72)		Underlying	Citation	Normal	
	a.	/manata/	ma.ˈna.ta	ˈma.ˌnaˑt	'to think'
		/manata-la-ku/	ma.ˈna.ta.ˌla.ku	ˈman.ta.ˌlaʊ̯k	'my thoughts'
	b.	/tai-a/	ta.ˈi.a	ˈta.i̯ɛ	'to sew it'
		/tai-a-la-na/	ta.ˈi.a.ˌla.na	ˈta.i̯ɛ.ˌlaˑn	'his sewing of it'
	c.	/ili-a/	i.ˈli.a	ˈi.ˌli̯ɛ	'to try it'
		/ili-a-la-na/	i.ˈli.a.ˌla.na	ˈi.li̯ɛ.ˌlaˑn	'his trying of it'

Causative prefix

The causative prefix is /faʔa-/. It can attach to verbs and some nouns.

(73)		Underlying	Citation	Normal	
	a.	/lebe/	ˈle.be	ˈlɛˑb	'to startle'
		/faʔa-lebe-a/	fa.ˈʔa.le.ˌbe.a	ˈhaʔ.le.ˌbe̯a	'to surprise'
	b.	/futa/	ˈfu.ta	ˈhwʌt	'to be born'
		/faʔa-futa/	ˈfa.ʔa.ˌfu.ta	ˈhaʔ.hwʌt	'to give birth'
	c.	/loko/	ˈlo.ko	ˈlɔˑk	'mess'
		/faʔa-loko/	ˈfa.ʔa.ˌlo.ko	ˈhaˑʔ.ˌlɔˑk	'to make a mess'

The 'Not' Prefix

Some verbs may take the prefix /abu-/; words with the adjective have a meaning opposite to the root.

(74)

Underlying	Citation	Normal	
/fanga/	ˈfa.ŋa	haŋ	‘to eat’
/abu-fanga/	ˈa.bu.ˌfa.ŋa	ˈa̰b.ˌhaŋ	‘to fast’

Reduplication

There are many words that inherently reduplicated in Kwara’ae. That is, there are words that appear to have the form XX, but there is no independent root X. Some examples are *’ali’ali* ‘fast’, *ti’iti’i*, ‘small’, and *lo’ulo’u*, ‘straight (through)’.

Other words are related semantically.

(75)

	Underlying	Citation	Normal	
a.	/nau/	ˈna̰u	ˈna̰u	‘I, me’
	/nau-nau/	ˈna̰u.ˌna̰u	ˈna̰u.ˌna̰u	‘arrogant’
b.	/ʔaba/	ˈʔa.ba	ˈʔaˑb	‘hand’
	/ʔabaʔaba/	ˈʔa.ba.ˌʔa.ba	ˈʔaˑb.ˌʔaˑb	‘shoulder

Other words have reduplicated forms, which may change the meaning way in some subtle way that has not been apparant to me.

(76)

	Underlying	Citation	Normal	
a.	/bali/	ˈba.li	ˈbâ̰il	‘side’
	/bali-bali/	ˈba.li.ˌba.li	ˈbâ̰il.ˌbâ̰il	‘side’
b.	/laŋa/	ˈla.ŋa	ˈlaŋ	‘dry’
	/laŋa-laŋa/	ˈla.ŋa.ˌla.ŋɑ	ˈlaŋ.ˌlaŋ	‘dry’

There is some productive partial reduplication in Kwara’ae, but this is an area of ongoing research. For example, the first syllable of a verb can be reduplicated to give a kind of perfective sense.

(77)

Underlying	Citation	Normal
/daroʔa-ni-da/	da.ˈro.ʔa.ˌni.da	da̰o̰r.ʔa.ˌnḭɛd ‘to share them’
/da-daroʔa-ni-da/	da.da.ˈro.ʔa.ˌni.da	da.ˈda̰o̰r.ʔa.ˌnḭɛd ‘to have shared them’

Notice that these words do not follow the regular stress pattern, nor the regular metathesis pattern. Obviously, more research is needed in this area.

Compounding

I do not know how compounds are formed productively. Here are two compounds I know, which indicate that the head occurs as the first element of the compound.

(78)

	Underlying	Citation	Normal	
a.	/faka/	ˈfa.ka	ˈha˞k	'ship'
	/lofo/	ˈlo.fo	ˈlo˞h	'fly'
	/faka-lofo/	ˈfa.ka.ˌlo.fo	ˈha˞k.ˌlo˞h	'airplane'
b.	/ʔai/	ˈʔai̯	ˈʔai̯	'tree'
	/takalo/	ta.ˈka.lo	ˈta.ˌkao̯l	'to scatter'
	/ʔai-takalo/	ˈʔai̯.ta.ˌka.lo	ˈʔai̯.ta.ˌkao̯l	'a scatter-tree' (a tree that sheds its leaves seasonally)

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