

The Distribution of Consonants and Vowels in Hawaiian
Disyllabic Base Words Without an Initial Consonant

This small article continues the search for principles of organization of words and the distribution of consonants and vowels in 1595 disyllabic base words found in *Hawaiian Dictionary*. The Table 1 presents 9 nuclei patterns found in disyllabic base words. At the left edge of the Table 1 are written 8 initial consonants: C1 of disyllabic base words: four obstruents: /',h,k,p/, four sonorants: /l,m,n,w/, and, at the bottom: O1, words without of a consonant in the initial position. This O1, the line of only 147 words, is of interest to this article.

Table 1

This table presents the Nine Nuclei Patterns in Hawaiian:

C1	1	2	3	4	5	6	7	8	9	
	v-v	V-V	VV-VV	V-VV	v-VV	VV-v	VV-V	v-V	V-v	
'	100	24	7	17	29	12+1	8	24	---	
k	110	53	7	50	14	18+1	9	15	4	
h	108	20	6	26	17	14	6	12	1	
p	94	33	3	31	14	14+1	6	16	---	
l	101	18	1	11	2	7	3	---	---	
m	77	24	5	19	19	16	1	9	8	
n	98	11	1	6	9	10	2	6	1	
w	40	2	4	3	---	5	2	1	1	
O1	100	9	2	3	11	7	6	8	1	147
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	828	194	36	166	115	106	43	91	16	

This Table 1 was first prepared for the article on disyllabic base words in Hawaiian. Below each pattern is written the number of words found with this particular nucleus configuration, while these word's initial consonant is written at the left edge of the table. These Nine Nuclei Patterns are marked like this: the lower case v indicates a short vowel, upper case V indicates a long vowel, and VV indicates a diphthong. The dash divides the nucleus of both syllables.

The most interesting thing here is, that this small group of 147 words without an initial (O1) consonant has words in all Nine Patterns, but with a smaller number of words in most. The only exception is the Pattern N1 (v-v), with both vowels short. It has 100 words out of 147. In all other groups of disyllabic words, the Pattern N1, with short vowels, also has the biggest number of words. Below are written Pattern N 1 words in columns with initial short vowels: /a,e,i,o,u/.

1. Pattern N1 (v-v) of words without an initial consonant C1 = O1:

v(a)-v	v(e)-v	v(i)-v	v(o)-v	v(u)-v
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Words beginning with vowels and followed with obstruents: ',k,h,p, as C2:

a 'a	e 'e	i 'a	o'a	u ' i
a 'e	e hu	i 'e	o'o	u ha
a 'o	e ko	i 'i	o'u	u he
a 'u		i he	o ha	u hi
a he		i hi	o hi	u hu
a hi		i ho	o ho	u ka
aho		i hu	o ka	u ki
a hu		i ka	o ki	u ku
a ka		i ki	o ko	
a ke		i po		
a ka		i pu		
a ku				
a po				
a pu				

Words beginning with vowels and followed with sonorants: l,m,n,w, as C2:

a la	e mi	i li	o la	u la
a le	e mu	i lo	o le	u le
a li	e ne	i mu	o li	u li
a lo	e wa	i na	o lo	u lu
a lu		i ne	o ma	u ma
a ma		i nu	o mo	u me
a mo		i wa	o na	u mo
a mu		i wi	o ne	u mu
a na			o ni	u na
a ne			o no	u ne
a ni				u nu
a no				
a nu				
a wa				
a we				

-----	Words without C2 of the second syllable:				
-	e a	i o	o e	u a	
-	e o			u e	7
				u i	

29 9 20 20 22 100

Out of these 100 words of Pattern N1 (v-v), 7 words, written at the bottom, do not have C2, an initial consonant of the second syllable. The other different case out of 100 words is the biggest group of 29 words with an initial [low] vowel /a/. This group has all 29 words with C2.

Out of 100, only nine words begin with the [mid] vowel /e/. They have three words with initial obstruents: /' ,h,k/ as C2, four words with sonorants: /m,n,w/ as C2, and 2 words without C2: /e, a/. n. 'Sovereignty, rule, independence'; and *e o*. vs. 'To lose, be defeated, beaten'. The other 5 words out of these 7 without C2 are: *io* n. 'short rib'... (PPN *io*); *o e*. nv. 'Prolonged sound or thing'; *u a*. nvi. 'Rain, to rain'; *u e*. vt. 'To jerk, pull'; *u i*. nv. 'To ask, question, appeal'.

Patterns N2 - 9 of words without an initial consonant:

2	3	4	5	6	7	8	9	
V-V	VV-VV	V-VV	v-VV	VV-v	VV-V	v-V	V-v	
a: he:	au lau	a:lai	a lau	ai na	au ha:	a ka:	e: we	
a:mu:		a:nai.	o loi	au ka	au ku:	i ko:		
a:wa:		a:pau	o'ou	ei na	au la:	i ku:		
e:ha:			u hae	ou wa	oi ku:	u na:		
i:ka:								
o:pu:			u hai					
o:wi:			u hao					
u:pe:			u hau					
u:ko:			ulei=hulei					
			u pai					
			9					
Words without C2 of the second syllable:								
-	ae ae	-	u ai	ai a	au e:	e o:	-	
-		-	u oi	au a	au i:	o i:	-	12
				ei a		u e:		
						u o:		
						4		
9	2	3	11	7	6	8	1	47

In Patterns N2-9 there are 47 disyllabic base words without C1. Out of these 47 words 12 words are also without C2, the initial consonant of the second syllable. Hence these 12 words contain only vowels: short, long, and diphthongs. Long vowels are marked by a colon.

However, C2 was not lost in words with initial long vowels, see above the 9 words of Pattern N2 with both vowels long, and words of Patterns N4 and N9, which have long vowels within the first syllable. Hence, in these words the length of the first vowel looks as responsible or decisive for the presence of C2, an initial consonant of the second syllable.

C2 was lost: 1) in some words after short vowels of the first syllable: 2 words in Pattern N5: *u ai*, and *u oi*; 4 words in Patterns N8, and 2) in words after some diphthongs of the first syllable: 3 words in Pattern N6, and 2 words in Pattern N7. In all these cases we see how important is the length of the vowel of the first syllable in base words without C1.

The words with an initial short vowel have either C2 and a diphthong in Pattern N5 (9 words) or C2 and a long vowel in Pattern N8 (4 words). However in these two Patterns there are words without C2. The smallest number of words is in Pattern N9, which has only one word: *e:we*. nvi.

'Sprout, rootlet, kin; to sprout'; and in Pattern N3, which has two words both with diphthongs in both syllables: *au lau*. vt. 'To gather leaves', and *ae ae*. nvi. 'A prolonged sound, wail; to prolong.' The second word does not have C2, the initial consonant of the second syllable, but also contains diphthongs in both syllables.

Hence, we see how complex and intricate is the distribution of consonants and vowels in this open-syllable language, which has only 8 consonants: 4 voiced sonorants and 4 voiceless obstruents. It also has 25 vowels: short, long and diphthongs, out of which some words are constructed independently from consonants. Together they present quite a sophisticated and intriguing system of sound organization, which is and should be of great interest to researchers.

In this article the analysis was done of only base words of contemporary Hawaiian.

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