

Samoa Phonology in OutlineA. Pawley

1.1 The segmental phonemes of the Samoan language, in its colloquial form are as follows:

Consonants: / p, k, ʔ, f, v, s, l, m, ŋ /.

Vowels: / a, e, i, o, u /.

1.2 The supra-segmental phonemes include a periodic or contour stress, //, and three junctures, open transition, /+/, final juncture, ./#/ , and non-final juncture, ////. While it is certain that there are several pitch phonemes, the analysis has not gone far enough to detail them.

1.3 Intonation Contours. The stream of Samoan speech is broken up into intonation contours by the occurrence of non-final and final junctures. In slow speech the morphemic material between junctures corresponds, in a high proportion of cases, to a grammatical phrase.

1.4 Syllables. Syllable division may be made in more than one way, but it simplifies the prediction of stress if it is said that a syllable boundary occurs after every vowel. Syllables thus have only two shapes, /V/ and /CV/.

1.5 Distribution. All possible syllables of the above shapes ordinarily occur, but /vo/ and /vu/ appear in no native Samoan words in my corpus. The only words recorded with them are /vulu/ wool, and /kevolu/ devil, from the English words. It can be seen from the symbolic syllable structures that there can be no consonant clusters, and no final (i.e. pre-juncture) consonants. On the other hand vowel clusters are permitted, and are common. All 25 possible vowel pairs occur. Clusters of up to five vowels occur, and up to ten vowels in succession (separated however, by /+/), are heard.

1.6 Stress. Three consistently recurring stress amplitudes are to be heard in Samoan speech. Contour stress is a louder stress than the others, and is associated with junctures in most of its occurrences. It is not always predictable, but most often falls on the penultimate syllable before a non-final or final juncture. Its frequency varies with the speed and type of speech, but it falls only on syllables that would otherwise have moderate stress, and not on unstressed syllables.

Moderate stress is predictable. In most cases it occurs on the second syllable before juncture (symbolized J), and on each alternate preceding syllable until the alternation is interrupted by the next preceding juncture. In a few... /J(C)VV(C)VJ/ sequences, the stress falls on the third syllable before juncture. These sequences are /J(C)aV(C)V/, e.g. (maile),

/J(C)V₁V₁(C)V/, e.g. (káaŋe), /J(C)ei(C)V/, e.g. (kéiŋe). All other syllables are unstressed, though in careful speech they are only a little less prominent than stressed syllables. In the sequence /iu/, /io/, and /V₁V₁/ (a long vowel), the second vowel, if unstressed, is heard almost as loud as the stressed vowel preceding it.

2.0 Description of Phonemes

2.1 Consonants: Allophonic variation is not noted in this account of consonant articulations. There is some variation (e.g. /k/ before /i/ is a good deal fronter than /k/ before /o/), but is comparatively slight.

/k/ is a dorso-velar stop, with little aspiration. /ʔ/ is a glottal stop, an unaspirated voiceless pressure stop. /p/ is a bilabial stop, voiceless, with little aspiration. /f/ is a voiceless labio-dental fricative. /v/ is a voiced labio-dental fricative. /s/ is an apico-alveolar groove fricative. /l/ is an apico-alveolar lateral, voiced. /m/ is a voiced bilabial nasal. /ŋ/ is a voiced dorso-velar nasal.

Two other phonemes occur very rarely, in words of foreign origin. They may be viewed as non-Samoan sounds used by Samoans who have some familiarity with other languages. /r/ is an apico-prepalatal resonant, /h/ a voiceless glottal fricative. In Formal Samoan speech /t/ voiceless apico-dental stop, and /n/ voiced apico-dental nasal, occur as additional phonemes, while /k/ occurs as a foreign sound only.

2.2 Vowels. Vowel phonemes with their allophones and conditioning environments are as follows:

- /i/ a high front unrounded vowel. After a stressed vowel the lips tend to retain the shape of that vowel. Before a consonant /i/ is centred somewhat. /ii/ is realised as a single very high tense front vowel.
- /u/ a high back rounded vowel. It is tightly rounded, very short and less sonorous before a stressed vowel. /CuC/ and /uu/ are higher, more backed, and more rounded than other allophones.
- /o/ a mid back rounded vowel. A more central, less rounded variant occurs before /(C)u/. Unstressed /o/ tends towards the quality of an adjacent stressed vowel. /oo/ is higher and more rounded than other allophones.
- /e/ a mid front unrounded vowel. A raised allophone occurs before unstressed /i/ and /u/. After stressed /a/ and /o/, and before /(C)V/ there is some centralising with variation of height towards an adjacent stressed vowel.

/a/ A low back unrounded vowel. A higher variant occurs before /C[̇]/ or after /[̇](C)/. /aa/ is the lowest allophone.

The occurrence of juncture or /+/ conditions allophones as would a consonant in that position. Unstressed vowels are shorter than stressed vowels. Vowels with contour stress are longer than normally stressed single vowels. Following /p, k, ʔ, s, f/ the final vowel in a contour ended by final juncture, is often devoiced.

Vowel length contrasts phonemically as short versus long. Long vowels are treated as consecutive identical vowels. A long vowel has about the length of a [C[̇]VCV] sequence, or of two consecutive different vowels. Minimal pairs are common e.g. /kaage/ male, and /kage/ tank, /manava/ stomach, and /maanava/ breathe.

2.3 Juncture and Open Transition. Open transition is in phonemic contrast with close transition e.g. /falaile/ Friday ≠ /fala+i+le/ mat in the .../faŋua/ land ≠ /faŋu+a/ bottle belonging to.../paʔuulili/ Lili fell ≠ /paʔu+uli+uli/ black skin, /kiŋa+a+malae/ Malae's wedge ≠ /kiŋaa+ʔo+malae/ (the) mother, Malae.

Open transition is heard as a rearticulation of the second vowel in a two vowel sequence. It is not possible at this point to describe the phonetic nature of open transition before consonants, but it is assumed to occur and is marked, whenever it is indicated by the principle of alternation of stress. i.e. if a stress falls in a vowel cluster, in a position that is not predicted by the rules for stress occurrences, then it will always be found that open transition also occurs between the first and second vowels after this stress. The same thing is assumed to happen when a stress falls non-predictably and the first vowel after the stressed vowel precedes a consonant, e.g. [moéŋa+néi] vs. [moé+leléi], [maka+makaŋa] vs. [makála+ʔupu], or [faʔa+fekai] vs. [fesili+mai].

Non-final juncture is characterised by a pitch which rises slightly from the start of the last stressed syllable, and is sustained on the final vowel. If the pitch on the previous stressed syllable is high then on the last stressed syllable it may be relatively lower while still having the above features. In slow speech or emphatic speech a heavy stress and vowel lengthening may be heard on the last syllable, and a pause sometimes follows, but in fast speech particularly these features are often absent.

Final junctures show a considerable phonetic variation, and it is not easy to say which are the significant features. In slow, deliberate speech final junctures are marked by a relatively lower

pitch from the last stressed syllable on, a heavy stress on the last syllable with associated vowel lengthening, a slowing up of speech rate, and (usually) by a definite pause. In rapid speech some of these features are often absent, final juncture being marked mainly by pitch fall, with volume often fading, and devoicing of final vowels after /k, ʔ, p, f, s / also common. The following utterances contrast non-final juncture and zero, final juncture and zero, and the two junctures, respectively. /ʔo+le+kiŋaa// ʔo+malae#/ the mother, Malae, and /ʔo+le+kiŋaa+o+malae#/ Malae's mother, /omaaʔualaa+makōa#/ Me and Toa and /ʔomaaʔualaa#makōa#/ us two. And Toa. /eleeai+sevaa#e+felaakaʔi+aafale#/ There's no distance between the houses, and /eleeai+sevaa# e+felaakaʔi+aafale#/ There's no distance. (referring to anything). The houses are close together.

2.4 Intonation. Though intonation contours end in juncture the pitch levels which occur within the contours are not always defined by these junctures. Utterances may contrast in meaning by pitch sequences alone. The exact number of pitch phonemes in Samoan has not been ascertained at this point but it is not less than three. The following minimal pairs are written with the numerals 1, 2, and 3, marking low, medium, and high pitch in the stressed vowel underneath. The change in pitch at juncture is often much less than the difference between any of the three levels marked. /ʔofea²ia+ipu²#/ (Where are the cups?) and /ʔofea²ia+ipu³ia+ipu²#/ (Where are the cups?! There aren't any here! /kaakouo¹o¹o¹#/ Let's go. /kaakouo²o²o³#/ Shall we go?, or Areyou coming with us?

Footnotes:

1. The phonemes of Samoan as it is spoken on formal occasions, (and by a few speakers all the time), are not quite the same as this. This is discussed in 2.1
2. The grammatical phrase can be defined unambiguously in terms of sequences of morphemes, since morphemes which can occur phrase initially, and those which occur phrase finally, are mutually exclusive classes.