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A PROFILE-GENERATIVE GRAMMAR OF MAORI

by

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To

Bruce Biggs

teacher, colleague, friend

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INTRODUCTION

After comparing the two main models for linguistic description -- Item and Arrangement (IA) and Item and Process (IP) -- Charles F. Hockett concluded his 1954 article with the following: "We must have more experimentation, as much with one model as with the other - and with the devising of further models too, for that matter - looking towards an eventual reintegration into a single more nearly satisfactory model, but not forcing that reintegration until we are ready for it".[1] A decade has passed and instead of merging the two models are seemingly separating almost to the point of complete apartheid, with the most successful exponent of IP -- transformational generative grammar (TG) -- adopting what has been aptly called an 'eclipsing stance'[2] over all other descriptive methods.

The attitude of permanent separation, and that of the transcendence of TG, is exemplified in the article by Andreas Koutsoudas, The Morpheme Reconsidered.[3] He views the IA-IP dichotomy as being permanent; they are methodologically incapable of being united since their respective assumptions are opposed and incompatible. The view has many proponents. Another viewpoint points out where the two models may fuse. Following a TG analysis of a fragment of English, Noam Chomsky states: "...the grammar sketched

above is neither an item-arrangement nor an item-process grammar, in the usual sense of these terms. Such rules as Sentence --> NP + VP or past --> d in the context learn _____, etc., are item-arrangement rules, while such rules as take + past --> tuk are the paradigm for item-process rules. There is no essential difference (other than generality) between these rules in the above framework[4].

This dissertation is an analysis of Maori (a Polynesian language) using a partially integrated model of IA, IP, and WP (Word and Paradigm), and a preliminary outline leading to a morpho-syntactic comparison of Polynesian languages. A variation of C. F. Voegelin's method of listing minor morphemes (restricted to salient minor morphemes), and his method of sentence profile analysis[5] is the essential framework for the morphological and syntactic sections of this dissertation. WP is used whenever feasible, especially in examples. The TG approach, as formulated by Noam Chomsky,[6] Robert B. Lees,[7] and as taught at Indiana University by Fred W. Householder Jr., and Andreas Koutsoudas, is used to provide the rules and lists for generating the phonology, the rules for establishing Contour Word types, and for a TG Grammar for sentences in the corpora.

Maori is spoken in New Zealand by about 100,000 people. Its closest links are with the languages and dialects of the East

Polynesian Hesion[8] of the Polynesian language group. The linguistic situation of which Maori is a part, may be treated in the manner of two interlocking dimensions, interlanguage and intralanguage. Maori is spoken by a minority in a country where English is the official language, the medium of instruction through the whole education system, and the language of the majority (with over 1,500,000 native monolingual speakers). All speakers of Maori know some English, while a very high proportion are either bilingual in Maori and English, or alternatively, know Maori as a second language. Maori, however, has survived and will probably continue to survive as the mother tongue of a sizable minority, because of the high value placed on its retention and sustenance. Maoritanga -- the pride in being Maori - has as one of its aspects the drive to get Maori taught in schools with a high proportion of Maori pupils.

The intralanguage dimension includes dialect variations, stylistic variations, and social variations. Spoken Maori is confined mainly to the North Island. Two dialects are recognised; Eastern and Western. The Western dialect and its subdialects are spoken from North Cape to Whanganui, west of and excluding the central plateaulands of the North Island. The Eastern dialect and its subdialects are spoken from East Cape -- excluding the central plateaulands - to Wellington. The central plateaulands is an area of dialect levelling. Dialectal differences are confined to allophonic

variations, allomorph variations, and some differences in lexicon. Other differences embrace a partiality for certain syntactic constructions, and such recognisable paralinguistic dialectal features as non-phonemic intonational contours. Such differences do not hinder interdialect communication. Dialect levelling is progressing, especially since those who are becoming professional Maori language teachers are being taught in urban locales, by other teachers who minimize dialect peculiarities in their speech. The South Island dialect is extinct. Speakers of Maori on that island have usually learnt a dialect from the North Island, or have migrated from the North to the South Island.

Stylistic variations range from formal oratory on the traditional forums of public discussion (the marae), to the informal style at the intimate interpersonal level. The former is characterized by the uses of such devices as metaphors, similes, proverbs, and formulaic greetings and expressions, and especially notable is the avoidance of loanwords from English. The latter has as its characteristics, short sentences (rarely more than two or three phrases), and the high frequency of assimilated and partially assimilated loanwords from English. There are no social variants (cp. Tongan and Samoan), only stylistic ones. In general then, Maori can be called a language with a high degree of spatial and vertical homogeneiety.

The corpora used in the preparation of this dissertation are from the following sources: Readings in Maaori,[9] the set text of the Maori Studies 1 class of Auckland University, New Zealand; sentences from The Structure of Maori, Indiana University Ph. D. dissertation of Bruce Biggs (for which this author served as an informant);[10] We Speak Maori by Syd M. Mead, A Dictionary of the Māori Language[11] by H. W. Williams; material sent by kinsfolk living in Hokianga, Northland; and sentences and words self-generated by this author (who is a native speaker of Maori). Tape recordings of the last source have been deposited in the files of the Archives of Languages of the World, Anthropology Department, Indiana University.

Comparative material from other Polynesian languages was obtained during the Linguistic Institute, held at Indiana University in the summer of 1964. My gratitude is expressed to the following: to Minna Schultz, the native-speaking Tongan informant who stayed with my family and me all that summer and with whom I worked intensively; and to Fred Kalani Meinecke for several Hawaiian sentences. Comparative sentences from Rarotongan were drawn from the WP analysis[12] of Rarotongan by J. E. Buse.

Maori is linguistically well documented, with the first attempt at a grammar appearing in 1815,[13] and a more systematic treatment of orthography, syntax and lexicon, in 1820.[14] This

latter work was by Thomas Kendall, a missionary, and Samuel Lee, Professor of Oriental Languages at the University of Cambridge. The material had been collected by Kendall, while further attestations were obtained from two Maori chiefs -- Hongi Hika and Waikato -- who had accompanied Kendall to Cambridge for that purpose. The orthography which resulted was based on Sanscrit, with those letters useful to Maori being utilised by the collaborators. The grapheme/phoneme correlation, however, was unsystematic: r and d were used for /r/; w for both /w/ and /f/; /h/ was invariably not marked in initial word position; vowel length was not marked; and stress was marked sometimes correlating with (and replacing) length, and sometimes because of its automatic occurrence on the first syllable of words with short syllables. Later scholars and missionaries refined the Kendall-Lee orthography; ng representing the velar nasal phoneme /ŋ/ and wh representing /f/. Vowel length was recognized as phonemic. Sometimes it was marked by a macron, but more often it was left unmarked.

The most modern analysis of Maori -- based on IA structural linguistics -- was published in 1961.[15] In this work, Bruce Biggs used a cluster solution (or vowel geminates) to mark phonemic vowel length. This spelling innovation was introduced into all written texts emanating from the University of Auckland, New Zealand, and it is now gaining acceptance throughout the educational system.

Bruce Biggs also analysed Maori morpho-syntax. His analysis however, confined itself to a taxonomy of minor morphemes, and an exhaustive listing of their co-occurrences. From this, Bruce Biggs provided a method for word (or major morpheme) classification, but apart from examples of permissible phrases, there was no classification of phrases per se, nor were units larger-than-phrase dealt with. This dissertation therefore is the corollary of that of Biggs, supplementing his phonological and morphological analyses, while concentrating on phrase structure and sentence analysis.

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CHAPTER I

PHONOLOGY

1.1. Phoneme inventory

1.1.1. This phonological discussion of Maori is supplementary to that of Biggs 1961.[1] Specific divergences are: the use of TG rules, the use of Distinctive Features, and the postulate that stress in Maori is predictable (i.e. non-phonemic).

The phoneme inventory, after Biggs 1961,[1] consists of ten consonants, five vowels, an SGC (Series Generating Component) of vowel length, two non-final, and two final junctures. Schematically, they are:

p	t	k	i	u
f		h	e	o
w			a	
m	n	ŋ		
	r			

SGC length

/ // / non-final juncture / +/ non-final juncture

/ #/ final juncture / ⇑ / final juncture

1.1.2. All phones are produced with egressive pulmonic air. There are three linear distinctions for stops; bilabial /p/ , interdental through alveolar / t/ , and velar / k/ . The interdental and alveolar allophones of / t/ are free variants in the speech of some informants. The fricatives have two linear distinctions, bilabial through labiodental / f/ , and palatal through glottal / h/ . The bilabial and labiodental

allophones of the voiceless fricative /f/ may occur freely from speaker to speaker, although older speakers and pedagogues prefer the bilabial variant. A defective SGC of voicing -- since only one member is affected -- occurs with fricatives. /w/ is a voiced bilabial continuant with little friction. The essential contrast between members of the oral fricative continuants is the presence or absence of voicing -- and a secondary opposition is the area of friction. /r/ is a voiced tap, or a voiced trill, articulated by the tongue apex against the alveolar ridge. It may be interpreted as the voiced counterpart of /t/.

1.1.3. The vowels - - a five vowel system which is widespread throughout the world -- have a contrastive pattern of two front vowels versus two back vowels over a low central vowel; i. e. ^{2}FB over N. There are therefore three linear distinctions, front, central, and back; and three vertical distinctions, high, middle, and low. SGC of vowel length is treated as a cluster, or geminate, since this simplifies description at other levels. Apart from slight centering towards mid-central position in interconsonantal unstressed position, each vowel phoneme has a narrow allophonic range. Some fronting of back vowels occurs after front vowels, and pre-velar consonants; while all vowels have slight backing after back vowels and post-velar consonants.

1.1.4. The lack of appreciable allophonic range for each vowel may

be due to the high frequency of vowel clustering, both in words and whole phrases. It is possible to have whole utterances consisting solely of vowels. It may well be that languages which maximize vowel placement -- such that vowels may occur freely in all positions -- minimize ambiguity and maximize contrasts with the aid of a tight allophonic range for each vowel phoneme.

1.1.5. Four junctures are postulated here: two final and two non-final. Final juncture / #/ is heard as a pause preceded by falling pitch, decreasing loudness and occasional devoicing of final vowels. Final juncture / ⇗ / is manifested by either a rise in pitch on the nucleus (M) of the first Contour Word sustained through all modifiers, or a rise in pitch on the last syllable of the utterance, or both. Non-final juncture / +/ occurs at word boundaries, isolable as a slight devoicing of the immediate pre-junctural vowel, or as a hiatus between word-final and word-initial vowels. Junctures are glossed here:

/ # / declarative, final juncture

/ ⇗ / interrogative, final juncture

/ // / contour word boundary, non-final juncture

/ +/ word boundary, non-final juncture

In phonemic transcription in this dissertation, non-final juncture / +/ is represented by space between morphemes or morpheme

clusters; non-final juncture /// by reversed square brackets (i.e.][ ) in the morpheme gloss in English immediately below the Maori morphemes; and both final junctures by their symbols given above.

1.2. Distribution

1.2.1. Consonants may occur word-initially, word-medially, but never word-finally. No consonant clusters occur (and its corollary, all consonants are followed by a vowel and preceded by a vowel, or silence). Vowels may occur freely in all word positions, alone, in geminate, and in non-identical clusters (except in clusters of three or more adjacent, identical vowels).

1.3. Attestation

1.3.1. The ease of phoneme attestation for Maori is exemplified by the following minimal series:

Consonants

word initial		word medial	
/paa/	touch	/apa/	seek
/taa/	beat	/ata/	morning
/kaa/	ignite	/aka/	tree root
/faa/	four	/afi/	embrace
/haa/	breath	/aha/	what
/waa/	space	/awa/	river

/maa/	clean	/ama/	boat-thwart
/naa/	satisfy	/ana/	hole
/ŋaa/	def. art. pl.	/aŋa/	move
/raa/	day	/ara/	wake up
		/ahi/	fire
		/awi/	yelp

Vowels

/ia/	3rd pers. sing.	/aia/	retribution
/ua/	strength	/aua/	don't know
/ea/	requite	/aea/	preferable
/oa/	boat sidestrake	/aoa/	bark at
/aa/	clean	/uea/	shake

After identical vowel clusters

/maaia/	brave	/tuuaa/	incantation
/maaea/	emerge	/tuuii/	a bird
/maaua/	we, dual, exclusive	/hoou/	new
/maaoa/	ripe	/kiia/	spoken

1.4. Distinctive Feature Analysis

1.4.1. Each phoneme can be regarded as being composed of a discriminative set of inherent distinctive features, and such features isolate and define each phoneme. A total of twelve inherent distinc-

tive features, or fewer, are postulated as being capable of showing the phonemic system of any language.[2] Each distinctive feature (DF) involves a binary -- or yes versus no -- choice, the + and - signs indicate the presence or absence of a specific feature for each phoneme analysed, while a zero sign (ø), indicates that the particular binary opposition is redundant for the specific phoneme.

1.4.2. Six DFs are used to isolate each Maori phoneme; five are sonority features -- consonant versus nonconsonant, continuant versus interrupted, nasal versus oral, voiced versus unvoiced, compact versus diffuse -- and one is a tonality feature (grave versus acute). The following chart gives the DF structure of Maori:

	p	t	k	r	f	h	w	m	n	ŋ	i	e	u	o	a
1. consonantal/ nonconsonantal	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-
2. interrupted/ continuant	+	+	+	+	-	-	-	-	-	-	ø	ø	ø	ø	ø
3. nasal/ oral	-	-	-	-	-	-	-	+	+	+	ø	ø	ø	ø	ø
4. voiced/ unvoiced	-	-	-	+	-	-	+	ø	ø	ø	ø	ø	ø	ø	ø
5. compact/ diffuse	-	-	+	ø	-	+	ø	-	-	+	-	+/-	-	+/-	+
6. grave/ acute	+	-	ø	ø	ø	ø	ø	+	-	ø	-	-	+	+	ø

1.4.3. Consonantal phonemes, as opposed to non-consonantal

phonemes, have more obstruction through the supraglottal vocal tract. Spectographic evidence shows that the consonants have a shorter breadth span (or smear) and this is one of the features which dichotomizes /u/ and /w/. /h/ is regarded as a consonant on phonological grounds; its allophones range from a velar to a palatal fricative, while its distribution is restricted to syllable initial position. /w/ is treated as consonantal on the same distributional grounds. /w/ cannot be regarded as a non-syllabic allophone of /u/ because of the minimal contrasts /aua/, /aoa/, /awa/, given previously in 1.3.1. Maori consonantal phonemes are /p,t,k,r,f,h,w,m,n,ŋ,/; non-consonantal phonemes are /i,e,u,o,a/.

1.4.4. The interrupted phonemes are characterized by complete obstruction of the supra-glottal sound tract followed by simultaneous oral-nasal release. /p,t,k,r/ are the interrupted phonemes, and all the rest are continuant. This feature is, however, redundant for vowels, or non-consonantals, since they are already distinguished from the consonantals. /r/ is treated as an interrupted phoneme since its variants range from an alveodental tap to a voiced dental stop.

1.4.5. Nasal phonemes are characterised by the complete obstruction of the oral cavity and the simultaneous channeling of sound through

the nasal cavity. /m,n,ŋ/ are the nasal phonemes, and the rest are oral. Again, this feature is redundant for non-consonantals.

1.4.6. The three features divide all phonemes into four classes:

non-consonantal	/i,e,u,o,a/
consonantal, interrupted	/p,t,k,r/
consonantal, continuous, oral	/f,h,w/
consonantal, continuous, nasal	/m,n,ŋ/

and the remaining three features result in each phoneme forming a class. The voiced/unvoiced feature demarcates /r/ and /w/ from the other consonants. Nasals and non-consonantals are also voiced, but this feature is regarded as being redundant for these groups. Voicing is characterised by periodic vibrations in the glottis.

1.4.7. In acoustic terms "compact phonemes are characterised by the relative predominance of one centrally located formant region (or formants)"[3]. This is interpreted as being caused by a large resonating cavity in front of the point of maximum stricture; thus, low vowels are compact and high vowels are diffuse, and post-alveolar consonants are compact while pre-alveolar consonants are diffuse. The compact feature is the only one which permits a middle term (±)[4], in addition to the binary oppositions. /e/ and /o/ are compact in relation to high vowels, and diffuse in relation to the low vowel /a/.

1.4.8. The grave feature is characterised by grave phonemes having larger resonance cavities than those that are acute. Hence labial consonants /p/ and /m/ are grave, and /t/ and /n/ are acute. In the same manner, back vowels /u/ and /o/ are grave and the two front vowels are acute.

1.4.9. The adoption of a cluster solution for phonemic length does away with the necessity of accounting for an additional five vowels in the distinctive feature chart. Geminate or identical vowel clusters also simplify the treatment of syllables and stress.

1.5. Syllabification

1.5.1. Heuristically, a word is defined as a grammatical unit of one or more phonemes, isolated from other such units by junctures, or, when written, isolated from other such units by space. This definition is phonological (e.g. a sequence of phonemes bound bilaterally by any two junctures, with junctures defined as space fillers), but will also hold true for morphological units (i.e. a word consists of either a stem, one or more roots, a root plus affix or affixes, or a particle).

1.5.2. In the same manner, a syllable is defined here as a combination of the following phoneme classes; a vowel (V), two vowels (VV), a consonant plus a vowel (CV), a consonant plus two vowels (CVV).

Following phonemicization, syllable boundaries are established automatically by marking the following boundaries concurrently, and when two boundaries conflict, the first in the sequence takes precedence. Boundaries occur at word space (/ + / junctural boundary), before a consonant, after identical vowels in a cluster, and after every second vowel in a non-identical vowel cluster.

To illustrate syllabification, the following Maori utterances are divided into words (separated by space) and syllables (with boundaries represented by a period word-internally and a space between words).

(1) The man went to the house

#	ka	hae.re	te	ta.ŋa.ta	ki
	[descriptive non-time	go]	[the, sing., non-person	man]	[connector

te	fa.re	#
the	house]	

(2) The girl is at Kaiaua at this moment

#	kei	kai.au.a	te	koo.ti.ro
	[present location	Kaiaua]	[the, sing., non-person	girl]

i.nai.a.nei	#
non-future location, now]	

(3) Those herrings made me scream and scream

#	i	au.ee.au.ee	a	au	i
[	verb past	scream-scream]	[the, non-number person	me]	[connector

au.a	au.aa	#
plural-retroactive time	herring]	

1.5.3. A syllable may now be given a generative formula -- (C)V(V) -- an optional consonant followed by an obligatory vowel, followed by an optional vowel. This formula summarizes section 1.4.1., above. A word can now be defined as being composed of a syllable, or a cluster of syllables; such as exemplified in 1.5.1.

A restriction rule must be applied to word formation from syllable components; vowel geminates must not be followed by a third vowel of the same quality. Clusters of three vowels of the same quality are impermissible, or, ungrammatical in the Choms kyan sense.[5] In any case, a third unrearticulated vowel of the same quality as the geminates will destroy the binary short-versus-long opposition, will introduce an analogic distinction (short versus long versus longer); SGC of length will then be no longer phonemically possible.

1.5.4. All other vowel sequences are theoretically possible. To infer that they cannot occur because they are not found in the various

corpora investigated, is invalid. A full- but not complete -- investigation of combinatorial possibilities can be done by searching the largest dictionary, and all sources with an electronic computer, but such results will still be invalid since no language exhausts its lexicon-forming units. Biggs:12(1961)[1] for example, mentions that of the 250 CVV syllables that are mathematically possible, 43 do not occur in his corpora. Among the 43 are listed these eight: /heo,huo, mio, neu, nio, wiu, ŋeo, ŋue/ , for which the following examples were drawn from H. W. Williams, A Dictionary of the Maori Language[6] /heoti, kohuoraŋi, amio, keneuri, manioro, kawiu, kereŋeo, ŋueŋue/ . Another CVV syllable which is given as not occurring is /fou/ , for which a coined word /founu/ for phone is regularly used.

1.6. Stem Stress

A stem is defined as a major morpheme without affixes, or as a minor morpheme cluster which may sometimes act as a major morpheme.

1.6.1. With a (C)V(V) syllable formulation, stem stress is predictable (that is, non-phonemic). Stress has a descending order of precedence. Major stress will fall on the first syllable containing a geminate cluster, if none, then on the first syllable with a non-identical vowel cluster, and if none, then on the first syllable.

Secondary stress will fall on the subsequent syllable which fills the highest order of precedence after the major stress, according to the descending order given above. Tertiary stress is the next in order. Quaternary stress (the lowest value), the next in order, is very rare since the bulk of Maori words are two or three syllables long. The value of the stress in each word is likewise predictable. Stress increases in intensity the further the stressed syllable is removed from the final vowel, and the final syllable, if unstressed, is devoiced.

1.6.2. The following exemplify word stress, with major stress marked by [ˈ], secondary stress by [ˌ], tertiary stress by [ᵛ], and quaternary stress is left unmarked. The Maori orthography, apart from phonetic stress markers, is phonemic.

mäˈtà raw, màˌtäa bullet, mäˈnà power, mäˌnàwă heart, màˌnăwatüu a province, màˌnäakiˈ support, tüu stand, tüutàkiˈ meet, ŋóŋŏtahäa a mountain, päatùutăhi a village

1.6.3. It has been shown in 1.6.1. that primary stress occurs on long syllables (CVV and VV), with geminates taking precedence over non-identical clusters. In most languages that have both length and stress, one is usually phonemic and the other redundant. In Maori, stress is redundant, while length -- analysed as geminate --

is phonemic. Redundancy increases the reliability of speech communication firstly by accenting those syllables that are long, and secondly, by inculcating a Markov Chain process whenever stress does not fall on the first syllable. This signals that a cluster will occur later in the word.

1.7. Utterance Stress

1.7.1. Foreshadowing the discussion of major morphemes (M) and minor morphemes (m), in Chapter 2 following, it is stated here that once the minor morphemes are isolated, utterance stress is also predictable. Minor morphemes -- consisting of particles and affixes -- are a finite isolable set of less than eighty members. In isolation, particles have the same stress patterns as words; in an utterance, minor morphemes will normally carry no stress. All M (major morphemes) have the stress patterns described in 1.6.1., regardless of whether or not such M are preceded by a prefix.

1.7.2. The following examples will illustrate utterance stress patterns, the first utterance consisting solely of particles (m) and major morphemes (M), and the remaining utterances including prefixes (m^), suffixes (^m), and reduplications (R), as well as particles (m) and M. Syllable divisions are shown (see 1.5.2.).

(4) I am at the house

#	kei	te	fä.rė	ø
[	present location	the, sing., non-person	house]	[the, non-number, person
	m	m	M	m

äu]	#
I	
M	

In this sentence, the particles /kei, te, a/ have no stress, while in the major morphemes, phonetic primary stress falls on the first syllable of /fare/ -- since it is the initial syllable of a word consisting solely of short syllable -- and falls also on /au/ being the only syllable of the word.

(5) The dog was hit by the man

#	i	pä.tú^a	te	kŭ.rĭĭ
[	past time	hit^passive]	[the, sing., non-person	dog]
	m	M - m	m	M

e	te	tăŋátă̆	#
[agentive	the, sing., non-person	man]	
m	m	M	

Minor morphemes are shown, in this sentence, as not having stress. The first major morpheme /patu/ hit, has an affix /^a/ passive and the whole stem /patua/ has a primary stress on the first syllable /pa/, a secondary one on /tu^a/ since /^a/ is a minor morpheme. The second M /kurii/ dog, has a primary stress on the second syllable, since it contains a geminate cluster, and the secondary stress falls on the first syllable. The final M, /taŋata/, is comprised of short syllables and therefore primary stress falls on the first syllable, secondary stress on the second syllable, and tertiary stress on the third.

(6) The men ran

#	i	ŏ.mȁ	ŋaa	taʷa-.ŋȁ.ta	#
	[past time	run]	[the, plural, non-person	man-plural]	
	m	M	m	M - R -	

(7) The younger brothers (of male) hid

#	i	pĭ.rȉ	ŋaa	teʷe꞉ i'.na	#
	[past time	hide]	[the, plural, non-person	younger sibling of same sex, -plural]	
	m	M	m	M - R -	

(8) The older sisters (of female) are at home

#	kei	te	käa.iˈ.ŋa
[	present position	the, singular, non-person	home]
	m	m̈	M

ŋaa	tü.a¨a-.ka.na	#
[the, plural, non-person	older sibling of same sex- plural]	
m	M - R -	

The first M of the Maori sentences cited above, has primary stress on the first syllable either because all syllables are short (i.e. containing one vowel), or because -- as in the third sentence -- the first syllable is long while the rest are short. The second syllable of each has secondary stress. The second M of each Maori sentence cited above has a vowel of the first syllable lengthened (or -- in a geminate solution -- reduplicated), this marking plural.

1.7.3. The list which marks plural by internal reduplication is highly restricted, containing less than ten members. All other M nucleii are invariant in shape whether singular or plural. The list has the following members (both singular and plural shapes are given), and their semantic domain is restricted to kinship terminology:

taŋata man, taaŋata men; tupuna ancestor, tuupuna ancestors; teina younger sibling of the same sex, teeina younger siblings of the same sex; tuakana older sibling of the same sex, tuaakana older siblings of the same sex; wahine wife, woman, waahine wives, women; matua parent, maatua parents.

All but one (tuakana/tuaakana) changes from singular to plural by lengthening the first vowel. The stress pattern for each is automatically conditioned; tuaakana may be syllabified and stressed thus -- tú.ǎa.ka.na -- and the remainder will have primary stress on the first syllable, secondary stress on the second, and tertiary on the third, the criteria being the descending order system outlined in 1.6.1.

Reduplication (marked as -R- if internal, R- if initial, and -R if final), on the basis of stress patterns and the high frequency of compounding, is treated here as a major morpheme expansion involving compounding. Compounding is treated here as a structure of modification.

1.7.4. Early missionaries complained that the languages of Polynesia had no grammar since any part of speech can be used as any other part of speech. What has not been mentioned previously is certain minor morpheme clusters may double as major mor-

phemes in the absence of a major morpheme nucleus, and since the whole particle cluster adopts the major morpheme stress pattern, its functional use is not only marked morphologically (as will be shown in Chapter 2), but also marked redundantly by stress patterning. Stress helps isolate contour words. The following examples show the contrast (with contour word brackets enclosing glosses):

(9) This horse is dead

# kua	mä.tė	tee^nei
[perfective, non-time	die]	[the, sing., npn-person near speaker
m	M	m m

höi.hó	#
horse]	
M	

(10) This one is dead

# kua	mä.tė	tëe^nèi	#
[perfective, non-time	die]	[the, sing., non-person	near] speaker
m	M	M m m	

1.7.5. Biggs in his dissertation,[7] and his published version[1] treated stress as phonemic, giving the following contrasts: te ī*h*iŋa the power, i hīŋa fell; kāakaa parrot, ka kāa burns; ŋaa māatua the parents, maa tūa for Tua; as examples of minimality. The contrasts depend upon comparing a word with a partial utterance. This is invalid since -- as shown above -- word stress and utterance stress (with particles and affixes included) are on different levels of analysis. This then means that phonemic stress has been achieved by mixing levels. It is felt that treating stress as predictable on the word level, and also predictable -- but in a different way -- on the utterance level, is a more powerful way of analysing stress.

1.8. Generative Grammar of Phonology

1.8.1. A phonological treatment of Maori -- making no allowance for stress, division into major and minor morphemes, and compounds -- is given here in the form of a TG grammar:

1.	Word	--→	$Sy(Sy)^R$	
2.	Sy	--→	(C)V(V)	
3.	C	--→	p,t,k,r,f,h,w,m,n,ŋ.	
4.	V	--→	i,u,e,o,a.	: restriction; each V can only be chosen twice, successively.

1.8.2. The symbols used in the TG grammar are explained here. The numbered sequence 1-4., indicates that the rules are to be taken in that order, and the single broken arrows, --> , meaning 'rewrite as', indicate that the order of rules are non-recursive. The rewrite of the first rule -- $Sy(Sy)^R$ -- shows a syllable followed by an optional syllable (symbols for optional markers are the parentheses), with the superscript R (mnemonic for recur) instructing that an infinite number, or null, may follow the first optional Sy. Rules 3. and 4. give linear lists of items, the commas separating items only one of which can be chosen after the rewrite symbol. The period at the end of each list indicates that the list has only those members, i. e. each list is finite. The restriction rule given after Rule 4. is to prevent the choice of three identical vowels adjacent to one another. Such has been called ungrammatical in 1.5.5. above.

1.8.3. The above grammar will generate all particles of one phoneme (e.g. /i,e,a,o/), of two phonemes (e.g. /te, aa, oo, au/ etc.) and all words in the largest Maori dictionary, including the long place name regarded by native speakers as one unit:
/kotetaumatafakataŋihaŋakooauauatamateapookaifenuakitanataahu/
the hill summit upon which Tamatea the Wanderer played his flute to his beloved. The lack of stress prediction, major and minor morpheme cuts, and compound division, is defended here by positing that such

are not part of a phonological TG grammar, but of morpho-syntax.

1.8.3. Each item in the lists of Rules 3. and 4. -- that is, each phoneme -- can be coded in the form of DF formulae, with the numerals after the broken arrow standing for the feature number, and the + or - sign after each numeral for the contrastive value as given in 1.4.1. The GT rules will continue those of 1.8.1. in this manner:

5. p --> 1 + 2 + 3 - 4 - 5 - 6 +

6. t --> 1 + 2 + 3 - 4 - 5 - 6 -

7. k --> 1 + 2 + 3 - 4 - 5 +

etc

Such a decomposition however, will not be considered at all in the Generative Grammar section of this dissertation, since there is, at this stage, no advantage in proliferating rules by rewriting each string in the form of DFs.

1.9. Bibliography. Sources cited above are:

1

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2

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Jakobson, Roman, G. Fant, and M. Halle, Preliminaries to Speech Analysis, Massachusetts Institute of Technology, Accoustics Laboratory, Cambridge, Massachusetts (1961).

3 Op. Cit. 1961:27.

4 Op. Cit. 1961:28.

5 Chomsky, Noam, Syntactic Structures, Mouton & Co., 'S-Gravenhage (1956):13-17.

6 Williams, H. W., A Dictionary of the Maori Language, Wellington (1957).

7 Biggs, Bruce G., The Structure of Maori, I. U. Ph.D. Dissertation, (1957).

CHAPTER 2

MORPHOLOGY

2.1. Method

2.1.1. The first model used for morphological analysis is that outlined by Zellig S. Harris[1] and refined by Charles F. Hockett.[2] Each utterance is divided into those minimal phoneme sequences which recur with the same meaning, or are left when other minimal sequences are isolated. Such minimal strings (or morphological primes) are called MORPHS. Morphs, including zeros, are grouped into MORPHEMES on the basis of (a) the same range of meanings (and such may be lexical or structural (functional); (b) non-contrastive distribution (and such may be free or conditioned). A MORPHEME is defined here as 'the name given to a class of morphs which have the same meaning, and are in non-contrastive distribution'.

2.1.2. The second model involves the division of morphemes into MAJOR MORPHEMES (usually lexical items) and MINOR MORPHEMES, a small, finite, highly recurrent set of particles, clitics, and affixes (as given exhaustively in Biggs 1961[3]); and then the grouping together of salient minor morphemes which demarcate clearly units larger than the word. Such clearly demarcated

larger-than-word units are sometimes called 'phrases' and sometimes 'clauses' in traditional grammars, are sometimes 'constructions' in Immediate Constituent Analysis,[4] are occasionally outputs of VP and NP expansions in GT analysis,[5] and are 'phrases' in Profile Grammar (PG) analysis.[6] Since the term 'phrase' is used in both TG and PG analyses, albeit loosely and only mnemonically in the former, the term -- CONTOUR WORD -- used by Biggs,[7] in 1961 is also used for each significant larger-than-word unit in this chapter.

2.2. Contour Word

2.2.1. At this point a sentence is defined as a grammatical string of words separated from other similar strings by a final juncture or its equivalent. A CONTOUR WORD (CW) is part of -- or is -- the whole sentence, initiated by one of a subset of minor morphemes, containing a nucleus major morpheme (M) or an M replacive, and terminated by a final juncture, or the onset of another CW. Since it is part of a sentence, or -- if there is only one CW -- is the whole sentence, a CW must also meet the condition of grammaticality.

2.2.2. Previous linguists who have analysed the morphology of one of the languages of the Polynesian Hesion have invariably given long lists of minor morphemes, many members of which are

treated as functionally different, but are phonemically homophonous.[8] These are a set of preposed minor morphemes, each having a range of interlocking functions (analysed as a range of meaning), with choice of functions determined by presence or absence of other minor morpheme classes in adjacent positions.

Proliferation of minor morphemes is due to arbitrary choice of one function out of an interrelated set, so as to fulfil the one meaning per morpheme criterion. This has obscured a basic structural feature of Polynesian languages; the minor morpheme with a range of interlocking functions. There is already a problem of homonymy in major morphemes (or lexical units) brought about by the paucity of segmental phonemes, the high frequency of words of two or three syllables, and the pressure of consonantal discontinuity; amongst minor morphemes, the problems are compounded since most of the minor morphemes are never more than one syllable in length and the likelihood of homonymous minor morphemes is therefore greater.

2.2.3. Contour Word Interior. The order of morphemes in the interior of a Contour Word is sequentially fixed. CW initiators are always first, and their function is to introduce and define CWs. With the two exceptions given below, the first free morpheme after the initiators is always the major morpheme nucleus (symbolised M), and subsequent major and minor morphemes

are always modifiers. These modifiers (symbolised m or M) are all treated as free forms, (e.g. taŋata patu hipi man kill sheep= sheep-slaughterer). The CW nucleus (M) may optionally take prefixes and/or suffixes (m-, and -m) and in the case of kinship terms (see 1.7.3.), number agreements shown by obligatory internal expansion (-R) for dual and plural number. No minor morpheme may occur as the nucleus (M) of a CW, although a small set of minor morpheme clusters may act as M .

The two exceptions to the sequentially fixed order of modified-modifier are /aata/ carefully or deliberately, and /tino/ very which may occur before the nucleus in VCWs, or Verbal Contour Words, but may occur optionally either before or after the nucleus in NCWs, or Nominal Contour Words.

There is a paucity of inflection and morphological complexity; what morphophonemic changes there are, are adequately discussed in Biggs, 1957 and 1961,[3] and given formal treatment in the TG analysis of Chapter 4 ff.

2.3. Contour Word Initiators

2.3.1. As the name suggests, contour word initiators introduce each contour word, as well as being part of it. The salient CW initiators are few in number, are all preposed particles or particle clusters, and are listed here in four groups. Members of certain

groups may co-occur. Presence or absence of such co-occurrences formally isolate CW types (see 2.8.).

Group 1 i, kei, me, hei.

Group 2 ka, kua, kia, e...ana, ee~ø.

Group 3 ko, ki, e, n^4a, m^4a.

Group 4 te∞t^{4a, 4b}∞ tee^P; ŋaa∞ø ∞ ee^P; a ~ ø; he.

Subgroup 4a aa(^Pr) oo(^Pr),

Subgroup 4b aua, tahi.

A discontinuous minor morpheme is shown in Group 2 -- /e...ana/ -- with e being a contour word initiator, and ana a contour word closer (i.e. ana occurs after the contour word nucleus before a following contour word initiator, or after the final modifier of the CW nucleus but still immediately preceding the next contour word initiator or final juncture). Two symbols are used above to conjoin allomorphs; ~ indicates that the allomorphs are phonologically conditioned, ∞ indicates that the allomorphs are morphologically conditioned. Some conventions of TG analysis are used in the above lists. The circumflex (^) represents an intra-word boundary, linking minor morphemes to each other or to a major morpheme. Thus n^4a may be read "n hooked to 4a", or, "n prefixed to 4a", and is written as /n^aa/ or /n^oo/ The braces { } enclose items one of which must be obligatorily chosen

if the particular morph preceding the symbol is chosen, or, as in Group 1, encloses phonologically conditioned allomorphs linked to another which is morphologically conditioned.

2.3.2. The symbol P in Group 4 represents a group of four minor morphemes. The first three may also function in major morpheme units (for a discussion on how this is treated in the m/M gloss see 2.3.3. following). Three of the four are position-markers:

nei position near speaker/s

naa position near hearer/s

raa position distant from both

with position being either in space or time. These three position markers may occur independent of members of Group 4 (i.e. in CWs not initiated by one of the Group 4 initiators). When they do occur with Group 4 initiators, they may conjoin with |te| or |ŋaa| and by morphophonemic processes the morphemes |te| and |ŋaa| change their shapes to /tee-/ and /ee-/ respectively, or they may occur after the CW nucleus, and modifiers (if any). In the latter instance, the morphemes |te| and |ŋaa| have the shapes /te/ and /ŋaa/ respectively. The fourth member of P is always a minor morpheme, always bound to /tee-/ and /ee-/. This is

-tahi particularizer.

2.3.3. (^Pr) in subgroup 4a indicates that one of the three bound

morphemes represented by Pr may be chosen; the parentheses indicate optionality. The three bound morphemes -- Pr represents Pronoun -- are:

-ku first person, singular

-u ~ ϕ second person, singular

-na third person, singular

These three conjoin with the possession markers given in subgroup 4a to form possessive pronouns. When prefixed by / t / (of Group 4), the whole morpheme cluster indicates that the thing possessed is singular; when prefixed by ϕ (also of Group 4), the thing possessed is plural. The possessive pronouns may function alternatively as major morphemes (M) when one of the bound morphemes -ku, -u, -na, is the CW nucleus (M), or as minor morphemes when the CW nucleus follows. In the m/M gloss given beneath the English gloss, those morphemes which function as both major and minor morphemes (see also 2.3.2.) are symbolised as $\frac{M}{m}$ when functioning as M, otherwise they remain as m.

2.3.4. In 2.4. through 2.7. following, each initiator will be given a parenthesized lower case letter, since this will make for easier citation later. The English gloss for each initiator is a functional one (although translation of each initiator is given in the discussion, it is not used for the morpheme gloss); the functional gloss is given underneath each morpheme. There is still the prob-

lem of bridging Maori and English; for some utterances (e.g. idioms, proverbs) this is a paralinguistic phenomena which is never completely overcome even if both functional and translational glosses are given.

2.4. Group 1 Initiators

2.4.1. Group 1 minor morphemes are multifunctional, marking whether M is subject or non-subject of the sentence, its location, mode, or time. The four members and their full functional glosses are:

(a)	i	non-subject, non-future location, descriptive, past-time
(b)	kei	non-subject, present-location, caveat, present-time
(c)	me	non-subject, conjunctive, prescriptive, non-time
(d)	hei	non-subject, future location, purposive, non-time

2.4.2. In NCWs and LCWs (or Locative CWs), Group 1 initiators take first and second functions (see 2.8.). Both /i/ and /kei/ may be translated by one of, or by combinations of, the following: was/is, had/have, along, to, from, at, on, in, than, because, while, of, and; with /i/ marking past-time, and /kei/ marking present time. In NCWs initiated by /me/ -- these are always in non-initial CW position in the utterance, otherwise the CW initiated by /me/ is a VCW -- /me/ may be translated by either and or

with.

2.4.3. In VCWs, Group 1 initiators take third and fourth functions, with the mode and time of the following M depending upon which Group 1 initiator is chosen. In such circumstances, VCW initiators of Group 1 do not translate directly into English. Their presence is inferred by the mode or time of the English verb.

2.4.4. Divisive formulae for NCW and VCW are given in 2.8. LCWs each contain one of a class of words called inherent locatives, whose occurrences overlap those of both NCWs and VCWs, as given by divisive formulae. These inherent locatives are listed in 2.8.4. When Group 1 minor morphemes occur with one of the listed locatives, they take the first, second, and fourth functions. The morphologically-conditioned allomorphs of /hei/ future location marker are:

/hei/ before Location of place (Lp)

/a/ before the string 4+ Location of time (4 + Lt)

/aa^/ hooked to a subset of Location of time. Locatives are dealt with in detail in section 2.8.4.

2.5. Group 2 Initiators

2.5.1. Group 2 initiators -- except for 2(e) which marks non-past time -- restrict their functions to mode. Tense or time -- if marked at all -- is marked by an M which is an inherent L(ocative)

in time (e.g. aapoopoo tomorrow; see 2.8.4.), which is not in the same CW. The members of Group 2 are:

(a) ka inceptive, non-time

(b) kua perfective, non-time

(c) kia subjunctive, non-time

(d) e...ana imperfective, non-time

(e) ee~ϕ imperative, non-past-time

2.5.2. Group 2 initiators occur only in VCWs. While they are not translated here (the exception being kia translated as either be or so that) the M of the VCW is translated into the appropriate mode in English corresponding to the morpheme functional gloss. The VCW 2(e), glossed imperative, non-past-time, has two allomorphs, both phonologically conditioned: /ee/ occur before M of one syllable, or M of two CV syllables, while /ϕ/ occurs elsewhere. E.g. ee tuu Stand up!; ee noho sit down; ee kai eat; haere go!; patu^a hit/kill (him)!; faka^oma^tia make (it) run!

2.6. Group 3 Initiators

2.6.1. Group 3 initiators are also multi-functional. The members, their classification, and their functions are:

(a) ko future location, specifier, non-time

(b) ki non-subject, relational, conditional, non-time

(c)	e	subject, agentive, vocative, present time
(d)	n^4a	non-subject, agentive, possessive, non-future-time
(e)	m^4a	non-subject, agentive, possessive, future time

2.6.2. Group 3 initiators occur only with NCWs, Poss(essive) CWs and LCWs. In the absence of other evidence, /ko/ specifies that the CW it initiates is an NCW. When other NCW are also part of the sentence, /ko/ also specifies that the nucleus of the one it initiates is not the subject of the sentence. In a LCW (see 2.8.4.) when the nucleus of the CW is one of the inherent locative of place, /ko/ has the functions future location specifier, and may be translated by either at or to; e.g.:

(11) Jim will be beneath

#	ko		raro	a
[	future location specifier		below]	[the, person, non-number
	m		M	m
	hemi	#		
	Jim]			
	M			

(12) Where will the meeting be?

# ko	hea	te
[future location specifier	what place]	[the, sing., non-person
m	M	m
hui ⇑		
meeting]		
M		

(12a) The meeting will be here

# ko	ko^nei	te
[future location specifier	position here]	[the, sing., non-person
m	M^m	m
hui #		
meeting]		
M		

The following example shows ko being used as a non-subject specifier:

(13) This boy is Jim

# ko ø	hemi	tee^nei
[non-subject specifier	Jim]	[the, sing., non-person ^near speaker
m	M	m m

tama^iti #

child^sing.]

M^m

When another NCW, not initiated by/ko/, occurs in the same sentence as that containing/ko/, the non-ko NCW contains the subject of the sentence. The two NCWs in the above sentence are enclosed in brackets; the second -- without / ko/ -- contains the subject. Ambiguities will arise since there is no structural signal to indicate whether / ko/ is being used as a future location marker, or as a specifier. Such an ambiguous sentence -- with / ko/ not glossed -- is the following:

(14)

# ko	Akuaku	te	tamâiti
[	Akuaku]	[the, sing., non-person	child^sing.
m	M	m	M^m

nei #

near speaker]

m

If/ko/is glossed future location specifier, the sentence will be translated, the child will be in Akuaku; if/ko/is glossed specifier, the sentence will be translated, the child is Akuaku. Paralinguis-

tic features (such as intonation, gestures, etc.) may indicate which is meant; such however are not infallible signs and the linguist must inevitably fall back on context, especially preceding utterances.

2.6.3. Similar problems of ambiguity occur with initiator /ki/. When /ki/ initiates the initial NCW, it has the functions non-subject, conditional, non-time, and is translated variously by one of the following: according to; in the opinion of; in the event of; if. When the NCW or the LCW /ki/ initiates is non-initial, /ki/ has the functions non-subject, relational, non-time, with relational either showing a prepositional function -- translated by one of to, onto, into, at, upon -- or an instrumental function (translated either by with, or, by means of). Although the CW initiated by /ki/ is -- if the nucleus is not an inherent Locative -- always a NCW, ambiguity is always inherent, in that only context will decide whether the nucleus of the NCW initiated by /ki/ is an object, or an instrument. Thus:

(15)

#	ka		patu^a	te
	[inceptive, non-time		hit^passive]	[the, sing., non-person
	m		M^m	m

taŋata	ki	te	raakau	#
man]	[	the, sing., non-person	tree]	
M	m	m	M	

may be ambiguously translated as either the man was hit with the tree (or stick), or, the man was hit at the tree, or the man was hit towards the tree. In the first, ki will take the functions non-subject, relational (=instrument) non-time; in the second, non-subject, relational (=location), non-time, in the third, non-subject, relational (=preposition) non-time. In this dissertation all ambiguity is arbitrarily resolved by equating relational as always being location marker.

2.6.4. The initiator 3(c) -- e -- has the functions subject, vocative, present time, either when the preceding or following VCW is initiated by 2(e), or when the NCW initiated by it is the whole utterance, or when other CWs in the utterance are NCWs.

(16) Stand up John

#	ee	tuu	e
	[imperative, non-past time	stand]	[subject, vocative, present time
	m	M	m
	hoone #		
	John]		
	M		

(17) Wake up, Peter

#	ø	maraŋa	e
[	imperative, non-past time	arise]	[subject, vocative, present time
	m	M	m

pita	#
Peter]	
M	

(18) This is a good canoe, John

#	he	waka	pai	tee^nei
[	indef. art.	canoe	good]	[the, sing., non-person^near speaker]
	m	M	M	M / m^m

e	hoone	#
[subject, vocative, present time	John]	
m	M	

Initiators 2(e) — ee~ø imperative, present time and 3(c) — e subject, agentive, imperative, present time, may alternatively be treated as allomorphs of the morpheme /ee/, with the latter being morphologically conditioned. Such an analysis however will complicate division of CWs and hence is not attempted here. Where any

preceding VCW is not initiated by /ee/ or /ø/, but has a passivizer suffixed to the verb, initiator 3(c) -- e -- has the sole function agentive, and all CWs it initiates are Ag(entive) CWs. As an agentive initiator, e is translated by.

2.6.5. Initiators 3(d) and 3(e) -- /m-/ and /n-/ -- are bound morphemes attached to either /aa/ or /oo/. Both may be variously translated by one of the following: for, by means of, by way of, belongs, on account of; with /m-/ marking future time, and /n-/ marking past-time. The minor morpheme clusters /moo/ and /noo/, whether or not they precede or conjoin with pronouns, are always non-subject, possessive markers. The minor morpheme clusters /maa/ and /naa/ however, whether or not they precede or conjoin with pronouns, may take alternative glosses according to the presence or absence of a following VCW. When a VCW follows, [m-] and [n-] in the strings /maa/ and /naa/ take non-subject, agentive glosses, initiating Ag(entive) CWs. Both are then translated by. Since /e/ described in 2.6.4. above is the initiator of post-VCW AgCWs, and /m-/ or /n-/ given here, is the initiator of pre-VCW AgCWs, one can be converted to the other with the aid of simple transformation rules: e.g.:

$$\# \text{---} \text{ VCW } + \underline{e} + \ldots \underline{M} \quad \Longrightarrow \quad \# \begin{bmatrix} n\hat{}aa \\ m\hat{}aa \end{bmatrix} + \ldots \underline{M} \text{ ---} + \text{VCW}$$

This is exemplified by sentences (19 (a)-(b)) and (20 (a)-(b)).

(19) The dog was hit by Jim

(a)

#	i	patu^a	te
	[descriptive, past-time	hit^passive]	[the, sing., non-person
	m	M^m	m

kurii	e	hemi	#
dog]	[agentive	Jim]	
M	m	M	

(b)

#	n^aa			hemi	
	[agentive, non-future time^acquired possession			Jim]	
	m^m			M	
	i	patu	te	kurii	#
	[descriptive, past-time	hit]	[the, sing., non-person	dog]	
	m	M	m	M	

(20) The dog will be searched for by Jim

(a)

#	ka	kimi^hia	te
	[inceptive, non-time	search^passive]	[the, sing., non-person
	m	M^m	m

kurii e hemi #

dog] [agentive Jim]

M m M

(b)

m^aa hemi ee

[agentive, future time ^acquired possession Jim] [future

m^m M m

kimi te kurii #

search] [the,sing.,non-person dog]

M m M

Elsewhere, 3(d) and 3(e) take those functions which set them up as Poss(essive) CW initiators.

2.7. Group 4 Initiators

2.7.1. Group 4 is comprised of four minor morphemes, and all are NCW initiators:

(a) te the,singular, non-personal

(b) ŋaa the,plural, non-personal

(c) a the, non-number, personal

(d) he indef. article, non-number, non-personal

2.7.2. Initiators 4(a) and 4(b) are translated by the, 4(c) is not trans-

lated, and 4(d) is translated by either a or some, with number being signalled by some other word in the utterance. The personal marker /a/ allomorph of 4(c) occurs only before personal names and personal pronouns. The zero allomorph, /ϕ/, occurs between /ko/, /e/, /m^4a/, /n^4a/, /4a/, and a following personal name or personal pronoun; and between a VCW and an adjacent following pronoun. One aberrant dialect form need be noted. In the northwestern subdialect region (north of the city of Auckland), the first person singular pronominal shape is /ahau/, contrasting with /au/ of other regions. The form /ahau/ is used in all environments without the personal marker /a/. There are several alternative ways of viewing this pronoun morphologically. One is to consider it as always taking the zero allomorph of /a/. Another way -- which is favoured here as the simplest and most elegant -- is to consider /ahau/ as having /a/ as a permanent adjunct (i.e. as a bound morpheme), with /h/ separating it from first person singular /au/.

Non-personal markers occur before animate and inanimate object names, before placenames, and before kinship terms. Before placenames they occur either as permanent adjuncts: e.g. Te Awamutu /te awa mutu/, Ngaruawahia /ŋaa rua waahi^a/, Owairaka /oo wairaka/; or have become subsequently lost through contractions of placenames by English speakers, and subsequent feedback of these reduced forms to Maori. Two examples are: Te Hoki an ga-nui-a-Kupe is now Hokianga /hoki^aŋa/;

Te Paa oo Uewhati is now Paauawhati /paauafati/. In the latter example, loss of non-personal marker co-occurs with complex vowel elision and vowel change.

2.7.3. Subgroups 4a and 4b. Three minor morphemes have been assigned to subgroups of Group 4. The two subgroups and their members are:

4a	(a)	aa	dominant, acquired, possession
	(b)	oo	subordinate, inherited, possession
4b	(a)	aua	retrospective
	(b)	tahi	specific

In the first subgroup, objects (things, persons, etc.) that precede 4a (i.e. are marked for possession) are divided into two classes. The class marked by /aa/ are those possessions to which the possessor (following 4a) is dominant (e.g. small personal portable property, food), or which the possessor acquired in his lifetime (e.g. wife, children, husband, uninherited objects). The second class marked by /oo/ to which the possessor is subordinate (e.g. non-portable property, or property such as canoes, boats, cars which carry the possessor), and inherited objects (e.g. ancestors, parents).

4b(a) -- /aua/ -- marks objects that have been mentioned previously in the discourse.

4b(b) -- /tahi/ -- marks specific articles, or objects.

2.8. Contour Word Formulae

2.8.1. Six major types of contour words (CWs) are dichotomised here by a combination of disjunctive groupings of initiators (given in 2.3.1. and exhaustively described in subsequent sections of Chapter 2), with M and its satellites (affixes m- and -m, and with modifiers, M, and m, given in 2.2.3.), and with environment conditions stated. The following formulae show divisive criteria for N(ominal) CWs, L(ocative) CWs, V(erbal) CWs, Ag(entive) CWs, Poss(essive) CWs, and Neg(ative) CWs. Every utterance in Maori is comprised of concatenations of these CWs. The formulae are given in the form of non-ordered TG grammar rules: in a linear string, optionality is indicated by parentheses ( ); linear strings of which one must be chosen are enclosed by braces { }; and environmental factors -- if any -- are specified after the specific string. The plus sign, +, indicates a unit boundary (mainly morpheme boundaries), and a new sign indicating non-contrastive permutations is a plus sign over a minus sign, or $\dot{+}$. Thus the string A $\dot{+}$ B : in the environment C + _____. may be read as either: C + A, C + A + B, or C + B + A; with the two substrings B + A, and A + B being non-contrastive permutants. In some of the formulae given below, X is used to represent the rest of the CW containing M. The divisive formulae for each CW type is given here, each specific formula being

represented later by an example:

2.8.2. NCW:

$$\left(\left\{\begin{matrix}1 & \left\{\begin{matrix}(c)\\(d)\end{matrix}\right\}\\ 3 & \left\{\begin{matrix}(a)\\(c)\end{matrix}\right\}\end{matrix}\right\}\right) \quad + \quad 4\,(\hat{}X) \quad + \quad \underline{M}$$

: except when following a VCW containing a passivizer.

In the above formulae X stands for any m affixed to 4. The following divisive framework for NCW are combined in the above formula: 4 + M; 1(c) + 4 + M ; 1(d) + 4 + M ; 3(a) + 4 + M ; 3(c) + 4 + M . Examples of each divisive formula follow; in these and subsequent examples, initiators are given appropriate codes:

(21) I was at the house

# i	te	fare
[non-subject, past location	the, sing., non-person	house]
1(a)	4(a)	M
ø	au #	
[the, non-number, person	me]	
4(c)	M	

(22) I have the dog

#	kei		a		au
[	non-subject, present location		the, non-number, person		me]
	1(b)		4(c)		M

	te	kurii	#
[	the, sing., non-person	dog]	
	4(c)	M	

Sentences (21) and (22) have in their second -- or N(ominal) -- Contour Word, the divisive formula 4 + M. The first CW of each sentence is a LCW. The nucleus of each NCW in the above sentences has been left unexpanded, or unmodified. In subsequent sentences, modifiers will be included.

(23) The white cat and the little black dog ran to the large hen-house

#	i		oma	te		poti
[	non-subject, past time		run]	[the, sing., non-person		(cat
	1(a)		M	4(a)		M

	maa	me		te
	white)]	[non-subject, conjunctive		the, sing., non-person
	M	1(c)		4(a)

kurii nohinohi ki te

(dog small)] [non-subject relational the, sing., non-person

M M 3(b)

fare heihei nui #

(house hen) big)]

M M M

Sentence (23) has the following order of CWs; VCW + NCW + NCW + LCW. The third, or Nominal CW, is initiated by the conjunctive marker /me/ -- or 1(d) -- and exemplifies the NCW formula 1(d) + M. Both NCWs and the following LCW have their nuclei modified, with each NCW's major morphemes having a modified-modifier order, while the LCW nucleus has a similar M M modified by a following M. These strings are enclosed in parentheses.

(24) This man is John

ko ∅ hoone

[specifier, non-time the, non-number, person John]

3(a) 4(c) M

tee^nei taŋata #

[the, sing., non-person^near speaker man]

4(a)^P M

Sentence (24) has a NCW + NCW profile, with the first NCW exemplifying the NCW formula 3(a) + 4 + M, and the second, 4^X + M . The symbol X in the latter formula represents nei position near speaker.

The environmental restriction on 3(c) + 4 (^X) + M being an NCW string is given in the formula. A more detailed account of this environmental restriction, as well as examples of the use of 3(c) as a NCW initiator is given in section 2.6.4.

The Subject of any sentence -- called either SCW or Topic in the Profile Grammar following -- is always a N(ominal) CW, or an expansion of NCW (for the latter, see 3.8. especially comments following sentence (222)).

2.8.3. VCW: The divisive formulae for VCWs are

$$\left\{\begin{matrix}1\\2\end{matrix}\right\} + \underline{M}$$

Groups 1 and 2 immediately preceding M (without intervening ϕ) are divisive. A semi-paradigmatic set of examples follow, in which all initiators of VCWs are exemplified:

(25) The man went to the store

# i	haere	te
[descriptive, past-time	move]	[the, sing., non-person
1(a)	M	4(a)

taŋata	ki	te	toa	#
man]	[relational	the, sing., non-person	store]	
M	3(a)	4(a)	M	

In sentence (25), the order of contour words is VCW + NCW + LCW, with VCW having the formula 1(a) + M.

(26) Be quick lest the man go to the store

# kia	horo	kei	haere
[subjunctive	fast]	[caveat, present time	move]
2(c)	M	1(b)	M

te	taŋata	ki	te	toa	#
[the, sing., non-person	man]	[relational	the, sing., non-person	store]	
4(a)	M	3(a)	4(a)	M	

The order of CWs in sentence (26) is VCW + VCW + NCW + LCW, with the first VCW having the formula 2(c) + M, and the second VCW having the formula 1(b) + M.

(27) The man had better go to the store

#	me	haere	te	taŋata
	[prescriptive	move]	[the, sing., non-person	man]
	1(c)	M	4(a)	M

ki	te	toa	#
relational	the, sing., non-person	store]	
3(b)	4(a)	M	

Sentence (27) has the order VCW + NCW + LCW, with the VCW formula being 1(c) + M.

(28) The truck arrives here to take the man to the store

#	ka	tae	mai	te
	[inceptive	arrive	to speaker]	[the, sing., non-person
	2(a)	M	m	4(a)

taraka	hei	tari	i
truck]	[purposive	take]	[non-subject, past time
M	1(d)	M	1(a)

te	taŋata	ki	te
the, sing., non-person	man]	[relational	the, sing., non-person
4(a)	M	3(b)	4(a)

toa	#
store]	
M	

The order of CWs in sentence (28) is VCW + NCW + VCW + NCW + LCW. The first -- or VCW -- exemplifies the formula (2)a + M, with M including minor morpheme particle -- mai glossed m -- being a M modifier. The third bracketed string -- also a VCW -- has the formula 1(d) + M.

(29) The man has already gone to the store

# kua	haere	noa	atu	te
[perfective	(move	only (=already)	away from speaker)]	[the, sing., non-person
2(b)	M	m	m	4(a)

taŋata	ki	te	toa	#
man]	[relational	the, sing., non-person	store]	
M	3(b)	4(a)	M	

The order of CWs in sentence (29) is VCW + NCW + LCW, with VCW showing the formula 2(b) + M, the M including minor morphemes as modifiers.

(30) The man is going to the store

#	e	haere	atu	ana
	[imperfective$_1$	(move	away from speaker)	imperfective$_2$]
	2(d)..	M	m	..2(d)

te	taŋata	ki	te
[the,sing.,non-person	man]	[relational	the,sing.,non-person
4(a)	M	3(b)	4(a)

toa	#
store]	
M	

Sentence (30) has the CW order VCW + NCW + LCW, with VCW having the formula 2(d) + M. The initiator 2(e) is a discontinuous minor morpheme, with the first element being a CW initiator, and the second discontinuous element a CW closer. The two parts of the one morpheme are shown by the glosses 2(d).. ..2(d). The CW nucleus (M) contains the head of the CW --/haere/ glossed move -- and a minor morpheme /atu/ away from speaker, the modifier of

the head.

(31) You stand (and) go to the store

# ee		tuu	ø
[imperative, non-past time		stand]	[subject, imperative
2(e)		M	4(c)

koe	//	ø		haere
2nd pers. sing.]		[imperative, non-past time		move]
M		2(e)		M

ki	te	toa	#
[relational	the, sing., non-person	store]	
3(b)	4(a)	M	

The CW order for sentence (31) is VCW + NCW // VCW + LCW. The two VCWs are both initiated by allomorphs of the morpheme /ee/ imperative, and both have the formula 2(e) + M.

2.8.4. LCW: The divisive formulae for LCWs are

$$X + L$$

$$\left\{\begin{matrix} 1(a) \\ 1(b) \\ 3(b) \end{matrix}\right\} + 4\hat{}X + M$$

In the formulae given, X stands for any initiator/s, and L represents

any one, or a combination, of the inherent locatives listed below.

2.8.4.I. LCWs are a type of CW whose first formula overlaps those of both NCWs and VCWs. Part of the explanation for this is factored by language contact with English (see 2.7.5.) and part is derived from the nature of language in general: smearing and overlapping in some domains are to be expected. In Maori, this imprecision at the morpho-syntactic level is found only among L(ocative) CWs.

Such factors have resulted in the postulating of classes of Ms which are always locative. An attempt is made here to give subclasses, and an exhaustive list in each subclass:

Lp (a) all placenames, including English placenames used in Maori, whether in their English forms (e.g. Hamilton, Dargaville, Auckland, Palmerston, etc.) or in their Maori transliterations (the four mentioned are transliterated by native speakers to Haamutana, Taakiwira, Aakarana, Paamutana).

(b) ruŋa on; raro beneath; mua front; muri back; tua behind; roto within; waho outside; anei here; koo visible place; fea~hea where, question; mamao~paamamao distant; taawaahi far side; tafiti far away; takutai~tahatai seaside; uta ashore; tai tide; waeŋa~waeŋanui~waeŋarahi middle; reira non-visible place.

Lt (a) time/period of day, month, or year.

(b) poopoo tomorrow; kuanei presently; anei~naaianei now; napoo last night; nanahi yesterday;

The two major divisions of place (Lp) and Locatives of time (Lt). The division is made on structural grounds; as will be shown in Chapter 3, the freedom of permutation of Lt is greater than that of Lp. Each division is shown to have two subdivisions; (a) in each division includes an open-ended list which may be preceded by initiators of Group 4; (b) in each division are those Locatives which do not occur (i.e. are incompatible) with postposed Group 4 initiators.

In pre-structural, or traditional grammars, some of the inherent locatives in Lp (b) have been analysed as complex prepositions when in such frames as ki____ki, i____i, kei____kei, ki____i,[8] kei____i, etc.[9] The notion of non-contrastive permutations as a means of supplying phrase -- or CW -- cuts, shows that such an analysis is untenable since the straddling particles belong to different phrases. Consider the following sentences:

(32) The man was on the house

(i) # i ruŋa i

[non-subject, past location on] [non-subject, past location

m a M m

te fare te

the,sing.,non-person house] [the,sing.,non-person
b

m M m

taŋata #

man]
c

M

(ii) # i ruŋa te

[non-subject, past location on] [the,sing.,non-person
a

m M m

taŋata i te

man] [non-subject, past location the,sing.,non-person
c

M m m

fare #

house]
b

M

Each CW -- shown in the glosses by square brackets -- is given a reference alphabetized subscript. Sentence (33(i)) has the order abc, and this is non-contrastively permuted to acb in sentence (33(ii)). Since this re-orderability holds true for all sentences of the same profile, that is, sentences containing a LCW_p + LCW_t +

NCW (so that a basic formula can be shown as $LCW_p + \{LCW_t \pm NCW\}$), simplicity of description, accordance with known facts, and internal consistency forces this writer to use a CW analysis, and abandon the notion of 'complex prepositional units'.[2] CW analysis, using the notion of initiators, is a more powerful means of syntactic analysis than any other method used by previous investigators of Polynesian languages.

2.8.4.2. The remaining formulae for LCW are now exemplified:

(33) The man is at the house on the side of the hills

#	kei	te	fare
	[non-subject, present location	the, sing., non-person	house]
	1(b)	4(a)	M
	i	te	taha
	[non-subject, past location	the, sing., non-person	side]
	1(a)	4(a)	M
	oo	ŋaa	
	[subordinate, inherited possession	the, plural, non-person	
	4a(b)	4(b)	

puke	te	taŋata	#
hill]	[the, sing., non-person	man]	
M	4(a)	M	

The CW order for sentence (33) is LCW + LCW + PossCW + NCW. The first LCW exemplifies the formula 1(b) + 4 + M, the second, 1(a) + 4 + M. The remaining formula, vis. 3(b) + 4 + M, is exemplified by the final phrase of sentence (32), above.

2.8.5. Poss CW: The divisive formulae for PossCW are:

4a + X

$\left\{\begin{matrix}3(d)\\3(e)\end{matrix}\right\}$ ^ 4a(b) + X

$\left\{\begin{matrix}3(d)\\3(e)\end{matrix}\right\}$ ^ 4a(a) $\left\{\begin{matrix}^{P_r}\\+\ 4\ +\ M\end{matrix}\right\}$:when no VCW follows, and, when any preceding VCW includes a passivizer.

The first formula reads, that any CW initiated by 4a, is a Poss(essive) CW. The second formulae indicates that any string (shown in the formula as X) terminated by a new CW initiator or silence, is a PossCW when initiated by 3(d) or 3(e) - attached - to - 4a(b). In other words, any CW initiated by /noo/ or /moo/ is a PossCW. The third formulae has an environmental condition attached. When 3(d) and 3(e) are hooked to 4a(a) -- or, when /naa/ and /maa/ are

the initiators -- PossCWs are realised under the following conditions: when there are no VCWs in the utterance, when there are no VCWs postposed; when any M of a preposed VCW is one of a finite list which cannot take a passivizer; when any other M of a preposed VCW has a suffixed passivizer. Failure to meet these conditions either converts /naa/ and /maa/ into Ag(entive) CW initiators, or results in ungrammatical utterances. The following utterances exemplify each formula given above:

(34) John's watch is broken

#	kua	pakaru	te	wati	
	[perfective, non-time	break]	[the, sing., non-time	watch]	
	2(b)	M	4(a)	M	
	aa	∅		hoone	#
	[acquired possession	the, person, non-number		John]	
	4a(a)	4(c)		M	

(35) Peter's ancestor is Uefati

#	ko	∅	uefati
	[specifier, non-time	the, person, non-number	Uefati]
	3(a)	4(c)	M

te	tupuna	oo
[the, sing., non-person	ancestor]	[inherited possession
4(a)	M	4a(b)

∅	pita	#
the, person, non-number	Peter]	
4(c)	M	

The final CWs of sentences (34) and (35) exemplify the PossCW formula 4a + X. In both CWs, X is represented by a personal marker (∅) followed by a personal name.

(36) This was John's land

#	n^oo	∅
	[possessive, non-future time^inherited possession	the, person non-number
	3(d) ^4a(b)	4(c)

hoone	te	fenua	nei	#
John]	[the, sing., non-person	land	near speaker]	
M	4(a)	M	m	

(37) That land is for the tribe

#	m^oo	te
	[possessive, future time^inherited possession	the, sing., non-person
	3(e) ^4a(b)	4(a)

iwi	tee^naa	fenua #
tribe]	[the, sing., non-person^near hearer	land]
M	4(a)^m	M

The initial CWs of sentences (36) and (37) show the formulae 3(d)^4a(b) + X, and 3(e)^4a(b) + X, respectively. Since they accord with restrictions given at head of section, these are PossCWs. Similarly, the second CW of each of sentences (40) and (41) are PossCWs.

(38) That gun, previously mentioned, was John's

#	n^aa	hoone
	[possessive, non-future-time^acquired possession	John]
	3(d)^4a(a)	M
	t^aua	puu #
	[the, sing., non-person^retrospective	gun]
	4(a)^4b(a)	M

(39) This is mine

#	n^aa^ku
	[possessive non-future-time^acquired possession^1st pers. sg.]
	3(d)^4a(a)^M/m

tee^nei #

[the,sing.,non-person^near speaker]

M
4(a)^m

(40) The dog was bought for John

i hoko^na mai

[descriptive, past-time buy^passive to speaker]

1(a) M^m m

m^aa ∅

[possessive, future time ^acquired possession the,person, non-number

3(e)^4a(a)

hoone te kurii #

John] [the,sing.,non-person dog]

M 4(a) M

(41) It became known that the dog was Peter's

kua kite^a n^aa

[perfective, non-time find^passive] [possessive,non-future ^acquired possession

2(b) M^m 3(d)^4a(a)

ϕ	pita	te
the, person, non-number	Peter]	[the, sing., non-person
	M	4(a)

kurii #

dog]

M

2.8.6. AgCW: The divisive formulae for Ag(entive) Contour Words are:

3(c) + X :in the environment VCW + NCW ± -----, and NCW + VCW + -----, when M of VCW contains a passivizer.

$\left\{\begin{matrix}3(d)\\3(e)\end{matrix}\right\}$ ^ 4a(a) + X :in the environment $\left(\text{VCW}\right)$ + ----- + $\left\{\text{VCW} \pm \text{NCW}\right\}$

In the divisive formulae for AgCW, X represents any string following the initiator, terminating in either another CW initiator, or silence. Initiator 3(c), and initiators 3(d) or 3(e) hooked to 4a(a) take on agentive functions when the CWs they initiate are in a certain relationship with adjacent CWs. The conditions for 3(c) are as follows. When the M of the adjacent postposed VCW is suffixed by a passivizer, and the whole string of two CWs is obligatorily preceded, divided, or succeeded by a NCW, the CW initiated by 3(c) is an Agentive Contour Word: e.g.

(42) The child was found by the policeman

#	i	kite^a	te
	[descriptive, past-time	find^passive]	[the, sing., non-person
	1(a)	M^m	4(a)

tamaiti	e	te	pirihimana	#
child]	[agentive	the, sing., non-person	policeman]	
M	3(c)	4(a)	M	

Sentence (42) shows the profile VCW + NCW + AgCW, with AgCW showing the formula 3(c) + 4(a) + M. The profile can be non-contrastively re-ordered VCW+AgCW + NCW, and this re-orderability is shown in the conditioning environment as VCW + NCW ± _____, with the underlined space being filled by AgCW. Sentence (43) following, exemplifies the use of 3(c) as an AgCW initiator in the environment NCW + VCW + _____. Because new obligatory particles are introduced, sentence (43), although having the same meaning as sentence (42), but different focus (as well as the same remaining morphemes), is nevertheless regarded as a transformation of sentence (43).

(43) The child was found by the policeman

#	ko	te	tama^iti
	[specifier, non-time	the, sing., non-person	child^small
	3(a)	4(a)	M ^m

i	kite^a	e
[descriptive, past-time	find^passive]	[agentive
1(a)	M^m	3(e)

te	pirihimana	#
the, sing., non-person	policeman]	
4(a)	M	

The formulaic strings 3(d)^4a(a) + X, 3(e)^4a(a), or /naa/ + X and /maa/ + X, are also transformations of the initial formula, 3(c) + X (or /e/ + X), in the given environments. The morpheme /e/ becomes the agentive marker in utterances containing both a NCW and a VCW, providing /e/ follows VCW. When a transformation (or reordering) occurs so that VCW follows AgCW, the initiator 3(c) is replaced by /naa/ if the tense-aspect of VCW is past, and by /maa/ if the tense-aspect of VCW is non-past. Sentences (45) and (46) exemplify the formulaic strings.

(44) The child was found by the policeman

# n^aa		te
[agentive^dominant possession		the, sing., non-person
3(d)^4a(a)		4(a)

pirihimana	i	kite	te
policeman]	[descriptive, past-time	find]	[the, sing., non-person
M	1(a)	M	4(a)

tamaiti	#
child]	
M	

Sentence (44) shows the profile AgCW + VCW + NCW, with AgCW showing the formula 3(d)^4a(a) + 4(a) + M. The profile can be non-contrastively re-ordered to AgCW + NCW + VCW.

(45) The policeman shall look for the child

# m^aa	te
[agentive^dominant possession	the, sing., non-person
3(e)^4a(a)	4(a)

pirihimana	ee	kimi
policeman]	[imperative, non-past time	search]
M	2(e)	M

te	tamâiti #
[the, sing., non-person	child^ sing.]
4(a)	M ^ m

Sentence (45) shares the same profile with sentence (44), as well as showing the same permutation.

2.8.7. NegCW. The divisive formulae for Neg(ative) CWs are:

$$\left\{\begin{matrix} 1(a) \\ 2(a) \\ 2(e) \end{matrix}\right\} \wedge M$$

Major morphemes which may be affixed by initiators of Groups 1 and 2 are few in number (ther are only five), and are glossed not in all instances. Furthermore, each morpheme glossed not has one of the initiators as a permanent adjunct; they therefore resemble some of the placenames which have non-personal markers as permanent affixes (see 2.7.2.). The five negatives with their permanent affixes each comprise a NegCW. The shape and complete gloss for each follows:

kaa ^ h ore	2(a) ^ not, descriptive, non-time
ee ^ kore	2(e) ^ not, emphatic imperative, non-past time

ø^eehara	2(e)^not, declarative imperative, non-time
ø^kaua	2(e)^not, caveat imperative, non-past time
k^i^ihai	1(a)^not, descriptive, past-time

The final negative in the above list has 1(a) infixed via the process of metathesis.

Agreement rules match each specific morpheme glossed not with its permanent affix. All imperative negatives, for example, are hooked to 2(e) marking imperative, non-future time. Furthermore, the allomorph shape of 2(e) agrees with the condition rules given in 2.5.2.

Postulating affixed rather than free forms for NCW is done on three counts; firstly since the initiators are permanent adjuncts, secondly since initiator 2(a) has the shape /kaa/ rather than /ka/, and thirdly since -- in the case of /kiihai/ -- it is more reasonable to assume a bound form metathesizing than to assume the internal transposition of a free form. Examples of NegCWs now follow.

(46) The man was not at work

#	kaa^hore	te	taŋata
	[inceptive, non-time^not, descriptive, non-time]	[the, sing., non-person	man]
	2(a)^M	4(a)	M

i	te	mahi	#
[past location	the, sing., non-person	work]	
1(a)	4(a)	M	

(47) The dog is not at home

# kaa^hore			te
[inceptive, non-time^not, descriptive, non-time]			[the, sing., non-person
2(a)^M			4(a)

kurii	kei	te	kaaŋa	#
dog]	[present location	the, sing., non-person	home]	
M	1(a)	4(a)	M	

(48) Mary will not go

# ee^kore		
[imperative, non-past time^not, emphatic imperative, non-past time]		
2(e)^M		

a	mere	ee
[the, non-number, person	Mary]	[imperative, non-past time
4(c)	M	2(e)

haere #

move]

M

(49) This is not Mary

ϕ^eehara

[imperative, non-past time^not, declarative imperative, non-time]

2(e)^M

tee^nei i

[the, sing., non-person^near speaker] [non-subject, past location

M 1(a)

4(a)^m

a mere #

the, non-number, person Mary]

4(c) M

(50) That isn't yours

ϕ^eehara

[imperative, non-past time^not, declarative imperative non-time]

2(e)^M

tee ^naa n^aa^u #

[the, sing., non-person ^ near hearer] [possessive, past time ^ dominant possession ^ 2nd pers sing.]

M
4(a) ^ M 3(d) ^ 4a(a) ^ M

(51) Don't you go to the store

∅ ^kaua

[imperative, non-past time ^not, caveat imperative, non-past time]

2(e) ^ M

∅ koe ee

[the, non-number, person 2nd pers. sing] [imperative, non-past time

4(c) M 2(e)

haere ki te toa #

move] [relational the, sing., non-person store]

M 3(b) 4(a) M

(52) He did not stay

k^i^ihai

[descriptive, past time ^not, descrptive, past-time]

^1(a) ^ M

∅	ia	i
[the, non-number, person	3rd pers. sing.]	[descriptive, past-time
4(c)	M	1(a)

noho #

stay]

M

In sentences containing NegCW in Chapter 3, the abbreviated gloss not is used for all Negatives.

2.9. Expansions.

Sentences (1) through (45) have been kept deliberately non-complex, since the major aim of this chapter is to give in simple sentences, examples of initiators and the CWs they initiate and define. Complexities can be introduced in three ways: firstly by the expansion of phrase interior (see 2.2.3.) by adding major and minor morpheme modifiers, secondly by expanding sentence profiles by juxtaposing and inserting additional CWs, and thirdly, by combining two or more kernel sentences to form complex sentences. The latter two methods can still be analysed by subdivision into CWs, and by the classification of each CW into CW types on the basis of Initiator + Environment. However, since combinatorial processes are interesting per se, they will be dealt with in Chapters 3 and 4.

2.10. Bibliography.

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7

see Biggs (1957), Biggs (1961), Buse (1963), Morton (1962). references are cited at end of Introduction and Chapter 1.

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CHAPTER 3

PROFILE GRAMMAR

3.1. Method

3.1.1. The model used for sentence profile analysis is that outlined by Professor C. F. Voegelin[1], and explained in his Language Typology and Field Methods courses at Indiana University. Each sentence has a specific profile comprised of concatenations of CWs. Sentences in the corpora which share the same profile are grouped together under the appropriate profile heading. For sentences with the same meaning and same CW components sentence profiles may be altered either by permutation (non-contrastive reordering of CWs) or by transformation (contrastive reordering of CWs with or without obligatory replacement of CW initiators; addition or deletion of one or more CWs). Sentences with the same profile and derivable from one another belong to the same BATTERY.

3.1.2. Permutations are optional reorderings of CWs without obligatory alteration of initiators or of message. The fact that permutations do occur -- regardless of reasons (style, usage, new focus, etc.) -- and that native speakers accept them as having the same meaning, are linguistically valid reasons for their inclusion. Research into permutations contribute to an understanding of the range

of optional variability existing in a language.

3.1.3. Transformational analysis is used to give formal rules of derivation since native speakers intuitively feel that certain sentence profiles are sufficiently closely related that one profile may be derived from the other. Thus the kernel sentence profiles VCW + SCW $\pm$ AgCW (with initiator 3(c) marking AgCW) and AgCW + VCW $\pm$ SCW (with 3(d) or 3(e) hooked to 4a(a) marking any pre-VCW agentive contour word) are felt to be so closely related that a bilateral transform link (symbolised by $\Leftarrow\Rightarrow$) exists between them: i.e.

VCW + AgCW + SCW ~ VCW + SCW + AgCW

$\Leftarrow\Rightarrow$AgCW + VCW + SCW ~ AgCW + SCW + VCW.

The whole series of profiles connected by permutation, and/or transformation links is called a BATTERY of profiles.

3.1.4. The background for profile grammar is the CW interior analysis of Chapter 2. It is claimed here that isolating CW types is the most powerful preliminary to a syntactic treatment of Maori, and of perhaps any other Polynesian language (see Chapter 5 for profiles of Tongan), since this leads not only to an accurate demarcation of what constitutes a kernel sentence (see 3.2.) but it also accurately pinpoints profiles and permutations which must constitute a corpora sufficient for GT analysis.

3.1.5. Analysis of major morphemes into word classes (or parts of speech) is an unnecessary abstraction and must always involve a degree of circularity in definition. In any case, apart from inherent locatives and the negatives, the type of CW is not determined by the word class of the nucleus (M), but by initiators and their cooccurrences as outlined in Chapter 2. The inverse is true: any definition of word classes must ultimately stem from a typology of CWs. Since it is self-evident that the nucleus of a VCW is a verb, that of a NCW (whether SCW, Topic, Instrumental, Objective etc.) is a noun, that of a LCW is a locative, etc., nothing is gained by formally stating what is self-evident. This however does not mean that these nuclei are *per se*, inherently verb, noun, locative, respectively.

3.2. Kernel Sentences.

3.2.1. The combinatorial possibilities of CWs within #_____⇑ and #_____# boundaries and within a span of seven dissimilar CW types, is the concern of this chapter. These bounds are deliberately set: given junctural boundaries demarcate sentences and seven CWs is the maximum number of discrete CW types (six CW types were demarcated in Chapter 2, the seventh results from a division of LCW into two -- L_pCW and L_tCW -- on the basis of distribution). These bounds are the definitive ones for potential kernel sentences, a POTENTIAL KERNEL SENTENCE being an utterance comprised

of grammatical combinations of some, or all CW types, with the restriction that each CW type occurs once only, and that the utterance is bounded by two final junctures. The only exception to the non-identity restriction are profiles containing [Comment] + [Topic] or NCW + NCW. All other sentences outside this formulation are complex sentences containing two or more kernel sentences.

When two or more POTENTIAL KERNELS are members of the same battery, one potential kernel -- on the basis of economy, native intuition, and algorithmic processes -- is chosen as the ACTUAL KERNEL SENTENCE. The actual kernel sentence chosen for each battery is not specified here.

3.3. 2CW Kernel Sentences

3.3.1. Of the 42 non-identical 2 CW combinations, only the following eight -- or four batteries -- are grammatical (transformable strings are linked by ⇐=⇒): VCW + NCW ⇐=⇒ NCW + VCW; L_tCW + NCW ⇐=⇒ NCW + L_tCW; L_pCW + NCW ⇐=⇒ NCW + L_pCW; PossCW + NCW ⇐=⇒ NCW + PossCW. With the sole identical 2CW grammatical combination -- NCW + NCW -- there are 9 grammatically permissible 2CW combinations within sentence boundaries; i.e. within the junctures #_____# and #_____↑

Every kernel sentence must contain one, and only one NCW functioning as S(ubject)CW. For the string NCW + NCW, the

second always functions as SCW or Topic, and the first is Comment. Some grammatical utterances occur without S (e.g. # ∅ haere mai # come here! #ee tuu# stand up!) ; these are regarded as complex sentences with S removed by an optional deletion rule (see Lees[2] for a discussion of 'understood' subject in English, and, for Maori, see Section 3.8.).

The following sentence profiles are exemplified in the parenthesized sections: Comment + Topic (3.3.2.); L_pCW + SCW (3.3.3.); L_tCW + SCW (3.3.4.); PossCW + SCW (3.3.5.), VCW + SCW (3.3.6.). The latter four profiles may be transformed to show the inverse profiles SCW + L_pCW, SCW + L_tCW, and SCW + PossCW, SCW + VCW, respectively, by transposition of CWs, the obligatory addition of initiator 3(a) -- ko --, and the replacement if necessary (on the basis of coocurrence restrictions given in 2.7.2.) of initiators between /ko/ and M.

3.3.2. Comment + Topic. Sentences (13), (14), and (24), preceding, and (53) through (69) following, share the same profile, namely [Comment] + [Topic], but differ in phrase interior. The profile cannot be re-ordered to [Topic] + [Comment] although phrase - interior elements can be switched across CW boundaries without altering the message. (see sentence (68)). In a [Comment] + [Topic] order, /ko/ is a non-topic specifier, and the topic is an

unmarked category. This difference between marked and unmarked categories - mentioned by J. Greenberg in his Universals of Language lectures at the Linguistic Institute, Summer 1964, Indiana University -- is pertinent in a discussion of Maori CW profiles. The [Comment] + [Topic] profile is comprised of two juxtaposed NCW strings bound by two final junctures.

(53) This is Peter

#	ko	∅	pita
	[specifier, non-time	the, person, non-number	Peter]
	3(a)	4(c)	M

tee^nei	#
[the, sing., non-person^near speaker]	
M / 4(a)^m	

(54) Peter is a boy

#	ko	∅	pita
	[specifier, non-time	the, person, non-number	Peter]
	3(a)	4(c)	M

he	tama^iti	#
[indef. art.	child^sing.]	
4(d)	M m	

The morphological conditions for the allomorphs of person marking initiator 4(c) were given in 2.7.2. as /ø/ occurring after /ko/, /e/, etc., and /a/ occurring elsewhere. Sentences (53) and (54) show the former, and (55) the latter.

(55) John is a smart boy

#	he	tama^iti	moohio	a
	[indef. art.	(child^sing.	smart)]	[the, person, non-sing.
	4(d)	M^m	M	4(c)

hoone	#
John]	
M	

In the first -- or [Comment] -- CW, the gloss for a modified-modifier construction is enclosed in parentheses. Similar constructions in subsequent sentences will also be shown in the same manner.

(56) Who is he?

#	ko	ø	wai
	[specifier, non-time	the, person, non-number	who, interrog]
	3(a)	4(c)	M

ø	iia ⇗
[the, person, non-number	3rd pers. sing]
4(c)	M

Interrogatives which occur in NCW formulae (see also sentences (57) and (70), are treated as NCW nucleii. The exceptions are the inherent locatives (see 2.8.4.).

(57) Who is the man?

# ko	ø	wai
[specifier, non-time	the, person, non-number	who, interrog.]
3(a)	4(c)	M

te	taŋata ⇗
[the, sing., non-person	man]
4(a)	M

(58) We are good people

# he	iwi	pai	ø
[indef. art.	people	good]	[the, person, non-time
4(d)	M	M	4(c)

taa^tou	#
inclusive 3rd pers.^plural]	
M	
m^m	

(59) My house is this one

#	ko		t^oo^ku
	[specifier, non-time		the, sing., non-person^inherited possession^1st pers. sing.
	3(a)		4(a) ^4a(a) ^$\underset{M}{m}$

fare	tee^nei	#
house]	[the, sing., non-person ^near speaker]	
M	$\underset{4(a)\text{^}m}{M}$	

(60) My mother is a good woman

#	he	wahine	pai	t^oo^ku
	[indef. art.	(woman	good)]	[the, sing., non-person ^inherited possession ^1st pers. sing.
	4(d)	M	M	4(a) ^4a(a)^$\underset{M}{m}$

faaea	#
mother]	
M	

(61) These are the good children

#	ko	ŋaa	tama^riki
	[specifier, non-time	the, plural, non-person	(child^plural
	3(a)	4(b)	M ^m

pa^pai	ee^nei	#
good^good)]	[the, plural, non-person^near speaker]	
R^M	M / 4(b)^m	

The first -- or comment - CW shows complex number agreement between initiator 4(b), M^m and R^M. A sub-class of M's when acting as modifiers, show plurality agreement by reduplication of initial CV, while singular is unmarked (see Biggs 1961: 25).[3]

(62) This girl here is the conceited one

#	ko	te	kootiro	fakahiihii
	[specifier, non-time	the, sing., non-person	(girl	conceit)
	3(a)	4(a)	M	M

nei	tee^nei	#
near speaker]	[the, sing., non-person^near speaker]	
m	M / 4(a)^m	

(63) She is the conceited girl

#	ko	ø	iia
	[specifier, non-time	the, person, non-number	3rd pers. sing.]
	3(a)	4(c)	M

te	kootiro	fakahiihii	#
[the, sing., non-person	(girl	conceit)]	
4(a)	M	M	

(64) This is the big river

#	ko	tee^nei
	[specifier, non-time	the, sing., non-person ^near speaker]
	3(a)	M / 4(a)^m

te	awa	nui	#
[the, sing., non-person	(river	big)]	
4(a)	M	M	

(65) Peter is my older brother

#	ko	ø	pita
	[specifier, non-time	the, person, non-number	Peter]
	3(a)	4(c)	M

t^oo^ku

[the,sing.,non-person^inherited possession^1st person sing.

4(a)^4a(b)^m

tuakana #

older brother]

M

(66) This is a fast-running horse

#	he	hoiho	oma	horo	tee^nei	#
	[indef. art.	((horse	run)	fast)]	[the,sing.,non-person^ near speaker	
	4(d)	M	M	M	M / 4(a)^m	

The first -- or Comment -- CW shows a Modified-Modifier construction being followed by another Modifier. Without the second modifier /horo/ fast, the sentence will then translate: This is a running horse. The same type of construction occurs in the [Comment CW] of sentence (66), and in the [TopicCW] of sentence (67).

(67) This is a man-killing horse

#	he	hoiho	patu	taŋata	tee^nei	#
	[indef. art.	((horse	kill)	man)]	[the,sing.,non-person^near speaker]	
	4(d)	M	M	M	M / 4(a)^m	

Sentence (68) exemplifies a re-ordering of elements across CW boundaries without a contrast in the message. If one may speak of functional slots, the focus slot is always the initial CW although the topic is always the second, and in [Comment] + [Topic] sentences phrase interior M and M of each may permute across CW boundaries, but initiators must remain constant. This can only be handled by optional transformational rules.

(68) This is the chief

(a) # ko te raŋatira

[specifier, non-time the, sing., non-person chief]

3(a) 4(a) M

tee^nei #

[the, sing., non-person^near speaker]

M
4(a)^m

(b) # ko tee^nei

[specifier, non-time the, sing., non-person^near speaker]

3(a) M
4(a)^m

te raŋatira #

[the, sing., non-person chief]

4(a) M

(69) What is that object?

#	he	aha	tee^naa
	[indef. art.	what, interrog.]	[the, sing., non-person^near hearer
	4(d)	M	4(a)^m

taoŋa ⇑

object]

M

3.3.3. Locative_p + Subject. Sentences (4), (8), (11), (12), (14), (21), (22), preceding, and (70) through (75) following, share the profile $[\text{Loc}_p\text{CW}]$ + [SCW].

(70) John is at the house

#	kei	te	fare	a
	[present location	the, sing., non-person	house]	[the, person, non-number
	1(b)	4(a)	M	4(c)

hoone #

John]

M

(71) Where is the house?

#	kei	hea	te
	[present location	where, interrog]	[the, sing., non-person
	1(b)	L_p( )	4(a)
	fare		
	house]		
	M		

(72) The bird is flying

#	kei	te	rere	te
	[present location	the, sing., non-person	fly]	[the, sing., non-person
	1(b)	4(a)	M	4(a)
	manu #			
	bird]			
	M			

(73) John was at the sea-side

#	i	te	taha	moana
	[past location	the, sing., non-person	(side	sea)]
	1(a)	4(a)	M	M

a	hoone	#
[the,person,non-number	John]	
4(c)	M	

(74) I am resting

# kei	te	okioki	ø
[present location	the,sing.,non-person	rest]	[the,person,non-number
1(b)	4(a)	M	4(c)

au	#
1st pers. sing.]	
M	

(75) This black cat was looking for rats

# i	te	rapu	kiore
[past location	the,sing.,non-person	(search	rat)]
1(a)	4(a)	M	M

te	poti	maŋu	nei	#
[the,sing.,non-person	(cat	black)	near speaker]	
4(a)	M	M	m	

3.3.4. Locative$_t$ + Subject. Locative$_t$ may also precede a Subject CW to form the profile [L$_t$CW] + [SCW] and this is shown

in sentences (76) and (77).

(76) The meeting will be tomorrow

# aa^poopoo	te	hui #
[future location^tomorrow]	[the, sing., non-person	meeting]
1(d) ^ L_t(b)	4(a)	M

(77) On the contrary, his birthday was yesterday

# i^nanahi	kee	t^oo^na
[non-future time^yesterday	instead]	[the, sing., non-past^acquired possession^3rd pers. sing.
1(a) ^ L_t(b)	m	4(a) ^4a(b) ^ m

huritau #
birthday]
M

3.3.5. Poss. + Subject. This profile -- [PossCW] + [SCW] -- is shared by sentences (36) through (38) above, and (78) through (80) following:

(78) These eels belong to Jim and his companions

# n^aa	hemi
[possessive, non-future^acquired possession	(Jim
3(d) ^4a(a)	M

maa ee^nei

plus others)] [the,plural,non-person^near speaker

m 4(a)^m

tuna #

eel]

M

(79) Those previously mentioned objects are for the school-teachers

m^aa ŋaa

[possessive, future time acquired possession the,plural,non-person

3(e) 4a(a) 4(b)

maahita kura ø^aua

(teacher school)] [the,plural,non-person retrospective

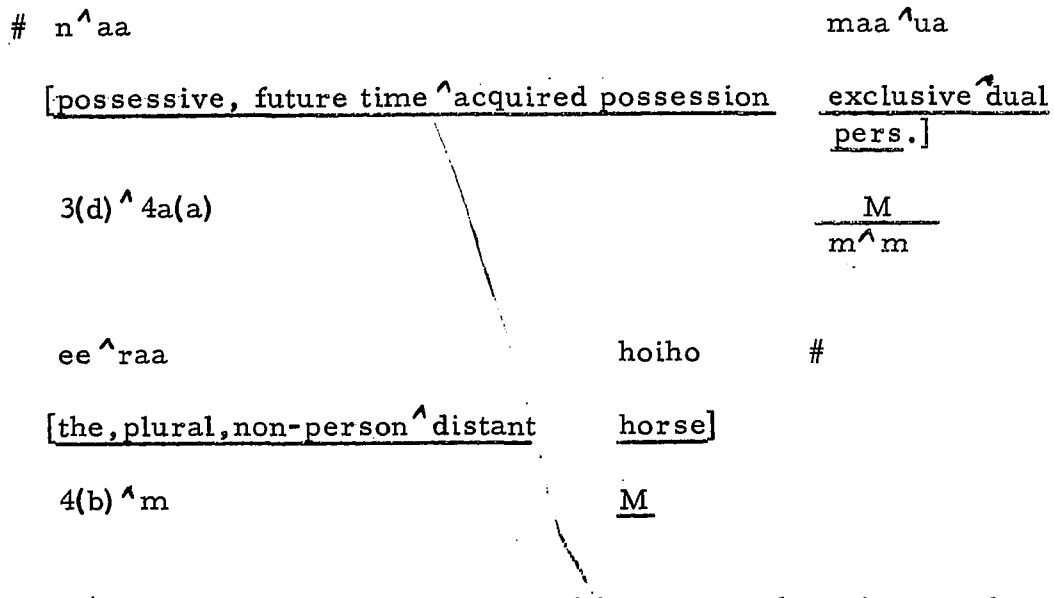
M M 4(b) 4b(a)

mea #

unspecified objects]

M

(80) Those horses yonder are ours



3.3.6. VCW + SCW. In terms of frequency of use in casual conversations, and as a kernel component of complex sentences, the profile exemplified here is the favorite one of native speakers. Sentences (5), (6), (7), (9), (10), (16), and (17), preceding, and (81) through (101) following, share the profile [VCW] + [SCW].

(81) The canoe has gone

#	kua	haere	te	waka	#
	[perfective, non-time	move]	[the, sing., non-person	canoe	]
	2(b)	M	4(a)	M	

(82) John went

#	i	haere	a
	[descriptive, past time	more]	[the, person, non-number
	1(a)	M	4(c)

hoone	#
John]	
M	

(83) The man has finished

#	kua	mutu	te
	[perfective, non-time	finish]	[the, sing., non-person
	2(b)	M	4(a)

taŋata	#
man]	
M	

(84) Mary has gone

#	kua	haere	a	mere	#
	[perfective, non-time	move]	[the, person, non-number	Mary]	
	2(b)	M	4(c)	M	

(85) The good horse ran fast

# i	oma	horo	te
[descriptive, past time	(run	fast)]	[the, sing., non-person
1(a)	M	M	4(a)

hoiho	pai	#
(horse	good)]	
M	M	

A closer translation would be the good horse fast-ran. As with previous sentences, so with this, the modified-modifier order is shown in parentheses.

(86) The boy has gone

# kua	haere	te
[perfective, non-time	move]	[the, sing., non-person
2(b)	M	4(a)

tamaiti	#
child^sing.]	
M^m	

(87) This horse is dead

#	kua	mate	te	hoiho
	[perfective, non-time	die]	[the, sing., non-person	horse
	2(b)	M	4(a)	M

nei	#
near speaker]	
m	

(88) The box is heavy

#	ka	taimaha	te	pouaka #
	[inceptive, non-time	heavy]	[the, sing., non-person	box]
	2(a)	M	4(a)	M

(89) Never mind that trip

#	hei	aha	tee^naa
	[purposive, non-time	what]	[the, sing., non-person^near hearer
	1(d)	M	4(a)^m

haere	#
go]	
M	

If the declarative final juncture / #/ were replaced by interrogative final juncture /⇑/ the sentence would then translate: What is that trip for?

(90) The child has become a man

#	kua	taŋata	te
	[perfective, non-time	man]	[the, sing., non-person
	2(b)	M	4(a)

tamaiti #

child^sing.]

M^m

(91) My youngest child is asleep

#	kua	moe	t^a^ku
	[perfective, non-time	sleep]	[the, sing., non-person^dominant, acquired possession^1st pers. sing.
	2(b)	M	4(a)^4a(a)^m

pootiki #

youngest child]

M

(92) This good horse is running fast

#	e	oma	horo	ana		te
	[modal	(run	fast)	imperfective, non-time]		[the, sing., non-person
	2(d)..	M	M	..2(d)		4(a)

hoiho	pai	nei	#
(horse	good)	near speaker]	
M	M	m	

The discontinuous initiator e...ana obligatorily straddles the M M string in the first -- or V -- CW. In the second -- or S -- CW, while the initiator /te/ and position marker /nei/ optionally straddle the M M string : the minor morphemes could be reordered non-contrastively as a cluster /tee^nei/, followed by the nucleus.

(93) The bird is still flying on

#	e	rere	haere	tonu	ana
	[modal	((fly	continue)	still)	imperfective, non-time]
	2(d)	M	M	m	2(d)

te	manu	#
[the, sing., non-person	bird]	
4(a)	M	

(94) That dog ran here, barking

#	i		oma	tautau	haere
	[descriptive, past-time	((	run	bark-bark	continue)
	1(a)		M	M-R	M

mai	tee^raa	
to here)]	[the, sing., non-person^distant from speaker & hearer	
m	4(a)^m	

kurii	#
dog]	
M	

(95) Mary was left behind

#	i	faka^reere^a	a
	[descriptive, past time	causative^leave^passive]	[the, person, non-number
	1(a)	m^M^m	4(c)

mere	#
Mary]	
M	

(96) The big shark was killed

# i	patu^a	te
[descriptive, past time	kill^passive]	[the, sing., non-person
1(a)	M^m	4(a)

maŋoo	nui	#
(shark	big)]	
M	M	

(97) I was housed

# i	fare^tia	a
[descriptive, past time	house^passivizer]	[the, person, non-number
1(a)	M^m	4(c)

au	#
1st pers. sing.]	
M	

(98) Jim and his companions were followed

# i	aru^mia	a
[descriptive, non-time	follow^passive]	[the, person, non-number
1(a)	M^m	4(c)

hemi maa #

Jim and others]

M m

(99) Jim and his companions came here secretively

ka haere ŋaro mai

[inceptive, non-time ((move secretly) towards speaker)

2(a) M M m

a hemi maa #

the,person, non-number Jim plus others]

4(c) M m

In the first -- or Verb -- Contour Word, two modified-modifier constructions are enclosed in parentheses. The nucleus is first modified by a major morpheme acting as a modifier, and this whole complex is then modified by a post-posed minor morpheme.

(100) The hurt snail kept crawling very slowly this way

i tino aata ŋaoko

[descriptive, past time (((very deliberately crawl)

1(c) m m M

tonu	mai	te
continue)	toward speaker)]	[the, sing., non-person
m	m	m

ŋata	fara	#
snail	hurt]	
M	M	

In the first -- or V -- Contour Word of sentence (100), the phrase nucleus is the centre of a series of modifier constructions. The first series of modifiers are pre-posed minor morphemes; this complex is then modified by another minor morpheme -- /tonu/ glossed continue -- which is postposed. The final modifier -- /mai/ motion toward speaker, then modifies all that which is enclosed in the second parentheses.

(101) The children are collecting apples

#	e	kohi-kohi	aaporo	ana
	[modal	(collect-collect	apple)	imperfective, non-time]
	2(d)...	M-R	M	...2(d)

ŋaa	tama^riki	#
[the, plural, non-person	child^plural]	
4(b)	M^m	

3.4. 3CW Kernel Sentences

In 3.2.1. it was stated that the exception to the non-identity restriction on the formulation of kernel sentences was the string NCW + NCW showing the profile [Comment] + [Topic]. Two NCWs may also combine with either L_pCW, L_tCW, or PossCW, to form 3CW kernel sentences. Of the 18 mathematically possible combinations, 6 are grammatical. These are shown here in the form of batteries of non-connected rules -- a BATTERY being a group of kernel strings sharing the same CW types, each string being a reordering, and all strings being grammatical. In the following set of CW strings a semi-colon separates one battery from another (again, with permutations linked by ~ and transformations by ⟨==⇒):

Comment + Topic + PossCW;

Comment + Topic + L_tCW ~ Comment + L_tCW + Topic ~ L_tCW + Comment + Topic;

Comment + Topic + L_pCW ~ L_pCW + Comment + Topic.

Only the first profile is exemplified below (3.4.1.).

Of the 90 mathematically possible combinations of non-identical 3CW strings of which one must be SCW, only 41 are grammatically permissible within the boundaries #_____⇑ and #_____#. In the following batteries of rules, allopermutants (or those whose CW components can be non-contrastively re-ordered) are shown by a ~ link, and transformational links by ⇐=⇒ :

VCW + LpCW + SCW ~ VCW + SCW + LpCW

⇐⇒ SCW + VCW+LpCW;

VCW + LtCW + SCW ~ LtCW + VCW + SCW ~

~ VCW + SCW + LtCW

⇐⇒ SCW + VCW + LtCW;

VCW + SCW + AgCW ~ VCW + AgCW + SCW

⇐⇒ SCW + VCW + AgCW

⇐⇒ AgCW + SCW + VCW ~ AgCW + VCW + SCW;

VCW + SCW + PossCW

⇐⇒ PossCW + SCW + VCW

⇐⇒ SCW + VCW + PossCW

⇐⇒ SCW + PossCW + VCW;

SCW + PossCW + LpCW

⇐⇒ PossCW + SCW + LpCW ~ LpCW + PossCW + SCW

~ SCW + LpCW + PossCW

⇐⇒ LpCW + SCW + PossCW;

PossCW + LtCW + SCW ~ LtCW + PossCW + SCW

⇐⇒ SCW + LtCW + PossCW ~ SCW + PossCW + LtCW

~ LtCW + SCW + PossCW;

SCW + LpCW + LtCW ~ SCW + LtCW + LpCW

~LtCW + SCW + LpCW

⇐⇒ LpCW + SCW + LtCW ~ LtCW + LpCW + SCW

~ LpCW + LtCW + SCW;

NegCW + SCW + VCW ~ NegCW + VCW + SCW

<===> SCW + NegCW + VCW;

NegCW + SCW + LtCW ~ NegCW + LtCW + SCW

<===> SCW + NegCW + LtCW;

NegCW + LpCW + SCW ~ NegCW + SCW + LpCW

<===> SCW + NegCW + LpCW.

Examples of each battery (with one profile chosen from each), are given in 3.4.3. ff. In the battery containing reorderings of VCW, AgCW, and SCW, transformations occur when VCW precedes AgCW (in which instance the agentive marker is /e/ or 3(c)), and when VCW follows AgCW (in which case the agentive initiator is then /n^aa/ or 3(d)^4a(a) if the tense-aspect of the VCW initiator is <u>past,</u> or /m^aa/ -- 3(e)^4a(a) -- if the tense-aspect of the VCW initiator is <u>non-past</u>). Whenever AgCW precedes VCW, any passivizer in VCW is obligatorily dropped. In the battery containing VCW, PossCW, and SCW transformational reorderings will be in partial converse to the foregoing. When adjacent to, and following NCW, the initiator for PossCW is one of two members of subgroup 4a. When preceding NCW, the PossCW initiators are either 3(d) or 3(e) hooked to the appropriate initiator of subgroup 4a, while a passivizer must occur attached to <u>M</u> of VCW. The same initiators occur in PossCW in the string SCW + VCW + PossCW.

3.4.1. Comment + Topic + Poss. Sentences (35) above, and (102) through (106) following, share the profile [Comment] + [Topic] + [PossCW].

(102) This is the man's house

#	ko	tee^nei		
	[specifier, non-time	the, sing., non-person^near speaker]		
	3(a)	M / 4(a)^m		
	te	fare	oo	
	[the, sing., non-person	house]	[inherited possession	
	4(a)	M	4a(b)	
	te	tanata	#	
	the, sing., non-person	man]		
	4(a)	M		

(103) This is Turi's boy

#	ko	te	tamaiti	
	[specifier, non-time	the, sing., non-person	child^sing.]	
	3(a)	4(a)	M^m	
	tee^nei		aa	
	[the, sing. non-person^near speaker]		[dominant, acquired possession	
	M / 4(a)^m		4a(a)	

turi #

Turi]

M

(104) The tears of the widow were a waterfall

#	he	wairere	ŋaa	roimata
	[indef. art.	waterfall]	[the, plural, non-person	tear]
	4(d)	M	4(b)	M

oo	te	pouaru	#
[subordinate possession	the, sing., non-person	widow]	
4a (b)	4(a)	M	

(105) Huia is the most beautiful girl for doing action songs

#	ko	ø	huia
	[specifier, non-time	the, person, non-number	Huia]
	3(a)		M

te	kootiro	tino	aataahua
[the, sing, non-person	(girl	very	beautiful)]
4(a)	M	m	M

m^oo

[possessive, non-past time subordinate, inherited possession

3(e) 4a(b)

te	mahi	waiata -- aa -- riŋa #
the, sing., non-person	(work	(song -- acquired possession -- hand))]
4(a)	M	M - m - M

(106) What is the color of your horse

#	he	aha	te	kara
	[indef. art.	what]	[the, sing., non-person	color]
	4(d)	M	4(a)	M

oo	t^oo ^u
[subordinate possession	the, sing., non-person ^subordinate possession ^2nd pers. sing.
4a(b)	4(a) ~4a(b)^ m

hoiho #

horse]

M

3.4.2. VCW + SCW + LpCW. (1), (15), (25), (27), (29), and (30) above, and sentences (107) through (125) following show the profile [VCW] + [SCW] + [LpCW]. This profile can be non-contrast-

ively permuted -- that is, reordered without changes in CW interior and message -- to VCW + LpCW + SCW.

(107) Where did John go to?

#	i	haere	a	
	[descriptive, past time	move]	[the, person, non-number	
	1(a)	M	4(c)	

hoone	ki	hea
John]	[relational	where, interrog]
M	3(b)	M

(108) John went to the mountains

#	i	haere	a	hoone
	[descriptive, past time	move]	[the, person, non-time	John]
	1(a)	M	4(c)	M

ki	ŋaa	maauŋa	#
[relational	thé, plural, non-person	mountain]	
3(b)	4(b)	M	

(109) The boat comes into the harbor mouth

#	ka	hou	te	waka
	[inceptive, non-time	enter]	[the, sing., non-person	canoe]
	2a	M	4(a)	M

ki	te	waha	awa	#
[relational	the, sing., non-person	(mouth	river)]	
3(b)	4(a)	M	M	

(110) The boy ran to the shop

#	i	oma	te
	[descriptive, past time	run]	[the, sing., non-person
	1(a)	M	4(a)

tama^iti	ki	te	toa	#
child^small]	[relational	the, sing., non-person	store]	
M^m	3(b)	4(a)	M	

(111) The man saw the shark

#	i	kite	te	taŋata
	[descriptive, past time	see]	[the, sing., non-person	man
	1(a)	M	4(a)	M

i	te	maŋoo #
[non-future location	the, sing., non-person	shark]
1(a)	4(a)	M

(112) The child ran crying to school

#	ka	oma	taŋi	haere	te
	[inceptive, non-time	(run	cry	motion)]	[the, sing., non-person
	2(a)	M	M	M	4(a)

tamaiti	ki	te	kura #
child sing]	[relational	the, sing., non-person	school]
M m	3(b)	4(a)	M

The first -- or V -- Contour Word shows a CW nucleus followed by two modifiers. A more literal translation for sentence (112) would be the boy ran crying (as he went) to school.

(113) The tree crashed to the ground

#	i	papahoro	te
	[descriptive, past time	crash]	[the, sing., non-person
	1(a)	M	4(a)

raakau	ki	te	fenua	#
tree]	[relational	the, sing., non-person	ground]	
M	3(b)	4(a)	M	

(114) The boy knocked on the door

#	kua	paatootoo	te	tamaiti
	[perfective, non-time	knock]	[the, sing., non-person	child sing.]
	2(b)	M	4(a)	M^ m
	i	te	kuaha	#
	[non-future location	the, sing., non-person	door]	
	1(a)	4(a)	M	

(115) The mother is searching for her child

#	e	kimi	ana	te
	[modal	search	imperfective, non-time]	[the, sing., non-person
	2(d)	M	2(d)	4(a)

faaea	i	t^aa^na	
mother]	[non-future location	the, sing., non-person dominant acquired possession 3rd pers. sing.	
M	1(a)	4(a) 4a(a)	m

tamaiti #

child sing.]

M m

(116) The teachers continued climbing to the summit

#	ka	piki	tonu	atu
	[inceptive, non-time	(climb	continue)	away from speaker]
	2(a)	M	m	m

	ŋaa	maahita	ki
	[the, plural, non-person	teacher]	[relational
	4(a)	M	3(b)

	te	taumata	#
	the, sing., non-person	summit]	
	4(a)	M	

(117) The children were collecting the fallen fruit

#	e	kohikohi	ana
	[modal	collect-collect	imperfective, non-time]
	2(d)...	M - R	..., 2(d)

ŋaa	tama^riki	i
[the,plural,non-person	child^plural]	[non-future location
4(a)	M^m	1(a)

ŋaa	hua	raakau	patere	#
the,plural,non-person	((fruit	tree)	spill)]	
4(b)	M	M	M	

The third - or Locative -- CW contains a M comprised of a modified string. . The string /hua - raakau/ is shown by parentheses in the gloss, as being a unit modified by patere.

(118) This girl fell off that black horse

# i	taka	tee^nei	
[descriptive, past time	drop]	[the,sing.,non-person^near speaker	
1(a)	M	4(a)^m	

kootiro i		tee^raa
girl]	[non-future location	the,sing.,non-person^distant
M	1(a)	4(a)^m

hoiho	maŋu	#
horse	black]	
M	M	

(119) All of them fell off this big rock

#	i	taka	iho	
	[descriptive, past time	fall	down to speaker]	
	1(a)	M	m	
	ø	raa ^tou		katoa
	[the, person, non-number	exclusive ^3rd pers. pl.		all]
	4(c)	M / M ^ m		M
	i	te	toka	nui
	[non-future location	the, sing., non-person	(rock	big)
	1(a)	4(a)	M	M
	nei	#		
	near speaker]			
	m			

(120) I saw the book

#	i	kite	ø
	[descriptive, past time	see]	[the, person, non-number
	1(a)	M	1(c)

au	i	te
first per. sing.]	[non-future location	the, sing., non-person
M	1(a)	4(a)

pukapuka #

book]

M

(121) I went to school

# i	haere	∅
[descriptive, past time	move]	[the, person, non-number
1(a)	M	4(c)

au	ki	te
first pers. sing.]	[relational	the, sing., non-person
M	3(b)	4(a)

kura #

school]

M

(122) I was going to the village

# e	haere	ana	∅
[modal	move	imperfective, non-time]	[the, person, non-number
2(d)...	M	...2(d)	4(c)

au	ki	te	paa #
first pers. sing.]	[relational	the, sing., non-person	village]
M	3(b)	4(a)	M

(123) He saw the box

# ka	kite	ø
[inceptive, past time	see]	[the, person, non-number
1(a)	M	4(c)

ʔia	i	te
3rd pers. sing.]	[non-future location	the, sing., non-person
M	1(a)	4(a)

pouaka #
box]
M

(124) They are carefully descending into this giant monster's cave

# e	aata	heke	ana
[modal	(carefully	descend)	imperfective, non-time]
2(a)...	M	M	...2(e)

∅	raa^tou	ki
[the, sing., non-person	exclusive ^ 3rd pers. pl.]	[relational
4(c)	M / m ^ m	3(b)

tee^nei	rua	tanifa	nui #
the, sing., non-person ^ near speaker	(cave	monster)	big)]
4(a) ^ m	M	M	M

In the third -- or L -- Contour Word, parentheses enclose a modified-modifier word order, with this complex again being followed by another major morpheme modifier.

(125) They entered there

# ka	hou	∅
[inceptive, non-time	enter]	[the, person, non-number
2(a)	M	4(c)

raa^tou	ki	reira #
exclusive ^ 3rd pers. pl.]	[relational	non-visible place]
M / m ^ m	3(b)	M

In the third CW, or [Locative CW], what has been glossed non-visible place is an inherent locative (see 2.8.4.1.).

3.4.3. VCW + SCW + LtCW. Sentences (126) through (132) following share the profile [VCW] + [SCW] + [LtCW]. This profile may be non-contrastively re-ordered to [LtCW] + [VCW] + [SCW] and [VCW] + [LtCW] + [SCW]. (c.f. [VCW] ~+ [SCW] + [LpCW] ~ [VCW] + [LpCW] + [SCW] in 3.4.2. above), and this wider distribution justifies the division of L into Lt and Lp.

(126) John went yesterday

#	i	haere	a
	[descriptive, past time	move]	[the, person, non-number
	1(a)	M	4(c)

hoone	i^nanahi	#
John]	[non-future location ^ yesterday]	
M	1(a) ^ M	

(127) The logs are afloat now

#	kua	maanu	ŋaa
	[perfective, non-time	float]	[the, plural, non-person
	2(b)	M	4(b)

tuuporo	i^naianei	#
log]	[non-future location^now]	
M	1(a)^M	

(128) I'll be coming tomorrow

#	ka	haere	mai	ø
	[inceptive, non-time	move	to speaker]	[the, person, sing.
	2(a)	M	m	4(c)

au	aa^poopoo	#
first pers. sing.]	[future location^tomorrow]	
M	1(a)^M	

(129) The cannibalistic enemy will be murdered tonight

#	ka	koohuru^tia	te
	[inceptive, non-time	murder^passive]	[the, sing., non-person
	2(a)	M^m	4(a)

hoa riri	kai	taŋata	a
(((friend war)	eat)	man)]	[future location
M M	M	M	1(d)

tee^nei	poo	#
the, sing, non-person^near speaker	night]	
4(a)^m	M	

(130) He returned in 1960

#	i	hoki	ø
	[descriptive past time	return]	[the, sing, non-person
	1(a)	M	4(c)

iia	i	te
3rd pers. sing.]	[non-future location	the, sing, non-person
M	1(a)	4(a)

tau	1960	#
year	1960]	
M	M	

(131) Mary will graduate on Friday

# ka	puta	a
[inceptive, non-time	emerge]	[the, person, non-number
2(a)	M	4(c)

mere	a	te	paraire	#
Mary]	[future location	the, sing., non-person	Friday]	
M	1(d)	4(a)	M	

(132) John was injured last night

# i	fara	a
[descriptive, past-time	hurt]	[the, person, non-number
1(a)	M	4(c)

hoone	i ^napoo	#
John]	[non-future location ^last night]	
M	1(a) ^M	

3.4.3. VCW + SCW + AgCW. Sentences (5), (19a), (20a), (42) preceding, and (133) through (146) following, share the profile [VCW] + [SCW] + [AgCW]. This profile may be non-contrastively reordered to [VCW] + [AgCW] + [SCW].

(133) The child has spilt the water

#	kua	riŋi^a	te
	[perfective non-time	spill^passivizer]	[the, sing., non-person
	2(b)	M^m	4(a)

wai	e	te	tama^iti	#
water]	[agentive	the, sing., non-person	child^singular]	
M	3(c)	4(a)	M^m	

(134) The man has been taken by the policeman

#	kua	tari^a	te
	[perfective, non-time	take^passivizer]	[the, sing., non-person
	2(b)	M^m	4(a)

taŋata	e	te	pirihimana	#
man]	[agentive	the, sing., non-person	policeman]	
M	3(c)	4(a)	M	

(135) All the people did this

# i	mahi^a	tee^nei
[descriptive, past time	work^passivizer]	[the, sing, non-per-son^near speaker
1(a)	M^m	M / 4(a)^m

e	ŋaa	ta^a^ŋata	katoa #
[agentive	the, plural, non-person	(man^plural	all)]
3(c)	4(b)	R-M	M

(136) John ate some food

# i	kai^ŋa	he
[descriptive, past time	eat^passivizer]	[indef. art.
1(a)	M^m	

kai	e	hoone #
food]	[agentive	John]
M	3(c)	M

(137) Peter taught the children

# i	faka^ako^tia
[descriptive, past time	causative^learn^passivizer]
1(a)	m^M^m

ŋaa	tama^riki	e	pita	#
[the, plural, non-person	child^plural]	[agentive	Peter]	
4(b)	M^m	3(c)	M	

(138) The kumara shoots were planted by the workers

# i	faka^too^ŋia			
[descriptive, past time	causative^plant^passivizer]			
1(a)	m^M^m			
ŋaa	tupu	kuumara	e	
[the, plural, non-person	(plant	kumara)]	[agentive	
4(b)	M	M	3(c)	
ŋaa	kai^mahi	#		
the, plural, non-person	nominalizer^work]			
4(b)	m^M			

(139) The clothes are being spread out by those women mentioned previously

# e	faka^hora^hia		mai
[modal	causative^spread^passivizer		towards speaker
2(d)	m^M^m		m

ana	ŋaa	kaakahu
imperfective, non-time]	[the, plural, non-person	clothing]
2(d)	4(b)	M

e	ɸ^aua	waahine #
[agentive	the, plural, non-person^retrospective	woman plural]
3(c)	4(b)^4b(a)	R - M

(140) The clothes are being washed by the washing machine

# e	horoi^a	ana
[modal	wash^passivizer	imperfective, non-time]
2(d)	M^m	2(d)

ŋaa	kaakahu	e	te
[the, plural, non-person	clothing]	[agentive	the, sing., non-person
4(b)	M	3(c)	4(b)

mihiini	horoi	kaakahu	#
((machine	wash)	clothing)]	
M	M	M	

(141) The dog has been killed by the man

# kua	patu^a	te
[perfective, non-time	kill^passivizer]	[the, sing., non-person
2(b)	M^m	4(a)

kurii	e	te	taŋata	#
dog]	[agentive	the, sing., non-person	man]	
M	3(c)	4(a)	M	

(142) He was taken prisoner by the enemy

# ka	mau^ria	here^here^tia
[inceptive, non-time	take^passivizer	tie^tie^passivizer]
2(a)	M^m	M^R^m

∅	iia	e
[the, person, non-number	3rd pers. sing.]	[agentive
4(c)	M	3(c)

te	hoa riri	#
the, sing., non-person	friend war]	
4(a)	M M	

(143) He has tied the sow

# kua	here^a	te
[perfective, non-time	tie^passivizer]	[the, sing., non-person
2(b)	M^m	4(a)

faereere	e	ø	ʃia #
sow]	[agentive	the, person, non-number	3rd pers. sing.]
M	3(c)	4(b)	M

(144) The clothes were washed by the women

# i		horoi^a	ŋaa
[descriptive, past time		wash^passivizer]	[the, plural, non-person
1(a)		M^m	4(b)

kaakahu	e	ŋaa	waahine #
clothing]	[agentive	the, plural, non-person	woman^plural]
M	3(c)	4(b)	-R-M

(145) The horse is being held by the woman mentioned previously

# e	puriʃtia		ana	te
[modal	hold^passivizer		imperfective, non-time]	[the, sing. non-person
2(d) ...	M m		...2(d)	4(a)

hoiho	e	t^aua
horse]	[agentive	the, sing., non-person^retrospective
M	3(c)	4(a)^4b(a)

wahine #

woman]

M

(146) The husband was led here by his children

# i	aarahi^na		mai
[descriptive, past time	escort^passivizer		towards speaker]
1(a)	M^m		m
te	taane	e	
[the, sing., non-person	husband]	[agentive	
4(a)	M	3(c)	
ø^aa^na			
the, plural, non-person^acquired possession^3rd pers. sing.			
4(b)^4a(a)^m			
tama^riki #			
child^plural			
M^m			

3.4.4. AgCW + VCW + SCW. The preceding sentences (19(b)), (20(b)), (44), (45), and the following, (147) through (152) share the profile [AgCW] + [VCW] + [SCW]. This profile may be non-contrastively permuted to [AgCW] + [SCW] + [VCW].

(147) The man killed the dog

n^aa

[agentive, non-future time ^dominant, acquired possession

3(d) ^ 4a(a)

te	taŋata	i
the, sing., non-person	man]	[descriptive, past time
4(a)	M	1(a)

patu	te	kurii	#
kill]	[the, sing., non-person	dog]	
M	4(a)	M	

A more literal translation for sentence (147) would be By the man the dog was killed. Here, the AgCW is made the focus of the sentence.

(148) The man can kill the dog

m^aa

[agentive, non-future time dominant acquired possession

3(e) 4a(a)

te	taŋata	ee
the, sing., non-person	man]	[imperative, non-past time
4(a)	M	2(e)

patu te kurii #

kill] [the, sing., non-person dog]

M 4(a) M

(149) He can carry this one

m^aa^na

[agentive, future time^dominant, acquired possession^3rd pers. sing.

M
3(e)^4a(a)^m

tee^nei ee

the, sing., non-person^near speaker] [imperative, non-past time

M
4(a)^m 2(e)

hari #

carry]

M

(150) John burnt the weeds

n^aa hoone

[agentive non-future time^dominant acquired possession John]

3(d)^4a(a) M

i tahu ŋaa taru #

[descriptive, past time burn] [the, plural, non-person weed]

1(a) M 4(b) M

(151) He brought that one

n^aa^na

[agentive non-future time ^dominant, acquired possession ^3rd pers. sing.

M
3(d) ^ 4a(a) ^ m

i	hari	mai
[descriptive, past time	carry	towards speaker]
1(a)	M	m

tee ^raa #

[the, sing., non-person ^distant]

M
4(a) ^ m

(152) The tribe supported his committee

n^aa

[agentive, non-future time ^dominant acquired possession

3(d) ^ 4a(a)

te	iwi	i
the, sing., non-person	people]	[descriptive past time
4(a)	M	1(a)

tautoko t^oo^na

support] [the,sing.,non-person^subord. possession^3rd pers. sing.

M 4(a)^4a(b)^m

komiti #

committee]

M

(153) This tribe can complete that beautiful carved meeting house yonder

m^aa

[agentive non-future time dominant, acquired possession

3(c)^4a(a)

te iwi nei ee

the,sing.,non-person tribe near speaker] [imperative,non-past time

4(a) M m 2(c)

faka^oti te fare fakairo

causative^finish] [the,sing.,non-person ((house carve)

m^M 4(a) M M

pai raa #

good) distant]

M m

3.4.6. VCW + SCW + PossCW. Sentence (34) preceding, and (154) through (160) following share the profile [VCW] + [SCW] + [PossCW].

(154) The man's younger brothers hid

#	i	piri	te
	[descriptive, past time	hide]	[the, sing., non-person
	1(a)	M	4(a)

teina	oo
younger sibling of same sex]	[subordinate possession
M	4a(b)

te	taŋata	#
the, sing., non-person	man]	
4(a)	M	

(155) The blind woman's dog has already died

#	kua	mate	noa	atu
	[perfective, non-time	die	common	away, from speaker] = already
	2(b)	M	m	m

te	kurii	aa	te
[the, sing, non-person	dog]	[acquired possession	the, sing., non-person
4(a)	M	4a(a)	4(a)

wahine kaapoo #

(woman blind)]

M M

(156) Mathew's house has been burnt

kua tahu^na te

[perfective,non-time burn^passive] [the,sing.,non-person

2(b) M^m 4(a)

fare oo ø

house] [inherited possession the,person,non-number

M 4a(a) 4(c)

matiu #

Mathew]

M

(157) A new house has been bought for him

kua hoko^na te

[perfective,non-time buy^passive] [the,sing.,non-person

2(b) M^m 4(a)

fare hoou m^aa^na

house new] [non-past possession^acquired possession]
^3rd pers. sing.

M M 3(e)^4a(a)^M

(158) The men of the island have all been killed

#	kua	patu^patu^a	katoa^tia
	[perfective, non-time	hit^hit^passive	all passive]
	2(b)	R^M^m	M^m

	ŋaa	ta^a^ŋata	oo
	[the, plural, non-person	man^plural]	[inherited possession
	4(b)	M^R	4a(b)

	te	motu	#
	the, sing., non-person	island]	
	4(a)	M	

(159) Give (me) this horse's saddle cloth

#	ø	hoomai	te
	[imperative, non-past time	give to speaker]	[the, sing., non-person
	2(e)	M	4(a)

	faariki	oo	tee^nei
	mat]	[subordinate possession	the, sing., non-person^near speaker

	hoiho	#
	horse]	
	M	

(160) Bring the cows here for this man

# ∅	mau^ria	mai
[imperative, non-past time	convey^passivizer	towards speaker]
2(e)	M^m	m

ŋaa	kau	m^aa
[the, plural, non-person	cow]	[agentive, non-past time^acquired possession
4(b)	M	3(c) ^4a(a)

tee^nei	taŋata	#
the, sing., non-person near speaker	man]	
4(a)^m	M	

3.4.7. LpCW + SCW + PossCW. Sentences (161) through (164) share the profile [LpCW] + [SCW] + [PossCW].

(161) The man's cows are way beyond

# kei	tua	noa	atu
[present location	beyond	common = already	from speaker]
1(b)	Lp	m	m

ŋaa	kau	aa
[the, plural, non-person	cow]	[acquired possession
4(b)	M	4a(a)

te	taŋata	#
the, sing., non-person	man]	
4(a)	M	

(162) Jim's wife will be here

# ko	ko^nei	te
[future location	place^near speaker]	[the, sing., non-person
3(a)	M/L^m	4(a)

wahine	aa	hemi	#
wife]	[acquired possession	Jim]	
M	4a(b)	M	

(163) Peter's father is at work

# kei	te	mahi	te
[present location	the, sing., non-person	work]	[the, sing., non-person
1(b)	4(a)	M	4(a)

paapaa	oo	ø	
father]	[inherited possession	the, person, non-number	
M	4a(b)	4(c)	

pita	#
Peter]	
M	

(164) The children's parents were at Auckland

#	i	aakarana	ŋaa
	[past location	Auckland]	[the, plural, non-person
	1(a)	Lp	4(b)
	ma^a^tua	oo	ŋaa
	parent^plural]	[inherited possession	the, plural, non-person
	-R- M	4a(b)	4(b)
	tama^riki	#	
	child^plural]		
	M^m		

3.4.8. LtCW + SCW + PossCW. Sentences (165) through (167) exemplify the profile [LtCW] + [SCW] + [PossCW].

(165) John's birthday was yesterday

#	i^nanahi		te
	[non-future location yesterday]		[the, sing., non-person
	1(a)^M		4(a)
	huri^tau	oo	hoone #
	turn year]	[inherited possession	John]
	M M	4a(b)	M

(166) The meeting concerning these matters will be tonight

# a	tee^nei		poo
[future location	the, sing., non-person^near speaker		night]
1(d)	4(a)^m		M
te	hüi	m^oo	
[the, sing., non-person	gathering]	[possessive, non-past time^inherited possession	
4(a)	M	3(e)^4a(a)	
ee^nei		take	#
the, plural, non-person^near speaker		subject]	
4(b)^m		M	

(167) The killing of the pigs will be tomorrow

# aa^poopoo	te	patu^ŋa
[future location^tomorrow]	[the, sing., non-person	kill^gerund]
1(d)^M	4(a)	M^m

oo	ŋaa	poaka	#
[acquired possession	the, plural, non-person	pig]	
4a(a)	4(b)	M	

3.4.9. LpCW + SCW + LtCW. The two sentences, (168) and

(169), share the profile [LpCW] + [SCW] + [LtCW].

(168) John was there yesterday

#	i	reira	a
	[non-future location	non-visible place]	[the, person, non-number
	1(a)	M	4(b)

hoone	i^nanahi	#
John]	[non-future location^yesterday]	
M	1(a) ^M	

(169) The workers are at the house now

#	kei	te	fare	ŋaa
	[present location	the, sing., non-person	house]	[the, plural, non-person
	1(b)	4(a)	M	4(b)

kai^mahi	i^naianei	#
nominalizer^work]	[non-future location^now]	
m^M	1(a)^M	

3.4.10. NegCW + SCW + VCW. The sentences above, (48) and (52) -- and the following -- (170) through (174) -- share the profile [NegCW] + [SCW] + [VCW].

(170) You did not listen

#	kaa^hore	ø
	[inceptive, non-time ^not]	[the, person, non-number
	2(a) ^ M	4(b)

koutou	i	faka^roŋo	#
inclusive ^ 3rd pers. sing.]	[descriptive, non-time	causative] ^ sense	
M / m ^ m	1(a)	m ^ M	

(171) He will never return

#	ee ^ kore	rawa	ø
	[imperative, non-past time ^not	intensive]	[the, person, non-number
	2(e) ^ M	m	4(c)

iia	ee	hoki	mai	#
3rd pers. sing.]	[imperative, non-past time	return	to speaker]	
M	2(e)	M	m	

(172) He did not really die

#	kaa^hore	ø	iia
	[inceptive, non-time^not]	[the, person, non-number	3rd pers. sing.]
	2(a)^M	4(c)	M

i	mate	rawa	#
[descriptive, past time	die	intensive]	
1(a)	M	m	

(173) That man will not know

#	ee^kore	tee^naa
	[imperative, non-past time^not	the, sing., non-person^near hearer
	2(e)^M	4(a)^m

taŋata	ee	moohio	#
man]	[imperative, non-past time	know]	
M	2(e)	M	

(174) The dog did not hear

#	k^i^ihai	te	kurii
	[non-future location negative]	[the, sing., non-person	dog]
	-1(a) - M	4(a)	M

i	roŋo	#
[descriptive, past time	sense]	
1(a)	M	

3.4.11. NegCW + SCW + LpCW. The only NegCW which may precede the strings SCW + LpCW and SCW + LtCW is /Kaa^ hore/ inceptive,non-time^not. The sentences (175) and (176) share the profile [NegCW] + [SCW] + [LpCW].

(175) Peter is not at the house

#	kaa^hore	a	pita
	[inceptive,non-time^not]	[the,person,non-number	Peter]
	2(a)^M	4(b)	M

kei	te	fare	#
[present location	the,sing.,non-person	house]	
1(b)	4(a)	M	

(176) The things weren't there

#	kaa^hore	ŋaa
	[inceptive,non-time^not]	[the,plural,non-person
	2(a)^M	4(b)

mea	i	reira	#
unspecified objects]	[non-future location	non-visible place]	
M	1(a)	M	

3.4.12. NegCW + SCW + LtCW. The two sentences following -- (177) and (178) -- exemplify the profile [NegCW] + [SCW] + [LtCW].

(177) There is no school tomorrow

#	kaa^hore		he	kura
	[inceptive, non-time ^ not]		[indef. art.	school]
	2(a)^M		4(d)	M
	aa^poopoo	#		
	[future location^tomorrow]			
	1(d)^M			

(178) There was no work yesterday

#	kaa^hore		he	mahi
	[inceptive, non-time ^ not]		[indef. art.	work]
	2a^M		4(d)	M
	i^nanahi	#		
	[non-future location^yesterday]			
	1(a)^M			

3.5. 4CW Kernel Sentences

3.5.1. 4CW Kernel Sentences containing NCW + NCW. In section 3.2.1. the only exception given to the non-identity restriction of CW types in kernel-sentence formation was the string NCW + NCW, analysed as Comment + Topic. In 3.4.1. it was given that the only CWs which formed 3CW kernel sentences with Comment + Topic were LpCW, LtCW and PossCW. The same three also

form 4CW kernel sentences with NCW + NCW, the shape and permutations being given in the form of a battery of non-ordered rules: LpCW + Comment + Topic + PossCW ~ Comment + Topic + PossCW + LpCW; LtCW + Comment + Topic + PossCW; LtCW + Comment + Topic + LpCW ~ Comment + Topic + LpCW + LtCW ~ LpCW + Comment + Topic + LtCW ~ Comment + LtCW + Topic + LpCW ~ LpCW + Comment + LtCW + Topic ~ Comment + Topic + LtCW + LpCW.

Examples of the profile [LtCW] + [Comment] + [Topic] + [LpCW] are the sentences (179) and (180) which follow:

(179) Yesterday, Jim was the most important person at that place

#	i^nanahi		ko	hemi
	[non-future location^yesterday]		[specifier, non-time	Jim]
	1(a)^M		3(a)	M

te	tino	taŋata	raŋatira
[the, sing., non-person	very	(man	chief)]
4(a)	m	M	M

i	reira	#
[non-future location	non-visible place]	
1(a)	M	

(180) In the future, that group in Auckland will be a good one

#	aa^kuanei	he	roopuu	pai
	[future location^presently]	[indef. art.	group	good]
	1(d)^M	4(d)	M	M

tee^raa	kei	aakarana #
[the, sing., non-person^distant]	[present location	Auckland]
4(a)^M	1(b)	M

3.5.2. Non-Identical 4CW Kernel Sentences. With the four provisos -- that no identical CWs occur in the same string (the only grammatical possibilities have been discussed in 3.5.1.); that one CW must be NCW (or SCW); that any string with AgCW must contain VCW also (see 2.8.6.); that no two 4CW strings share the same CW types (even if they are re-order differently -- there are 14 theoretically possible 4CW combinations of the seven CW types. Factorial analysis calculation shows each of the 14 may alter CW order 24 times without duplication; thus there are 336 mathematically possible 4CW combinations. Of these 336, only 79 are grammatical. Rather than giving the whole in a battery of rules (which should be done if the format of 2CW and 3CW discussion is to be parallelled) the totality is instead subdivided into battery sections, based on a permutation-transformation taxonomy. Allopermutants are linked

by ~ , and transformable strings by ⟺ .

3.5.3. VCW + SCW + LpCW + LtCW. Sentences (181) through (183) share the profile [VCW] + [SCW] + [LpCW] + [LtCW] and this may be reordered as follows:

VCW + SCW + LpCW + LtCW ~ VCW + SCW + LtCW + LpCW ~
VCW + LtCW + SCW + LpCW ~ VCW + LpCW + LtCW + SCW ~
VCW + LpCW + SCW + LtCW ~ LtCW + VCW + LpCW + SCW ~
LtCW + VCW + SCW + LpCW ⟺ SCW + VCW + LpCW + LtCW ~
SCW + VCW + LtCW + LpCW ~ LtCW + SCW + VCW + LpCW.

(181) He will hit the woman tomorrow

#	ka		patu	ø		
	[inceptive, non-time		hit]	[the, sing., non-person		
	2(a)		M	4(c)		
	ʔia		i		te	
	3rd pers. sing.]		[past location		the, sing., non-person	
	M		1(a)		4(a)	
	wahine	aa ^ poopoo		#		
	woman]	[future location ^ tomorrow]				
	M	1(d) ^ M				

(182) John sat here yesterday

# i	noho	a	hoone
[descriptive, past time	sit]	[the, person, non-number	John]
1(a)	M	4(c)	M

i	ko^'nei	i^nanahi	#
[location, past time	place^near speaker]	[location, past-time] ^yesterday	
1(a)	M^m	1(a)^M	

(183) He will see the girl tomorrow

# ka	kite	∅	
[inceptive, non-time	see]	[the, person, non-number	
1(a)	M	4(c)	

iia	i	te	kootiro
3rd pers. sing.]	[past location	the, sing, non-person	girl]
M	1(a)	4(a)	M

aa^poopoo	#
[future location^tomorrow]	
1(d)^M	

3.5.4. VCW + SCW + AgCW + LtCW. Permutation and transformation links of this profile with 9 others sharing the same battery of 4CW types are as follows:

VCW + SCW + AgCW + LtCW ~ VCW + SCW + LtCW + AgCW <===>

SCW + VCW + AgCW + LtCW ~ SCW + VCW + LtCW + AgCW <===>

SCW + AgCW + VCW + LtCW ~ SCW + LtCW + AgCW + VCW <===>

AgCW + SCW + VCW + LtCW ~ LtCW + AgCW + VCW + SCW ~

LtCW + AgCW + SCW + VCW ~ LtCW + SCW + AgCW + VCW.

Initiator substitution rules for AgCW preceding or following VCW have been outlined in 3.4.1. and those for SCW in sentence initial position in 3.3.1.

Sentences (184) through (186) exemplify the profile [VCW] + [SCW] + [AgCW] + [LtCW].

(184) The seagull was discovered by John yesterday

#	i	kite^a	te
	[descriptive, past time	see^passive]	[the, sing., non-person
	1(a)	M^m	4(a)

karoro	e	hoone	i^nanahi	#
seagull]	[agentive	John]	[non future location^yesterday]	
M	3(c)	M	1(a)^M	

(185) I'll be fetched by the workers tomorrow

#	ka	tiiki^na	ϕ
	[inceptive, non-time	fetch^passivizer]	[the, person, non-number
	2(a)	M m	4(c)

au e ŋaa

first pers. sing.] [agentive the, plural, non-person

M 3(c) 4(b)

kai^mahi aa^poopoo #

nominalizer^work] [future location^tomorrow]

m^M 1(d)^M

(186) The dogs will search for the pigs in a moment

ka kimi^hia ŋaa

[inceptive, non-time search^passivizer] [the, plural, non-person

2(a) M^m 4(b)

poaka e ŋaa kurii

pig] [agentive the, plural, non-person dog]

M 3(c) 4(b) M

aa^kuanei #

[future location^present]

1(d)^M

3.5.5. VCW + SCW + PossCW + LtCW. Permutation and transformation links of this profile with 4 others, sharing the same battery of 4CW types are as follows:

VCW + SCW + PossCW + LtCW ~

LtCW + VCW + SCW + PossCW ~

VCW + LtCW + SCW + PossCW <===>

SCW + PossCW + VCW + LtCW ~

LtCW + SCW + PossCW + VCW.

The profile [PossCW] + [VCW] + [SCW] + [LtCW] is shown by the three sentences (187), (188) and (189):

(187) John discovered the seagull yesterday

#	n^aa			hoone
	[agentive non-future time ^acquired possession			John]
	3(d)^4a(a)			M
	i	kite	te	
	[descriptive, past time	find]	[the, sing., non-past time	
	1(a)	M	4(a)	
	karoro	i^nanahi	#	
	seagull]	[non-future location^yesterday]		
	M	1(a)^M		

(188) I'll be fetched by the workers tomorrow

#	m^aa	ŋaa
	[agentive future time^acquired possession	the, plural non-person
	3(e)^4a(a)	4(b)

kai^mahi	a	au
nominalizer^work]	[the,person,non-number	first pers. sing.]
m^M	4(c)	M

ee	tiki	aa^poopoo	#
[imperative non-past time	fetch]	[future location^tomorrow]	
3(c)	M	1(d)^M	

(189) I'll take the workers tomorrow

m^aa^ku
[agentive future-time^acquired possession^1st pers. sing.]
3(e)^4a(a)^M/m

ŋaa	kai^mahi	ee
[the,plural,non-person	nominalizer^work]	[imperative non-past time
4(a)	m^M	3(c)

tiki	aa^poopoo	#
fetch]	[future location^tomorrow]	
M	1(d)^M	

3.5.6. NegCW + SCW + VCW + LpCW. This profile is part of four non-recurring 4CW strings which share the same CW types. These are:

NegCW + SCW + VCW + LpCW ~

NegCW + VCW + LpCW + SCW ~

NegCW + VCW + SCW + LpCW <=#=>

SCW + NegCW + VCW LpCW;

Sentences (190) through (193) following exemplify the profile [NegCW] + [SCW] + [VCW] + [LpCW].

(190) The man did not go to Peter

#	ki^i^hai	te	tangata
	[descriptive past time^not]	[the, sing., non-person	man]
	-1(a)- M	4(a)	M

i	haere	ki	a	pita	#
[descriptive, past time	go]	[relational	the, person, non-number	Peter]	
1(a)	M	3(b)	4(c)	M	

(191) Peter did not see the man

#	ki^i^hai	a	pita
	[descriptive, past time^not]	[the, person, non-number	Peter]
	-1(a)- M	4(c)	M

i	kite	i	te
[descriptive, past time	see]	[non-subject	the, sing., non-person
1(a)	M	1(a)	4(a)

taŋata #

man]

M

(192) Don't you hit the black cow

# ∅ ^kaua		∅	
[imperative, non-past time ^not]		[the, person, non-number	
1(a) ^ M		4(c)	

koe	ee	patu
2nd pers. sing.]	[imperative, non-past time	hit]
M	1(a)	M

i	te	kau
[non-subject past location	the, sing., non-person	(cow
1(a)	4(a)	M

maŋu #

black)]

M

(193) They will not expedite the betrothal

#	ee^kore		ø
	[imperative, non-past time^not]		[the, person, non-number
	2(e)^M		4(c)
	raa^tou		ee
	exclusive 3rd pers. plural]		[imperative, non-past time
	M		2(e)
	faka^haere	i	te
	causative^move]	[non-subject, past location	the sing., non-person
	m^M	1(a)	4(a)
	tomo	#	
	betrothal]		
	M		

3.5.7. NegCW + SCW + VCW + LtCW. The battery of kernel sentences profiles which share the CW types given above are:

NegCW + SCW + VCW + LtCW ~

NegCW + SCW + LtCW + VCW ~

NegCW + VCW + LtCW + SCW ~

NegCW + VCW + SCW + LtCW ~

LtCW + NegCW + VCW + SCW ~

LtCW + NegCW + SCW + VCW <===>

SCW + NegCW + VCW + LtCW.

Sentences (194) and (195) share the profile [NegCW] + [SCW] + [VCW] + [LtCW].

(194) The wild pigs won't come back now

#	ee^kọre		ŋaa		
	[imperative, non-past time ^not]		[the, plural, non-person		
	2(e)^M		4(b)		
	poaka	puihi	ee	hoki	mai
	(pig	wild)]	[imperative, non-past time	return	to here]
	M	M	2(e)	M	m
	i^naianei	#			
	[non-future location ^now]				
	1(a)^M				

(195) The boy did not play yesterday

#	ki^i^hai	te	
	[descriptive past time^not]	[the, sing., non-person	
	-1(a)- M	4(a)	

tama^iti	i	tutuu	i^nanahi	#
child^sing.]	[descriptive, past time	play]	[non-future location^yesterday	]
M^m	1(a)			
M^m	1(a)	M	1(a)^M	

3.5.8. VCW + SCW + AgCW + LpCW. Those 6 profiles which share these given 4CW types are:

VCW + SCW + AgCW + LpCW ~

VCW + SCW + LpCW + AgCW <==>

SCW + VCW + AgCW + LpCW ~

SCW + VCW + LpCW + AgCW <==>

SCW + AgCW + VCW + LpCW <==>

AgCW + SCW + VCW + LpCW.

The transformations needed for inverting VCW + SCW are given in section 3.3.1., and those transformations needed for having AgCW before or after VCW -- i.e. VCW...± ... AgCW are given in section 3.4.1. Sentence (196) exemplifies the profile [VCW] + [SCW] + [AgCW] + [LpCW].

(196) We were taken by John to Auckland

# i	tari^a	∅
[descriptive, past time	take^passivizer]	[the, person, non-number
1(a)	M^m	4(a)

maa^tou e hoone ki

exclusive, non-sing.^plural] [agentive John] [relational

M 3(c) M 3(b)

m^m

akarana #

Auckland]

M

3.5.9. VCW + SCW + PossCW + LpCW. This profile is part of a battery of 3 4CW strings. These are:

VCW + SCW + PossCW + LpCW ~

VCW + LpCW + SCW + PossCW <===>

SCW + PossCW + VCW + LpCW.

The profile [VCW + SCW] + [PossCW] + [LpCW] is exemplified by sentence (197).

(197) John's father died in the 2nd World War.

i mate te

[descriptive, past time die] [the, sing., non-person

1(a) M 4(a)

paapaa oo hoone i

father] [inherited possession John] [non-future location

M 4a(b) M 1(a)

te	pakaŋa	tua^rua	#
the, sing, non-person	war	ordinal^two]	
4(a)	M	m^M	

3.5.10. VCW + SCW + PossCW + AgCW. This profile is part of a battery of 6 reorderable profiles with the same CWs:

VCW + SCW + PossCW + AgCW ~

VCW + AgCW + SCW + PossCW <===>

SCW + PossCW + AgCW + VCW <===>

SCW + PossCW + VCW + AgCW <===>

AgCW + SCW + PossCW + VCW ~

AgCW + VCW + SCW + PossCW.

Sentence (198) exemplifies the profile [VCW] + [SCW] + [PossCW] + [AgCW]. Rules marking allomorph changes for certain reorderings of VCW $\pm$ AgCW and SCW $\pm$ VCW have been outlined in sections 3.4.0. and 3.3.1., respectively.

(198) Peter's dog was chased continously by the bull

# i	aru^mia	tonu^tia		
[descriptive, past time	chase^passive	continue^passive]		
1(a)	M^m	m m		
te	kurii	aa		pita
[the, sing., non-person	dog]	[acquired possession		Peter]
4(a)	M	4a(a)		M

e te puru #

[agentive the, sing., non-person bull]

3(c) 4(a) M

3.5.11. NegCW + SCW + VCW + AgCW. This profile is part of a battery of 4 non-recurring 4CW strings which share the same CW types:

NegCW + SCW + VCW + AgCW ~

NegCW + VCW + AgCW + SCW ~

NegCW + VCW + SCW + AgCW ⟺

SCW + NegCW + VCW ≠ AgCW.

Exemplification of the profile NegCW + SCW + VCW + AgCW is given in sentence (199) which follows:

(199) The boy was not smacked by the woman

kaa^hore te

[inceptive, non-time ^not] [the, sing., non-person

2(a)^ M 4(a)

tama^iti i paki^paki^a

child ^small] [descriptive, past time slap ^slap^ passive]

M ^m 1(a) M^R^m

e te wahine #

[agentive the, sing., non-person woman]

3(c) 4(a) M

3.5.12. NegCW + SCW + PossCW + VCW. There are 3 4CW strings in the battery which share the above CW types. These are:

NegCW + SCW + PossCW + VCW ~

NegCW + VCW + SCW + PossCW ⟨===⟩

SCW + PossCW + NegCW + VCW

Sentence (200) which follows, exemplifies the profile [NegCW] + [SCW] + [PossCW] + [VCW].

(200) The woman's coat was never discovered

#	ki^i^hai		rawa	te
	[descriptive, past time ^not		indeed]	[the, sing., non-person
	-1(a)-M		m	4(a)

koti	oo	te
coat]	[subordinate possession	the, sing., non-time
M	4a(b)	4(a)

wahine	i	kite^a	#
woman]	[descriptive, past time	find^passive]	
M	1(a)	M^m	

3.5.13. SCW + PossCW + LpCW + LtCW. This profile is one of a battery of 7 non-recurring 4CW strings which share the same CW type:

SCW + PossCW ≠ LpCW + LtCW ~

LtCW + SCW + PossCW + LpCW ⟺

PossCW + SCW + LpCW + LtCW ~

PossCW + LtCW + SCW + LpCW ~

LtCW + PossCW + SCW + LpCW ⟺

LpCW + SCW + PossCW + LtCW ~

LpCW + LtCW + SCW + PossCW.

The morphophonemic processes which occur when SCW and PossCW are reordered are given in section 3.4.0.

Sentence (201) following exemplifies the profile SCW + PossCW + LpCW + LtCW:

(201) The man's bicycle is now at the house

# ko	te	pahikara
[specifier, non-time	the, sing., non-person	bicycle]
3(a)	4(a)	M

oo	te	taŋata
[subordinate possession	the, sing., non-person	man
4a(a)	4(a)	M

kei	te	fare
[present location	the, sing., non-person	house]
1(b)	4(a)	M

i^naianei #

[non-future location ^now]

1(a) ^ M

3.5.14. NegCW + SCW + PossCW + LtCW. There are 8 profiles in the battery which shares the above CW types. These are:

NegCW + SCW + PossCW + LtCW ~

LtCW + NegCW + SCW + PossCW ~

LtCW + NegCW + PossCW + SCW ~

NegCW + PossCW + SCW + LtCW ⟺

SCW + NegCW + PossCW + LtCW ~

SCW + NegCW + LtCW + PossCW ~

SCW + LtCW + NegCW + PossCW ~

LtCW + SCW + NegCW + PossCW.

The following sentences (202) and (203) show the profile [NegCW] + [SCW] + [PossCW] + [LtCW]:

(202) This is not Jim's now

ɸ^eehara tee^nei

[imperative, non-time ^not] [the, sing., non-person ^near speaker]

2(e) ^ M M / 4(a) ^ m

n^aa

[possessive,non-future time^acquired possession

3(d)^4a(a)

ø hemi i^naianei #

the,person,non-number Jim] [non-future location^now]

4(c) M 1(a)^M

(203) Jim won't have a dog tonight

kaa^hore he kurii

[inceptive, non-time^not] [indef. art. dog]

2(a)^M 4(d) M

m^aa ø

[possessive, future time^acquired possession the,person, non-number

3(e)^4a(a) 4(a)

hemi a tee^nei

Jim] [future location the,sing.,non-person^here

M 1(d) 4(a)^m

poo #

night]

M

3.5.15. NegCW + SCW + PossCW + LpCW. The following battery of 3 profiles share the CW types NegCW, SCW, PossCW, LpCW:

NegCW + SCW + PossCW + LpCW ~

NegCW + LpCW + SCW + PossCW ⟺

SCW + PossCW + NegCW + LpCW

Sentence (204) exemplifies the profile [NegCW] + [SCW] + [PossCW] + [LpCW].

(204) The doctor's dog was not within

# kaa^hore	te	kurii
[inceptive,nontime^not]	[the,sing.,non-person	dog]
2(a)^M	4(a)	M
aa	te	rata
[acquired possession	the,sing.,non-person	doctor]
4a(a)	4(a)	M
i	roto #	
[non-future location	within]	
1(a)	M	

3.6. 5CW Kernel Sentences

Contrasting with previous profiles, 5CW kernel sentences cannot contain more than one NCW. Of all possible 5CW combinations of the seven CW types established in Chapter 2, only those batteries containing one NCW (or SCW) -- and, if an AgCW, then also a VCW -- form grammatically acceptable sentences. Only 9 batteries are possible - containing the following CW combinations (sections

where the batteries are treated are given in parentheses):

(1) S, V, Ag, Lp, Lt (3.6.1.);

(2) S, Poss, V, Lp, Lt (3.6.2.);

(3) S, Poss, V, Ag, Lp (3.6.3.);

(4) Neg, S, Poss, V, Lt (3.6.4.);

(5) Neg, S, Poss, V, Lp (3.6.5.);

(6) Neg, S, Poss, V, Ag (3.6.6.);

(7) Neg, S, V, Lp, Lt, (3.6.7.);

(8) Neg, S, Poss, Lp, Lt (3.6.8.).

(9) Neg, S, V, Ag, Lp

There are 120 mathematically possible sequences in each battery, and for each battery, all have been considered in computing grammatical permutations and transformations.

3.6.1. SCW + VCW + AgCW + LpCW + LtCW. The battery of 24 grammatical sequences sharing the above CW components are given here (permutations are linked by ~ and transformations by ⟨===⟩):

SCW + VCW + AgCW + LpCW + LtCW ~

SCW + VCW + AgCW + LtCW + LpCW ~

SCW + VCW + LtCW + LpCW + AgCW ~

SCW + VCW + LtCW + AgCW + LpCW ~

SCW + VCW + LpCW + AgCW + LtCW ~

LtCW + SCW + VCW + AgCW + LpCW ~

LtCW + SCW + VCW + LpCW + AgCW ~

SCW + LtCW + VCW + AgCW + LpCW ~

SCW + LtCW + VCW + LpCW + AgCW <===>

VCW + SCW + AgCW + LpCW + LtCW ~

VCW + SCW + AgCW + LtCW + LpCW ~

VCW + SCW + LtCW ~ LpCW + AgCW ~

VCW + SCW + LpCW + LtCW + AgCW ~

VCW + SCW + LtCW + AgCW + L CW ~

VCW + SCW + LpCW + AgCW + LtCW <===>

SCW + AgCW + VCW + LpCW + LtCW ~

SCW + AgCW + VCW + LtCW + LpCW ~

SCW + LtCW + AgCW + VCW + LpCW ~

LtCW + SCW + AgCW + VCW + LpCW ~

SCW + AgCW + LtCW + VCW + LpCW <===>

AgCW + SCW + VCW + LpCW + LtCW ~

AgCW + SCW + VCW + LtCW + LpCW ~

AgCW + SCW + LtCW + VCW + LpCW ~

LtCW + AgCW + SCW + VCW + LpCW.

Two sentences -- (205) and (206) -- were used to test the above reorderings. These sentences show the profile [SCW] + [VCW] + [AgCW] + [LpCW] + [LtCW]:

(205) The dog will soon be taken home by Jim

# ko	te	kurii
[specifier, non-time	the, sing., non-person	dog]
3(a)	4(a)	M

ka	tari^a	e	ϕ
[inceptive, non-time	take^passive]	[agentive	the, person, non-number
2(a)	M^m	3(c)	4(c)

hoone ki	te	kaaiŋa
John] [relational	the, sing., non-person	home]
M 3(b)	4(a)	M

aa^kuanei

[future location^presently]

1(d) ^ M

(206) Yesterday, at work, his forehead was ripped by a piece of jagged steel

# ko	t^oo^na	
[specifier, non-time	the, sing., non-person^inherited possession ^3rd person	
3(a)	4(a) ^ 4a(b)^m	

rae i	tiihae^a	e
forehead] [descriptive, past time	torn^passive]	[agentive
M 1(a)	M^m	3(c)

te	rino	koi	i
the, sing., non-person	(steel	sharp)]	[non-future location
4(a)	M	M	1(a)

te	mahi	i ^nanahi	#
the, sing., non-person	work]	[non-future location^ yesterday]	
4(a)	M	1(a) ^M	

3.6.2. VCW + SCW + PossCW + LpCW + LtCW. The two batteries of 20 grammatical sequences sharing the above CW types are given here:

VCW + LpCW + LtCW + SCW + PossCW ~

VCW + SCW + PossCW + LpCW + LtCW ~

VCW + SCW + PossCW + LtCW + LpCW ~

VCW + LtCW + SCW + PossCW + LpCW ~

VCW + LtCW + LpCW + SCW + PossCW ~

LtCW + VCW + LpCW + SCW + PossCW <===>

SCW + PossCW + VCW + LpCW + LtCW ~

SCW + PossCW + LtCW + VCW + LpCW ~

SCW + PossCW + VCW + LtCW + LpCW ~

LtCW + SCW + PossCW + VCW + LtCW;

VCW + LpCW + PossCW + SCW + LtCW ~

VCW + SCW + LpCW + PossCW + LtCW ~

VCW + SCW + LtCW + LpCW + PossCW ~

VCW + LtCW + SCW + LpCW + PossCW ~

LtCW + VCW + SCW + LpCW + PossCW ~

LtCW + VCW + LpCW + PossCW + SCW <===>

SCW + VCW + LpCW + PossCW + LtCW ~

SCW + VCW + LtCW + LpCW + PossCW ~

SCW + LtCW + VCW + LpCW + PossCW ~

LtCW + SCW + VCW + LpCW + PossCW

That two separate batteries are formed can be exemplified by the following sentences (207) and (208). The object possessed in each example does not belong to the same categories of possession; and hence two batteries are posited. Sentence (207) exemplifies the profile [VCW] + [SCW] + [PossCW] + [LpCW] + [LtCW].

(207) Jim's dog will go home tomorrow

#	ka		hoki	te
	[inceptive, non-time		return]	[the, sing., non-person
	2(a)		M	4(a)
	kurii	aa	hemi	ki
	dog]	[acquired possession	Jim]	[relational
	M	4a(a)	M	3(b)
	te		kaaiŋa	~~eo~~
	the, sing., non-person		home]	~~[inherited possession~~
	4(a)		M	~~4a(b)~~

~~Ø~~		~~hemi~~	aa^poopoo	#
~~thirdperson,non-time~~		~~Jim~~]	[future^tomorrow]	
~~1(e)~~		M	1(d)^M	

3.6.3. SCW + PossCW + VCW + AgCW + LpCW. The 2 batteries with the above CW components are composed of 21 profiles:

SCW + PossCW + VCW + AgCW + LpCW ~

SCW + PossCW + VCW + LpCW + AgCW ~

SCW + PossCW + LpCW + VCW + AgCW <==>

VCW + SCW + PossCW + AgCW + LpCW ~

VCW + SCW + PossCW + LpCW + AgCW ~

VCW + AgCW + SCW + PossCW + LpCW ~

VCW + AgCW + LpCW + SCW + PossCW ~

VCW + LpCW + AgCW + SCW + PossCW <==>

SCW + PossCW + AgCW + VCW + LpCW ~

SCW + PossCW + LpCW + AgCW + VCW <==>

AgCW + VCW + SCW + PossCW + LpCW ~

AgCW + VCW + LpCW + SCW + PossCW;

SCW + VCW + AgCW + LpCW + PossCW ~

SCW + VCW + LpCW + PossCW + AgCW ~

SCW + LpCW + PossCW + VCW + AgCW <==>

VCW + SCW + AgCW + LpCW + PossCW ~

VCW + SCW + LpCW + PossCW + AgCW ~

VCW + AgCW + SCW + LpCW + PossCW <====>

SCW + AgCW + VCW + LpCW + PossCW ~

SCW + LpCW + PossCW + AgCW + VCW <===>

AgCW + VCW + SCW + LpCW + PossCW

Sentence (209) exemplifies the profile [SCW] + [PossCW] + [VCW] + [AgCW] + [LpCW].

(209) Peter's car was stolen at the factory by the thief.

#	ko	te	motokaa	
	[inceptive, non-time	the, sing., non-person	motorcar]	
	3(a)	4(a)	M	
	oo	pita	i	
	[subordinate possession	Peter]	[descriptive, past time	
	4a(b)	M	1(a)	
	taahae^tia	e	te	taahae
	thief^passive]	[agentive	the, sing., non-person	thief]
	M^m	3(c)	4(a)	M
	i	te	feeketere	#
	[non-future location	the, sing., non-person	factory]	
	1(a)	4(a)	M	

3.6.4. NegCW + SCW + PossCW + VCW + LtCW. One battery of 9 profiles is formed by combinations of the above CWS. The profiles are:

NegCW + SCW + PossCW + VCW + LtCW ~

NegCW + VCW + SCW + PossCW + LtCW ~

NegCW + VCW + LtCW + SCW + PossCW ~

NegCW + LtCW + VCW + SCW + PossCW ~

LtCW + NegCW + VCW + SCW + PossCW <===>

SCW + PossCW + NegCW + VCW + LtCW ~

SCW + PossCW + LtCW + NegCW + VCW ~

LtCW + SCW + PossCW + NegCW + VCW ~

SCW + PossCW + NegCW + LtCW + VCW

Sentence (210) is one of the test sentences used for working out the members of the above battery.

(210) Peter's car was not found yesterday

#	k^i^ihai	te	motokaa
	[descriptive past time ^not]	[the, sing., non-person	motorcar]
	1(a)^M	4(a)	M

oo	pita	i
[subordinate possession	Peter]	[descriptive, past time
4a(b)	M	1(a)

kite^a i^nanahi #

find^passive] [non-future location^yesterday]

f

M^m 1(a)^M

M m 1(a) M

3.6.5. NegCW + SCW + PossCW + VCW + LpCW. The two batteries which are formed by 7 profiles of the above five CWs are:

NegCW + SCW + PossCW + VCW + LpCW ~

NegCW + VCW + SCW + PossCW + LpCW ~

NegCW + VCW + LpCW + SCW + PossCW <===>

SCW + PossCW + NegCW + VCW + LpCW;

NegCW + SCW + VCW + LpCW + PossCW ~

NegCW + VCW + SCW + LpCW + PossCW <===>

SCW + NegCW + VCW + LpCW + PossCW

The first profile of each battery is exemplified by sentences (211) and (212):

(211) Jim's people will not go to the child

ee^kore te

[imperative,non-past time not] [the,sing.,non-person

2(e) M 4(a)

iwi oo hemi ee

people] [inherited possession Jim] [imperative,non-past time

M 4a(b) M 2(e)

haere ki te tama^iti #

move] [relational the,sing.,non-person child^small]

M 3(b) 4(a) M^m

(212) The people will not go to Jim's child

ee^kore te

[imperative, non-past time ^not] [the,sing,non-person

2(e)^M 4(a)

iwi ee haere ki

people] [imperative,non-past time move] [relational

M 2(e) M 3(b)

te tama^iti aa

the,sing.,non-person child^small] [acquired possession

4(a) M^m 4a(a)

hemi #

Jim]

M

3.6.6. NegCW + SCW + PossCW + VCW + AgCW. The battery of 4 profiles composed of the above CWs are:

NegCW + SCW + PossCW + VCW + AgCW ~

NegCW + VCW + SCW + PossCW + AgCW ~

NegCW + VCW + AgCW + SCW + PossCW <===>

SCW + PossCW + NegCW + VCW + AgCW

This battery is restricted to four profiles because of three co-occurrence restrictions: NegCW must precede VCW; PossCW must follow and be adjacent to SCW; and NegCW cannot occur in sentence-final position. Sentence (213) exemplifies the profile [NegCW] + [SCW] + [PossCW] + [VCW] + [AgCW]:

(213) John's keg was not found by the wardens

#	k^i^ihai		te	kaahoo
	[descriptive, past time^not]		[the, sing., non-person	keg]
	-1(a)- M		4(a)	M

aa	hoone	i
[acquired possession	John]	[descriptive, past time
4a(a)	M	1(a)

kite^a	e	ŋaa	waatene	#
find^passive]	[agentive	the, plural, non-person	warden]	
M^m	3(c)	4(b)	M	

3.6.7. NegCW + SCW + VCW + LpCW + LtCW. There are 13 profiles in the battery comprised by the CWs above:

NegCW + SCW + VCW + LpCW + LtCW ~

LtCW + NegCW + SCW + VCW + LpCW ~

NegCW + LtCW + SCW + VCW + LpCW ~

NegCW + SCW + LtCW + VCW + LpCW ~

NegCW + SCW + VCW + LtCW + LpCW ~

NegCW + VCW + SCW + LtCW + LpCW ~

NegCW + VCW + LpCW + SCW + LtCW ~

NegCW + VCW + SCW + LpCW + LtCW ~

NegCW + LtCW + VCW + SCW + LpCW ~

LtCW + NegCW + VCW + SCW + LpCW ⟺

SCW + NegCW + VCW + LpCW + LtCW ~

SCW + LtCW + NegCW + VCW + LpCW ~

SCW + NegCW + LtCW + VCW + LpCW

The following sentence -- (214) -- exemplifies the profile [NegCW] + [SCW] + [VCW] + [LpCW] + [LtCW].

(214) Snow won't fall here now

#	ee^kore		te		huka
	[imperative, non-past time^not]		[the, sing., non-person		snow]
	2(e) ^ M		4(a)		M
	ee	tatuu	i		
	[imperative, non-past time	rest]	[non-future location		
	2(e)	M	1(a)		

ko^nei i^naianei #

place^here] [non-future location^now]

M^m 1(a)^M

3.6.8. NegCW + SCW + PossCW + LpCW + LtCW. Two batteries with a total of 16 profiles are formed by the Cws specified above:

NegCW + SCW + PossCW + LpCW + LtCW ~

NegCW + LpCW + SCW + PossCW + LtCW ~

NegCW + LpCW + LtCW + SCW + PossCW ~

LtCW + NegCW + SCW + PossCW + LpCW ~

LtCW + NegCW + LpCW + SCW + PossCW ~

NegCW + LtCW + LpCW + SCW + PossCW <==>

SCW + PossCW + NegCW + LpCW + LtCW ~

SCW + PossCW + NegCW + LtCW + LpCW ;

NegCW + SCW + LpCW + PossCW + LtCW ~

NegCW + LtCW + SCW + LpCW + PossCW ~

LtCW + NegCW + SCW + LpCW + PossCW ~

NegCW + SCW + LtCW + LpCW + PossCW ~

SCW + NegCW + LtCW + LpCW + PossCW ~

SCW + NegCW + LpCW + PossCW + LtCW ~

SCW + LtCW + NegCW + LpCW + PossCW ~

SCW + NegCW + LpCW + PossCW + LtCW

One of the testing sentences for the first profile of the first battery -- i.e. -- [NegCW] + [SCW] + [PossCW] + [LpCW] + [LtCW] is sentence (215):

(215) John's horse is not at the creek now.

#	kaa^hore	te	hoiho
	[inceptive, non-time ^not]	[the, sing., non-person	horse]
	2(a) ^M	4(a)	M

aa	hoone	kei	
[acquired possession	John]	[present location	
4a(a)	M	1(b)	

te	awa	i^naianei	#
the, sing., non-person	river]	[non-future location^now]	
4(a)	M	1(a) ^M	

3.7. 6CW and 7CW Kernel Sentences

8 batteries are formed by non-repetitive 6CW combinations. The CW components of each battery are given here, and following, the profiles of one battery are given.

(1) S, Poss, V, Ag, Lp, Lt

(2) S, V, Ag, Lp, Poss, Lt

(3) Neg, S, V, Ag, Lp, Lt.

(4) Neg, S, Poss, V, Ag, Lp

(5) Neg, S, V, Ag, Lp, Poss

(6) Neg, S, Poss, V, Ag, Lt

(7) Neg, S, Poss, V, Lp, Lt

(8) Neg, S, V, Lp, Poss, Lt

All 7CW types combine to form two 7CW batteries. These are not given here.

3.7.1. VCW + SCW + PossCW + AgCW + LpCW + LtCW.

There are 35 profiles in the first of two batteries formed by the above CW components. The second battery -- with one profile exemplified in (2) above (with LCW obligatorily preceding PossCW) -- is not dealt with. The profiles are:

VCW + SCW + PossCW + AgCW + LpCW + LtCW ~

LtCW + VCW + SCW + PossCW + AgCW + LpCW ~

VCW + AgCW + SCW + PossCW + LtCW + LpCW ~

VCW + AgCW + SCW + PossCW + LpCW + LtCW ~

VCW + LtCW + AgCW + SCW + PossCW + LpCW ~

VCW + AgCW + LtCW + SCW + PossCW + LpCW ~

LtCW + VCW + AgCW + SCW + PossCW + LpCW ~

LtCW + VCW + AgCW + LpCW + SCW + PossCW ~

LtCW + VCW + LpCW + AgCW + SCW + PossCW ~

VCW + AgCW + LpCW + LtCW + SCW + PossCW ~

VCW + SCW + PossCW + LtCW + AgCW + LpCW ~

VCW + SCW + PossCW + LpCW + AgCW + LtCW ~

VCW + SCW + PossCW + AgCW + LtCW + LpCW ~

VCW + SCW + PossCW + LpCW + LtCW + AgCW ~

VCW + SCW + PossCW + LtCW + LpCW + AgCW ~

LtCW + VCW + SCW + PossCW + LpCW + AgCW <===>

AgCW + VCW + SCW + PossCW + LpCW + LtCW ~

LtCW + AgCW + VCW + SCW + PossCW + LpCW ~

AgCW + VCW + SCW + PossCW + LtCW + LpCW ~

AgCW + VCW + LtCW + SCW + PossCW + LpCW ~

AgCW + LtCW + VCW + SCW + PossCW + LpCW ~

LtCW + AgCW + VCW + LpCW + SCW + PossCW ~

AgCW + LtCW + VCW + LpCW + SCW + PossCW ~

AgCW + VCW + LtCW + LpCW + SCW + PossCW ~

AgCW + VCW + LpCW + LtCW + SCW + PossCW ~

AgCW + SCW + PossCW + VCW + LpCW + LtCW ~

LtCW + AgCW + SCW + PossCW + VCW + LpCW ~

AgCW + SCW + PossCW + VCW + LtCW + LpCW ~

AgCW + SCW + PossCW + LtCW + VCW + LpCW <==>

SCW + PossCW + AgCW + VCW + LtCW + LpCW ~

SCW + PossCW + AgCW + LtCW + VCW + LpCW <===>

SCW + PossCW + VCW + AgCW + LtCW + LpCW ~

SCW + PossCW + VCW + LtCW + LpCW + AgCW ~

SCW +PossCW + VCW + LtCW + AgCW + LpCW ~

LtCW + SCW + PossCW + VCW + AgCW + LpCW

Sentence (216) is one of the test sentences used to determine the battery profiles. The sentence exemplifies the profile [VCW] + [SCW] + [PossCW] + [AgCW] + [LpCW] + [LtCW].

(216) Peter's car was discovered in the cave yesterday, by the workman

#	i		kite^a		te		
	[descriptive, past time		find^passive]		[the, sing., non-person		
	1(a)		M^m		4(a)		
	motokaa	aa		pita	e		
	motorcar]	[acquired possession		Peter]	[agentive		
	M	4a(a)		M	3(c)		
	te		kai^mahi		i		
	the, sing., non-person		nominalizer^work]		[non-future location		
	4(a)		m^M		1(a)		
	te	ana	i^nanahi		#		
	the, sing., non-person	cave]	[descriptive, past time^yesterday]				
	4(a)	M	1(a) M				

3.8. Complex Sentences. A complex sentence is formed either by removal of SCW (so that Subject is said to be 'understood') (see 3.8.1.) or by imbedding one sentence in another (see 3.8.2.), or by conjunctive linking of two or more sentences (see 3.8.3.).

3.8.1. Understood SCW occurs either in imperative sentences --

as in sentences (217) and (218) following --, or in two-sentence units where the first sentence contains or infers the referent subject for both sentences. Sentences (219) and (220) exemplify this latter type. In free translation, the understood subject is parenthesized.

(217) (You) get out of here!

#	∅	haere	atu
	[imperative, non-past time	move	away from speaker]
	2(e)	M	m

i	ko^nei	#
[non-future location	place^near speaker]	
1(a)	M^m	

(218) (You) listen to me!

#	∅	faka^roŋo	mai	#
	[imperative, non-past time	causative^listen	towards speaker]	
	2(e)	m^M	m	

(219) Let the horse loose? (Yes) release (it).

#	∅	tuku^na	te
	[imperative, non-past time	release^passive]	[the, sing., non-person
	2(e)	M^m	4(a)

hoiho ⇗	∅	tuku^na	#
horse]	[imperative, non-past time	release^passive]	
M	2(e)	M^m	

In the first -- or VCW + SCW -- sentence, SCW is comprised of initiator / te/ and M /hoiho/. This same SCW is inferred in the second sentence. Although this, and other, complex sentences are not treated in the TG grammar to follow, they are obtainable by using a Topt. reduction rule on imperative sentences. The same comment applies to sentence (220) following.

(220) Is this yours? (It's) mine

n^aa^u

[possessive non-future time^acquired possession^2nd pers. sing.

3(d)^4a(a)^m

tee^nei // n^aa^ku #

the, sing., non-person ^ near speaker] [possessive non-future time ^acquired possession ^ 1st pers. sing.]

M / 4(a)^m

M / 3(d)^4a(a)^m

3.8.1. When the following conditions occur, an infinite number of kernel sentences may be imbedded to form a complex sentence:

(i) all sentences must share the same profile;

(ii) the first initiators of the same CW types must be identical; (this would involve positing ϕ as a subject marker, in SCW, rather than leaving it as an unmarked category, since a series of SCWs may be imbedded, whatever the initiator).

(iii) in all sentences to be imbedded, only the nucleus (M) and/ or the modifier/ s of a shared CW type must differ.

When imbedding occurs, all but one of the CWs of the same type and identical interior are deleted and all CWs of the same type but with differing interior are juxtaposed next to each other. The order in which the non-identical CWs of the same type occur (i.e. those which differ in CW interior only), is the order of occurrence of the kernel sentences which contain them.

Since the number of kernels which may be imbedded are theoretically infinite, and since there are constraints in the Maori code which favor using conjunctive links for combining sentences of different profiles, or with similar profiles but different CW initiators, any theory which attempts to show how kernels combine to form complex sentences must take all possibile kernels to be imbedded as a gestalt. How complex sentences decompose is a simpler matter; all that is required is to find out which CW types occur more than once in a sentence. To show how kernels combine, an informal multiple transformation rule is used for sentences (221) and (222):—

(221) The soldiers got up and charged, and returned and rested.

#	ka	tuu	ŋaa	hooia	#
	[2(a)	stand]	[4(b)	soldier]	
#	ka	kookiri	ŋaa	hooia	#
	[2(a)	charge]	[4(b)	soldier]	
#	ka	hoki mai	ŋaa	hooia	#
	[2(a)	return to here]	[4(b)	soldier]	
#	ka	okioki	ŋaa	hooia	#
	[2(a)	rest]	[4(b)	soldier]	

==⇒ # ka tuu // ka kookiri // ka hoki mai // ka okioki //

[2(a) stand] [2(a) charge] [2(a) return to here] [2(a) rest]

ŋaa hooia #

[4(b) soldier]

: 2(a) = inceptive, non-time

: 4(b) = the, plural, non-person

(222) The soldiers, trucks, guns, and prisoners, returned

#	ka	hoki	mai	ŋaa	hooia	#
	[2(a)	return	to here]	[4(b)	soldier]	
#	ka	hoki	maī	te	taraka	#
	[2(a)	return	to here]	[4(a)	truck]	
#	ka	hoki	mai	ŋaa	puu	
	[2(a)	return	to here]	[4(b)	gun]	
#	ka	hoki	mai	ŋaa	t^aaŋata mau here^here	#

==⇒ # ka hoki mai ŋaa hooia // te taraka //

[2(a) return to here] [4(b) soldier] [4(a) truck]

ŋaa puu // me ŋaa tâaŋata mau

[4(b) gun] [CW conjunctive non-person 4(b) man-plural-catch

here^here #

tie tie] : 2(a) = inceptive, non-time

: 4(a) = the, sing., non-person

: 4(b) = the, plural, non-person

With a posited Subject marker as the first initiator, sentence (222) satisfies condition (ii) given at the head of the section, and thus the juxtaposing of NCWs initiated by 4(a) and 4(b) -- and any other members of group 4 if needed -- form grammatically accepted strings.

Sentence (222) also has, in the final CW, a CW conjunctive. Where NCWs are juxtaposed in a complex sentence, the final one is obligatorily initiated by a CW conjunctive (one may speak formally of ∅ subject marker being obligatorily substituted). CW conjunctives are of two types: person-marking and non-person marking, with the latter being exemplified above. Person-marking conjunctives (what is meant by person has been defined in section 2.7.2.) consist of the dual exclusive pronominal form and specifier /raa^ua + ko/ for linking one NCW containing personal name with final

SCW, and the plural exclusive pronominal and specifier / raa^tou + ko/ for linking more than one CW containing different personal names with final SCW. Final SCW must be personal. Sentence (223) exemplifies the imbedded sentence formed by a combination of kernel sentences containing 3NCWs with personal names as nucleii. Again, the form is an informal multiple transformation rule:

(223) John, Peter, and Mary went to the town

#	ka	haere	a	hoone	ki	te	taaone	#
	[2(a)	move]	[4(c)	John]	[3(b)	4(a)	town]	
#	ka	haere	a	pita	ki	te	taaone	#
	[2(a)	move]	[4(c)	Peter]	[3(b)	4(a)	town]	
#	ka	haere	a	mere	ki	te	taaone	#
	[2(a)	move]	[4(c)	Mary]	[3(b)	4(a)	town]	

==⇒ # ka haere a hoone // a pita //

[2(a) move] [4(c) John] 4(c) Peter]

raa^tou ko ø

[exclusive^3rd pers. sing. specifier, non-time 4(c)

mere ki te taaone #

Mary] [3(b) 4(a) town]

: 2(a) = inceptive, non-time

: 4(c) = the, person, non-number

: 3(b) = relational, non-time

: 4(a) = the, sing., non-person

3.8.2. Sentence conjunctive links combine two sentences with differing CW profiles. Some common ones are: /aa/ and, and so, after a while; /n̂oo reira~n̂aa reira/ therefore, and finally, and so; /heoi raa~heoti raa/ therefore, accordingly; /mehemea/ if, when; /kaatahi/ and then.

3.9. Bibliography. Sources cited in this Chapter are:

1

Voegelin, C. F., Typology of Density Ranges 11: Contrastive and Non-Contrastive Syntax, International Journal of American Linguistics 27.4. (1961): 287-297.

2

the validity of having an 'understood' subject as the output of a deletion rule is mentioned by R. B. Lees in Some Neglected Aspects of Parsing, Language Learning XI, 3 & 4 (1961): 179-180.

CHAPTER 4

TRANSFORMATIONAL GENERATIVE GRAMMAR

4.1. Scope. To be considered minimally adequate, a TG grammar of Maori must generate at least one profile sentence from each of the batteries given in Chapter 3. The specific profile sentence chosen as a kernel sentence of the TG grammar (from which other sentences are derived by permutations and/or transformations), is chosen according to several criteria, the most significant being economy and algorithmic simplicity. The TG grammar following shows the history of at least one such kernel (or one profile sentence) from each battery. Ideally, a TG grammar is a finite set of rules and lists necessary and sufficient to generate all (and only) the sentences of a language. Although all non-complex sentences are generated, the following grammar makes no claim to exhaustiveness. Rather, its major functions are:

(i) to give minimal kernel requirements by giving at least one profile from each battery;

(ii) to give morphophonemic rules so that the outputs of each tree of derivation is phonemically correct;

(iii) to provide a framework of formal TG rules leading to a future typological analysis of the structure of Polynesian languages and dialects. From this minimal TG grammar, other sentences are

formed by further specification of T-Rules.

The corpora used for the following TG grammar are the profile grammar potential kernel sentences given in the chapters above. Because of complex agreement rules not yet programmed, Neg(ative CW) is not expanded. Phoneme strings of Maori and their English glosses are underlined, the English glosses either being given adjacent to their Maori counterparts, or else given in the explanatory notes following certain rules.

4.2. TG Analysis. The symbols used in the following rules and lists are in line with those used by Andreas Koutsoudas and Fred W. Householder Jr. My gratitude is expressed here to Professor Householder for carefully checking the rules and suggesting further improvements. The formal rules now follow:

S

1. S ---> (Neg) Pred + Subj

2. Pred ---> $\left\{ \begin{matrix} (\text{VP}) \\ \text{P} \end{matrix} \right\}$ (L_p) $\pm$ (Loc)

: choose one

The ± symbol is used as a permutation marker. Thus A (+B) (± C) has seven possible orders: A, A +C, A + B, C + A, A + B + C, A + C + B, C + A + B. In rule 2. therefore, Loc may optionally precede Lp or either of VP or P. The instruction given at the foot of rule 2. indicates that if the first line of rule is selected, at least one node must be chosen.

3. P ---→ ko + { NP / R } specifier,non-time

4. Lp ---→ prep + NP

5. VP ---→ Prev { V_i (i + NP) / (faka^) M (^tia (e + NP)) } (Adv)

6. Prev --→ { $Prev_a$ / $Prev_b$ } :when VP ≠ prev + V_i (i + NP)

i in rule 5. is a morphologically conditioned allomorph of e in the lower string. Both are AgCW initiators, already typed as initiator 3(c) agentive, with i occurring after a class of Ms

(V_i) which do not take passivizers, and e occurring elsewhere. faka is the causativizer and tia the passivizer.

7. Adv ---→ (Adv_a) (D) (Post) (kee)

:choose one

kee is glossed otherness, or, other than expected.

8. Adv_a ---→ (M) (Adv_b)

:choose one

9. Subj ---→ NP

10. NP ---→ { Pr / N (adj)(Post)(Poss) }

11. N ---→ { Num_a ^ Post { Num / pp / he } { N_a / N_r / N_b / N_x } (Comp) / N_c { pp / a } N_d (maa) }

maa glossed plus others is added to N_d personal names to

indicate a group of which the person mentioned is a member. Thus a hoone maa... is John and companions ...

12. Poss ---> $\left\{\begin{matrix}(\underline{m}\text{^}) \\ (\underline{n}\text{^})\end{matrix}\right\}$ C $\left\{\begin{matrix}\text{Num} \left\{\begin{matrix}N_a \\ N_b \\ N_x\end{matrix}\right\} \\ \left\{\begin{matrix}N_c \\ N_d \\ Pr_b \\ \text{^}Pr_a\end{matrix}\right\}\end{matrix}\right\}$

13. he ---> $\left\{\begin{matrix}\underline{he}_{sing} \\ \underline{he}_{plural}\end{matrix}\right\}$

he is glossed indefinite article (= a, some). Number may be inferred from context, or from the shape of the following M or M. Although shape is invariant, two forms are inferred -- one singular, one plural -- so as to allow for obligatory transformations as that of rule 37.

In the profile grammar, he is initiator 4(d).

14. Num ---> $\left\{\begin{matrix}Num_a \\ Ret\end{matrix}\right\}$

15. N_a ---> $\left\{\begin{matrix}N_{aa} \\ N_{ao} \\ N_x\end{matrix}\right\}$

16. N_b ---→ $\left\{ \begin{matrix} N_{ba} \\ N_{bo} \end{matrix} \right\}$

17. Pr ---→ $\left\{ \begin{matrix} Pr_a \\ Pr_b \end{matrix} \right\}$

18. pp ---→ (t^) C $\left\{ \begin{matrix} (\hat{}\, Pr_a) \\ (\hat{}\, Pr_b) \end{matrix} \right\}$

t^ is one of the allomorphs of initiator 4(a) the, sing., non-person. Its absence (indicated by optional parentheses) indicates that the rewrite of pp is then plural.

19. prep ---→ $prep_a$ ($prep_b$)

20. adj ---→ (tino) M (rawa) (atu)

tino, rawa and atu are qualifiers: tino glossed very, rawa glossed exceedingly, atu glossed more. Combinations of the three are grammatical, but cause unexpected shifts in the semantic field: tino + rawa means too (e.g. as in he is too good),

rawa + atu is glossed very much more, tino + rawa + atu is glossed superlative.

21. Loc ---> { Loc_a (kee) | $prep_a$ + R | ko { R | N_c } } otherness / specifier, non-time

22. Adv_b ---> (tino) (aata / horo) (tonu) (kee)

: choose one

tino is glossed very; aata deliberately; horo quickly; tonu continue; kee otherness. These are also qualifiers.

23. Comp ---> M_2 (M_3)

24. Tob. X + Y + Adv ===> X + Adv + Y

:X = Prev [V_i | (^faka) M (^tia)]

:Y = any string

25. Topt. X + Y + Subj ===⇒ X + Subj + Y

: X = Prev $\left\{ \begin{matrix} V_i \\ (\underline{faka}\text{^}) \text{ M } (\text{^}\underline{tia}) \end{matrix} \right\}$ (Adv)

: Y = any string

26. $Prev_a$ -->

<u>e</u> + <u>ana</u>	<u>imperfective, non-time</u>
<u>i</u>	<u>descriptive, past-time</u>
<u>ka</u>	<u>inceptive, non-time</u>
<u>kua</u>	<u>perfective, non-time</u>
<u>me</u>	<u>presecriptive, non-time</u>

_____

After lists, the line _____ indicates that the items listed are a closed set. This same symbol is used in later rules. An open set (i.e. one which other items may be added) is symbolised by a broken line, viz. --------.

27. $Prev_b$ ---> <u>ee</u> <u>imperative, non-past time</u>

28. Tob. <u>ee</u> + X + Subj ===⇒ <u>ee</u> + X + <u>e</u> + Subj

: X = any string

Agreement rules specify that when VP is <u>imperative</u>, Subj is also marked <u>imperative</u>. Subj imperative marker is <u>e</u>. However,

whereas ee must be deleted in certain environments (see rule 31. below) Subj imperative marker is obligatory in imperative constructs.

29. Tob. e + ana + X ===⇒ e + X + ana

: $X = \left\{ \begin{matrix} V_i \\ (\text{faka}\hat{}) \ M \ (\hat{}\text{tia}) \end{matrix} \right\} (\text{Adv})$

30. Tob. me + X^tia + Y ===⇒ X^tia + Y

: X,Y = any strings

31. Tob. $\# \text{ee} + \left[\begin{matrix} (\text{faka}\hat{}) \ M\hat{}\text{tia} + X \\ \text{faka}\hat{}M \end{matrix} \right] ===⇒ \# \left[\begin{matrix} (\text{faka}\hat{}) \ M\hat{}\text{tia} + X \\ \text{faka}\hat{}M \end{matrix} \right]$

: X = any string

32. Tob. prep + Pr ===⇒ prep + a + Pr

a is the,person,non-number, occurring obligatorily between prep (or Group 1 initiators) and Pr (or pronouns). This is the same marker obligatorily preceding N_d in rule 11. above.

32(a) Tob. $\underline{ko} + \underline{a} + N_d \Longrightarrow \underline{ko} + N_d$

33. Topt. $\# X + \begin{bmatrix} \underline{m}\hat{} \\ \underline{n}\hat{} \end{bmatrix} C + Y \Longrightarrow \# \begin{bmatrix} \underline{m}\hat{} \\ \underline{n}\hat{} \end{bmatrix} C + Y + X$

: X = any string

$Y = num \begin{bmatrix} N_a \\ N_b \\ N_c \end{bmatrix}, N_c, N_d$

34. Tob. $\begin{bmatrix} \underline{m}\hat{} \\ \underline{n}\hat{} \end{bmatrix} C + X + \underline{ko} + Y \Longrightarrow \begin{bmatrix} \underline{m}\hat{} \\ \underline{n}\hat{} \end{bmatrix} C + X + Y$

: X, Y = any string

35. $Num_a \dashrightarrow \left\{ \begin{matrix} \underline{te} \\ \underline{ŋaa} \end{matrix} \right\}$

The two members of Num_a are te glossed the, sing., non-person and ŋaa glossed the, plural, non-person. These are initiators 4(a) and 4(b), respectively, in the previous chapters.

36. Ret ---→ { taua / aua }

Ret stands for Retrospective. The two members are taua glossed the, sing., retrospective (= the, sing., aforementioned) and aua is its plural counterpart.

37. Tob. X + [he sing / he plural] + Y ===⇒ X + [teetahi / eetahi] + Y

: X = ko, a
: Y = N_a, N_b, N_x

38. Topt. [te / ŋaa] + X + Post ===⇒ [tee^ / ee^] Post + X

: X = any string

39. Post ---→ { nei / naa / raa }

The three outputs of Post are three minor morphemes marking position in time and place in relation to an object or action. nei is glossed here, naa there near listener, raa distant from speaker and hearer.

40. Tob. e + X + ana + nei ===⇒ e + X + nei

: X = any string

Rule 32 indicates that when nei follows the second member of the discontinuous imperfective non-time marker e ...ana, ana is obligatorily deleted and nei takes on dual functions, marking position and mode.

41. C ---→ { aa / oo } :when N____ = N_{aa}, N_{ba}

:when N____ = N_{ao}, N_{bo}, N_x

The outputs of C indicates the nature of thing possessed. aa indicates a possession to which the possessor is dominant, active, or superior, or else has been acquired by the possessor: aa is glossed dominant, acquired possession and is initiator 4a(a). oo demarcates those possessions to which the possessor is inferior, subordinate or passive, or has been inherited by the possessor. oo is glossed subordinate, inherited possesssion and is initiator 4a(b).

42. Pr_a ---→ au 1st pers. sing.

koe 2nd pers. sing.

iia 3rd pers. sing.

43. Pr_b ---> { maa / taa / kour / raa } ^ { ua / tou }

ua is dual person, tou is plural person. These are affixed to non-singular forms; maa exclusive, taa inclusive, kour 2nd person, raa 3rd person.

43(a). Tob. kour^tou ===⇒ koutou

44. Tob. (X^) C [au / koe / iia] ===⇒ (X^) C^[ku / u / na]

: X = any string

45.	Loc_a	--->	aakuanei	presently
			aapoopoo	tomorrow
			inaianei	now
			inanahi	yesterday
			inapoo	last night

46.	$prep_a$	--->	{ $prep_{aa}$ / maa }	by way of
47.	$prep_b$	--->	R + $prep_{aa}$	
48.	$prep_{aa}$	--->	i	non-future location
			ki	relational non-time
			kei	present location

49. R ---→

hea	where
konaa	place near hearer
konei	place near speaker
koo	visible place
kooraa	place distant
mua	front, before
muri	rear, behind
raro	beneath, under
reira	non-visible place
roto	within, inside
ruŋa	on, above
tua	beyond, behind
waeŋa	middle, center
waeŋanui	very center
waeŋarahi	very center
waho	outside

---

50. D ---→

ake	motion upward to speaker
atu	motion away from speaker
iho	motion down to speaker
mai	motion to speaker

---

51. Tob. $\text{prev} + X\begin{bmatrix} V_i \\ M \end{bmatrix} \quad Y + (\underline{\text{tino}}) + (\underline{\text{aata}}) + Z$

$\Longrightarrow \text{prev} + (\underline{\text{tino}}) + (\underline{\text{aata}}) + \begin{bmatrix} V_i \\ M \end{bmatrix} Y + Z$

: X, Y = any string

: Z = $\underline{e}$ + NP, $\underline{i}$ + NP,
Loc, Subj.

52. M_2 ---→ $\begin{Bmatrix} M \\ V_i \end{Bmatrix}$

53. M_3 ---→ M

54. Topt. $\begin{bmatrix} \underline{i} \\ \underline{ka} \\ \underline{me} \end{bmatrix}$ + M^ $\underline{tia}$ + Subj + $\underline{e}$ + NP + Z

$$\Longrightarrow \begin{bmatrix} \underline{naa} \\ \underline{maa} \\ \underline{maa} \end{bmatrix} + \text{NP} + \begin{bmatrix} \underline{i} \\ \underline{ee} \\ \underline{ee} \end{bmatrix} + \text{M} \quad \pm \text{ Subj} + \text{Z}$$

: Z = any string

Section 2.6.5. gives the processes involved when an Agentive CW is shifted from post-VCW to pre-VCW position. The transformation is here given in the form of a rule.

55. N_d ---> $\begin{Bmatrix} V_i \\ N_{da} \\ M \end{Bmatrix}$

56. M ---> N_{aa}, N_{ao}, N_{ba}, N_{bo}, N_x.

57. N_x ---> N_e, N_f, N_g, N_h, N_i, N_j, N_k, N_l, N_m.

58. Topt. $\begin{bmatrix} N_e \\ N_h \\ N_i \\ N_j \end{bmatrix}$ ^ $\underline{tia}$ ====> $\begin{bmatrix} N_e \\ N_h \\ N_i \\ N_j \end{bmatrix}$ ^ $\underline{nia}$

59. Tob. $\begin{bmatrix} N_e \\ N_f \\ N_g \\ N_h \\ N_i \\ N_j \\ N_k \\ N_l \end{bmatrix}$ ^tia ===⇒ $\begin{bmatrix} N_e\ \text{^hia} \\ N_f\ \text{^a} \\ N_g\ \text{^ŋia} \\ N_h\ \text{^ina} \\ N_i\ \text{^mia} \\ N_j\ \text{^ria} \\ N_k\ \text{^kia} \\ N_l\ \text{^na} \end{bmatrix}$

60. V_i ---→

ea	suffice, pay, avenge
fara	hurt, wound
hemo	disappear, pass away
horo	fast, speedy
mahiti	spent, exhaust
maakona	satisfy
marara	scatter, broadcast
peto	consume
rato	serve
ruupeke	assemble, gather
takoki	sprain
tanoi	out-of-joint
taui	wound

mahue	leave, abandon
maruu	fill, replete
nohinohi	small
pakaru	break, smash
pau	consume, finish
piri	hide, conceal
poto	short, brief
riro	take, seize

61. N_{aa} --->

tanata	man
tamaiti	child
teina	younger sibling, same sex
tuahine	sister of a male
wahine	woman, wife

62. N_{ao} --->

matua	parent
tuakana	older sibling, same sex
tupuna	ancestor

63. N_{ba} --->

aaporo	apple
aha	what, interrogative
afi	embrace
auaa	herring
awa	river
faariki	mat, cover
fakahiihii	vain, ostentatious
fakairo	carve
hiki	lift

hoa	friend, companion
horo	fast, quick
hua	fruit, berry
huka	snow, sugar, foam
ika	fish
kaahoo	keg
kaimahi	worker
katoa	all, everyone
kau	cow, swim
kiore	mouse, rat
kohikohi	collect
koorero	talk, speak, speech
kootiro	girl
kuaha	door
kurii	dog
maakutu	bewitch
manu	bird
maŋoo	shark
maŋu	black
maroke	dry
mataku	fright, fear
mea	unspecified thing
mihiini	machine
moana	sea
mokopuna	grandchild
moni	money
moohio	know, clever, adept
ŋaoko	creep, crawl
okioki	rest
paatootoo	knock
pahikara	bicycle
papahoro	crash, fall, tumble
piki	climb, ascend
pirihimana	policeman
poaka	pig
pootiki	last born
poti	boat, cat
pouaka	box
pukapuka	book
pupuri	hold
roopuu	group
tautau	bark
taumata	peak, summit
taahae	steal, thief
taane	male, husband

taimaha	heavy
tanifa	monster
tuna	eel
tuutaki	meet, confluence

---

64. N_{bo} --->

faaea	mother, aunt
fare	house
feeketere	factory
hiahia	desire, want
hineŋaro	desire, covet
hoiho	horse
huritau	birthday
iwi	tribe, people, bone
kaaiŋa	home, village, district
kura	school
maahita	teacher
moana	sea
motokaa	motorcar
ŋaro	lost, fly (insect)
rata	doctor
taha	side
toa	store, warrior
waatene	warden
waiata-aa-riŋa	action songs
waina	wine
waka	canoe

---

65. N_c --->

aakarana	Auckland
akuaku	
~~dunedin~~	
~~gisborne~~	
kaiaua	
korea	
~~malaya~~	
pooneke	Wellington

		puutiki	
		tauraŋa	
		tuuraŋa	Gisborne
		waima	
		----	

66. N_{da} ---→

hemi	Jim
hera	Sarah
hoone	John
horotai	
kupe	
~~miller~~	
pita	Peter
roomana	Roman
~~sally~~	
taamati	
tamatea	
----	

67. N_{e} ---→

amo	carry
hora	spread, disperse
huri	turn
karo	dodge, duck
kimi	search
puu	gun
ruku	dive
taŋo	take
titiro	look
unu	remove
wera	hot
wero	stab, poke
waru	peel

68.	N_f ---→	fiu	chase, drive, whip
		haere	move, road, journey
		hao	net
		here	tie, knot
		heru	comb
		heu	shave, razor
		hii	line fishing
		hoe	row, paddle, oar
		hono	tie, join
		horoi	wash
		horomi	swallow
		hui	meet, meeting
		kawe	carry, pack
		ketu	excavate
		kii	fill, speak
		kite	see, find
		koti	cut, slash
		moe	sleep
		ŋau	bite
		paŋa	throw
		pao	thump, pound, beat
		peehi	press, suppress
		piu	swing, skip, sway
		poro	chop
		rere	fly, soar, waterfall
		riri	anger, admonish
		rite	similar, appearance
		rui	sow, broadcast
		rutu	jerk
		tapahi	cut, slash, sever
		tari	convey
		tono	send
		tui	sew
		tuku	release, free

69.	N_g ---→	paa	touch
		pai	good
		poo	night
		tatau	count
		tohu	sign, signify
		tuu	stand

70.	N_h	--->	epa	cast, throw
			kata	laugh
			tia	steer, adorn
			tua	fell

71.	N_i	--->	aru	follow
			inu	drink
			tanu	bury

72.	N_j	--->	mau	carry, convey
			tau	land
			tatuu	content, settle

73.	N_k	--->	hopu	catch
			oma	run

74.	N_l	--->	hoko	buy, sell, trade
			tahu	ignite, burn
			tiaki	keep, guard
			tiki	fetch

74(a) Tob. $X_1 \hat{} \underline{tia} + X_1 \Longrightarrow X_1 X_1 \hat{} \underline{tia}$

: X = any string
: $X_1 = X_1$

75. Topt. pupuri ^tia ====> puritia

76. Tob. tiki ^na ===> tiikina

77. Tob. rere ^a ===> reerea

78. Topt patu ^a ===> patukia

79. N_m ---> (tua^) No

tua is an ordinal marker, optionally preceding numerals (No).

80. No ---> $\left\{ \begin{matrix} \underline{tahi} \\ No_{plural} \end{matrix} \right\}$ one

81. Tob. $\begin{bmatrix} X \\ Y \end{bmatrix} + No_{plural} \Longrightarrow \begin{bmatrix} X + \underline{toko}\hat{} \\ Y + \underline{ee} \end{bmatrix} No_{plural}$

N_{aa} and N_{oo} represent kinship and kindred terms and Pr, pronouns. When such are enumerated, the following plural number is obligatorily prefixed by toko enumerator, personal. ee, in all other instances, marks non-person enumerator.

82. No_{plural} ---→

rua	two
toru	three
faa	four
rima	five
ono	six
fitu	seven
waru	eight
iwa	nine
maha	many
tini	many

Chapter 5

Comparative Polynesian Profiles

5.1. Scope

A problem crucial to Polynesian Linguistics, and important to theoretical conceptualizations, is whether the Polynesian speaking inhabitants of the various isolated islands, island clusters, and archipelagoes speak:

(1) different languages (such as those listed variously by Elbert[1], Grace[2], Dyen[3]);

(2) delayed-intelligibility dialects of two languages (East Polynesian and West Polynesian);

(3) chain dialects either of the two specified languages, or of the one language called here Common Polynesian.

Four approaches to the problem are specified here, and the fourth carefully examined. The first two will receive cursory treatment since their use in Polynesian linguistics have been exhaustively covered in the publications mentioned above. The first is the comparative method, which utilizes sound correspondence comparisons of known (usually spoken) languages to reconstruct a proto-language (usually unknown). Present reflexes are explained as end-products of the processes of splits, merges, and partial merges in the devolution of the proto-language. Circularity is

apparent when it is realized that the proto-forms are obtained by analysing existing phonemic systems, and the existing phonemes (now called reflexes) are explained in terms of descent from these proto-forms.

5.1.1. Glotto-chronology and lexico-statistics have evolved from the comparative method. For the Polynesian languages, the density of shared basic vocabulary has been given by Elbert,[1] and basic vocabulary was also used by Dyen to classify Austronesian languages.[3] Elbert[1] lists seven languages/dialects of the western Polynesian branch, these being Ellice, Futunan, Niuean, Samoan, Tokelauan, Tongan, Uvean. For the Eastern Polynesian Branch, the following eight are given: Easter Island, Hawaiian, Mangarevan, Marquesan, Maori, Tuamotuan, Rarotongan, Tahitian. Dyen,[3] however, treats Maori as being coordinate with, but separate from the East Polynesian hesion, and has a Tongic cluster (Tongan and Niuean) as separate from the West Polynesian languages.

It is felt here that Dyen's classification of Polynesian languages/dialects relied too heavily on sources which were inaccurate. These have resulted in the separation of Maori and Tongan from their respective subgroups. Thus, for Maori, his 196 basic vocabulary items were drawn from a dictionary containing items wrongly glossed, containing only one-word equivalents in the majority of cases, and written in an orthography from which

phonemic vowel length was omitted.[4] The 200-word basic vocabulary list has also received criticisms from a fieldworker in the Tahitian Islands, the most pointed being that the list reflected "standard Average European ethnocentrism" and was "difficult to apply to Tahitian".[5]

The theoretical background and postulates of the lexicostatistical-glottochronological approach have received other searching criticism by other scholars. Bergsland and Vogt have questioned the postulate of constant rate of change;[6] Chretien is of the view that the mathematical basis for the approach is highly suspect.[7]

Criticisms notwithstanding, the comparative method and lexicostatistics have provided strong evidence for the homogeneity of Polynesian languages and dialects.

5.1.2. A typological inspection of Polynesian phonology and profile sentences gives a testable classification of languages without inferring genetic connections.[8] For languages/dialects known to be genetically connected, typological indices show the salient differences and similarities.

Phonological comparisons show the homogeneity existing between all Polynesian languages. The vowel system is the same for all -- including outliers -- five vowels are arranged in a two-back versus two-front over one central vowel:

i u

e o

a

All systems have phonemic vowel length, permissible vowel clustering, and non-occurrence of consonant clusters (although some evidence exists for consonant clusters in two outliers, Kapingamarangi[9] and Ellice[10]). Polynesian consonantal phoneme systems share a patterned simplex; linear distinctions are limited to 4 stops /p, t, k, ʔ/; three nasals /m, n, ŋ/; two fricatives /f, h/; plus possible voicing of /f/ as an added vertical (or SGC) contrast. Three Polynesian languages show all linear contrasts for stops (these are Uvea, Futuna, and Tonga), others make selections from the 4 stop pattern. Tahitian, Ongtong Java, and Hawaiian use two of the three nasals; while seven outliers are reported to have three or four -- rather than two -- linear distinctions among fricatives. These are, however, variations of a pattern; in a typology of Polynesian languages and dialects the vowels are the same and the consonantal patterns show choices from a common inventory.

5.1.3. Profile inspection will first involve a comparison of profiles of four Eastern Polynesian "languages" (in 5.2.), and secondly, a detailed analysis of some Tongan -- or West Polynesian -- profiles (in 5.3.). For comparing languages, the profile grammar

approach may be viewed as a gestalt: typological indices, vocabulary cognates, and morpho-syntactic similarities (including scatter profiles of major and minor morphemes) all combine to give a profile comparison of a group of languages. As with other typological indices, typological morpho-syntactic similarities do not infer genetic relationship. When they are combined with cognate evidence, however, profile study can provide a useful measure of internal relationships among languages/dialects.

5.2. Eastern Polynesian Profiles. The similarities in profiles of the four Eastern Polynesian languages given -- Tahitian, Rarotongan, Hawaiian, and Maori -- outweigh the differences: all have salient CW initiators of which the majority are cognate; all share the same morpheme scatter profile (with some differences in shattering of minor morpheme clusters, due perhaps to differing morphological analyses); and all share similar morpho-syntactic processes (including the same manner of modification). Similar morpho-syntax coupled with cognacy attest genetic relationship, but not intelligibility.

There is sufficient anecdotal coverage of some intelligibility between speakers of different languages/dialects of Eastern Polynesia, and between Eastern and Western Polynesian languages/dialects. Thus C. F. Voegelin (personal communication) speaks of

the Maori ethnologist, Te Rangihiiroa (Sir Peter Buck) being able to understand Hawaiian after ten days of passive listening, and also of a Tongan speaker being able to understand a speaker from the outlier, Bellona. Bruce Biggs, in his 1961 publication on Maori, mentions conversing with Tikopians, while this writer has managed to achieve satisfactory intelligibility within 6 hours with a Tahitian and a Mangarevan during a 24 hour stopover in Pape'ete, Tahiti. Raoul Narroll gives a flat statement of Tongan-Samoan intelligibility: 'Samoans and Tongans spoke varieties of Polynesian sufficiently similar so that the crucial communication question was less often "Can you understand what they are saying?" than "Do you ever talk to them?" '.[11] Ralph Gardner White, however, states that Marquesan, Tuamotuan, Mangarevan, and Rarotongan, are not intelligible to Tahitians.[5] It would be interesting to know whether speakers of these other languages mentioned by White understand Tahitian, and whether Tahitians profess ignorance of other languages since they and their language is now dominant (if one may exclude French) in the central Pacific. In other words, there is no necessity for their knowing other languages.

In the examples which follow, sentences from the four languages will be ordered; Hawaiian (H) on the first line, Tahitian (T) on the second line, Rarotongan (R) on the third, and Maori (Ma) on the fourth. The initiators of each CW will be glossed as for

Maori, while the major morpheme glosses, and the morpheme scatter profile are for all languages.

Sentences for Hawaiian were either obtained from Fred Meinecke,[12] or were abstracted from Elbert and Keala; for Tahitian the sentences were either given by Stephan Wurm or were abstracted from Vernier;[13] and all Rarotongan sentences were abstracted either from Savage,[14] or from Buse.[15] In all examples phonemic vowel length is represented by a vowel cluster.

5.2.1. Comment + Topic. Because of structural identity, one would expect rapid mutual intelligibility between speakers of the languages listed if conversation was limited to sentences sharing a Comment + Topic profile. This profile is exemplified by sentences (1) through (4):

(1) What is that pig?

H	#	he	aha	kee^laa	pua?a ⇑
T	#	he	aha	tee^raa	pua?a ⇑
R	#	?e	a?a	tee^raa	puaka ⇑
Ma	#	he	aha	tee^raa	poaka ⇑
	[indef. art.		what]	[the, sing. ^distant	pig]
	4(d)		M	4(a)^m	M

All morphemes in sentence (1) are cognates, the scatter profile of morphemes is the same, and the initiators are the same. Diffi-

culties will inevitably arise when the nucleus of a NCW represents an item not traditionally Polynesian, as in the second -- or Topic -- CW of sentence (2)

(2) What is that ship (near you)?

H	#	he	aha	kee ^na	moku ⇑
T	#	he	aha	tee ^na	pahii ⇑
R	#	ʔe	aʔa	tee ^na	paʔii ⇑
Ma	#	he	aha	tee ^naa	tima ⇑
		[indef. art.	what]	[the, sing., ^ near hearer	ship]
		4(d)	M	4(a) ^m	M

What is glossed ship for all languages are non-cognate. For non-Polynesian objects, the equivalent may be a native term with either a meaning shift(as in /moku/ island in Hawaiian, since ships look like floating islands), or a new connotation (as with /pahii/ in Tahitian, or /paʔii/ in Rarotongan, where the referents now include big crafts as well as small), or else a term is borrowed (as in Maori, where /tima/ is an alliteration of steamer, but with the term referring to river launches as well as larger crafts).

(3) The person is Poomare

H	#	ʔo	poomale	ke	kanaka	#
T	#	ʔo	poomare	te	taʔata	#
R	#	ko	poomare	te	taŋata	#
Ma	#	ko	poomare	te	taŋata	#

[inceptive, non-time Poomare] [the, sing. man]

3(a) M 4(a) M

In this sentence, Rarotongan and Maori share identical elements; whereas in sentence (2) -- apart from the non-cognates / pahii/ and / tima/ -- Maori and Tahitian, instead, share identical cognates. If the phoneme cognates are ignored, however, all languages share identical initiators and CW nucleii.

(4) He is a water-drinker

H	#	he	kanaka	inu	wai	ʔo	ia	#
T	#	ʔe	taʔata	inu	pape	ø	ia	#
R	#	ʔe	taŋata	inu	vai	ʔa	ia	#
Ma	#	he	taŋata	inu	vai	ø	ia	#

[indef.art. man drink water] [person 3rd pers. sing.]

4(d) ((M M) M) 4(c) M

The parentheses enclose two modifier constructions already exemplified in Maori, and now shown to be similar in the three other eastern Polynesian languages/ dialects under comparison. All show the modified-modifier construction within the first parenthesis (glossed man drink). If the morpheme glossed water was omitted in all languages the sentence would read He is a drinker). When the morpheme glossed water is added, the first parenthesized morphemes become modified, and the added parenthetic item is

the modifier.

Tahitian is the only language/dialect with a non-cognatic element; /pape/ for water, instead of *vai. Word taboo is in operation based on the replacement of all morphemes, and even submorphemic strings, when they are homonymous with the personal name of one of chiefly status.[14]

5.2.2. VCW + SCW. Sentences (5) through (7) show comparative profiles.

(5) The canoe is afloat

H	#	ua	lewa	ka	wa?a	#
T	#	ua	reva	te	va?a	#
R	#	kua	rewa	te	waka	#
Ma	#	kua	rewa	te	waka	#
		[perfective, non-time	float]	[the, sing.,	canoe]	
		2(b)	M	4(a)	M	

(6) I speak

H	#	∅	?oolelo	∅	au	#
T	#	{∅ / tee}	{?oorero / parau}	∅	vau	#
R	#	ka	{koorero / tuatua}	∅	au	#
Ma	#	ka	koorero	∅	au	#
		[inceptive, non-time	speak]	[the, person	1st pers. sing.]	
		2(a)	M	4(c)	M	

As in Maori (see Chapter 2), ∅ or zero is postulated as an allomorph of / a/ the, person, non-time. Since Hawaiian and Tahitian have overt person markers (/ ʔo/ and / a/ respectively -- see sentence (4) -- postulating zero for all languages appears to be justified. This of course is a measure of the closeness between these languages. On the other hand, a divergent measure is the lack of an inceptive, non-time initiator in Hawaiian.

(7) We go!

H	#	∅	hele	∅	taa^ua	#
T	#	∅	ʔaere	∅	taa^ua	#
R	#	∅	ʔaere	∅	taa^ua	#
Ma	#	∅	haere	∅	taa^ua	#
		[imperative	move]	[the, person	we inclusive^] dual person	
		2(a)	M	4(c)	M / m^m	

For imperative sentences however, in a VCW + SCW string, the initiator for all languages is zero.

5.2.3. LpCW + SCW. Similarities of morpheme shape and morpheme order extend to Locative initiated constructions. The sentences (8) through (10) exemplify the profile [LpCW] + [SCW].

(8) Where is your hand?

H #	kei	hea	k^oo^u	lima ⇑
T #	?ei	hea	t^o o ?oe	rima ⇑
R #	tei	?ea	t^oo^u	rima ⇑
Ma #	kei	hea	t^oo^(u)	rina ⇑
	[present location	where]	[the, sing.^inher-ited poss.^2nd pers. sing.	hand]
	1(b)	M´	4(a)^4a(b)^m	M

For possessive pronouns, Tahitian does not share a common feature of the other languages, a bound allomorph for second person singular. For the other two possessive forms in the singular, however, the forms used in Tahitian are bound, and are cognate with those of the other three languages given.

(9) Where are you from?

H #	n^oo	hea	mai	∅	oe ⇑
T #	n^oo	hea	mai	∅	?oe ⇑
R #	n^oo	?ea	mai	∅	koe ⇑
Ma #	n^oo	hea	mai	∅	koe ⇑
	[possessive, non-future possession ^ inherited possess-ion	where	to speaker]	[the person	2nd person sing.]
	3(d)^4a(b)	M	m	4(c)	M

(10) The ship was at Tahiti

H	#	i	kaahiki	ka	moku #
T	#	i	taahiti	te	pahii #
R	#	i	taa?iti	te	pa?ii #
Ma	#	i	taahiti	te	tima #
		[Non-future location	Tahiti]	[the, sing.	ship]
		1(a)	M	4(a)	M

The different shapes for what is glossed ship has already been discussed after sentence (2). In Hawaiian, the, sing. non-person has two allomorphs /ke/ before M beginning with k-, a-, o-, and e-, and /ka/ occurs elsewhere.

Further sentence comparisons -- providing that allowance for divergent treatment of borrowed objects and concepts is made -- only compounds the similarities. Maori profile reflexes have been found for all the sentences in the sources cited.

5.3. West Polynesian Profiles. Tongan seems to be crucial in any analysis of Polynesian internal relations. According to reconstructions, proto-Tongan separated last from proto-Austronesian, so that it is "the most complex and archaic language phonemically of the Polynesian group."[1] The phonemic picture has, however, obscured the large mass of features shared by Tongan and East

Polynesian languages/dialects, and by Tongan and other West Polynesian languages/dialects. The following is a tentative study of Tongan sentence profiles and their relationships firstly with Maori sentence profiles, and -- through Maori -- with profiles of other Polynesian languages.

5.4. 2CW Kernel Sentences.

The sentences in the 2CW corpora are arranged in their order of occurrence in the Maori corpora. These profiles are discussed; Comment + Topic (5.4.1.), LpCW + SCW (5.4.2.), VCW + SCW (5.4.3.); VCW -- Emb SCW (5.4.4.), SCW + VCW (5.4.5.).

5.4.1. Comment + Topic. The following Tongan sentences (1) through (8) are the reflexes of sentences (53) through (60) respectively of the Maori corpora. Like the latter, they share the profile [Comment] + [Topic]. Sentences (1), (4), and (6) are strikingly identical with their Maori counterparts in morpheme shape (where regular sound correspondences can be established by the comparative method), and in morpheme order (including the same scatter profile of major and minor morphemes). The remaining sentences show some divergences from those of the Maori corpora; firstly, major morphemes often showing no regular sound correspondences (but showing identical place and order);

secondly, SCW (or Topic) is a marked category.

(1) This is Peter

#	ko	ø	pita	?eni	#
	[specifier	the,person	Peter]	[this]	
	m	m	M	M m	

(2) Peter is a boy

#	ko	ø	pita	ko	e	tama^si?i	#
	[specifier	the,person	Peter]	[specifier	the	child^sing.]	
	m	m	M	m	m	M^m	

(3) John is a smart boy

#	ko	e	tama^si?i	poto	?a	ø
	[specifier	the	(child^sing, smart)]		[subj.	the,person
	m	m	M	M	m	m

	sione	#
	John]	
	M	

(4) Who is he?

#	ko	ø	hai	?a	ø
	[specifier	the,person	who,interrog.]	[subj.	the,person
	m	m	M	m	m

	iia	
	3rd pers. sing.]	
	M	

(5) Who is the man?

#	ko	ø	hai	?a	e
	[specifier	the person	who, interrog.]	[subj.	the
	m	m	M	m	m
	taŋata ⇑				
	man]				
	M				

(6) We are good people

#	ko	e	kakai	lelei	?a	ø
	[specifier	the	(people	good)]	[subj.	the person
	m	m	M	M	m	m
	kitautolu		#			
	3rd pers. pl. inclusive]					
	M					

In sentence (6) above, the first bracketed string - or [Comment] -- has a modified-modifier construction, shown by the parenthesized gloss. This construction -- and expansions of it -- has been shown in Maori, and is found in all Polynesian languages.

(7) My house is this one

#	ko	h^o^ku	fale
	[introducer	the sing. poss, ^1st pers. sing. poss.	house]
	m	m^m	M

ʔe^ni #

[the^here]

M

m ^ m

(8) My mother is a good woman

#	ko	e	fefine	aŋalelei	ʔeku	faʔee	#
	[specifier	the	(woman	good)]	[the my	mother]	
	m	m	M	M	m m	M	

5.4.2. ⌴L:pCW + SCW. Sentences (9) through (11) share a common profile -- [⌴L:pCW] + [SCW] -- and each sentence is a reflex of one of the sentences (70) through (72) respectively in the Maori corpora (section 3.3.2.). Differences in the morpheme scatter profile have resulted from different morphemic analyses. If either /kei/, in Maori was analysed as a minor morpheme cluster /ke^i/ -- /ke/ present and /i/ location, with /ø~i/ being the past location shape, the scatter profiles and morpheme glosses will be strikingly identical. Furthermore, the shape of each morpheme (except for /puna/ fly in sentence (11)) are cognates.

(9) John is at the house

#	ʔoku	ʔi	fale	ʔa	ø	sione	#
	[present	location	house]	[subj.	the person	John]	
	m	m	M	m	m	M	

(10) Where is the house?

#	?oku	?i	fee	?a	e	fale
	[present	location	where, interrog.]	[subj.	the	house]
	m	m	M	m	m	M

(11) The bird is flying

#	?oku	?i	puna	?a	e	manu	#
	[present	location	fly]	[subj.	the	bird]	
	m	m	M	m	m	M	

5.4.3. VCW + SCW . Sentences (11) through (18) exemplify the profile [VCW] + [SCW], and each sentence parallels in morpheme sequence a specific sentence in the Maori corpora numbered from (81) through (91) respectively.

(12) The boat has sailed

#	kuo	fulao	?a	e	vaka	#
	[perfective, non-time	sail]	[subj.	the	canoe]	
	m	M	m	m	M	

(11a) John went

#	na?e	?alu	?a	sione #
	[past-time	go]	[the, subj.	John]
	m	M	m	M

(12) The man has finished

#	kuo	osi	ʔa	e	taŋata	#
	[perfective	finish]	[subj.	the	man]	
	m	M	m	m	M	

(13) Mary has gone

#	kuo	ʔalu	ʔa	ø	mele	#
	[perfective	go]	[subj.	the,person	Mary]	
	m	M	m	m	M	

(14) The good horse ran

#	naʔe	lele	vaave	ʔa	e	hoosi	lelei	#
	[past	(run	fast)]	[subj.	the	(horse	good)]	
	m	M	m	m	m	M	M	

(15) The men ran

#	naʔe	lele	ʔa	e	kau	taŋata	#
	[past-time	run]	[subj.	the	plural	man]	
	m	M	m	m	m	M	

In Maori, plurality is shown by a substitution of singular initiators by plural ones. In Tongan, on the other hand, plurality is expressed by the addition of a plural-marking minor morpheme, /kau/.

(16) The boy has gone

#	kuo	haele	?a	e	tamaˆsi?i	#
	[perfective	move]	[subj.	the	child^sing.]	
	m	M	m	m	M	m

(17) This horse is dead

#	kuo	mate	?a	e	hoosi	ni	#
	[perfective	die]	[subj.	the	horse	near speaker]	
	m	M	m	m	M	m	

The separation of the two minor morphemes glossed the and near speaker is also seen in Maori (as in tee^nei + M te + M + nei). In Tongan, the strings e + M + ni M + ?e^ni show the same transformational processes in operation, except that in Tongan, M precedes the minor morpheme cluster /?eni/. This will not make any significant revision to an Initiator-based analysis of Tongan syntax (c.f. Maori), since all CW types are marked categories (c.f. Maori, where SCW is unmarked for subject.).

(18) The box is heavy

#	oku	mamafa	?a	e	puha	#
	[present	heavy]	[subj.	the	box]	
	m	M	m	m	M	

5.4.4. VCW --- Emb SCW The sentences (19) through (22) form a sub-group of the profile VCW + SCW; the SCW is embedded

in the VCW. Since the only M s capable of being embedded are personal pronouns (with Tongan having both a free and a bound set), the embedded set can be analysed as being morphologically conditioned. As such they share in the VCW + SCW profile with the sentences above. The Subj. marker is ø, but is not given in the morpheme structure of the sentences. This S-embedding is the most striking divergence between Tongan and Maori syntax patterns.

(19) We went

#	na?a	ma	?alu	#
	[past	[we]	go]	
	m	M	M	

(20) I go

#	?oku	ou	?alu	#
	[present	[I]	go]	
	m	M	M	

(21) He has come

#	kuo	ne	ha?u	#
	[perfective	[he]	come]	
	m	M	M	

(22) He is eating apples

#	?oku	ne	kai	āpele	#
	[present	[he]	(eat	apple)]	
	m	M	M	M	

5.4.5. SCW + VCW. In section 3.3.1. VCW + SCW and SCW + VCW were given as grammatical transforms of one another (linked by ⟸⟹) in the Maori corpora. This is also the case in the Tongan sample collected. When the CWs are transposed, subject marker /ʔa/ is obligatorily replaced by initiator /ko/ -- as in Maori. The string SCW + VCW is exemplified in sentences (23) and (24).

(23) This horse is dead

#	ko	e	hoosi	ni	kuo	mate	#
	[specifier	the	horse	near speaker]	[perfective	die]	
	m	m	M	m	m	M	

(24) Peter spoke

#	ko	ø	pita	naʔe	lea	#
	[specifier	the,person	Peter]	[past	speak]	
	m	m	M	m	M	

5.5. 3CW Kernel Sentences. As in Maori, so in Tongan, to the [Comment] + [Topic] string may be added [PossCW], [LpCW], and [LtCW], to form 3CW kernel sentences. Also parallelling Maori, in Tongan other CW types form ungrammatical strings with [Comment] + [Topic]. Only the string Comment + Topic + PossCW is given (5.5.1.).

For comparative purposes, the following Tongan profiles

are also given: VCW + SCW + LpCW (5.5.2.) <==⇒ SCW + VCW + LpCW (5.5.3.); VCW + SCW + LtCW (5.5.4.); VCW + SCW + AgCW (5.5.5.); VCW + SCW + PossCW (5.5.6.); NegCW + SCW + VCW (5.5.7.).

5.5.1. Comment + Topic + PossCW. Sentences (25) through (27) share the same profile, namely [Comment] + [Topic] + [PossCW]. In structure, in order of morphemes, in regular phonemic correspondences; the sentences given are exact reflexes of Maori.

(25) What is the name of the fish?

#	ko	e	haa	ʔa	e	hiŋoa
	[specifier	the	what, interrog.]	[subj.	the	name]
	m	m	M	m	m	M
	ʔo	e	ika ⇗			
	[possession	the	fish]			
	m	m	M			

(26) What is the name of the mountain?

#	ko	e	haa	ʔa	e	hiŋoa
	[introducer	the	what, interrog.].	[subj.	the	name]
	m	m	M	m	m	M
	ʔo	e	moʔuŋa ⇗⇗			
	[possession	the	mountain]			
	m	m	M			

If Tongan /ko + e/ is regarded as being the equivalent of /he/ in Maori, not only do the two languages share a common syntactic structure, but they also dichotomise their words in the same manner; haa (or aha) for things, hai (or wai) for persons.

(27) What is the man's name?

#	ko	ø	hai	?a	e	hiŋoa
	[introducer	the	who, interrog.]	[subj.	the	name]
	m	m	M	m	m	M
	?o	e	taŋata ⇑			
	[possession	the	man]			
	m	m	M			

5.5.2. VCW + SCW + LpCW. The profile shown by the sentences (28) through (32) is [VCW] + [SCW] + [LpCW]. As with the same profile in Maori, this profile in Tongan may be non-contrastively permuted to [VCW] + [LpCW] + [SCW]. Sentences (28) through (32) have as their reflexes, sentences (107) through (111) in the Maori corpora (see section 3.4.2.).

(28) Where did John go to?

#	na?e	?alu	?a	ø	sione	ki	fe ⇑
	[past	go]	[subj.	the, person	John]	[to	where, interrog.]
	m	M	m	m	M	m	M

(29) John went to the mountain

#	na?e	?alu	?a	∅	sione	ki	he	mo?uŋa	#
	[past	go]	[subj.	the,person	John]	[to	the	mountain]	
	m	M	m	m	M	m	m	M	

(30) The boat comes through the reef

#	?oku	ha?u	?a	e	vaka	?i	he	vaha?a
	[present	come]	[subj.	the	boat]	[locative	the	channel
	m	M	m	m	M	m	m	M
	hakau	#						
	reef]							
	M							

(31) The boy ran to the shop

#	?oku	lele	?a	e	tama^si?i	ki	he
	[past time	run]	[subj.	the	child^sing.]	[to	the
	m	M	m	m	M^m	m	m
	fale	koloa	#				
	(house	store)]					
	M	M					

(32) The man saw the shark

#	na?e	mamata	?a	e	taŋata	ki	he	?aŋa	#
	[past time	see]	[subj.	the	man]	[to	the	shark]	
	m	M	m	m	M	m	m	M	

5.5.3. VCW---EmbSCW + LpCW. Sentences (33) through (36) form a subgroup of the profile VCW + SCW + LpCW since SCW is embedded in VCW (i.e. [VCW--EmbSCW] + [LpCW]. As mentioned in 5.4.4., only personal pronouns may be embedded in VCW. The equivalent Maori sentences to (33) through (36) are numbered (120) through (123) respectively, in section 3.4.2. Again,there is a remarkable degree of similarity in profile structure between Maori and Tongan, -- apart from embedded SCW.

(33) I saw the book

#	na?a	ku	mamata	ki	he	tohi	#
	[past	[first pers. sing.]	see]	[to	the	book]	
	m	M	M	m	m	M	

(34) I went to school

#	na?a	ku	?alu	ki	he	?ako	#
	[past	[1st pers. sing.]	go]	[to	the	school]	
	m	M	M	m	m	M	

(35) I was going to the village

#	na?a	ku	?alu	ki	he	kolo	#
	[past time	[1st pers. sing.]	go]	[to	the	village]	
	m	M	M	m	m	M	

Sentence (34) above, and sentence (36) following contrast an embedded SCW with a non-embedded SCW. The minor morpheme /na?a/ has the capability of acting as a major morpheme, shown as $\underset{m}{M}$ in the

morpheme scatter profile given beneath the following sentence. When this occurs /na?a/ acts like a past descriptive form of an auxiliary verb in English.

(36) I was at school

#	na?a	ku	?i	he	?ako	#
	[past time]	[1st pers. sing.]	[at	the	school]	
	M m	M	m	m	M	

5.5.4. SCW + VCW + LpCW. Sentences (37) and (38) show the profile [SCW] + [VCW] + [LpCW], and this is a battery transformant of a previous profile: [VCW] + [SCW] + [LpCW].

(37) The good boy went to school

#	ko	e	tama^si?i	aŋalelei	kuo	?alu
	[introducer	the	child^sing.	good]	[perfective	go]
	m	m	M^m	M	m	M

ki	he	lautohi	#
[to	the	school]	
m	m	M	

(38) John went to the mountains

#	ko	∅	sione	na?e	?alu	ki	he
	[introducer	the,person	John]	[past	go]	[to	the
	m	m	M	m	M	m	m

mo?uŋa	#
mountain]	
M	

5.5.5. VCW + SCW + LtCW. Sentences (39) and (40) show the profile [VCW] + [SCW] + [LtCW], with the latter showing [SCW] embedded in [VCW]. Sentence (39) parallels sentence (126), and sentence (40) parallels sentence (128) of the Maori corpora (see section 3.4.3.).

(39) John went yesterday

#	na?e	?alu	?a	ø	sione	?aneafi	#
	[past	go]	[subj.	the,person	John]	[yesterday]	
	m	M	m	m	M	Lt	

(40) I'll be coming tomorrow

#	te	u	ha?u	?apoŋipoŋi	#
	[future	[I]	come]	[tomorrow]	
	m	M	M	M	

Since the embedded Subject is now treated as a morphologically conditioned permutant of the [VCW] + [SCW] + ... profile, this sentence is a variant of the profile of sentence (35).

5.5.6. VCW + SCW + AgCW. Sentence (41) through (45) show the profile [VCW] + [SCW] + [AgCW]. This may be non-contrastively reordered to VCW + AgCW + SCW. The sentences given in order, have their reflexes in the Maori sentences (133) through (137) respectively (see section 3.4.3.). Differences occur in morpheme shape, in marked [SCW], and in free reordering (metathesis) of agentive marker /?e/ and def. art. /he/ (c.f. third (or Ag)CW

of sentences (37) and (39)). One can infer that ?e ≠ ∅, and ∅ ≠ ?e are also possible (see sentences (40), (41) where only the first is given).

(41) The water was spilt by the boy

#	na?e	hua?i	?a	e	vai	he	?e	tama si?i	#
	[past	spill]	[subj.	the	water]	[the	by	child sing.]	
	m	M	m	m	M	m	m	M	

(42) The man was taken by the police

#	na?e	?ave	?a	e	tanata	he	?e	polisi	#
	[past	take]	[subj.	the	man]	[the	by	police]	
	m	M	m	m	M	m		M	

(43) All the people did it

#	na?e	fai	?a	∅	ia	?e	he	kakai	kotoapa	#
	[past	do]	[subj.	the	it]	[by	the	(people	all)]	
	m	M	m	m	M	m	m	M	M	

(44) John ate some food

#	na?e	kai	ha	ma?akai	?e	∅	sione	#
	[past	eat]	[some	food]	[by	the,person	John]	
	m	M	m	M	m	m	M	

(45) Peter taught the children

#	na?e	akö?i	?a	e	tamaiki	?e	∅
	[past	teach]	[subj.	the	child^plural]	[by	the,person
	m	M	m	m	M^m	m	m

pita #

Peter]

M

5.5.7. VCW + SCW + PossCW. Sentence (46) shows the profile [VCW] + [SCW] + [PossCW]. This sentence is a reflex of sentence (154) in the Maori corpora.

(46) The younger brother of the man hid

na?e toi ?a e tehina

[past hide] [subj. the younger siblings of same sex]

m M m m M

?o e taŋata #

[subord. possession the man]

m m M

5.5.8. NegCW + VCW + SCW. The sentences following -- (47) through (52) -- show the profile [NegCW] + [VCW] + [SCW].

(47) The boat hasn't come

kuo t'e?eki ke ha?u ?a e vaka

[perfect not] [imperative come] [subj. the boat]

m M m M m m M

(48) Don't let John stay

?oua ?e nofo ?a ∅

[not imperative] [imperative stay] [subj. the,person

M m M m m

sione #

John]

M

(49) John did not come

?oku: ?ikai te ha?u ?a ø

[present negative] [future come] [subj. the,person

m M m M m m

sione #

John]

M

(50) I don't know

?oku ?ikai te u ?ilo

[present negative] [future [I] know]

m M m M M

(51) Don't let him sit

?oua ?e nofo ø ia

[not, imperative] [imperative sit] [the,person 3rd pers. sing.]

M m M m M

(52) Don't you cry

?oua te ke taŋi

[not, imperative] [future imperative cry]

M m m M

5.6.0. 4CW Kernel Sentences. One battery is given as representative of Tongan 4CW kernel sentences.

5.6.1. VCW + SCW + LpCW + LtCW. Unlike Maori (see 3.5.3.), Tongan sentences sharing the above CW components cannot be reordered so that initial CW is LtCW. The grammatically accepted profiles are:

VCW + SCW + LpCW + LtCW ~

VCW + SCW + LtCW + LpCW ~

VCW + LpCW + SCW + LtCW ~

VCW + LtCW + SCW + LpCW ~

VCW + LpCW + LtCW + SCW ~

VCW + LtCW + LpCW + SCW <===>

SCW + VCW + LpCW + LtCW ~

SCW + VCW + LtCW + LpCW ~

SCW + LtCW + VCW + LpCW.

Sentences (53) and (56) share the profile [VCW] + [SCW] + [LpCW] + [LtCW].

(53) The girl is at Nukualofa at this moment

#	?oku	?a e	ta?ahine	?i	nuku?alofa	?i
	[present time]	[subject the	girl]	[at	Nukualofa]	[at
	M / m	m m	M	M	M	m

he taimi ni #

the time here]

m M m

(54) John sat here yesterday

na?e nofo ?a ø sione ?i heni ?aneafi

[past sit] [subject person John] [at here] [yesterday]

m M m m M m M M

(55) The man will go to Tonga today

?e ?alu ?a e taŋata ki toŋa ?i he

[future go] [subject the man] [to Tonga] [at the

m M m m M m M m m

?ahoni #

today]

M

(56) The man went to the beach yesterday

na?e ?alu ?a e taŋata ki he mataa tahi

[past go] [subject the man] [to the (side sea)]

m M m m M m m M M

?aneafi #

[yesterday]

M

The same sentence can be used as documentation on the success of eliciting batteries (i.e. syntax). The examples are also evidence

that many native speakers of a Polynesian language (including the writer) treat permutations within a battery as being the same sentence. At the end of summer 1964, after several successful attempts at generating utterances in Tonga, the writer presented Mrs. Shultz (the Tongan informant) with a series of permutations, one of which seemed to be ungrammatical. Each was written on a separate card, and each was handed over singly for her comments, and for recording on tape. The object was to check a profile that she had, 2 weeks previously, stated was ungrammatical. The incidental comments on the other profiles, however, were far more illuminating.

The following transcripts are taken directly from the tape (Reel I. Tongan. June 1964, Archives of Languages of the World, Anthropology Department, Indiana University):

2) # na?e ?alu ?ae taŋata ?aneafi ki he mataatahi #

3) # na?e ?alu ki he mataatahi ?aneafi ?ae taŋata #

4) # na?e ?alu ?aneafi ki he mataatahi ?ae taŋata #

Comment: "This is the same one!"

5) # na?e ?alu ki he mataatahi ?ae taŋata ?aneafi #

Comment: "I think we've got that (already)."

6) # na?e ?alu ?aneafi ?ae taŋata ki he mataatahi #

Comment: "I think I'm having this all over again."

7) # ?aneafi na?e ?alu ki he mataatahi ?ae taŋata

Comment: "Not said this way ... no Tongan speaker will say this one."

The point is -- if the final one is excluded as being ungrammatical in Tongan -- all the six sentences given above are permutation profiles of [VCW] + [SCW] + [LpCW] + [LtCW], namely:

2) VCW + SCW + LtCW + LpCW

3) VCW + LpCW + LtCW + SCW

4) VCW + LtCW + LpCW + SCW

5) VCW + LpCW + SCW + LtCW

6) VCW + LtCW + SCW + LpCW

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