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A DESCRIPTIVE GRAMMAR OF TONGAN (POLYNESIAN)

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ERMEL J. MORTON

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Date: May 14.62

Committee:

C. F. Voegelin  
Chairman

Karl W. Hruschka

Joseph R. Rouse

Alb. Rouse

\_\_\_\_\_

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## CHAPTER I

### THE PHONEMES OF TONGAN

0.1. This paper presents the phonemic system of Tongan as spoken by residents of the Tongan or Friendly Islands in the South Pacific. All of the informants are natives of Tonga and lived there from their birth until they came to the United States between the years 1955 and 1962.

0.2. The language materials used in this study have been gathered from various informants, most of whom were living on the island of Tongatapu, the largest or main island of the Tongan Archipelago, at the time they came to America. However, some of the informants had lived earlier in their life at Neiafu, Vava'u, in the northern group of islands, or at Pangai, Ha'apai, in the central group.

0.3. This diversity of origin, however, has no special linguistic significance, as the same dialect of Tongan is spoken in all three places: Tongatapu, Ha'apai, and Vava'u. The main observable differences that do exist are found in the use of a few characteristic lexical forms and a few slight variations in the tonal patterns of Tongan as spoken in Vava'u and as spoken in the other two places, Tongatapu and Ha'apai. Only one separate dialect of Tongan exists. It is the dialect of Niua Fo'ou, or Tin Can Island, the most northern and remote island of the Tongan group. Unfortunately this dialect is in danger of disappearing, as all of the people speaking it were removed from Niua Fo'ou by the Tongan Government in 1946,

when the large volcano on that island erupted violently, and the people were relocated at various places in Tongatapu and Eua.

0.4. Tongan is of strategic importance in the Western group of Polynesian languages. Proto-Tongan is considered by some to be the last to have broken off Proto-Austronesian,<sup>1</sup> with the result that it is said to be "the most complex and archaic language phonemically of the Polynesian group."<sup>2</sup>

1.0. The Tongan phonemic system includes seventeen segmental phonemes and eight prosodic phonemes, a total of twenty-five phonemes. They include twelve consonants, five vowels, four stresses, and four junctures. The phonemes are as follows:

		CONSONANTS			
		Labial	Alveolar	Velar	Pharyngeal
Stops		p	t	k	ʔ
Fricative		f	s		h
Continuants		v			
Non-fricative		m	n	ŋ	
Continuants			l		
VOWELS		PROSODIC PHONEMES			
	Front    Central    Back	Stresses    ˙    ˆ    ˘    ˘			
High	i                    u	Junctures    +               #			
Mid	e                    o				
Low	a				

As may be seen from the above chart of consonants, the

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<sup>1</sup> Samuel H. Elbert, "Internal Relationships of Polynesian Languages and Dialects," Southwestern Journal of Anthropology, IX (1953) pp. 147-173.

<sup>2</sup> Ibid., p. 163.

twelve consonants may be classified into two main groups: four stops / p t k ʔ / and eight continuants / f v s h m n ŋ l /. The continuants may be subdivided into four fricatives / f v s h / and four non-fricative continuants / m n ŋ l /. This classification gives the symmetrical arrangement of four stops, four fricative continuants, and four non-fricative continuants, which may be illustrated by the following contrasting sets of forms: (stops) pai bent or crooked (of fingers), tai sea, salt water (variant form of tahi sea, ocean), kai to eat, ʔai to put, to place; (fricatives) fai to do, vai water, sai good, satisfactory, hai who, interrogative; (non-fricative continuants) mafa to have a predilection for, nafa drum, ŋafa task, and lafa flat.

The same symmetrical four-four-four arrangement of the consonants may be made according to point or place of articulation: four labials / p f v m /, four alveolars / t s n l /, and four back consonants or velar-pharyngeal / k ŋ ʔ h /, which may be illustrated by the following contrasting sets of forms, some of which are included in the examples previously cited: (labials) pai bent, crooked (of fingers), fai to do, vai water, mai here, to or toward the first person or speaker; (alveolars) too to plant, soo sweetheart, noo to borrow, loo ant; (velar-pharyngeal) kata to laugh, ŋata to end, terminate, ʔata shadow, and hata our, dual, inclusive, indefinite.

A classification into stops, voiceless fricatives and resonants is useful in describing some aspects of the distribution of allophones. The seven non-resonants / p t k ʔ f s h /

may be divided into four stops / p t k ʔ / and three non-resonant fricatives / f s h /, and the five resonants remaining are / v l m n ŋ /, which include one fricative / v /, one lateral / l / and three nasals / m n ŋ /.

The five-vowel system of two front / i e /, two back / u o /, and one central / a /, may also be arranged into two high / i u /, two mid / e o /, and one low / a /. However, in some cases of assimilation affecting vowels as well as consonants, two high / i u / are opposed to three low / e o a /, or two front / i e / are opposed to three back / u o a /. These latter two classifications of high versus low and front versus back are useful in describing some aspects of the allophonic distribution of vowels.

Contrasts for all five vowels may be exemplified for single vowels in identical environments, as follows: sala name of a tree, sola stranger, foreigner, sula juror, sila envelope, and sela Sarah, female name, all of which words are in common use in present-day Tongan, although all except sala seem to be obviously loan words into Tongan from other languages. Contrasts can also be exemplified for each vowel in identical VV clusters, as follows: taa to strike, too to plant, tuu to shake out, tii tea, and tee to float. Contrasts for each of the vowels can also be exemplified in clusters of more than two vowels in the environment a\_\_a, as in haohaoa to be perfect, kaukaua to be robust or strong, maea rope, ʔaia that, who, which, relative pronoun, and fakaaa to heat or warm over

a fire in order to soften.

There are no series generating components of phonemes as the phonemes are presented in this paper, although it is possible to treat vowel length as a series generating component by setting up length as a phoneme. Minimal pairs such as mama ring and ma\*ma world can be found to validate the phonemic status of vowel length. However, the analysis presented in this paper treats long vowels as identical or geminate VV clusters for the purpose of achieving greater simplicity of description. Stress and intonation are easier to describe if vowel length is represented by geminate vowels.

Even though there are no series generating components among Tongan consonants, there is one component, that of voicing, which enters in labial fricatives to give voiced-voiceless opposition: / f / and / v /.

The four stresses / ' ^ ` ~ / phonemically mark junctures or breaks in the alternation of phonemic stress in the contour phrase or utterance. In such alternation, / ' ^ ~ / alternate with / ~ /, but no alternation has been observed between / ' /, / ^ /, or / ~ / (i. e., primary, secondary, or tertiary). Only the stress of the particular vowel or vowels breaking the alternation of stress pattern are marked. For example, the stress pattern of the contour phrase #?oku+lahi! [#?òku+láhi!] is big or great (tertiary + weak + primary + weak) is regular; hence, no stress need be marked. The stress pattern, on the other hand, of the contour phrase #?oku+fe?àlu?àkil. [#?òku+fè?àlu?áki!] are going back and forth is broken by the occurrence of tertiary

stress on the syllable ?a following tertiary stress on the syllable fe. ?a should have weak stress to preserve the alternation of stress pattern; hence, the tertiary stress occurring on ?a is marked. The alternating stress is reckoned from major juncture /|/, /||/, or /#/ and counting forward toward the succeeding major juncture. In the regular alternation of stress pattern, the first stress of the utterance or macrosegment<sup>3</sup> is tertiary /`/ followed by weak /˘/. Tertiary and weak stresses alternate on the succeeding vowels unless the alternation of stress pattern is broken. The vowel breaking the alternation is marked with the particular stress falling on it. If the alternation of stress resumes with a regular pattern following such a break, no further stress is marked. That pattern is tertiary alternating with weak until the first primary or secondary stress occurs. If such primary or secondary stress falls on the penultimate syllable of the contour span or macrosegment, it is not marked for primary stress but is marked for secondary, since the normal stress for such syllables is primary. All primary or secondary stresses occurring on a syllable preceding the penultimate syllable are marked since the only normal position for primary stress is on the penultimate syllable of the contour span or macrosegment. All occurrences of secondary stress are irregular; hence, they must be marked. It should be noted that tertiary stress may occur immediately before a secondary or primary stress in the regular stress pattern.

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<sup>3</sup> See Charles F. Hockett, A Course in Modern Linguistics (New York: Macmillan Company, 1958), p. 38. As used in this paper, macrosegment means "the stretch of material spoken with a single intonation."



if tertiary stress occurs there in a pattern of regular alternation up to that point. Note the example #na<sup>?</sup>e+mahino! [#nâ<sup>?</sup>e+mâhino!] was plain or clear, which has regular alternation of tertiary and weak stress preceding the first primarily stressed vowel. In this case, the first primary stress falls on the penultimate syllable and is regular; hence, it is not marked in the phonemic transcription. Short contour spans or macrosegments of two syllables normally have primary stress followed by weak, in which case no phonemic stress is marked: #ha<sup>?</sup>u# [#há<sup>?</sup>u#] come. However, if the first syllable of a disyllabic contour span receives secondary stress, such stress is marked, since its occurrence is irregular, as in #nâ<sup>?</sup>e! past tense, which occurs in the utterance #nâ<sup>?</sup>e!<sup>?</sup>i+hâ<sup>?</sup>apai# [#nâ<sup>?</sup>e!<sup>?</sup>i+hâ<sup>?</sup>apai#] (he, she) was in Ha'apai. In trisyllabic contour spans, the normal stress pattern is tertiary followed by primary and then weak, as in #tata<sup>?</sup>o! [#tâtá<sup>?</sup>o!] cover up, imperative. In four-syllable contour spans the normal pattern is tertiary + weak + primary + weak, as in #na<sup>?</sup>e+lahi! [#nâ<sup>?</sup>e+lâhi!] was big or great.

The junctures are word-final<sup>4</sup> or open juncture /+//; contour span final /|/, which may also occur utterance finally; utterance-final falling /#/; and utterance-final rising or high /||/.

1.1.0. Examples of overlapping distribution of the phonemes are abundant for consonants and vowels, but not as abundant for

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<sup>4</sup> Word is here defined as any stretch or sequence of phonemes occurring between juncture, including the /+// juncture.

the prosodic phonemes, although sufficient examples of contrastive distribution can be found to validate their phonemic status.

1.1.1. At least one series of thirteen minimally contrasting forms exists in Tongan to validate the independent phonemic status of each of the twelve consonants as well as the independent status of / h / and / ʔ / as being separate from zero. Note the following minimally contrasting forms: paa to explode, taa to hit or strike, kaa to clear the throat, ʔaa fence, faa four, vaa space or distance between, ʂaa rafter, haa to appear, maa to be ashamed, naa to be respectful, ɲaa to pant hard or breathe under difficulty, laa sail, and aa to heat sticks or leaves over a fire for softening. ʔaa, haa, and aa illustrate the contrast of / ʔ / and / h / with zero. The same contrast is illustrated in intervocalic position by maa to be ashamed, maʔa to be clean, and maha to be empty. As seen in the examples which have been cited, each stop, each fricative, and each non-fricative continuant appears in contrast with each other phoneme of its own particular series; moreover, each labial, each alveolar, each velar and each pharyngeal phoneme also contrasts with each other phoneme of the series to which it belongs.

Numerous other minimally contrasting series can be shown as evidence for the various classes of phonemes according to the manner as well as the place of articulation of each. Note the following examples: (stops) pau certain, tau to fight, kau to belong, ɲertain, ʔau current, poo night, too to fall, koo beyond, and ʔoo to go, plural; (fricatives) folo to swal-

low, volo uvula, solo solo, holo about, here and there, fii to plait or braid, vii a tree bearing oval-shaped fruit, sii to cast or throw, and hii semen; (non-fricative continuants) moa fowl or chicken, noa zero, ŋoa a kind of shell-fish, loa a black rain cloud, mafa to be taken up with a work to the exclusion of everything else, nafa native drum, ŋafa task or duty, and lafa to be affected with ring worm; (labials) pau to be certain, fau exceedingly, very much or greatly, vau to scrape or grate, mau a kind of tree, pilo pillow, filo thread, vilo to rotate rapidly, and milo to twist or turn; (alveolars) too to plant, soo to be sweethearts, noo to borrow or hire, loo ant, tautau to hang, iterative, sausau leaves used in magical rites, naunau equipment, and laulau tray; (velars and pharyngals, together with the contrast between / ʔ / and zero) koa soap, foam, ʔoa oar, oa an interjection, hoa companion, ŋoa a kind of shell-fish, kau to belong or pertain, ʔau current, au straight part of a fish fence, hau emperor or champion, and ŋau to gnaw.

1.1.2. As noted above, / t / and / s / are separate phonemes, contrasting not only with each other but with all other consonants. This statement regarding their separate phonemic status, however, does not agree with statements previously made by George William Grace and Otto Dempwolff that there is no phoneme / s / in Tongan. In his study entitled "The Position of the Polynesian Languages Within the Austronesian (Malayo-Polynesian) Language Family" Grace says, "Tongan t has an al-

lophone which occurs only when t is immediately followed by To. (Tongan) i. So do Futunan and Uvean. In Tongan this allophone is at present [ s ], but in earlier writings on Tongan it was written with i. In Futunan it is described as [ ts ]. In Uvean it is written 's'.<sup>5</sup> Dempwolff, in his fundamental work on Austro-nesian linguistics, says that s is lacking in Tongan but that Tongan has a phoneme ts which he writes in Tongan words where / s / now appears.<sup>6</sup> For example, Dempwolff writes masiva poor as matsiva, kutufisi louse as kutufitsi, and fisifisi to flip with the fingers as fitsifitsi.<sup>7</sup>

In view of these statements, it is interesting to note that not only do / t / and / s / contrast before other vowels, but also before / i /. Note the following examples of overlapping distribution before / i /: tii tea, sii to cast or throw, sisi

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<sup>5</sup> Published in International Journal of American Linguistics, XXV, no. 3, (July, 1959). See page 17.

<sup>6</sup> Otto Dempwolff, vergleichende Lautlehre des Austronesischen Wortschatzes, Beiheft zur Zeitschrift für Eingeborenen-Sprachen, No. 17 (1937), (Berlin: Dietrich Reimer), pp. 169, 175. It is not immediately clear where Dempwolff obtained his ts phoneme. Shirley Baker in his Tongan and English Vocabulary (Auckland, New Zealand: 1897) uses the letter i, which he says is pronounced like ch. William Mariner in his dictionary and grammar in An Account of the Natives of the Tonga Islands in the South Pacific Ocean, written by John Martin, (Edinburgh: 1827), II, liv, lists ch pronounced [ č ] as a letter of the alphabet. This is evidently the same as Baker's i and s as now used by C. M. Churchward in his Tongan Dictionary (Oxford: 1959), since the term for body is listed by Mariner as chino, by Baker as jino, and by Churchward as sino. The writer has lived nine years in Tonga, speaks Tongan fluently, and has conversed in Tongan with more than 2,000 native speakers. Neither in his long experience nor in some 18 hours or so of tapes from more than ten informants has he encountered a sound [ č ] nor [ c ]. The closest would be [ š ] carelessly spoken for /si/ in positions of weak stress preceding strong stress.

<sup>7</sup> Dempwolff, op. cit.

grass skirt, tisi dish, misi to dream, miti a sauce made from coconut cream, teniti tent, tenisi tennis, tiueti duet, siueti a female name, tili money-till, sili to fish with a net that is thrown, sita a female name, sisa Caesar, nasi to look forward to, and nati a nut to a bolt.

Although many of the above forms are loan words, a number of them have come into general usage and are fully accepted as Tongan, as evidenced by the fact that they have entered into use as stems in affixation, as, for example, in tii'aki to use as tea, fetii'aki to have tea at each other's houses, tisi'aki to use as a dish, teniti'aki to use as a tent, tenisi'aki to use in playing tennis, and nati'aki to use as a nut.

It is possible, however, although not certain, that the contrast of / t / and / s / before / i / is of fairly recent origin in Tongan, as there are no pairs that have been found which do not apparently include at least one loan word. The pair miti and misi comes the closest to being of native origin, as misi to dream is of unquestioned Polynesian origin, being cognate with similar forms with similar meaning in other Polynesian languages, and miti a sauce made from coconut cream is shared by both Fijian and Tongan. Its meaning in Fijian is a sauce made of orange, chili, and onion juice. Thus, if miti is a loan word in Tongan, it has most likely come from Fijian.

On the other hand, however, the existence of contrasting [ s ] and [ t ] in Samoan, including the environment before [ i ], as in miti the name of a bird and misi to make a hissing noise with the lips, as well as the existence of [ s ] and [ t ] in

Fijian and the appearance of both phones in contrasting environments, including before [ i ], as in misi to pick or nibble at and in miti a sauce made of orange, chili, and onion juice would seem to indicate that Tongan has always had an / s / and a / t /, and that perhaps the two phonemes were in contrast before / i / as well as other vowels. It is interesting to note in this connection that [ s ] has been lost from such Eastern Polynesian languages or dialects as Maaori, Hawaiian, and Tahitian. Except for at least one dialect of Hawaiian, all of these have only [ t ].

But no matter whether / t / and / s / had overlapping distribution before / i / in earlier times or not, the two phonemes evidently have existed in Tongan for a long time, perhaps since Tongan broke off the proto-language. Tongan still has quite a few native forms which preserve minimal contrasts of / t / and / s / before all vowels except / u /, and even with regard to / u /, recent loan words have eliminated this lack of contrast, as is noted in the minimally contrasting forms suu shoe, tuu to shake out, sula jurymen and tula bald. Note the following native Tongan forms showing a contrast between / s / and / t /, in addition to taa to strike and saa rafter, which were previously cited: sai to be good or satisfactory, tai a dust bag, saisai to be fairly good, taitai to be brackish, soo to be sweethearts, too to fall, saasaa to move the hands rhythmically to accompaniment of a drum, taataa to strike repeatedly or to play, as a musical instrument, sesele to be silly or crazy, tetele to peel or shave, ?ise?isa alas, ?ite?ita to be angry or surly, soosoo

to be crowded, tootoo to fall gradually, solu to chip off,  
toli to pick or pluck, sauaki to plunder, tauaki to put out to  
dry, sasala to become known, tatala to remove, soki to kick,  
toki axe, musu to concede an argument, mutu to be short or cut  
off, sala to be smoked brown, tala to tell, sausau leaves used  
for casting magical spells, tautau to suspend or hang, se'e  
to drive away, and te'e excrement. A number of other forms con-  
sisting only of loan words which exhibit contrastive overlap of  
/ t / and / s / could be cited, but the above examples are  
enough to demonstrate that a fairly large number of minimal  
pairs can be found to attest the contrast of / t / and / s /  
before all vowels in identical environments. Hence, / s / and  
/ t / are regarded in this paper as phonemes.

1.1.6. Numerous series of five minimally contrasting  
forms are found in Tongan evidencing the independent phonemic  
status of the five vowels. Some of these have already been  
given in Section 1.0. above. Four such series are presented  
here as follows: ka but, ke you, singular, ki to, for, ko nomi-  
nal predicative particle, ku I, first person, singular, exclusive,  
afi fire, efi crowded, ifi to blow with the mouth, ofi to be  
near, ufi to be modest, reserved, afa to resemble, afe to turn,  
afi fire, afo cord or small rope, afu fine mist or spray, aa to  
heat sticks or leaves over the fire to soften them, ee vocative,  
ii fan, oo to go, non-singular, and uu to be sheltered as from  
the wind.

Minimal pairs for long and short vowels are not presented  
in this paper since long vowels are written as identical or  
geminate vowel clusters.

1.1.7. Stress is unpredictable and is therefore phonemic. Each of the four stresses contrasts with the others in analogous or similar environments. Note the following examples of contrastive stress following / + /, in which all stresses except weak are marked: #ʔòku+fùʔu+lâhi# (it) is too much (tertiary and primary), #ʔòku+fúʔu+lâhi# (it) is too much (primary), #ʔòku+fùʔu+lâhi|ʔenâufâʔa+ôo!ki+hâʔapâi# they (plural) go to Ha'apai too much, their habitual going to Ha'apai is too much (tertiary, secondary, primary), |ʔâe+fefinêni| this woman (weak), and |kâ+ko+siône| but John is (weak, tertiary). In addition to this contrast following plus juncture / + /, the occurrence of primary, secondary, or tertiary stress on the penultimate syllable is not predictable. The only definite statement that can be made regarding the penultimate syllable of the contour span is that weak stress has not been observed to occur there. Note the following examples: #nâʔe+mâhîno|lêlêi# it was very clear or plain (primary and secondary), #nâʔe+mâhîno|lêlêi# it was very clear or plain (primary and secondary), #nâʔe+fùolôa|ʔêne+ʔâlu# he was gone a long time (secondary and primary), #nâʔe+fùolôa|ʔêne+ʔâlu# he was gone a long time (primary and secondary), and #nâʔe+fùolôa|ʔêne+ʔâlu# his being away was prolonged (emphatic) (secondary and tertiary). Tertiary stress occurs on the penultimate syllable whenever primary or secondary stress occurs on the ultimate syllable; however, it is not possible to predict for any macrosegment whether primary, secondary, or tertiary stress will occur there.

Another environment in which the four stresses contrast is that of k\_\_p following / # /, as in: #kapâu+lêva| whenever,



if then, which has weak stress; #kàpé'íííá# curse him (imperative) which has tertiary; #kâpa|'âe+kòlò# surround or besiege the town, which has secondary; and #kápa|ííá# surround or besiege it, which has primary. It is possible to find other phonemic environments in which the four stresses contrast but these are deemed sufficient for purposes of validation of their phonemic status.

1.1.8. The four junctures are also found contrasting in similar or analogous environments. / + / also contrasts with zero and with / ? /. Note the following examples: /#kuo+tau+ma?-u|ííá#/ we (plural, inclusive) have obtained it, /#kuo+tauma?u|ííá#/ it is jammed or stuck, /#?oku+tau+mama?o|/ we (plural inclusive) are far, /#?oku+taunama?o|/ it is very distant, /#kuo+tau+tau|/ we have reached, /#kuo+tautau|/ it has hung, been suspended, /#na?e+pehee#|/ it was thus, they were as follows, /#na?e+pehee||/ was it thus, were they as follows (interrogative), /#na?e+pehee|/ he (she) said, and /#na?e+pěhée+ai|/ then he said. In the last two examples / + / and / | / contrast following the same form / pehee / which has the same stress in both instances [ pěhée ].

Glottal stop / ? / and in contour-final juncture / | / also contrast in similar environments, i.e., the same sequence of phonemes having similar stress on identical syllables. Note the following examples in which all stresses except weak are marked: /#?okù+mà+háfulííá#|/ we (dual, exclusive) are drifting, /#?òku+mà-háfulííá#|/ he is armed, and /#?òku+màháfú?ííá#|/ he has (they have) an abundance of arms (i.e., they are well armed).

2.0. Tongan is characterized by the occurrence of numerous vowel clusters of from two to eight vowels but by no consonantal clusters. There are, however, certain phones--predictable long consonants--which occur before certain stops either with or without an intervening open juncture; phonemically, these phones are written as consonant plus vowel. Since the extra consonantal length is predictable and the extra length of each specific consonant is in complementary distribution with a specific vowel, it is possible to make this analysis of the extra consonantal length as representing a certain vowel.

Hence, with this interpretation of phonetic consonantal clusters, it is possible to say that consonantal clusters do not occur on the phonemic level. Each consonant must be followed by a vowel, and no juncture may be preceded by a consonant. Words, which are defined in this paper as any span or stretch of material occurring between successive junctures, may consist of a single CV syllable, or may range up to 16 or more syllables containing some 25 or more phonemes.

2.1. Tongan has CV and V syllables, as in ?i in, at and in the disyllabic form kau to belong, which consists of the syllables ka + u. Each vowel in a vowel cluster or word marks a syllable nucleus, and no syllable has more than one syllabic. V and CV syllables have been postulated in this paper in order to facilitate description of stress and intonational contours. Moreover, there appears to be no satisfactory grounds--either intonational or pertaining to stress--for postulating syllables longer than one vowel or consonant and one vowel. To set up

syllable boundaries on the basis of changes or shifts in tone would be unsatisfactory as the syllables of some forms would depend upon their position in the intonational contour with the result that syllable boundaries of the form would vary from utterance to utterance. To set up syllable boundaries on the basis of each consonant marking a new syllable, and, in vowel clusters, each change or shift in stress marking a new syllable, would give few syllables other than those of V or CV because of the alternation of stress which occurs. Thus, it seems much simpler to recognize only V and CV syllables. The criterion of combinations of phonemes appearing before juncture as a guide in breaking up phoneme clusters into syllables will not work in Tongan as there appears to be no limit to the possible combinations of C and V or of vowels in vowel clusters following C which may occur there.

All consonants, as well as all vowels, occur initially, as in aa to heat stick or leaves over a fire to soften them, ee vocative, ii fan, oo to go, non-singular, uu to be sheltered, fai to do, hai who, interrogative, kai to eat, lahi big, mahi bitter, nafa drum, ʔafa duty or task, pala rotten, soo to be sweethearts, tala to tell, and vala loin cloth.

All consonants occur intervocalically or medially, as in mafa to be a fanatic on one thing, maha empty, maka rock or stone, mala misfortune or ill-luck, mama ring, mana supernatural power, maʔa fork or branch, mapa a kind of tree, masani to be surpassingly beautiful, mata eye, and mavae to part or separate.

All vowels occur word-finally, as in the following examples:

tala to tell, tale to cough, tali to answer, talo taro, and talu since, to be subsequent in time.

Each vowel and consonant may occur before or after each other vowel or consonant. All possible combinations are found although some combinations appear much more frequently than others. However, if restricted to position, some combinations appear only infrequently. For example, si in initial position is found only in a few forms, and gu in final position is rare. However, since -si is a suffix forming transitive verbs, the combination si appears very frequently in final position, contrasting with its comparatively rare use in initial position.

2.2.0. Identical vowel clusters are analyzed as two syllables, three syllables, or four syllables; thus, hoo to breathe, fakaaakega to be in style, stylishly, and oooo to go, non-plural, iterative. Three-syllable identical clusters occur only when an affix, beginning or ending with a certain vowel, is affixed to an identical disyllabic cluster of the same vowel, as above, where the causative verb prefix faka- precedes the form aakega style, mode.

2.2.1. The largest identical vowel clusters found are four-syllable clusters. All examples found consist of the phonemes / u / and / o /; neither front vowels nor the low vowel / a / enter into four-syllable identical clusters. Some examples of four-syllable clusters are uuuu to be well sheltered, iterative, uuuuŋaki to be sheltered from the wind, iterative, and uuuuŋe-kina to be sheltered or protected, iterative.

2.2.2. Identical VV clusters occur quite frequently in

Tongan. The largest number of such identical VV clusters found in one word is three, as in maalooloo to rest, paapaakuu to be unwilling, unwilling, fakapaapaakuu half-heartedly, maaluuluu to be moist and soft, maaluuluunia to be moistened, fakateeteelousii to float or swim on the back, and piinoonoo bogey or demon. Disyllabic identical vowel clusters are found quite frequently in words, as the following examples illustrate: fakateete to sail, transitive, fakatoofaa to put to bed (honorific), taataa to beat or strike, iterative, kaakaa to be deceitful, soosoo to be crowded, iterative, tootoo to fall, iterative, and kookoo to squawk.

2.2.3. Non-identical vowel clusters, or clusters composed of non-identical as well as identical vowels, range from disyllabic VV clusters to seven-syllable clusters. No clusters larger than seven vowels have been found in the present study. Disyllabic VV and trisyllabic VVV clusters are very common in Tongan.

All possible combinations of vowels occur in disyllabic clusters, as in faa four, fee which, interrogative, fii to plait or braid, foo to wash, laundry, fuu to clap the hands in a kava ceremony, kae but, kai to eat, kao name of a volcano, kau to belong, to pertain, lea to speak, mei from, feo coral, keu that I may, ia him, her, it, fie to want, 'io yes, mou you, plural, ua two, ue'i to cause to move, to move, ui to call, and kuo perfect or incentive aspect.

Disyllabic vowel clusters occur initially, as in uaʒeau two hundred; medially, as in feiza to try, to attempt; and finally, as in fai to do and kapau if.

Trisyllabic VVV clusters are quite common, but not as common as disyllabic VV clusters. Trisyllabic clusters occur initially, medially, and finally, as in aautoo (of sun-er-moon) to be about to set, feooʔaki to go in opposite directions (reciprocative), and ɲaue to move. Trisyllabic vowel clusters appear most frequently in medial and final position, and only occasionally in initial position. A few forms are found consisting of only a trisyllabic vowel cluster, as uii an expression of disgust and uoo to be crowded.

Four-syllable or tetrasyllabic vowel clusters are not frequently found. Those that do occur are found as single words as well as in sets of initial, medial, and final syllables. Compare the following examples of identical vowel clusters: oooo to go (plural, iterative), uuuu to be sheltered, iterative, together with examples of non-identical tetrasyllabic clusters: aoao to bind round and round, ouau rite, ordinance, uuuuɲekina to be sheltered, auauni to consist of several folds (iterative), ɲaueʔi to utilize, looua double, two-fold, and looio to divide fish along the grain with the fingers. Four-syllable clusters occur more frequently medially than in any other position.

Five-syllable vowel clusters occur word-medially and word-finally but not word-initially, except when the whole word is made up of the five vowels. The following are examples: (of whole word) iauee an expression of surprise; (of word-medial cluster) fakaaaoʔi to treat despotically or tyrannically; and (of word-final cluster) fakaaao to act like a despot. Five-syllable clusters occur more frequently in word-final than in

word-medial, and rarely as whole words.

Six-syllable clusters occur word-finally and medially but not initially, except when the whole word is made up of six vowels. Compare the following examples: uououo to be crowded, iterative, feooooaki to go back and forth, reciprocative, plural, and ʔoiauee alas, to exclaim in dismay. Six-syllable vowel clusters in medial position and single words composed of six syllables are very rare. Six-syllable clusters in final position are also rare but are found more frequently than in any other position.

One seven-syllable vowel cluster has been encountered in the present study: ʔioiaaee everybody heave or push, all together now, heave or push. It is possible, however, that other non-encountered forms exist in the language with seven-syllable clusters.

2.2.4. The canonical shape of words appearing between successive occurrences of plus juncture / + /, or between plus juncture and a major juncture, vary from monosyllabic words of the shape CV or disyllabic VV clusters to long words of as many as 16 syllables: au I, me, no and, and ʔaauetootooivimalohiʔaki to use zealously and industriously, the latter example consisting of nine consonants and 16 vowels.

The largest number of consecutive CV syllables strung together successively in a word is 12, as in fefakavahaʔapuleʔaʔaʔaki to vie with each other as nations, reciprocative. Numerous eight, ten, and twelve syllable forms consisting entirely of CV syllables are formed by reduplication of a CVCV stem either with or without the affixation of a CV prefix or CVCV suffix. Numerous stems and affixes are of this pattern.

No forms have been found in the present study with more than 12 consonants or 16 vowels as in the forms which have just been cited.

Between the extremes of monosyllabic CV words and sixteen-syllable words, a wide variety of vowel and CV combinations occur, but it seems trivial to list all of the combinations found.

Some of the favored canonical shapes, however, are as follows: CV he for, VV ai there, CVV fau extremely great, VCV efu dust, CVCV kalo to dodge, VVCV aafu fine mist or spray, CVVCV feiŋa to try, VVVCV uiaki to announce by calling out loudly, VVVCVW aautoo to be about to alight or land, VVVCVCV aaulalo low-lying land, VCVV afaa hurricane, CVVW koaa interrogative particle, mamata to see, CVCVW fufuu hidden, to hide, and CVCVCVCV poŋipoŋi to become morning, morning. The canonical shapes V, CV, VV, and CVV are observed in numerous stems and affixes and may enter into all sorts of combinations giving a very great variety of canonical shapes of Tongan words. All morphemes of the shape V and many of the shape CV are enclitic and enter into numerous combined forms of more than one morpheme. Essentially, these shapes of V, CV, VV, and CVV are the basic unit shapes which are combined to form most larger forms. The one restriction is that no vowel clusters longer than seven syllables or VVVVVVV may be formed.

2.5.0. Stress and intonation are best described in relation to the macrosegment<sup>8</sup> rather than in terms of the utterance.

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<sup>8</sup> The definition of macrosegment followed here is "that stretch



This is due to the fact that phonemic alternation of stress is marked from the beginning of the macrosegment and counting toward the next major juncture marking the end of the macrosegment and to the fact that the boundary of the pre-peak and peak spans of each macrosegment is marked by the occurrence of the first secondary or primary stress in the macrosegment. Each of these spans, the pre-peak span and peak span, has its own particular intonational contour that is distinctive.

Each span bounded by one of the major junctures / | /, / # /, or / || / will be called a macrosegment or contour span. / + /, or plus juncture, is a minor juncture and, together with the major junctures, helps to mark what will be termed word boundaries within the macrosegment. The sequence of varying pitch or successive tone levels between major junctures will be termed an intonational contour. The sequence of varying pitch between the first secondary stress or primary stress of the macrosegment and the final juncture of the macrosegment will be called the intonational contour of the peak span and the sequence of tones or pitches from the beginning of the macrosegment to the first secondary or primary pitch will be called the intonational contour of the pre-peak span. Utterances bounded by / # / or / || / may include one or more macrosegments, each of which has its own intonational contour. An example of an utterance containing four macrosegments is as follows: #teu+fáihâ+ki?i+fakamatâlkâu!

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of phonemes occurring between major junctures" including / | /, / # /, or / || /. Cf. Charles C. Hockett, A Course in Modern Linguistics, (New York: Macmillan Co., 1958), p. 37 f., p. 154 f., and p. 166 f.

ki+toŋa# I will make a brief explanation concerning Tonga.

The macrosegments are bounded by / 1 / and / # /.

2.5.1. The alternation of phonemic stress which occurs in each macrosegment<sup>9</sup> is marked beginning with the initial syllable or vowel of the macrosegment and continuing until the next major juncture whether /#/ , /1/ , or /||/. /+ / has no effect on the alternation of stress pattern and is disregarded in counting the alternation of stress. In order to simplify the description and to make possible the counting of the alternation of stress as well as to predict the tones of the intonational contour which occur on each particular syllable, the macrosegment is divided into two parts, a pre-peak span and a peak span. The point marking the end of the pre-peak span and the beginning of the peakspan signalizes a distinct change in the intonational pattern of the macrosegment. For example, in the macrosegment #tene+ʔālu+atu# he will go there (place of the second person or away from the place of the first person) the occurrence of secondary stress on ʔa of ʔalu to go marks the beginning of the peak span as it is the first occurrence of strong stress in the macrosegment. Everything preceding this strong stress belongs to the pre-peak span and the syllable on which the strong stress occurs and all syllables succeeding it up to the next major juncture which follows belong to the peak span. For the purposes of this

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<sup>9</sup> In order to simplify description of alternation of stress, the setting up of the semivowels /w/ and /y/ has been considered, but what would be gained in simplicity of description of stress would be offset by complications in the description of morphology as a result of increased allomorphic alternation.

description, strong stress is said to include primary and secondary stress. Thus, the pre-peak span has tertiary and weak stress alternating, and the peak span has primary and secondary stress alternating with weak. For example, in the illustration cited above, the pre-peak span has the following stresses: #tène+. . .he, she, future tense (tertiary stress followed by weak) and the post-peak span. . .+ʔâlu+atu# go forth (secondary + weak + primary + weak stress). Primary stress always falls on the penultimate syllable of the macro-span unless the syllable is marked with secondary stress. Weak stress always falls on the ultimate syllable of the macrosegment unless the ultimate syllable is marked with secondary or primary stress.

According to the alternation of stress rule, the macrosegment as well as the pre-peak span, if there is such a span in the utterance,<sup>10</sup> always begins with tertiary stress on the first syllable unless the syllable is marked with weak. Since only variations from the alternation of stress rule are marked, the occurrence of tertiary stress on the first syllable is unmarked whereas weak stress must be marked if it occurs there, as the occurrence of only tertiary stress on the first syllable is considered as regular or normal. Whatever the stress, whether tertiary or weak, occurring on the first syllable the stress is considered as alternating between tertiary and weak

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10 When disyllabic verbs are used in the imperative, the macrosegment in which they occur has no pre-peak span, as in #haʔu! come which consists only of a peak span.

beginning with the first syllable and no stress is marked until the end of the pre-peak span is reached unless there is a break in the alternation of stress. Thus, the pre-peak span cited above as an illustration has no stress marked #tene+. . he, she will since tertiary stress occurs on the first syllable followed by weak on the second. However, in the pre-peak span of /hǎʔaku+. . my, indefinite, as in the macrospan /haʔaku+meʔa/ a my thing weak stress is marked on the first syllable as occurrence there of weak stress is irregular. However, no further stresses are marked in the pre-peak span as the stress alternates regularly from there on to the end with tertiary stress on the second syllable and weak on the third. The fourth syllable marks the beginning of the peak span as it receives primary stress. It should be noted that pre-peak spans may end with either tertiary or weak stress on their final syllable and no stress will be marked as long as the stress alternation is regular up to that point. In the two examples cited above of pre-stress spans, the final syllable receives weak stress:

#tene+. . he will (tertiary + weak) and /hǎʔaku+. . a my (weak + tertiary + weak). An example of a pre-peak stress span ending with tertiary stress on the final syllable is the following: #naʔe+na-. . (tertiary + weak + tertiary) in the macrosegment #naʔe+mahuʔi/ departed, left, went out of, which, as a whole, has the stress pattern of tertiary + weak + tertiary + primary + weak. In this latter example, the peak span -huʔi/ has primary stress on the first syllable and weak

on the final syllable. In pre-peak spans of four or more syllables, there is sometimes a break in the alternation of stress pattern in the central part of the span, and such a break is marked, as in the pre-peak span #ʔoku+na+fùʔu+aŋa- in the macrosegment #ʔoku+na+fùʔu+aŋaʔofa/ they, dual, are very kind or loving. This pre-peak span has the stresses tertiary + weak + tertiary + tertiary + weak + tertiary + weak. The successive tertiaries on na and fu mark a break in the pattern. Since the first of these two tertiaries occurs in a position where tertiary would be expected, it is unmarked. However, the second tertiary is not expected on the syllable fu and hence it must be marked. However, the alternation of stress resumes following fu, and no further marking is necessary as such alternation is regular.

Peak spans may have one, two, four, or six syllables. No peak span longer than six syllables has been observed in the present study, although it is possible that peak spans of eight or more syllables may occasionally occur. Except for monosyllabic peak spans, all peak spans have an even number of syllables.

Monosyllabic peak spans regularly have primary stress on the syllable. If secondary stress occurs there, it is irregular. Note the example of the peak span -lú/ in /ʔene+ʔalú/ his going (emphatic definite) which has primary stress and the peak span -na/ in /ʔae+oŋo+vakapunâ/ the two airplanes (emphatic definite), which has secondary stress on the final syllable. It should be noted that the stress, whether primary or secondary, is always

marked on monosyllabic stress spans as occurrence of strong stress is irregular in such a position, since the ultimate syllable of macrosegments normally takes weak stress.

Disyllabic peak spans are the most common and show two stress patterns. The regular pattern in which no stress is marked is primary stress followed by weak stress, as in . . +lahi! big, great in the macrosegment #na'e+lahi! was great or big. The irregular pattern, which has stress marked on the penultimate syllable, consists of secondary stress followed by weak, as in the stress span . . .-kâi! in the macrosegment #na'e+'ikâi! wasn't, didn't.

Four-syllable peak spans also have two variant stress patterns. The pattern which is apparently the most frequent in appearance is that of secondary stress followed by weak, which in turn is followed by primary and weak stress in that order. Note the example . . +'âlu+atu! to go forth in the macrosegment #tene+'âlu+atu# he will go forth or to there, which has secondary + weak + primary + weak stress in that order. Only the first strong stress needs to be marked so that the macrosegment may be recognized as having a four-syllable peak span. Disyllabic peak spans are considered as normal or regular, and hence the first strong stress of four-syllable and six-syllable peak spans or peak spans of more syllables than six must be marked. And since primary stress is considered as normal or regular on the penultimate syllable of any macrosegment, such occurrence of primary stress is unmarked. Thus, both secondary stresses of the peak span . . +'âlu+âtu! must be marked, the first to indicate the irregular occurrence of the four-syllable

peak span and the second since occurrence of secondary stress on the penultimate syllable is also irregular. . . +?âlu+âtu/go forth has been observed occurring in the utterance #teu+?âlu+âtu/?anai# I will go forth or there a little later. When two primary stresses occur in a four-syllable peak span, only the first needs to be marked, as the occurrence of the second is considered as regular, as in the peak span . . +nófo+ai# stay there in the utterance #tene+nófo+ai# he (she) will stay there. It should be noted that in four-syllable peak spans, two secondary or two primary stresses may occur before the juncture /l/ and also before the two junctures /l/ and /#/. Two strong stresses are quite frequently observed before the juncture /#/, as in #tene+?âlu+aŋe# he (she) will go there (a third place away from the first and second persons). But the combination of primary followed by secondary stress on the penultimate syllable of a four-syllable peak span has not been observed in the present study and seems likely not to occur in Tongan. This same observation holds true also for peak spans of six or more syllables.

Six-syllable peak spans have been observed with three primary stresses or with two secondary and one primary stress, as in the utterance #teu+?âlu+âtu+leva# I will go forth (there) at once (peak span|| . . . +?âlu+âtu+leva# go forth at once, which has primary stress on the first, third and fifth syllables), and #tena+tôki+?âlu+aŋe# they (dual) will go there then (peak span: . . +tôki+?âlu+aŋe# to go there then, which has secondary on the first and third syllables and primary on the fifth syllable. In both examples the even-numbered syllables receive peak stress.

If eight-syllable peak spans occur in Tongan, it is likely that they will show a similar stress pattern to that of the six-syllable peak span: primary stress on the odd-numbered syllables with weak stress on the even-numbered syllables, or secondary stress on all odd-numbered syllables except the last one which will have primary stress and with weak stress on the even-numbered syllables.

2.5.2. The occurrence of pitch or tone on the syllables of the macrosegment can be predicted from the stress and final juncture as well as the boundaries of the pre-peak span and the peak span. Phonetically, there are five tones in Tongan: low, mid, high, extra-high, and extra-high rising. Phonetically, these will be marked by the numbers 1 for low, 2 for mid, 3 for high, 4 for extra-high, and 5 for extra-high rising.

Each macrosegment or pre-peak span begins with mid tone and continues on mid with minor or slight fluctuations until the final syllable of the pre-peak span is reached, where the tone falls to low, except in the case of monosyllabic pre-peak spans which have mid tone. In the peak spans, primary stress is accompanied by extra-high tone, except before // juncture which causes the tone to become extra-high rising, and secondary stress by high tone. Weak stresses in the peak span receive low tone except on the syllable immediately preceding the juncture /1/, which receives the same tone as the preceding syllable. Before the final juncture //, weakly stressed syllables receive extra-high rising tone. Weakly stressed syllables in the peak span preceding the juncture #/ receive low tone or are falling



toward low from high. Note the examples which follow. The examples will be written with pitch and stress marked so that the correlation between pitch, stress, and juncture may be noted: #<sup>2</sup>nà<sup>?</sup>e +fèpàa<sup>1</sup>tò<sup>4</sup>osi|<sup>2</sup>ʔàe+òpò+vàka<sup>1</sup>pù<sup>3</sup>nâ|<sup>2</sup>ʔo+<sup>1</sup>nâ+<sup>3</sup>tôo|<sup>2</sup>ki+<sup>4</sup>lá<sup>1</sup>lo# the two airplanes crashed together and they fell down (i. e., to below); #<sup>2</sup>ʔò<sup>1</sup>ku+<sup>3</sup>môhe|<sup>2</sup>feʔù<sup>1</sup>lu<sup>4</sup>fáki|<sup>2</sup>ʔàe+ta<sup>1</sup>mâ<sup>3</sup>iki|<sup>2</sup>à<sup>4</sup>kó|<sup>2</sup>inè-ʔenâu+<sup>1</sup>mò<sup>4</sup>hé# the students are sleeping with their heads towards each other; #<sup>2</sup>nà<sup>?</sup>e+mò<sup>1</sup>tu<sup>4</sup>kí<sup>1</sup>a+<sup>4</sup>kóvi|<sup>2</sup>ʔène+<sup>1</sup>à<sup>3</sup>kô|<sup>2</sup>kò<sup>1</sup>e+<sup>4</sup>mótu|<sup>2</sup>hòno+<sup>1</sup>ní<sup>3</sup>mâ# his schooling was interrupted as a result of the breaking of his arm; #<sup>2</sup>nà<sup>?</sup>e+mò<sup>1</sup>tu<sup>4</sup>kí<sup>1</sup>a|<sup>2</sup>ʔè<sup>1</sup>ne+<sup>4</sup>ʔálu|<sup>2</sup>ki+hà<sup>?</sup>a<sup>1</sup>pâ<sup>3</sup>í|<sup>2</sup>kòe+mò<sup>1</sup>tu<sup>4</sup>hí<sup>1</sup>a|<sup>2</sup>hòno+<sup>1</sup>vâ<sup>3</sup>kâ# his trip to Ha'apai was cut short because of his boat being broken up or smashed up; and #<sup>2</sup>ʔòku +mò<sup>1</sup>tu<sup>4</sup>há<sup>1</sup>ʔa|<sup>2</sup>ʔèku+<sup>1</sup>hè<sup>3</sup>lê# my knife is broken off short. It will be seen in all of these examples that each macrosegment begins with mid tone and, in all cases except those in which the pre-peak span is monosyllabic, that the tone falls to low in the syllable immediately preceding the peak span. In the peak span, primary stress correlates with extra-high tone and secondary stress with high tone. Before / | / juncture, weakly stressed syllables have the same tone as preceding syllables, but before / # / the tone drops to low. In the one four-syllable peak span . . . -<sup>4</sup>kí<sup>1</sup>a+<sup>4</sup>kóvi| the weakly stressed syllable between the two primarily stressed syllables has low tone, but the final syllable of the span has extra-high tone the same as the preceding primarily stressed syllable. Before / || / juncture, the final syllable rises above extra-high, but since / || / indicates rising tone, the higher tone is not indicated by any special mark

in phonemic transcription. However, in the following example, the higher tone of the final syllable will be marked with the numeral 5 to show the difference with preceding tones. Note the following example: #<sup>2</sup>òku+fehèehè<sup>1</sup>e<sup>4</sup>náki|<sup>2</sup>hòno+<sup>?</sup>àta<sup>1</sup>mà<sup>5</sup>i|| does his mind wander, is his mind wandering (interrogative). In regular phonemic transcription this utterance is written as follows: #<sup>?</sup>oku+feheeheenaki|hono+<sup>?</sup>atamai|| with the difference of juncture indicating the higher of the two tones.

3.0. A description of the phonemes of Tongan, together with the allophones and distribution of the allophones of each, will now be presented. Consonants will be considered first.

3.1.0. The four stops / p t k ? / may be described as follows:

3.1.1. / p / has the allophones [ p' ] and [ p ], the former a bilabial stop phone that is strongly aspirated and [ p ] a bilabial stop phone having weak aspiration. [ p ] appears much less than [ p' ] in frequency. [ p ] appears before / e / and / a / in all word positions--initial, medial, and final--when / e / and / a / are followed immediately by a stop or by juncture, as in the following examples: [ psts ] / pete / to have a rash, [ patò ] / pata / course sand or gravel used in covering graves, [ pskò ] / peka / bat, flying fox, [ pakò ] / paka / crab, [ peps ] / pepe / butterfly, [ papò ] / papa / board, [ tapò ] / tapa / to flash (lightning), and [ kapekape ] / kapekape / to swear, to curse. [ p' ] appears in all other positions. It should be noted that speakers vary in the amount of aspiration with the allophone [ p ], some speakers showing

a consistently weak aspiration or an aspiration weaker than the average, and others showing a stronger aspiration than average. In pronouncing Tongan [ p ], these latter speakers tend to pronounce the stop almost as strongly as the English allophone [ p' ] of the English phoneme / p /. Tongan [ p ] is rarely pronounced with as little aspiration as English [ p ] of the English phoneme / p /.

All Tongan speakers that have been observed tend to pronounce Tongan [ p' ] very strongly. The plosion generally occurs almost simultaneously with the onset of the succeeding vowel. Tongan [ p' ] occurs before the high vowels / i u / and before the back vowels / u o /, as in the following examples: [ p'oto ] / poto / to be wise, [ p'iki ] / piki / to cling or adhere, and [ p'ukup'uku ] / pukupuku / to be short or stunted. In positions of unusually weak stress, [ p ] sometimes is noted in free variation with [ p' ]. This phenomenon has been noted usually immediately before / # / juncture, as in [ hapo# ] / hapo# / to catch.

The phone [ p: ] occurs in Tongan, but it represents / pu / phonemically, as in [ #kò+tòŋatáp:ɪ ] / #ko+tòŋatapul / (it) is Tongatapu. [ p: ] is in complementary distribution with [ pu ] in the environment before pause juncture, since [ p: ] before pause juncture contrasts with [ p ] plus all other vowels, whether the voiced or voiceless allophone of such vowels. Note [ tapɪɪ ] / tapal / edge, [ hapo# ] / hapo# / catch, [ kapel ] / kapel / a type of native tuber that is edible, and [ ?apil ] or [ ?apɪɪ ] / ?apil / home. Thus, it is possible

to interpret the extra length of [ p: ] as an allophone of / u /.

3.1.2. / t / has the allophones [ t ] and [ t' ]. The aspirated allophone [ t' ] shows only moderate to weak aspiration and appears only before / u /, as in [ t'ut'u ] / tutu / to set fire to, to light a fire and [ t'uɭə ] / tula / bald, to be bald. The unaspirated allophone appears in all other environments, as in [ talə ] / tala / to tell, [ toɭu ] / tolu / three. [ d ] has been observed but only in the slurred or extra rapid speech of one informant from Vava'u, as in [ #te-dəu+ ] / #tetəu+ / we, inclusive, plural, future tense. In this case, [ d ] appeared as a single voiced alveolar flap in free variation with [ t ]. [ t' ], since it appears before / u /, is articulated farther back at the rear edge of the alveolar region and is thus somewhat retroflexed. [ t ] before [ i ] is farther back than [ t ] in other positions but is not as far back as [ t ] before [ u ]. [ t ] before the mid vowels / e o / is articulated with the apex of the tongue touching the back of the teeth. Before / a /, [ t ] is articulated in the central alveolar region.

[ t: ] occurs before / t / or / +t / in positions of weak stress between strongly stressed vowels. In this position, [ t: ] is in complementary distribution with [ tu ], and hence the extra consonantal length is interpreted as the voiceless allophone of / u /. [ t: ] has been observed occurring in connection with the forms potu place or direction, motu island, and ?otu row or line when these forms precede a form beginning

with / t /. Note the examples: [ʔót:+tóna] /ʔótu+tóna/ Tongan archipelago, [pót:+tókéláu] /pótu+tókéláu/ north direction or place, and [mót:+tókéláu] /mótu+tókéláu/ northern island.

[ t' ] also appears before all voiceless allophones of vowels before pause juncture, as in [p'ót'q#] /poto#/ to be wise.

3.1.3. / k / has the allophones [ k ] and [ k' ]. [ k' ], the aspirated allophone, appears before / u / in all positions. It shows moderate aspiration and is backed to the velar region due to the back articulation of the back vowel / u /. [ k ] before the back vowels / o / and / a / is also articulated in a back velar region but not as far back as [ k' ] before / u /. [ k ] before the front vowels / e / and / i / is fronted to the front velar region. Examples of the two allophones and the fronting and backing of [ k ] are as follows: [k'uk'u] /kuku/ to seize or grasp, to hold tightly, [kookoo] /kookoo/ to fit loosely, [kaaka] /kaaka/ to be deceitful, [kili] /kili/ skin, and [keli] /keli/ to dig. It will be noted that [ k' ] is always backed before the back vowel / u / and that [ k ] is either fronted or backed depending upon whether a front or a back vowel follows.

[ k' ] also appears before any completely voiceless vowel, usually a high vowel, as a strongly exploded release, as in [+lókí#] /+loki#/ room, [ʔò<ʔók'u#] /ʔoʔoku#/ mine, to be mine, and [+fà káfòk'ifáa|] /+fakafokifaa|/ suddenly.

In one idelect, that of an informant from Vava'u, a voiced

allophone [ g ] appears in free variation with [ k ] in slurred speech in positions of weak sonority before / a / or before weakly stressed / i / or / u / or in the environment \_\_ia, as in [ |gìà+sióne| ] / |kia+sione| / to or for John, [ |giàte+íò| ] / |kiate+ia| / to or for him or her, [ |gi+kólo#| ] / |ki+kolo#| / to town, [ |gðhá?u#| ] / |kaha?u#| / to come, future, [ |gi+ìndiánò#| ] / |ki+initiana#| / to Indiana, and [ +gəgái+tóŋə ] / +kakai+toŋə / Tongan people. In the latter example [ g ] also appears in the environment ka\_\_á when the first / k / appears as [ g ]. [ g ] appears in the environment \_\_ǔ sometimes in the speech of the one informant referred to when / u / is followed by a nasal, as in [ |ògu+nàu+| ] / |?oku+nau+| / they (plural) present tense. In all observed cases, [ g ] occurs with slight voice background in spectographs.

Occasionally the voicing of [ g ] in the one idiolect observed has superimposed nasalization and sounds like [ ŋ̃ ] when preceding another nasal, as in [ |òk̃u+nàu+| ] they (plural) present tense. This phone also is in free variation with [ k̃ ]. Since / ŋ̃ / does not appear in the environment \_\_u before plus juncture, except in reduplicated forms such as [ ŋ̃úŋu ] / ŋuŋu / to chew, masticate, or in the environment c-u, the appearance of [ k̃ ] is predictable, and it is possible to interpret it as / k / rather than / ŋ̃ /, since [ k̃ ] never appears in the environment ŋu\_\_u. / ŋ̃ / always appears in this environment.

Both [ k̃: ] and [ k: ] occur, the former representing / ki / and the latter representing / ku / phonemically. This interpretation is possible as [ k̃: ] is in complementary

distribution with [ ki ] and [ k: ] with [ ku ]. [ k: ] has been observed appearing only before / ki /, and [ k: ] has been observed in all other environments. These environments for [ k: ] include the positions before / f / and / ka /, as in [ 1'òk:+káu+ía ] / 1'òku+káu+ia / it pertains or belongs and [ 1'òk:+fè'úŋð ] / 1'òku+fe'úŋa / is sufficient or enough. And example of [ k: ] is [ +fók:iki+tóŋð ] / +fokiiki+toŋa / return to Tonga. Since, in this latter example, / | / represents merely a sudden fall in tone from high to low with some diminution of sonority and not a break or pause, the assimilation of [ ki ] to [ k: ] is not affected. If, however, / | / represents a pause, [ ki ] is not assimilated to [ k: ].

3.1.4. Glottal stop / ʔ / has the allophones [ ʔ ] representing complete glottal closure, [ \* ] representing strong vowel onset, and [ ʔ̤ ] representing vowel hiatus with voiced background.

[ ʔ̤ ] occurs intervocalically between a strongly stressed vowel followed by a weakly stressed vowel, as in [ mé'ð ] / me'a / thing, [ tá'u ] / ta'u / year, and [ fò'o+háke ] / fo'o+hake / to lie face upward.

[ \* ], or strong vowel onset, occurs following a weakly stressed vowel and preceding a primarily or secondarily stressed vowel or following any juncture, including plus juncture, and before a primarily or secondarily stressed vowel. Before weakly or tertiarily stressed vowels [ \* ] may be lost, as when ʔi in, at, through is weakly stressed or appears phonetically as [ i̇ ]. Ordinarily [ \* ] is not lost before tertiarily stressed vowels unless the speech is extraordinarily rapid.

Note the following examples: [#nà?e+\*álu] /#na?e+?alu/ went, [fà^kò\*òfo<\*ófò] /faku?ofò?ofa/ beautiful, and [#\*è+\*áve] /#?e+?ave/ will take.

It is necessary to set up strong vowel onset [ \* ] as an allophone of [ ? ] because [ \* ] contrasts with weak vowel onset following plus juncture or following a weakly stressed vowel and preceding a primarily stressed vowel, as in [ikihe+aḡò] /ikihe+aḡa/ to the trait or character, [ikihe+\*aḡò] /ikihe+?aḡa/ to the shark, [#kòe+amo] /#ke+amo/ (it) is stroking with the palm of the hand, [#kòe+\*amo] /#koe+?amo/ (is) a nick or notch, [#kòe+ao] /#koe+ao/ (it is) a turban, and [#kòe+\*ao] /#koe+?ao/ (it is) a cloud.

[ ? ] occurs following a vowel receiving secondary stress and before a weakly stressed vowel in positions where sonority has fallen very low. Such falling or weakened sonority most usually occurs before pause juncture. Note the following examples: [#nà?e·] /#na?e/ past tense, [+tà?elàtá#] /+ta?e-lada#/ loneliness (definite, emphatic), and [#nà?aku] /#na?aku/ I past tense.

[ ?: ] occurs and represents / ?u / phonemically since [ ?: ] is in complementary distribution with [ ?u ] and contrasts with [ ? ] plus all other vowels in positions of weak stress. Note the examples: [+fù?+mótu] /+fu?u+notu/ huge island and [+fèitú?+tóḡò] /+feitu?u+toḡa/ south place or direction. [ ?: ], however, is in free variation with [ ?u ].

3.2.0. The allophones of the four fricatives and their distribution will now be discussed.



3.2.1. / f / has only one allophone: [ f ], which is a labio-dental voiceless fricative, as in [kafo] /kafo/ wounded (honorific), [tafu] /tafu/ to light (a fire), and [afi] /afi/ fire. [ f ] occurs intervocalically, as in the examples given, and initially as in [fu?u] /fu?u/ great, huge.

3.2.2. / v / also has only one allophone: [ v ], which is a voiced, labio-dental fricative, as in [lavð] /lava/ to be able and [ava] /ava/ hole or opening. [ v ] occurs intervocalically as in the examples given and initially, as in [vãnu] /vanu/ abyss.

3.2.3. / s / also has only one allophone: [ s ] which is a voiceless, pre-alveolar groove fricative occurring both intervocalically and initially, as in [sósð] /sosa/ saucer, [tósi] /tosi/ to neck, [hòosi] /hoosi/ horse, and [kásð] /kasa/ flashlight or lantern.

[ š ] sometimes appears in free variation with [ sy ] / si / before strongly stressed vowels, as in [šyópe] /siope/ Job and [šyási] /siasí/ church, which also appear as [siópe] and [siási] in some utterances. Usually, however, these forms appear as [syópe] or [syási].

[ s: ] occurs and represents / si / phonemically whenever voiceless [ i ] loses its vowel-like quality before pause juncture, as in [hòós:#] horse which also appears as [hòósi#]. Thus [ s: ] and [ si ] are in free variation before pause juncture. [ s: ] also appears before / f / where it is also in free variation with [ si ], as in [pàs:fíki] Pacific.

3.2.4. / h / has the allophones [ h ], [ h ], and [ h ]. The fronted variety appears before the high vowels / i / and / u / and the backed variety before / a /, as in [húu] /huu/ to enter and [háŋô] /haŋa/ to face toward. The normal variety pronounced near the velum, or dorso-velar region, appears before the mid vowels / e / and / o / and before [ ô ], the centralized allophone of / a /. Note the following examples: [hóŋe] famine, [héle] knife, and [hōháu] dew. [ h: ] appears and is in free variation with [ ih ] or [ ?ih ] in positions of unusually weak stress. For example, [h:e] in the is in free variation with [ihe] in the following / i /. In view of the fact that [ih], representing [i?ihe] /i?ihe/, has overlapping distribution with [iehe] by the, [laha] of a and [loha] of a in the same position, it is possible to postulate [h:] and [ihe] phonemically as /i?ihe/.

3.3.0. The four non-fricative continuants / m n ŋ l / will now be considered in regard to their allophones and their allophonic distribution.

3.3.1. / m / has only the allophone [ m ], which is a bilabial nasal. It appears in all positions, as in [mákô] /maka/ rock and [lâmulâmu] /lamulamumu/ to chew.

[ m: ] occurs before the homorganic stop / p /, and, in this position, is in complementary distribution with / mu /, as in [pâm:pâmú?i] to pump (iterative). [ m: ] contrasts with [ m ] plus all other vowels except / u / in positions of weak stress.

3.3.2. / n / has the allophones [ n ] and [ n ]. [ n ] is fronted to the pre-alveolar position just behind the upper front teeth whereas [ n ] is articulated in the regular alveolar position. [ n ] appears before the front vowels / i / and / e /. [ n ] appears before all other vowels. Note the following examples: [ána] /ana/ cave, [áno] /ano/ lake, [áne] /ane/ moth, [núk'unúk'u] /nukunuku/ name of a village in western Tongatapu, and [nīmā] /nima/ hand.

[ n:] appears in positions of weak stress before homorganic consonants followed by / i /, and represents / ni / phonemically. In this position, [ n:] is in complementary distribution with / ni / and in contrasting or overlapping distribution with / n / plus all other vowels. [ n:] occurs in such forms as [èn:si-níō] /enisinia/ engineer and [in:tiánō] /initiana/ Indiana. However, [ n:] and [ ni ] are in free variation, as evidenced by the appearance of such forms as [inítiō] /initia/ India and [kàu+inítiō+kúlō] /kau+initia+kula/ red or American Indians; however, whenever [ i ] does appear in the environment n\_\_t between two alveolars, it has reduced sonority.

3.3.3. / ŋ / has the allophones [ ŋ ] and [ ŋ ]. The fronted variety [ ŋ ] is pronounced in the pre-velar region and [ ŋ ] in the central velar region or in the back velar region. The fronted allophone [ ŋ ] occurs before the front vowels / i e / and the allophone [ ŋ ] before the back vowels / u o a /. Note the following examples: [lèlīŋi] /lilīŋi/ to pour, iterative, [ŋiŋilō] /ŋiŋila/ to be bright, shining,

[ʔəŋúlu] /ʔuŋulu/ to roar, [ʔóto] /ʔoto/ to sink, [ʔéli] /ʔeli/ monkey, and [ʔálo] /ʔalo/ to forget, to pass out of mind.

[ ʔ̥: ] and [ ʔ̥: ] occur. The fronted variety [ ʔ̥: ] is in complementary distribution with [ ʔ̥i ] and the latter variety [ ʔ̥: ], which is backed or more back, with [ ʔ̥a ].

[ ʔ̥: ] occurs in weakly stressed positions before / p /, and [ ʔ̥: ] in weakly stressed positions before / k /. Note the following examples: [apòŋ:póŋi] /apɔŋipɔŋi/ tomorrow, [fàŋ:+kiʔi] /faŋa+kiʔi/ small or tiny, plural, and [pàaŋ:kée] /paŋakee/ bank.<sup>11</sup>

3.3.4. / l / has the allophones [ l ] and [ l̥ ]. The allophone [ l ] occurs before the front vowels / e i / and is pronounced in the central alveolar region as in [ híli ] /hili/ after, to be subsequent in time and [ léle ] /lele/ to run. The backed allophone [ l̥ ] occurs before the back vowels / u o a / and is retroflexed to the lamino-domal region, as in [ hálo ] /hala/ road, [ hólo ] /holo/ to fall down, and [ hulu ] /hulu/ to be over-abundant, to exceed.

3.4.0. The allophones of the five Tongan vowels / i e a o u / together with their allophonic distribution will now be discussed.

3.4.1. / i / has allophones of [ i ], [ i̥ ], [ i̥ ], [ y ], and [ i̥ ]. Open [ i̥ ] is lax and somewhat lower than [ i ] and occurs before / ʔ / when the preceding consonant is not one of the labial or alveolar resonants / v m n l /. For example,

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<sup>11</sup>A variant form /paŋikee/ occurs phonetically as [pàaŋikée] with [ i̥ ] showing nasalization.

[ i ] appears in the environment h\_\_ɲ, as in [màhuíɲə] /mahuiɲa/ valuable, but not in the environment m\_\_ɲ, as in [míɲi] /miɲi/ to wrinkle, nor in the environment l\_\_ɲ, as in [liɲi] /liɲi/ to pour.

[ i ] also appears in unstressed position following the vowels / a /, / o / and / e / in VV clusters, as in [fáɪ] /fai/ to do, [mòimóɪ] /moimoi/ to escort, and [tèttéɪ] /teitei/ absolutely (negative).

[ y ] appears in unstressed position before primarily or secondarily stressed back vowels<sup>12</sup> / u o a /, or before / ʔ / followed by a back vowel, as in [syú] /siu/ Jew, [kyú] /kiu/ a kind of sea bird, [syùtítí] /siutiti/ a female name, [syóne] /sione/ John, [syʔòto] /siʔoto/ one's, [kyàte] /kiate/ to, unto, and [syási] /siasí/ church. [ y ] represents a palatalized glide.

[ y ] also appears in the environment V\_\_V in trisyllabic vowel clusters whether unstressed or stressed. For example, the form /iʔàia/ which (relative pronoun) whether pronounced with primary stress on / i / or whether the primary stress falls on / a / has [ y ] for the / i /. Tongan speakers have [iʔàfá] and [iʔáyá] in free variation. In the latter form, / i / functions like a consonant in the stress pattern, as [iʔáyá] conforms to the same stress pattern primary followed by weak on CVCV forms before major juncture as in [iháʔu] come (imperative).

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<sup>12</sup>See Section 1.0. for classification of / u o a / as back vowels for purposes of explaining certain vowel allophones.

[ ɿ ], the centered allophone, appears in positions of weak or tertiary stress between identical consonants, as in [ɿɿɿiɿ] /ɿɿiɿ/ to be bright or shining, [hɿhɿifo] /hihifo/ west, [nɿnɿimo] /ninimo/ to be dizzy, [mɿmɿihə] /mimiha/ mouth organ, and [hɿhɿihɿi] /hihihi/ to scoop out, iterative. As is evident from the latter example, the rule that [ ɿ ] appears in positions of weak or tertiary stress is limited to positions before secondary or primary stress. Note that [ i ] appears in the first position of tertiary stress in [hɿhɿihɿi] since it is not followed by strong stress but rather by weak. In the second syllable, [ ɿ ] appears in a position of weak stress preceding strong or primary stress.

The voiceless allophone [ i̥ ] occurs before pause juncture and following a non-resonant, as in [sisi̥#] /sisi̥#/ grass skirt, [sɿpi̥#] /sɿpi̥#/ sheep, [tókɿ̥#] /toki̥#/ axe, [pàlotɿ̥?i̥#] /paloti̥?i̥#/ to ballot or vote, [lâpâsi̥!] /lapasi̥! / to waylay, and [lâhi̥!] /lahi̥! / big, great.

[ i̥ ] may also occur in positions of weak stress between non-resonant consonants with or without intervening plus juncture, as in [fòkɿ̥fâa] /fokifaa/ suddenly, to be sudden, [pâsɿ̥fɿ̥ki] /pasɿ̥fɿ̥ki/ Pacific, [lâhi̥+ta?u] /lahi+ta?u/ to be many years, [hɿhɿifo] /hihifo/ west, and [fɿ̥fɿ̥tə] /fɿ̥fɿ̥ta/ a female name, but in these positions [ i̥ ] is in free variation with other allophones of / i / depending upon which allophone normally appears in the particular environment.

[ i̥ ] appears in some utterances following a nasal and before / s / or / h /, as in [polɿ̥nɿ̥si̥ə] /polɿ̥nɿ̥sia/ Polynesia,

and [táimí+sí'í:] /táimi+si'í/ to be a short time. However, in these environments [í] is in free variation with [i].

[i], the close allophone, appears in all environments not previously mentioned for the other allophones of /i/.

[í] always occurs in weakly stressed position following /s/, as in [síási:] /siasí/ church, [síópe] /siope/ Job, and [síále] /siale/ Charles. [í] frequently occurs in unstressed position before /h/, as in [íihel] /lihe/ in the.

5.4.2. /u/ has the allophones [u], [u̠], [w], [ə], and [u̡].

The open allophone [u̠] varies from the lax and somewhat lowered form [u̠] to the more tense, rounded, lowered form [u̡]. The latter form appears following /o/ or /a/ in positions of weak stress in VV clusters, as in [hóu] to be rough (the sea), and [káu] to belong.

The lax allophone [u̠] also appears in positions of weak stress between successive stresses, either primary, or secondary or tertiary. Note the following examples:

[mahùhuhúu] /mahuhuhuhu/ to be pricked, [tú'u] /tu'u/ to stand, [kòhukóhu] /kohukohu/ to smoke, iterative, [kàlukúu] /kulukulu/ a small bluish-green dove, [tùmúu] /tumutumu/ to be buzzled, and [pàkupáku] /pakupaku/ dry, parched.

[u̠] also occurs before /ŋ/ in all positions of stress, as in [ʔòlúŋ] /ʔoluŋa/ above and [lùlúŋ] /luluŋa/ west.

[ə] occurs between identical consonants in positions of weak or tertiary stress before strong stress, as in [pàpúŋ] /pupuŋa/ bunch, cluster, [tùtú'u] /tutu'u/ to stand, plural,

[məmúhu] /mumuhu/ to buzz or hum, [ʔəʔúlu] /ʔuʔulu/ to roar, and [fəfúu] /fufuu/ to hide, to conceal. [ ə ] does not appear, however, in positions of weak stress between identical consonants in four syllable forms, as in the following example: [mùmumúmu] /mumumumu/ to crowd close to the fire, iterative.

[ w ] is found in positions of weak stress following the front vowels / i e / in VV clusters, as in [lɛ́líwíiá] change it. This rule, however, does not apply when pause juncture or a consonant follows, as in [lɛ́líu|hòno+fòuʔò] change the way of, change its method. [ u ] appears in this position. Note also the following [tèutéw+áɛ] go ahead and prepare and [tèutéu+lévə] prepare at once.

[ w ] also occurs in positions of weak stress before all vowels except / u / when such vowels receive primary, secondary, or tertiary stress, as in [wèsíte] /uesite/ west, [wèsiliánə] /wesiliana/ Wesleyan, [witóu] /uitou/ widow, [háwáiʔi] /hauaiʔi/ Hawai'i, [wási] /yasi/ watch, clock, [wii] /uii/ an exclamation of disgust, and [wóo] /uoo/ to be crowded and noisy.

[ w ] also occurs in the environment V\_\_V in both stressed and weakly stressed positions. When stressed, its function resembles that of a vowel and when unstressed, its function resembles that of a consonant. In either event, it represents a glide from a high, back position of stress to a front, a low, front, or a low, back position of weak stress, as in [iʔówə] /iʔoua/ don't, negative prohibition, which is also pronounced [iʔówə]. Some speakers have both pronunciations in free variation. In the latter form [iʔówə], the [ w ]



functions like a consonant and the form has a stress pattern similar to such CVCV or VCV words before / l / or / # / as [+há?u|] /+ha?u|/ come and [+áko|] /+ako|/ to study. Other examples of stressed and weakly stressed [ w ] in a similar position are [kàukáwō] /kaukau/ strong, robust, which shows free variation with [kàukàwō] and [mà^lāwō] /malau/ countable, which shows free variation with [mà^lāwō]. In these positions, [ w ] is almost always stressed in careful speech, functioning as a vowel rather than as a consonant.

[ u ] occurs before / p t k ? f h m n # l / and following / k / or / ? /, as in [túku|fà^kàhólo|] /tuku|fakaholo|/ to hand down from one to another, [#?òku+ tú?u|kihe+ ] /#?oku+tu?u|kihe+ / (it) stands over towards, [#?òku+pèhéel] /#?oku+peheel / (he or she) says, [#?òku+kául] /#?oku+kau| / (he or she) belongs or it pertains, [#?òku+f`e`úŋá|] /#?oku+fe?uŋa| / (it) is sufficient, [Itúku|hò?o+] /Ituku|ho?o+ / stop your, imperative, [#?`oku+nàul] /#?oku+nau / they, plural, present tense, [#?òku+mà?olúŋá|] /#?oku+ma?olunja| / (it) is high or elevated, [#tətúku#] /#tutuku# / dismiss, imperative, [tú?u|kihe] /tu?u|kihe / stand over toward the, [+fèitú?u|kò?éni|] /+feitu?u|ko?eni| / this place, [fù?u+ tául] /fu?u+tau| / great or big war or fight, [fù?u+pùáká] /fu?u+puaka / big pig, [fù?u+?ápi?ápi] /fu?u+?api?api / very crowded, [fù?u+námu] /fu?u+namu / big mosquito, [fù?u+fà^kàlátá] /fu?u+fakalata / very pleasing or pleasant, [fù?u+mè málu] /fu?u+mamalu / very solemn, [fèitu?u|hihífo|] /feitu?u|hihifo| / west, western place, [tá?u|] /ta?u| / year, and [há?u#] /ha?u# / come.

Other environments in which [ u ] occurs are as follows: p\_\_f, p\_\_#, p\_\_l, t\_\_t, t\_\_k, t\_\_f, t\_\_l, and t\_\_#. In these environments / l / represents a pause juncture or a non-pause juncture preceding a voiceless consonant. Note the following examples: [tápu:l] /tapu:l/ forbidden, [tùpu+fài+tòtónu] /tupu+fai+totonu/ to grow up honest, [pòtu+tòkeláu] /potu+tokelau/ north, north place, [fítu+fítu:] /fitu+fitu:/ seventy-seven [mótu:] /motu:/ island, and [+ʔâlwátu:ki+tóngò#] /+ʔâluatu:ki+toŋa#/ go forth to Tonga.

[ u ] appears in all positions not mentioned for the other allophones of / u /.

/ u / also has allophones of extra consonantal length of all stops and / m /. See under the discussion of / p t k ʔ m / in Sections 3.1.1., 3.1.2, 3.1.3, 3.1.4, and 3.3.1 respectively. The extra consonantal length occurs in the environments described in the paragraphs referred to in rapid speech or when the amplitude or force of the utterance is greatly reduced.

3.4.3. The vowel / ē / has the allophones [ e ], [ ε ], [ ε> ], and [ e̞ ]. [ e ] is high and close. [ ε ] ranges from [ e̞ ] to open [ ε ] or approximately [ ε ]. [ ε> ] is centralized. [ e̞ ] represents breathing or aspiration of a quality resembling [ e ] or, in some cases, a consonantal release having partial voicing of a quality resembling [ e ], though somewhat centered because of being reduced in sonority and articulation. / e / has no allophone occurring as extra consonantal length.

[ ɛ ] occurs in stressed position, either primary or secondary, before nasals, as in [kòʔénō] /koʔena/ that, that's it, [mòhénō] /moheŋa/ bed, and [tòʔohémō] /toʔohema/ left (side). [ ɛ ] also occurs in stressed position, either primary, secondary, or tertiary before / ʔ k f s h a /, as in [hěʔe] /heʔe/ grasshopper, cricket, [ʔéke] /ʔeke/ to ask, inquire, [fàahéfō] /faahefa/ name of a village in western Tongatapu, [kéhe] /kehe/ different, [pàlofésō] /palofesa/ professor, and [péō] /pea/ name of a village in central Tongatapu. [ ɛ ] occurs in unstressed position following / a / as in [ʔàs] /ʔae/ goal marker, definite article, and in the environments s\_\_t, k\_\_t, and k\_\_p, as in [kéte] /kete/ stomach, [làkəpə] /lakepa/ name of a village in Tongatapu, and [sətuátō] /setuata/ steward.

[ ɛ > ] appears in unstressed or tertiary stressed position between identical consonants in syllables immediately preceding a primarily or secondarily stressed syllable, as in [lè>léi] /lelei/ good and [fè>féle] /fefele/ littered or strewn about.

[ ɛ̥ ] occurs in unstressed positions following voiceless consonants and before pause juncture, as in [máte#] /mate#/die and [áke#] /ake#/to revive. [ ɛ̥ ] also occurs in unstressed positions following a voiceless consonant and before a voiceless fricative / f s h /, as in [mápe+sái] /mape+sai/ good map, [həhəŋi] /heheŋi/ wild, untamed, [fəfəkō] /fefeka/ hard, tough, and [pəsəti] /peseti/ per cent.

[ e ] occurs in all positions not listed above for the allophones of / a /. These environments include the following:

\_\_l, \_\_v,  $\acute{V}$ \_\_,  $\grave{V}$ \_\_, \_\_t, \_\_p, and in weakly stressed position following a consonant except voiceless consonants before pause juncture and except the environments a\_\_, k\_\_t and k\_\_p listed previously for [ɛ]. Note the following examples: [máte] /mate/ to die, [léle] /lele/ to run, [lévâ] /leva/ immediately, [kóe] /koe/ you (singular), [tètúe] /tutue/ thin, [màalie] /maalie/ interesting, [pépe] /pepe/ butterfly, and [tètetété] /tetetete/ to tremble, iterative.

3.4.4. /o/ has the allophones [o], [o<sup>◀</sup>], [o<sup>◁</sup>], and [o<sup>◊</sup>]. [o] varies from the regular close position of [o] to a raised position [o<sup>^</sup>]. The centered allophone [o<sup>◀</sup>] may be centered almost as much as [ʌ] while still retaining slight [o] quality. [o<sup>◁</sup>] is the lowered variety of /o/, and [o<sup>◊</sup>] occurs as heavy aspiration with [o] quality and as a slightly voiced consonantal release having slight rounding.

The centered allophone [o<sup>◀</sup>] shows the greatest centering in positions of weak or tertiary stress between identical consonants or between voiceless stops immediately preceding a strongly stressed syllable, as in [tò<sup>◀</sup>tónu] /totonu/ right, correct, [ko<sup>◀</sup>tóá] /kotoa/ all, everything, [ko<sup>◀</sup>póá] /kopoa/ cat-fish, [to<sup>◀</sup>kóto] /tokoto/ to lie down, [po<sup>◀</sup>kófu] /pokofu/ a kind of fish, [ʔo<sup>◀</sup>ʔóná] /ʔoʔona/ his (her) own, [mo<sup>◀</sup>móná] /momona/ fat (of shell-fish), [no<sup>◀</sup>nóʔo] /nonoʔo/ to bind, and [lo<sup>◀</sup>lóʔi] /loloʔi/ to cook in coconut oil.

The centered allophone [o<sup>◁</sup>] shows partial centering in positions of weak stress except in vowel clusters, as in the following examples: [póto<sup>◁</sup>] /poto/ wise, skilled, [maʔo<sup>◁</sup>po<sup>◁</sup>ʔo<sup>◁</sup>]

/maʔopoʔopo/ to be packed or fitted closely together, and [mòko<sið] /mokosia/ to feel cold.

A raised variety [ o^ ] appears following / u / in vowel clusters, as in [kùo^] /kuo/ perfect tense and [lúo^] /luo/ hole. This same raised variety [ o^ ] appears in the environment \_\_ʔu in positions of weak or tertiary stress immediately preceding a strongly stressed syllable, as in [mo^ʔúi] to live.

The lowered allophone [ ɔ ] is found before stressed [ a ] in positions of weak or tertiary stress, as in [kɔ́aa] interrogative particle, and in positions of weak stress following strongly stressed [ a ], as in [hà<hàóð] /haohaoha/ to be perfect and [ká<] /ka/ name of a volcano.

The allophone [ ɔ̣ ] appears before pause juncture and following voiceless fricatives or stops, as in [maʔòpo<ʔópo#] /maʔopoʔopo#/ to be packed in snuggly, [tóho#] /toho#/ to drag, and [ófo#] /ofo#/ to be surprised.

/ o / has no allophones involving extra consonantal length as the mid vowels do not participate in having such allophones.

The close allophone [ o ] appears in all other positions that have not been mentioned for the other allophones of / o /. These include, mainly, positions of strong stress, either secondary or primary, and positions contiguous to front vowels, as in [sío] /sio/ to see, [lówà] /lova/ to race, and [kòh<kóh<] /kohikohi/ to scratch or mark, iterative.

3.4.5. The vowel / a / has the allophones [ a ] [ a^ ], [ ə ], and [ ạ ]. [ a ] is low, back and [ a^ ] is raised to

a position between [ a ] and [ ə ]. [ ə ] is centralized, and [ ḁ ] is a voiceless vowel consisting of heavy aspiration of [ ə ] quality. [ a ] also appears as extra consonantal length of the back consonants [ k ] and / ŋ /. See Sections 3.1.3. and 3.3.3. for a discussion of these allophones of / a /.

The central allophone [ ə ] is found in all positions of weak stress, as in the following examples: [fàtəfátə] /fatafata/ breast, [móə] /moa/ chicken, fowl, and [məmátə] /mamata/ to look, see.

The raised allophone [ a^ ] occurs before the back consonants / ŋ k / and following a front consonant in positions of tertiary stress and in the environment f\_\_ŋ in positions of primary or secondary stress, as in the following examples: [fà^kəhúu] /fakahuu/ to insert, cause to enter, [fà^ŋə] /faŋa/ plural (animals), [fá^ŋə] /faŋa/ beach or seashore, [mà^ŋálo] /maŋalo/ forgettable, and [tá^ŋəblóə] /taŋaloa/ name of a mythical Polynesian god. Stressed aa clusters in these positions, however, show the allophone [ a ] for each vowel position in the cluster.

The voiceless allophone [ ḁ ] occurs in unstressed positions between fricatives and glottal stop or fricatives and pause juncture, as in [fà^kəʔəfoʔəfoʔ] /fakaʔofoʔofo/ beautiful and [ʔəfaʔəŋə] /ʔəfaʔaŋa/ beloved one; in unstressed position or tertiarily stressed position between fricatives, as in [hàháu] /hahau/ dew, [hà+hóŋe] /hah+hóŋe/ a famine, [kíhə+siási] /hihə+siási/ to a church; and between fricatives and voiceless stops in positions of weak or tertiary

stress, as in [lha+pótu] /lha+potu/ a place, any place and [fekáu] /fekau/ to command.

[ a ] appears as a centralized, partially voiced release greatly reduced in sonority in positions of weak stress following / ? / as in [fá:lnótá?ə#] difficult to do. [ a ] also appears as a barely audible release with slight voicing in some of the environments listed and illustrated above, especially those before a nasal or other resonant.

3.5.0. A few general statements will now be made concerning the vowel allophones.

3.5.1. Only the high vowels / i / and / u / and the low vowel / a / have allophones appearing as extra consonantal length. Mid vowels do not share this feature.

3.5.2. The junctures / + / and / | /, except when / | / represents a pause, do not affect assimilation of phonemes nor the environments which affect the distribution of allophones. / | /, when not marking a pause juncture, merely marks a sudden break in the intonational contour of the utterance and the start of a new phrase contour.

3.5.3. Voiceless vowel allophones range from aspiration of vowel-like quality with no voicing to such aspiration with slight voicing coupled with roughness or turbulence. For example, [he] may appear as aspiration having the quality of [ e ] without voicing or with slight roughness coupled with slight voice background. Voiceless vowel allophones, following / ? / represent consonantal release of greatly reduced sonority and having slight voicing, as in [tá?e] without, negative.

The same type of consonantal release may follow any voiceless stop. However, such releases following / p t / tend more to complete voicelessness or aspiration. Some vowel allophones appearing before nasals or stops sometimes show slight voicing.



## CHAPTER. II

## MORPHEMICS AND MORPHOPHONEMICS

4.1. Tongan roots range from monosyllabic roots of the shape V or CV, as in e definite article, -o to go, -ku to grasp, seize, -u to be sheltered, and ka but, if, to roots of as many as four syllables: maalohi to be strong, maalie to be interesting or pleasing, and koomiti committee.

4.2. Roots may be divided into declinable and undeclinable roots. The former consist of nouns and verbs; the latter consist of particles.

Declinable roots participate in reduplication or affixation or both. Both declinable and undeclinable roots participate in compounding although not all roots of either class enter into compound forms.

4.3. By far the most common type of root is disyllabic; trisyllabic roots are the next most common. Four-syllable roots are the third most common with monosyllabic roots being the least common. In fact, monosyllabic roots are found very infrequently. Many of the disyllabic and trisyllabic forms occurring in Tongan utterances are roots, as in the utterance #na'e+há'u,|fa:| mei+tópa# he came from Tonga which consists entirely of disyllabic roots: na'e past tense, ha'u to come, mei from and topa Tonga.

4.4. Reduplication may involve the reduplication of a disyllabic root, symbolized P-R, i.e. penultimate and ulti-

mate syllables reduplicated, as in efuefu dust, ashes (from efu dust), uiui to call, iterative (from ui to call) and nofonofu to stay, dwell, durative (from nofo to stay, reside, dwell) or the reduplication of a part of such a root and a preceding morpheme, symbolized -PR, i.e. penultimate and antepenultimate syllables reduplicated, as in ꞑauꞑauꞑe to move or shift position, moderative (the prefix ꞑa- imperfective and first syllable of ue to move or shift are reduplicated and constitute the reduplicative) and in mahimahino to understand, moderative (the prefix ma- potential, non-terminative aspect<sup>1</sup> and the first syllable of the bound root -hino to perceive are reduplicated and constitute the reduplicative). Existing alongside the latter two forms are the related derivative forms ꞑaueue to move or shift position, iterative and mahinohino to understand or be understood, durative, both of which involve P-R reduplication of the disyllabic roots, i.e. penultimate and ultimate syllables. Reduplication of a part of the root or penultimate syllable plus a preceding morpheme or antepenultimate syllable does not occur very frequently in Tongan, as reduplication usually does not involve breaks in morpheme boundaries. Quite often a third type of reduplication is observed: that of reduplication of a morpheme preceding the penultimate or first syllable of the root but the root does not participate in the reduplication. Note fakata?eta?etui

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<sup>1</sup>Non-terminative is emphatic passive, emphasizing action by an actor. In regard to possession, the non-terminative aspect signifies dominant possession.

to doubt, to be dubious, durative (only the disyllabic prefix taʔe negative, which precedes the root tui to believe, is reduplicated, and not the root or the causative prefix faka-).

4.5. Reduplication of roots or stems is of four types: reduplication of the penultimate or peak syllable of the root or stem here in after to be called the peak syllable, and symbolized as PR, i.e., peak reduplication, as in tutuʔu to stand (distributive) (from tuʔu to stand; reduplication of the peak and post-peak or ultimate syllable of the root or stem, symbolized as P-R, i.e., peak-post peak reduplication, as in akoako to study or practice (iterative) (from ako to study); reduplication of the pre-peak syllable or syllables together with the peak syllable, symbolized as -PR, i.e., pre-peak plus peak syllable, as in molumoluu to become somewhat soft (moderative or diminutive aspect) (from moluu to be soft); and pre-peak syllable or syllables only, symbolized as AR, i.e., antepenult reduplication, as in vaavaaofi to be near together (comitative or non-singular) (from vaaofi to be near together: vaa- to be spaced + oafi to be near). The latter type, that of pre-peak syllable or syllables only being reduplicated (AR), appears only in connection with complex or multi-morphemed stems, never with roots, and usually involves the reduplication of a prefix or other morpheme in the pre stress span since only four- and six-syllable forms or longer are reduplicated in this way.

4.6. In all analysis of reduplication presented in this paper, it should be noted that the reduplicative or reduplicated

element is always considered as being prefixed to the root, never suffixed. This analysis is used in order to simplify the description of reduplication and because, when there is a difference between the variant forms of root, the reduplicative and the same morpheme used as a free form, the difference is nearly always between the part that is prefixed (reduplicative) and the free form rather than between the final part (root) and the free form. For example, in the form kulokula to be red the difference is between the prefixed element (reduplicative) kulo- and the free form kula to blush, rather than between the final element (root) -kula and the free form, both of which have identical phonemic form.

5.1.0. Reduplication of the peak syllable occurs in monosyllabic,<sup>2</sup> disyllabic and trisyllabic roots. No reduplication of this type has been observed in complex or multi-morphemed stems.

5.1.1. Monosyllabic roots show only two patterns of reduplication of the peak syllable considered from the standpoint of canonical shape: V becomes VV, as with oo to go (dual-plural) (from -o bound root, to go) and CV becomes CVCV, as with kuku to grasp, seize, hold on (from -ku bound root, to grasp). All reduplication of monosyllabic roots that has been observed involves reduplication of bound roots. No reduplication of free V or CV roots has been observed.

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<sup>2</sup>Monosyllabic roots are considered as having only a peak syllable.

5.1.2. Disyllabic roots exhibiting reduplication of the peak or penultimate syllable only (PR) show the patterns CVCV becomes CVCVCV, as in tutu?u to stand (comitative, dual-plural) (from tu?u to stand); and VCV becomes VVCV, as in aafu to send out a very fine spray or mist (intensive) (from afu to send out fine spray or to sprinkle as rain).

5.1.3. Trisyllabic roots which show reduplication of the peak or penultimate syllable (PR) all involve internal reduplication, as in ?aafifio to see, know, live, dwell (regal, dual-plural) (from ?afio to see, know, live, dwell, regal). Only two other examples of this type of reduplication have been found in the present study: peekikia to die (honorific, dual-plural) from pekia to die (singular) and maatutu?a to be old (dual-plural) from motu?a to be old (singular).

5.2.0. Reduplication of the peak syllable and post-peak or final syllable occurs in disyllabic and trisyllabic roots only. With disyllabic roots the entire form is reduplicated, as with lahi to be great or much (lahilahi to be moderately great or much), hau to enter (huhuu to enter at various places), and -ao to bind around (aoao to bind round and round, continuative or iterative). The above examples exhibit the following patterns of canonical forms: CVCV becomes CVCVCVCV, CVV becomes CVVCVV, and VV becomes VVVV.

5.2.1. Disyllabic roots may enter into combination with prefixes to form trisyllabic stems from which reduplicated forms result, exhibiting internal reduplication when the peak and post-peak syllables are reduplicated. For example, alea

to discuss (aleelea to discuss, continuative), which has the reduplicative lee- infix between the verbal derivative prefix a- and the root lea to speak. Other examples of similar internal reduplication are as follows: gaue to move or shift position (gaueue to move or shift position, continuative or iterative). ma'opo to be fitted or packed closely together (ma'opo'opo to be fitted or packed closely together, to be in order, multiplicative), ma'ahi to go or come (ma'ahi'ahi to go or come, iterative), ma'efu to begin to dawn (ma'efu'efu to just begin to dawn, moderative), and mavahe to be separate or independent (mavahevahe to be separate, independent, multiplicative).

5.2.2. Only three- and five-syllable roots and stems have been observed exhibiting reduplication of the peak and pre-peak syllables. Examples are as follows: toafa desert, uncultivated land (tootoafa to have areas of uncultivated land), fo'ou to be new (fo'ofou to be somewhat new), vaha'a space between (vahavaha'a intervening spaces), fokihi to turn over or around (fokifokihi to turn over or around, continuative), gaue to move or shift position (gaugaue to move or shift position, continuative), tuai to be slow or delayed (tuotuai to be slow or delayed, moderative), fokai chameleon (fokofokai to be inconsistent in one's opinions or convictions), kamata to begin, start (kamakamata to barely or just begin), katoa to be all or complete (katokatoa to be all, to be complete, intensive), mamio to be twisted, to wriggle out (mamimamio to be somewhat twisted, to be inclined to wriggle out), mama'o to be distant

(mamamama<sup>o</sup> to be somewhat distant), mahaki to be sick or ill (mahamahaki to be sickly or chronically ill), mahalo to suppose, to suspect mahamahalo to be suspicious, to suppose (moderative), mahino to understand, to be plain or clear mahimahino to be clear or understood (moderative), and fita<sup>a</sup> to be forceful, savage, ruthless fitefita<sup>a</sup> to labor or toil.

5.3.0. Other forms exhibit reduplication of only the pre-peak syllable or syllables. However, only four- and six-syllable stems are involved in this type of reduplication of pre-peak syllables. These stems usually consist of two or more morphemes, often a prefix or suffix or both or of two morphemes forming a compound. Note the following examples: kulukia to be strained (kulu to strain + k stem formative + i transitivizing verbal suffix + a passive particle) and kulukulukia to be strained or to strain oneself (continuative or iterative); foliaki to lead around (foli to go around + aki transitive, derivational) and folifoliaki to lead or show a person around (continuative or iterative); vaaofi to be near or close together (dual) (vaa space + ofi to be near) and vaavaaofi to be near together (plural); and holomui to go backwards or retrogress (holo to go or pass along in succession + mui back, the rear) and holoholomui to go backwards or retrogress (iterative or continuative).

5.4.0. Usually affixes are not included in the reduplication; that is to say, the reduplicated element usually does not include an affix or any part of one. For example, the prefix ma- to be in condition of having received action is not

included in the reduplicative that is added to the root vahe to divide when mavahevahe to be separate or independent (plural) is formed by reduplication from mavahe to be separate or independent. The reduplication occurs in the nucleus of the word and the prefix is added outside of the nucleus.

5.4.1. However, occasionally variant forms of reduplicated words are found in which the reduplicative is formed from part of the root and a prefix. Note the variant forms mahinohino and mahinahino to be understood to a certain extent, to begin to be understood and gaugaeue to move or shift position (repetitive or continuative) with its variant form gaueue.

In mahinohino the stem is reduplicated and the prefix ma- added outside the nucleus; in mahinahino the reduplicative mahi- includes the prefix ma- and the first syllable of the root hino to understand. In gaueue the root ue to move is reduplicated and ga-, an allomorphic form of ma-, is added outside of the nucleus; in gaugaeue the reduplicative gau- includes the prefixal form ga- potential and the first syllable of the root.

5.4.2. One example has been observed in the present study of a suffix being included in a reduplicative. Note feke?ike?i to quarrel, iterative or multiplicative from feke?i to quarrel, reciprocal (ke to quarrel, root, + fe- non-singular, reciprocal, + ? derivational suffix + i transitivizing suffix).

5.5.1. Occasionally variant reduplicated forms have been found which show a semantic contrast. For example, both maniomio to be twisted in a number of places and manimamio to



be inclined to wriggle out of one's duty, to be inclined to be somewhat twisted (moderative) are formed from the root mi to twist or bend; the former has a nucleus of reduplicative plus root (miomio) to which the prefix is added, whereas the latter has a reduplicative composed of the prefix ma- and the first syllable of the root mi. The stem to which the reduplicative is added contains the prefix ma- and root mi.

5.5.2. In all instances where the reduplicative includes a prefix and the first syllable of the root, the stem for the reduplication consists of the same prefix plus the root, as in mamimamio, which includes the root mi and prefix ma-. The reduplicative, as has been explained, includes the prefix and first syllable of the root, and the stem to which the reduplicative is added includes the prefix and root. mahimahino (prefix ma- and root hino) and mauauae (prefixal form ma- and root ue) exhibit a similar pattern of formation.

In all examples of reduplication observed, except those which have just been cited, reduplication does not disturb morpheme boundaries. Usually the boundaries of reduplicative elements coincide with those of morphemes.

5.6.0. Sometimes two layers of reduplication are observable in reduplicated forms. However, examples of this are not very numerous. Only a certain number of forms having CV roots, one form having a V root, and one having a CVV root have been found in the present study. All of the CV roots and the V root are bound. For example, the bound root -o to go is found in the reduplicated form oo to go (non-singular), which also is reduplicated to form oooo to go (dual-plural, iterative or

continuative). The free form tea to be white or whitish is the root of the reduplicated form teetea to have the appearance of an albino or to be pale looking, and the latter is also reduplicated to form teteteetea, the moderative form of teetea. The bound CV roots are as follows: -tu to kindle a light or set fire to, tutu to kindle or light a fire, to set fire to, and tutututu to light or kindle a fire (iterative or continuative); -ka to climb, kaka to climb, and kakakaka to climb (continuative); -lu to shake, lulu to shake or quiver, and lulululu to shake (iterative); -ta to shovel or scoop, tata to shovel or scoop up, and tatatata to keep on shoveling or scooping up; -lo to press, lolo to press down, to suppress, and lolololo to press down (iterative or continuative); -ku to grasp, kuku to seize or grasp, to hold, and kukukuku to grasp or take hold of (iterative or continuative); and -hu to enter, huhu to go in, to enter, to pierce, and huhuhuhu to eat with a fork (i.e., to jab repeatedly with a fork), to jab repeatedly.

5.7.0. Various types of phonemic changes and alternations are observed in reduplicated forms.

5.7.1. CVCV reduplicated forms formed from CV bound roots, as -tu to light or kindle a fire, -ka to climb, -lu to shake, -ta to shovel or scoop, -lo to press, -ku to grasp, and -hu to enter each have variant bound forms of the shape CVV from which the second consonant C of the CV form has been lost in affixation. For example, tutu to light or kindle a fire and tuu-, bound form, as in tuumaama time when lamps are lit; tu?u to

stand and tuu-, bound form, as in tuu?uta to land or go ashore (i. e., to stand on shore or land); kaka to climb and kaa-, bound form, as in kaasia to climb, transitive, to climb up; tata to scoop up or shovel and taa-, bound form, as in taapata to scoop up white sand or coarse gravel for a grave; lolo to press down and loo-, bound form, as in loomia to suppress or quell; kuku to hold on to, to grasp or seize and kuu-, bound form, as in kuunima to clasp the hands; and huhu to enter or go in, to sting or pierce and huu, bound or free form, as in huufia to enter or dedicate (a building). Two of these CVV forms may appear as free forms: huu to enter and taa to scoop or shovel. Note that taapata referred to above is in free variation with taapata. Before major juncture occurring at the end of a contour span, huu is always a free form.

5.7.1. The foregoing forms follow the general rule that voiceless C between identical VV is lost when CVCV reduplicated forms are used as bound forms, as in the examples just cited. Such forms as fihi to be entangled as compared with fii to plait or braid and lisi to throw at or cast at as compared with lii to throw or cast do not represent examples of the rule as here stated as the CVV forms, though related, have cognate, not identical meanings. Moreover, the CVCV forms are not reduplicated forms composed of reduplication of CV roots as the examples cited in the previous paragraph are.<sup>3</sup>

5.7.2. Certain vowel losses are observed in connection with reduplication. Roots terminating in double identical

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<sup>3</sup> It may be possible to set up a rule that fricatives are lost from between identical vowels when CVCV forms become bound.

vowels have a reduplicative form which has a single vowel in the reduplicative in place of the double vowel cluster as in the root, as in pehepehee to be thus, continuative or iterative. The root pehee to be thus, it will be noted, has a double vowel cluster / ee / which contrasts with / e / in the reduplicative pehe-. Other examples of this sort of alternation are as follows: matee exactly and matematee exactly, plural or multiplicative; kahii to rasp and kahikahii to rasp, iterative; hagee to be like or resemble and hagehagee to be somewhat like or to resemble (moderative); maluu to be calm and malumaluu to be somewhat calm; moluu to be soft and molumoluu to be somewhat soft; and hinaa to be grey or white (of hair) and hinehinaa to be going grey (hair).

5.7.3. Internal reduplication of the peak syllable is, in all cases, accompanied by automatic doubling of the initial vowel of the stem, as in ʔaafifio to see, to know, to live (non-singular, regal), which is formed from the stem or root ʔafio; in peekikia to die (non-singular, honorific), which is formed from the stem or root pekia; and in maatutuʔa to be old (non-singular), which is formed from the stem or root motuʔa. Substitution of / aa / for / oo / appears in the latter form, but it has not been possible to demonstrate that such substitution is automatic. The doubling of the vowel, however, is a result of the syllable comprising the reduplicative receiving tertiary stress as well as the preceding syllable. Two successive tertiary stresses cannot precede a primary or secondary stress. Thus, the extra vowel is added to maintain the alternation of

stress.

5.7.4. Two other examples of internal reduplication involving doubling of the preceding vowel have also been found in the present study: mahe'a to be audible and maahehe'a to be audible (non-singular); mahei to be aslant or askew and maahehei to be not quite right.

5.8.1. Regressive, non-contiguous vowel assimilation is noted in reduplication of disyllabic roots.<sup>4</sup> In all such assimilation, the low vowel / a / is assimilated to the front central vowel / e / in the second vowel position of the root when the first vowel of the root is a front vowel, and to the back, central vowel / o / when the first vowel of the root is a back vowel. In some instances, the assimilation of / a / to / e / has been noted in the first vowel position of the root when the second vowel is the front vowel / e /. Note tejetane to be sick (honorific) and tejetega to be lumpy. In the first example the root is the bound form -tane to be sick, and the alternation is in the first vowel position with the / e / of the syllable -ne assimilating the preceding / a / to / e /. In the second example the root is the free form tega a seed or lump, and the alternation occurs in the second vowel position with the / e / of the first syllable of the root assimilating the / a / of the final syllable of the reduplicative to / e /.

5.8.2. Thus, in reduplicatives, the combinations

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<sup>4</sup> The root of a reduplicated form always follows the reduplicative. Thus, in the form mafofoa to be broken to bits, the root is foa to break and the reduplicative is foo-. ma- is the potential verbal prefix.

/ e + a / and / o + a / do not occur in the two syllables of the reduplicative. However, / a + e / occurs in all except a very few instances such as teŋetaŋe previously cited, where / e + e / occurs. Note such examples of / a + e / as maemae to wither, continuative, vavevave to be moderately fast or rapid, valevale to be like a little child, a little child, matemate to die one by one, and hanehane to be somewhat like.

5.8.3. The following are examples of the assimilation of / a / to / e / in the second vowel position of disyllabic roots: ( i + a assimilated to i + e ) lieliaki to case aside, continuative, fiefia to be happy, to rejoice; ( e + a assimilated to e + e ) ʔeeleʔela to sit or walk with the face turned upwards, kehekeha to be yellow or yellowish; ( u + a assimilated to u + o ) muʔomuʔa to precede or go first, uoua sinew, tendon, muscle, fuofua first of all; and ( o + a assimilated to o + o ) polopola a coconut leaf basket and folofola to speak, regal.

Additional examples are as follows: (disyllabic roots having e + a) hela to be tired and helehela to be tiring or getting tired; vela to be hot or burn and velevela to be fairly hot; lea to speak, leeleea to speak, continuative or iterative; eŋa to be yellow, eŋeeŋa to be dark yellow (intensive); ʔeva to go about for pleasure, ʔeveʔeva to spend the time visiting about for pleasure, to take a holiday or vacation; (disyllabic roots having the vowels i + a) kila to be shaven or clipped, kilekila to be shaven or clipped in various places; fitaʔa to be aggressive or determined, fitefitaʔa to

labor or toil; hina to be white or grey, hinehina to be white; hiva to sing, hivehiva to sing, continuative or iterative; (disyllabic roots having the vowels u + a) kula to blush, kulokula to be red; uŋa to seek or solicit, uŋouŋa to solicit, iterative; ʔuha to rain, ʔuhoʔuha to be rainy, to rain (repetitive); uka to be sticky, ukouka to be sticky or glutinous; and (disyllabic roots having the vowels o + a) loka to be rough (the sea), lokoloka to be rough, continuative or iterative; koka stain for dyeing tapa cloth, kokokoka to be spattered with tapa cloth stain; koŋa part, koŋokoŋa to be in parts or sections; ʔofa to love, to have love, the stem ʔofoʔofa in feʔofoʔofani to be on friendly terms one with the other; loa to be long in length, looloa to be long, multiplicative; and hola to run away, to flee, holohola to be continually running away, repetitive.

6.0. With regard to affixation, only prefixation and suffixation have been observed. Such internal changes in roots as that appearing in ʔafio to see, live, know, regal, singular and the reduplicated form ʔaafifio to see, live, know, regal, non-singular are treated as instances of the reduplicative operator which reduplicates the penultimate syllable. See Section 5.1.3. above.

6.1.0. Tongan has various series of suffixes which show variation of their phonemic shapes, as for example the transi-tivizing suffixes -i, -fi, -si, -ni, -hi, -mi, -ki, -ŋi, and -ʔi. It will be noted that every consonant except t and p and that also zero occur together with -i in the above series. Such variation cannot, however, be treated as **morphophonemic**

variation either automatically or non-automatically determined, as minimal pairs can be found demonstrating semantic contrasts between suffixes exhibiting the different consonants and zero. For example, note the contrast in meaning between alafi to reach out for and seize and alasi to handle, both formed from the root ala to touch with the transitivizing suffixes -fi and -si. The existence of a large number of such contrasting forms together with the need for an analysis which will reveal the peculiar nature of the structure of Tongan morphology has led the writer to adopt the interpretation that such suffixes are not composed of one morpheme but two, a derivational suffix consisting of the consonant and another morpheme having the basic meaning of the total form. Thus, -si does not consist of the transitivizing morpheme alone but of a derivational suffix plus the transitivizing morpheme -i.

6.1.6. The need for an analysis of affix forms that will simplify description in this way is more apparent when the wide variety of affixal forms exhibiting a similar variation and pattern is noted. Not only is such a variation of consonants seen with regard to the transitivizing suffixal forms already referred to but also in the following affixes: -ia, -fia, -mia, -sia, -ʔia, -hia, -kia, and -ɲia, all transitive and evidencing the terminative aspect (i. e., emphasize action upon a goal rather than action by an actor); -aki, -faki, -vaki, -maki, -taki, -naki, -laki, -haki, -kaki, -ɲaki, and -ʔaki, all transitive, instrumentive, non-terminative (i. e., emphasizing action by an actor), indicating means of performing action of the root; -ekina,



-fekina, -mekina, -tekina, -nekina, -lekina, -hekina, -kekina, -ʔekina, and -ʔekina, all transitive, instrumentive, terminative aspect, indicating means of performing the action of the root; -aʔa, -faʔa, -maʔa, -taʔa, -naʔa, -laʔa, -haʔa, -kaʔa, -ʔaʔa, all noun-forming and indicating place of action or thing where action takes place or is performed, or cause of action; -fi, -si, -ni, -ki, and -ʔi, all meaning of and denoting the genitive of nouns; and -la, -ʔa, and -ʔa, all noun-forming, indicating an object associated with the action of the verb. In each case, the alternation of the initial consonant marks a semantic difference or a grammatical difference either in the meaning or the slot occupied by the form in the sentence. This is the basis for regarding such consonants as derivational affixes.

6.1.2. As has already been stated, a large number of contrastive pairs are found in Tongan supporting the assertion that the initial consonants of the affixal forms shown above are derivational affixes. Note the following examples of contrastive use of affixal forms with different initial consonants: with k and h, (motu to break off, intransitive + -kia) motukia to be disrupted or broken off and (motu +-hia) motuhia to be severed, to be broken off or separated from where attached; (huu to enter + kia) huukia to pierce, to penetrate (goal-oriented) and (huu to enter + fia) huufia to enter for the first time, to dedicate; with k and ʔ, (tufa to distribute + kaʔa) tufakaʔa allotment or portion and (tufa to distribute + ʔaʔa) tufaʔaʔa place or cause of distributing; with k and ∅,

(hifo to descend + kaki) hifokaki to go ashore with, to get off a boat with and (hifo to descend + aki) hifoaki to launch (a boat), to drag down into the water for the first time; with k and s, (fe- dual-plural + paatoo to make a loud banging noise + ki) fepaatooki to crash together with a loud noise and fall (as two airplanes) and (fe- dual-plural + paatoo + si) fepaatoosi to bang together as shutters in the wind; with k and t, (vili to continue + kaki) vilikaki to persist in desiring or asking for and (vili to continue + taki) vilitaki to continue doing until finished, to persist with; with f and h, (tau to suspend or carry + fia) taufia to grab and carry away rapidly, and (tau to suspend or carry + hia) tauhia to carry food to a chief in a ceremony (goal-oriented); with f and Ø, (too to arrive + faki) toofaki to have just started out on a journey and (too to arrive + aki) tooaki to be well underway, to have made a considerable start with; with f and s, (kaa- to climb, bound variant form of kaka + fia) kaafia to climb, transitive, terminative aspect and (kaa- to climb + sia) kaasia to climb over in such a way as to choke or injure; with f and ʔ, (sio to look or see + fi) siofi to look at steadily and (sio to look or see + ʔi) sioʔi to look at in a critical or offensive way; with f and m, (taʔo- to weight down, to press under a weight + fi) taʔofi to stop, to prevent or hinder and (taʔo- to weight down, to press under a weight + mi) taʔomi to crush by pressing down heavily upon; with f and n, (uku to dive under water, to submerge + faki) ukufaki to dive or swim underwater with, to carry under water and (uku to dive or submerge + naki) ukunaki to dive or

swim under water with (figuratively), to continue with under severe hardships, to be persevering.

With s and Ø, (laka to step or march + si) lakasi to pass by, to overtake and pass, to surpass and (laaka-, which includes laka + derivational morpheme of vowel doubling, + i) laakai to step over, to go by; with s and ʔ (heka to sit or ride + si) hekasi to sit on and injure, to harm by sitting on and (heka + ʔi) həkai to sit or ride on, to perch on; with t and ʔ, (noʔo to tie, to fasten + taŋa) noʔotaŋa waist or place of tying mats on ceremonial occasions and (noʔo to tie or fasten + ʔaŋa) noʔo-ʔaŋa place of tying or fastening anything; with t and Ø, (fe- non-singular, comitative + tuʔu to stand + taki) fetuʔutaki to adjoin or be adjacent, to be contiguous, reciprocal and (fe- non-singular, comitative + tuʔu to stand + aki) fetuʔuaki to get up and go somewhere else, iterative or multiplicative.

With h and n, (ʔefi to hold or carry under the arm + haŋa) ʔefihaŋa a bundle carried under the arm and (ʔefi to hold or carry under the arm + naŋa) ʔefinaŋa a bundle of mats wrapped in tapa cloth or a mat for carrying; with h and ʔ, (mili to rub + hi) milihi to handle unduly, to turn over and over in the hands and (mili to rub + ʔi) miliʔi to massage, to rub with the hands; with h and Ø, (fe- non-singular, comitative + ʔosi to terminate, to come to an end + haki) feʔosihaki to be finished or exhausted on both sides and (fe- non-singular, comitative + aki) feʔosiaki to finish together, reciprocal or multiplicative.

With ʔ and Ø, (ʔulu head or to be head + ʔaki) ʔuluʔaki to have or use as a head or central governing point and (ʔulu

head, or to be head + aki) ?uluaki to be first or at the head;  
 with ? and l, (tu?u to stand + ?aki) tu?u?aki to stand by means  
 of or with and ( tu?u to stand + laki) tu?ulaki to form in line,  
 to stand in position preparatory to marching; with ? and m,  
 (faka- causative verbal prefix + ?alo to sink out of sight or  
 disappear + ?i) fakaka?alo?i to cause to be forgotten, to forget,  
 transitive and (faka- causative + ?alo to sink out of sight +  
 mi) fakaka?alomi to cause to sink out of sight, to cause to pass  
 from view; with ? and n, (ako to study, to teach + naki) akonaki  
to teach religiously and (ako to study, to teach + ?aki) ako?aki  
to study by means of, to teach, transitive; with ? and ŋ, (faka-  
causative + ?ita to be angry + ?i) faka?ita?i to cause to be  
 angry, to make angry and (faka- causative + ?ita to be angry  
 + ŋi) faka?itaŋi to speak sharply to, to scold angrily.

With m and Ø, (fe- non-singular, comitative + tanu to bury  
 + maki) fetanumaki to bury above ground, to mound up or cover  
 with earth and (fe- non-singular, comitative + tanu to bury +  
 aki) fetanuaki to cover over with dirt, leaves or brush, non-  
 singular; with m and n, (fe- dual or plural + heehee to wander  
 or stray, iterative + maki) feheeheemaki (of the mind) to  
 wander this way and that and (fe- dual or plural + heehee to  
 stray or wander, continuative + naki) feheeheenaki to wander  
 about here and there, to change direction continuously; with  
 m and ŋ, (lulu to shake, intransitive + ŋaki) lulugaŋaki to shake  
 or jar, to purposely agitate and (lulu to shake, intransitive  
 + maki) lulumaki to shake things up as an earthquake.

With n and Ø, (tafu to light as a fire, to build up a fire + naki) tafunaki to kindle, to arouse, inspire and (tafu to light or kindle + aki) tafuaki to build up (a fire), to put more fuel on; with n and ꞑ, (fe- dual or plural + ?ita to be angry + naki) fe?itanaki to be out of sorts with each other, to have bad feelings toward each other and (fe- dual or plural + ?ita to be angry + ꞑaki) fe?itaꞑaki to be angry at one another.

With ꞑ and Ø, (luu- to shake, bound variant form of lulu to shake, intransitive + ꞑekina) luuꞑekina to be so shaken about as to be injured or harmed and (luu- to shake + ekina) luuekina to be shake by the wind or some force; with ꞑ and v, (kaila to shout, intransitive + ꞑaki) kailaꞑaki to shout, transitive and (kaila to shout + vaki) kailavaki to exclaim, to cry out with surprise or emotion, transitive; with ꞑ and f, (fe- dual or plural + ?ulu to be the head + ꞑaki) fe?uluꞑaki to lie with the heads toward each other and (fe- dual or plural + ?ulu to be the head + faki) fe?ulufaki to lie with the heads opposite or away from each other.

With l and Ø, (tu?u to stand + laki) tu?ulaki to stand in formation or in place and (tu?u to stand + aki) tu?uaki to stand with, to sell by traveling about; (fa?o to pack + laki) fa?olaki to store and (fa?o to pack in + aki) fa?oaki to pack into a box.

With v and Ø, (fe- dual or plural + kaila to shout, to cry out + vaki) fekailavaki to exclaim together concerning and (fe- dual or plural + kaila to shout + aki) fekailaaki

to shout from different directions; with v and ʔ, (fe- dual or plural + kaila to shout + vaki) fekailavaki to exclaim together concerning and (fe- dual or plural + kaila to shout + ʔaki) fekailaʔaki to shout back and forth to each other, reciprocal; and with v and ŋ, (kaila to shout + ŋaki) kailaŋaki to shout, transitive, active and (kaila to shout + vaki) kailavaki to exclaim about.

In addition to the above cited minimal pairs, a certain number of other pairs can be cited exhibiting combinations of consonants not shown in contrast by the above minimal pairs to be in contrast in analogous environments. It should be noted, however, that Ø and ʔ contrast with all consonants except p. Contrasts between consonants not demonstrated by minimal pairs but evidenced by contrast in analogous environments include the following: with s and n, (meheka to be jealous + nekina) mehekanekina to be jealous of, to make the object of jealousy, terminative aspect and (meheka to be jealous + sia) mehekasia to make the object of jealousy, multiplicative or continuative, terminative aspect; with k and m, (huu to enter + kia) huukia to pierce, to penetrate and (huu to enter + maki) huumaki to poke into, to jab a hole into, to insert by jabbing; with k and ŋ, (faka- causative + puli to disappear + ki) fakapuliki to cause to disappear, to hide, transitive and (fe- dual or plural + puli to disappear + ŋaki) fepuliŋaki to be hidden from view from each other, to be out of sight of each other; with ŋ and s, (luu- to shake, variant form of lulu to shake + ŋekina) luuŋekina to be badly shaken about and (luu- to shake + sia)

luusia to be buffeted about by the wind as a boat but to safely make it to harbor; with l and t, (tu'u to stand + laki) tu'ulaki to stand in position, to form in position in line or for marching or travelling and (fe- dual or plural + tu'u to stand + taki) fetu'utaki to be contiguous or adjacent to each other; and with m and s, (lulu to shake + maki) lulumaki to shake continuously as by an earthquake and (luu- to shake, a variant form of lulu to shake + sia) luusia to be buffeted about by the wind but to still make it to harbor. Each example of such contrast in analogous environments just cited involves use of a different consonant following the same root, except in the case of luu- and lulu, variant forms of to shake and preceding one of the suffixes normally preceded by such derivative consonants. In each case, it will be noted that there is a shift in the root or basic meaning of the form, a shift in meaning which is considered as added justification for considering the consonants as derivative affixes.

An alternative solution to this problem might be adopted, that of setting up free forms alternating with bound stems. For example, the occurrence of the free form lulu to shake, together with the forms luuekina to be badly shaken, luuekina to be shaken by the wind, luusia to be buffeted about in a storm, and lulumaki to shake continuously as by an earthquake, could be explained by saying that the morpheme lulu has various derived forms: lulum-, luuŋ-, luus-, and luu∅-. The added consonant would account for the shift in meaning of the root in each case. However, such an interpretation is not felt to

be as powerful as that of interpreting the consonants as derivational affixes. Such an interpretation, it is felt, brings out much more clearly the true structure of Tongan morphology. The relationship between series of related affixes is much more clearly shown, as in the case of -ia, -kia, -fia, -sia, -hia, -<sup>?</sup>ia, -mia, -nia, and -nia already referred to above in Section 6.1.1. Moreover, it is felt that to set up a large number of derivative forms each having a slightly different though related meaning for the various roots and stems, as would be necessary if the consonant were interpreted as being a part of a bound stem, would be unnecessarily complicated and difficult in trying to explain adequately the morphology of the language. Hence, the view is adopted in this paper that these consonants are derivative affixes.

6.1.3. Accordingly, the following derivational morphemes, all affixes, are set up: 51 -p, 52 -k, 53 -f, 54 -s with the allomorphs -s and -t, 55 -h, 56 -l, 57 -m, 58 -n, 59 -ŋ, 60 -v, 61 -∅, and 71 -<sup>?</sup>. The latter, 71 -<sup>?</sup>, is emphatic, whereas the other derivational affixes are non-emphatic. -<sup>?</sup> is assigned a number of a higher decade as it may occur not only in the same position as the other derivational affixes but also in positions farther out from the stem. Derivational affixes Numbers 51, 52, 53, 54, 55, 56, 57, 58, 59, and 61 have been observed in a position no higher or farther from the stem than the first suffix position following the stem, as in siofi to look steadily at (sio to look + 53 -f derivational + 81 -i transitivizer + 93 -∅ actor-oriented or non-terminative aspect, emphatic, active). By way of contrast, -<sup>?</sup>i (71 -<sup>?</sup> + 81 -i



transitivizer + 93 -∅ actor-oriented, emphatic, active, non-terminative aspect emphasizing action by an actor) has been observed as high as the fifth position following the stem, as in halaia<sup>?</sup>ia<sup>?</sup>i to regard as guilty, transitive, active, actor-oriented (hala to be wrong or in error + 61 -∅ derivational suffix + 81 -i transitivizer + 92 -a goal-oriented, terminative aspect emphasizing action performed upon a goal, emphatic + -<sup>?</sup>ia to regard as, to consider as + 71 -<sup>?</sup> derivational, emphatic + 81 -i transitivizer + 93 -∅ actor-oriented, non-terminative aspect).

6.2.0. In addition to the derivational affixes listed and described above and numbered 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, and 71, there are the following verbal suffixes which enter into combination with the derivational affixes to form complex suffixes attached to verbal roots. They are as follows: 81 -i transitivizer; 82 -aki, allomorphs -aki and -eki, transitivizing instrumentive suffix, with or by means of; 83 -<sup>?</sup>ia to consider as being, to regard as; 91 -ana cause, reason, place of doing, noun-forming; 92 -na, allomorphs -na and -a, goal-oriented, terminative aspect, emphatic; and 93 -∅ actor-oriented, non-terminative aspect, emphatic, active.

6.2.1. These suffixes listed above in Section 6.2.0. enter into combination with the derivational affixes listed in Section 6.1.3. to form the following complex suffixes which are attached to verbs: -i (61 -∅ + 81 -i + 93 -∅), tapui to forbid, to prohibit (root: tapu sacred); -ki (52 -k + 81 -i + 93 -∅) humuki to cause to stumble (root: humu to stumble);

-fi (53 -f + 81 -i + 93 -∅) siofi to stare at (sio to look or see); -si (54 -s + 81 -i + 93 -∅) kaipoosi to steal and eat at night or on the sly, transitive (kai to eat + poo night); -hi (55 -h + 81 -i + 93 -∅) ʔefihi to push or squeeze into a space between two things that are close together (ʔefi to be close together, to squeeze under the arms); -mi (57 -m + 81 -i + 93 -∅) lolomi to ouell, to suppress (lolo to push down); -ni (58 -n + 81 -i + 93 -∅) utoni to provide (a fish net) with floaters (uto floater for a fish net); -ŋi (59 -ŋ + 81 -i + 93 -∅) fakapooŋi to murder or slay (fakapoo to commit the act of murder or slaying: faka- causative + poo to catch a prey, to prey upon); and +ʔi (71 -ʔ + 81 -i + 93 -∅) taaʔi to hit or strike, to beat up, active, transitive (taa to hit or strike).

All of the above are transitive, active, actor emphatic or actor-oriented, non-terminative aspect.

-ia (61 -∅ + 81 -i + 92 -a) halaia to be guilty (hala to be in error, to be wrong); -kia (52 -k + 81 -i + 92 -a) mutukia to be cut short (mutu to be short); -fia (53 -f + 81 -i + 92 -a) fakahaofia to be saved, to save, to cause to be saved (fakahaofi to save, rescue, deliver: faka- causative + hao to escape + -fi transitive, derivational); -sia (54 -s + 81 -i + 92 -a) pikisia to get stuck, to be entangled or stuck (piki to adhere, to stick); -hia (55 -h + 81 -i + 92 -a) ʔevehia to be frequented (ʔeva to walk or go about for pleasure, ʔeve- is bound variant form); -mia (57 -m + 81 -i + 92 -a) tanumia to be buried underneath as by an avalanche (tanu to bury); -nia (58 -n + 81 -i + 92 -a) tuʔenia to take to heart, to feel deeply concerned about (tuʔa to think or feel); -ŋia (59 -ŋ + 81 -i + 92 -a) poogia to faint,

to go unconscious (-poo to black out as in popoꝯi to cause the eyes to be dazzled, to dazzle the eyes); and -ʔia (71 -ʔ + 81 -i + 92 -a) ueʔia to cause to move, to be moved or nudged (ueʔi to move, to disturb: ue- to move or snift position + ʔi transitive, active, actor-oriented, non-terminative). All of the foregoing complex suffixes terminating in 92 -a are transitive, passive, goal-oriented, terminative aspect and mean to be in the condition of having undergone or undergoing the action or having the condition assumed by the meaning of the root.

-aki (61 -∅ 82 -aki + 93 -∅) taapuaki to give a blessing, to bless, (tapu to be sacred or forbidden + vowel doubling derivational morpheme); -kaki (52 -k + 82 -aki + 93 -∅) punakaki to carry up into the air (the wind) (puna to fly); -faki (53 -f + 82 -aki + 93 -∅) haofaki to deliver (hao to escape); -taki (54 -s allomorph -t + 82 -aki + 93 -∅) hekataki to be on a person's back (of a boil or other such swelling) (heka to ride); -haki (55 -h + 82 -aki + 93 -∅) kauhaki to swim with, to carry while swimming (kau- to swim); -maki (57 -m + 82 -aki + 93 -∅) huumaki to pierce as a thorn in the foot, to penetrate (huu to enter); -naki (58 -n + 82 -aki + 93 -∅) akonaki to teach, to give religious or moral instruction (ako to teach); -ŋaki (59 -ŋ + 82 -aki + 93 -∅) toloŋaki to throw stones at, to pelt with missiles (tolo to throw); -laki (56 -l + 82 -aki + 93 -∅) tupulaki to flourish (tupu to grow); -vaki (60 -v + 82 -aki + 93 -∅) kailavaki to shout, transitive (kaila to shout); and -ʔaki (71 -ʔ + 82 -aki + 93 -∅) kalaŋaʔaki

to shout, to proclaim by shouting (kalaṅa to shout). All of the foregoing are transitive, instrumentive, actor-oriented or non-terminative aspect, emphatic passive.

-ekina (61 -∅ + 82 -aki allomorph -eki + 92 -na) taapuekina to cause to be blessed, to be blessed (tapu to be sacred + vowel doubling derivational morpheme); -kekina (52 -k + 82 -eki + 92 -na) silikekina to make haste with, to be made haste with or receive too hasty of treatment (silikaki to make haste with: sili- to make haste); -fekina (53 -f + 82 -eki + 92 -na) kalofekina to be saved or snatched from danger, to snatch or save from danger (kalofaki to rescue from danger: kalo to dodge); -tekina (54 -s allomorph -t + 82 -eki + 92 -na) kaatekina to endure or have patience with, to be endured (kaataki to have patience: kaa- to exercise control); -hekina (55 -h + 82 -eki + 92 -na) kauhekina to defend or support, to be supported or defended (kauhaki to take the side of or defend: kau to belong or participate); -lekina (56 -l + 82 -eki + 92 -na) tupulekina to flourish, to grow rapidly (tupu to grow); -mekina (57 -m + 82 -eki + 92 -na) ṅalomekina to sink out of sight, to be caused to be sunk out of sight (ṅalo to sink or pass out of sight or memory); -nekina (58 -n + 82 -eki + 92 -na) akonekina to be well taught, to teach well (akonaki to teach or give religious instruction: ako to teach or study); -ṅekina (59 -ṅ + 82 -eki + 92 -na) luuṅekina to be badly shaken (luuṅaki- to shake: luu- to shake); and -ʔekina (71 -ʔ + 82 -eki + 92 -na) kalaṅaʔekina to shout or announce by shouting, to be proclaimed by shouting (kalaṅaʔaki to shout or proclaim: kalaṅa to shout).

All of the foregoing forms ending in 92 -na are transitive, passive, instrumentive, goal-oriented or terminative aspect.

6.2.2. The -na and -a allomorphs of 92 -na goal-oriented or terminative aspect, emphatic morpheme alternate in a morphologically determined pattern, as can be seen from the examples cited in the preceding paragraph. -a occurs following 81 -i transitivizer and -na occurs following the 82 -aki allomorph -eki transitivizing or instrumentive suffix meaning with or by means of. The -a allomorph may also occur immediately following the stem, as in tekea to be pushed or shoved, to cause to be pushed or shoved (teke to push or shove + 92 -na allomorph -a goal-oriented or terminative aspect). In the position next to the stem -a contrasts with the transitive, actor-oriented or non-terminative aspect suffix -'i (71 -' + 81 -i + 93 -∅), as in huke'i to open up by lifting a corner or the edge, to turn back a corner or edge versus hukea to be lifted up, to cause to be lifted up or opened and in teke'i to push or shove versus tekea to be pushed or shoved or to cause to be pushed or shoved. 92 -na does not contrast in this position with any of the complex suffixes formed by a derivational morpheme plus 81 -i transitivizer, as -ŋi (59 -ŋ derivational suffix + 81 -i transitivizer) in fakapooŋi to murder, to slay (fakapoo to commit murder: faka- causative + poo to take a prey). But in some forms the -na allomorph of 92 -na has been observed following -ki (52 -k derivational suffix + 81 -i transitivizer), as in malakina to be trampled upon, to cause to be trampled upon (mala to tread or walk + 52 -k + 81 -i + 92 -na) and following -i (61 -∅ derivational suffix + 81 -i transitivizer + 92 -na

goal-oriented, terminative aspect), as in ʻahuina to be blackened by smoke, to cause to be blackened by smoke (?ahu smoke, to smoke or emit smoke + 61 -∅ + 81 -i + 92 -na).

The only alternation between allomorphic forms observed in the derivational affixes is that between the -s and -t allomorphs of 54 -s. As will be seen from examples which have been given above the -s allomorph occurs before 81 -i transitivizer and -t occurs before 82 -aki transitive, instrumentive and before 92 -aʻa cause, reason, place of doing, noun-forming suffix, as in hikitāʻa to disinter a body, to exhume a grave (hiki to lift + 54 -s allomorph -t + 91 -aʻa). An example of the complementary distribution of -s and -t is noted in hiikisia to be lifted up or proud (hiki to lift + vowel doubling derivational morpheme + 54 -s + 81 -i + 92 -a) and fehikitaki to move about from place to place (fe- comitative + hiki to lift + 54 -s allomorph -t + 82 -aki transitive, instrumentive).

7.1.0. vowel alternation is observed in Tongan in allomorphic forms of roots. certain roots have allomorphs involving the alternation of / a / alternating with / e /. The form having / e / in place of / a / appears only before the morphemes 81 -i verbal, transitivity suffix plus 92 -a transitive, passive verbal suffix together with the derivational suffixes 55 -h, 58 -n, 59 -ŋ, and 54 -s, as in the following examples: fola to spread and folehia to spread (terminative goal emphatic) or to be spread; taji to cry and teŋhia to cry over, to mourn, to cry about as a dead person (goal emphatic or terminative aspect); kona to be poison or poisonous and

konehia to be poisoned or drunken, which is in free variation with konahia to be poisoned or drunken; 'itaji to scold, to speak angrily to and 'itejia to scold, to be scolded (goal emphatic or terminative aspect; fua to carry and fuesia to carry (goal emphatic or terminative aspect; -puha to feel or be hot (cf. pupuha to feel or be hot) and puhejia to feel oppressed by heat and stuffiness; faka'utaji to imagine and faka'utejia to imagine, to be imagined (goal emphatic or terminative aspect); vela to burn, to be hot and velehia to be scorched or burnt; kina to be tired, to be disgusted and kinemia to be tired of, to be disgusted with; 'eva to go about for pleasure, to go on an excursion or holiday and 'evehia to be frequented by people on a holiday or excursion; meheka to be jealous and mehekesia to be jealous of, which also has the variant form mehekasia to be jealous of; tu'enia to take heart, to feel deeply concerned about and tu'a to hope or look forward, a fore form.

The alternation of / a / with / e / is also observed in the two allomorphs of the instrumentive, transitive verbal suffix -aki, which has the allomorphs -aki and -eki. -eki appears only when immediately followed by the -na allomorph of the impersonal, terminative aspect or goal emphatic suffix 92 -na, as evidenced in a comparison of akonaki'i to teach, to counsel or advise and akonekina to teach, to be taught or well educated; loomaki'i to inundate or flood and loomekina to be flooded or inundate or to flood (goal emphatic or terminative aspect). The allomorph -aki never appears before -na.

The vowel alternation of / a / with / e / is also observed in some stems and roots when the verbal suffix 94 -na intransitive, intensive, derivative, is added to the stem or root. -na has two allomorphs, -na and -ḡa which are both involved in the alternation, as indicated by the following examples: fai to do and feiḡa to try, to try for; kai to eat and keina to consume, devour; vela to be hot, to burn and veleḡa enthusiastically, with fire and enthusiasm, and teka to push and tekena to come up or out because of pressure underneath, to push out.

The alternation of / a / with / e / is also seen in certain roots or stems ending in -ai when the -a allomorph of 92 -na, impersonal, terminative aspect or goal-emphatic transitive verbal suffix is added, as in the following examples: fai to do, feia to do, to be done; ʔomai to bring, ʔomeia to bring, to be brought; and tokai to punch with the fist, tokeia to hit, to be hit, or get hit with a fist.

A few roots or stems also show the same alternation when the -a allomorph of 92 -na, the transitive, goal emphatic or terminative aspect verbal suffix, is added to -ʔi, transitive, actor emphatic, non-terminative aspect verbal suffix, as in taaʔi to hit, strike as compared with teeʔia to smite, to strike (by a supernatural power), to be smitten, or when 81 -i transitive, derivative verbal suffix and 92 -na terminative aspect are added to the root, as in huʔa juice or liquid, huʔeina to be damp or wet; ʔuha to rain, ʔuheina to get wet by the rain, to get rained on; ʔofa to love, ʔofeina to be beloved, to be a favorite; ʔita to be angry, ʔiteina to be



the object of anger; and afua to be clear or fine weather, afueina to have or to experience good weather.

7.1.1. In a few instances, certain stems or roots have been found with variant forms co-occurring with certain affixes. For example, ope to jut out, to hang down over the edge and the reduplicated continuative or iterative form opeope have the variant bound forms -upe and -upeupe, which appear only following the prefix taa- to be or to be doing: taaupe to hang down or dangle and taaupeupe to be dangling or hanging down, continuative. The vowel alternation of / o / with / u / is observed in this example of morphemically determined variation.

7.1.2. ʒʒ -ʔi genitive suffix has five allomorphs, ʔi, ki, fi, si, and ni, which appear between two nouns joined together when the first noun indicates that which is possessed and the second the possessor or that which the first belongs to, as mataʔipeni pen point (mata point, edge + ʔi of or possession + peni pen), luokipaka hole of a crab (luo hole + ki of + paka crab), matanikolo outskirts of town (mata edge + ni of + kolo town, village), kilisitahi bottom of the ocean (kili bottom or sediment, variant form of kele earth + si of + tahi ocean, sea), ʔaofinima palm of the hand (ʔao front side + fi of + nima hand), taʒataʔifonua native or person who really belongs to the country (taʒata man + ʔi of + fonua land or country). The particular allomorph of ʒʒ ʔi which appears with two given nouns is morphologically determined. In addition to the form matanikolo outskirts of town already cited above, ni has been observed in only one other form tuonimatani a sudden gust of wind (tuo pull, tug + ni of + mataʒi wind). ki has been ob-

served with muʔa front, earlier, former in muʔaki original, first, but this form is followed by / + / as in muʔaki+taŋata first man. ki has also been observed with luo hole followed by the name of some animal or insect, as in luoki+loo ant hill (luo hole + ki of + loo ant), but in no other environments or with no other forms. However, ʔi may appear in a large number of environments, including at least two in which the allomorph ki may appear: luokiloo ant hill, luoʔiloo ant hill and luokinata serpent hole, luoʔinata serpent hole. In such cases, ʔi and ki are in free variation.

7.1.3. Occasionally the derivational morpheme allomorph which consists of doubling of the first or last vowel of the root is also accompanied by non-significant vowel replacement, as in kaatoa to be all or complete. This form comes from the root or stem koto complete, absolute, and consists of the root koto + doubling of the initial vowel, derivational morpheme + 84 -a verbal adjective derivational suffix + replacement of oo by aa. The vowel replacement can be said to accompany the derivational morpheme allomorph of vowel doubling.

7.2.0. Syncope resulting in loss of vowels is noted in a number of environments and includes loss of vowels or consonants or of both vowels and consonants when syllables are lost. The most frequently lost consonants are / k, ʔ, h /. Loss of vowels will now be considered first.

7.2.1. Certain roots or stems ending in identical VV clusters lose one of the vowels of such clusters when the verbal suffix -ʔi (71 -ʔ + 81 -i) transitive, actor emphatic or non-terminative aspect or the same suffix ʔi plus 92 -a goal empha-

tic, terminative aspect, transitive, or when 95 -ʔia emphatic verbal suffix, exactly, just are added to the root or stem, as in pehee to be thus, peheʔi to do thus or so, to do in the indicated manner (71 -ʔ + 81 -i); monuu good luck or fortune, monuʔia to be blessed or fortunate, to have good luck (71 -ʔ + 81 -i + 92 -a goal emphatic, terminative aspect, transitive); fee when, ʔafee when, interrogative, future, ʔafeʔia just or exactly when, interrogative, future (95 -ʔia emphatic, exactly, just).

7.2.2. Some roots have free allomorphs of the canonical shape CVV and bound allomorphs of the shape CV. The VV cluster in the free form consists of identical vowels, one of which is lost from the bound CV allomorph. Note the following examples: too to fall, to- in fakatomala to repent (i. e., to cause evil or perdition to fall: faka- causative and mala evil, perdition); vaa to play, as in fakavaa to play or make sport, to be sportive, va-, bound stem as in vaʔiŋa to play, a game and in faiva to perform (i. e., to play or do) an item of entertainment; paa to strike against, to hit against, pa-, bound form as in paki to touch lightly and fepaki to collide together, to strike against each other (fe- non-singular, comitative + pa- to strike against + 52 -k + 81 -i); -huu to ask or inquire as seen in huhuu to inquire or ask, a reduplicated form, and -hu to ask or inquire as seen in fehuʔi to ask, to inquire, to ask a question (fe- non-singular, comitative + hu- to ask + 71 -ʔ + 81 -i); lii to throw or cast, -li to throw as in liaki to throw away, to reject (li- to throw + 61 ∅ + 82 aki); sii to throw, to cast (variant form of lii), si-

bound form as seen in siaki to reject, to throw away or cast aside (si- to throw or cast + 61 -∅ + 82 -aki); and puu to release air or gas, pu-, bound form, as seen in puhi to blow with the mouth, to spout as a whale (pu- to blow + 55 -h + 81 -i).

7.2.3. / ? / is often lost from the final syllable of roots or stems when / ? / plus vowel is added in suffixation. Note, for example, taumata'u to fish with a line and hook, which becomes taumatau-, a bound stem, when the transitive, actor emphatic suffix -'i (71 -? + 81 -i) is added: taumatau'i to fish for, to catch by fishing. However, loss of / ? / in such positions is not automatically determined by phonological environment as: taumata'u'i to fish for is in free variation with the former form taumatau'i. Other examples are: fehi'a to hate, fehia- as in fakafehia'i to cause to hate (faka- causative + fehia- to hate, bound form + 71 -? + 81 -i) and tono'i to commit adultery with, tonoi- to commit adultery with, bound form, as in fetonoi'aki to commit adultery with each other's husbands or wives (fe- non-singular, comitative + tono to commit adultery + 81 -i + 71 -? + 82 -aki). The genitive suffix ʒʒ -'i is also observed in connection with similar loss of / ? /, as in le'o voice and leo'i+fafa'u voice of a bell, sound of a bell (leo- bound form varying with le'o voice + ʒʒ -'i + fafa'u bell).

One example has been found in Tongan of loss of / ? / plus a following vowel in a position of weak stress between tertiary and primary stress when the following consonant is / f /. Note no'ofatu to tighten one's belt (no'o to tie + fatu stomach, honorific) and its variant form nofatu, with

which it is in free variation.

7.2.4. Some roots and stems show loss of the consonant / h / in variant allomorphic forms. Usually the allomorphic form which is bound shows the loss of the consonant. However, a few examples have been found in which both variant forms have been free, but the CVV form also appears bound in some instances.

Examples of such loss of / h / are as follows: fohe oar, foe- oar, as in foeluolua double oars for use individually by two persons and foefoelua to row and sail at the same time; vahe to divide, to separate, vae- as in vaeua to divide into two parts (ua two) and vae'i to pull apart a fish lengthwise; lohi to tell a lie, to deceive by lying, loi to lie, to tell lies (free form); vaha open space at sea, vaa- space, as in vaaofi to be near or close together and vavaa open space between earth and sky; tahi sea, ocean, salt or sea water, tai- salt water, as in taitai to be slightly salty or brackish, taiki to salt or to flavor with salt, and fakataitai to make salty or brackish; mohe to sleep, moe- to sleep as in moeaki to sleep at a place in readiness for work or a meeting next day, moekina to sleep at, impersonal, terminative aspect, and moemoepoo while sleeping at night, as in tee'ia+moemoepoo to slay while sleeping at night, to assassinate at night. Note that the forms moeaki and moekina have variant forms moheaki and moheekina in free variation.

7.2.5. The same alternation between a CVCV and a CVV root has also been observed in connection with the loss of the alveolar stop / t /, as in mate to die, to become dead and in mae to wither, to die (a plant), which is a free form.

7.2.6. There are also a number of  $C_1V_1C_1V_1$  stems consisting of reduplicated CV roots which have the form CVCV as free forms and CVV as bound forms. The second  $C_1$  is dropped, leaving  $C_1V_1V_1$ . Various consonants are observed as being lost in this way. Note the following examples : lulu to shake, luu-, as in luuekina and luuekina, variant forms meaning to be shaken or jostled about; tutu to set fire to or to light, tuu-, as in tuumaama to light a lamp or lamps and tuufale to set fire to houses (i.e., to commit arson); lolo to suppress or press down, loo- or lo- (variant form), as in loomia to quell, to suppress (impersonal, terminative aspect, goal emphatic), lomi to press down or suppress, and looloomia to quell (iterative or continuative, impersonal, goal emphatic); loto heart, to will or to consent, lootaki to urge, to exhort, to inspire heart or courage; tata to scoop or shovel up, taa- as in taanaki to gather up, to collect and taa'one'one to scoop up sand, which also appears as taa+'one'one; kuku to seize, grasp, kuu-, as in kuunima to clasp the hands together, kuuihu to grasp the nose, and kuumia to grasp, to be grasped (terminative aspect, goal emphatic); and tu'u to stand, tuu- as in tuu'uta to land, to go to shore.

7.2.7. Loss of vowels and consonants occurs in rapid speech in the forms 'oku present tense or progressive verbal aspect and na'a past tense. Note the examples : 'oku+ou I, present tense, which becomes kou or kuòu and na'àku I, past tense nà'u.

The prefix maaʔu- to have the characteristics of or to be has a variant form maa- which appears before stems beginning with ʔo-, as maaʔoluŋa to be high or elevated. The ʔu- is assimilated to ʔo- and lost before ʔo.

7.2.8. Metathesis is observed in connection with a few forms. niʔihi some, a few appears in some utterances as nihiʔi. faʔahi side or faction also appears in some utterances as fahaʔi. The same alternation is also observed in the variant forms faʔahitaʔu season or part of the year and fahaʔitaʔu. ʔa+ha of a and maʔa+ha for a sometimes appear as haʔa and mahaʔa respectively, as in lha+ŋahi+huulhaʔa+kakai+mahaʔa + siʔi + laumaalieʔ prayer of people (indefinite) for a poor spirit.

8.1.1. Pronominal roots and affixes also show morpho-phonemic alternation of forms. The pronominal roots, including their allomorphs, are as follows: 11 -ku, allomorphs -ku, -ou, -u, and au, first person, exclusive, singular, I; 12 -te, allomorphs -te, -to, and -ta, first person, inclusive, singular I or one (indefinite, first person); 13 -ke, allomorphs -ke, -ʔo, -oe, and -u, second person, singular, thou or you; 14 -ne, allomorphs -ne, -no, -na, and -a, third person, singular, he, she, it<sup>5</sup>; 15 -ma first person, non-singular<sup>6</sup>, exclusive, we; 16 -ta first person, non-singular, inclusive, we; 17 -mo second person, non-singular, you or ye; 18 -na third person, non-singular, they.

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<sup>5</sup>-ne is usually used to refer only to persons, but occasionally may be used to refer to things.

<sup>6</sup>Non-singular refers to the fact that the form is used as stem in forming dual or plural.

8.1.2. Minor morphemes which may be used as prefixes attached to pronominal roots or as free forms include the following: 21 he, allomorphs he, e, ho, o,  $\emptyset$ , definite article, non-emphatic; 22 ha, allomorphs ha and a, indefinite article; 23  $\text{?à}$ , allomorphs  $\text{?à}$ ,  $\text{?è}$ ,  $\text{?ò}$ ,  $\text{ò}$ ,  $\text{à}$ , actor-oriented, non-terminative aspect possessive morpheme, of; 24  $\text{?ò}$ , allomorphs  $\text{?ò}$ ,  $\text{ò}$ ,  $\text{?à}$ , and  $\text{à}$ , terminative aspect, goal-oriented possessive morpheme, of; 25  $\text{si?i}$ , allomorphs  $\text{si?i}$  and  $\text{si-}$ , diminutive; 26  $\text{mV-}$ <sup>7</sup> dativative morpheme, to or for; 27  $\text{hV-}$ <sup>8</sup> pronominal prefix; and 28  $\text{?V-}$ <sup>9</sup>, allomorphs  $\text{?V-}$  and  $\emptyset$ , adjectival verb prefix.

The minor morphemes which may be used as suffixes attached to pronominal roots or as bound forms are as follows: 31 -ua, allomorphs ua and  $-\emptyset$ , dual number; 32 tolu, allomorphs -tolu and -u, plural number.

At least one of the allomorphs of 31 or of 32 obligatorily co-occurs with 26  $\text{mV-}$ , 27  $\text{hV-}$ , and 28  $\text{?V-}$ .

8.2.0. The formation of the possessive pronominal forms, including the definite, indefinite, diminutive definite, and diminutive indefinite, will now be explained.

8.2.1. The definite, actor-oriented or non-terminative aspect possessive pronominal prefix  $\text{he?è-}$  (21 he + 23  $\text{?è-}$ ) combines with 11 -ku,  $\text{he?èku}$  my, exclusive; with 12 -te,  $\text{he?ète}$  my, inclusive; and with 14 -ne,  $\text{he?ène}$  his, her.  $\text{he?è-}$  or

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<sup>7</sup> In  $\text{mV-}$ , the V represents / a / before 23  $\text{?a}$  the actor-oriented, non-terminative possessive morpheme and / o / before 24  $\text{?o}$  the goal-oriented, terminative aspect possessive morpheme.

<sup>8</sup> The same rule applies to V in  $\text{hV-}$  as in 26  $\text{mV-}$ : V represents / a / before 23  $\text{?a}$  and / o / before 24  $\text{?o}$ .

<sup>9</sup> The same rule for determining V applies to  $\text{?V-}$  as to 26  $\text{mV-}$  and 27  $\text{hV-}$  as stated above.



hè'e- co-occurs with the -Ø bound allomorph of 31 ua dual or with the -u bound allomorph of 32 tolu plural and with the following pronominal roots: with 15 -ma, he'èma our, exclusive, dual and hè'emàu <sup>10</sup> our, plural, exclusive; with 16 -ta, he'èta our, dual, inclusive and hè'etàu our, plural, inclusive; and with 18 -na, he'èna their, dual and hè'enàu their, plural.

The definite, actor-oriented, non-terminative aspect possessive pronominal prefix form he'è- or hè'e- co-occurs only with the phrasal prefixes 165 ki to, for, as in kihe'eku to my, exclusive; 166 mei from, as in meihe'eku from my, exclusive; and 164 'i in, with, through, as in 'ihe'eku in my, exclusive. he'è- has a variant form 'è-, which co-occurs with phrasal particles other than ki-, mei-, and 'i- already referred to. 'e- co-occurs with 160 ko substantive predicative as in ko'eku my, exclusive, with 162 'a non-transitive subject marker as in 'a'eku my, exclusive, with 163 'a goal marker as in 'a'eku my, exclusive, with 23 'a actor-oriented, of as in 'a'eku of my, exclusive, with 24 'o goal-oriented, of as in 'o'eku of my, exclusive, and with 150 mo and as in mo'eku and my, exclusive.

he'è- also has a variant form ho'ò or hò'o-, which co-occurs with 17 -mo second person, non-singular. This variant form is composed as follows: (11 ho + 13 'ò) ho'ò-,

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<sup>10</sup> When he'è- combines with CVV stems, the stress automatically shifts to the first vowel hè'e- by the rule of alternation of stress.

which co-occurs with 31-∅ in hoʔòmo your, dual and with 32 -u in hòʔomòu your, plural.

heʔè- has a fourth variant form hò-, which is derived as follows: 21 ho + 23 ò yield hò- derived by the rule that in identical VV clusters, unstressed V of VV̂ is lost since no identical VV cluster has augmenting or ascending stress, i. e., weak followed by a stronger stress, either tertiary, secondary, or primary<sup>11</sup>. In such situations, as has been stated, the weakly stressed vowel is dropped. hò- combines only with 13 -ʔo, as in hòʔo<sup>12</sup> thy, your, second person, singular possessive.

Neither the hoʔò- or hò- variant forms of heʔè- show variation according to the phrasal particle which precedes them as do heʔè- and its variant form ʔè- as previously explained. Thus, hoʔò- and hò- both co-occur with 165 ki to, for, 164 ʔi in, with, by and 166 mei from, as well as all other phrase initial particles.

8.2.2. The diminutive, definite, actor-oriented or non-terminative aspect possessive prefix is formed as follows: siʔè-<sup>13</sup> (25 si- diminutive + 21 e definite article + 23 ʔè). This prefix combines with 11 -ku, siʔèku my, exclusive, actor-oriented, diminutive; with 12 -te, siʔète my, one's, inclusive, actor-oriented, diminutive; with 14 -ne, siʔène his, her, actor-oriented,

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<sup>11</sup> Identical VV clusters may have only a VV, V̂V, or V̂V stress pattern. No other patterns have been observed for such clusters.

<sup>12</sup> All CV pronominal roots are weakly stressed.

<sup>13</sup> Weakly stressed e is lost to preserve the alternation of stress pattern.

diminutive. In the dual and plural, si'è- combines with the respective pronominal roots followed by 31 -Ø or 32 -u: with 15 -ma, si'èma our, dual, exclusive, actor-oriented, diminutive and si'èmau<sup>14</sup> our, plural, exclusive, actor-oriented, diminutive; with 16 -ta, si'èta our, dual, inclusive, actor-oriented, diminutive and si'ètàu our, plural, inclusive, actor-oriented, diminutive; and with 18 -na, si'èna their, dual, actor-oriented, diminutive and si'ènàu their, plural, actor-oriented, diminutive.

In the second person, the allomorphic form of the prefix occurring in the singular is composed as follows: si- (25 si- diminutive + 21 o definite article + 13 ò actor-oriented possessive) in which the identical vowel cluster is lost and the tertiary stress of 13 ò is retained since identical VV clusters do not admit the stress pattern of weak followed by tertiary stress and since VVV clusters do not admit the stress pattern of weak, weak, tertiary before a weakly stressed syllable: (25 si- + 21 o + 23 ò + 13 'o second person, singular pronominal root) si'o thy, your, singular, actor-oriented, diminutive.

In the second person plural, the allomorphic form of the prefix is composed as follows: si'ò-<sup>15</sup> (15 si- diminutive + 21 o definite article + 23 'ò actor-oriented possessive)

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<sup>14</sup> CVCV prefixes having tertiary stress on the second V occur before CV roots. The stress of the prefix shifts to the first vowel when the prefix is attached to CVV roots.

<sup>15</sup> Weakly stressed o is lost to preserve the alternation of stress pattern.

ive). This prefix combined with 17 -mo plus 31 -∅ and 32 -u giving si'òmo Your, dual, actor-oriented, diminutive and si'òmòu your, plural, actor-oriented, diminutive.

The definite, goal-oriented prefix hò-<sup>16</sup> (21 ho-definite article + 24 ò goal-oriented possessive) combines with all pronominal roots, as follows: with 11 -ku, hòku my, exclusive, goal-oriented; with 12 -to, hòto one's, my, inclusive, goal-oriented; with 13 -∅, hò thy, your, singular, goal-oriented; and with 14 -no, hòno his, her, its, singular, goal-oriented. In the dual and plural hò- combines with the pronominal roots plus 31 -∅ dual and 32 -u plural: with 16 -ma, hòma our, dual, exclusive, goal-oriented and hòmàu our, plural, exclusive, goal-oriented; with 17 -mo, hòmo your, dual, goal-oriented and hòmòu your, plural, goal-oriented; and with 18 -na, hòna their, dual and hònàu their, plural, goal-oriented.

The diminutive, definite, goal-oriented possessive prefix is formed as follows: 25 si- diminutive + 21 o definite article + 24 'ò goal-oriented possessive yields si'ò-<sup>17</sup>. This prefix combines with 11 -ku, si'òku my, exclusive, diminutive, goal-oriented; with 12 -to, si'òto one's, my, inclusive, diminutive, goal-oriented; with 13 -∅, si'ò thy, your, diminutive, goal-oriented; with 14 -no,

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<sup>16</sup> Weakly stressed o drops out since the ascending stress pattern of weak followed by tertiary or secondary stress is not permitted in identical VV clusters.

<sup>17</sup> Weakly stressed o is lost to preserve the alternation of stress pattern.

si'òno his, her, diminutive, goal-oriented. si'ò- also co-occurs with 31 -∅ dual and 32 -u plural suffixed to the pronominal root: with 15 -ma, si'òma our, dual, exclusive, diminutive, goal-oriented and si'òmàu our, plural, exclusive, diminutive, goal-oriented; with 16 -ta, si'òta our, dual, inclusive, diminutive, goal-oriented and si'òtàu our, plural, inclusive diminutive, goal-oriented; with 17 -mo, si'òmo your, dual, goal-oriented and si'òmòu your, plural, goal-oriented; and with 18 -na, si'òna their, dual, goal-oriented and si'ònàu their, plural, goal-oriented.

8.2.3. The indefinite, actor-oriented, possessive prefix ha'â- (22 ha- + 23 'â) combines with the following pronominal roots in the following manner: 11 -ku, ha'âku my, indefinite, exclusive, actor-oriented; 12 -te, ha'âte one's, my, indefinite, inclusive, actor-oriented; 14 -ne, ha'âne his, her, indefinite, actor-oriented. ha'â- also co-occurs with 31 -∅ dual and 32 -u plural in the following combinations: with 15 -ma, ha'âma our, dual, indefinite, exclusive, actor-oriented and hà'amàu our, plural, indefinite, exclusive, actor-oriented; with 16 -ta, ha'âta our, dual, indefinite, inclusive, actor-oriented and hà'atàu our, plural, indefinite, inclusive, actor-oriented; with 17 -mo, ha'âmo your, dual, actor-oriented and hà'amòu your, plural, actor-oriented; and with 18 -na, ha'âna their, dual, actor-oriented and hà'anàu their, plural, actor-oriented.

ha'â- has a variant form hà- formed as follows: 22 ha- + 23 â yields hà-. Weakly stressed a of 22 ha- is dropped to avoid a pattern of ascending stress in identical VV clusters,

i. e., weak stress followed by tertiary, secondary, or primary stress. hà- combines with 13 ʔo second person, singular, pronominal root to form hàʔo thy, your, indefinite, singular, actor-oriented.

The indefinite, diminutive, actor-oriented possessive prefix is formed as follows: 25 si- diminutive + 22 -a indefinite article + 23 ʔà actor-oriented, possessive morpheme yields siʔà<sup>18</sup>. siʔa- combines with the following singular roots: with 11 -ku, siʔàku my, indefinite, exclusive, actor-oriented, diminutive; with 12 -te, siʔàte one's, my, indefinite, inclusive, actor-oriented; with 13 -o, siʔào thy, indefinite, actor-oriented, diminutive; and with 14 -ne, siʔàne his, her, indefinite, actor-oriented, diminutive. siʔà- co-occurs with 31 -∅ dual and 32 -u plural in the formation of the following forms: with 15 -ma, siʔàma our, dual, exclusive, indefinite, actor-oriented, diminutive and siʔàmau our, plural, exclusive, indefinite, actor-oriented, diminutive; with 16 -ta, siʔàta our, dual, inclusive, indefinite, actor-oriented, diminutive and siʔàtau our, plural, inclusive, indefinite, actor-oriented, diminutive; with 17 -mo, siʔàmo your, dual, indefinite, actor-oriented, diminutive and siʔàmou your, plural, indefinite, actor-oriented, diminutive; and with 18 -na, siʔàna their, dual, indefinite, actor-oriented, diminutive and siʔànau their, plural, indefinite, actor-oriented, diminutive.

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<sup>18</sup> Weakly stressed a is lost to preserve the alternation of stress pattern.

8.2.4. The indefinite, goal-oriented, possessive prefix consists of 22 ha- + 24 -à yielding hà-<sup>19</sup>. hà- combines with the following pronominal roots in the following manner: with 11 -ku, hàku my, indefinite, exclusive, goal-oriented; with 12 -te, hàte one's first person, inclusive, indefinite, goal-oriented; with 13 -o, hào thy, your, singular, indefinite, goal-oriented; with 14 -ne, hàne his, her, indefinite, goal-oriented. In the dual and plural hà- co-occurs with 31 -∅ dual and 32 -u plural: with 15 -ma, hàma our, dual, exclusive, indefinite, goal-oriented and hàmàu our, plural, exclusive, indefinite, goal-oriented; with 16 -ta, hàta our, dual, inclusive, indefinite, goal-oriented and hàtàu our, plural, inclusive, indefinite, goal-oriented; with 17 -mo, hàmo your, dual, indefinite, goal-oriented and hàmòu your, plural, indefinite, goal-oriented; and with 18 -na hàna their, dual, indefinite, goal-oriented and hànàu their, plural, indefinite, goal-oriented.

8.2.5. The diminutive, indefinite, goal-oriented, possessive prefix is formed as follows: 25 si- diminutive + 22 a- indefinite article + 24 'à goal-oriented possessive yields si'à-<sup>20</sup>. si'à- combines with the following singular pronominal roots: with 11 -ku, si'àku my, exclusive, indefinite, goal-oriented, diminutive; with 12 -te, si'àte one's,

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<sup>19</sup> Weakly stressed a is lost since Tongan does not permit a pattern of weak stress followed by tertiary or secondary in identical VV clusters.

<sup>20</sup> Weakly stressed a is lost to preserve the alternation on stress pattern.

first person, inclusive, indefinite, diminutive, goal-oriented; with 13 -o, si'ào thy, your, singular, indefinite, goal-oriented, diminutive; with 14 -no, si'áno his, her, indefinite, goal-oriented, diminutive. In the dual and plural si'â- co-occurs with 31 -∅ dual and 32 -u plural in the following forms: with 15 -ma, si'âma our, dual, exclusive, indefinite, goal-oriented, diminutive and si'âmâu our, plural, exclusive, indefinite, goal-oriented, diminutive; with 16 -ta, si'âta our, dual, inclusive, indefinite, goal-oriented, diminutive and si'âtâu our, plural, inclusive, indefinite, goal-oriented, diminutive; with 17 -mo, si'âmo your, dual, indefinite, goal-oriented, diminutive and si'âmòu your, plural, indefinite, goal-oriented, diminutive; and with 18 -na, si'âna their, dual, indefinite, goal-oriented, diminutive and si'ânâu their, plural, indefinite, goal-oriented, diminutive.

8.3.1. The dative morpheme mV-<sup>21</sup> combines with 23 'à- actor-oriented possessive and with 24 'ò- goal-oriented possessive to form the dative prefixes ma'â- for, to, actor-oriented. These combine with the pronominal roots as follows: with 11 -ku, ma'áku to or for me, exclusive, actor-oriented and mo'óku to or for me, exclusive, goal-oriented<sup>22</sup>; with 12 -ta, ma'âta for or to one or me, inclusive, actor-oriented

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<sup>21</sup> V becomes a before 23 'à- and o before 24 'ò-.

<sup>22</sup> Before CV roots the stress of ma'â- and mo'ò- shifts to ma'á- and mo'ó-.



and mo'óta for or to one or me, inclusive, goal-oriented;  
 with 13 -u, ma'áú to or for you, singular, actor-oriented  
 and mo'óu to or for you, singular, goal-oriented; and with  
 14 -na, ma'ána to or for him or her, actor-oriented and  
 mo'óna to or for him or her, goal-oriented. In the dual,  
 ma'á- and mo'ò- co-occur with 31 -ua dual: with 15 -ma,  
 mà'amàúa to or for us, exclusive, dual, actor-oriented and  
 mò'omàúa to or for us, exclusive, dual, goal-oriented; with  
 16 -ta, mà'atàúa to or for us, dual, inclusive, actor-  
oriented and mò'otàúa to or for us, dual, inclusive, goal-  
oriented; with 17 -mo, mà'amòúa to or for you, dual, actor-  
oriented and mò'omòúa to or for you, dual, goal-oriented;  
 and with 18 -na, mà'anàúa to or for them, dual, actor-  
oriented and mò'onàúa to or for them, dual, goal-oriented.  
 In the plural ma'á- and mo'ò- co-occur with 32 -u plural  
 allomorph + -tolu plural allomorph: with 15 -ma, mà'amàutólu  
to or for us, plural, exclusive, actor-oriented and mò'omàu-  
 tólu to or for us, plural, exclusive, goal-oriented; with  
 16 -ta, mà'atàutólu to or for us, plural, inclusive, actor-  
oriented and mò'otàutólu to or for us, plural, inclusive,  
goal-oriented; with 17 -mo, mà'amòutólu to or for you, plural,  
actor-oriented and mò'omòutólu to or for you, plural, goal-  
oriented; and with 18 -na, mà'anàutólu to or for them, plural,  
actor-oriented and mò'onàutólu to or for them, plural, goal-  
oriented.

When ma'á- and mo'ò- are prefixed to the actor-oriented  
 possessive adjective form 23 'à-, the 'à- and 'ò- are lost:

maʔà- + ʔèku yields maʔèku to or for my, exclusive, actor-oriented and moʔò- + ʔèku yields moʔèku to or for my, exclusive, goal-oriented. This loss occurs before ʔè- (21 ∅ definite article + 23 ʔè- actor-oriented possessive) and is obligatory in this environment. However, in the environment preceding hò- (21 ho- definite article + ò goal-oriented possessive) one of two things may occur: maʔà- and moʔò- are either prefixed to hò- with consequent loss of the final syllables, as in maʔà- + hòno his, her, actor-oriented, which yields mahòno to or for his or her, actor-oriented dative, or in moʔò- + hòno, which yields mohòno to or for his or her, goal-oriented dative, or maʔà- and moʔò- are used as free forms before plus juncture with an attendant change of stress, as in maʔà- + hòno yields [màʔa+hòno] and in moʔò- + hòno yields [mòʔo+hòno]. Loss of the final syllables of maʔà- and moʔò- is obligatory when the forms are attached as prefixes to the definite, actor-oriented and goal-oriented possessive adjective prefixes without intervening plus juncture; the final syllables, however, are always retained when there is an intervening plus juncture, as in the examples just cited.

8.3.2. In the regular pronominal forms, 27 hV- pronominal prefix is added to the ʔà allomorph of 23 and the ʔò allomorph of 24. When such occurs, V becomes a before 23 ʔà or o before 24 ʔò. This produces the possessive pronominal prefixes haʔà- actor-oriented possessive pronoun prefix and hoʔò- goal-oriented possessive pronoun prefix. From these possessive pronominal prefixes are composed the following forms: haʔà- +

11 -ku, haʔáku<sup>23</sup> mine, exclusive, actor-oriented and hoʔò- + 11 -ku, hoʔéku mine, exclusive, goal-oriented; haʔà- + 12 -ta yields haʔáta one's own, inclusive, actor-oriented and hoʔò- + 12 -ta yields hoʔóta one's own, inclusive, goal-oriented; haʔà- + 13 -u yields haʔáu thine, yours, singular, actor-oriented and hoʔò- + 13 -u yields hoʔóu thine, yours, singular, goal-oriented; haʔà- + 14 -na yields haʔána his, hers, actor-oriented and hoʔò- + 14 -na yields hoʔóna his, hers, goal-oriented. In the dual, haʔà- and hoʔò- co-occur with ʒ1 -ua dual and in the plural with ʒ2 -u plural + ʒ2 -tolu plural, as follows: haʔà- + 15 -ma + ʒ1 -ua, hàʔamàúa ours, dual, exclusive, actor-oriented; haʔà- + 15 -ma + ʒ2 -u + ʒ2 -tolu, hàʔamàutólu ours, plural, exclusive, actor-oriented; hoʔò- + 15 -ma + ʒ1 -ua, hòʔomàúa ours, dual, exclusive, goal-oriented; and hoʔò- + 15 -ma + ʒ2 -u + ʒ2 -tolu, hòʔomàutólu ours, plural, exclusive, goal-oriented; haʔà- + 16 -ta + ʒ1 -ua, hàʔatàúa ours, dual, inclusive, actor-oriented; haʔà- + 16 -ta + ʒ2 -u + ʒ2 -tolu, hàʔatàutólu ours, plural, inclusive, actor-oriented; hoʔò- + 16 -ta + ʒ1 -ua, hòʔotàúa ours, dual, inclusive, goal-oriented; and hoʔò- + 16 -ta + ʒ2 -u + ʒ2 -tolu, hòʔotàutólu ours, plural, inclusive, goal-oriented; haʔà- + 17 -mo + ʒ2 -ua, hàʔamòúa yours, dual, actor-oriented; haʔà- + 17 -mo + ʒ2 -u + ʒ2 -tolu, hàʔamòutólu yours, plural, actor-oriented; hoʔò- + 17 -mo + ʒ1 -ua, hòʔomòúa yours, dual,

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<sup>23</sup> Before CV stems the stress on haʔà- and hoʔò- shifts to haʔá- and hoʔó-. The stress shift in the plural is to hàʔa- and hòʔo-.

goal-oriented; and hoʔò- + 17 -mo + ʒ2 -u + ʒ2 -tolu, hòʔomòutólu yours, plural, goal-oriented; haʔà- + 18 -na + ʒ1 -ua, hàʔanàúa theirs, dual, actor-oriented; haʔà- + 18 -na + ʒ2 -u + ʒ2 -tolu, hàʔanàutólu theirs, plural, actor-oriented; hoʔò- + 18 -na + ʒ1 -ua, hòʔonàúa theirs, dual, goal-oriented; and hoʔò- + 18 -na + ʒ2 -u + ʒ2 -tolu, hòʔonàutólu theirs, plural, goal-oriented.

3.3.3. The adjectival verb prefix 28 ʔV- is prefixed to the actor-oriented possessive morpheme 25 ʔà- and to the goal-oriented possessive morpheme 24 ʔò-. When so prefixed, V becomes a before ʔà- and o before ʔò-. Thus, ʔV + ʔà- becomes ʔàʔá- actor-oriented, adjectival verb prefix and ʔV + ʔò- becomes ʔòʔó- goal-oriented adjectival verb prefix. These two forms, ʔàʔá- and ʔòʔó-, are prefixed to singular pronominal roots, as follows: to 11 -ku, ʔàʔáku mine, to be mine, exclusive, actor-oriented and ʔòʔóku mine, to be mine, exclusive, goal-oriented; to 12 -ta, ʔàʔáta one's, to be one's, inclusive, actor-oriented and ʔòʔóta one's, to be one's, inclusive, goal-oriented; to 13 -u, ʔàʔáu thine, yours, to be thine or yours, singular, actor-oriented and ʔòʔóu thine, yours, to be thine or yours, singular, goal-oriented; and to 14 -na, ʔàʔána his, her, to be his or her, actor-oriented and ʔòʔóna his, her to be his or her, goal-oriented.

In the dual and plural strongly stressed ʔá- and ʔó- of the ʔàʔá- and ʔòʔó- prefixes are lost: ʔàʔá- becomes ʔà- and ʔòʔó- becomes ʔò-, since the prefix no longer is

prefixed to a pronominal root which falls as the ultimate syllable of a contour span. These shortened forms are construed as being derived as follows: ?à?á- + 15 -mà + 31 -úa becomes ?àmàua of us, ours, dual, actor-oriented. The strongly stressed syllable of ?à?á- is lost since the only stress patterns that have been observed in the two syllables occurring before the strongly stressed penultimate syllable of forms is the regular patterns of either weak plus tertiary or tertiary plus weak or the irregular pattern of tertiary plus tertiary. The pattern of tertiary plus strong plus tertiary does not occur preceding strong stress on the penultimate syllable; hence, the strongly stressed syllable of ?à?á- is dropped, leaving the stress pattern still irregular but one that does occur and is allowable. The shorter form ?ò- of ?ò?ó- is derived in a similar manner: ?ò?ó- + 15 -mà + 31 -úa becomes ?òmàúa of us, ours, dual, goal-oriented or terminative aspect.

In the dual, ?à- and ?ò co-occur with 31 -ua dual and in the plural with 32 -u plural + 32 -tolu plural. This double use of plural allomorphs occurs because, in the plural, the preposed pronominal forms are used as stems and these stems already include the -u allomorph of the plural morpheme, as in ?àmàutólu of us, ours, plural, exclusive (?à- + the preposed pronominal form mau, which includes 15 -mà + 32 -u, + 32 -tólu). The following are the dual and plural forms in addition to ?àmàúa, ?òmàúa, and ?àmàutólu, which have already been explained. All three of these forms are first person exclusive.

The remaining forms are as follows: (?ò- + 15 -mà + 32 -u + 32 -tólu) ?òmàutólu ours, plural, exclusive, goal-oriented; (?à- + 16 -tà + 31 -úa) ?àtàúa ours, dual, inclusive, actor-oriented, (?à- + 16 -tà + 32 -u + 32 -tólu) ?àtàutólu ours, plural, inclusive, actor-oriented, (?ò- + 16 -tà + 32 -úa) ?òtàúa ours, dual, inclusive, goal-oriented, and (?ò- + 16 -tà + 32 -u + 32 -tólu) ?òtàutólu ours, to be ours, inclusive, plural, goal-oriented; (?à- + 17 -mò + 31 -ua) ?àmoúa yours, to be yours, dual, actor-oriented, (?à- + 17 -mò + 32 -u + 32 -tólu) ?àmoutólu yours, to be yours, plural, actor-oriented, (?ò- + 17 -mò + 31 -úa) ?òmòúa yours, dual, goal-oriented, (?ò- + 17 -mò + 32 -u + 32 -tólu) ?òmòutólu yours, plural, goal-oriented; (?à- + 18 -nà + 32 -úa) ?ànaúa theirs, dual, actor-oriented, (?à- + 18 -nà + 32 -u + 32 -tólu) ?ànàutólu theirs, plural, actor-oriented, (?ò- + 18 -nà + 31 -úa) ?ònaúa theirs, dual, goal-oriented, (?ò- + 18 -nà + 32 -u + 32 -tólu) ?ònàutólu theirs, plural, goal-oriented.

8.4.0. Alternation of allomorphic shapes is also observed in the singular forms of the proposed actor pronouns and the postposed actor-goal-objective pronominal forms. In addition to 11 -ku first person, exclusive, singular, 12 -to first person, inclusive, singular, 13 -ke second person, singular, and 14 -ne third person, singular, there is one other minor morpheme used in the formation of the singular proposed and postposed pronominal forms, and that is 29 ki- the postposed pronominal prefix, which has the allomorphs ki-, i-, k-, and  $\emptyset$ .

8.4.1. The singular preposed, actor pronouns show the following alternation of allomorphic shapes: 11 -ku following 141 ʔoku present tense marker appears as the allomorph ou, as in #ʔoku+ou+ʔálu# I go, I am going; 11 -ku following the naʔa allomorph of 142 naʔe past tense marker appears as the allomorph -ku as enclitic, as in #náʔaku+ʔálu# I went; 11 -ku following 143 kuo perfect, inchoative aspect marker appears as the allomorph -u as enclitic, as in #kúou+tóo# I have failed; 11 -ku following the te allomorph of 144 ʔe future tense marker appears as the allomorph -u as enclitic, as in #teu+ʔálu# I will or shall go; 11 -ku following either the te or ke allomorphs of 146 ke potential, imperative, purposive or infinitive aspect marker appears as the allomorph -u as enclitic, as in 1keu+ʔálu# that I (may) go or in 1keu+ʔilóʔi# that I know; 11 -ku following 145 ka conditional or desiderative aspect marker appears as the allomorph -u as enclitic, as in 1kau+ʔálu# may I go or that I may go; 11 -ku following 149 ʔo and and 148 pea and appears as the allomorph -u as enclitic, as in 1ʔou+ʔálu# and I went, 1pěau+ʔálu# and (then) I went; 11 -ku following 147 ne subjunctive aspect marker appears also as the allomorph -u as enclitic, as in #ka+něu+ʔálu# if I had gone.

None of the other pronominal roots, 12 -te, 13 -ke, or 14 -ne, in the singular show allomorphic alternation following the tense and aspect markers or the conjunctions which are listed above as determining the alternation of the allomorphs of 11 -ku first person, inclusive, singular.

Only one allomorph of 12 -te, 13 -ke, and 14 -ne appears before all tense, aspect, and conjunctive particles. Only the -te allomorph of 12 -te first person, inclusive, singular, the -ke allomorph of 13 -ke second person, singular, and the -ne allomorph of 14 -ne third person, singular appear before 141 ?oku present tense, the na?a allomorph of 142 na?e past tense, 143 kuo perfect, inchoative aspect, the te allomorph of 144 ?e future, 145 ka conditional, desiderative, 146 ke potential, imperative, 147 ne subjunctive, 148 pea and, 149 ?o and.

8.4.2. However, alternation of allomorphic forms is observed in the singular, postposed, actor-goal-objective pronominal forms, as follows: 11 -ku appears as the allomorph au in the postposed pronominal form au (29  $\emptyset$  + 11 au), as in |kiate+áú# to me; 12 -te appears as the allomorph -ta in the postposed pronominal form kita (29 ki- + 12 -ta), as in |kiate+kíta# to one or me; 13 -ke appears as the allomorph oe in the postposed pronominal form koe (29 k- + 13 -oe), as in |kiate+kóe# to you, singular; and 14 -ne appears as the allomorph -a in the postposed pronominal form ia (29 i- + 14 -a), as in |kiate+ía# to him, her, it.<sup>24</sup>

8.4.3. The non-singular postposed pronominal forms show no alternation of allomorphic shape of the pronominal roots. Only one allomorph of each non-singular root

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<sup>24</sup> Following kiate the postposed form ia rarely means it, although in other contexts ia may refer to non-human objects.



appears in the postposed pronominal forms. For example, the single allomorph na of 18 -na third person, non-singular appears in the postposed forms kinaua them, dual (29 ki- + 18 -na + 31 -ua) and kinautolu them, plural (29 ki- + 18 -na + 32 -tolu).

The same observation also holds true for the preposed non-singular pronominal forms. Only one allomorph of each non-singular pronominal root appears in the preposed non-singular forms, as, for example, na they, dual (18 na- + 31  $\emptyset$ ) in #tena+?álu# they (dual) will go and nau they, plural (18 na- + 32 -u) in #tenàu+?álu# they (plural) will go.

8.5.1. The preposed and postposed pronominal forms in the dual and plural are formed as follows: (preposed, actor) ma (15 ma- + 31 - $\emptyset$  dual) we, dual, exclusive: as in #tema+?álu# we (dual, exclusive) will go; ta (16 ta- + 31 - $\emptyset$  dual) we, dual, inclusive, as in #teta+?álu# we (dual, exclusive) will go; mo (17 mo- + 31 - $\emptyset$ ) you, dual, as in #temo+?álu# you (dual) will go; na (18 na- + 31 - $\emptyset$ ) they, dual, as in #tena+?álu# they (dual) will go; mau (15 ma- + 32 -u plural) we, exclusive, plural, as in #temàu+?álu# we (plural, exclusive) will go; tau (16 ta- + 32 -u) we, inclusive, plural, as in #tetàu+?álu# we (plural, inclusive) will go; mou (17 mo- + 32 -u) you, plural, as in #temòu+?álu# you (plural) will go; and nau (18 na- + 32 -u) they, plural, as in #tenàu+?álu# they (plural) will go.

8.5.2. (Postposed, actor-goal-objective forms) kimaua (29 ki- + 15 -ma + 31 -ua dual) we, us, exclusive, dual,

as in |kiâte|kimaúa# to us (dual, exclusive); kitaua (29 ki- + 16 -ta + 31 -ua) we, us, inclusive, dual, as in |kiâte|kitàúa# to us (dual, inclusive); kimoua (29 ki- + 17 -mo + 31 -ua) you, dual, as in |meiâte|kimoúa# from you (dual); kinaua (29 ki- + 18 -na + 31 -ua) they, them, dual, as in |meiâte|kinaúa# from them (dual); kimautolu (29 ki- + 15 -ma + 32 -u + 32 -tolu) we, us, exclusive, plural, as in |kiâte|kimàutólu# to us (plural); kitautolu (29 ki- + 16 -ta + 32 -u + 32 -tolu) we, us, inclusive, plural, as in |kiâte|kitàutólu# to us (plural, inclusive); kimoutolu (29 ki- + 17 -mo + 32 -u + 32 -tolu) you, plural, as in |kiâte|kimòutólu# to you (plural); kinautolu (29 ki- + 18 -na + 32 -u + 32 -tolu) they, them, plural, as in |kiâte|kinàutólu# to them (plural).

8.5.3. Alternation of the allomorphs of 29 ki- postposed, actor-goal-objective prefix is noted in the singular postposed forms above, as follows: 29 ki- appears as  $\emptyset$  before the 11 -ku allomorph au in au I, me, exclusive, singular; 29 ki- appears as the allomorph ki- before the allomorph -ta of 12 -te in kita one, I, inclusive, first person, singular; 29 ki- appears as the allomorph k- before the -oe allomorph of 13 -ke in koe you, singular, and 29 ki- appears as the allomorph i- before the 14 -ne allomorph -a in ia he, him, she, her. 29 ki- appears as the allomorph ki- before 15 -ma, 16 -ta, 17 -mo, and 18 -na in the dual and plural forms kimaua we, us, dual, exclusive, kitaua we, us, dual, inclusive, kimoua you, dual, kinaua, they, them,

dual, kimautolu we, us, plural, exclusive, kitautolu we, us, plural, inclusive, kimoutolu you, plural, and kinautolu they, them, plural, which have been described in the paragraph above.

9.0. Tongan numeral forms, both roots and affixes, exhibit some alternation of allomorphic forms. The morphemes involved in the composition of the forms of the numeral system are as follows: 201 taha, including the allomorphs taha, ho-, and te-, one; 202 ua, including the allomorphs ua and uo-, two; 203 tolu three; 204 faa four; 205 nima five; 206 ono six; 207 fitu seven; 208 valu eight; 209 hiva nine; and 210 fiha how many, an indefinite number; 211 -ʻā, including the allomorphs -ʻā, ʻāe, -ʻāo, -o, and ∅, numeral stem formative; 212 -fulu ten or a decade; 213 -kau a score (of coconuts) or twenty; 214 -kumi ten (fathoms or spans); 215 -fuhi ten score or two hundred (usually of yams); 216 -fua ten score or two hundred (usually of coconuts); 217 -au one hundred; 218 -tula ten pairs (of thatch); 219 afe thousand; 220 mano ten thousand; 221 kilu one hundred thousand; 222 miliona million; and 223 noa zero, nothing.

9.1.0. By one method of counting, the numerals taha one, ua two, tolu three, faa four, nima five, ono six, fitu seven, valu eight, hiva nine, and noa zero are used without change in various combinations, as, for example: taha noa fitu one hundred and seven (literally, one zero seven), fitu fitu tolu seven hundred and seventy-three (literally, seven seven three), and so on. No morphophonemic changes

occur in this form of counting.

9.1.1. However, in other methods of counting, morphophonemic changes are observed to occur. The decade numerals not used in counting coconuts, fathoms, or spans, which are used in all general counting, are formed by suffixing 211 -no stem formative to the root followed by 212 -fulu ten or a decade, as follows: ho $\eta$ ofulu ten (201 ho-one + 211 -no stem formative + 212 -fulu ten or a decade); uofulu twenty (202 uo- two + 211  $\emptyset$  stem formative + 212 -fulu ten or decade); tolu $\eta$ ofulu thirty (203 tolu three + 211 -no stem formative + 212 -fulu ten or decade); fa $\eta$ ofulu forty (204 faa four + 211 -no stem formative + 212 -fulu ten or decade); nima $\eta$ ofulu fifty (205 nima five + 211 -no stem formative + 212 -fulu ten or decade); ono $\eta$ ofulu sixty (206 ono six + 211 -no stem formative + 212 -fulu ten or decade); fitu $\eta$ ofulu seventy (207 fitu seven + 211 -no stem formative + 212 -fulu ten or decade); valu $\eta$ ofulu eighty (208 valu eight + 211 -no stem formative + 212 -fulu ten or decade); hiva $\eta$ ofulu ninety (209 hiva nine + 211 -no stem formative + 212 -fulu ten or decade); and fiha $\eta$ ofulu how many tens, an indefinite number of tens (210 fiha how many + 211 no stem formative + 212 -fulu ten or decade).

9.1.2. The century numerals are formed by suffixation to the numeral root of 211 -no stem formative plus the century suffix 217 -au one hundred, one century, as follows: teau one hundred (201 te- one + 211  $\emptyset$  stem formative + 217 -au one hundred, one century); ua $\eta$ eau two hundred (202 ua

two + 211 ŋe stem formative + 217 -au hundred or century);  
 toluŋeau three hundred (203 tolu three + 211 -ŋe stem form-  
ative + 217 -au hundred); faaŋeau four hundred (204 faa  
four + 211 -ŋe stem formative + 217 -au hundred); nimaŋeau  
five hundred (205 nima five + 211 -ŋe stem formative + 217  
 -au hundred); onoŋeau six hundred (206 ono six + 211 -ŋe  
stem formative + 217 -au hundred); fituŋeau seven hundred  
 (207 fitu seven + 211 -ŋe stem formative + 217 -au hund-  
red); valuŋeau eight hundred (208 valu eight + 211 -ŋe stem  
formative + 217 -au hundred); hivaŋeau nine hundred (209  
 hiva nine + 211 -ŋe stem formative + 217 -au hundred);  
 fihaŋeau how many hundred (210 fiha how many + 211 -ŋe stem  
formative + 217 -au hundred).

9.1.3. The numerals for counting coconuts or yams by  
 scores are formed as follows: tekau one score or twenty  
 (201 te- one + 211 -∅ stem formative + 213 -kau score);  
 uaŋakau two score (202 ua two + 211 -ŋa stem formative + 213  
 -kau score); toluŋakau three score (203 tolu three + 211 -ŋa  
stem formative + 213 -kau score); faaŋakau four score (204  
 faa four + 211 -ŋa stem formative + 213 -kau score); nim-  
 aŋakau five score (205 nima five + 211 -ŋa stem formative +  
 213 -kau score); onoŋakau six score (206 ono six + 211 -ŋa  
stem formative + 213 -kau score); fituŋakau seven score  
 (207 fitu seven + 211 -ŋa stem formative + 213 -kau score);  
 valuŋakau eight score (208 valu eight + 211 -ŋa stem form-  
ative + 213 -kau score); hivaŋakau nine score (209 hiva  
nine + 211 -ŋa stem formative + 213 -kau score); fihaŋakau  
how many score (210 fiha how many + 211 -ŋa stem formative

+ 213 -kau score); tefua ten score (201 te- one + 211  $\emptyset$  stem formative + 216 -fua ten score); uofua twenty score (202 uo- two + 211  $\emptyset$  stem formative + 216 -fua ten score); tolufua thirty score (203 tolu three + 211  $\emptyset$  stem formative + 216 -fua ten score); faafua forty score (204 faa four + 211  $\emptyset$  stem formative + 216 -fua ten score); nimafua fifty score (205 nima five + 211  $\emptyset$  stem formative + 216 -fua ten score); onofua sixty score (206 ono six + 211  $\emptyset$  stem formative + 216 -fua ten score); fitufua seventy score (207 fitu seven + 211  $\emptyset$  stem formative + 216 -fua ten score); valufua eighty score (208 valu eight + 211  $\emptyset$  stem formative + 216 -fua ten score); hivafua ninety score (209 hiva nine + 211  $\emptyset$  stem formative + 216 -fua ten score); for yams only the following are used: tefuhi ten score (201 te- one + 211  $\emptyset$  stem formative + 215 -fuhi ten score); uaŋofuhi twenty score (yams) (202 ua two + 211 -ŋo stem formative + 215 -fuhi ten score); toluŋofuhi thirty score (yams) (203 tolu three + 211 -ŋo stem formative + 215 -fuhi ten score); faaŋofuhi forty score (yams) (204 faa four + 211 -ŋo stem formative + 215 -fuhi ten score); nimaŋofuhi fifty score (yams) (205 nima five + 211 -ŋo stem formative + 215 -fuhi ten score); onoŋofuhi sixty score (yams) (206 ono six + 211 -ŋo stem formative + 215 -fuhi ten score); fituŋofuhi seventy score (yams) (207 fitu seven + 211 -ŋo stem formative + 215 -fuhi ten score); valuŋofuhi eighty score (yams) (208 valu eight + 211 -ŋo stem formative + 215 -fuhi ten score); hivaŋofuhi ninety score (yams) (209 hiva nine + 211 -ŋo stem

formative + 215 -fuhi ten score); fihajofuhi how many units of ten score each (yams) (210 fiha how many + 211 -jo + 215 -fuhi ten score).

9.1.4. The special numeral forms used in counting fathoms or spans are formed by addition of 211 -jo stem formative plus 214 -kumi ten (fathoms or spans) to the numeral root, as follows: tekumi ten (fathoms or spans) (201 te- one + 211  $\emptyset$  stem formative + 214 -kumi ten); uajokumi twenty (fathoms or spans) (202 ua two + 211 -jo stem formative + 214 -kumi ten); tolujokumi thirty (fathoms or spans) (203 tolu three + 211 -jo stem formatives + 214 -kumi ten); faajokumi forty (fathoms or spans) (204 faa four + 211 -jo stem formative + 214 -kumi ten); nimaajokumi fifty (fathoms or spans) (205 nima five + 211 -jo stem formative + 214 -kumi ten); ononajokumi sixty (fathoms or spans) (206 ono six + 211 -jo stem formative + 214 -kumi ten); fitujokumi seventy (fathoms or spans) (207 fitu seven + 211 -jo stem formative + 214 -kumi ten); valujokumi eighty (fathoms or spans) (208 valu eight + 211 -jo stem formative + 214 -kumi ten); hivaajokumi ninety (fathoms or spans) (209 hiva nine + 211 -jo stem formative + 214 -kumi ten); and fihajokumi how many tens (fathoms or spans) (210 fiha how many + 211 -jo stem formative + 214 -kumi ten).

9.1.5. The special numeral forms used in counting sets of pairs of thatch for roofing a house are formed by suffixing 211 -jo stem formative plus 218 -tula ten pairs (thatch) to the numeral stem, as follows: tetula ten pairs (thatch)

(201 te- one + 211  $\emptyset$  stem formative + 218 -tula ten pairs);  
 uaŋotula twenty pairs (thatch) (202 ua two + 211 -ŋo stem formative + 218 -tula ten pairs); toluŋotula thirty pairs (thatch) (203 tolu three + 211 -ŋo stem formative + 218 -tula ten pairs); faaŋotula forty pairs (thatch) (204 faa four + 211 -ŋo stem formative + 218 -tula ten pairs);  
 nimaŋotula fifty pairs (thatch) (205 nima five + 211 -ŋo stem formative + 218 -tula ten pairs); onoŋotula sixty pairs (thatch) (206 ono six + 211 -ŋo stem formative + 218 -tula ten pairs); fituŋotula seventy pairs (thatch) (207 fitu seven + 211 -ŋo stem formative + 218 -tula ten pairs); val-  
 uŋotula eighty pairs (thatch) (208 valu eight + 211 -ŋo stem formative + 218 -tula ten pairs); hivaŋotula ninety pairs (thatch) (209 hiva nine + 211 -ŋo stem formative + 218 -tula ten pairs); and fihaŋotula how many sets of ten pairs (thatch) (210 fiha how many + 211 -ŋo stem formative + 218 -tula ten pairs).

9.1.6. The morphophonemic variation occurring in the formation of the above numeral forms may be summarized by saying that it is limited to the use of the various allomorphs of 211 -ŋa stem formative and of 201 taha one, and of 202 ua two. All of these variations are morphemically determined. The following variations occur in the following environments: ho- allomorph of 201 taha one occurs before -ŋo allomorph of 211 -ŋa stem formative in hoŋofulu ten; uo- allomorph of 202 ua two occurs before  $\emptyset$  allomorph of 211 -ŋa stem formative; and ue allomorph of 202 ua two



occurs before -pa, -pe, -po allomorphs of 211 -pa stem formative. This latter variation of -pa, -pe, -po is determined as follows: -pa before 213 -kau a score (nuts); -pe before 217 -au hundred; and -po occurs in all other environments. The te- allomorph of 201 taha one occurs before  $\emptyset$  allomorph of 211 -pa stem formative in all instances.

10.0. A number of contour-span initial particles show morphologically determined alternation. The minor morphemes appearing in contour span initial position are as follows: 141 ?oku, allomorphs ?oku and ku-, present tense, durative aspect; 142 na?e, allomorphs na?e, na?a, and ne, past tense; 143 kuo perfect, inceptive or inchoative; 144 ?e, allomorphs ?e and te, future, post-preterite; 145 ka when, conditional; 146 ke potential, imperative; 147 ne subjunctive; 148 pea and, and then, and next; 149 ?o and; 150 mo, allomorphs mo and maa, and, with, coordinating conjunction (individual forms only); 151 kae, allomorphs ka and kae, but, contrastive; 152 kapau if; 153 koe?uhi because; 154 he for, since; 155 neogo even though, despite the fact that; 156 pe or, whether; 157 lolotoŋa during, while; 158 kae?oua until; 159 na?a lest, lest perhaps; 160 ko substantive predicative; 161 ?e transitive actor marker; 162 ?a non-transitive actor or subject marker; 163 ?a goal marker; 164 ?i in, at, by, through, with; 165 ki to, unto, for; 166 mei from, of; 167 -a gender marker denoting human beings; 168 -te syntactical marker denoting pronouns; 169 telia lest, perhaps; 170 talu since, to be in a subsequent period of time.

10.1.1. The distribution of the allomorphs of the above morphemes having more than one allomorph is as follows: the ?oku and ku- allomorphs of 141 ?oku present, durative are in free variation before the ou allomorph of 11 -ku first person, singular, exclusive, ?oku being a free form and ku-bound; the ne allomorph of 142 na?e past tense is in free variation with the na?a and na?e allomorphs<sup>25</sup>, but na?e and na?a have complementary distribution. na?a co-occurs with the preposed actor pronouns as enclitic, as in na?aku I, exclusive, past, whereas na?e occurs only when the substantive indicating the actor is postposed following the verb, as in #na?e+?álu|íá# he went. The ?e and te allomorphs of 144 ?e future, post-preterite, are also in complementary distribution, te occurring only before the preposed actor pronominal forms, as in teu I shall or will, and ?e only where the substantive indicating the actor is postposed following the verb, as in #?e+?álu|íá# he will go. 147 ne subjunctive has a limited distribution, occurring only following 145 ka conditional and either directly before a verb or immediately before 143 kuo perfect, incentive. The maa and mo allomorphs of 150 mo and, coordinating conjunction are also in complementary distribution. maa occurs only between numerals, as in |?e+hogofúlu|maa+níma| fifteen (literally, ten and five),

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<sup>25</sup> There seems, however, to be a slight semantic difference between ne and na?e and ne and na?a despite the fact that they seem to be more or less substitutable for each other in the same slots or positions. In many contexts, however, it seems difficult to pin down any difference of meaning as being a definite difference.

and mo occurs in all other environments. 148 pea and, 149 ?o and, and 150 mo and contrast in some environments, as in #ke+ke+tô?o! ho+fâlâ! pea+?álu# take your mat and then go (literally, imperative + you, singular + take + your+ mat + and then + go), #ke+ke+tó?o! ho+fâlâ! ?o+?álu# take your mat and go (take and go are here regarded as parts of the same action), and #ke+ke+tó?o! ho+fâlâ! mo ?álu# take your mat and go (take and go are here considered coordinate, separate actions). 148 pea and sometimes appears in contour-span initial position and preceding 150 mo and, as in |pea+mo+Píta# and also Peter. In such usage, mo has the meaning of also, in addition. 148 pea and is used most frequently to join coordinate clauses or phrases, especially clauses showing one action succeeding another or one subsequent to the other. Only 150 mo and is used to join coordinate forms of the same form class. 149 ?o and joins coordinate verbs having the same tense marker which are regarded as being two units of a larger action, and also appears in contour-span initial position before 145 ka conditional, 152 kapau if or before words modifying a verb, as in #lêle! ?o+váve# run quickly or fast (lele to run, vave to be quick or fast). The ka and kae allomorphs of 151 kae but, contrastive are also in complementary distribution. ka appears only before a tense or aspect marker and kae appears only directly before a verb without an intervening tense or aspect marker, as |ka+na?e+?álu! but went and |kae+?álu! but went. 154 he for, since may occur in phrase initial position or immediately following

153 koe?uhi because. 158 kae?oua until occurs only preceding 146 ke potential, imperative, infinitive aspect. 167 -a human gender marker occurs only following 164 ?i in, at, through, with, 165 ki to, for and 166 mei from. 168 -te pronoun marker occurs only following 167 -a human gender marker and preceding a pronominal form beginning with 29 ki- postposed pronominal prefix. 169 telia lest, perhaps co-occurs with 159 na?a lest, perhaps as in Itelía!na?a+maumául lest be broken or damaged or with 163 goal marker as in #tokána! telía!?ae+manumánu# beware of covetousness (tokána to pay attention or give heed + telia lest, because of + ?a goal-marker + e definite article + manumanu covetousness). 170 talu since, to be subsequent in time co-occurs with 163 goal marker following, as in Itálu!?ae+kamata?áña# since the beginning (talú since + ?a goal marker + e definite article + kamata?aña beginning: kamata to begin + ? derivational morpheme + aña place of doing the action or place where the action occurs). talu may occur following a tense marker, as in #na?e+tálu+ái+pee! ?ene+?alû! mo+?èku+hohá?a# ever since he left I have been worried (na?e past tense + talu to be subsequent in time + ai then or there + pee just, only, exactly + ?ene his + ?alu going + mo and + ?eku my hoha?a being worried or disturbed).

10.1,2. A number of miscellaneous morphemes, including minor morphemes, are found in Tongan, which show alternation of allomorphic forms.

21 he definite article shows morphologically determined alternation. he co-occurs with ki to, unto, for, ?i in, at, with, through, by, and mei from and ?e transitive actor marker as enclitic: |kihe+falé| to the house, |?ihe+falé| in the house, |meihe+falé| from the house, and |?ehe+taḡatá# (by) the man. The e allomorph of 21 he appears following ko substantive predicative particle, mo and, ?a intransitive subject marker, ?a goal marker, ?a of, non-terminative aspect, actor-emphatic, and ?o of, terminative aspect, goal emphatic; #koe+falé| the house, |moe+falé| and the house, |?ae+falé| the house (subject), |?ae+falé| the house (goal), |?ae+falé| of the house, non-terminative aspect, and |?oe+falé| of the house, terminative aspect. All other allomorphs of 21 he definite article co-occur with pronominal affixes and roots, which have previously been discussed.

11.0. The operator morphemes will now be discussed. These include the morphemes manifested as reduplication and vowel doubling.

11.1.0. One of the operator minor morphemes is that of vowel doubling having the meaning of derivation of a related form having a related meaning. This morpheme is symbolized as V- and is seen, for example, in haa?ele to go, walk, travel, (regal) as contrasted with ha?ele to toddle or walk (a child) and in faanau children as contrasted with fanau to give birth to a child. This derivational morpheme has two allomorphs : Vi- (the initial vowel is doubled) and Vf- (the final vowel is doubled).

Examples of the first allomorph have already been cited, An example of the doubling of the final vowel as a derivational morpheme allomorph is kauḡaa fellow, associate as contrasted with kauḡa relationship.

11.1.1. Vowel doubling in either the initial or final vowel position of morphemes or stems is observed as a derivational morpheme deriving related forms in a wide variety of forms. The causative verbal prefix faka- is sometimes observed as faaka-, the vowel doubling indicating the derivation of a related form. For example, fakangalo to cause to disappear (faka- causative, verbal prefix + ḡalo to pass out of sight or mind) contrasts with, but is related to, faakaḡalo to have almost disappeared (faaka- causative, plus doubling of initial vowel + ḡalo to disappear), the difference in meaning being attributable to the doubling of the first vowel of the causative prefix. Doubling of the initial vowel in the derivation of such related forms is also noted with fair frequency in other forms: mahuʔi to depart, to leave (ma- potential, non-terminative aspect + huʔi to go) and maahuʔi to avoid the presence of others, to be shy (ma- potential, non-terminative + doubling of first vowel + huʔi to go); maʔili to blow or be blown past (ma- potential, non-terminative + ʔili to blow, to move as air) and maaʔili to blow or fan gently (ma- potential, non-terminative + doubling of first vowel + ʔili to blow or move as air; mofi to have a fever, to be hot with fever and moofia to be burnt by heat, to be

scorched (mofi to be hot with fever + doubling of first vowel, the derivational morpheme + -a terminative aspect, goal-emphatic); and mavae to part, to separate (ma- potential, actor emphatic + vae to divide, to separate) and maavae to be separated or sundered, to part or come apart (ma- potential, actor emphatic + doubling of first vowel, derivational morpheme + vae to divide, to separate).

11.1.2. This derivational morpheme, doubling of the initial vowel of the stem, serves to differentiate forms that would otherwise be homophonous as well as to derive new related forms from the stem, as has just been discussed. For example, the doubling of the initial vowel of the causative verbal prefix faka- or the homophonous adjective-forming prefix faaka- serves to differentiate forms derived by use of the two prefixes from homophonous roots, as fakahua to jest or joke (faka- causative prefix + hua to be jolly or joking in manner) and faakahua to change the sail and rudder in order change course in sailing, to tack back and forth (faaka- causative plus derivational morpheme + hua to scud, to run before the wind), fakatu?a to think or to look forward to (faka- causative + tu?a to think or consider) and faakatu?a to be common, vulgar, ignoble (faaka- adjective-forming prefix plus derivational morpheme + tu?a a commoner, common person), fakaua to repeat a second time (faka- causative + ua two) and faakaua (of a boat) to roll (faaka- causative plus derivational morpheme + ua evidently a variant form of lue to rock),

and fakafua to cause to bear fruit (faka- causative + fua to bear fruit ) and faakafua to lift or carry with effort (faaka- causative plus derivational morpheme + fua to lift or bear up).

11.1.3. Vowel doubling with derivational effect is also observed in the final vowel position of some stems. For example, kauḡa relationship (kau to belong, to pertain + -ḡa noun-forming suffix) is a free form, but kauḡaa- fellow, associate (kau to belong, to pertain + -ḡa noun-forming suffix + doubling of final vowel, derivational morpheme) is a bound form and appears in kauḡaaʔapi neighbor (kau to belong + ḡa noun-forming suffix + vowel doubling, derivational morpheme + ʔapi home) and a number of other forms composed of kauḡaa- plus another morpheme: kauḡaameʔa companion, kauḡaahia associate in crime, and kauḡaaḡaaue fellow worker. Other forms exhibiting similar vowel doubling with derivative force are holoḡaa- row, series (holo to follow in succession + ḡa noun-forming + vowel doubling, derivational), as in holoḡaaafale row of houses; ʔuluḡaa- characteristic way (ʔulu head, to be at the head + -ḡa noun-forming + vowel doubling, derivational), as in ʔuluḡaaḡaa characteristic trait or way of acting; faleḡaa- kind, sort, type, as in faleḡaaaleʔo type or sort of voice; mataa edge of from mata front or face, as in mataatahi seashore and in mataafonua edge of the land. Compare mataafonua edge of land from the viewpoint of the ocean and mata + fonua coast on the front side of the island. No other examples of the



derivational morpheme appearing as doubling of the final vowel of stems have been observed in the present study, but it is quite likely that they exist.

11.1.4. A number of other examples of the derivational morpheme appearing as doubling of the initial or final vowel of stems will now be cited, as follows: faakakaila to keep on shouting (faka- causative + vowel doubling + kaila to shout), faakalalahi to become greater and greater or more and more (faka- causative + vowel doubling + lalahi to be large or great, dual or plural) as contrasted with fakalalahi to cause to be bigger, faakakofe to sing lustily (faka- causative + vowel doubling + kofe to sing at the top of one's voice), faakalue (of a boat) to roll while anchored (faka- causative + vowel doubling + lue to rock backwards and forwards), faakafoa to cry out loudly (faka- causative + vowel doubling + foa shout), faakao to fish for oo, a small fish (faka- causative + vowel doubling + oo a kind of small fish), faakau to keep on calling out (faka- causative + vowel doubling + ui to call), laakai to pass, overtake, or surpass (laka to step forward + doubling of initial vowel + 81 -i transitivizing suffix), piikoi to do reluctantly (piko to be crooked or bent + doubling of initial i + 81 -i transitivizing suffix), kaapui to encircle completely, to hem in on all sides (kapu to go around + doubling of initial a + 81 -i transitivizing suffix), naamu'i to sniff at, to smell (transitive) (namu to smell or give off an odor + doubling of initial a + 71 -' derivational, emphatic morpheme + 81 -i

transitivizing suffix), taapuaki to bless or utter a benediction (tapu to be sacred + doubling of a + 61. -Ø + 82 -aki transitive, instrumentive suffix), taafea to be flooded by running water (tafe to run or flow + doubling of initial a + 92 -a goal-oriented, terminative aspect), hooŋea to suffer from starvation in a famine.

11.2.1. The multiplicative morpheme in verbs includes the following concepts: continuing action (imperfect or continuative aspect), action repeated at various times or in various places (iterative), or distributive action (distributive). The multiplicative morpheme will be symbolized by MR; its allomorphs will be symbolized by PMR, reduplication of the penultimate syllable (PR), as in lalava to bind round and round, to wind round and round in order to bind (lava, bound form, to wind, to wrap); by P-MR, reduplication of the penultimate and ultimate syllables (P-R), as in manamana to thunder (iterative) (mana to thunder); by -PMR, reduplication of antepenultimate syllable or syllables and the penultimate syllable (-PR), as in fokifokihi to turn over or around several times or repeatedly (iterative) (fokihi to turn over or around); and by AMR, reduplication of one or more syllables preceding the penultimate syllable (AR), as in kulukulukia to be strained or to strain oneself (continuative or iterative) (kulukia to strain oneself or to be strained), and holoholomui to retrogress or go back (continuative or iterative) (holomui to go backwards or retrogress, to retreat).

11.2.2. The dual-plural or non-singular morpheme in verbs, is indicated by reduplication of the penultimate syllable only (PR) and has only one allomorph. This morpheme will be symbolized by NPR, i.e., number, penultimate reduplication. Examples of this morpheme are: tutu'u to stand, dual-plural (tu'u to stand); nonofo to live together, two or more persons (nofo to live, to dwell); lalahi to be large or big, dual-plural (lahi to be large or big); and lalata to be tame, dual-plural (lata to be tame). Sometimes reduplication of the penultimate syllable in forming the dual-plural form of a verb results in internal reduplication: 'afifio to live, dwell, see, regal, dual-plural ('afio to dwell, live, see, regal).

11.2.3. The diminutive morpheme is also exemplified as reduplication, DR, which appears as all types of reduplication. The allomorphs are : PDR, reduplication of the penultimate syllable (PR), as in aano to be somewhat marshy or covered by ponds (ano lake or pond, anoano to be marshy or covered by ponds) and hilihili to be a little greater (hili to pass, to be past); P-DR, reduplication of the penultimate and ultimate syllables (P-R), as in lahilahi to be somewhat large or great (lahi to be large or great) and in saisai to be fairly good (sai to be good or all right); -PDR, reduplication of the antepenultimate syllable or syllables and the penultimate syllable (-PR), as in molumoluu to be somewhat soft (moluu to be soft) and lelelelei to be somewhat good (lelei to be good); and ADR, reduplication of

the antepenultimate syllable or syllables (AR) (i.e., one or more syllables preceding the penultimate syllable), as in holoholomui to retrogress slowly or somewhat, to go backward somewhat or a little bit (holomui to retrogress, retreat, go backward).

11.2.4. The intensive morpheme is exhibited in reduplication as IR, which has two allomorphs: PIR, penultimate reduplication (PR), as in hihiki to lift with force or roughly (hiki to lift) and teteke to shove, to push hard or roughly (teke to push) and AIR, reduplication of the antepenultimate syllable or syllables (AR) (i. e., syllable or syllables preceding the penultimate), as in kulukulukia to be strained from lifting a heavy weight (intensive) (kulukia to be strained or weighed down with a heavy weight) and teletelefua to be absolutely naked (telefua to be naked).

11.2.5. The derivational morpheme, WR, has the allomorphs PWR, reduplication of the penultimate syllable (PR), as in lalave to cause discomfort or irritation by contact (lave to touch or come in contact) and aano to be somewhat pondy or marshy (ano pond or lake) and P-WR, reduplication of penultimate and ultimate syllables (P-R), as in tofetofe a shellfish somewhat like an oyster (tofe oyster) and koḡokoḡa to be in parts or sections (koḡa part or section).

CHAPTER III  
FORM CLASSES

12.1.1. Depending upon the position they may occupy in utterances or in contour spans, Tongan forms may be divided into six main form classes: Class I, consisting of a large class which may be denominated a verb-noun-adjective class; Class II, consisting of nouns only; Class III, consisting of the actor pronouns; Class IV, consisting of adverbs or modifiers of verbs or verb contour spans; Class V, consisting of adjectives or modifiers of nouns or noun contour spans; and Class VI, consisting of particles, including function words.

In the analysis of form classes above enumerated, the positions forms may occupy have been determined according to the classification of contour spans, which will now be discussed. Stresses will be marked in illustrating environments.

12.1.2. Contour spans may be of two types: macrospans and microspans. A microspan may be defined as the stretch of an utterance occurring between major junctures, as #na'e'álu| went, #kuo+tóo|| has (he or she) fallen? or #kuone+há'u# he (she) has come. A macrospan may be defined as two or more microspans having a relationship of modification, predication, or complementation. A macrospan exhibiting a relationship of modification between the microspans consists of a span which is head and one or more other spans modifying the head span, as #koe+tamãiki|kotòapée| all of the children (#koe+tamãiki|

the children is head span and Ikotòapée! all, every is tail or modifying span), #naʔanau+nôfo!ʔo+fùolóa# they stayed a long time (#naʔanau+nôfo! they stayed is head span modified by ʔo+fùolóa# a long time, a tail modifying the head), and #náʔana+nôfo!áil!ʔo+fùolôa# they stayed there a long time (#náʔana+nôfo! they stayed (dual number) is head span and áil! there and ʔo+fùolôa# a long time, and long time are both tail spans modifying the head span). Each head span in these examples together with its tail span or spans, if more than one, constitute a macrospan. There may be more than one modifying tail span in a macrospan. Macrospans consisting of two or more microspans exhibiting a relationship of modification may be called structures of modification.<sup>1</sup> Two or more microspans exhibiting a relationship of verb and actor or verb and subject may be termed a structure of predication.<sup>2</sup> For example, #ʔoku+mamáfa!ʔae+puhá# the box is heavy consists of the verb span #ʔoku+mamáfa! is heavy and the subject span ʔae+puhá# the box, and #naʔe+fâil!ʔe+sióne!ha+mâlâna# John gave or preached a sermon consists of the verb span #naʔe+fâil! gave, the actor span ʔe+sióne! John or by John, and the goal span !ha+mâlâna# a sermon. In this utterance, the verb span and actor span form a macrosegment of predication or structure of predication. In the same utterance, the verb span and goal span may be said to form a macrosegment

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<sup>1</sup> See W. Nelson Francis, The Structure of American English (New York: Ronald Press Co., 1958), p. 292.

<sup>2</sup> Ibid.

of complementation or structure of complementation. The verb span is nucleus in both the structure of predication and the structure of complementation, and in utterances having both a structure of predication and a structure of complementation involving an actor span and a verb span, the verb span is part of both structures. Dative spans consisting of the dative particles ma'a for, actor-oriented or mo'o for, goal-oriented plus a noun do not enter into a relationship of complementation with the verb span, but rather are equivalent to a modifier of the verb span and thus are part of a structure of modification with the verb span as head, as in #ʔáve|íá|ma'a+sióne# give it to John, take it to John, in which #ʔáve| take or give is the verb span serving as head and |ma'a+sióne# for or to John is the dative span indicating the recipient of the giving. |íá| it is the goal span, which enters into a structure of complementation with the verb span #ʔáve|, the two spans forming a macrospan of complementation. One special type of verb span should be noted. Some verb spans include a morpheme indicating the actor, and whenever a special term is needed to indicate such spans, the name verb-actor span will be used. Such spans may comprise a complete utterance by themselves, as in #tene+ʔálu# he (or she) will go.

12.2.0. With the concept of microspans and macrospans now established, we are now in a position to discuss the various Tongan form classes and the positions or slots occupied by each. The environments in which each form class may appear will be described by means of transformations from the environ-

ments set up or given as basic.

12.2.1.0. Form Class I words may appear in a verb span consisting of either the past tense morpheme allomorph *na'e* or the future tense morpheme allomorph *'e* plus the Form Class I word followed by major juncture: / | /, / # /, or / || /. Examples are: #*na'e*+*nofó'i* | inhabited, #*'e*+*tá'o* | will or shall bake, #*'e*+*'álu* || will (he) go? and #*'e*+*'álu* # (he) will go.

The basic substitution frame determining Group A words of Form Class I is #*na'e*+\_\_\_\_ | with the transformation: #*na'e*+\_\_\_\_ | ---> #*koe*+\_\_\_\_ |, as with #*na'e*+*ʔaóhi* | made ---> #*koe*+*ʔaóhi* | (is) the making or construction. Words found in the corpus examined for this study belonging to Form Class I, Group A, are as follows: *fakaaloalo* to be slow or delayed, *fakakaukau'i* to consider, to deliberate on or about, *fua* to lift, carry, bear, *iai* or *ai* to be, to exist, *nofo'i* to inhabit, to settle, to live on, *nonofo* to live together (dual or plural), *ʔaohi* to make, construct, *paʔo'ia* to consider as unfortunate, *pehee* to say, to state, *pule'i* to rule over, to govern, to direct or manage, *sai'ia* to like, to consider as good, *tau* to arrive, *tau'i* to make war on, to fight, *ta'o* to bake, *te'eki* or the variant form *he'eki* to be not yet, to never be, *tokoni'i* to help, to assist, *to'o* to seize, to take hold of, to carry or take, *'ave* to take, *'ikai* negative, to not be, no, *he'ikai* emphatic negative, not, absolutely not, *'io*, yes, *ʔaue* to move, to shift position, *havili* to blow, to be a strong breeze or wind, *mataʔi* to blow (wind),



to be windy, ?afaa to blow a hurricane, ?uha to rain.

12.2.1.1. These Group A, Class I, words may be divided into at least three sub-groups: Sub-group 1, consisting of forms which exhibit the transformation: #na'e+\_\_\_|---> #\_\_\_| desiderative, as in #na'e+fakakaukaú?i| considered, thought about ---> #fakakaukaú?i| think about, consider. Other forms listed above in Group A, Form Class I, which have been found to occur in Sub-group 1 of Group A, Class I words are as follows: nofo?i to inhabit, ñaohi to make, construct, pule?i to govern, tau?i to fight, ta'o to bake, tokoni?i to help, to assist, ñaue to move, to'o to take, seize, ?ave to take, and fua to lift. Sub-group 2 of Group A, Form Class I words are found to occur in the transformation #na'e+\_\_\_| ---> #\_\_\_| interrogative or #\_\_\_# declarative. Only three forms were found in this sub-group: ?ikai negative, no, he?ikai emphatic negative, absolutely not and ?io yes, which occur in #na'e+?ikâi| didn't (declarative) ---> #?ikâi| didn't (interrogative) or #?ikâi# no, and in #?io| yes ---> #?io# yes. Sub-group 3 of Group A, Form Class I words includes words occurring only in the two positions #na'e+\_\_\_| and #koe+\_\_\_|. The Group A forms occurring only in these two positions and consequently in Sub-group 3 are fakaaloalo to be slow, iai or ai to be or exist, nonofo to live with, paño?ia to consider as unfortunate, pehee to say, to state, sai?ia to consider good, tau to arrive, havili to blow (breeze), matañi to blow (wind), ?afaa to blow (hurricane), and ?uha to rain. Sub-group 4, Group A, Class I forms occur

in the positions of Sub-group 1 and also in the environment #na'e+\_\_\_\_+ai| ke+ha'u| as in #na'e+te'êki+âilke+há'u|fa# he hadn't yet come and #na'e+he'êki+âilke+há'u# he had not yet come. Only two forms, te'eki to not yet be and its variant form he'eki to not yet be have been found occurring as members of this sub-group.

12.2.1.2. Group B, Class I words occur in the environments #na'e+\_\_\_\_| ---> #koe+\_\_\_\_|, as is the case with Group A forms, and in the following additional environments:

#na'e+\_\_\_\_| ---> #na'e+\_\_\_\_+ánel past tense, comparative degree of comparison, #na'e+\_\_\_\_+táhal past tense, superlative degree of comparison, or in an adjective microspan modifying a head span, as in the environment #koe+noun|\_\_\_\_|. This latter environment may also undergo the transformation #koe+noun|\_\_\_\_| ---> #koe+noun+\_\_\_\_|. Note the following examples: #na'e+láhi| was or were great ---> #na'e+láhi+ánel was greater ---> #na'e+láhi+táhal was greatest. Also #na'e+láhi| was great or big ---> #koe+láhi| the greatness or big-ness ---> #koe+fále+láhi| (is) a big house ---> #koe+fále|láhi| (is) a big house. Since words of Group B, Class I may occupy three primary positions: as the nucleus of a verb span, as the nucleus of a noun span, as the only form in an adjective span, or in the adjective slot following a noun nucleus in a noun span, as is noted in the examples cited above, Group B, class I consists of forms having the function verb-noun-adjective.

Group B, class I forms may be subdivided into two main sub-groups: those occurring in the environments already cited and forming the comparative degree and superlative degree, as in the substitution frames: #na'e+\_\_\_+aje! and #na'e+\_\_\_+taha!, which were previously cited, and those occurring in the environments #na'e+\_\_\_! ---> #koe+\_\_\_! in addition to forming the comparative and superlative forms as in the environments: #na'e+\_\_\_!lahi+aje! or #na'e+\_\_\_!?'o+lâhi+aje!, as in the examples #na'e+melîno!lahi+aje! was more peaceable or #na'e+mahîno!?'o+lâhi+aje! was understood more, was plainer or clearer. Forms occurring in the environments first listed will be designated Sub-group 1 and those occurring in the last-named environments or positions will be designated as Sub-group 2.

In a few cases, forms of either group may occur in the environments #koe+ñahi+\_\_\_! or #koe+kau+\_\_\_!, as in #koe+ñahi+vaivái! the weaknesses and #koe+kau+añakóvi! the evil ones, the wicked. Such forms overlap in environment with Group C, Class I forms, which are discussed following Group B, Class I forms.

Sub-group 1, Group B, Class I forms found in the present study are as follows: fuoloa to be a long time or delayed, fuonounou to be short in duration, iiki to be small, tiny, kaukaua to be strong, robust, kehe to be different, kulokula to be red, lahi to be large, great, lalahi to be large, (dual or plural), looloa to be long, maamaalie to be slow, mahino to be plain, clear, understood, mahinonofua to be easily

understood, moluu to be soft, nounou to be short, ofi to be near, nearby, petepete to be rough, sai to be satisfactory, si'i to be small, few, little, si'isi'i to be few, small in amount, to be little, vave to be swift, fast, quick, tuai to be late, delayed, slow. The forms vaivai to be weak and lelei to be good, excellent also appear in the environment #koe+ŋahi+\_\_\_! as in #koe+ŋahi+vaivái! the weaknesses or weaknesses and in #koe+ŋahi+leléi! excellent features, good features. The forms aŋakovi to be wicked or evil and aŋalelei to be good, to be generous also occur in the environments #koe+ŋahi+\_\_\_! and #koe+kau+\_\_\_!, as in #koe+ŋahi+aŋakóvi! bad deeds or ungenerous acts, #koe+kau+aŋakóvi! the wicked, #koe+ŋahi+aŋaleléi! good deeds or behavior, and #koe+kau+aŋaleléi! the good people or those who are good or generous or well-behaved.

Sub-group 2, Group B, Class I forms found occurring in the environments indicated above are as follows: lotolahi to be courageous, melino to be peaceable, to be at peace, molemole to be smooth, movetevete to be scattered, pukupuku to be short, tokakovi to be rough as a road, to be broken up (the surface), tokaŋa to heed, to pay attention, haŋatonu to be straight, not crooked, kehekehe to be different, various, to'oto'o to take or to seize, iterative, tuotuai to be late, to be delayed or slow, 'ile'ila to be spotted, 'ilo to know, to have knowledge, 'ilo'ilo to know many things, to have great knowledge, fakato'oto'o to hurry or hasten, fakavave to hasten, to speed up, fakavavevave to

hurry or hasten. 'ilo'ilo is found also in the environment #koe+kau+'ilo'ilo! the wise ones.

12.2.1.3. Class I, Group C forms appear in the environments #na'e+\_\_\_\_! ---> #koe+\_\_\_\_!, as do all forms of Class I, and in one or the other or both of the following environments involving the inanimate plural marker Ꞥahi (also honorific plural) and the human plural marker kau: #koe+Ꞥahi+\_\_\_\_! and/or #koe+kau+\_\_\_\_!. Forms appearing in both of these latter environments belong to Sub-group 1 of Group C, Class I and exhibit both transformations #koe+\_\_\_\_! ---> #koe+Ꞥahi+\_\_\_\_! is or are the + inanimate plural marker and #koe+kau+\_\_\_\_! is or are the + human plural marker. The following forms have been found appearing in all of these environments for Class I, Group C, Sub-group 1: fakapoo to commit murder, malapa to preach a sermon, to give a talk or speech, Ꞥaue to work, Ꞥapitaiso to baptize, sivi to examine, to take an examination, Ꞥani to weep, to cry, tau to fight, to wage war, tokoni to help, to give aid or assistance, faiva to participate in a dance or other feature of entertainment, to entertain, and lotu to pray, to worship.

Forms of Sub-group 2 of Group C, Class I appear in all of the environments of Group C forms listed above except in the environment #koe+kau+\_\_\_\_! where they do not occur. Forms in Sub-group 2 found in the present study are as follows: fai to do, fakakaukau to think, fakamaaloo to give thanks, folofola to speak (regal), hiki to lift, to move, hilifaki to lay or set on, kovi to be bad or evil, laumaalie spirit,

to live (honorific), loto to will, to want or wish, to agree, maama to be light, to shine, maavae to part, to separate, matapaa to have doors or gates, door or gate, mole to be lost, to disappear from sight, mo'oni to be true or genuine, nima to have hands, hand, pule'āna to be a kingdom, kingdom or government, sino to be fat, body, sio'ata to have or wear glasses, glass or glasses, tala to tell, to make known, tatau to be like or alike, to be the same, tohi to write, tu'i to reign as king, vaivai to be weak, va'a to have a branch, branch, va'e to have feet, foot or feet, 'ila to have a spot or blemish, spot or blemish, 'otu to be in a line or row, row, 'uli to be dirty, unclean.

Class I, Group C, Sub-group 3 forms appear in the environments #na'e+\_\_\_| ---> #koe+\_\_\_| ---> #koe+kau+\_\_\_|, as in #na'e+fefine| (she) was a grown woman ---> #koe+fefine| is a woman ---> #koe+kau+fefine| are women, are the women. The following forms, in addition to fefine woman, have been found appearing in these environments in the present study: fakauli to drive or steer, fanogo to hear, to listen, mamata to see, to look, ma'oni'oni to be righteous, melomelo to be brown or tan, to be dark yellow, motu'a to be old, nofo to live, dwell, reside, pule to be in charge, to be head of, to reign, sootia to be a soldier, soldier, taki to lead, to conduct, talavou to be young, to be handsome, ta'ata to be a mature man, man.

12.2.1.4. Class I, Group D forms occur in the environments #na'e+\_\_\_| ---> #na'e+fāil|\_\_\_| or #na'e+fāil'o+\_\_\_|, as in #na'e+a'atāha| was one time or once, #na'e+fāil'a'atāha|

was done once, did once or one time, and #na'e+fáil'o+?añatáhal was done once, did once or one time. Forms which have been found occurring in these environments are as follows: ?añataha once, one time, ?añaua twice, two times, ?añatolu thrice, three times, tu'otaha once, one time, tu'oua twice, two times, tu'otolu thrice, three times, tu'ofiha how many times, fakataau according to, like, and fakamuimui to be last, to bring up the rear.

12.2.1.5. Class I, Group E forms appear in the environments #na'e+\_\_\_| ---> #koe+\_\_\_| and in the environments |?e+\_\_\_| numerical modifier, and |?e+tòko+\_\_\_| human numerical marker. Forms occurring in these environments found in the present study are taha one, ua two, tolu three, faa four, nima five, ono six, fitu seven, valu eight, hiva nine, hoñofulu ten, uofulu twenty, teau one hundred, uañeau two hundred, toluñeau three hundred, faañeau four hundred, valuñeau eight hundred. These appear in the above environments as follows: #na'e+táhal was one, #na'e+toko+táhal was one person, was alone, #koe+tañátal'e+tòko+táhal (is) one man, and #koe+fále|?e+táhal (is) one house.

12.2.1.6. Class I, Group F forms occur in the following environments: #na'e+\_\_\_|, #ko+ possessive pronoun +mé?a|\_\_\_|, #ko+ possessive pronoun + fále|\_\_\_|, #koe+mê?a|\_\_\_|, and #koe+fále|\_\_\_|. Examples of these are #na'e+?a?ána| was or were his or her, #ko'ene+mê?a|?a?ána| (is) his or her own thing, #ko+hòno+fále|?o'ónal| (is) his or her own house, #koe+mé?a|?a?ána| (is) his or her own thing, #koe+fále|?o'ónal| (is) his

own house. Class I, Group F forms may be divided into two sub-groups depending upon whether they occur in the environment #koe+méʔal\_\_\_\_| or in the environment #koe+fále|\_\_\_\_|. Those occurring in the former environment will be classed as Sub-group 1 and those in the latter environment as Sub-group 2.

Forms found in the environments of Class I, Group F, Sub-group 1 are non-terminative or actor-oriented and are as follows: ʔaʔaku to be mine, exclusive, ʔaʔau to be yours, singular, ʔaʔata to be one's or mine, inclusive, ʔaʔana to be his or hers, ʔamaua to be ours, dual, exclusive, ʔamautolu to be ours, exclusive, plural, ʔataua to be ours, dual, inclusive, ʔatautolu to be ours, inclusive, plural, ʔamoua to be yours, dual, ʔamoutolu to be yours, plural, ʔanaua to be theirs, dual, and ʔanautolu to be theirs, plural.

Forms found in the environments of Class I, Group F, Sub-group 2 are terminative aspect or goal-oriented forms and are as follows: ʔoʔoku to be mine, exclusive, ʔoʔota to be one's or mine, inclusive, ʔoʔou to be yours, singular, ʔoʔona to be his or hers, ʔomaua to be ours, dual, exclusive, ʔomautolu to be ours, plural, exclusive, ʔotaua to be ours, dual, inclusive, ʔotautolu to be ours, plural, inclusive, ʔomoua to be yours, dual, ʔomoutolu to be yours, plural, ʔonaua to be theirs, dual, and ʔonautolu, to be theirs, plural.

12.2.1.7. Class I, Group G forms occur in the environment #naʔe+\_\_\_\_| plus the transformation #naʔe+\_\_\_\_| ---> #naʔe+\_\_\_\_+ʔálu|, as in #naʔe+láva| was able, was accomplished ---> #naʔe+láva+ʔálu| was able to go. Forms which have been found in the present study occurring in these two environments



are as follows: lava to be able, to accomplish or finish, haya to proceed to, to face toward, toe to be or do again, to remain, kamata to begin or start, ?osi to finish, to complete, and ?uluaki to be first, to do first of all. Each of the above-mentioned forms also occurs in the environment: #na?e+\_\_\_! ---> #koe+\_\_\_!, as in #na?e+láva! was able, accomplished or was accomplished ---> #koe+láva! the being able, the accomplishment or finishing.

12.2.1.8. Class I, Group H forms occur in the environment #na?e+\_\_\_+?álu! and in the transformation #na?e+\_\_\_+?álu! ---> #koe+\_\_\_+?álu!. They also occur in the environment #koe+tâma!\_\_\_+?aaúe! in an adjectival modifier contour span. Only two forms have been observed in this group of Class I forms: fié to want, to desire and fa?a to be habitual in doing, to be able to do, to usually or constantly do. Examples of spans in which these two forms, together with transformations, are as follows: #na?e+fié+?álu! wanted to go ---> #koe+fié+?álu! the desire to go, the wanting to go; #koe+tâma!fié+?álu! a fellow wanting to go, a fellow desirous of going; #na?e+fâ?a+?álu! usually or always went, constantly went ---> #koe+fâ?a+?álu! constant going; #koe+tâma!fa?a+?álu! a fellow constantly going, a fellow always on the go.

12.2.1.9. Class I, Group I forms occur in the environment #na?e+\_\_\_! and the transformation #na?e+\_\_\_! ---> #\_\_\_!. They also occur in the environment #na?e+\_\_\_+verbl, as in the following example: #na?e+matamáta! it seemed, it was apparently ---> #matamáta! apparently; #na?e+matamata+?úha! it seemed

like rain, it seemed as though it would rain. Other forms, in addition to matamata to seem, found occurring in these environments in the present study are as follows: nalinali to look like, to resemble, to appear or seem, nofonofo to go on living for a period, to stay or dwell (continuative), faifai to continue on, to pass or go by (time), 'oiauee alas, how unfortunate, lolotoŋa to be in progress, while, during, fakafokifaa to be sudden or unexpected, maaloo thanks, how nice, congratulations, and talū to be since, since. This latter form occurs in the environment #na'e+\_\_\_+péel, as in #na'e+tálu+péel was ever since, and in the environment #na'e+\_\_\_l, as in #na'e+tálu! was since; it also occurs in the transformation #na'e+\_\_\_l ---> #\_\_\_l, as in #tálu!'ene+'álu! since his going, as do all other forms in this group with the difference that #tálu! always precedes a subject microspan and the other forms in the same environment precede verb verb microspans or verb-actor microspans. However, talū since does not occur in the environment #na'e+\_\_\_+verbl, as do the other forms.

12.2.1.10. Class I, Group J forms appear only in the environments #na'e+\_\_\_l and #na'e+verbl'o+\_\_\_l. Only two forms have been found in the present study which occur in these environments: hagee to be like, to appear to be, to look like and taa to be exactly, to be just so many. However, it is likely that other non-observed forms occur in these environments.

12.2.1.11. Class I, Group K forms appear in the environments #ka+ne+\_\_\_l and #ka+na'e+\_\_\_l. Only two of these have been found: 'oua don't, negative prohibition and ta'e'oua to

not be. They appear as follows: #ka+ne+ta?e?oua|?ene+ha?ú| had it not been for his coming and #ka+ne+?oua|?ene+ha?ú| if he hadn't come.

12.2.1.12. Class I, Group L forms appear in the environment #na?e+\_\_\_| and #na?e+?álu+\_\_\_| or #na?e+ôo+\_\_\_|. The forms which occur in these environments are as follows: hake to go up, upward, hifo to go downward, mai toward the speaker, to give to the speaker, atu toward the second person or persons, to give to the second person or persons, and aje toward a third person, to give to a third person or persons. Examples of the usage of these are as follows: #na?e+háke| ascended, went up, #na?e+?álu+háke| went up, ascended, #na?e+tô?o+hake| lifted up, took up, #na?e+ôo+mail came (plural), #na?e+tâu+mail arrived, came (a boat), #na?e+?álu+aje| went to a third or another place, #na?e+áje| gave to a third person, and #máil give to me, give here.

12.2.1.13. Class I, Group M forms occur in the environments: #na?e+\_\_\_+átul or #na?e+\_\_\_+mail and #na?e+tô?o|\_\_\_+háke| or #na?e+â?u|\_\_\_+máil. Three forms have been found occurring in these environments: tahataha to do one by one, to move or do gradually, takitaha to be each one, each one, to each do, and kaatoa to be all, to be all together, to do all together. Examples of their use in microspans are as follows: #na?e+tô?o|tahataha+háke| (he or she) took up one by one, #na?e+tahataha+átul moved gradually a little farther on, #na?e+tô?o|takitaha+háke| each gathered or picked up, #na?e+kâatôa+máil everyone came, all gathered here, #na?e+â?u|kaatoa

+máil all arrived here, all came. takitaha each, however, does not occur in the environment #na'e+\_\_\_\_+hákel, but does occur in the environment #na'e+\_\_\_\_+fáil, as in #na'e+takitaha+fáil each did.

12.2.1.13. Class I, Group N consists of only two forms that have been found in the present study. Those two forms are hei'ílo who knows, it is unknown, which may appear in the environment #\_\_\_\_# or #\_\_\_\_|pe+'e+lôto| who knows whether will agree or consent, and the form koloto there is absolutely none, which appears in the environment #\_\_\_\_|, as in #kolôto|kene+'ílo| he (she) absolutely doesn't know. Note the examples: #hei'ílo# I don't know or who knows, perhaps and #hei'ílo|pe+tène+'álu|ki+âi|pe+'íkái# I don't know whether he (she) will go there or not.

12.2.1.14. Class I, Group O also consists of only two forms: taumaiaa oh that it were, oh that it might be and 'ofa I wish. These appear as follows: #taumaiâa|kene+há'u# oh that he might come and #'ôfa|kene+há'u# I hope he comes, I hope she comes.

12.2.1.15. Class I, Group P forms consist of exclamatory utterances which appear in the environment #\_\_\_\_#. Forms which have been found appearing in this environment with exclamatory meaning are as follows: seuke exclamation of surprise, taamani exclamation of surprise coupled with mild regret, and 'oiavee alas, woe is me, how unfortunate.

12.2.2.0. Class II forms are those occurring either in the environment #ko+\_\_\_\_| or the environment #koe+\_\_\_\_| but not in the environment #na'e+\_\_\_\_|, as is the case with Class

I forms. Most pronominal forms, except the actor pronouns, which occur between a tense marker allomorph and a verb, are included in Class II forms. The actor pronouns are classified as Class III forms.

The various groups of Class II forms will now be discussed, including the environments in which the forms appear and the particular forms which have been found appearing in such environments in the present study.

12.2.2.1. Class II, Group A forms appear in the environment #koe+\_\_\_| with the transformation #koe+\_\_\_| ---> #ko+\_\_\_|. They also appear in the environment |kihe+\_\_\_| and the transformation |kihe+\_\_\_| ---> |ki+\_\_\_|, as in the case of maamani this world, the earth: #koe+maamáni| is this earth, the earth ---> #ko+màamáni| is this earth (a place) and |kihe+maamáni| to the earth, to this earth ---> |ki+màamáni| to the world, to this earth (place). Other forms, in addition to maamani, which have been found appearing in these environments are as follows: hevani heaven, tokelau north, hihifo west, luluŋa west, western islands, hahake east, toŋa south, and laŋi heaven, sky.

12.2.2.2. Class II, Group B forms are sub-divided into Sub-group 1-A, Sub-group 1-B, and Sub-group 2. Sub-group 1-A forms appear in the environments #koe+\_\_\_| together with the expansion #koe+ŋahi+\_\_\_| and also in the environment |kihe+\_\_\_|. Note the example #koe+fonúá| is the or a land ---> #koe+ŋahi+fonúá| are the lands, are lands, islands or continents. Fonua also appears in the environment |kihe+fonúá| to the land, to the island. Forms which have been found oc-

curring in these environments, in addition to fonua, in the present study are as follows: kakai people, palakipoe black-board, penivahevahe pencil, papa board, puha box, sioka chalk, letio radio, saliate cart, motokaa automobile, sima cement tank, 'akau plant, tree, matala'i'akau flower, pola plaited coconut leaves used in building or for holding food, ato roof, pou beam, pillar, mata'itohi letter of the alphabet, teepile table, kulo pot for cooking, umu earthen oven, and kato basket. One additional form, haa what (interrogative) appears in all these environments except #koe+ŋahi+\_\_\_! since the form cannot be used in the plural.

Sub-group 1-B of Class II, Group B forms appear in the same environments as Sub-group 1-A forms with the addition of the environment #koe+\_\_\_+noun!, as with 'aho day, which has been observed appearing in #koe+'áho! is a or the day, #koe+ŋahi+'áho! are days, are the days, lkihe+'áho! to the day, and #koe+'aho+falaite! is Friday. The following other forms appear in Sub-group 1-B environments similar to 'aho day: poo night, efiafi afternoon, poŋiponŋi morning, koŋa part, fuŋa surface, tumuaki top, summit, tu'i king, kuini queen, 'eiki noble, chief, and 'otua god.

Class II, Group B, Sub-group 2 forms occur in the environments #koe+\_\_\_! ---> #koe+ŋahi+\_\_\_! and lkihe+\_\_\_! ---> lki+\_\_\_! and lkihe+ŋahi+\_\_\_!. Examples of forms in these environments are as follows: #koe+mótul is the or an island, #koe+ŋahi+mótul are islands, are the islands, lkihe+mótul to the island, lkihe+ŋahi+mótul to islands, to the islands, and lki+mótul to the island (place). Other forms which have been

observed occurring in these environments are as follows: kolo town, village, city, ?uta bush, inland area, bush area surrounding a village, mataatahi seashore, beach, faʻa beach, small area of beach, tahi ocean, sea, maka rock, quarry or pit for obtaining rock, vaka boat, ship, fale house, faleako school house, vahehahake eastern district, eastern part of island, vahehihifo western district, western part of island, lotokolo center of town. In the last-named environment, that of |ki+\_\_\_|, these forms overlap with Group D, Class II forms, which also occur in the environment |ki+\_\_\_|:

Class II, Group B, Sub-group 3 forms occur in the environments #koe+\_\_\_| ---> #koe+faʻa+\_\_\_| and |kihe+\_\_\_|, as #koe+pépe| is a or the butterfly, #koe+faʻa+pépe| are butterflies, the butterflies, and |kihe+faʻa+pépe| to the butterflies, to butterflies in addition to |kihe+pépe| to the or a butterfly. Other forms which have been observed appearing in these environments are as follows: molokau centipede, ika fish, manu animal, insect, manupuna bird, sikotaa kingfisher, heʻe grasshopper, cricket, namu mosquito, and moa chicken, fowl.

Class II, Group B, Sub-group 4 forms occur in the environments #koe+\_\_\_|, #koe+kau+\_\_\_|, |kihe+\_\_\_|, and |kihe+kau+\_\_\_|, as in the examples: #koe+taʻahine| is a or the girl, #koe+kau+taʻahine| are girls, are the girls, |kihe+taʻahine| to a or the girl, and |kihe+kau+taʻahine| to girls, to the girls. In addition to taʻahine girl, the following other forms have been observed occurring in the respective environments

of this sub-group: finemui young girl, young woman, poolisi policeman, seila jailer, talekita director, and koomiti committee.

12.2.2.3. Class II, Group C forms occur in the environments #koe+\_\_\_|, |kihe+\_\_\_|, and #teu+verbl\_\_\_| (goal microspan). Note the examples: #koe+penisíni| is benzine, |kihe+penisíni| to the or some benzine, to benzine, and #teu+fakatâu|penisíni| I will buy benzine. These forms may also occur in the regular goal microspan which includes the goal marker l63 'a, as in #teu+fakatâu|'ae+penisíni# I will buy some benzine. Other forms which have been observed occurring in these environments are as follows: kava pepper root used in a native drink, hu'akau milk, aisikilimi ice-cream, tupenu cloth, natu native tapa cloth, siaine banana, mataka mohuku tall grass, orchard grass, musie lawn grass, kakano flesh, kelekele soil, earth, maasima salt, suka sugar, loli candy, pa'anga money, kumala sweet potato, 'ufi yam, and talo taro.

12.2.2.4. Class II, Group D, Sub-group 1 forms occur in the environments #ko+\_\_\_| and |ki+\_\_\_| and are place names. Note the examples: #ko+nuku'alófa| is Nuku'alofa (capital city of Tonga) and |ki+nuku'alófa| to Nuku'alofa. Other forms occurring in these environments that have been observed in this study are as follows: ha'apai Ha'apai, entral group of islands, toŋa Tonga, toŋatapu Tongatapu, main Tongan island, ha'amoá Samoa, fahefa Fahefa, a village in Tongatapu, matahau Matahau, a village in Tongatapu, neiafu Neiafu, capital



of Vava'u, the northern group of islands, 'amelika America, Pilitaania Great Britain, nu'usila New Zealand, niue Niue or Savage Island, and fee where, interrogative.

Class II, Group D, Sub-group 2 forms occur in the environments #ko+\_\_\_| or #ko+\_\_\_# together with the transformation #ko+\_\_\_| ---> |ki+\_\_\_|. Morphophonemic variation is observed in the latter transformation. For example: #ko+'éni| is this, are these, here is or are, ---> |ki+héni| to here, to this. Three forms have been observed occurring in these environments: 'eni this, these, now, with allomorphs 'eni and heni; 'ena that, those, there, with allomorphs 'ena and hena; and ee that, those, there near or at the location of a third person or persons. The allomorphs heni and hena co-occur with 164'i in, at, 165 ki to, for, and mei from. 'eni and 'ena occur in all other environments. It should be observed that in rapid speech all of the above forms are also observed occurring in the environments #ko\_\_\_| and |ki\_\_\_| with loss of plus juncture, as in #ko?'éni| is this, are these, here is or are and |kihéni| to here. The form ai there, it, that, those may also be included with this sub-group but has defective distribution, occurring only in the environments |ki+\_\_\_|, as in |ki+ái| to there, to it, to that or those; |'i+\_\_\_|, as in |'i+ai| in there, there; and |mei+ai| from there or it. All of the above forms, except ai, also occur in the subject slot, as in the environment #koe+noun|\_\_\_# and all occur in an adverbial slot, as in the environment #'e+'alu|\_\_\_#. Examples

of usage in these last-named environments are as follows:

#koe+séa|'éni# this is a chair, #koe+fâle|ée# that over there is a house, #'okune+'âlu|'éni# he is going now, #'e+'âlu|ái# (he or she) will go because of it or that, (he or she) will go then.

Class II, Group D, Sub-group 3 forms occur only in the environments #ko+\_\_\_\_| and |ki+\_\_\_\_| and are nouns indicating periods of time. Forms occurring in these environments found in the present study are as follows: ono'aho time long ago, ancient times, sanuali January, fepueli February, maasi March, epileli April, mee May, sune June, siulai July, aokosi August, sepitema September, okatopá October, novema November, tiisema December, and lihamu'a first month of the ancient Tongan calendar.

12.2.2.5. Class II, Group E forms occur in the environments #ko+\_\_\_\_| and |kia+\_\_\_\_| and consist of personal names. Forms found occurring in these environments, together with examples of their usage, are as follows: #ko+pita| is Peter, |kia+pita| to Peter, sione John, mele Mary, ana Anna, tupou Tupou, finau Finau, and hai who, interrogative.

12.2.2.6. The so-called postposed pronominal forms are a sub-class of nouns and are found occurring in the environments #ko+\_\_\_\_| and |kiate+\_\_\_\_|, as #ko+au| is I (i.e., it is I) and |kiate+au| to me, for me. They will be classified here as Form Class II, Group F forms. Other pronominal forms occurring in these environments are as follows: kita one, I, first person, inclusive, singular, koe you, singular, ai

he, him, she, her, it, kimaua we, us, dual, exclusive, kimautolu we, us, plural, exclusive, kitaua we, us, dual, inclusive, kitautolu we, us, plural, inclusive, kimoua you, dual, kimoutolu you, plural, kinaua they, them, dual, and kinautolu they, them, plural.

12.2.2.7. Another class of pronominal forms, that of the so-called emphatic pronouns, is also a sub-class of nouns occurring in the environments #ko+\_\_\_\_| and |ki+\_\_\_\_|. In addition, however, they occur in other environments such as that of a subject microspan without the subject marker, as in the environment #?e+?áve|\_\_\_\_|. Forms occurring in these environments and ordinarily called emphatic pronouns will be classified as Class II, Group G forms, and since they may be divided into two groups according to the noun group with which they co-occur, two sub-groups will be set up: Sub-group 1 and Sub-group 2. Class II, Group G forms occur in the environments #ko+\_\_\_\_| and |ki+\_\_\_\_| previously mentioned and also in subject microspans without a subject marker and also in the following additional environments: #?e+?áve|\_\_\_\_|kau+sootiâ, #?e+?áve|\_\_\_\_|salioté|, or #na?e+foáki| ki+\_\_\_\_|ñáhi+kaumé?a#, as in the case of #?e+?áve|ha?anaû|kau+sootía| their soldiers will be taken, #?e+?áve|ha?akû|salioté| will take my own cart, #na?e+foáki|ki+ho?okû|ñahi+kaumé?a| were or was given to my friends. Forms occurring in the first and second positions listed exhibit the non-terminative aspect and will be denominated Sub-group 1 forms and those in

the latter position exhibit the terminative aspect and will be denominated as Sub-group 2 forms.

Forms found occurring in the positions of Class II, Group G, Sub-group 1 forms are as follows: ha'aku mine, exclusive, ha'ata one's, mine, inclusive, ha'au thine, yours, singular, ha'ana his, hers, ha'amaua ours, dual, exclusive, ha'amautolu ours, plural, exclusive, ha'ataua ours, dual, inclusive, ha'atautolu ours, plural, inclusive, ha'amoua yours, dual, ha'amoutolu yours, plural, ha'anaua theirs, dual, and ha'anautolu theirs, plural.

Forms found occurring in the positions of Class II, Group G, Sub-group 2 forms are as follows: ho'oku mine, exclusive, ho'ota one's, mine, inclusive, ho'ou thine, yours, singular, ho'ona his, hers, ho'omaua ours, dual, exclusive, ho'omauautolu ours, plural, exclusive, ho'otaua ours, dual, inclusive, ho'otuatolu ours, plural, inclusive, ho'omoua yours, dual, ho'omoutolu yours, plural, ho'onaua theirs, dual, and ho'onautolu theirs, plural.

12.2.2.8. Class II, Group H forms appear in the environments #ko+\_\_\_\_|, |ki+\_\_\_\_|, and in the noun modifier slots |kihe+\_\_\_\_+fále| and #koe+\_\_\_\_+fále|, as in the examples: #ko+mú'a| the place in front, the front part, |ki+mú'a| to the front, forward, #koe+mû'a+fále| the place in front of the house, and |'ihe+mû'a+fále| in front of the house (place). Other forms, in addition to mu'a front, found occurring in these environments are as follows: mui rear, in the rear, behind, lalo below, under, 'oluŋa above, over, loto center, middle, and tu'a outside.

12.2.2.9. Class II, Group I forms occur in the environments #koe+\_\_\_\_\_! and in an adverb microspan following a predicate span, as in the environment #'e+fâil\_\_\_\_\_# or in the environment #na'e+fâil\_\_\_\_\_#. Note the examples: #koe+'apóol (it) is tonight, #'e+fâil'apóo# (it) will be held tonight. Other forms found occurring in the environments of this group 'aponiponi tomorrow, tomorrow morning, 'anepoo last night, 'aneafi yesterday, 'amui in the future, the future.

12.2.2.10. Class II, Group J forms occur in the environments #koe+\_\_\_\_\_!, lkihe+\_\_\_\_\_! and in the adjective slots indicated in the following environments: #koe+noun+\_\_\_\_\_!, #koe+noun!\_\_\_\_\_!, lkihe+noun+\_\_\_\_\_!, and lkihe+noun!\_\_\_\_\_!, as in the examples: #koe+taimi+kùohíli! is the time gone by, is the past, #koe+taîmi!kuohíli! is the past, #koe+'aho+falàite! is Friday (i.e., the day Friday), lkihe+kahá'u! to the future, and lkihe+taîmi!kuhá'u! or lkihe+taimi+kahá'u! to the future (i.e., the future time). Forms which have been observed occurring in these environments are as follows: kuohili past, gone by, time gone by, kaha'u to come, future, time to come, saapate Sunday, moonite Monday, tusite Tuesday, pulelulu Wednesday, ta'apulelulu Thursday, falaite Friday, tokonaki Saturday.

12.2.2.11. Class II, Group K forms occur in the following environments: #koe+\_\_\_\_\_! and lkihe+\_\_\_\_\_! but in none of the other environments listed for groups or sub-groups of class II forms. Note the use of 'ataa sky,

open space, firmament in #koe+ʔatáa| is the sky and |kihe+ʔatáa| to the sky. Other forms observed appearing in the two environments given for Class II, Group K forms are as follows: ʔaoniu ʔaoniu, name of a boat, fuŋaʔakau in a tree or in the tree (location or place), fuŋafonua surface of the land, on the land (location or place), and tumuakifale housetop.

12.2.2.12. Class II, Group L consists of only one form, niʔihi some, a few which occurs in the environments #koe+\_\_\_\_| and the numerical adjective slot |ʔe+\_\_\_\_|. Note the examples of the use of niʔihi: #koe+niʔihi| are some and #koe+ŋahi+mêʔa|ʔe+niʔihi| are some things.

12.2.2.13. Class II, Group M consists of two forms, noa nothing, zero, worthless, and paŋo unfortunate, unfortunately, misfortune. These forms occur in the environments #koe+\_\_\_\_|, #koe+noun+\_\_\_\_-|, and #naʔe+verb+\_\_\_\_|, the latter two consisting of an adjective slot and an adverb slot respectively. Note the following examples of the use of the two forms: #koe+nóa| is nothing, is zero, #koe+mêʔa+nóa| is a worthless thing, and #naʔe+fâi+nóa| did without reason, did accidentally.

12.2.3.0. Class III forms consist of the so-called preposed or the actor pronominal forms. These occur in the actor slot in verb-actor spans, as in the following environments: #naʔa\_\_\_\_+ʔálu| went, #naʔa+\_\_\_\_+ʔálu| went, #te\_\_\_\_+ʔálu| will or shall go, #te+\_\_\_\_+ʔálu| will or shall go, #ʔoku+\_\_\_\_+ʔálu| am, is or are going, #kuo\_\_\_\_+ʔálu| has or have gone, or #kuo+\_\_\_\_+ʔálu| has

or have gone. Examples of forms occurring in these environments are as follows: #nãʔaku+ʔálu| I went, #naʔa+nau+ʔálu| they went, #küou+ʔálu| I have gone, #kuo+nau+ʔálu| they have gone, #ʔoku+ou+ʔálu| I am going, I go, and #tenâu+ʔálu| they will or shall go.

The complete list of Class III forms, together with allomorphic forms, is as follows: ku (ku, u, ou) I, first person, singular, exclusive te one, I, first person, singular, inclusive, ke you, singular, ne he, she, it, ma we, dual, exclusive, mau we, plural, exclusive, ta we, dual, inclusive, tau we plural, inclusive, mo you, dual, mou you, plural, na they, dual, and nau they, plural.

Class III forms, in the singular and dual, are identical with certain allomorphs of the pronominal roots listed under minor morphemes in the present study. (See Chapter II, Section 8.1.1.)

12.2.4.0. Class IV consists of forms which occupy adverb slots in Tongan utterances. These positions consist of the position immediately preceding a verb in a verb or verb-actor span or of the position of modifier in a microspan in a modifying and following a verb or verb-actor span.

12.2.4.1. Class IV, Group A forms occur in the environments #naʔe+\_\_\_\_+verbl or #naʔane+\_\_\_\_+verbl, as does sinaki beforehand, first of all in the following examples: #naʔe+sinâki+fâil| did first of all, did beforehand and #naʔane+sinâki+fâil| he did first of all or beforehand. Other forms, in addition to sinaki, which

have been found occurring in this environment are as follows: si'i diminutive, fuofua first, before, kei still, yet, mei almost, nearly, meimei almost, nearly (moderative), momo'i absolutely, emphatic negative, mu'aki beforehand, toe again, fua first, previously, tomu'a previously, before, earlier, matuaki certainly, indeed, emphatic, toki then, at that time, subsequently, toutou repeatedly, tou repeatedly, fu'u exceedingly, very much, ki'i slightly, a little bit.

12.2.4.2. Class IV, Group B forms occur in the environment |\_\_\_\_| or |\_\_\_\_# in an adverb span modifying a verb or verb-actor span, as fakakuu when, interrogative in the utterance #teke+'álu|fakakúu# when will you go. #teke+'álu| you, singular, will or shall go is a verb-actor span containing a tense marker te future, an actor form ke you, singular and 'álu go. Other forms, in addition to fakakuu, which have been observed occupying this slot are as follows: 'afee when, future, 'afe'ia just when, future, 'anefee when, past, 'anefe'ia just when, past, 'aupito very, exceedingly, to a great degree, nai approximately, just about, perhaps, 'apee perhaps, maybe, koaa interrogative particle, noa'ia accidentally, without cause of reason, tokua allegedly, assertedly, indefinite, matematee exactly, moderative, matee exactly, tofupée exactly, just like, tofu just like, exactly like. koe'uma'aa for what reason, to what avail appears in the environment |\_\_\_\_# as in #na'ane+'álu|koe'uma'áa# to what avail did he go? The forms peheni



in this manner, like this and pehena in that manner, like that occur in this position or slot, but overlap in distribution with verbs in Group A of Class I, especially with pehee to be thus, and therefore are a sub-group of Class I, Group A verbs. Note the examples: #na?e+fâi|pehée# (he) did thus, #na?e+fâi|pehêni# (he) did in this manner, and #na?e+fâi|pehena# (he) did in that manner. pehe to be thus also occurs in the verb slot, as do peheni and peheni, as in the examples: #na?e+pehée| was thus, were thus, #na?e+pehêni| was or were like this or in this manner, and #na?e+pehêna| was or were that way or like that.

12.2.4.3. Class IV, Group C forms occur in the slot following the verb in verb or actor-verb spans, as in the examples: #na?e+?âlu+pée| (he or she) went anyway, (he or she) went all right and #na?e+?âlu+âpe| (he or she) went on or along (to a third place). Other forms, in addition to pee just, all right, anyway and ape to a third place, along, on, are as follows: aa politeness or polite hortatory, foki also, likewise, too, holo about, here and there, fano to various places, about, here and there, leva immediately, at once, then, ape comparative degree of comparison, taha superlative degree of comparison, fau exceedingly great, superlative degree, mai to or toward the speaker or first person, atu to or toward the second person.

12.2.5.0. Class V consists of adjectives occupying positions of modification to a noun nucleus in a nounal span such as the actor microspan |?he+ki?i+tamasí?i| by

(goal marker) a small or tiny boy, the subject span |ʔae+kiʔi+tamásiʔi| subject marker, a small or tiny boy, the goal span |ʔae+momòʔi+tamásiʔi| goal marker, a very tiny boy, or in a modifying span having a noun nucleus, as |kihe+kiʔi+tamásiʔi| to a small boy. Class V forms may also occupy the modifying slot following a span with a noun nucleus, as in the environment |\_\_\_\_| in #koe+tamásiʔi| kotòapêe| is every boy, are all boys. Number markers accompanying nouns occur in the slot preceding nouns and are thus classed as Class V forms and are basically adjectival in function, as #koe+oŋo+taŋáta| are men, dual in which oŋo marks the dual number. The possessive pronominal forms are also classed as Class V forms since they also occupy the modification slot preceding nouns, as #ko+hòku+fále| is my house.

12.2.5.1. Class V, Group A, Sub-group 1 forms appear in the pre-noun modification slot in spans with a noun nucleus, as in the environment #koe+\_\_\_\_+noun|, |kihe+\_\_\_\_+noun| and so on. For example, mataʔi a single unit of in #koe+mataʔi +tóhi| is a letter or is the letter of the alphabet occupies the adjective slot. Other forms found occupying this position of modification of nouns in the present study are as follows: mataʔi single unit of, fukahi surface of (ocean or sea), kilisi bottom of (ocean or sea), luoki hole or den of, tuoni single gust of, aofi palm of, outer side of, foʔi single one of, kiʔi tiny, small, kihiʔi greatly reduced in size, small, koto complete, entire,

holoŋaa row of, kaunaa associate of, and mataa front part of.

Class V, Group A, Sub-group 2 forms also appear in the pre-noun position as do forms of Sub-group 1, but the former mark number, both dual and plural, or indicate collectivity and are therefore listed in a separate sub-group. These number markers are as follows: oŋo dual marker, ŋahi plural marker, inanimate, honorific, faŋa plural marker, animals, familiar, kau plural marker, human, non-honorific, ʔuu group, set, collection, fuifui flock (fowl or birds), tukui various, several, tuʔu several, various.

Class V, Group A, Sub-group 3-A forms consist of possessive adjectives or possessive pronouns, which are divided into two groups depending upon the noun gender class with which they co-occur. For example, Sub-group 3-A forms co-occur with such nouns as meʔa thing, hele knife, kato basket, saliote cart, hoosi horse, and with Class I forms used in noun slots in the sense of action by an active actor, as #ko+ʔèku+papitaíso! my baptizing (i. e., I do the baptizing). On the other hand, Sub-group 3-B forms co-occur with such nouns as fale house, fala mat, moheŋa bed, kofu dress, sea chair, ʔapi home or plantation, fonua land or country, and with Class I forms used in noun slots in the sense of action received by a receiver, as #ko+hòku+papitaíso! my being baptized (i. e., someone else baptizes me).

Class v, Group A, Sub-group 3-A forms show morphophonemic variation depending upon the environment in which they appear:

#ko+?èku+mé?al is my thing ---) |kihe?eku+mé?al to my thing  
 in which ?eku my, exclusive varies with he?eku my, exclusive.  
 Forms of this sub-group, including the variant forms, are  
 as follows: (definite forms) ?eku and he?eku my, first  
person, singular, exclusive, ho?o thy, your, second person,  
singular, ?ene and he?ene his, her, its, ?ete and he?ete  
one's, my, first person, singular, inclusive, ?ema and he?ema  
our, dual, exclusive, ?emau and he?emau our, plural, exclu-  
sive, ?eta and he?eta our, dual, inclusive, ?etau and he?etau  
our, plural, inclusive, ho?omo your, dual, ho?omou your,  
plural, ?ena and he?ena their, dual, and ?enau and he?enau  
their, plural.

(Indefinite forms) ha?aku my, first person, singular,  
exclusive, ha?ate one's, my, first person, singular, inclu-  
sive, ha?o your, singular, ha?ane his, her, ha?ama our, dual,  
exclusive, ha?amau our, plural, exclusive, ha?ata our, dual,  
inclusive, ha?atau our, plural, inclusive, ha?amo your, dual,  
ha?amou your, plural, ha?ana their, dual, and ha?anau their,  
plural.

Class V, Group A, Sub-group 3-B forms occur in the  
 environments described above and do not have alternating  
 forms for the two environments #ko+\_\_\_+fále! and |ki+\_\_\_+  
 fále! as do Sub-group 3-A forms as listed above. The Sub-  
 group 3-B forms are as follows: (Definite forms) hoku my,  
first person, singular, exclusive, hoto one's, my, first  
person, singular, inclusive, ho thy, your, second person,  
singular, hono his, her, its, homa our, dual, exclusive,

homau our, plural, exclusive, hcta our, dual, inclusive, hotau our, plural, inclusive, homo your, dual, homou your, plural, hona their, dual, and honau their, plural. (Indefinite forms) haku my, first person, singular, exclusive, hato one's, my, first person, singular, inclusive, hao thy, your, singular, hano his, her, its, hama our, dual, exclusive, hamau our, plural, exclusive, hata our, dual, inclusive, hatau our, plural, inclusive, hamo your, dual, hamou your, plural, hana their, dual, and hanau their, plural.

Class V, Group A, Sub-group 4 forms occur in the environments #koe+\_\_\_\_+tólul and #na'e+\_\_\_\_+tólul, and therefore, in the latter environment, overlap with Class IV forms. Because of this overlap of occurrence, they could either be classified as Class IV or Class V forms; however, they are classified as the latter in this paper.

Class V, Group A, Sub-group 4 forms found occurring in the environments specified in this study are as follows: toko person, human, tokotoko persons, humans (moderative), taki each, tu'o times, 'aŋa times.

12.2.5.2. Class V, Group B forms occur in adjective micro-spans that are tail to a preceding span having a noun as a nucleus, as #koe+taŋâta|\_\_\_\_| is a man. In the macrospan #koe+taŋâta|fulipée| is every man, #koe+taŋâta| is man is head span and |fulipée| every is tail and modifies the head span. Forms which have been found occurring in this slot in the present study are as follows: fulipee every, each, all, fuapee all, kotoa all, every, kotoapee just all, every, ko'ena that,

those, ko'eni this, these, koe that, those (at a third place), and koia that, the one mentioned or the ones mentioned.

12.2.6.0. Class VI forms are particles which occupy a number of different slots. Some of these particles consist of conjunctions appearing as nucleus in conjunction microspans, some of the tense markers, and some of conjunctions occupying the initial word position in a microspan and yet linking the span of which they are a part with the preceding span.

12.2.6.1. Class VI, Group A forms consist of forms which fill conjunction slots in a conjunction microspan in the environments #\_\_\_|, |\_\_\_|, or |\_\_\_#. An example of such a conjunction span or linking span is the following: #na'ane+fái| fá|neôŋo|na'e+faiŋatá'a# he (she) did it even though it was difficult. In this utterance, #na'ane+fái| he (she) did is the verb-actor span, |fá| it is the goal span, the two comprising a structure of complementation which is joined to the microspan |na'e+faiŋatá'a# (it) was difficult by the conjunction microspan |neôŋo| even though.

Forms which have been found occupying the slots or positions of Class VI, Group A forms are as follows: neoŋo even though, despite, pea and, and then, then, koe'uhi (variant forms koe'úhi and koe'uhí are automatically determined by stress shift) because, telia lest perhaps, because of, kapau if, kae'uma'aa and likewise, and also, kae'oua until, 'aki by means of, with, and ta'e without, lacking. The latter form

may occur in other environments as follows: #na'e+ta'e+?álu| he (she) didn't go, never went and #na'e+ta'e+etotóni| was free of charge, was without price or pay. In these two environments ta'e has a distribution overlapping with Class IV, Group A forms in the environment #na'e+\_\_+verbi|. See Section 12.4.2.1.3 preceding. It is, however, because of its occurrence in the environment |\_\_| in a conjunction span, as in #na'ane+gàáueltâ'e| ha+tòtóni# he (she) worked without any pay that ta'e is listed with the Class VI, Group A forms.

12.2.6.2. Class VI, Group B forms may be divided into two sub-groups, the first occurring in the environment #\_\_+?álu| went and the second occurring in the environment |\_\_+noun|. Sub-group 1 forms occurring in the environments given above are as follows: pe whether, he for, since, because, ?o and, and kae but. The latter form varies with the allomorphic form ka but; the former occurs as in |kae+?álu| but went. The allomorph ka appears before a tense marker and kae directly before a verb; thus the two forms are in complementary distribution. pea and and ?o and may occur in the environments |\_\_u+?álu| with a Class III form following either as enclitic or a free form, as in |?ou+?álu| and I went and in |peau+fái| and I did. kapau if may occur in the environment |?o+kapâu|?e+?álu| if will or shall go with ?o and preceding it. Sub-group 2 forms appearing in the environment |\_\_+noun| as stated above are as follows: ma'a for, on behalf of, dative, non-terminative aspect, mo?o for, on behalf of, terminative aspect, dative, ?a of, non-terminative aspect, ?o of, terminative aspect, ko predicative for substantives (nouns and

pronouns), mo and, ?e actor marker, ?a subject marker, intransitive, or without a verb or verb span, ?a goal marker. It should be noted that no mot only appears in the environment |\_\_\_\_+noun| but also in the environment |\_\_\_\_+verb| as in |mo+?álu| and went and therefore overlaps in environment with kae but listed above in Sub-class 1.

12.2.6.3. Class VI, Group C forms consist of tense or verb aspect markers. They occur in the environments #\_\_\_\_+?álu| go, #\_\_\_\_ku+?álu| I go, #\_\_\_\_u+?álu| I go, or |\_\_\_\_+?álu| go. Class VI, Group C forms found in the present study are as follows: na?e (na?e, na?a, ne) past tense, ?oku present tense, progressive aspect, kuo perfect, inceptive aspect, ?e (?e, te) future, ke infinitive or imperative aspect, purposive aspect, ka conditional, potential aspects. The latter form has an allomorphic form that is discontinuous which co-occurs with Class III forms as in #kau+ka+?álu| when I go, if I go and in #?oka+tau+ka+?álu| when or if we go, whenever we go. ka may co-occur optionally with or without ?o and, a Class VI, Group B, Sub-group 2 form.



## CHAPTER IV

## SYNTAX

13.0. Microspans may be classified according to the type of function they perform in the utterance. Microspans which assert action or which make an assertion concerning a subject in a structure of predication will now be considered.

13.1.1. Verb spans perform the function of asserting the action performed by an actor or make an assertion about the actor or subject: #ka+nà'e+ofol but wondered, but was amazed (ka but Class VI Group B-1 + na'e past tense marker Class VI Group C + ofo to be amazed, to wonder Class I Group B Sub-group 2)<sup>1</sup>. The verb span always includes one of the tense or aspect markers 141 'oku present or continuous, 142 na'e past, 143 kuo perfect, inchoative aspect, 144 'e future, 145 ka conditional or desiderative, 146 ke potential, imperative, purposive or infinitive aspect, 147 ne subjunctive; 148 pea and or 'o and may occur with a verb in a verb span without a tense or aspect marker, or a verb span may follow an actor span which includes a tense or aspect marker, as in the examples: !pěau+'alu! and I went (pea and + u I + 'alu to go: 148 + 11 + I-A-1) and #na?'anâu:fe'alu'aki! they went back and forth or to and fro (na'a past tense + nau they, plural + fe'alu'aki to go back and forth, comitative reci-

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<sup>1</sup> Form class will be signified in future references by capital Roman numeral for class, capital letter for group and Arabic numeral for sub-group.

procal: 142 + 18 and 32 + fe- non-singular, comitative + ?alu' to go I-A-1 + 71 + 82). Other examples of verb micro-spans are as follows: #pea+?alu' and went (pea and VI-A<sup>2</sup> + ?alu' to go I-A-1), #na?e+?osi' finished, was finished (na?e past tense VI-C + ?osi' to finish I-J), #ka+nà?e+mei+?alu' but almost went (ka but VI-B-1 + na?e past tense marker VI-C + mei almost, nearly IV-A + ?alu' to go I-A-1), #ka+nà?e+kei+fâi+atu' but still continued, but still went on (ka but VI-B-1 + na?e past tense + VI-C + kei still, yet IV-A + fai to do I-A-1 + atu forth, on IV-C), Ipe?ùlu?ulufaki' to have the heads pointed toward each other (Class I-A-3) (occurring in a verb-actor macro-span: #na?anâulfe?ùlu?ulufaki' they had their heads pointing towards each other: na?a past tense VI-C + nau they consisting of 18 na they non-singular root and plural morpheme -u 32 + fe- non-singular, comitative + ?ulu' to head, to be at the head or head reduplicated + 53 f + 82 aki).

13.1.2. Verb-actor spans name the actor and assert an action performed by an actor: #?oku+ne+fai' he (she) is doing (?oku present tense, progressive VI-C + ne he, she III + fai to do I-A-3), #ka+nà?a+ne+mèi+laval' but he almost accomplished (ka but VI-B-1 + na?a past tense VI-C + mei almost, nearly VI-A + lava to accomplish I-A-3), Ipe+tèu+kumi+atu' whether I shall keep on looking or seeking (pe whether VI-B-1 + te future tense VI-C, u I III, kumi to seek, to look for I-A-3 + atu

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<sup>2</sup> The past tense marker is frequently dropped following pea and and preceding a Class I form in past-tense verb span.

on, further IV-C), #peâu+lea! and I spoke (pea and VI-A + u I III + lea to speak I-A-1), #nă?aku+?ilo! I knew (na?a past tense VI-C + ?ilo to know I-A-3).

13.1.3. Imperative spans are a type of verb span. They differ from regular verb spans in that they lack a tense or aspect marker, except ke imperative, or Class VI Group C form and have present or future meaning. An imperative span may consist of a single form in the environment #\_\_\_\_#, as #ha?u# come, #?alu# go, and #tu?u# stop, stand still. Like verb spans, imperative spans may be expanded to include Class IV Group C forms immediately following the Class I form and preceding the final juncture, as in #tökoni+mai# help me or us, help here, #?alu+atu# go further on, go forth, and #to'o+aje# take it away, take it out. Class IV Group A forms may also be included, as in #toe+fai# do (it) again, #toe+fai+aje# do (it) again or further, demonstrate (it) again, and #toutou+fai# do (it) repeatedly. Imperative spans do not co-occur in a macrospan with an actor span as regular verb spans do, as #?ai+aje# do (it), perform (it), which is an imperative span, and #na?e+?ai+aje! ?e+sione! John performed or did, which consists of the verb span #na?e+?ai+aje! performed, did and the actor span !?e+sione! John or by John, which, together constitute a macrospan or structure of predication. As stated above, imperative spans may occur with the Class VI Group C form ke imperative, potential, desiderative, but not with any other Class VI Group C form as such forms occur only in regular verb spans. Imperative spans with ke may follow /#/ juncture or

/I/ juncture, as in #kemòu+fai+lelei|tāmaikî# children, be well behaved or do good (ke imperative Class VI Group C, mou you, plural Class III, fai do Class I-A-1, and lelei well, good, Class I Group B Sub-group 1, tamaiki children Class II Group K) and in #naʔane+fiemâʔu|kenâu+oo# he wanted them to go (naʔa past tense Class VI Group C, ne he, she Class III, fiemaʔu want Class I, ke imperative, desiderative Class VI Group C, nau they, plural Class III, oo go Class I-A-3).

Verb-actor spans may be imperative, as #tau+tokaŋa| let's pay heed (tau we, plural, inclusive, Class III and tokaŋa to pay heed Class I-A-1, #keke+ʔalu| thou shalt go (ke imperative Class VI Group C, ke thou Class III, ʔalu Class I-A-1).

13.2.1. Predicative spans are of two types: Type A and Type B. Type A Predicative spans are marked by the use of ko substantive predicative particle (Class VI Group B Sub-group 2) and a substantive, either a noun of Class II, including such so-called pronominal forms as the postposed pronouns (Class II Group F) and the emphatic pronouns (Class II Group G), or a Class I form used as a noun. Note the examples: #ko+pita| is Peter (ko substantive predicative Class VI Group B Sub-group 2; pita Peter Class II Group E), #koe+tamasiʔi| is a boy (ko predicative; e definite article minor morpheme 21, tamasiʔi boy Class II Group K), #ko+kinàutolu| are they, it is they (ko predicative; kinautolu they or them Class II Group F), and #ko+haʔaú| is yours, it is yours (ko predicative, haʔau yours, singular Class II Group G Sub-group 1). When the predicative particle ko is followed by the minor morpheme

e definite article (21); -modifiers of the noun nucleus may occur in the span, as in #koe+ki'i+fale! is or it is a small house (ko predicative, e definite article Minor Morpheme 21, ki'i small, tiny Class V Group A Sub-group 1, fale house Class II).

13.2.2. Type B predicative spans consist of exclamations or ejaculations appearing in the environment #\_\_\_\_# and in addition a number of other response-type utterances occurring within the bounds of initial and final juncture. Exclamations occurring in the environment #\_\_\_\_# include Class I Group P forms, as #seuke# exclamation of surprise, #taamani# exclamation of mild surprise coupled with mild regret, and #'oiavee# woe is me, how unfortunate. A number of other forms, some exclamatory and others consisting of responses, also occur in Type B predication spans in the environment #\_\_\_\_#. Note the following: #'oiauee# exclamation of surprise, pain, regret or amazement (Class I Group I), #hei'ilo# who knows (Class I Group N), #maaloo# thanks (Class I Group I), #'ikai# no (Class I, Group A, Sub-group 2), #he'ikai# absolutely not, no, emphatic (Class I, Group A, Sub-group 2), #'io# yes, indeed, all right, indicating assent (Class I, Group A, Sub-group 2), #ko'eni# here it is, this is it (Class V, Group B), #ko'ena# there it is, that is it (Class V, Group B), #koe# there it is over there, that is it over there (Class V, Group B), and #koia# that is it, that is right (Class V, Group B). A number of greetings come in this group of Type B Predicative micro-spans. These all consist of compound forms formed from maaloo

thanks (Class I Group I) listed above plus or minus (21) e definite article plus a verb indicating whatever action the person greeted is doing, as #maalooeŋàaue# thanks for working (maaloo thanks + e definite article +ŋaaue to work), #maalooelelei# hello, thanks for being well (maaloo thanks + lelei to be well or good), #maalooelèlei# hello, thanks for being well (maaloo thanks + e definite article + lelei to be well, to be good), and #maalooeheka# thanks for riding, hello (maaloo thanks + e definite article + heka to ride).

If primary or secondary stress falls on the penultimate syllable of maaloo, then the greeting becomes a macrospan consisting of a verb span plus a subject span, as in #maalóole+ŋaaue# hello, thanks for working.

13.3.0. Actor microspans may occur following a verb span or a predicative span provided the latter has as a nucleus a verb or Class I form denoting action, as #na'e+fâi!?'e+sione! John did (na'e past tense Class VI Group C, fai to do Class I Group C Sub-group 2, ?e actor marker Class VI Group B Sub-group 2, sione John Class II Group E) and the transformation #koe+fâi!?'e+sione! was the doing by John (ko predicative Class VI Group A Sub-group 2, e definite article Minor Morpheme 21, fai to do Class I Group C Sub-group 2, ?e actor marker Class VI Group B Sub-group 2, sione John Class II Group E). In the first example, !?'e+sione!, the actor span, follows the verb span #na'e+fâi! whereas !?'e+sione!, the actor span, follows the predicative span #koe+fâi! in the latter example. Other examples of actor spans are as follows: #na'e+taû?'i!?'e+ha'amoal

Samoa attacked or made war on (#na'e+tau'i | attacked verb span includes na'e past tense VI-C + tau'i to fight, to attack I-A-1; |'e+ha'amoal Samoa, actor span includes 'e actor marker VI-B-2 +ha'amoal Samoa II-D-1), #na'e+tâul'ae+vaka | the or a ship anchored or arrived (#na'e+tâul arrived, verb span, includes na'e past tense VI-C + tau to arrive, stop I-A-3; |'ae+vaka | the or a ship actor span includes 'a subject-actor marker + e definite article Minor Morpheme 21 + vaka ship, boat II-B-2), #na'a+nâulsai'ial they liked (#na'a+nâul actor span includes na'a past tense VI-C + nau they, plural III; |sai'ial verb span includes sai'ia to like I-A-3), #tete+pehêe|'e+kital one would say, I would say (#tete+pehêe | verb-actor span includes te future VI-C + te one, I, first person, singular, inclusive III + pehee to say, state I-A-3; |'e+kital one, I emphatic actor span includes 'e actor marker VI-C + kita one, I, first person, singular, inclusive II-F), Ina'e+fetaulâki|hă+fokisi | a fox met (the verb span Ina'e+fetaulâki | met includes na'e past tense VI-C and fetaulaki to meet together I-A-3 and the actor span |hă+fokisi | includes ha indefinite article Minor Morpheme 22 and fokisi fox II-B-3), #na'e+kakâul'a+sione | John swam (the verb span #na'e+kakâul swam includes na'e past tense marker VI-C and kakau to swim I-A-3 and the actor span |'a+sione | John includes the intransitive actor-subject marker 'a VI-B-2 and sione John II-E), and #na'a+nâul they, past tense (na'a past tense marker VI-C and nau they III). Thus, actor spans may consist of the actor markers 'e or 'a plus or minus modifiers plus a noun form,

either a Class I form used as a noun or a Class II form.

Sometimes, though not frequently, an actor span may consist of a tense marker plus a Class III form, as in the last example above. Both actor markers ?e (transitive) and ?a (intransitive) are Class VI Group C forms. Actor microspans lack an actor marker when the first morpheme of the span is the indefinite article (Minor Morpheme 22) ha or when the first form is one of the so-called possessive adjectives (Class V Group A Sub-groups 3-A and 3-B), as in #?e+?âlu!?eku+fa?eé! my mother will go (consisting of the verb span #?e+?âlu! will go which includes ?e future tense VI-C + ?alu to go I-A-3 and the actor span !?eku+fa?eé! my mother, which includes ?eku my V-A-3 and fa?ee mother II-B-1A). Class II Group G forms may occur in an actor span without an actor marker, as in #?e+?âlu!ha?au! yours will go (?e future tense VI-C + ?alu to go I-A-1 + ha?au yours II-G-1).

13.4.0. Subject microspans differ from actor microspans in that the former begin with 162 ?a non-transitive subject marker and the latter with 161 ?e transitive worker. Subject microspans co-occur with such verbs, as iai to exist, taha to be one or united, and ?a?ataha to be once or one time or they follow a predicative microspan as #koe+faiako+lelei! is a good school teacher in the utterance #koe+faiako+lelei!îa# he (she) is a good school teacher (ko predicative particle VI-B-2 + e definite article Minor Morpheme 21 + faiako teacher II-B-4 + lelei to be good I-B-1 + ia he, she II-F). The predicative microspan is #koe+faiako+lelei! and the subject span is !îa#.



Examples of subject spans are as follows: #ʔoku+ʔi-  
 lōŋa|ʔae+tamasiʔi+poto| is known or is characterized the  
wise boy (ʔoku present tense VI-C + ʔiloŋa to be known or  
marked by I-A-3 + ʔa subject marker VI-B-2 + e definite  
article Minor Morpheme 21 + tamasiʔi boy I-A-3 + poto to  
be wise I-B-1), #naʔe+iâi|ha+tàʔahine| there was a girl  
 (naʔe past tense VI-C + iai to be, to exist I-A-3 + ha  
indefinite article Minor Morpheme 22 + taʔahine girl  
 II-B-4), and #ʔoku+monuʔia|ʔakinautolu| they are blessed  
 (ʔoku present tense VI-C + monuʔia to be blessed or for-  
fortunate I-B-1 + ʔa subject marker VI-B-2 + kinautolu they,  
them II-F).

Examples of subject spans following predicative spans  
 are as follows: #koe+tamasiʔi+pôto|ʔa+sione# John is a  
smart boy (ko predicative particle VI-B-2 + e definite  
article Minor Morpheme 21 + tamasiʔi boy I-A-3 + poto to  
be wise or smart I-B-1 + ʔa subject marker VI-B-2 + sione  
John II-E), #koe+faiako|âu# I am a teacher (ko predicative  
particle VI-B-2 + e definite article Minor Morpheme 21 +  
 faiako teacher II-B-4 + au I II-F), and #koe+fefine+aŋ-  
 alelei|ʔeku+faʔeé# my mother is a good woman (ko predica-  
tive particle VI-B-2 + e definite article Minor Morpheme 21  
 + fefine woman I-C-3 + aŋalelei to be good or well-behaved,  
to be kind I-C-1 + ʔeku my V-A-3A + faʔee mother II-B-4).

13.5.0. Goal microspans follow verb spans which  
 have a transitive verb as nucleus and potentially, at  
 least, may co-occur in the same utterance with an actor

span beginning with ?e actor marker VI-B-2, as in #na?e + fai! ?ae+tohi! ?e+Paûla# Paul wrote the letter, which includes the verb span #na?e+fai! wrote, the goal span !?ae+tohi! the letter, and the actor span !?e+paûla# Paul or by Paul (na?e past tense VI-C + fai to do I-C-2 + ?a goal marker VI-B-2 + e definite article Minor Morpheme 21 + tohi book, letter, to write I-C-2 + ?e transitive actor marker VI-B-2 + paula Paul II-E). Goal spans may or may not begin with the goal marker ?a VI-B-2. The goal marker does not co-occur with ha indefinite article Minor Morpheme 22 nor with any of the forms of Class V Group A Sub-groups 3-A and 3-B. The nucleus of every goal span is always a Class I or Class II form. Class V or Class I forms or adjective modifiers may occur in any of the adjective slots of such spans either preceding the nucleus or following it, as in !?ae+ki?i+fale! a or the small house (?a goal marker VI-B-2 + e definite article Minor Morpheme 21 + ki?i small, tiny V-A-1 + fale house II-B-2) and !?ae+tamasi?i+lahi! the eldest boy (?a goal marker VI-B-2 + e definite article Minor Morpheme 21 + tamasi?i boy I-A-3 + lahi large, old, to be large or old I-B-1). Class II Group G forms may be used in goal spans by themselves, as in #?e+?ave!ha?au# will take yours (verb span #?e+?ave! will take, ?e future tense VI-C + ?ave to take I-A-1, and goal span !ha?au# yours, ha?au yours II-G-1). A single Class I or Class II word may appear as the sole form in a goal span, as in #na?a+mau+tâa!fakataataa! we drew pictures, we painted (verb-actor span, na?a past

tense VI-C + mau we, plural, exclusive III + taa to strike, to stroke, to paint or draw I-C-2 and goal span fakataataa to draw, picture, painting I-C-2). The goal span may precede the actor span or follow it in many utterances, the difference being one of emphasis, as #?oku+?ilo!?'ae+me-?âni!?'ehe+kakai! kotoapêe# all people know this thing (?oku present tense VI-C + ?ilo to know I-A-3 + ?a goal marker VI-B-2 + e definite article Minor Morpheme 21 +me?a thing I-C-2 + ni this Minor Morpheme 41 + ?e actor marker VI-B-2 + he definite article Minor Morpheme 21 + kakai people II-B-1A + kotoa all V-B + pee only, just, exactly IV-C) and #?oku+?ilo!?'ehe+kakâi!kotoapêe!?'ae+me-?ani# all people know this thing, which contains the same morphemes and microspans as the previous sentence, but in a different order. The former example has the following microspans in the following order: verb span + goal span + actor span + modifier span (adjective), and the latter example has the same microspans in the following order: verb span + actor span + modifier span (adjective) + goal span. A large number of Tongan utterances containing both an actor span and a goal span show a similar alternation in the order in which the actor span and goal span occur.

13.6.0. A number of Tongan utterances consist entirely of a single actor-verb-goal microspan, as #?oku+ne+kâiufi# he eats or is eating yam (?oku present tense VI-C + ne he, she III + kai to eat I-A-3 + ufi yam II-C).

In other utterances, an actor-verb-goal span occurs at the beginning of the utterance and precedes /|/ juncture, as in #na?a+mau+fâi+kaval?anepôo# we had a kava ceremony last night (na?e past tense + mau we, plural, exclusive + fai to do, to hold I-C-2 + kava pepper root plant, a Tongan drink made from pepper root plant II-C + ?anepoo last night II-I).

13.7.1. Modifier microspans are of two types: adverbial and adjectival. Adverbial modifier spans consist entirely of Class IV Group B or Class IV Group C forms in the environment |\_\_\_\_|, |\_\_\_\_\_|# or #\_\_\_\_\_|, as in the following examples: #nâ?aikuo+ke+hela# perhaps you may be tired (adverbial modifier span #na?ai perhaps + kuo perfect or inceptive aspect VI-C + ke thou, you, singular III + hela to be tired I-B-2), #na?a+ne+?âlu?aneni# he (she) went a little while ago (verb-actor span na?a past tense VI-C + ne he, she III + ?alu to go I-A-3 + adverbial modifier span |?anepoo# last night IV-B), and #teke+?âlu|fakakuulki+kôlo# when will you go to town (verb-actor span te future tense VI-C + ke thou, you, singular III + ?alu to go I-A-3 + adverbial modifier span |fakakuu| when, future IV-B + adverbial modifier span |ki+kôlo# to town ki to VI-B-2 + kolo town, village, city II-B-2). As noted in the latter example, adverbial modifier spans may include spans formed from Class VI Group B Sub-group 2 forms followed by a noun from Class I or Class II. Note the examples: #na?e+ha?ulfaimei+kolo# he (she) came from town (verb span na?e past tense VI-C

+ ha'u to come I-A-1 + actor span lîa | he, she II-F + adverbial modifier span mei from VI-B-2 + kolo town, city, village II-B-2) and #?ave|fa|ma?a+sione# take it to John (imperative verb span #?ave| take I-A-1 + goal span lîa | it II-F + adverbial modifier span, dative, |ma?a+sione# to or for John ma?a to or for VI-B-2 + sione John II-E).

13.7.2. Adjective modifier microspans consist of Class V Group B forms in the environments |\_\_\_\_| or |\_\_\_\_|# of of Class VI Group B Sub-group 2 forms followed by a noun form from Class I and Class II, as in the following examples: #koe+fonûa|kotoapee| is every country or land (predicative span ko predicative particle VI-B-2 + e definite article Minor Morpheme 21 + fonua land, country II-B-1A + adjectival modifier span kotoa all V-B + pee just, exactly, only IV-C), #neu+sio|kiha+môtu|faka?ofo?ofa# I saw a beautiful island (verb-actor span ne past tense VI-C + u I, first person, exclusive, singular III + sio to see, to look at I-A-1 + adverbial modifier span ki to VI-B-2 ha indefinite article Minor Morpheme 22 + motu island II-B-2 + adjective modifier span |faka?ofo?ofa# beautiful I-B-1). Adjective modifier spans may follow predicative spans (#koe+fale|faka?ofo?ôfa# it is a beautiful house: predicative span #koe+fale| is a house + adjective modifier span |faka?ofo?ôfa# beautiful), actor spans : (#na?e+fai|lîa|?ehe+kakâi|kotoapee# all the people did it: verb span #na?e+fai| did + goal span lîa | it + actor span |?ehe+kakâi| the people, by the people + ad-

jective modifier span |kotoapee# all), goal spans: (#tete+  
 ?âve|?ae+tôhi|ko?eni# you shall take this book: verb-actor  
 span #teke+?âve| you shall take + goal span |?ae+tôhi|  
the book + adjective modifier span |ko+eni# this), and  
 modifier spans (#?ave|îa|kihe+tamasi?i|ko?ena# take it to  
that boy imperative verb span #ave| take + goal span |îa|  
it + adverbial modifier span |kihe+tamasi?i| to the boy  
 + adjective modifier span |ko?ena# that and #koe+laa|  
 ?êni|!?oe+vâka|?o+sioné# this is the sail of John's boat:  
 predicative span #koe+laa| is the sail + subject span  
 |?êni| this + adjective span |?oe+vâka| of the boat +  
 adjective span |?o+sioné# of John).

13.8.0. Prepositional microspans consist of a pre-  
 position between major juncture. The prepositional mic-  
 rospan is always followed by a prepositional object span,  
 both of which together constitute a prepositional macro-  
 span modifying a head span. For example, in #hili|  
 ?emau+maalooloô|na?amau+oo# after we had rested, we went  
or left the prepositional span is #hili| after, and the  
 prepositional object span, |?emau+maalooloô| our resting.  
 The two microspans together constitute a prepositional  
 macrospace modifying the verb-actor span |na?amau+oo# we  
(plural, exclusive) went or left. The only prepositional  
 macrospace that have been found in this study are adverb-  
 ial, modifying a verb span or verb-actor span. The object  
 spans in prepositional macrospace often are marked by one  
 of ?a goal or objective marker, as in #tene+tu?usilia|?âki|  
 ?ae+kili# he will cut it off with a saw (verb-actor span

te future tense VI-C + ne he, she III + tu'usi to cut off I-A-1 + goal span !ia! it II-F + prepositional span !ʔâki! with, by means of VI-A + prepositional object microspan ʔa goal-objective marker VI-B-2 + e definite article Minor Morpheme 21 + kili saw, II-B-1A).

13.9.0. Conjunctive microspans join clauses each of which contains either a verb span, a verb-actor span, a verb-actor-goal span, or a predicative span. The conjunctive span always precedes one of these types of spans. A conjunctive span may be preceded by /#/ juncture. Note the following examples: following /#/ juncture and preceding a predicative span #kâa|koe+ʔahoni| but is today (kaa but + ko predicative particle VI-B-2 + e definite article Minor Morpheme 21 + ʔaho day II-B-1B + ni this Minor Morpheme 41), following /#/ juncture and preceding a verb span #kâa|naʔe+lelei| but was good (kaa but + naʔe past tense VI-C + lelei to be good I-B-1), and between two clauses in the environment |\_\_\_\_|, as in #vave+mai| nâʔa|ke+toomui# hurry up lest you be late (vave to be rapid, fast I-B-1 + mai here IV-C + naʔa lest VI-A + ke you, thou III + toomui to be late I-B-1). In this latter example, the conjunctive span and succeeding actor-verb span constitute a conjunctive macrospan modifying the preceding verb microspan as an adverbial modifier. The verb span is head to the modifying conjunctive macrospan.

14.0. The various types of macrospans in Tongan utterances will now be discussed. There are several types of macrospans.

14.1.0. Actor macrospans may consist of coordinate actor microspans. Note the following examples: #?e+fâi|?e+pita|mo+sione| John and Peter will do (verb span ?e future tense VI-C + fai to do I-C-2 + main actor span ?e actor marker VI-B-2 and pita Peter II-E + coordinate actor span mo and VI-B-2 and sione John II-E) #?e+?alu|îalpea+mo+sione| he and John will go (verb span ?e future tense VI-C + ?alu to go I-A-1 ; main actor span ia he II-F; coordinate actor span pea and VI-A + mo and VI-B-2 + sione John II-E), and #?e+nôfo|?a+sione|kae?u-ma?âalmo+pita| John and also Peter will stay (verb span ?e future tense VI-C + nofo to stay, live, dwell I-A-1; main actor span ?a actor-subject marker VI-B-2 + sione John II-E; conjunctive span kae?uma?aa likewise, also VI-A; coordinate actor span mo and VI-B-2 + pita Peter II-E).

14.2.0. Subject macrospans may consist of two coordinate subject microspans or of a subject microspan modified by an adjective span, as in the examples #?oku+?ikâi|ke+iai|ha?aku+hoôsi|pe+pasikala# I have no horse or bicycle (verb span ?oku present tense VI-C + ?ikai negative, to not be I-A-2; infinitive verb span ke infinitive aspect VI-C + iai to exist, to be I-A-3; subject span ha?aku a my, indefinite V-A-3A + hoosi horse II-B-3; subject span pe or VI-B-1 + pasikala bicycle II-B-1A, the latter two subject spans being coordinate and constituting a subject macrospan) and in #?oku+iai|?ae+hoôsi|?a+sione# John has a horse or there is a horse



of John (verb span ?oku present tense VI-C + iai to be, to exist I-A-3; subject span ?a subject marker VI-B-2 + e definite article Minor Morpheme 21 + hoosi horse II-B-3; adjective span ?a of VI-B-2 + sione John II-E, the latter two spans, a subject span and adjective span, constituting a subject macrospan with the subject span as head and the adjective span as tail).

14.3.0. Predication macrospans consist of a verb span or predicative span followed by an actor span or subject span, the two spans constituting a structure of predication. Examples are #na?e+fâi!?'e+sione! John did (verb span na?e past tense VI-C + fai to do I-C-2; actor span ?e actor marker VI-B-2 + sione John II-E), #na?e+tañi!?'ae+tamasi?'i! the boy cried or wept (verb span na?e past tense VI-C + tañi to weep, to cry I-C-I; actor span ?a actor-subject marker VI-B-2 + e definite article Minor Morpheme 21 + tamasi?'i boy I-C-3), #na?e+iâi!ha+teesi! there was a desk (verb span na?e past tense VI-C + iai to be, to exist I-A-3; subject span ha indefinite article, a, an Minor Morpheme 22 + teesi desk II-B-1A), #koe+tâ?oi?'e+sione# it was baked by John, is the baking by John (predicative span ko predicative particle + e definite article Minor Morpheme 21 + ta'o to bake I-A-1; actor span ?e actor marker VI-B-2 + sione John II-E), #koe+tâñi!?'ae+tamasi?'i! is the crying of the boy (predicative span ko predicative particle VI-B-2 + e definite article Minor Morpheme 21 + tañi to cry, crying, weeping I-C-1; actor span ?a subject-actor marker VI-B-2 + e definite article Minor Morpheme 21 +

tamasi?i boy I-C-3), #ko+hono+fâi!?'e+sione| is the doing by John (predicative span ko predicative particle VI-B-2 + hono its V-A-3B + fai to do I-C-2; actor span ?e actor marker VI-B-2 + sione John II-E), and #ko+?ene+?âlu!?'a+sione| is the going by John or of John (predicative span ko predicative particle VI-B-2 + ?ene his, its, her V-A-3A + ?alu to go I-A-3; actor span ?a subject-actor marker VI-B-2 + sione John II-E).

14.4.0. Complementation macrospans consisting of structures of complementation consist of verb spans plus goal spans, verb-actor spans plus goal spans, or predicative spans plus goal spans, as in the following examples: #na?e+tâ?o!?'ae+maa| the bread was baked, baked bread (verb span na?e past tense VI-C + ta?o to bake I-A-1; goal span ?a goal marker VI-B-2 + e definite article Minor Morpheme 21 + maa bread II-C), #na?a+ne+tâ?o!ha+maa| he (she) baked some bread (verb-actor span na?a past tense VI-C + ne he, she III + ta?o to bake I-A-1; goal span ha some, indefinite article Minor Morpheme 22 + maa bread II-C), #koe+tâ?o!?'ae+maa| is the baking bread (predicative span ko predicative particle VI-B-2 + e definite article Minor Morpheme 21 + ta?o to bake I-A-1; goal span ?a goal marker VI-B-2 + e definite article Minor Morpheme 21 + maa bread II-C), #ko+?ene+ta?o!ha+maa| is his baking some bread (predicative span ko predicative particle VI-B-2 + ?ene his, her V-A-3A + ta?o to bake I-A-1; goal span ha some, indefinite article Minor Morpheme 22 + maa bread II-C), I?o+fâi!ha+ŋaaue| and

do some work (verb span ?o and VI-B-1 + fai to do I-C-2; goal span ha some, indefinite article Minor Morpheme 22 + ʒaaue work, to work I-A-1), and #pěau+fâi! ha ʒaaue! and I did some work (verb span pea and VI-A + u I III + fai to do I-C-2; goal span ha some, indefinite article Minor Minor Morpheme 22 + ʒaaue work, to work I-A-1).

14.5.0. Verb macrospans enter into various combinations with other verb microspans or with verb-actor spans. Such spans may begin with tense or aspect markers of Class VI Group C or with Class VI Group B Sub-group 1 forms or with pea and of Class VI Group A. Class I Group A Sub-group 4 forms may form the nucleus of a main verb span which is followed by a second verb or verb-actor span which either complements the first verb span by indicating a complementary action or, in the case of verb spans, is coordinate with the first verb span, indicating a coordinate action. For example, in the utterance #na'e+?ikâi!ke+ta?o! didn't bake the second verb span is complementary to the first, which expresses negative meaning (na'e past tense VI-C + ?ikai to not be, not, no). The complementary verb span !ke+ta?o! to bake (ke infinitive aspect VI-C + ta?c to bake I-A-1) states the action referred to as not occurring. In the utterance #tene+?alu!?'o+ʒaôhi! ha+me?akai# she will go and prepare some food, the main verb span #tene+?alu! she will go (te future tense VI-C + ne she, he III + ?alu to go I-A-1) indicates the initial action and the coordinate verb span !?'e+ʒaôhi! and prepare or make (?o and VI-B-2 + ʒaôhi to make, to prepare I-A-1)

indicates the succeeding or ensuing coordinate action which follows the first. Additional examples of verb macrospans are as follows: #?oua|teke+?ave|ia# don't take it, which includes the main verb span #?oua| don't I-A-1 followed by the complementary verb span |teke+?ave| you take (te infinitive aspect VI-C + ke thou, you, singular III + ?ave to take) and a goal span |ia# it II-F; #?oku+te?eki+âi| tene+?ilo# he (she) doesn't know yet, which includes the main verb span #?oku+te?eki+âi| doesn't yet (?oku present tense VI-C + te?eki to not yet be or do I-A-4 + ai there, at the point or place IV-C) and the complementary verb-actor span |tene+?ilo# he (she) know (te infinitive aspect VI-C + ne he, she III + ?ilo to know I-A-3); #feîga|ke+ha?u# try to come, which includes the main verb span #feîga| try or attempt (imperative) I-A-1 and the complementary verb span |ke+ha?u# (ke infinitive aspect VI-C + ha?u to come I-A-1); #?oku+totônu|ketau+oo# we ought to go, which includes the main verb span #?oku+totônu| is right (?oku present tense VI-C + totônu to be right or correct I-B-1) and the complementary verb-actor span |ketau+oo# that we go, we go (ke infinitive aspect, purposive VI-C tau we, plural, inclusive III + oo to go, non-singular I-A-3); #?oku+leleî|ke+fai|ia# it is good that it be done, it ought to be done, which includes the main verb span #?oku+leleî| is good (?oku present tense VI-C + leleî to be good I-B-1) plus the complementary verb span |ke+fai| to do (ke infinitive or purposive aspect VI-C + fai to do

I-C-2) and the goal span !îa# it II-F; #na'e+fâi|ha+hiva|pea +tutûku# a song was sung and the meeting dismissed, which includes the main verb span #na'e+fâi| did or sang (na'e past tense VI-C + fai to do, to perform I-C-2), the goal span |ha+hiva| a song (ha indefinite article Minor Morpheme 22 + hiva to sing) and the coordinate verb span |pea+tutûku# and dismissed (pea and VI-A + tutuku to dismiss, to let out) #?oku+laulâhi|mo+lòloa|?ae+halâ# the road is wide and long, which includes the main verb span #?oku+laulâhi| is wide (?oku present tense VI-C + laulâhi to be wide I-B-1) plus the coordinate verb span |mo+lòloa| and long (mo and VI-B-2 + looloa to be long (length) I-B-1) and the subject span !?ae+halâ# the road (?a subject-actor marker VI-B-2 + hala road II-B-2).

14.6.0. Verb-actor spans may form macrospans with other verb-actor spans or with verb spans. In such macrospans, the second microspan may be complementary to the first span or may be coordinate with the first. Note the following illustrative examples: #tene+?âlu|mo+mâmata|kihe+falê# he (she) will go and see the house, which includes the verb-actor span #tene+?âlu| he (she) will go (te future tense VI-C + ne he, she III + ?alu to go I-A-1) plus the coordinate verb span |mo+mâmata| and see, look (mo and VI-B-2 + mamata to see, look I-C-3) and the adverbial span |kihe+falê# to the house (ki to VI-B-2 + he definite article + fale house II) which modifies the preceding coordinate verb span; #tenâu+?âlu|?o+vâkai|?enâu+fa'eê|?i+mu'a# they will go and see how their mother is in Mu'a, which includes the verb-actor

#tenâu+?âlu! they will go (te future tense VI-C + nau they, plural III + ?alu to go I-A-1) plus the coordinate verb span !?o+vâkai! and see, and visit (?o and VI-B-2 + vakai to see, to look at, to visit I-A-1) and the goal span !?enâu+fa?eê# their mother (?enau their, plural V-A-3A + fa?ee mother II-B-1A); #kuo+ne+înu|pea+fiu# he has drunk and is satisfied, which includes the verb-actor span #kuo+ne+înu! he has drunk (kuo perfect or inceptive aspect VI-C + ne he, she III + inu to drink I-A-1) and the coordinate verb span |pea+fiu# and is satisfied (pea and VI-A + fiu to be satisfied, to be satiated I-A-3); #na?a+mau+heka|pea+mau+tuku+folâu+lêva# we got aboard and sailed immediately, which includes the verb-actor span #na?a+mau+heka! we rode or got aboard (na?a past tense VI-C + mau we, plural exclusive III + heka to ride, to get aboard or on for riding I-A-1) plus the verb-actor span |pea+mau+tuku+folâu+lêva# and we set sail at once (pea and VI-A + mau we, plural, exclusive III + tuku to leave, to start off I-A-3 + folau to sail I-A-1 + leva immediately IV-C); #na?a+nau+kata|mo+nâu+kamâta+tuêe# they laughed and they began to shout out approvingly, which includes the main verb-actor span #na?a+nau+kata! they laughed (na?a past tense VI-C + nau they, plural III + kata to laugh I-A-3) plus the coordinate verb-actor span |mo+nâu+kamâta+tuêe# and they began to shout approvingly (mo and VI-B-2 + nau they, plural III + kamata to begin, to start I-A-1 + tuee to shout out approvingly or vociferously I-A-1).

14.7.0. A number of special combinations of verb spans, verb-actor spans and actor spans also occur in Tongan. Verb-actor spans may be followed by intensive actor spans which intensify the meaning of actor, as in #tete+pehê!ʔe+kita!ʔoku+sai+pee# one would say oneself that it was all right (verb-actor span #tete+pêhe! one would say which includes the morphemes te future tense VI-C, te one, I, singular, inclusive III, and pehee to say, state I-A-3 followed by the emphatic actor span !ʔe+kita! one, I, singular, inclusive which includes the morphemes ʔe actor marker VI-B-2 and kita one, I, singular, inclusive II-F and the goal span !ʔoku+sai+pee# is all right, which includes the morphemes ʔoku present tense VI-C + sai to be all right, good, satisfactory I-B-1 + pee just, exactly, only IV-C.

14.8.0. Goal macrospans include a main goal micro-span and a coordinate goal span, as in #naʔe+maumauʔi!ʔae+falê!moe+peitó# the house and cook-house were destroyed (verb span naʔe past tense marker VI-C + maumauʔi to destroy, to ruin I-A-3; main goal span ʔa goal marker VI-B-2 + e definite article Minor Morpheme 21 + fale house II-B-2; coordinate goal span mo and VI-B-2 + e definite article Minor Morpheme 21 + peito cook-house II-B-2) and #naʔe+ʔaohi!ʔae+ʔûfi!pea+moe+talo# yam and taro were cooked (verb span naʔe past tense VI-C + ʔaohi to cook, to prepare or make I-A-1; main goal span ʔa goal marker VI-B-2 + e definite article Minor Morpheme 21 + ʔûfi yam II-C;

coordinate goal span pea and VI-A + mo and VI-B-2 + e definite article Minor Morpheme 2l + talo taro II-C).

14.9.0. Macros spans of modification or modification macros spans constitute structures of modification and are of two types: adjective macros spans and adverb macros spans. The former will be considered first.

14.9.1. Predicative micro spans co-occur with adjective micro spans and the two together constitute a structure of modification or a modification macros pan, as in #koe+tohi+laukôŋa|hono+uá# is the second reader (predicative micro span ko predicative particle VI-B-2 + e definite article Minor Morpheme 2l + tohi to write, book II-C + laukoŋa to read a passage or portion; adjective micro span hono its V-A-3B + ua two I-E); #koe+tamasi?i|liá|mei+toŋa# he is a boy from Tonga or Tongatapu (predicative micro span ko predicative particle VI-C + e definite article Minor Morpheme 2l + tamasi?i boy II-K; subject span liá| he II-F; adjective span modifying predicative span mei from VI-B-2 + toŋa Tonga or Tongatapu II-D-1); #koe+saliôte!?'a+sione# it is the cart of John, it's John's cart (predicative span ko predicative particle VI-B-2 + e definite article Minor Morpheme 2l + saliote cart II-B-1A; adjective span ?a of VI-B-2 + sione John II-E).

14.9.2. Adjective micro spans may co-occur with actor spans, subject spans, goal spans or with any modification micro span such as an adjective micro span or adverb micro span, and when they do, the adjective micro span and its



head span constitute a macrospan of modification or a structure of modification. Note the following examples:

#na'e+tau+mâi|'ae+vâka|'e+ua# two boats came (verb span na'e past tense VI-C + tau to arrive, to anchor I-A-3 + mai here, to or toward the first person; actor span 'a actor-subject marker VI-B-2 + e definite article Minor Morpheme 21 + vaka boat II-B-2; adjective span 'e numeral adjective particle VI-B-2 + ua two I-E); #neu+mamata|kiha+ñahi+'âpi|faka'ofa'ofa# I saw some beautiful homes (verb-actor span ne past tense VI-C + u I, first person, singular, exclusive III + mamata to see, to look I-A-1; adverb microspan ki to VI-C + ha indefinite article Minor Morpheme 22 + ñahi + 'api home II-B-2; adjective span adjective span modifying the noun nucleus of the preceding adverb span |faka'ofa'ofa# beautiful I-B-1); #na'e+huo|'ae+mala'ê|'ehe+tamâiki+âko|'e+tôko+valu# eight students cut the grass of the lawn (verb span na'e past tense VI-C + huo to cut, to hoe; goal span 'a goal marker VI-B-2 + e definite article Minor Morpheme 21 + mala'e lawn, open grassy place II-K; actor span 'e actor marker VI-B-2 + he definite article Minor Morpheme 21 + tamaiki children II-K + ako to study I-C-3; adjective span modifying noun nucleus of preceding actor span 'e numeral adjective particle VI-B-2 + toko person or persons, human V-A-4 + valu eight I-E).

14.9.3. Adverb macrospans constituting adverbial structures of modification include an adverbial microspan

modifying a verb span, verb-actor span, or an adjective span, as in the following examples: #nã'aku+a'u+atu| ki+?âpi|?ihe+taimi+fitu# I arrived home at seven o'clock (verb-actor span na'a past tense VI-C + ku I, first person, singular, exclusive III + a'u to arrive, to reach I-A-3 + atu forth, to the pace of the second person or away from the speaker VI-C; adverb span modifying verb-actor span ki to, unto VI-B-2 + ?api home II-B-2; adverb span modifying verb-actor span ?i at, in VI-B-2 + taimi time II-K + fitu seven I-E); #na'a+mau+nofo+âi|?o+fuoloa# we stayed there a long time (verb-actor span na'a past tense VI-C + mau we, plural, exclusive III + nofo to stay, reside, I-A-1 + ai there, that place IV-C; adverb span modifying preceding verb-actor span ?o and VI-B-2 + fuoloa to be a long time I-B-1); #na'e+?uha|fuoloa# it rained a long time (verb span na'e past tense VI-C + ?uha to rain I-A-3); adverb span modifying the preceding verb span |fuoloa# to be a long time I-B-1); #koe+fale|faka?ofa|?aupito# it is a very beautiful house (predicative span ko predicative particle VI-B-2 + e definite article Minor Morpheme 21 + fale house II-B-2; adjective span |faka? ofa| to be beautiful I-B-1; adverb span modifying the preceding adjective span |?aupito# very, much, intensive IV-B).

14.9.4. When a macrospan consists of two microspans, its structure is simple; when it consists of a macrospan modifying a head span, the head span and its macrospan

modifier may be termed a complex macrospan (i.e., a macrospan modifying a microspan head). Such complex macrospans will be termed Rank I complex macrospans. The shortened designation for these will be Rank I macrospans. When a Rank I complex macrospan modifies another microspan or macrospan, the Rank I complex macrospan and its head microspan will be designated as a Rank II complex macrospan. Examples of these complex types are as follows: (Rank I complex macrospans) #hili!?'emau+maalooloo!na?'a+mau+kai# after we had rested, we ate (preposition microspan hili after; prepositional object span ?emau our, plural, exclusive, actor-oriented V-A-3A + maalooloo to rest I-A-1; verb-actor span na?'a past tense VI-C + mau we, plural, exclusive III + kai to eat I-A-1; the preposition span and the preposition object span constitute a preposition macrospan which modifies the verb-actor span as an adverb macrospan; the adverb macrospan and its head span constitute a Rank I complex macrospan of modification or structure of modification); #?'oku+?'ita!ia!koe?'uhi!ko+hono+luma?'i# he is angry because he was made fun of (verb span ?oku present tense VI-C + ?ita to be angry I-A-3; actor span ia he II-F; complex macrospan modifying the structure or macrospan of predication constituting the verb span and actor span, including the conjunctive microspan koe?'uhi because VI-A and the predicative span ko predicative particle VI-B-2 + hono his, her V-A-3B + luma?'i to make fun of I-A-1);

(Rank II complex macrospans) #na'e+?ikai|tene+lea|kiate+au|  
 he+nà'e+?ita|koe?ûhi|ko+hòno+kata?i# he didn't speak to me  
because he was angry because of having been laughed at  
 (main verb span na'e past tense VI-C + ?ikai not, no, to  
not be I-A-2; complementary verb-actor span te infinitive  
aspect VI-C + ne he, she III + lea to speak I-A-1; adverb  
 span kiate to, unto VI-B-2 + au me II-F; adverb-verb span  
 he for, as, because VI-B-1 + na'e past tense VI-C + ?ita  
to be angry I-A-3; conjunctive span koe?uhi because VI-A;  
 predicative span ko predicative particle VI-B-2 + hono  
his, her V-A-3B + kata?i to laugh at I-A-3; the main verb  
 span, the complementary verb-actor span, and the adverb  
 span constitute a clause which is head to the macrospan  
 composed of the conjunctive microspan and the predicative  
 span); #na'e+taqi|he+nà'e+taa'i|?âki|'ae+va?akau# he cried  
because he was struck with a stick (verb span na'e past  
tense VI-C + taqi to cry, weep I-A-3 is modified by the  
 Rank I complex macrospan which includes the adverb-verb  
 span he for, as, because VI-B-1 + na'e past tense VI-C +  
 taa'i to strike, to beat or whip modified by the prepo-  
 sitional macrospan including the preposition microspan  
 |?aki| with, by means of VI-A and the prepositional ob-  
 ject span 'a subject goal-objective marker VI-B-2 + e  
definite article Minor Morpheme 21 + va?akau stick II-B-1A).

14.9.5. As seen in the paragraph above, a clause  
 may be head to a microspan or macrospan in a structure  
 of modification. A clause is here defined as a microspan

which makes a complete predication between initial and final juncture, i. e., /#/ or /||/, or a macrospan or combination of macrospans and/or microspans occurring between initial and final juncture which are related by the relationships of modification, predication, or complementation or coordination and which include at least one verb span, verb-actor span, or a predicative span. Any main span with its related coordinate span constitute a structure of coordination, as in |'ihe+falê|pea+moe+peitó# in the house and in the cook-house and in #tene+?alu!?'o+mohé# he (she) will go and sleep (main span ?i in VI-B-2 + he the, definite article Minor Morpheme 2l + fale house II-B-2 and coordinate span pea and VI-A + mo and VI-B-2 + e definite article Minor Morpheme 2l + peito II-B-2) and in #tene+?alu!?'o+mohé# he will go and sleep (verb-actor span te future tense VI-C + ne he, she III + ?alu to go I-A-1; coordinate verb span ?o and VI-B-2 + mohé to sleep I-A-3). Some examples of clauses are as follows: #ha?u# come, desiderative I-A-1; #há?u!?'o+kai# come and eat (structure of coordination, main verb span ha?u come I-A-1 and coordinate verb span ?o and VI-B-2 + kai to eat I-A-1); #na?e+kai!?'e+tamasi?i!?'ae+fo'i+moli!?'e+tolu# the boy ate three oranges (verb span + actor span + goal span + adjective span modifying the preceding goal span; verb span na?e past tense marker VI-C + kai to eat I-A-1; actor span ?e actor marker VI-B-2 + he definite article Minor Morpheme 2l + tamasi?i boy

II-K; goal span ?a goal marker VI-B-2 + e definite article Minor Morpheme 2l + fo?i single V-A-1 + moli orange II-C; adjective span ?e numeral adjective particle VI-B-2 + tolu three I-E). In general, it may be stated that a clause consists of any microspan, macrospan, or combination of microspans and macrospans occurring between major juncture or between a major juncture and juncture marking the beginning of a conjunctive microspan. For example, the utterance #na?e+taŋi|îa|koe?ûhi|na?e+tôol'ihē+sivi# she cried because she failed in the examination contains two clauses, the first occurring between the utterance initial juncture /#/ and juncture marking the beginning of the conjunctive microspan |koe?ûhi| because and the second occurring between the same juncture marking the beginning of the conjunctive microspan and the final juncture /#/. The utterance is analyzed as follows: verb span na?e past tense VI-C + taŋi to cry, to weep I-A-3; actor span |îa| she II-F; conjunctive span koe?ûhi because VI-A; verb span na?e past tense VI-C + too to fail, to fall I-A-1; adverb span ?i in VI-B-2 + he definite article Minor Morpheme 2l + sivi examination, to examine or take an examination I-C). Conjunctive spans are formed from Class VI Group A forms except for ?aki with, by means of. Clause boundaries may also be marked by juncture preceding a microspan beginning with Class VI Group B Sub-group 1 form or by ko predicative particle, a Class VI Group B Sub-group 2 form or by juncture preceding a microspan beginning

with a Class VI Group C form, It should be noted that when such Class VI Group A forms as kae'uma'aa likewise, also, and neogo even though, although, despite are followed by a microspan beginning with 'a goal-objective marker VI-B-2, they constitute prepositional spans and not conjunctive spans and hence do not mark a clause boundary. But when these forms are followed by a predicative span, a verb span or verb-actor span, they constitute conjunctive spans and mark clause boundaries. For example, in the utterance #na'a+ne+too!'ihe+sivîlko+'ene+ta'etokaŋa# he failed in the examination because of carelessness (verb-actor span na'a past tense VI-C + ne he III + too to fail, to fall I-A-1; adverb span 'i in VI-B-2 + he definite article Minor Morpheme 21 + sivi to examine, examination I-C; predicative span marking beginning of second clause ko predicative particle VI-B-2 + 'ene his V-A-3A + ta'etokaŋa to fail to pay attention, to disregard I-A-3), the boundary marker comes between the predicative span and the preceding span.

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## VITA

NAME: Ermel Joseph Morton.

BIRTHPLACE: Mapleton, Utah County, Utah.

FATHER: Joseph Morton.

MOTHER: Belva Hatfield Morton.

ELEMENTARY SCHOOL: Mapleton Elementary School, Mapleton, Utah County, Utah.

HIGH SCHOOL: Springville High School, Springville, Utah County, Utah.

UNIVERSITIES AND DEGREES: Brigham Young University, Provo, Utah, A. B. degree in 1936; M. A. degree in 1951. Attended the National University of Mexico, Mexico City, Mexico, summer of 1958; and the University of Texas, Austin Texas, summer of 1960 (the Linguistic Institute of 1960).

LATTER-DAY SAINT MISSIONS: the Tongan Mission, 1936-1939; missionary and principal of Liahona College, Nuku-'alofa, Tonga, 1951-1957.

MARRIAGE: Lena Gertsch at Salt Lake City, Utah, 1944.

TEACHING: Brigham Young University, Provo, Utah, 1944-1946, journalism and English; Ricks College, Rexburg, Idaho, 1946 to present, journalism, English, and Spanish.

OTHER EXPERIENCE: advertising assistant, Merrill Company, Salt Lake City, Utah, 1941-1942; newspaper reporter and political writer, Salt Lake Telegram, Salt Lake City, Utah, 1942-1944.