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SOME PROBLEMS IN THE HISTORY OF
MOKILESE MORPHO-SYNTAX

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IN LINGUISTICS

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ABSTRACT

This dissertation considers the historical development of selected features of Mokilese nominal and verbal morpho-syntax--nominal possessive marking by means of possessive suffixes, verb subcategorization, verbal sentence syntax and morphology, and the post-verbal clitic complex of Mokilese. All the developments considered are in some way related to changes in what generative phonology would consider the position or type of boundary between adjacent morphemes. Historical inferences are based on internal reconstructions from Mokilese data collected from native speakers, on comparative evidence from published and unpublished sources on other Austronesian languages, and on POC reconstructions.

Changes in Mokilese verb subcategorization and verbal sentence syntax are linked to the reanalysis of transitive verbs with the suffix *-i as monomorphemic following the loss of this suffix through final vowel deletion. The principal result of the restructuring of verb categories was the creation of the Mokilese transitive paradigm, a four-member syntactic paradigm defined by the number of obligatory verb arguments, their case roles, and their reference. It is claimed that the pre-Mokilese antecedent of this paradigm was restricted to a single subcategory of transitive verbs (termed patient-oriented) and that, on one dimension, it marked an aspectual distinction. Following the restructuring of verb subcategorization, the paradigm was extended to all transitive verbs and its aspectual significance was lost.

Changes in the boundary type associated with adjacent morphemes are claimed to reflect changes in the nature of the category node

directly dominating those morphemes. The analyses of Mokilese nominal and verbal constructions presented in this study suggest that a # boundary is associated with morphemes enclitic to a phrasal category, while a + boundary is associated with affixes in a construction dominated by a lexical category. The way in which the historical processes of final consonant deletion and final vowel deletion applied to nouns followed by possessive markers suggests that these markers have changed from noun phrase enclitics to noun suffixes in the course of the evolution of noun-poss constructions in Mokilese. The change from independent word to enclitic to suffix is further evidenced in the history of the Mokilese post-verbal clitic complex and in the development of transitive verbs with the suffix -i. The -i suffix is claimed to have developed from a locative preposition PAN/POC *i which first entered the verb phrase as an enclitic and was later 'captured' by the verb as a suffix. This development appears to have occurred twice in the history of Mokilese, first in the development of the POC close transitive suffix *-i and, at a later period, in the development of the synchronic -i transitive suffix in Mokilese. The history of the POC remote transitive suffix *-aki(ni) is explored from this same perspective. We argue that POC *-aki(ni), when followed by an object, may have been an enclitic, rather than a suffix, in POC. The word → enclitic → suffix transition is characterized in terms of a progressive loss of intrinsic semantic content, a process here termed semantic bleeding.

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LIST OF ABBREVIATIONS

Language Names

PAN	Proto-Austronesian	TRU	Trukese
POC	Proto-Oceanic	WOL	Woleaian
PEO	Proto-Eastern Oceanic	ULI	Ulithian
PMC	Proto-Micronesian	TON	Tongan
PPN	Proto-Polynesian	SAM	Samoan
MAR	Marshallese	KWA	Kwara'ae
GIL	Gilbertese	WLO	Wolio
KUS	Kusaiean	IND	Indonesian
PING	Pingelapese	WAY	Wayan
MOK	Mokilese	BAU	Bauan
PON	Ponapean		

Grammatical Terms

S	sentence
S _t	transitive sentence
S _{iA}	intransitive sentence with agent subject
S _{iP}	intransitive sentence with patient subject
S _{io}	intransitive sentence with incorporated object
N	noun
Ni	inalienable noun
Na	alienable noun
V	verb, vowel
Vi	intransitive verb
Vt	transitive verb
VP	verb phrase

NP	noun phrase
NP _S	noun phrase subject
NP _O	noun phrase object
PRO _S	VP-internal pronoun subject
PRO _O	VP-internal pronoun object
Pred	predicate
SUB	subject
OBJ	object
AG	agent
FOC	focus marker
MOD	modal
NEG	negative
DIR	directional
MAN	manner phrase
RED	reduplication
poss	possessive marker
art	article
tr	transitive suffix
perf	perfective
imperf	imperfective
tns	tense marker
CA	causative
const	construct suffix

CHAPTER I

Introduction

1.1 Aims

This dissertation will investigate selected problems in the historical development of the nominal and verbal systems of Mokilese.

These are:

- i) the evolution of nominal possessive constructions with possessive suffixes
- ii) the evolution of verbal subcategorization
- iii) changes in the syntax and semantics of simple verbal sentences, with emphasis on the development of what will be termed a transitive paradigm, with its morphological, syntactic and semantic correlates
- iv) changes in the structure and membership of the post-verbal enclitic complex of Mokilese, with particular emphasis on those parts of the complex that have relevance to the development of the rest of the verbal system.

The first problem will be taken up in Chapter Two, the second and third in Chapter Three, and the fourth in Chapter Four.

All of these problems can in some way be related to changes in the position or in the type of morphological boundary associated with adjacent formatives in surface structure, and to changes in the category labels associated with these formatives and with the constructions in which they occur. It will be claimed, as is perhaps

evidenced in the boundary assignment conventions of Chomsky and Halle (1968), that these two kinds of change, in boundary type and in category label, are linked. Chapter Five will suggest some directions for an account of the nature of this linkage.

1.2 The Position of Mokilese

Mokilese is spoken by the some four hundred and fifty inhabitants of Mokil Atoll, Eastern Caroline Is., and by perhaps twice that number of Mokilese residents of Ponape, ninety miles to the west. These latter are the result of a migration to Ponape that began in the early years of this century and which has increased rapidly since the end of the Second World War.

Little is known of the prehistory of Mokil. It is presumed that the atoll was first settled from Ponape, and that close contact between these two islands has been maintained throughout the history of Mokil. Mokil has, however, been subject to influences from the other islands and island groups of eastern Micronesia, particularly from the Marshalls, but also from the Gilberts and from Kusaie.

The vagaries of atoll life have undoubtedly had great significance for the linguistic history of Mokil. It is doubtful that Mokil could ever have supported a stable population in excess of five or six hundred individuals. Moreover, the atoll is frequently visited by devastating typhoons. The Mokilese date their own modern history from one such typhoon in or around the last decade of the eighteenth century, which, by their accounts, left no more than a dozen or so survivors. Under such circumstances, it would seem that even minimal influence from the outside could have had profound effects on the

language.

With the exception of a word list collected in the course of the German Southseas Expedition (1908-1910), the study of the Mokilese language was neglected until it was selected for study by the Micronesian Language Project of the Pacific and Asian Linguistics Institute, University of Hawaii. The data presented in the present study was collected during the period 1971-1973, in conjunction with that project.

1.3 Oceanic Languages

The Micronesian language 'family', to which Mokilese belongs, is a subfamily of the Oceanic subgroup of the larger Austronesian family, which encompasses the languages of most of the Pacific basin south of latitude 25 N, excepting Australia, substantial parts of New Guinea, and a few other islands and island groups. It extends also to the Malay peninsula, isolated pockets in Vietnam and Cambodia, and to the island of Madagascar.

The existence of an Oceanic subgroup within Austronesian has been accepted by most scholars since Dempwolff, who initially defined it in terms of certain shared phonological innovations, for the most part mergers of PAN phonemes. For example:

- i) the merger of all [\pm voi] consonantal contrasts, except in the apical stops
- ii) the emergence of a five vowel system through the merger of PAN *e, *aw \rightarrow POC *o and PAN *i, *uy \rightarrow POC *i

as well as other, perhaps less generally agreed upon innovations.

Higher level subgrouping within Oceanic has proven to be a

contentious issue. The most widely accepted subgroup is usually termed Eastern Oceanic, corresponding roughly to Grace's (1955) Oceanic group 4 and to Dyen's (1965) lexicostatistically-determined Heonesian Linkage. Eastern Oceanic includes at least Polynesian, Fijian, and Rotuman. Apart from these languages, Grace's and Dyen's accounts differ to some extent. Both assign some New Hebridean languages to the subgroup. Dyen includes four languages of the southeast Solomons considered to form a separate subgroup in Grace's earlier study, as well as Motu of south-eastern Papua. Grace tentatively suggests that the 'nuclear' Micronesian languages (see section 1.4) be subgrouped with his group 4. Dyen, though excluding Micronesian languages from his Heonesian linkage, points out that similarities between Gilbertese, his Carolinian subfamily, and Heonesian are strong enough to constitute an argument that the former two should be subsumed under Heonesian.

Evidence for the Eastern Oceanic subgroup is far from overwhelming. The strongest evidence involves the loss of all POC/PAN final consonants in PEO. As this phonological change is crucial to the present work, I will continue to use the terms Eastern Oceanic and Proto-Eastern Oceanic (POC) as a convenient label for the stage in the history of Mokilese by which time earlier final consonants were lost. This should not be construed as a strong claim in favor of an Eastern Oceanic subgroup.

1.4 Micronesian Languages

Because the term Micronesia has been viewed as primarily a geographical designation for an area comprising the Mariana, Caroline, Marshall, and Gilbert Islands, and the island of Nauru, Bender (1971)

is careful to distinguish those languages spoken in this area which he feels to be closely affiliated from those that are more distantly related. The former he terms the 'nuclear' Micronesian languages. These include all the languages of geographical Micronesia except Chamorro, a Philippine-type language of the Mariana Islands, Palauan, whose closest relatives have been claimed to be in north-eastern Indonesia, and the Polynesian languages of Nukuoro and Kapingamarangi, two relatively isolated atolls in the eastern Carolines. The affinities of a fifth language, Yapese, are unclear, but it does not appear to group with the 'nuclear' Micronesian languages, nor is it at all clear that it should be considered Oceanic. Nauruan, as reported in Nathan (1973) is perhaps the most problematic of all the 'marginal' languages of Micronesia, since it is both similar to and different from the 'nuclear' Micronesian languages to an extent that its affinities are in doubt. If a 'nuclear' Micronesian family can be established, present evidence suggests that Nauruan forms an independent higher order subgroup of that family. No Nauruan data will be considered in the present study. In the present study the 'nuclear' Micronesian languages will be designated simply as Micronesian languages.

The existence of a Micronesian language family as a distinct subgroup within Oceanic has not yet been demonstrated conclusively. To my knowledge, no incontestable uniquely shared innovation has yet been discovered. The best candidate so far recognized is the first person singular possessive suffix (POC *-ŋku), whose Micronesian reflexes suggest PMC *-iu. This proposal is, however, belied in one language, Kusaiean, which reflects this suffix as -k. The form of the

first person singular independent pronoun appears to be distinctively Micronesian also. In all languages east of Truk, it suggests an earlier *nai (with initial *n̥ as compared to the reconstructed POC *i-nau, with *n). The Trukic languages pose problems here, however, since most suggest an earlier *naan, while one at least, Woleaian, has the form gaang, where g reflects an earlier *k.

The careful lexical comparison of Micronesian languages begun by Marck (1976) will perhaps prove most fruitful in the long run. It has already revealed a number of apparently distinctive Micronesian lexical items, among these PMC *aramata 'human being', PMC *pau 'arm, hand, wing' (POC *pan(i) 'wing'), PMC *ala 'road' (POC *(s,n̄)ala(n) 'road'), and PMC *nii 'tooth' (POC *nipon 'tooth'). I might finally suggest what appears to have been the specialization of POC *-aki 'objectless remote transitive suffix' as a marker of what I term a PMC 'agentless passive' construction as a possible Micronesian innovation. In conclusion, I can but point out that those of us who have worked with Micronesian languages have what can best be described as a strong confidence in the integrity of the group. We can only hope that future comparative work will reveal that this faith has not been misdirected.

Higher order subgrouping within Micronesian is as elusive as the question of the unity of the family itself. On the basis of sound correspondences, Marck (1976) postulates only one higher-order subgrouping within Micronesian, that of the Trukic continuum, all those Micronesian languages spoken to the west of a north-south line drawn at the eastern limit of the Mortlock Islands. His evidence is not clear. We will demonstrate (Chapter Four) that, from the data

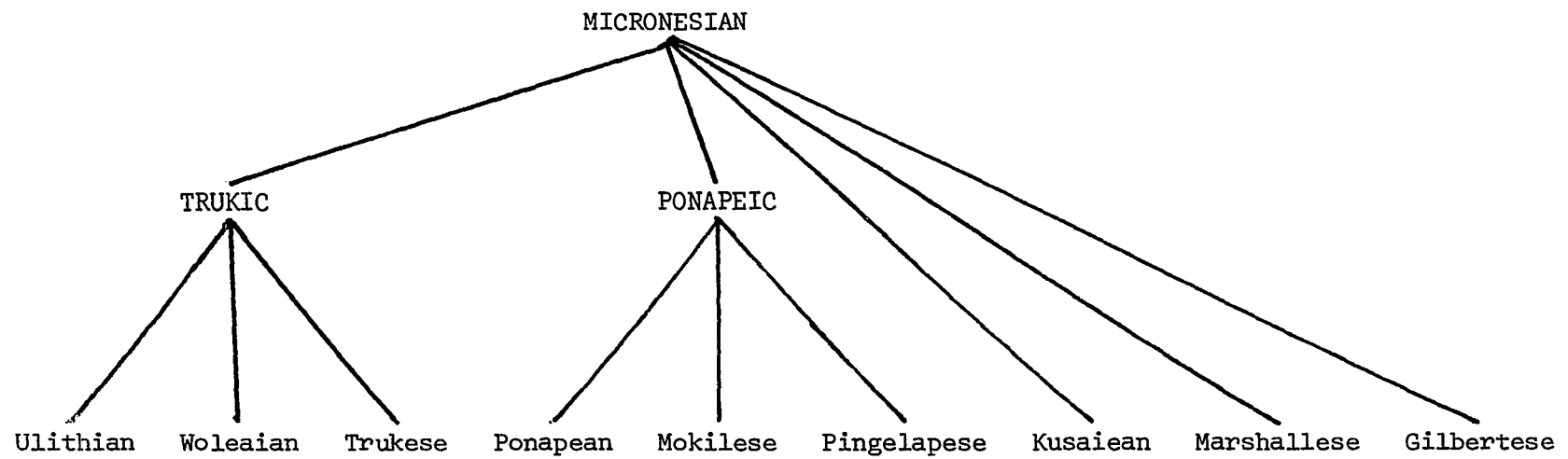
available, the Trukic languages seem to have innovated from a hypothetical PMC post-verbal syntactic complex in identical ways. All available evidence tends to support the hypothesis that Trukic constitutes an independent higher order subgroup.

I would also like to postulate the existence of a Ponapeic subgroup, consisting of Ponapean, Mokilese, Pingelapese, and Ngatikese. The post-verbal complexes of these languages, barring individual innovations, are identical and distinct from both PMC and from other Micronesian languages. Particularly salient is the extension of what I give as PMC *akini 'accessory case role marking enclitic' to transitive sentences in which it marks the instrument. This is, to my knowledge, a Ponapeic innovation.

No other subgroups emerge clearly on the basis of the morphosyntactic evidence to be presented in this study. Ponapeic and Trukic show certain similarities in some areas, as do Ponapeic and Marshalese (in the treatment of directional enclitics), Ponapeic and Kusaiean (in having a synchronic -i transitivizing suffix), Marshallese and Gilbertese (in the placement of pronoun objects), and Marshallese, Gilbertese, and Kusaiean (in the general shape of the post-verbal complex). In short, nothing conclusive can be said.

In terms of the languages considered in this study, I suggest the following tentative subgrouping:

FIGURE I
SUBGROUPING OF MICRONESIAN LANGUAGES



1.5 Sound Correspondences

The comparative study of Micronesian languages is still very much in its infancy. Published work has, perhaps atypically, been rather evenly distributed between comparative phonology and comparative grammar. This fact is not surprising, however, in the light of the complex internal history of Micronesian phonologies, particularly vowel systems, as demonstrated in Dyen (1949) and Rehag (1973). Recent work by Marck (1975, 1976) is the first attempt towards an exhaustive comparative Micronesian phonology. Omitting details, Marck's conclusions regarding PMC phonology can be summarized in the following tables:

TABLE I
PMC CONSONANT INVENTORY

	Bilabial	Apical	Velar
Stops			
Plain	p	t	k
Double Closure	p'	t'	k ^w
Nasals			
Plain	m	n	ng
Double Closure	m'		
Fricatives	f	s	g [x]
Lateral		l	
Trill/Flap		r	

PMC *k^w and *g are reconstructed by Marck on what he admits to be slim evidence, three forms for the former and only one for the latter. He also reconstructs a fourth fricative, PMC *S, on the basis of a Ø, as opposed to a /t/ reflex of PMC *s in Kusaiean. Double closure involves

the velarization of labials, the affrication of apicals, and the labialization of velars. Consonant gemination in PMC will be ignored in this brief discussion of comparative Micronesian phonology.

Significant consonant correspondences in the languages to be considered here are given in the following tables. Table II presents obstruent correspondences, Table III sonorant correspondences:

TABLE II

PMC OBSTRUENT REFLEXES

PMC	*f	*p	*p'	*t	*t'	*s	*k
MAR	∅	p	b	j	d	t	k~k,
GIL	∅	b	bw	t	r	r	k
KUS	∅	p	f	t~s	sr	t	k~kw
MOK	p~∅	p	pw	j~∅	s	d	k
PON	p~∅	p	pw	s~∅	t	d	k
TRU	f	p	pw	s~∅	ch	t	k~s~∅
WOL	f	p	b	t~s	sh	t	g
ULI	f	p	b	t~s	c	d	x

TABLE III

PMC SONORANT REFLEXES

PMC	*r	*l	*n	*ng	*m	*m'
MAR	r	l	n	\bar{n}	m	m,
GIL	Ø	n	n	ng	m	mw
KUS	l	l	n	ng	m	mw
MOK	r	l	n	ng	m	mw
PON	r	l	n	ng	m	mw
TRU	r	n	n	n~ng	m	mw
WOL	r	l	l	ng	m	mw
ULI	r	l	l	g	m	mw

where the symbols used for reflexes in daughter languages are those used in representations of data from these languages in the present study (see section 1.6). The following remarks are pertinent to conditioned reflexes of PMC consonants:

- i) PMC *f is reflected as PON/MOK Ø most often before PMC *i. The situation is complex, however.
- ii) Synchronic 'weakened' reflexes of PMC *t are most common before higher vowels, with variation from language to language.
- iii) Labialized reflexes of PMC *k in MAR and KUS are conditioned, albeit differently in the two languages, by their vocalic environment. TRU reflexes of PMC *k are complex, but unimportant for our purposes.
- iv) PMC *ng is regularly TRU n before i.

The above tables are intended to facilitate the reader's evaluation

of cognate relations and PMC reconstructions to be proposed in the present work. As noted above, certain details have been omitted from these tables, as have reflexes of Marck's PMC *k^W, *S, and *g. No attempt will be made to outline vowel correspondences, as the situation is far too complex for a brief summary. The reader should consult the works cited above.

1.6 Orthographies

1.6.1 Mokilese

Mokilese orthographic practice is founded on principles established in the nineteenth century for Ponapean. Though no official standard orthography has been sanctioned by the Mokilese themselves, the conventions used in the present work (those adopted in Harrison 1976, 1977) do not deviate markedly from usual orthographic practice on Mokil.

The following chart gives the phonemic inventory of Mokilese in orthographic representation:

TABLE IV
MOKILESE PHONEMIC INVENTORY

Consonants

	Labial	Apical	Palatal	Velar	Velarized labial
Stop	p	d	j	k	pw
Fricative		s			
Nasal	m	n		ng	mw
Lateral		l			
Flap/Trill		r			

Vowels

	Front	Central	Back
High	i		u
Higher mid	e		o
Lower mid	e		oa
Low		a	

Higher mid [e] and lower mid [ɛ] are not distinguished orthographically. The former is statistically infrequent. All vowels can occur long, length being marked by an h after the corresponding short vowel. All consonants can occur geminate, in which case they are normally written doubled. Geminate pw, mw, and ng are, however, written pww, mww, and ngg, respectively.

The glide [y] is written i and occurs in the following environments:

- i) #__V or V__ $\left\{ \begin{matrix} C \\ \# \end{matrix} \right\}$, as in ia 'where' [ya], woi 'turtle' [woy], mwein 'male' [m^weyn]

ii) V__V, in which case it is pronounced geminate, as in

pahioa 'his spouse' [paayyo]

The glide [w] is found in the same environments. When initial or medial it is written w, as in war 'canoe', oawoa 'his mouth'. When syllable-final it is written u, as in doau 'to climb', except in the word aw 'mouth', and in forms of the general counting classifier--ew 'one', riaw 'two', etc. Medial w is not pronounced geminate unless written ww.

1.6.2 Other Micronesian Languages

Data from other Micronesian languages is given either in their standard orthography or in the representation given in the major source of reference for the language in question. Sources used as a basis for the representation of data from other Micronesian languages are: for Woleaian, Sohn (1975); for Ulithian, Sohn and Bender (1973); for Trukese, Goodenough and Sugita (1972); for Ponapean, Rehg (to appear); for Pingelapese, Welley and Good (1976); for Kusaiean, Lee (1975); for Marshallese, Abo et al. (1976); for Gilbertese, Groves et al. (n.d.). We will not present complete descriptions of the orthographies of these languages. Below, however, are listed some orthographic symbols which require some comment:

Woleaian

b -- velarized bilabial fricative

ch -- palatal stop

g -- velar fricative

sh -- palatal fricative

iu -- high central vowel [ɯ]

Ulithian

- b -- velarized bilabial fricative
- c -- alveo-palatal stop
- d -- alveolar fricative
- x -- velar fricative
- g -- velar nasal
- á -- low front vowel [a]
- ó -- low back vowel [ɔ]
- é -- mid central vowel [ə]

Trukese

- ch -- alveopalatal affricate [tʃ]
- ó -- low back vowel [ɔ]
- á -- low front vowel [a]
- é -- mid central vowel [ə]
- ú -- high central vowel [ɨ]

Ponapean

- t -- retroflexed stop [ɖ]

Kusaiean

- sr -- retroflexed fricative [s]
- ih -- high central vowel [ɨ]
- uh -- lower mid central vowel [ʌ]
- ah -- low front vowel [a]
- uc -- higher mid central vowel [ə]
- ac -- lower mid front vowel [ɛ]

Marshallese

b -- velarized labial stop

d -- apical trill or flap

j -- apical stop or affricate

C, -- a velarized/labialized version of C, where C is some
consonant

\bar{n} -- velar nasal

\bar{a} -- low front vowel [æ]

\bar{o} -- mid central vowel [ə]

ɣ -- low back vowel [ɔ]

\bar{u} -- high central vowel [ʊ]

CHAPTER II

Possessive Constructions in Mokilese

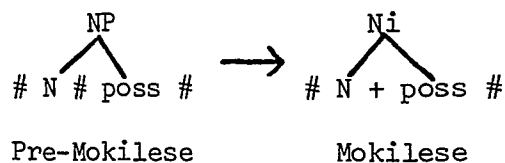
2.0 Introduction

The present chapter considers the evolution of noun-possessive marker constructions in Mokilese. These constructions serve as an example of morphological change involving change in boundary type. Section 2.1 considers the synchronic analysis of such constructions in Mokilese and in a pre-Mokilese stage that can be equated with PAN. Section 3.3 considers phonological evidence that the change from pre-Mokilese to Mokilese noun-possessive marker constructions involved, at least in part, a change in the nature of the internal boundary associated with this construction. Section 2.3 evaluates this change in terms of existing theories of boundary assignment.

2.1 Possessive Constructions in PAN and in Mokilese

2.1.0 Introduction

We propose the following change to have taken place in the structure of noun-possessive marker constructions from pre-Mokilese to Mokilese:



In pre-Mokilese, we suggest, possessive markers were enclitic to the noun phrase, while in Mokilese the possessive markers suffix to noun stems of a particular lexical category, here termed inalienable noun (Ni). Concomitant with this syntactic change was a change in the internal boundary associated with this construction, from # (word

boundary) to + (morpheme boundary). This boundary type change will be considered in section 2.2 and 2.3.

2.1.1 Noun-poss Constructions in PAN

We propose that possessive marking by means of possessive suffixes in Mokilese can be related to a pre-Mokilese construction of the following sort:



I assume this construction to have been present in PAN, since all Austronesian languages, to my knowledge, show some reflex of it. If non-Oceanic languages can be considered to reflect the form of this construction in PAN more clearly than do Oceanic languages, then it would appear that any noun could be followed by a possessive enclitic in PAN.

The best argument for the analysis of PAN noun-poss constructions as noun phrases comes from the shape of what I assume to be its reflex in languages like Indonesian, as in examples like:

IND buku-ku
 book-my
 'my book'
buku biru-ku
 book blue-my
 'my blue book'

where the possessive enclitics are clearly enclitic to the noun phrase, rather than simply to the noun.

Somewhat less tangible evidence in favor of the hypothesis that

possessive markers had some degree of syntactic freedom at an earlier period in their history comes from western Fijian dialects like Wayan, as reported in Pawley (1973:181), who notes that their reflexes are suffixed to kinship terms but are prefixed to nouns naming body parts. Thus:

WAY	<u>tama-qu</u>	'my father'
	father-my	
	<u>mna-m</u>	'your mother'
	mother-your	
	<u>qu-lima</u>	'my arm'
	my-arm	
	<u>m-lewe</u>	'your body'
	your-body	

These cases suggest that at some earlier period in the history of Wayan the possessive markers exhibited a degree of syntactic independence perhaps characteristic of phrasal elements. Further justification for this analysis of PAN possessive constructions in terms of a theory of boundary assignment will be presented in section 2.3 and again, after additional Mokilese evidence has been introduced, in section 5.3.

2.1.2 Possession in Mokilese

Two innovations characteristic of the possessive system of Oceanic languages found in Mokilese are:

- i) the elaboration of number specifications for the possessive markers
- ii) the emergence of an alienable/inalienable distinction

The plural possessive markers of PAN were augmented in Oceanic by

suffixation of the numerals 'two' and 'three', creating a four-way number system for the possessive markers: singular, dual, trial, and plural. It is not clear that dual and trial marking was obligatory in POC; in one Micronesian language, Marshallese, it is optional, while in another, Gilbertese, the dual/trial/plural distinction does not appear to be made. Mokilese does reflect four numbers distinctly, though their functions have changed. Older trial forms now function as plurals, while the original plurals are now used as what might best be described as a collective number.

All Micronesian languages, including Mokilese, have added an additional member to the nominal possessive paradigm, the construct form used when the 'possessor' is a surface noun phrase. This form is the result of giving suffixal status to the POC *ni ligature used in noun-*ni-noun constructions. One reflex of this ligature in Mokilese is the construct suffix -n, suffixed to the 'possessed' noun when the possessor is a noun phrase. Thus:

MOK	<u>joamoa-i</u>	'my father'
	father-my	
	<u>joamoa-mw</u>	'your father'
	father-your	
	<u>jeme-n woallo</u>	'that man's father'
	father-of man-that	

Mokilese shows a sixteen member nominal possessive paradigm. As many as eight paradigm types can be distinguished in terms of variations in the form of the suffixes and in the morphophonemic alternations found in the paradigm. These can, however, be grouped

into three basic paradigm types in accordance with the form of the third person singular: those ending in a short (non-high) vowel (or in a long vowel found in other paradigm members also), those with a final long -ah alternating with a short vowel in the rest of the paradigm, and those with a final -n. These paradigm types are exemplified below:

'name'

	Singular	Dual	Plural	Collective
1st incl.		oadoasa	oadoasai	oadoahs
1st excl.	oadoai	oadoama	oadoamai	oadoami
2nd	oadoamw	oadoamwa	oadoamwai	oadoamwi
3rd	oadoa	oadoara	oadoarai	oadoahr
const.	oadoan			

'father'

1st incl.		jamasa	jamasai	jamahs
1st excl.	joamoai	jamama	jamamai	jememi
2nd	joamoamw	jamamwa	jamamwai	jememwi
3rd	jamah	jamara	jamarai	jamahr
const.	jemen			

'skin'

1st incl.		kilisa	kilisai	kilihs
1st excl.	kilihoa	kilima	kilimai	kilimi
2nd	kilimwen	kilimwa	kilimwai	kilimwi
3rd	kilin	kilira	kilirai	kilihr
const.	kilin			

Mokilese nouns can be divided into two types according to whether or not they take possessive suffixes directly. Those which do take the

possessive suffixes (that is, have a paradigm like those given above) can be termed inalienable in view of the rough correlation between the interpretation of these noun-suffix constructions and such relationships as kinship or part-whole, and such culturally-determined relationships as those exemplified by nouns like oadoa 'his name', mwaroa 'his title', dipah 'his sin', or mwomwe 'his behavior'. Those nouns which do not take possessive suffixes directly can be termed alienable. Alienable nouns require a possessive classifier, which typically precedes the 'possessed' noun and to which the appropriate possessive suffix is affixed. The classifier used with a given alienable noun typically reflects the use to which the referent of that noun is being put or the way/value with which it is regarded. The general classifier oai, oamw, ah,... 'my, your, his,.....thing' is used when no other classifier is appropriate. Some examples are:

<u>warah warro</u>	'his canoe'
his-vehicle canoe-that	
<u>warah jidohsahu</u>	'his car'
his vehicle car-that	
<u>koanoai mwinge</u>	'my food'
my-food food	
<u>koanoai mwumwwe</u>	'my fish here (to eat)'
my-food fish-this	
<u>mwoaroamw rohssok</u>	'your flowers (for a garland)'
your-garland flower-those	
<u>mwoaroamw soahk</u>	'your leaves (for a garland)'
your-garland leaf-those	

A given alienable noun can often be used with more than one classifier under correspondingly different interpretations:

koanoai wusso 'my banana (to eat)'

my-food banana-that

oai wusso 'my banana tree'

my-thing banana-that

noai wusso 'my banana tree (for which I have a special

my-valued banana-that affection)'

Possessive classifiers can be considered to be a sub-type of inalienable noun if that class is defined in terms of the morphological property of having a possessive paradigm (taking possessive suffixes). There are some syntactic parallels as well. Like other inalienable nouns, possessive classifiers can be used alone without a following alienable noun, as the head noun of a noun phrase, if the referent of the possessive construction is either understood or can be equated with the class of items defined by the classifier. Thus:

Imwahu inenin koalik. 'His dwelling is very large.'

his-dwelling-that very large

Ia mine woaroamwo? 'Where's your vehicle?'

where be your-vehicle-that

Wahdo koanoai. 'Bring me something to eat.'

bring-hither my-food

We are suggesting, then, that the alienable/inalienable distinction in Mokilese not be considered to be fundamentally a semantic one but, rather, a morpho-syntactic distinction between those nouns which take possessive suffixes directly (inalienable nouns) and those which do not

(alienable nouns). This morpho-syntactic characterization of Mokilese inalienable nouns is open to two interpretations:

- i) that inalienable nouns are those that may take possessive suffixes, but need not do so in all their occurrences. This may be termed the potential interpretation of morpho-syntactic inalienability.
- ii) that inalienable nouns are those that must, in all their occurrences, take a possessive suffix. This may be termed the necessary interpretation of morpho-syntactic inalienability.

Under the potential interpretation, nouns are considered inalienable if, in some of their uses, they take possessive suffixes while in other uses they do not. Such nouns include, in Mokilese, ad 'name', oadoa 'his name'; kil 'skin', kilin 'his skin', in contrast to the vast majority of Mokilese nouns, which can never take possessive suffixes. Under the necessary interpretation, only those nouns which have no unsuffixed form, along with the suffixed forms of nouns with both suffixed and unsuffixed forms, are considered to be inalienable. Far from being an empty question of definitional interpretation, this question will be shown to be central to an understanding of the historical development of possessive constructions in Mokilese.

The necessary interpretation of morpho-syntactic inalienability predicts that suffixed and suffixless nouns from the same historical root will tend to become disassociated through time if they are analyzed as belonging to distinct nominal subcategories. There is some evidence that this disassociation has taken place in many forms. One relevant

observation is that many Mokilese inalienable nouns¹ (nouns taking possessive suffixes) have no corresponding unsuffixed forms; that is, forms reflecting the historical root of the suffixed forms directly. Among these are: pahioa 'his spouse', iroa 'his health', luoa 'his/its remains', kanah 'his food', jamah 'his father', inah 'his mother', kijehn 'his relative', kiah 'his mat', sooa 'its member', wah 'its fruit', pwalah 'his chest', imwin 'its end', ipoa 'near him/it', inmonin 'his disposition'. There appear to be approximately forty such nouns in Mokilese. It is significant that the missing free or isolate forms (unsuffixed forms) do not even appear to be potential in the language, since they cannot be supplied in context even by the most imaginative of informants. They have simply disappeared from the language. Their disappearance, I hypothesize, suggests the disassociation of suffixed and unsuffixed forms predicted under the necessary interpretation of morpho-syntactic inalienability. Suffixed and unsuffixed forms from the same nominal root had, at some point in the history of Mokilese, become mutually independent to an extent that the unsuffixed forms could disappear from the language with no effect on the suffixed forms.

The semantic interpretation of suffixed and unsuffixed forms from the same historical root has diverged in many cases. For example, corresponding to the possessive classifiers imwah 'his dwelling' and warah 'his vehicle', we find the nouns umw 'house' and war 'canoe'. The possessive classifiers refer to broad classes of objects while the referents of the corresponding alienable nouns are a small subset of those classes. Native speakers are adamant that the meaning of the

former is not a simple combinatorial function of the meaning of the latter and that of the possessive suffixes.

Two examples are perhaps more glaring. The noun mwarmwar can be translated 'garland worn over the chest', while its suffixed counterpart is rendered as 'his chest'. The pair pwiri/pwurroa is particularly interesting. The form pwurroa reflects a regular historical process in native Mokilese items by which a sequence $*C_1i \quad V$ becomes C_1C_1V , as $[-hi]$ evidenced by the Ponapean cognates pwiri/pwirie. The suffixed form pwurroa 'his stomach/core' typically refers to the seat of human emotions, in sentences like:

Pwurroa mwehu. 'He is even-tempered'

his-core good

Sihkei pwurroa. 'He is strong-willed.'

strong his-core

The related form pwiri is never used to refer to a human organ, nor to the seat of human emotions. Rather, its referent is some organ of fish, whose exact identification I am not certain of. Moreover, in this sense, it appears that a new possessive paradigm has been created on the long-vowel n-third singular pattern; thus, pwirihn '?its stomach'. This second possessive paradigm cannot be used to refer either to any human organ or to the seat of human emotions. It seems clear that the disassociation of pwiri and pwurroa is complete.

These cases of formal and of semantic disassociation of suffixed and unsuffixed Mokilese nouns with the same historical source suggest to me that the necessary interpretation of morpho-syntactic inalienability in Mokilese is the correct one; that only suffixed forms can be properly

inalienable. I interpret this conclusion as a claim that the nominal category of some earlier stage in the history of Mokilese has been bifurcated into two distinct subcategories, which can be labelled alienable noun (Na) and inalienable noun (Ni), which are at least in part distinguished by the fact that only the latter take possessive suffixes, in fact, must take possessive suffixes.

This analysis suggests that all unsuffixed nominals, even those whose meaning is not obviously distinct from that of related suffixed forms, are alienable nouns. Evidence in favor of this proposal can be found in the fact that such nouns can be possessed alienably; for example, kanah poa 'his arm (to eat)', used in reference to a cannibal perhaps, in contrast to poah 'his arm' and oai dam 'my outrigger (on my canoe, that I made, etc.)', in contrast to dame 'its outrigger (the canoe's)'. It is to be expected that if contexts appropriate to the alienable (unsuffixed) counterpart of an inalienable noun are rare, the alienable noun might disappear from the language, as has obviously occurred in the forty or so cases noted earlier. Many Mokilese alienable nouns with inalienable counterparts, though still extant in the language, are difficult to use. Thus, for example, the noun aw 'mouth' might be of some practical value in art or anatomy lessons, but the concept MOUTH is otherwise quite difficult to alienate from particular individuals. The noun in question is most frequently used predicatively, as in:

In aw mas. 'He is foul-mouthed.'

he mouth foul

Ih am likamw. 'He is a (habitual) liar.'

he mouth lie

in contrast to:

Nehn oawoa mas. 'His mouth smells.'

inside his-mouth foul

?Oawoa likamw. ?'His mouth lies.'

his-mouth lie

It would appear that the conceptual distinction between 'alienability' and 'inalienability' has, over time, become more salient in the grammar of Mokilese, in terms of the development of a categorial (or subcategorial) distinction between inalienable nouns that take possessive suffixes and alienable nouns that do not. In any event, if the analysis given in this section for possessive constructions in Mokilese is substantially correct, then it suggests that noun-poss constructions in Mokilese are now dominated by the category Ni where, at some earlier period, they were dominated by the phrasal category NP. The following sections will attempt to relate this change to the change in the internal boundary type associated with these constructions.

2.2 Final Consonant Deletion and Final Vowel Deletion in Mokilese

2.2.0 Introduction

The historical processes of final consonant deletion and final vowel deletion will be shown to be crucial to an understanding of the development of the Mokilese nominal and verbal constructions considered in this study. These processes will be shown to have applied under identical conditions (word-finally), but at different periods in the history of Mokilese. Final consonant deletion dates from the PEO period, while final vowel deletion is a relatively recent process in some, but not all, Micronesian languages. We will demonstrate that final consonant

deletion applied to the nominal element in noun-poss constructions, while final vowel deletion, at a later period, failed to apply to these same nominal elements though the environment for the two rules was the same. This fact suggests that some change had taken place in the structure of the forms in question during the intervening period. We will claim that this was a change in the nature of the internal boundary associated with noun-poss constructions.

In the present work, the rules of final consonant deletion and final vowel deletion are considered as historical processes. Their possible synchronic status in Mokilese is considered briefly in the context of one possible analysis of the Mokilese verbal system (see section 3.2). In Chapter 3, it will be demonstrated that, in the case of final vowel deletion at least, the operation of the rule has had profound effects on the later history of the forms to which it applied.

2.2.1 Operation of the Rules

Final consonant deletion is a well attested process that, as noted in section 1.3, in part defines the Eastern Oceanic subgroup (Pawley 1972:7). The following data, drawn from Pawley (op. cit.), will suffice to demonstrate the operation of final consonant deletion:

PAN	PEO
enem	ono 'six'
ikan	ika 'fish'
manuk	manu 'bird'
kulit	kuli 'skin'
qaZan	qansa 'name'

Final vowel deletion is found sporadically throughout Oceania but

there is no strong indication that it can be used as evidence for any subgrouping. Within Micronesia it has not affected all languages to the same degree. It has operated in Marshallese, Kusaiean, the Ponapeic languages (including Mokilese), and, in the Trukic continuum, as far west as Satawal. In Gilbertese, final vowel deletion has affected only final high vowels after nasal consonants. In western Trukic, final vowels are devoiced and, in Ulithian at least, lost under certain well-defined conditions. Mokilese reflexes of the PEO forms given above show the operation of final vowel deletion:

PEO	MOK	
ono	ohn	'six (serial counting series)'
ika	ik	'fish (a bound form in some fish names)'
manu	mahn	'bird', -men 'animate numeral classifier'
kuli	kil	'skin'
qansa	ad	'name'

The application of the rules of final consonant deletion and final vowel deletion was blocked by the presence of a following transitive suffix (POC *-i and *-aki(ni)--see section 3.2). This fact can be demonstrated in the synchronic alternations found in Mokilese transitive and intransitive verb forms from the same historical root (see section 3.2), where we hypothesize that a following transitive suffix removed the final VC of the root from the relevant deletion environments in transitive forms. Thus:

POC	*tangis	*tangis-i	*pulut	*pulut-i	
	'to weep'	'to weep for s-t'	'glue'	'to glue s-t'	
	tangi	tangis-i	pulu	pulut-i	C-deletion
	tang	tangis	pul	pulut	V-deletion

Other phonological changes yield the Mokilese forms joang 'to weep', jangid 'to weep about s-t' and pwil 'glue, to glue', pwilij 'to glue s-t'.

Significant for our present purposes is the fact that, in noun-possessive marker constructions, the possessive marker did not block the application of final consonant deletion, but did block the application of the historically-later rule of final vowel deletion. Thus:

POC	*kulit	*kulit-mu	*qansan	*qansan-mu	
	'skin'	'your skin'	'name'	'your name'	
	kuli	kuli-mu	qansa	qansa-mu	C-deletion
	kul	kuli-m	qans	qansa-m	V-deletion

Other phonological changes yield the Mokilese forms kil 'skin', kilimw 'your skin' and ad 'name', oadoamw 'your name'.

There are three possible interpretations for the failure of final vowel deletion, but not of final consonant deletion, to apply in identical environments in noun-poss constructions. The first is that final consonant deletion applied to pre-Mokilese nouns before noun-possessive marker constructions entered the language. This interpretation is unlikely since possessive marking by means of possessive enclitics can be reconstructed for PAN. A second possibility is that the loss of final consonants in the possessed forms can be attributed to some other process, one of cluster reduction for example, since the

reconstructed POC possessive markers are in all cases consonant-initial. I discount this possibility, however, on the grounds that consonant loss in these forms parallels exactly the expected results of final consonant deletion and, to my knowledge, occurs in just those languages where final consonant deletion is known to have applied.

A third possible interpretation of the failure of final vowel deletion to apply in possessive constructions is a functional one. This interpretation would hold that, though operating in essentially the same superficial environment, the processes of final consonant deletion and final vowel deletion were functionally quite distinct. Final consonant deletion operated to optimize syllable structure by 'opening' closed syllables. Final vowel deletion might be quite differently motivated, since it created just the sort of syllable patterns that final consonant deletion eliminated. One might suggest that it was ultimately motivated by stress, and that it functioned to eliminate weak, stressless final syllabic segments. If stress assignment operated over phonological phrases, as is not unlikely, then we would not expect a rule like final vowel deletion to apply in the possessive constructions given above if, for example, the vowel preceding the possessive marker, and expected to undergo final vowel deletion, were stressed.

Two sorts of evidence might be brought to bear to falsify the argument that final consonant deletion and final vowel deletion were distinct in function, though identical in superficial environment. First, cases in which a final consonant was deleted before a vowel-initial enclitic would provide evidence that final consonant deletion

did not function solely to 'open' closed syllables (that is, $V_1C_1\$C_2V_2 > V_1\C_2V_2)² since sequences of the shape $V_1C_1\#V_2$ would be syllabified $V_1\$C_1V_2$ before our hypothesized deletion of C_1 . The Austronesian data present no immediately obvious cases of this sort, however, since none of the PAN enclitics in question can be reconstructed as vowel initial. Second, cases in which a final vowel was in fact deleted when it would be safe to assume that that vowel was stressed (that is, $C_1\hat{V}_1\#(C_2)V_2 > C_1\#(C_2)V_2$) or, conversely, cases in which a final vowel was not deleted through unstressed (that is, $C_1V_1\#(C_2)\hat{V}_2(C_3)V_3$) would provide evidence that final vowel deletion did not function solely to remove unstressed final syllabic segments. Mokilese does seem to present cases of this latter sort.

The evidence in question involves a PMC verb-enclitic construction (to be considered in greater detail in section 4.3) whose form in Mokilese is shown in the following example:

Ngoah apwal-ki doadoahkko.

I difficult-ki work-that

'I find that job difficult.'

There seems to be no reason to expect verb-ki and noun-poss constructions to behave differently with respect to final vowel deletion since they are structurally parallel.

Since prior application of final consonant deletion in Mokilese left no reflexes of historical final consonants in absolute final position, we can assume apwal to have been vowel-final in pre-Mokilese (before final vowel deletion); that is $*apwalV$. The enclitic ki is reconstructed (section 4.2.2.4) as PMC $*akini$. The initial $*a$ is

reconstructed on the basis of reflexes in Gilbertese and in western Trukic, but is not evidenced in reflexes in other Micronesian languages. We may then assume a post-PMC pre-Mokilese *kini, whose final *i was lost through final vowel deletion and whose *-n- was irregularly lost in Mokilese (cf. PING kin, PON ki ~ kin--see section 4.2.2.4), yielding MOK ki.

Assuming a pre-Mokilese enclitic *kini, we can then postulate the formally identical constructions:

- i. *ada-mui³ (→ oadoamwi 'your (pl) name(s), GIL aramii)
- ii. *apwalV-kini (→ apwalki 'to find s-t difficult')

where the final vowel of *apwalV was deleted before *kini, but where the final vowel of *ada was not deleted before *mui. Since these constructions appear otherwise identical, we would expect final vowel deletion to apply both to the nominal and to the verbal root, or to neither. In fact, however, it applied to the verbal root but not to the nominal, under what we must infer were identical stress conditions. We must, therefore, reject the stress-sensitive interpretation of the failure of final vowel deletion to apply to the nominal element of noun-poss constructions.

If we allow that the conditions for final consonant deletion and final vowel deletion were the same, applying to the final segment of a phonological string, where final is defined, following current practice, in terms of some boundary type, then we must infer from the data presented above that a change had taken place in the internal analysis of noun-poss constructions. At the time that final consonant deletion applied, the last segment of the nominal element of a noun-poss

construction was defined as final for the purposes of final segment deletion rules, while, at the later point at which final vowel deletion applied, the corresponding segment was not so defined. In the following section it will be proposed that this structural change was in the nature of the internal boundary associated with noun-poss constructions.

2.3 Deletion Rules and Boundary Type

In the preceding section, it was demonstrated that final consonant deletion applied at an early stage in the history of Mokilese before the antecedents of synchronic Mokilese possessive suffixes while, at a later period, the process of final vowel deletion failed to apply in what appears to have been the same environment. We concluded that this fact suggests that some change had taken place in this construction in the intervening period. An obvious interpretation of this change, within the framework of generative phonology provided by the Sound Pattern of English (Chomsky and Halle 1968--henceforth SPE) is that the internal boundary between noun and possessive marker has changed. The effect of this change in boundary type was then to remove the final vowel of the noun from the environment of the later rule of final vowel deletion.

SPE gives the following conventions for the introduction of boundaries into surface strings:

- i) place a + (formative) boundary before and after each lexical formative
- ii) place a # (word) boundary in conjunction with each major category bracketing in surface structure, where a major category is one of the universal lexical categories (noun, verb, adjective) or a category

dominating one of these

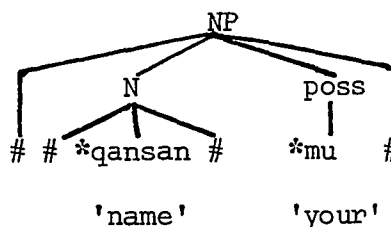
While these conventions provide the core of the SPE phonological boundary system, it must be stressed that the total system is more complex than this. Thus, SPE postulates a third boundary, the = boundary, associated with particular lexical formatives, and assigns special status to sequences of more than one # boundary. Such sequences define the limit of the phonological word in SPE.⁴ SPE also provides mechanisms for changing boundary assignments made initially in terms of syntactic surface structure (see below).

If we state the relevant deletion rules as follows:

i) $C \rightarrow \emptyset / _\#$

ii) $V \rightarrow \emptyset / _\#$

then the fact that final consonant deletion applied in possessive constructions suggests that the internal boundary associated with these constructions was a # boundary, at the time at which final consonant deletion applied. The appropriate structure follows directly from the SPE boundary assignment conventions, under the analysis of PAN noun-poss constructions given in section 2.1:



If final vowel deletion did not apply in such constructions at a later period, we must assume that in the intervening period the internal analysis of these constructions changed from N#poss to N+poss.

SPE provides one major mechanism by which such a change can be

effected; the readjustment rules linking surface structure as output of the syntactic component to surface structure as input to the phonological component. Readjustment rules of the sort required to effect a change in boundary type are motivated in terms of the applicability of phonological rules to the structures in question (see Chapter Five). Whatever the synchronic status of such global functions might be, their validity as historical processes is questionable. If, as in examples such as the one above, the sole phonological motivation of the readjustment rule changing # to + in possessive constructions was to prevent the application of final vowel deletion to the final vowel of the nominal root, then we must assume its introduction to have been the result of a capricious decision not to apply final vowel deletion to these forms. It is, of course, possible that historical change does proceed in this fashion but, if so, its study is reduced to near vacuity. Since I am aware of no other motivation for the readjustment rule in question, we must hope that, while it perhaps states the effects of the change, the readjustment rule is not the change itself. This conclusion is further elaborated in section 5.3.

The SPE boundary assignment conventions suggest another route by which the internal boundary in noun-poss constructions could have changed, that being a change in the category labelling in the construction itself. If, following the SPE conventions, the category node directly dominating the nominal root in such constructions ceased to be the major category noun, but changed to some 'minor' category, then no # boundary would be introduced following the nominal root. As a result, the + formative boundary would remain, in accordance with the

SPE conventions. This boundary would effectively block the application of final vowel deletion at a later period.

While we have no direct evidence that this change did in fact take place, we have already noted that evidence suggests a change in the category node dominating the entire noun-poss construction from NP in PAN to Ni in Mokilese. This hypothesis, if justified, is, however, insufficient to affect a change in boundary type following the SPE conventions since, under this analysis, the nominal root is still directly dominated by the major category noun. What we would like to propose here is that the change hypothesized in the node dominating the entire construction is sufficient to guarantee a change in the internal boundary associated with the construction. The implications of this proposal for the theory of boundary assignment will be the subject of Chapter Five of the present work.

Footnotes to Chapter Two

1. Henceforth, inalienable nouns will be cited in their third person singular paradigm form.

2. The symbol \$ marks syllable boundaries.

3. This reconstruction is made for illustrative purposes only. It is intended to represent a hypothetical stage of pre-Mokilese before the application of final vowel deletion, and should not be identified with POC or with PMC. The reconstruction *mui for the second person plural possessive marker reflects the fact that mw in Mokilese is conditioned by a following round vowel when its source is POC *m (compare MOK -mw 'second person singular possessive', from POC *mu; Pawley reconstructs POC *m(i)u for the second person plural possessive.) We must assume two vowels to have been present at an earlier stage because of the operation of final vowel deletion. The change *u# to MOK i# is common.

4. Phonological boundary assignment has been treated in somewhat different ways in much of the work subsequent to SPE. Since the purpose of this chapter is only to introduce, through one example, the nature of the historical problems to be dealt with in this study, rather than to give an exhaustive treatment of even this single example, we delay consideration of later approaches to boundary assignment and of their relevance to the particular case that is the subject of this chapter until chapter 5, where the question of boundary type change will be treated in detail.

CHAPTER III

Verb Subcategorization in Mokilese

3.0 Introduction

In this chapter we consider the historical development of Mokilese verb subcategorization and related topics in the history of Mokilese transitivity patterns. We begin (section 3.1) with a consideration of the verb subcategorization system of modern Mokilese, with particular emphasis on the existence of a transitive verb paradigm to which all Mokilese transitive verbs must conform. Section 3.2 provides an internal reconstruction of pre-Mokilese transitive marking based on synchronic alternations between now distinct Mokilese verbs that we hypothesize reflect the same pre-Mokilese verb, with and without a pre-Mokilese analog of the POC close transitive suffix *-i. The profound changes that have occurred in the relatively recent history of the Mokilese verbal system are claimed to have been triggered by the phonological process of final vowel deletion which, we suggest, led to the reanalysis of pre-Mokilese transitive verbs with the transitive suffix *-i as monomorphemic.

Section 3.3 considers the syntax and semantics of pre-Mokilese transitive verbs in greater detail in an attempt to find the pre-Mokilese source of the Mokilese transitive paradigm. We hypothesize a pre-Mokilese transitive paradigm restricted to a class of verbs termed patient-oriented (P-verbs). The P-verb transitive paradigm is claimed to have been based on:

- i) the existence of alternating transitive sentence patterns, with and without a transitive suffix, which appear to have marked an aspectual distinction
- ii) the generalization to all P-verbs of a derivational process termed the descriptive reduplication

In section 3.4, the verb subcategorization system of pre-Mokilese is compared to that reconstructed for POC in Pawley (1973). These two reconstructions are shown to be for the most part reconcilable. The pre-Mokilese P-verb paradigm cannot, however, be immediately extended to POC. The descriptive reduplication, from which one parameter of the paradigm is derived, is likely to be a PMC innovation, though evidence suggests that the aspectually-distinct alternating transitive patterns hypothesized for pre-Mokilese P-verbs may have a longer history. Finally, section 3.5 considers those changes in Mokilese verb subcategorization and transitivity we hypothesize to have followed from the reanalysis of pre-Mokilese transitive verbs in *-i as monomorphemic.

3.0.1 Method and Terminology

In the spirit of Pawley's work on POC, Mokilese verbs will be subcategorized on the basis of their potential occurrence in given syntactic environments and their morphological marking in those environments. That is, a set of verbs found in similar surface syntactic environments with identical morphological marking will be considered a subcategory. Syntactic environment includes both the number of surface arguments and the case relation (in the sense of Fillmore 1968) holding between each argument and the verb. This latter relation will be termed the case role of the argument. In this sense, perhaps, our

categorization is partially semantic. Other semantic properties of verbs will be referred to as they pertain to the discussion which follows, but the role they will play in the subcategorization itself, if any, is minimal.

Relevant surface arguments of verbs will be designated NP_S (or PRO_S if pronominal) or subject and NP_O (or PRO_O if pronominal) or object. Pawley (1973:116-117) defines object as 'that NP in a transitive sentence whose case relation to the verb is marked by the transitive suffix on that verb' and/or is anticipated by a post-verbal pronoun. He defines subject as 'the obligatory NP in an intransitive sentence...[or] that obligatory NP in a transitive sentence which is not the direct object'. These characterizations are of little value to us since Mokilese has lost all POC 'anticipatory' post-verbal pronouns and does not reflect POC transitive suffixes as such. For our purposes we will define subject as the obligatory NP or PRO in any clause and object as the NP or PRO in a transitive clause (one containing a transitive verb) that is not the subject and whose case relation to the verb is not otherwise marked.

3.1 The Verbal System of Mokilese

3.1.0 Introduction

This section provides an analysis of the verbal system of Mokilese on the basis of which we will attempt to reconstruct the verbal system of an earlier pre-Mokilese period. We begin with a brief description of the simple verbal sentence in Mokilese (section 3.1.1). Section 3.1.2 gives an account of the verb subcategorization system of Mokilese. Finally, section 3.1.3 describes the Mokilese transitive

paradigm, a four-member syntactic paradigm to which the overwhelming majority of Mokilese transitive verbs, whatever their subcategory, must conform.

3.1.1 Verbal Sentences

The majority of Mokilese verbal sentences have the following basic shape:

NP_S VP (NP_O) (NP_{LOC}) (NP_{TIME})

where NP_O occurs optionally in transitive sentences and NP_{LOC}/NP_{TIME} are optional locative and time phrases which will not concern us here. Verbal sentences may, in addition, be augmented by 'accessory' and 'goal/source' noun phrases, to be considered in Chapter Four.

The Mokilese verb phrase as analyzed here cannot be equated with that of standard generative grammar since it does not include NP_O. The same is true of the verb phrase in most descriptions of Oceanic languages. The Mokilese verb phrase has the following shape:

(MOD) VERB (POST-VERBAL COMPLEX)

where the modality (MOD) is a complex, often empty, constituent potentially filled by a large number of modal, aspectual, and temporal particles. It will not be considered here. The post-verbal complex is a set of twelve enclitic elements, some or none of which may occur in any sentence, following constraints to be considered in Chapter Four. Perhaps the most frequently occurring are the directional/aspectual enclitics; for example, da 'up', di 'down', la 'away'. It must be stressed that these enclitics can appear with any verb, regardless of subcategory. Finally, the verb itself can take affixes, the only ones considered here being ka- 'causative', -i 'transitive', and -ek

'intransitive'. These affixes are restricted to particular verb subcategories, as will be shown in the course of the discussion to follow. A verb root with one of these affixes will be considered to be a verb of the same syntactic status as an unaffixed verb, while a verb with (an) enclitic(s) will be considered to be a verb phrase. Some justification for this analysis is provided in Chapter Five.

Several minor verbal sentence patterns will not be considered here:

- i) verb-initial intransitive sentences, for example:

Rojdi pillo.

exhausted-down water-that

'The water is all gone.'

- ii) existential and locative sentences with verbs like

mine 'to exist, to be (in a place)', for example:

Mine pil nehn pwarerro.

exist water in well-that

'There's water in the well.'

Ih mine Pohnpei.

he be Ponape

'He is on Ponape.'

- iii) directional sentences with simple verbs of motion, like inla 'to go', or with a motion verb and a directional enclitic (see Chapter Four), for example:

Ih inla Johkoahj.

he go Sohkehs

'He went to Sohkehs.'

Ih kijoula Pohnpei.

he travel-away Ponape

'He travelled to Ponape.'

We will consider only sentences of the basic shape:

NP_S VP (NP_O)

These are of two basic types:

- i) transitive sentences
- ii) intransitive sentences

Transitive sentences in Mokilese have the structure:

NP_S VP (NP_O)

where NP_O is a noun phrase with specific reference. In Mokilese, these noun phrases are either pronouns, proper nouns, or common nouns with a determiner. Thus:

Ngoah sipwang rahu.

I bend branch-that

'I am bending that branch.'

Jeriho umwwujoahla ngoahi.

child-that vomit-on-away me

'That child vomitted all over me.'

Ngoah kapang John.

I see John

'I saw John.'

No pronoun is normally used if the object is inanimate. Compare:

Woallo pokihi ih.

man-that strike-down him

'The man struck him.'

Woallo pokihi.

man-that strike-down

'The man struck it.'

The last sentence is nonetheless transitive since a specific object is implied, though not overtly present.

Intransitive sentences have the basic structure:

NP_S VP

where the verb dominated by VP does not imply a specific object.

They are of two types:

- i) simple intransitive sentences
- ii) intransitive sentences with an incorporated object construction

Simple intransitive sentences may be illustrated by the following examples:

Sakaio soausoau.

rock-that heavy

'That rock is heavy.'

Mahnno mehdi.

bird-that die-down

'The bird is dead.'

Jeripeinno joang.

girl-that cry

'The girl is crying.'

Ngoah pirin kijoula.

I MOD travel-away

'I'm going to leave.'

Ih poadpoad.

he plant

'He is (at work) planting.'

Incorporated object constructions can be characterized as verb compounds analogous to the English 'baby-sit'. They consist of a verb and a following noun with generic reference (and, therefore, neither proper, pronominal, or with a determiner), thus contrasting with the NP₀ of a transitive sentence. Restrictions of the type of verb that can occur in an incorporated object construction will be considered in section 3.1.3. Incorporated object constructions never appear in transitive sentences (with an NP₀ in addition to the generic noun that is part of the incorporated object construction itself). Some examples are:

Inoaio pirin kurujek mwehng rehnnoawe.

my-mother that MOD grind-ek taro day-this one

'My mother is going to grind taro today.'

(The suffix -ek will be considered in section 3.1.3.)

Kamai dopdop rais aio.

we buy rice yesterday

'We bought rice yesterday.'

Ih poad suhkoa.

he plant tree

'He is planting trees.'

in contrast to the transitive sentences:

Inoai pirin kurujdi mwehngkai rehnnoawe.

my-mother-that MOD grind-down taro-these day-this

'My mother is going to grind up these taro today.'

Kamai dupukda raisso aio.

we buy-up rice-that yesterday

'We bought that rice yesterday.'

Ih poadokdi suhkoahu.

he plant-down tree-that

'He planted that tree.'

Incorporated object constructions are islands, individual components of which cannot be questioned, relativized, topicalized, pronominalized, etc. Contrast the following sentences:

Ia mwehnggo koah pirin kurujdi?

which taro-that you MOD grind-down

'Which taro are you going to grind?

Mwehnggo ma koah kurujdi mine o.

taro-that REL you grind-down be there

'The taro that you ground is there.'

Mwehnggo ioar ma ngoah kurujdi.

taro-that FOC REL I grind-down

'That taro, that's what I ground.'

with the following ungrammatical sentences involving incorporated object constructions:

*Ia mwehng koah pirin kurujek.

*Mwehng ma koah kurujek mine o.

*Mwehng ioar ma ngoah kurujek.

The syntactic unity of incorporated object constructions can also be seen in the fact that directional enclitics, when used with such a construction, follow the entire incorporated object construction.

Compare:

Ngoah kurujdi mwehnggo.

I grind-down taro-that

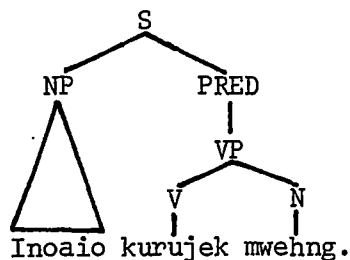
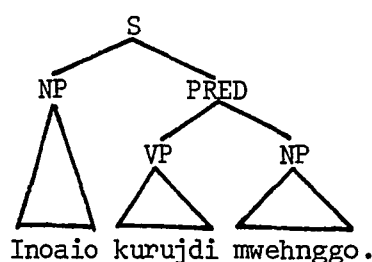
'I ground that taro.'

Ngoah kurujek mwehngla.

I grind-ek taro-away

'I finished grinding taro.'

We might want to contrast the internal structure of transitive sentences and of incorporated object constructions as:



3.1.2 Verb Subcategorization

3.1.2.0 Terminology

The term verb root will be used to refer to the unaffixed but possibly reduplicated form of a Mokilese verb. All forms of a verb (affixed or unaffixed) based on the same root will be termed verb forms. It is convenient to distinguish two types of verb form according to the sentence type in which they typically occur. Verb forms occurring in transitive sentences will be termed transitive verbs/forms. Verb forms occurring in intransitive sentences will be termed intransitive

verbs/forms. The term verb will be used to refer to a verb root together with its associated affixed forms. Thus, the verb LOAKJID 'to fish' has three forms (ignoring reduplication): the intransitive verb/form loakjid 'to fish' (the verb root), the transitive verb/form loakjidi 'to fish for s-t', and the intransitive verb/form loakjidek 'to fish'. A verb will be said to be found in a given sentence type if at least one of its forms occurs in that sentence type.

Mokilese verbs are subcategorized in accordance with the sentence type in which their root typically occurs. On this basis, we can distinguish the following subcategories:

- I Stative
- II Root Transitive
- III Root Intransitive
- IV Optional Transitive
- V Obligatory Intransitive
- VI Non-transitive

These subcategories will be considered in turn in the following sections.

3.1.2.1 Stative

Stative verbs appear in simple intransitive sentences with non-agent subjects and have causative forms with the prefix ka-. Some examples are:

<u>loau</u>	'cooked'
<u>sipw</u>	'broken'
<u>ling</u>	'pretty'
<u>dahr</u>	'fast'
<u>soausoau</u>	'heavy'

wahssa 'red'
lioas 'lioas'
pwilpwil 'sticky'

as in:

Raisso loau.
 'The rice is cooked.'
Ngoah kaloau raisso.
 'I recooked the rice.'
Ngoah lioas.
 'I am angry.'
Ih inenin kalioas.
 he very cause-angry
 'He really makes people angry.'
Ih kalioasihda ngoahi.
 he cause-angry-tr-up me
 'He got me angry.'

As noted in the penultimate example above, causative forms with the prefix ka- are not necessarily transitive, but may be found in simple intransitive sentences in the interpretation 'characteristically stimulating x', where x is the content of the stative verb. The majority of statives with an intransitive causative of this sort are experiencer subject verbs in their root form. All causative forms can also occur in transitive sentences. Most require the suffix -i under such circumstances, but a significant number do not. We will not explore the properties of the causative further here.

3.1.2.2 Root Transitive

Root transitive verbs appear in transitive sentences in their root form. Some examples are:

<u>kuruj</u>	'to grind s-t'	<u>kidim</u>	'to wrap s-t'
<u>diar</u>	'to find s-t'	<u>ijir</u>	'to husk s-t'
<u>nikid</u>	'to save s-t'	<u>sipwang</u>	'to bend/break s-t'
<u>awal</u>	'to replace s-t'	<u>piload</u>	'to pick s-t'
<u>nihd</u>	'to drag s-t'	<u>ungud</u>	'to wring out s-t'
<u>doakoa</u>	'to stab s-t'	<u>sipis</u>	'to tie s-t'
<u>poadok</u>	'to plant s-t'	<u>pakad</u>	'to defecate on s-t'
<u>insinge</u>	'to write on s-t'	<u>pwiliij</u>	'to glue s-t'
<u>daur</u>	'to climb for s-t'	<u>dupuk</u>	'to buy s-t'

3.1.2.3 Root Intransitive

Root intransitive verbs appear in simple intransitive sentences with agent-subjects (rarely experiencer-subjects) and take the suffix -i in transitive sentences, usually with goal/location-, but sometimes with patient-objects. Some examples are:

<u>loakjid</u>	'to fish'	<u>adma</u>	'to behead'
<u>pihn</u>	'to paint'	<u>pidek</u>	'to go around'
<u>noaisik</u>	'to give birth'	<u>ain</u>	'to iron'
<u>pwuriamwei</u>	'to be surprised'	<u>aliij</u>	'to aim'

as in:

Ngoah loakjid.

'I am fishing.'

Ngoah loakjidi mwumwwo.

'I am fishing for that fish.'

Ih alij.

'He took aim.'

Ih aliji suhkoahu.

'He aimed at that tree.'

3.1.2.4 Optional Transitive

Optional transitive verbs can occur both in transitive and simple intransitive sentences with no change in form. They are, for the most part, experiencer-subject verbs. Some examples are:

rong 'to hear (s-t)'

nam 'to taste (s-t)'

nim 'to drink (s-t)'

kapang 'to see (s-t)'

kidal 'to know (s-t)'

mijik 'to fear (s-t)'

jong 'to taste, to try (s-t)'

3.1.2.5 Obligatory Intransitive

Obligatory intransitive verbs are found in simple intransitive sentences. All are agent-subject verbs. Some examples are:

alu 'to walk'

kijou 'to run, to travel'

mwinge 'to eat'

je 'to shout'

koaul 'to sing'

doadoahk 'to work'

insing 'to write'

3.1.2.6 Non-transitive

Non-transitive verbs are found both in simple intransitive sentences and in intransitive sentences with incorporated object constructions. They are of two sub-types:

i) P-non-transitive

These verbs are found in incorporated object constructions with agent subjects and, almost always with a directional/aspectual enclitic, in simple intransitive sentences with patient-subjects. Examples are:

<u>poad</u> 'to plant, planted'	<u>kid</u> 'to wrap, wrapped'
<u>joai</u> 'to sharpen, sharpened'	<u>sip</u> 'to tie, tied'
<u>ne</u> 'to divide, divided'	<u>poal</u> 'to chop, chopped'
<u>doau</u> 'to fill, filled'	<u>rep</u> 'to break, broken'
<u>pwil</u> 'to glue, glued'	<u>piloa</u> 'to pick, picked'

as in:

Ngoah poad suhkoa.

'I am planting trees.'

Suhkoahu ne poaddi.

tree-that MOD plant-down

'That tree has been planted.'

ii) A-non-transitive

These verbs have the same distribution as P-non-transitives except that, in addition, they can be used in simple intransitive sentences with agent subjects. In most cases, the A-non-transitive is transparently a reduplication of an existing P-non-transitive, though it is neither the case that all A-non-transitives are reduplicated (though most are) nor that they have corresponding P-non-transitives. Some

examples are:

<u>poadpoad</u>	'to plant'	<u>kidkid</u>	'to wrap'
<u>joaijoai</u>	'to sharpen'	<u>nehne</u>	'to divide'
<u>doaudioau</u>	'to fill'	<u>poalpoal</u>	'to chop'
<u>dopdop</u>	'to buy'	<u>poaloang</u>	'to spread out to dry'

as in:

Ngoah joaijoai.

'I am (engaged in) sharpening.'

Ngoah joaijoai jahr.

'I am sharpening knives.'

Jahrro joaijoaila.

'The knife has been sharpened.'

3.1.2.7 Cross-subcategory Relationships

A careful examination of the data presented in the preceding section reveals that certain formal relationships frequently hold between what are, in an obvious sense, semantically similar verbs belonging to different subcategories. Obligatory intransitive verbs (those found only in intransitive sentences with agent subjects) or P-non-transitive verbs (those found in intransitive sentences with patient subjects and in incorporated object constructions) differ canonically from 'related' root transitive verbs (those found unsuffixed in transitive sentences), ignoring vowel morphophonemics, only in that the former two lack the final V(C) (or C, if the preceding segment is a glide) of the root transitive. Thus: daur 'to climb after s-t', doau 'to climb'; poadok 'to plant s-t', poad 'to plant'; doaroa 'to protect s-t', doar 'to protect'. A-non-transitive

verbs (those found in intransitive sentences with agent subjects and in incorporated object constructions) related to verbs of other subcategories can be described canonically, with certain well-defined exceptions to be considered in section 3.2, as reduplications of corresponding root transitive verbs whose final V(C) or C has been removed. Thus: poadpoad 'to plant', poadok 'to plant s-t'; dopdop 'to buy', dupuk 'to buy s-t'; poalpoal 'to chop', poaloa 'to chop s-t'. Statives with related forms in other subcategories are either reduplicated or unreduplicated versions of root transitives without their final V(C) or C. Thus: sipw 'broken', sipwang 'to break s-t'; pwilpwil 'sticky', pwilij 'to glue s-t'.

These relationships are displayed in the following chart:

Root Tr.	Oblig. Intr.	P-non-tr.	A-non-tr.	Stative
dupuk	----	----	dopdop	----
daur	doau	----	----	----
poadok	----	poad	poadpoad	----
sipwang	----	----	----	sipw
pwilij	----	pwil	----	pwilpwil

There are also optional transitive and stative verb pairs related in the sense described here; for example, nim 'to drink s-t' nimnim 'to be a drinker'. Discussion of such pairs will be delayed until section 3.3.5, where the mechanism used to derive the stative member, here termed the descriptive reduplication, is considered in some detail. Finally, we might note that, of all the verb subcategories of Mokilese, only the root intransitives (those verbs found unsuffixed in intransitive sentences with agent subjects and, with the suffix -i, in transitive

sentences) are completely 'isolated' in that no member of that subcategory is related, in the intended sense, to verbs of any other subcategory. It will be shown in section 3.5.4 that this fact is not accidental.

3.1.3 The Transitive Paradigm

Considered as a set, the related verbs poadok 'to plant s-t', poad 'to plant, planted' and poadpoad 'to plant' can appear in four sentence types. The first of these verbs appears in transitive sentences like:

Ih poadokdi suhkoahu.
 he plant-down tree-that
 'He planted the tree.'

The second appears in simple intransitive sentences with patient-subjects and in intransitive sentences with incorporated object constructions:

Suhkoahu poaddi.
 tree-that plant-down
 'The tree has been planted.'

Ih poad suhkoa.
 he plant tree
 'He is planting trees.'

The third appears in simple intransitive sentences with patient-subjects, in simple intransitive sentences with agent-subjects, and in intransitive sentences with incorporated object constructions:

Suhkoahu poadpoaddi.
 'The tree has been planted.'

Ih poadpoad.

'He is (engaged in) planting.'

Ih poadpoad suhkoa.

'He is planting trees.'

Thus, the verb set {poadok, poad, poadpoad} can appear in the following four sentence types:

- i) transitive (S_t)
- ii) simple intransitive patient-subject (S_{iP})
- iii) simple intransitive agent-subject (S_{iA})
- iv) intransitive with incorporated object (S_{io})

These sentence types define what will be termed the Mokilese transitive paradigm. The nature of the transitive paradigm may be stated in terms of the following constraint:

$$\begin{aligned}
 [NP_1 [V]_{VP} [N_2]_{NP_2}]_{S_t} &\supset [NP_1 [V]_{VP}]_{S_{iA}} \\
 &\supset [NP_2 [V]_{VP}]_{S_{iP}} \\
 &\supset [NP_1 [V-N_2]_{VP}]_{S_{io}}
 \end{aligned}$$

That is, every transitive sentence implies a corresponding simple intransitive agent-subject sentence, a simple intransitive patient-subject sentence, and an intransitive sentence with an incorporated object construction.

In accordance with the above constraint, all Mokilese transitive verbs (root transitives, optional transitives, or transitives formed from some other subcategory by means of the suffix -i), with certain well-defined exceptions, have historically-related or synchronically-derived intransitive forms that appear in intransitive (S_{iA} , S_{iP} , S_{io}) sentences. A transitive verb together with corresponding intransitive

verb(s) will be termed the transitive paradigm of the verb in question. The subcategory to which the intransitive verb(s) belong(s) and/or the affix(es) carried by the verbs in a given paradigm will be claimed to be a function of the earlier subcategorization of the historical verb from which the synchronic forms of the paradigm developed. The major paradigm types are summarized in the following table:

TABLE V

MOKILESE TRANSITIVE PARADIGM

S _t	S _{iA}	S _{iP}	S _{io}
poadok	poadpoad	poad	poad
	padokek	padokek	padokek
		poadpoad	poadpoad
kuruj	kurujek	kurujek	kurujek
daur	doau	daurek	daurek
loakjidi	loakjid	loakjidiek	loakjidiek
nim	nim	nim	nim

or, more schematically:

	S _t	S _{iA}	S _{iP}	S _{io}
I	root tr.	$\left\{ \begin{array}{l} \text{A-non-tr.} \\ \text{root tr.-ek} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{P-non-tr.} \\ \text{root tr.-ek} \\ \text{A-non-tr.} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{P-non-tr.} \\ \text{root tr.-ek} \\ \text{A-non-tr.} \end{array} \right\}$
II	root tr.	root tr.-ek	root tr.-ek	root tr.-ek
III	root tr.	obl. int.	root tr.-ek	root tr.-ek
IV	root int.-i	root int.	root int.-i-ek	root int.-i-ek
V	opt. tr.	opt. tr.	opt. tr.	opt. tr.

Table V distinguishes five transitive paradigm types. Since

paradigm type I is the most complex, it will be considered last.

Paradigm type II is limited to those root transitive verbs having only intransitive forms in -ek in S_{iA} , S_{iP} , and S_{iO} sentences. Paradigm type III is limited to those root transitive verbs with related obligatory intransitives (appearing in S_{iA} sentences). The -ek intransitive of paradigm type III root transitives is found only in S_{iP} and S_{iO} sentences.

Root intransitive verbs (appearing in S_{iA} sentences) follow paradigm type IV. Their transitive forms in -i appear in S_t sentences, while their intransitive forms in -i-ek appear in S_{iP} and S_{iO} sentences. Paradigm type IV is productive in Mokilese; that is, all new verbs (statives aside) seem to be brought into the root intransitive subcategory. Transitive verbs in -i, it might be noted, are derivable from nouns as well as from root intransitive verbs. When denominal, or when the source of the i-transitive is ambiguously nominal and verbal, the root without -i can be used in S_{iP} sentences. Compare:

pihn 'paint, to paint' / pihni 'to paint s-t'

S_{iP} Sehpillo pihniekla.

Sehpillo pihnla.

'The table has been painted.'

loakjid 'to fish' / loakjidi 'to fish for s-t'

S_{iP} Mwumwo loakjidiekda.

*Mwumwo loakjidda.

'The fish has been caught.'

Optional transitive verbs follow paradigm type V, with no change in form in any of the four sentence types in question. We might note,

however, that optional transitive verbs with experiencer- (but not agent-) subjects; for example, rong 'to hear (s-t)', are difficult to elicit in S_{iP} and S_{iO} sentences.

Paradigm type I is limited to those root transitive verbs with related A-non-transitives (appearing in S_{iA} sentences) and P-non-transitives (appearing in S_{iP} and S_{iO} sentences). These root transitives also have -ek intransitive forms which can appear in S_{iA} , S_{iP} , and S_{iO} sentences. I have observed, however, that these -ek intransitive forms are less frequent in such sentences than are the related A-non-transitives (in S_{iA} sentences) and P-non-transitives (in S_{iP} and S_{iO} sentences).¹ Furthermore, I have observed the occurrence of A-non-transitives in S_{iP} and S_{iO} sentences, though this use of A-non-transitives appears to be most infrequent.

It will be claimed that the transitive paradigm grew out of another paradigm, built on somewhat different parameters, and at first restricted to a single pre-Mokilese verb subcategory (the P-optional transitive category). The evolution of this earlier paradigm will be considered in section 3.3. Subsequently, as will be claimed in section 3.5.2, the paradigm was extended to all transitive verbs after the dissolution of the older subcategorization system. The dust has yet to settle completely, however.

3.2 The POC *-i transitive in Mokilese

In this section it will be argued that each set of related verbs in Mokilese, as described in section 3.1.2.7 (that is, each of the rows of the chart appearing in section 3.1.2.7) reflects a single historical verb at an earlier stage in the history of Mokilese. Each

of these earlier verbs has 'split', in accordance with demonstrable historical changes, into a number of now distinct Mokilese verbs. It will be shown in section 3.3 that the nature of this 'split', barring a few idiosyncratic cases, reflects the earlier subcategorization of the historical verb in question. For the purposes of the discussion of the present section, the reduplicated members of related verb sets in Mokilese (A-non-transitives and reduplicated statives) are ignored. These forms will be considered separately in section 3.3.5.

The synchronic relationships in question fall into three types, that between:

i) root transitives and obligatory intransitives

<u>daur</u>	'to climb after s-t'	<u>doau</u>	'to climb'
<u>pakad</u>	'to defecate on s-t'	<u>poak</u>	'to defecate'

ii) root transitives and P-non-transitives

<u>poadok</u>	'to plant s-t'	<u>poad</u>	'to plant, be planted'
<u>pwiliij</u>	'to glue s-t'	<u>pwil</u>	'to glue, be glued'

iii) root transitives and statives

<u>sipwang</u>	'to break s-t'	<u>sipw</u>	'broken'
<u>okoj</u>	'to burn s-t'	<u>ok</u>	'to burn, burning'

In each case, one of the related verbs is a root transitive and the other, an intransitive verb belonging to either the obligatory intransitive, P-non-transitive, or stative subcategory. Ignoring for the moment the categorial differences in the second member of each pair, we can then compare synchronic reflexes like the following:

<u>sipw</u>	'broken'	<u>sipwang</u>	'to break s-t'
<u>poak</u>	'to defecate'	<u>pakad</u>	'to defecate on/in s-t'
<u>doau</u>	'to climb'	<u>daur</u>	'to climb after s-t'
<u>sip</u>	'to tie'	<u>sipis</u>	'to tie s-t'
<u>poad</u>	'to plant'	<u>poadok</u>	'to plant s-t'
<u>insing</u>	'to write'	<u>insinge</u>	'to write/put a mark on s-t'
<u>dok</u>	'to stab'	<u>doakoa</u>	'to stab s-t'

where the intransitive verbs in the left hand column differ from the corresponding transitive verbs in the right hand column in that the latter have a final V(C), or C if the preceding segment is a glide, not present in the former. (I ignore vowel morphophonemics, which are complex and not directly relevant to the issue in question.)

We can account for these differences in canonical shape if we assume that, at an earlier period, the canonical shape of the historical antecedent of the intransitive member of each of the above pairs was identical to that of the corresponding synchronic root transitive; that is, MOK sip 'to tie, be tied' < *sipis (cf. MOK sipis 'to tie s-t'), MOK insing 'to write' < *insinge (cf. MOK insinge 'to write on s-t'). The synchronic shape of the intransitive forms in question can be considered to be the result of the application of the historical processes of final consonant deletion and final vowel deletion, considered in Chapter 2, to these earlier forms. Thus:

*sipis	*insinge	*poadok	*doaroa	
sipi	---	poado	---	C# Deletion
sip	insing	poad	doar	V# Deletion

If this analysis is correct, it remains to account for the apparent

failure of the two historical phonological processes in question to apply to the transitive member of each of the related synchronic verb pairs. A likely hypothesis is that these processes were blocked by a transitive suffix, itself ultimately lost, appearing with transitive verbs at an earlier period in the history of Mokilese.

Pawley's (1973) reconstruction of POC verbal syntax and morphology assumes that, under most circumstances, verbs which could appear in both transitive and intransitive sentences were used in their root (unsuffixed) form in intransitive sentences but required a transitive suffix when used in transitive sentences. Two transitive suffixes have been reconstructed for POC: the close transitive *-i, associated with goal/patient case roles for the object NP or PRO, and the remote transitive *aki(ni), associated with such case roles as cause/instrument/beneficiary. These suffixes are considered to have been mutually exclusive in a given clause.²

I propose that the root transitive members of related Mokilese transitive-intransitive verb sets reflect earlier verbs with a pre-Mokilese analog of the POC close transitive suffix *-i, while the corresponding intransitive verbs reflect the same historical verbs without that suffix. This hypothesis allows us to derive the related Mokilese verbs in question as follows:

*sipis	*sipis+i	*insinge	*insinge+i	
sipi	---	---	---	C# Deletion
sip	sipis	insing	insinge	V# Deletion

It follows from this account that what we have analyzed as distinct, though related, root transitive and intransitive (obligatory

intransitive, P-non-transitive, or stative) verbs in Mokilese are, in fact, reflexes of the same historical verb, with and without the POC close transitive suffix *-i, respectively.

The above account of the historical relationship between Mokilese root transitive verbs and intransitive verbs of various subcategories involves a claim that pre-Mokilese bimorphemic transitive verbs (that is, *verb+i structures) evolved into monomorphemic Mokilese root transitive verbs. We will explore this claim by considering in greater detail the history of the boundary hypothesized for these earlier *verb+i constructions in the course of the development of these constructions into Mokilese root transitive verbs.

In the widely accepted account proposed by Hale (1971), the loss of POC final consonants in PEO resulted in a reanalysis of the internal structure of transitive verbs, whereby the morpheme boundary was shifted to the left of a preceding consonant, with the result that the final consonant of the POC verb root was reanalyzed as part of the transitive suffix. Thus, for POC *inum 'to drink', we find:

*inum	*inum+i	
inu	*inu+mi	Final Consonant Deletion

The result of this change was a proliferation of allomorphs of the transitive suffix, in accordance with which thematic consonant (as the reanalyzed POC verb root final consonants are termed) is associated with a given verb.

Hale argues that the motivation for this change was the disparity in canonical shape that would have resulted had the original analysis been maintained. Due to the workings of final consonant deletion, no

surface final consonants survived into PEO. However, the old analysis of the transitive suffix rested on the admissability of consonant-final verbs roots. The shift in the position of the + boundary, in Hale's terms, brought the canonical shape of the underlying representations of transitive verbs into line with the new surface canonical patterns.

In support of his analysis Hale notes that in Maori the suffix -tia, rather than -ia, is the productive marker for the so-called 'passive' (the synchronic reflex of the POC close transitive in Maori), used in derived causatives with whaka- (POC *paka-), with borrowed items, with adverbials agreeing in 'voice' with the main verb, in de-nominal verbs, and, pathologically, when the correct 'passive' allomorph is not remembered. Hawaiian has taken this analogical leveling to the extreme, employing -ia (from PPN *-kia) as the sole 'passive' suffix except in a few fossilized forms. Note that Hawaiian and Maori have focused on historically different thematic consonants in selecting a productive 'passive' allomorph.

Evidence from Fijian appears to lend support to this analysis. In Fijian, for example, we often find 'incorrect' thematic consonants in transitive forms; for example, Bauan gunu-va 'to drink s-t' (from POC *inum-i-a), rogo-ca 'to hear s-t' (from POC *doŋo 'to hear', with no final consonant). Reflexes of POC close and remote transitives with the same verb not infrequently show different thematic consonants; Bauan masu-ta 'to pray to', masu-laka 'to pray for'. Finally, it has been felt by many students of Fijian (see Arms 1973 for discussion) that some degree of semantic specialization is a feature of the choice of Fijian transitive suffixes.

We will assume the thematic consonant analysis to be correct for PEO.

The loss of final vowels in all Micronesian languages except Gilbertese and some western Trukic languages removed the last formal link between the various transitive allomorphs in Eastern Oceanic--the POC transitive suffix itself. We must inquire as to the possible consequences of the loss of the *-i suffix on the internal analysis of transitive verbs. Four hypotheses can be considered:

- i) that, with the problem of canonical disparity removed, the synchronic system was restructured back in the direction of POC, such that 'related' verbs are given a common underlying form to which synchronic rules of final consonant and final vowel deletion apply. This can be termed the synchronic deletion rule hypothesis.
- ii) that the loss of final vowels had no effect on the position of the + boundary in transitive verbs. This can be termed the stable + boundary hypothesis.
- iii) that the + boundary was shifted left once more, creating a set of -V(C) transitive allomorphs. This can be termed the -V(C) transitive suffix hypothesis.
- iv) that the + boundary was eliminated. This represents the account adopted in the discussion above and can be termed the monomorphemic transitive hypothesis.

The synchronic deletion rule hypothesis is perhaps to be ruled out a priori on two grounds; first, that it involves the postulation of an abstract transitive suffix, here symbolized as +V, whose sole function

is to prevent final consonant deletion in transitive forms, and, second, and perhaps a weaker objection from the point of view of any proposed constraints on phonological theory, that it involves a sharp restructuring of verbal base forms--the re-introduction of previously deleted consonants and of the formerly defunct rule of final consonant deletion. Nonetheless, we will examine the consequences of such an analysis for Mokilese.

Under the synchronic deletion rule hypothesis, three verbs forms must be derivable in Mokilese from a base form resembling the transitive in canonical shape--transitive verbs like poadok 'to plant s-t', sipwang 'to break s-t', insinge 'to write on s-t'; intransitive verbs like poad 'to plant', sipw 'broken', and insing 'to write' and, for some verbs, a reduplicated intransitive form; for example, poadpoad 'to plant', sipwasipw 'breakable'. For the verb 'to plant' we might propose the following synchronic derivation:

poadok+V	poadok	poadok	
		[+red]	
---	poado	poado	C# Deletion
poadok	poad	poad	V# Deletion
---	---	poadpoad	Reduplication

yielding the correct surface forms.

These rules give incorrect derivations for the reduplicated intransitives of verbs like pina 'to cover s-t' (pinapin 'to cover') and sipwang 'to break s-t' (sipwasipw 'breakable'). Thus:

pina	sipwang	
[+red]	[+red]	
--	sipwa	Final Consonant Deletion
pin	sipw	Final Vowel Deletion
*pinpin	*sipwsipw	Reduplication

Reversing the order of application of the rules of final vowel deletion and reduplication yields the correct results here, but creates problems for the derivation of forms like poadpoad 'to plant', with no reflex of a deleted 'final' vowel preserved internally; that is, not *poadopoad. However, this vowel can be removed by an independently motivated rule of the form:

$$V \rightarrow \emptyset / \# (C) \quad V \quad C _ CV$$

[-hi]

which deletes the second of two noncontiguous vowels in open syllables in a word of three or more syllables, if the first vowel is non-high. The operation of this process, which can be termed vowel reduction, can be seen in the following examples:³

<u>alij</u>	'beard'
<u>oaljoa</u>	'his beard'
<u>kapw</u>	'new'
<u>kakapwihla</u> [kakp ^w iila]	'to renovate s-t'
<u>uduk</u>	'flesh'
<u>udukoa</u> [utko]	'his flesh'

Revised derivations for poadpoad 'to plant' and sipwasipw 'breakable' can be given as:

poadok	sipwang	
[+red]	[+red]	
poado	sipwa	Final Consonant Deletion
poadopoado	sipwasipwa	Reduplication
poadopoad	sipwasipw	Final Vowel Deletion
poadpoad	---	Vowel Reduction

Consider now the following synchronic P-non-transitive forms found in incorporated object constructions:

<u>poad suhkoa</u>	'to plant trees'
<u>pwil pares</u>	'to catch terms with glue'
<u>piloa moai</u>	'to pick breadfruit'

The rules of final consonant deletion and final vowel deletion derive the correct surface forms from underlying forms like poadok and pwilij in the first two cases, but predict a non-occurring *pil in the third (from underlying piload, the transitive form 'to pick s-t'). The second vowel of these P-non-transitives is being preserved in precisely the same environment that the same vowel is preserved in reduplicated intransitives; when it is non-high and the preceding vowel is high. This further suggests that these vowels, when not present on the surface in P-non-transitive forms, have been deleted by vowel reduction rather than by final vowel deletion; that is, they are being treated as word-internal, rather than word-final vowels.

Since the underlying representation of piloa 'to pick' must be given as piload, in view of the transitive form piload 'to pick s-t', the problem is to bring about the deletion of the final consonant in these P-non-transitive forms, while preserving the final vowel (later subject to vowel reduction where applicable). Without detailing the

numerous possible means of reconciling these forms that are provided for us by the theory, I know of no non-ad hoc solution to this dilemma. On these grounds I am therefore led to reject the synchronic deletion rule hypothesis, whereby related root transitive and intransitive verbs are held to have a common underlying form in synchronic Mokilese.

The stable + boundary hypothesis and the V(C) transitive suffix hypothesis may be considered together. The former represents a claim that the loss of the *-i transitive suffix through final vowel deletion triggered no change in the position of the + boundary. In effect, transitive forms of earlier vowel-final verbs would then emerge as monomorphemic transitive verbs, while transitive forms of earlier consonant-final verbs would be reanalyzed with a +C transitive suffix. The following derivations display the history of the related verbs in question under this hypothesis:

*insinge	*insinge+i	*poadok	*poadok+i	
---	---	poado	poado+ki	C# Deletion
insing	insinge	poad	poado+k	V# Deletion

This reanalysis is perhaps less likely than that following from the V(C) transitive suffix hypothesis under which all transitive verbs, rather than only consonant-final transitive verbs, remain bimorphemic after final vowel deletion. Under this latter hypothesis, the + boundary in transitive verb forms shifts leftward to a position at which the 'root' of the transitive form is canonically identical to the unaffixed intransitive form following final vowel deletion. Thus:

*insinge	*insinge+i	*poadok	*poadok+i	
---	---	poado	poado+ki	C# Deletion
insing	insing+e	poad	poad+ok	V# Deletion

On the basis of the evidence available to me it is impossible to disprove either of these two accounts. It can be shown, however, that no arguments parallel to those given by Hale in favor of the thematic consonant analysis of transitive forms in PEO can be presented in favor of either of the above accounts of the later history of transitive verbs in Mokilese. It is impossible to appeal to any general constraint governing the resolution of cases of deep-surface canonical disparities, as Hale did, since, following final vowel deletion in Mokilese, both vowel-final and consonant-final surface patterns re-emerged in Mokilese. More significantly, under these hypotheses we would expect, following Hale, that the later history of Mokilese would show some degree of analogical leveling among the various +V, +VC, or +C transitive suffix allomorphs predicted under these accounts and, perhaps, the rise of one of these to the status of 'productive allomorph', as Hale suggests occurred among the various thematic suffixes of Polynesian. Evidence that levelling of this sort has taken place would lend support to the stable + boundary/V(C) transitive suffix hypotheses. Lack of such evidence would seem to me to cast some doubt on the validity of these hypotheses as accounts of the history of transitive marking in Mokilese following final vowel deletion.

There is in fact no evidence that any analogical leveling has taken place among these putative transitive suffixes. Five of the seven Mokilese vowels occur finally in root transitive verbs:

<u>kini</u>	'to pinch s-t'
<u>koso</u>	'to cut s-t'
<u>leme</u>	'to believe s-t'
<u>doakoa</u>	'to stab s-t'
<u>pina</u>	'to cover s-t'

Of the remaining two vowels, /e/ is never found finally and final /u/ is rare in polysyllabic forms. The frequency of the other five vowels in root transitive verbs does not appear to vary from their frequency in final position throughout the Mokilese lexicon.

Nine of the twelve Mokilese consonants appear finally in root transitive verbs:

<u>kidim</u>	'to wrap s-t'
<u>pakad</u>	'to defecate on s-t'
<u>okoj</u>	'to burn s-t'
<u>daun</u>	'to fill in s-t'
<u>sipis</u>	'to tie s-t'
<u>pwukul</u>	'to make a hole in s-t'
<u>kadar</u>	'to send s-t'
<u>poadok</u>	'to plant s-t'
<u>sipwang</u>	'to break s-t'

The consonants /p/, /pw/, and /mw/ do not, to my knowledge, occur finally in root transitive verbs. This fact may not be totally accidental. In the first case, there is evidence that many cases of historical final /p/ have been lost recently in Mokilese. Compare:

POC *quna(p) 'fish scale'

MOK wina 'to pluck, to scale s-t'

WOL iuniufi 'to pluck, to scale s-t'

The non-occurrence of /mw/ and /pw/ may be attributed to the fact that most synchronic final occurrences of these consonants reflect a following round vowel; which, of course, POC *-i was not. These consonants could never have arisen finally in transitive verb forms since they would have been followed by the unround POC *-i transitive suffix. The distribution of the occurring consonants does not suggest either analogical leveling or the emergence of a productive allomorph. I have not tabulated the occurring hypothetical +VC transitive terminations, but I expect that this exercise would be equally unrevealing.

We have presented four alternative hypotheses regarding the fate of the + boundary in pre-Mokilese *verb+i transitive forms following the loss of the *-i suffix through final vowel deletion. The first of these, the synchronic deletion rule hypothesis, which holds essentially that the analysis of transitive marking in Mokilese was restructured back in the direction of an earlier POC analysis, was rejected on the grounds that such an analysis is inconsistent with the synchronic Mokilese data. The second and third hypotheses, the stable + boundary hypothesis and the V(C) transitive suffix hypothesis, involve claims that parts of the pre-Mokilese verb root were reanalyzed as transitive suffixes. These analyses could not be dismissed entirely, but were considered doubtful in view of the fact that predictions regarding analogical leveling of suffix allomorphs that follow from these

hypotheses are not borne out in the later history of Mokilese.

These considerations lead me to adopt the fourth hypothesis, that earlier *verb+i forms were reanalyzed as monomorphemic root transitive verbs, as an account of the later history of pre-Mokilese transitive verbs in *-i. Just as Hale's thematic consonant analysis of PEO and our stable + boundary and V(C) transitive suffix hypotheses for Mokilese predict an eventual leveling of transitive suffix allomorphs, the monomorphemic transitive hypothesis predicts a potential disassociation of Mokilese transitive and intransitive verbs from the same historical source. Unfortunately, few clear cases come to mind. A possible example is that of the pair doadoahk 'to work' and koadoahkoa 'to work on s-t', which suggests an earlier *doahkoa 'to work'. While a full explication of these forms rests on certain other facts of the history of the Mokilese verbal system yet to be introduced (see section 3.3.5), I will give a brief summary of the argument here. Reduplicated intransitive verbs taking agent subjects, like doadoahk 'to work', are an expected development from a particular pre-Mokilese verb subcategory, termed P-optional transitive (see section 3.3.1). Mokilese verbs from this earlier subcategory do not typically have a derived causative. Mokilese koadoahkoa 'to work on s-t' (with the prefix koa-, an alternate of ka- 'causative prefix') is, however, formally causative. These facts suggest that doadoahk and its historical root *doahkoa have, at some point, become disassociated, the latter taking on an unexpected causative prefix.

The only additional evidence for the disassociation of root transitive verbs and intransitive verbs of other subcategories, with

the same historical source, is anecdotal, found in the fact that it is frequently difficult to elicit the root transitive counterpart of a given intransitive verb. While these forms are eventually presented, the time lag is greater than would be expected for affixed and unaffixed forms of the same verb. It should not be surprising that the same degree of historical disassociation is not found for related verbs of different subcategories as is found for related alienable/inalienable nouns (as considered in Chapter Two), since the specialization of noun-poss constructions for inalienable possession must have preceded the break-up of POC, while the process of final vowel deletion, which we claim led to the reanalysis of older verb-*i constructions as monomorphemic, is a relatively recent innovation of some Micronesian languages.

In this section we have suggested the following account of the history of verb forms taking the suffix *-i at some pre-Mokilese period, allowing the verb kidim 'to wrap s-t' to represent the Mokilese verbs in question:

*kidim	*kidim+i	
kidi	kidi+mi	Final Consonant Deletion
kid	kidim	Final Vowel Deletion

where, following Hale (1971), the + boundary moved to the left of an immediately preceding consonant following the operation of final consonant deletion and where the boundary was eliminated following the operation of final vowel deletion. Though some evidence has been presented to show that this latter development is perhaps the most reasonable of the four accounts of the history of transitive marking in

Mokilese following final vowel deletion that have been considered here, we have been unable to justify this account conclusively. What we have termed the monomorphemic transitive hypothesis, that the + boundary disappeared in Mokilese transitive verbs following final vowel deletion, is, however, given further support by the fact that a unified account can be presented of both this development and the leftward shift in the position of the + boundary following final consonant deletion.

According to Hale's (1971) account, the leftward shift in the position of the + boundary was motivated by a constraint that the underlying representation of any formative cannot defy surface constraints on permissible canonical shape. Specifically, if, at the period of pre-Mokilese in question (after final consonant deletion), no simplex formative ended in a consonant on the surface then underlying forms could not end in a consonant.

While Hale's constraint is an interesting one, I would like to suggest that it is not the only possible explanation for the proposed change. In addition to guaranteeing that constraints on canonical shape will hold for both underlying and surface representations, the change kidim+i → kidi+mi guarantees that the relationship between suffixed and unsuffixed forms of the same verb root remain constant after final consonant deletion; that is, that the transitive form be analyzable as the intransitive form plus some affix.

Briefly stated, I propose that morphological reanalysis of this sort is conditioned by what might be termed a compositionality constraint that, as far as is possible, a morphologically complex form be analyzable in terms of a morphologically simplex form plus an affix.

The implications of such a constraint for the theory of morphology appear to me to be far-reaching, but cannot be treated here. I might, however, point out that Aronoff (1976:21) makes a somewhat analogous though in detail quite different proposal when he suggests, as the basis for his model of word formation, that (derivational) morphology be described in terms of a set of rules (word formation rules) forming new words from already existing words.

An extension of the compositionality constraint can perhaps lead to an intuitively pleasing account of what we have proposed as the next stage in the evolution of the POC close transitive in Mokilese; the reanalysis of verbs with the POC close transitive suffix as morphologically simplex, following the application of final vowel deletion.

Thus:

kidim	kidim+i	insinge	insinge+i	
kidi	kidi+mi	---	---	C# Deletion
kid	kidim	insing	insinge	V# Deletion

The compositionality constraint suggests that, following final vowel deletion, these exemplary transitive forms should have been reanalyzed as kid+im and insing+e, respectively; that is, in terms of the -V(C) transitive suffix hypothesis. As suggested above, there is no evidence that such a reanalysis in fact took place. We may now consider a possible explanation for that observation.

The result of the suggested reanalysis under the compositionality constraint would have been a vast proliferation in the number of allomorphs of the transitive suffix; a proliferation that, in effect, would have been nearly equivalent to the selection of a different

transitive allomorph for each verb. At this point, the verb-suffix construction could just as well be analyzed as simplex, with no loss in generality and with perhaps a gain in the fact that the rule of transitive verb formation, however it is to be stated, could be eliminated from the grammar. This proposal follows in a nature way from the compositionality constraint and provides a possible explanation for the reanalysis of transitive verbs as simplex items. Thus, the compositionality constraint provides us with an account of both the leftward movement and the eventual loss of the + boundary in Mokilese transitive verbs having a verb+*i source at an earlier period in the history of Mokilese. The reanalysis of earlier verb+*i structures into monomorphemic root transitive verbs has had profound effects on the verb subcategorization system of Mokilese, as will be demonstrated in section 3.5.

3.3 Pre-Mokilese Verbal System

3.3.1 Pre-Mokilese Optional Transitives

In section 3.2, it was proposed that 'related' Mokilese root transitive verbs and intransitive verbs (of several subcategories) reflect, in each case, a single historical verb with and without the transitive suffix *-i, respectively. In the present section we will propose a subcategorization of these historical verbs based on the syntactic properties of their modern Mokilese reflexes. The pre-Mokilese verbs in question fall immediately into three subclasses:

- i) those reflected as 'related' root transitives and obligatory intransitives

- ii) those reflected as 'related' root transitives and statives
- iii) those reflected as 'related' root transitives and P-non-transitives

Related Mokilese root transitive and obligatory intransitive verbs can be taken to reflect a class of pre-Mokilese optional transitive verbs found, with the suffix *-i, in transitive sentences with agent subjects and goal/location objects and, unsuffixed, in intransitive sentences with agent subjects. This same distribution is preserved in their modern Mokilese reflexes. Thus:

Ngoah insing.

'I am writing.'

Ngoah insinge peipahu.

'I am writing on the paper.'

Related Mokilese verbs of this sort will be considered to reflect a class of pre-Mokilese agent-optional transitive verbs (A-optional transitives of A-verbs). As will be seen in section 3.4, a verb class with similar properties has been reconstructed for POC by Pawley (1973) and by Foley (1976).

Other Mokilese reflexes of A-optional transitive verbs are:

<u>doau</u>	'to climb'	<u>daur</u>	'to climb after s-t'
<u>umwwuj</u>	'to vomit'	<u>umwwujoa</u>	'to vomit on s-t'
<u>doar</u>	'to protect'	<u>doaroa</u>	'to protect s-t'
<u>poak</u>	'to defecate'	<u>pakad</u>	'to defecate on s-t'
<u>jap</u>	'to slash'	<u>japak</u>	'to slash s-t'
<u>widing</u>	'treacherous'	<u>widinge</u>	'to deceive s-o'

noaroak 'to be greedy' noaroakoa 'to be greedy for s-t'

Though the intransitive verbs of the last two pairs are, in fact, stative, and, therefore, do not have agent subjects, I include them nonetheless. I suspect that the true defining characteristic of earlier A-non-transitives was perhaps not their agent subject, but the fact that these verbs had like-subjects in both transitive and intransitive contexts. This argument will not be pursued further, however.

By the same criteria used above to reconstruct a pre-Mokilese class of agent-optional transitive verbs, related Mokilese root transitive and stative verbs can be taken to reflect a class of pre-Mokilese patient-optional transitive verbs (P-optional transitives or P-verbs) found, with the suffix *-i, in transitive sentences with agent subjects and patient objects and, unsuffixed, in intransitive sentences with patient subjects. This distribution can be seen in putative Mokilese reflexes of pre-Mokilese P-verbs; for example:

<u>sipwang</u>	'to break s-t'	<u>sipw</u>	'broken'
<u>mweid</u>	'to snap s-t'	<u>mwei</u>	'snapped'
<u>okoj</u>	'to burn s-t'	<u>ok</u>	'to burn, burning'

as in:

Rahu sipw.

'The branch is broken.'

Ngoah sipwangla rahu.

I break-away branch-that

'I broke the branch.'

Umwwo ok.

'The house is burning.'

Ih okojdi umwwo.

he burn-down house-that

'He burned down the house.'

A verb class with similar properties, to be considered in section 3.4, has also been proposed for POC in Pawley (1973) and in Foley (1976). Such pairs are rare in Mokilese, however; these three being the only ones known to me. Far more common are root transitive P-non-transitive pairs like:

<u>poadok</u>	'to plant s-t'	<u>poad</u>	'to plant, planted'
<u>kidim</u>	'to fold s-t'	<u>kid</u>	'to wrap, wrapped'
<u>pwiliij</u>	'to glue s-t'	<u>pwil</u>	'to glue, glued'
<u>ijir</u>	'to husk s-t'	<u>ej</u>	'to husk, husked'
<u>poaloa</u>	'to chop s-t'	<u>poal</u>	'to chop, chopped'
<u>daun</u>	'to fill s-t'	<u>doau</u>	'to fill, filled'
<u>nehk</u>	'to divide s-t'	<u>ne</u>	'to divide, divided'
<u>doapwoa</u>	'to pull s-t'	<u>doapw</u>	'to pull, pulled'
<u>sipis</u>	'to tie s-t'	<u>sip</u>	'to tie, tied'
<u>pwalang</u>	'to chop s-t'	<u>pwal</u>	'to chop, chopped'

The root transitive member of these pairs occurs in transitive sentences with agent subjects and patient objects, while the P-non-transitive member occurs in simple intransitive sentences (usually with a directional/aspectual enclitic) with patient subjects and in intransitive sentences with incorporated object constructions, where the subject is an agent and the incorporated object is a patient. I would like to claim that these Mokilese verb pairs are the true reflexes of an earlier class of P-optional transitive verbs and that the root

transitive/stative pairs represent an irregular development, to be considered briefly in section 3.5.3.

The Mokilese reflexes of pre-Mokilese P-optional transitives are thus claimed to have the following synchronic distribution, as exemplified by poadok/poad:

Ih poadok suhkoahu.

'He is planting that tree.'

Suhkoahu poaddi.

'The tree is planted.'

Ih poad suhkoa.

'He is planting trees.'

as contrasted with the distribution of Mokilese reflexes of pre-Mokilese A-optional transitives, as exemplified by daur/doau:

Ih daur penno.

'He is climbing after that coconut.'

Ih doau.

'He is climbing.'

Internal Mokilese evidence thus suggests that, at some earlier period, P-verbs and A-verbs (optional transitives) had the following distribution:

	A-verbs	P-verbs
with *-i in transitive sentences	X	X
unsuffixed in intransitive sentences		
i) where $NP_S = NP_S$ of S_t	X	-
ii) where $NP_S = NP_0$ of S_t	-	X
iii) in incorporated object constructions	-	X

In this section we have hypothesized that:

- i) related Mokilese root transitive and obligatory intransitive verbs reflect earlier (pre-Mokilese) agent-optional transitive verbs (A-verbs)
- ii) related Mokilese root transitive and P-non-transitive verbs reflect earlier (pre-Mokilese) patient-optional transitive verbs (P-verbs)
- iii) related Mokilese root transitive and stative verbs reflect an irregular development from pre-Mokilese P-verbs, to be considered in section 3.5.3

Two properties of P-verbs and their synchronic reflexes require some comment. The fact that Mokilese P-non-transitive verbs (reflexes of unsuffixed pre-Mokilese P-verbs) usually require a directional/aspectual enclitic in simple intransitive sentences will be considered in section 3.5.3. This fact will be shown to be related to a second problematic feature of the history of P-verbs in Mokilese under the analysis presented here--the fact that P-non-transitive reflexes of earlier P-verbs (and, we have thus far assumed, the unsuffixed pre-Mokilese P-verbs they reflect) are found in incorporated object constructions. This property has not been noted as particular to the analogs of pre-Mokilese P-verbs postulated, as already noted, for POC by Pawley (1973) and Foley (1976). This distribution is systematic in Mokilese, however, since Mokilese obligatory intransitives, under our hypothesis from earlier intransitive A-verbs, cannot appear in incorporated object constructions. Thus:

*Ih doau pen.

'He is climbing after coconuts.'

The following section will attempt to demonstrate that the occurrence of reflexes of intransitive P-verbs in incorporated object constructions need not be considered to be an innovation of Mokilese but may, in fact, have a long history. This discussion will lead directly into a consideration of the historical antecedent of the Mokilese transitive paradigm.

3.3.2 A- and P-Verbs in PPN

Evidence that something like an object incorporation pattern, restricted to P-verbs, might be reconstructable for some higher order Oceanic subgroup including Micronesian can be found in a consideration of Polynesian transitivity patterns. Clark (1973a:569) notes two basic transitive sentence patterns in Polynesian, which may be schematized:

1	V	SUB	i/ki	OBJ
2s	V-Cia	e	SUB	OBJ
2o	V	e	SUB	OBJ

where PPN *e and *i/*ki are subject and object markers respectively and where pattern 2s appears to reflect some form of the POC transitive suffix (here symbolized as -Cia) and where pattern 2o is identical to 2s except that no transitive suffix is reflected.

One interpretation of these patterns, which Clark terms the Hohepa-Hale hypothesis, is that PPN employed patterns 1 and 2s, the former an active construction, the latter a passive. This is much the situation in modern Maori, where pattern 2o is quite rare and marginal. Under this account, the 2s passive construction came to be favored in

Samoic and Tongic, with the result that for many verbs the active (1) construction ceased to be a permissible option. Since the -Cia suffix no longer marked the distinction between active and passive, its use became optional. The Hohepa-Hale hypothesis holds, then, that Maori, and the other eastern Polynesian languages with similar patterning, are relatively conservative in this respect, while Samoic and Tongic languages showing different transitivity patterns have innovated.

Clark's view is somewhat the reverse of this; that PPN closely resembled modern Tongan where (details not directly relevant here aside) patterns 1 and 2 were distinct transitive patterns specialized to different classes of verbs; the second to what Clark calls A-verbs and the first to what he calls B-verbs (though these latter were also used in pattern 2s). He assumes the transitive suffix to have been optional in pattern 2 (yielding patterns 2s and 2o) 'with little if any difference of meaning between suffixed and unsuffixed forms' (1973a: 588-589). Languages like Maori are assumed by Clark to have innovated in extending pattern 1 to the A-verbs.

What is of particular interest for us is that Clark's A-verbs, those restricted to pattern 2, correspond to our P-verbs and that his B-verbs, those appearing in either pattern 1 or pattern 2s, correspond to our A-verbs. In his dissertation, Clark characterizes (1973b:88) A-verbs as:

'those which have an Agent and an Object, in the sense of Fillmore (1968). Examples of the semantic range of this class are "burn", "eat", "tie", "throw", "break". Type B [B-verbs--SPH] are all other two-place verbs, including

relations between an object and its source, goal, or location ("sit in", "run to", "fall out of"); persons and the objects of their thoughts, perceptions, emotions, or attention ("think about", "see", "listen to", "afraid of", "look for"); persons and the intended audience of their speech or other acts ("talk to", "scold", "dance for").'

The correlation between Clark's A-verbs and our P-verbs and his B-verbs and our A-verbs, though not perfect, is close enough to be of interest.

Ignoring for the moment PPN 1 and the simple intransitive sentences of Mokilese, and employing the terms A-verb and P-verb as in section 3.3.1 for PPN as well as for pre-Mokilese, we find that:

- i) both pre-Mokilese and PPN A-verbs require a reflex of the POC close transitive suffix *-i in transitive sentences
- ii) both pre-Mokilese and PPN P-verbs show alternative 'transitive' patterns, with and without a reflex of the POC close transitive suffix *-i

These correspondences can be tabulated as follows:

	Pre-Mokilese			PPN	
	A-verb	P-verb		A-verb	P-verb
transitive	X	X	2s	X	X
incorporated object	-	X	2o	-	X

The 2s pattern of PPN, like the transitive pattern of pre-Mokilese, involves a reflex of the POC close transitive suffix *-i, while the 2o pattern of PPN, like the incorporated object constructions of Mokilese,

suggest reflexes of POC verbs without a transitive suffix.

I would like to suggest that the occurrence of P-verbs in two place constructions both with and without a transitive suffix in both pre-Mokilese and PPN is not an accident; that it reflects the distributional potential of these verbs at some stage ancestral to both pre-Mokilese and PPN. This hypothesis has initial appeal since it obviates the need to postulate nearly identical innovations in both these languages for exactly the same set of verbs--the rise or incorporated object constructions in pre-Mokilese and the optionality of transitive marking in PPN. The hypothesis remains speculative, however, unless it is possible to reconcile the differences between Mokilese and Polynesian reflexes of this hypothetical P-verb 'suffixless transitive construction'. Such a reconciliation will be attempted in the following section.

3.3.3 The Pre-Mokilese P-verb Paradigm

3.3.3.0 Introduction

In the previous sections we argued that internal Mokilese evidence suggests an earlier stage in which, generalizing somewhat on the case roles of NP_S and NP_O , A- and P-optional transitives had the following distribution:

	P-verbs	A-verbs
a. with *-i	agent-V+i-patient	agent-V+i-goal/location
b. without *-i	i) agent-V-patient	-----
	ii) patient-V	agent-V

We also noted that P-verbs in PPN, as reconstructed in Clark (1973a,b) have analogs of the pre-Mokilese a. and b.i) P-verb transitivity

patterns. It was also suggested that these P-verb patterns might be reconstructable for a higher order subgroup including both Mokilese and PPN.

The present section will explore this hypothesis further. It will consider the function of the *-i transitive for P-verbs in Oceanic and will conclude that, at least at some pre-Mokilese stage, it seems to have marked an aspectual distinction. We can note further that the P-verb sentence patterns given above define three of the four parameters of the transitive paradigm in modern Mokilese. In section 3.3.5, we hypothesize that the fourth parameter of the synchronic transitive paradigm, the simple intransitive sentence with agent-subject, had its origin in a natural extension of what will be termed the descriptive reduplication. We conclude that, at the period of pre-Mokilese before the operation of final vowel deletion, pre-Mokilese P-verbs had the following paradigm:

	transitive sentence		intransitive sentence	
morphology	V+i	V+Ø	V+Ø	V+Ø-redup.
	perfective	imperfective	patient-subject	agent-subject

Changes to this system following final vowel deletion will be considered in section 3.5.

3.3.3.1 Transitivity and Aspect in Pre-Mokilese

The remainder of section 3.4.2 will investigate the hypothesis that the contrast between agent-verb+i-patient and agent-verb-patient sentences with P-verbs marked a distinction between perfective and imperfective aspect at some pre-Mokilese stage prior to final vowel

deletion, possibly a stage common to both Mokilese and PPN (which, according to Clark (1973a) had analogous P-verb constructions). I make no strong claims regarding transitivity in PAN, POC, or PEO, however. Any review of recent literature on the historical development of transitive structures in Austronesian reveals, if nothing else, tremendous confusion and numerous conflicting claims. This fact has already been noted in the case of Clark's account of the history of transitive sentences in Polynesian, as opposed to that of Hohepa and Hale. Similarly contrasting accounts have been given for the development of transitive sentences from PAN to POC. Thus, Foley (1976) argues that PAN transitive sentence structure closely resembled that reconstructed for POC, and that Philippine-type focus systems developed therefrom. Pawley and Reid (1976) appear to be arguing the reverse.

Comments by Pawley and Reid and by Clark suggest some sources of this apparent confusion. The former state (1976:30) 'that differences in the data are partly responsible for the divergence between Foley's conclusions and ours, and that different subgrouping assumptions are a second factor'. Clark is perhaps more direct when he notes (1973a:571) that:

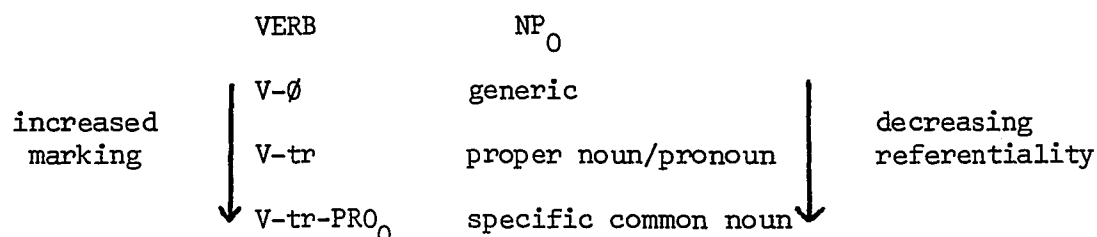
'Hohepa's and Hale's assumption of a particular direction of change undoubtedly results in part from the fact that they were working on Maori and saw Polynesian from that perspective. . Having a certain Samoan-centred bias myself... ...[I] will argue that, although the case is by no means closed, there is at least as much evidence for the opposite direction.'

Because I do not have all the data at hand, because subgrouping within Oceanic is by no means certain, and because I admit to a certain Micronesian- (if not Mokilese-) centred bias, I do not hope to be able to unravel all the mysteries of Oceanic transitivity here. The possible implications for POC (or some lower order subgroup) of the claims to be made here regarding the relationship between transitivity and aspect in pre-Mokilese await further research.

To avoid possible confusion it is worthwhile at this point to state two hypotheses regarding transitive structures in pre-Mokilese prior to final vowel deletion that differ from widely-held analyses of the structure of transitive sentences in POC. First, where these analyses hold that POC transitive verbs took either the close transitive suffix POC *-i or the remote transitive suffix POC *-aki(ni) in transitive sentences, depending on the case role of the object, we assume that pre-Mokilese used only the former, not the latter, in transitive sentences. As will be argued in section 3.5.2, the PMC reflex of the remote transitive suffix POC *-aki(ni) was not used in transitive sentences, as is still true of what we hold to be its reflexes in all Micronesian languages, but appeared only in what we will term 'agentless passive' constructions. The second hypothesis, already stated, is that pre-Mokilese P-verbs could be used both with and without the transitive suffix *-i in transitive sentences. We have noted that this option is also reconstructable for PPN P-verbs under Clark's (1973a) analysis.

Foley's (1976) account of transitive marking in Fijian is the only attempt known to me to provide an explanation for the alternation between $NP_S-V+i-NP_O$ and NP_S-V-NP_O sentences in an Oceanic language. He

notes a correspondence between the amount of transitive marking on the verb and the degree of referentiality of the NP_0 . This relationship might be diagrammed:



The less clear the discourse reference of the NP_0 the more transitive marking appears on the verb. Since generic nouns are referentially transparent, referring to a class of objects, they appear with an unmarked verb. The reference of proper nouns and pronouns is only slightly less opaque, so they appear with a verb plus transitive suffix. (The object pronouns in Fijian are themselves PRO_0 . Foley's point, I take it, is that pronoun objects are not reflected twice, as verbal suffixes and as VP-external pronouns.) Since specific common nouns are the least referential terms in a discourse, they require most verbal marking.

Foley's analysis of transitive marking in Fijian, though interesting, sheds little light on the problem of transitive marking in pre-Mokilese since it suggests no account of the fact that the suffixed/unsuffixed alternation in question is restricted to P-verbs. We will now propose an account of this patterning in terms of an aspect distinction, where VERB+i is claimed to have marked perfective aspect and VERB+ \emptyset is claimed to have marked imperfective aspect for pre-Mokilese P-verbs. The synchronic Mokilese transitive sentence and incorporated object patterns will be claimed (section 3.5) to have developed from

these two earlier structures, respectively.

We must first stress that perfectivity and imperfectivity are properties of sentences or, rather, clauses, not of situations in the real world. That is, they represent a grammatical distinction, typically marked in the verb or in the verb phrase. In Comrie's characterization of this distinction (1976:16), perfective forms appear in sentences which describe a situation (either a state, event, or process) 'as a single whole, without distinction of the various phases that make up that situation,'⁴ while the imperfective pays essential attention to the internal structure of a situation.' This characterization is rather vague, a vagueness perhaps motivated by Comrie's desire to provide a universal characterization of aspectual distinctions, applicable for all languages in which such distinctions are marked. A longer explication of the perfective/imperfective dichotomy is beyond the scope of the present work. The following sentences exemplify the contrast in Mokilese, where the a. sentences are perfective and the b. sentences imperfective:

a. Ih rapahkihda woallo.

he search-up man-that

'He found that man.'

b. Ih rapahki woallo.

'He looked for that man.'

where a. describes a whole event, the search and the end of the search, while b. describes only the search itself.

a. Woallo lioasla.

man-that angry-away

'The man got angry.'

b. Woallo lioas.

man-that angry

'The man is angry.'

where a. describes the entry into a state, from the time the state was not in force until the time it was, while b. describes just the state itself. Other examples of the perfective/imperfective distinction in modern Mokilese will be given in section 4.1.2.2, where the aspectual function of the directional/aspectual enclitics is described. For an account of the analogous phenomenon in Kusaiean, see Lee (1974).

We might note further that not all languages with a perfective/imperfective distinction use the distinction in the same way. Thus, in some hypothetical language differing from Mokilese, the perfective marking used with eventive verbs may not be applicable to statives. The semantic range of the imperfective is particularly broad. Comrie notes that, within imperfectivity, it is possible to distinguish habituality from continuousness, and, within continuousness, progressive from non-progressive. This suggests that the distinction between perfective and imperfective need not be binary; that is, languages may have distinct and overt marking for both perfective and imperfective aspects. This is true of Mokilese, as can be seen from examples like:

a. Ih loakjidihda mwumwwo.

he fish-tr-up fish-that

'He caught that fish.'

b. Ih loakloakjidi mwumwwo.

he RED-fish-tr fish-that

'He continued fishing for that fish.'

c. Ih loakjidi mwumwwo.

he fish-tr fish-that

'He is fishing for that fish.'

where a. is perfective, b. is continuous, and c. is neither perfective nor continuous. Imperfective and perfective aspects are mutually exclusive in Mokilese, however, unlike Bulgarian, as noted by Comrie (1976:32), where perfective and imperfective marking are combined to mark a habitual perfective.

The perfective/imperfective distinction I hypothesize for pre-Mokilese is a binary one, restricted to a single class of verbs in transitive sentences only, where perfectivity is marked by the presence of the transitive suffix *-i and imperfectivity by its absence. Evidence for this analysis is perhaps circumstantial, but I believe the analysis to have explanatory value. The following points are significant in this respect:

- i) An analysis in terms of an aspect distinction can account for the fact that SUB-V+i-OBJ/SUB-V+Ø-OBJ alternations are restricted to P-verbs.
- ii) Reflexes of these alternating sentence types mark aspectual distinctions in other Micronesian languages.
- iii) Recent analyses of other Oceanic languages suggest that alternating transitive sentence patterns mark aspectual distinctions in these languages also.

- iv) An aspectual distinction of the sort hypothesized here for pre-Mokilese can be seen as the source of the perfective aspect in modern Mokilese, though its marking has changed and it has been extended to all verb sub-categories and all sentence types.
- v) The obligatory or nearly-obligatory perfective marking on Mokilese P-non-transitive verbs in simple intransitive sentences and the appearance of these verbs in incorporated object constructions can be explained in terms of an earlier aspectual distinction for P-verbs.

The remainder of section 3.3 will be devoted to an explication of points i) to iii) above. Later developments in Mokilese (points iv) and v) above) will be considered in section 3.5.

3.3.3.2 Telicity and Aspect

The origin of an aspectual distinction for P-verbs can be related to a particular semantic property of these verbs--the fact that the situations they describe are normally telic. A telic situation is one that must, of necessity, end; that is, such situations have a 'built-in' terminal point. A common test for telicity is to ask of a sentence describing some situation whether, if some argument y is x'ing, and is interrupted in the process of x'ing, can it be said that y has x'ed. If the answer is affirmative, then the situation is atelic. If the answer is negative, then the situation is telic. In more concrete terms, consider the following Mokilese sentences and their English glosses:

John poadok suhkoahpas.

'John is planting a tree.'

John doau.

'John is climbing.'

If John is planting a tree, and is interrupted in the course of it, we cannot say that John planted a tree, but, if John is climbing, and is interrupted, we can say that John climbed, even though he may not have reached his intended objective. Thus, the situation described by the first sentence is telic, while that described by the second is atelic.

Telicity is a property of situations in the real world, not of sentences.⁵ It should not be confused with either transitivity or perfectivity. Thus, intransitive sentences may describe telic situations and transitive sentences may describe atelic ones. Consider the following Mokilese sentences:

John indoa.

'John is coming.'

John loakjidi mwumwwo.

'John is fishing for that fish.'

In the case of the situation described by the first of these two sentences, if John is interrupted in the course of coming, we cannot say that John has come. Therefore, the situation, though described by an intransitive sentence, is telic. In the case of the situation described by the second sentence, if John is interrupted while fishing for the fish, it is still true that he has fished for the fish. Therefore, the situation is atelic, though described by a transitive

sentence.

As regards the independence of telicity and aspect, we note that all four Mokilese sentences above are imperfective, describing only a part of the total situation regardless of its telicity. A speaker of Mokilese could equally well describe the entirety of these situations; that is, in the perfective aspect, but this would not alter the basic telic or atelic nature of each of the situations. We could deduce from such perfective sentences that some end point had been or was intended to be reached, however.

To my knowledge, the situations described by all pre-Mokilese P-verbs are fundamentally telic, while those described by A-verbs are not. I refer the reader to the lists of P- and A-verbs in section 3.3.1. Some Mokilese reflexes of A-verbs do, however, admit telic interpretations. Compare:

Ih insinge peipahu.

'He is writing on the paper.'

Ih insinge kijinlikkoaupas.

'He is writing a letter.'

the first of which describes an atelic situation, the second a telic one. It appears that the original meaning of this verb was 'to tatoo s-o' (cf. PON ntinge 'to write (on) s-t, to tatoo s-o'), with an atelic interpretation. Its telic interpretation I assume to be a recent innovation.

The patient-orientation of P-verbs can be viewed as a concomitant of the fact that they typically describe telic situations. Thus, a simple intransitive sentence with a patient-subject and a P-verb in

fact describes the 'built-in' terminal point itself.⁶

I hypothesize that at an earlier stage in pre-Mokilese, the normal interpretation of a P-verb transitive sentence with *-i, which is assumed to have been obligatory transitive marking for these verbs, was that the end point of the situation described either had been or would be attained, since it was 'built-in' in the sense described above. That is, P-verbs in transitive sentences normally, though perhaps not necessarily, had perfective interpretation. This is true, for example, of English 'telic verbs' in the past tense. Thus, He planted the tree means that the tree was in fact planted, the end point reached. English can appeal to other tenses to remove the implication of perfectivity from such sentences (for example, He was planting the tree.) It is not clear that pre-Mokilese had such options. I suggest, then, that transitive marking for P-verbs became associated with perfective aspect, descriptions of whole telic situations, while lack of this marking, by implication, came to denote imperfective aspect, descriptions of the internal structure of telic situations. These options were only available in transitive sentences, however, since it was formal transitive marking that was being exploited to signal the perfective/imperfective contrast.

3.3.3.3 The Semi-transitive in Trukic

We have claimed that pre-Mokilese P-verbs could appear in transitive sentences both with and without the transitive suffix *-i, and that the contrast marked was that between perfective and imperfective aspect. Pre-Mokilese P-verb perfective transitive

structures developed into the normal Mokilese transitive sentence pattern, while P-verb imperfective transitive structures developed into simple intransitive sentences with incorporated object constructions. As Sugita (1973) reports, however, object incorporation of the sort described in section 3.1 is restricted, in Micronesian, to Ponapeic and Kusaiean. Analogous constructions in Marshallese and Trukic, reflecting P-verbs with no transitive suffix, do not involve object incorporation; that is, NP₀ may be topicalized or focused and follows, rather than precedes, elements of the post-verbal complex (see Chapter Four). Thus:

TRU Wúpwe wún kkónik.

I-tns drink water

'I will drink water.'

Wúpwe wúnúnó kkónik.

I-tns drink-away water

'I will finish drinking water.'

Wúpwe wún chek kkónik.

I-tns drink just water

'I will just drink water.'

Kkónik wúpwe wún.

water I-tns drink

'Water, I will drink.'

Kkónik ee wúpwe wún.

water FOC I-tns drink

'It is water that I will drink.'

Furthermore, the NP₀ in semi-transitive constructions (involving verbs

that do not reflect the transitive suffix) need not have generic reference but may, in fact, be definite. Thus:

- TRU a. Wúpwe ppek macchang.
 I-tns shoot bird
 'I will shoot birds.'
- b. Wúpwe ppek ewe macchang.
 I-tns shoot the bird
 'I will participate in shooting the bird.'
- c. Wúpwe pekkiy ewe macchang.
 I-tns shoot-tr the bird
 'I will shoot the bird.'
- a. Wúpwe wún kkónik.
 I-tns drink water
 'I will drink water.'
- b. Wúpwe wún ewe kkónik.
 I-tns drink the water
 'I will drink (some) of the water.'
- c. Wúpwe wúnúmi ewe kkónik.
 I-tns drink-tr the water
 'I will drink the water.'

where the a. and b. sentences involve semi-transitive verbs with generic and definite NP₀, respectively, and where the c. sentences are transitive.

This pattern, as noted above, is shared by Marshallese and Trukese, and seems to be widespread in other Trukic languages. Woleaian analogues of Trukese semi-transitive sentences, as reported in

Sohn (1975), must have non-specific, though not necessarily generic objects, while Ulithian, as reported in Sohn and Bender (1973), patterns like Trukese. Relevant data from Gilbertese is unavailable.

Sugita (1973:398) characterizes the semantic contrast between the b. and c. sentences above as that between partitive and exhaustive interpretations. This analysis is suggestive of an imperfective/perfective contrast such as that hypothesized for the analogous constructions in pre-Mokilese. It is not completely clear whether the object-incorporation pattern or the semi-transitive pattern is the more conservative in Micronesian, since neither is restricted to a well-defined subgroup. Our hypotheses suggest that the semi-transitive construction should be the more conservative. Moreover, under the alternative hypothesis--that the object-incorporation pattern is conservative--it would be necessary to hypothesize two identical shifts, from object-incorporation to semi-transitive, in geographically distant parts of Micronesia (the Marshalls and Truk). Though it is far from clear that Ponapeic and Kusaiean form a subgroup (though they do, in fact, seem to share several innovations) and thus could be assumed to have innovated the incorporated-object pattern from a semi-transitive pattern once, these languages are at least geographically contiguous. It is hoped that this issue can be clarified through more research.

3.3.3.4 Transitivity and Aspect in Polynesian

In section 3.3.2, we pointed out the following parallels between PPN transitivity and what we now assume to have been pre-Mokilese transitivity:

- i) both languages have an A-verb/P-verb distinction
- ii) P-verbs in both languages seem to have appeared in transitive sentences both with and without a transitive suffix (Clark's 2s and 2o patterns, respectively).

Were the parallel to be complete, under our analysis, we would expect the distinction between 2s and 2o patterns to suggest a perfective/imperfective contrast. Clark notes, however, that in the Samoic group at least (1973a:575) the distinction between the two patterns in question is almost totally obscure.

The same does not appear to be true in Tongan, as reported in Tchekhoff (1973), who notes the following paradigm:

- TON a. Na'e fana'i 'e Sione 'a e manupuna.
 past shoot-tr AG J. OBJ art bird
 'John shot the birds.'
- b. Na'e fana 'e Sione 'a e manupuna.
 'John shot at the birds.'
- c. Na'e fana 'a e manupuna.
 'The birds were shot at.'
- d. *Na'e fana'i 'a e manupuna.

where the a.-c. sentences are suffixed transitive, unsuffixed transitive, and simple intransitive with patient subject, respectively, and where the semantic contrast between a. and b. is that between perfective and imperfective aspect. Here the parallel with our hypothetical pre-Mokilese P-verb paradigm is exact.

Milner (1973) notes a similar contrast between Clark's patterns 1 and 2s for A-verbs in Samoan:

Pattern 1 Na va'ai le tama 'i le i'a.

tns look art boy OBJ art fish

'The boy looked at the fish.'

Pattern 2s Na va'aia e le tama le i'a.

tns look-tr AG art boy art fish

'The boy has spotted the fish.'

where A-verb pattern 1 may be considered imperfective and pattern 2s perfective.

While this latter pattern contrast has not been reconstructed for pre-Mokilese, the fact that it exists at all is suggestive of the until recently unappreciated significance of aspect for Polynesian languages. Tchekhoff's Tongan analysis is, of course, of more interest to us because of its remarkable similarity to our claims for pre-Mokilese. Though the full importance of these parallels will only be appreciated with more research, they suggest that pre-Mokilese, given the plausibility of our analysis, is not alone in Oceanic in having given an aspectual interpretation to alternating transitivity patterns.

3.3.3.5 Summary

In section 3.3.3 we have claimed that alternations in Pre-Mokilese between suffixed and suffixless P-verbs in transitive sentences marked an aspectual distinction. We attempted to account for the apparent restriction of this distinction to P-verbs in terms of their inherent telic properties. Finally, we demonstrated that analogous constructions in Trukic, Marshallese and Tongan appear to mark an aspectual distinction similar to that postulated here for pre-Mokilese.

3.3.4 Verb Subcategorization in Pre-Mokilese--A First Approximation

This section will provide a synthesis of the verb subcategorization system of pre-Mokilese as it has emerged from the discussion of the preceding sections. For this purpose we continue to ignore the reduplicated verb forms of modern Mokilese--A-non-transitive verbs and reduplicated statives. These forms will be considered separately in section 3.3.5.

Since there is no evidence that those stative verbs of modern Mokilese that:

- i) are unreduplicated
- ii) have no 'related' root transitive

have undergone any major change in subcategorization, we must therefore hypothesize a stative verb subcategory for pre-Mokilese which we assume to have evolved in a straightforward manner into the stative subcategory of Mokilese. The development of Mokilese reduplicated statives will, as noted above, be considered in section 3.3.5. The history of Mokilese statives with 'related' root transitives (for example, sipw 'broken' sipwang 'to break s-t') will be treated in section 3.5.

As described in preceding sections, related Mokilese root transitive and P-non-transitive verbs (for example, poadok 'to plant s-t' poad 'to plant, be planted') are assumed to reflect suffixed and unsuffixed forms, respectively, of members of a pre-Mokilese class of P-optional transitive verbs. Related Mokilese root transitive and obligatory intransitive verbs (for example, daur 'to climb after s-t' doau 'to climb') are assumed to reflect suffixed and unsuffixed (transitive and intransitive) forms of a pre-Mokilese class of

A-optional transitive verbs.

We have not yet considered the pre-Mokilese status of those Mokilese obligatory intransitive verbs without a related root transitive (for example, kijou 'to run, travel', alu 'to walk', koaul 'to sing'), nor of those Mokilese root transitive verbs without a related verb of some other subcategory (for example, kuruj 'to grind s-t', awal 'to replace s-t', nikid 'to save s-t'). The former set of obligatory intransitives can be taken to reflect a pre-Mokilese class of obligatory intransitives whose subcategorization has not changed through time, though the subcategory itself has been enlarged by the addition of intransitive forms of pre-Mokilese A-optional transitive verbs.

Root transitives like kuruj 'to grind s-t', with no related verb in another subcategory, appear to reflect pre-Mokilese verbs that obligatorily carried a transitive suffix; that is, a class of pre-Mokilese obligatory transitive verbs. Thus, the Mokilese verb 'to grind' has only two forms: kuruj 'to grind s-t' and kurujek 'to grind, be ground'. The former, I suggest, reflects the POC close transitive in *-i, the latter, the POC remote transitive in *-aki (though, in synchronic Mokilese at least, with a very different function). These forms can be derived as follows, details aside:

*kuruj+i	*kuruj+aki	
----	----	Final Consonant Deletion
kuruj	kuruj+ek	Final Vowel Deletion

This analysis suggests, then, that these verbs had a transitive suffix in all their occurrences in pre-Mokilese and thus can be identified with a pre-Mokilese class of obligatory transitives. Mokilese -ek as a

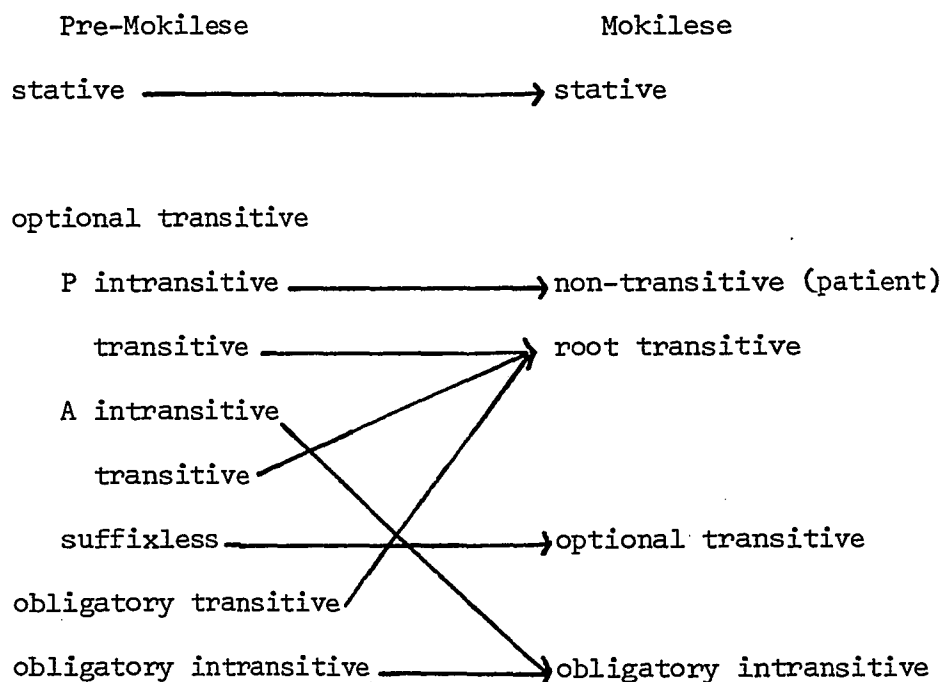
reflex of POC *-aki will be considered in greater detail in sections 3.5.2 and 4.2.2.4.

The history of two further Mokilese verb subcategories remains to be considered--optional transitive verbs and root intransitive verbs. The former are verbs, like mijik 'to fear (s-t), to be afraid', rong 'to hear (s-t)', and kapang 'to see (s-t)', which occur in both transitive and intransitive sentences with no change in form. There is no evidence that their shape in transitive and intransitive contexts differed at any pre-Mokilese period. Since I know of no class of verbs in any Oceanic language that took the transitive suffix *-i in both transitive and intransitive sentences and since, in the case of rong 'to hear (s-t)' (< *dono 'to hear') for example, the shape of the synchronic Mokilese form can be reconciled with the POC reconstruction through regular phonological changes (in this instance, POC *d > MOK r and final vowel deletion) with no appeal to the suffix *-i, I assume these Mokilese verbs to reflect a pre-Mokilese class of suffixless optional transitive verbs.

The history of Mokilese root intransitive verbs like loakjid 'to fish' loakjidi 'to fish for s-t' is a matter of somewhat greater complexity. These verbs will be considered separately in section 3.5.4.

The view of the evolution of verb subcategorization emerging from the above discussion can be summarized in the following chart:

FIGURE II
EVOLUTION OF MOKILESE VERB SUBCATEGORIZATION:
A FIRST APPROXIMATION



The picture presented here is, of course, incomplete insofar as it ignores reduplicated forms, irregular developments from pre-Mokilese P-verbs, and the Mokilese root intransitive class. These problems will be taken up separately in the sections noted above.

3.3.5 The Descriptive Reduplication in Pre-Mokilese

In this section we consider the source of the final member of the pre-Mokilese P-verb paradigm of section 3.3.3.0, a reduplication of the P-verb root (without a transitive suffix) used in simple intransitive sentences with agent subjects. It will be claimed that these reduplicated verb forms were the result of a pre-Mokilese process for deriving what will be termed virtual statives. We hypothesize that

this process was extended in the case of pre-Mokilese P-verbs as a mechanism for deriving verb forms that give an atelic interpretation, without an expressed object, to fundamentally telic situations (as noted in footnote 6).

The pre-Mokilese descriptive reduplication, as described in Harrison (1973) had two shapes:

- i) #CV-, for roots of the shape #CV $\begin{Bmatrix} h \\ g \end{Bmatrix}$ C
- ii) -CVCV#, otherwise

Thus:

i)	<u>koa-doahkoa</u>	'to work at'	<u>doadoahk</u>	'to work'
	<u>kaik</u>	'to scratch s-t'	<u>koakoaik</u>	'to scratch' ⁷
	<u>mwahl</u>	'bad'	<u>mwamwahl</u>	'to act badly'
	<u>pohk</u>	'to sweep s-t'	<u>popohk</u>	'to sweep'
ii)	<u>pik</u>	'sand'	<u>pikapik</u>	'sandy'
	<u>al</u>	'line, road'	<u>alahl</u>	'striped'
	<u>koalo</u>	'root'	<u>koalohlo</u>	'full of roots'
	<u>sikoa</u>	'to talk about s-t'	<u>sikesik</u>	'to converse'
	<u>ijir</u>	'to husk s-t'	<u>ejjej</u>	'to husk' (< *ejiej)
	<u>jaim</u>	'to sharpen s-t'	<u>joaijoai</u>	'to sharpen'
	<u>jirang</u>	'ray, wave'	<u>jirangrang</u>	'curly, wavy'
	<u>poadok</u>	'to plant s-t'	<u>poadpoad</u>	'to plant'
	<u>sohk</u>	'to fish s-t'	<u>sohso</u>	'to fish with a net'

These lists are by no means exhaustive.

The descriptive reduplication must have existed in Mokilese before final vowel deletion took place since, although these forms do not

reflect root-final vowels in absolute final position (these having been removed by final vowel deletion), these vowels are reflected internally before a -CVCV# 'suffix' in environments where they would not have been removed by vowel reduction. That is, they are preserved when non-high, between syllables with high vowels, as in pikapik 'sandy' (compare pik 'sand' < *pika) or sikesik 'to converse' (compare sikoa 'to talk about s-t'), and immediately before vowels, as in alahl 'striped' (compare al 'road, line' < *ala) or ejjej (< *ejiej) 'to husk' (compare ijir 'to husk s-t'), but not in forms like poadpoad 'to plant' (compare poadok 'to plant s-t') or kidkid 'to wrap' (compare kidim 'to wrap s-t').

The descriptive reduplication can be postulated for PMC since it appears to be found in all Micronesian languages:

GIL	<u>nango</u>	'(a) fly'	<u>nangonango</u>	'full of flies'
	<u>tang</u>	'to cry'	<u>tangitang</u>	'prone to crying'
MAR	<u>di</u>	'bone'	<u>didi</u>	'boney'
	<u>kool</u> ,	'hair'	<u>kool,ol</u> ,	'hairy'
TRU	<u>kúna</u>	'to find s-t'	<u>kúnékún</u>	'to find'
	<u>takir</u>	'to laugh'	<u>takirikir</u>	'prone to laughing'
WOL	<u>fiyaa</u>	'to squeeze s-t'	<u>fiyafiya</u>	'to squeeze'
	<u>bata</u>	'low tide'	<u>batabata</u>	'thirsty'

There is no internal evidence that the descriptive reduplication can be postulated for POC, since POC root final consonants are not preserved in descriptive forms: jaim 'to sharpen s-t', joaijoai 'to sharpen'; poadok 'to plant s-t', poadpoad 'to plant'.

Members of all pre-Mokilese verb subcategories, as well as nouns, had derived descriptives. These appear to have often been accompanied,

under as yet unclear conditions, by either the prefix li- or the suffix *-nV. Descriptive forms in modern Mokilese appear to be completely fossilized. Moreover, it appears that the process was not fully productive in pre-Mokilese, in the sense that all forms we predict could have had a derived descriptive do not in fact have one. The one significant exception is the pre-Mokilese P-verb category, every member of which appears to have a derived descriptive. The following are examples of descriptives derived from various pre-Mokilese lexical (sub)categories:

i) nouns

<u>pik</u>	'sand'	<u>pikapik</u>	'sandy'
<u>loang</u>	'fly'	<u>loangloang</u>	'full of flies'
<u>no</u>	'wave'	<u>nohno</u>	'rough (of ocean)'
<u>loap</u>	'part, side'	<u>loaploap</u>	'divided into parts'
<u>al</u>	'line, road'	<u>alahl</u>	'lined, striped'
<u>dikol</u>	'lump'	<u>dikolkol</u>	'lumpy'
<u>mwei</u>	'spot'	<u>mweimwei</u>	'spotted'
<u>sakai</u>	'rock'	<u>sakaikai</u>	'rocky'
<u>si</u>	'bone'	<u>sihsi</u>	'boney'

This list is not exhaustive.

ii) statives

<u>moahk</u>	'crushed'	<u>moamoahk</u>	'spongey'
<u>soang</u>	'tight (of know)'	<u>soangsoang</u>	'tight'
<u>koahk</u>	'tired'	<u>koakoahk</u>	'tired'

This list is probably not exhaustive, but clear cases are difficult to find. The semantic contrast in the last two pairs is difficult to

gloss in English. The unreduplicated forms seem to have a resultant state interpretation, the reduplicated forms a virtual interpretation, to be defined below.

iii) A-verbs

<u>joang</u> 'to cry'	<u>li-joangjoang</u> 'prone to crying, to be a cry-baby'
-----------------------	--

This is the only clear A-verb descriptive known to me.

iv) suffixless optional transitive

<u>nim</u> 'to drink (s-t)'	<u>nimnim</u> 'to be a drinker'
<u>kol</u> 'to hold (s-t)'	<u>kolkol</u> 'frugal'
<u>pil</u> 'to choose (s-t)'	<u>li-pilpil</u> 'choosy, picky'

v) obligatory transitives

<u>moalkoa-hla</u> 'to forget'	<u>molukluk</u> 'forgetful'
<u>kadipoa</u> 'to betray'	<u>kadipedip</u> 'treacherous'
<u>koajoane</u> 'to arrange'	<u>koajoanjoan</u> 'arranged'

vi) obligatory intransitives

<u>kak</u> 'to jump'	<u>li-kakkak</u> 'bouncy'
----------------------	---------------------------

This is the only such case of which I am aware.

As noted above, all P-verbs have a descriptive reduplication. In all but the following two cases (as far as I know):

<u>pwil</u> 'to glue, glued'	<u>pwilpwil</u> 'sticky'
<u>sipw</u> 'broken'	<u>li-sipwasipw</u> 'breakable'

these forms appear in simple intransitive sentences with agent subjects.

The two cases above are problematic: pwilpwil 'sticky' may, in fact, be derived from the noun pwil 'glue'; sipw 'broken' is a stative in modern Mokilese, but the existence of the root transitive sipwang 'to break s-t' suggests it was a P-verb in pre-Mokilese.

Ignoring for the moment the usual P-verb interpretation of the descriptive reduplication, we can come to some understanding of its original function by examining its semantics in other forms. In most cases it names either i) an attributive state of some location/object or ii) a general characteristic of some person. Thus:

i)	<u>loang</u>	'fly'	<u>loangloang</u>	'full of flies'
	<u>koalo</u>	'root'	<u>koalohlo</u>	'full of roots'
	<u>pik</u>	'sand'	<u>pikapik</u>	'sandy'
	<u>pwil</u>	'stuck'	<u>pwilpwil</u>	'sticky'
	<u>pad</u>	'rut'	<u>padpad-an</u>	'rutted'
ii)	<u>pil</u>	'to choose'	<u>li-pilpil</u>	'choosy'
	<u>joang</u>	'to cry'	<u>li-joangjoang</u>	'to be a cry-baby'
	<u>kol</u>	'to hold'	<u>kolkol</u>	'frugal'
	<u>moalkoa-hla</u>	'to forget'	<u>molukluk</u>	'forgetful'
	<u>nim</u>	'to drink'	<u>nimnim</u>	'to be a drinker'

The correlation between attribute/characteristic interpretation and the descriptive reduplication can also be seen by comparing a random list of reduplicated and unreduplicated statives. While the correlation is not perfect, most of the former name attributes or characteristics, while most of the latter name temporary or resultant states or conditions. Some secure cases are:

Attributes		Conditions	
<u>siksik</u>	'small'	<u>air</u>	'worried'
<u>soausoau</u>	'heavy'	<u>moadoak</u>	'in pain'
<u>roairoai</u>	'long'	<u>lioas</u>	'angry'
<u>korohro</u>	'white'	<u>roj</u>	'empty'
<u>imwpwilapwil</u>	'pink'	<u>deng</u>	'tight'
<u>manman</u>	'able to do magic'	<u>inoang</u>	'desirous'
<u>dangahnga</u>	'lazy'	<u>jor</u>	'chapped'
<u>laplap</u>	'important'	<u>moahk</u>	'crushed'
<u>paspas</u>	'flat'	<u>sipw</u>	'broken'

It is rarely, if ever, that descriptive reduplications are interpreted either as resultant states or habitual actions. We can characterize the function of the descriptive reduplication for these forms as a mechanism (often accompanied by the prefix li- or the suffix -an) for deriving what we might term virtual statives denoting observations made out of the context of any event (states) that are not contingent upon any event (that is, virtual). This accounts for the fact that such forms neither carry habitual interpretations (since these are eventive) nor result interpretations (since these are contingent).

A-verbs and P-verbs were necessarily eventive so one would expect that few if any would have derived virtual statives. Those that do, we might infer, are the few for which a virtual stative 'prone to' interpretation was transparent; li-sipwasipw 'breakable', li-joangjoang 'to be a cry-baby'. One might, however, note one further fact about virtual statives, that the situations they describe are necessarily atelic. I would like to suggest that in pre-Mokilese, the use of the

descriptive reduplication was extended from a virtual stative derivational process to an atelic intransitive derivational process. This extension could not have affected those A-verbs that did not have a descriptive form with virtual interpretation, since these verbs, in their root form, already referred to atelic situations. (One might suggest a habitual interpretation. This possibility might have been precluded by the existence of the modal kin, which marks habituality.) It did, however, have a profound effect on the P-verbs in that it permitted a previously unrealizable possibility, an 'atelic' P-verb with an agent subject appearing in constructions typical of A-intransitive verbs. This possibility, I suggest, was seized upon and generalized throughout the remainder of the P-verb class--those verbs that did not already have a derived virtual stative.

3.4 Pre-Mokilese and Proto-Oceanic

The verb subcategorization system of pre-Mokilese outlined in section 3.3.4 is remarkably congruent with that hypothesized for POC in Pawley (1973). While I make no strong claims regarding the identifiability of POC with the stage in the history of Mokilese here termed pre-Mokilese, the similarities between these two reconstructions seem to require some comment. Pawley's POC reconstruction is employed initially as a basis for comparison with pre-Mokilese since it is the most comprehensive reconstruction of POC verbal syntax, morphology, and subcategorization to date.

In Pawley's analysis, both verb and verbal sentence classification in POC are rooted in a fundamental distinction between stative and non-stative. A stative verb is one whose subject in an intransitive

sentence (NP_S VP) 'denotes the sufferer of the state, the entity which is in the state referred to by the verb phrase' (Pawley 1973:113). Such sentences are termed stative sentences. All other POC sentences are termed active sentences. It follows, then, that while all POC stative sentences are intransitive, active sentences may be either transitive (NP_S VP NP_O) or intransitive (NP_S VP).

Stative verbs, according to Pawley, are not restricted to stative sentences but may occur, with appropriate transitive marking, in active transitive sentences whose subject 'denotes the actor or experiencer of the verb' (ibid.:114). The object of a stative verb in an active transitive sentence has the same case role as that of the subject of that verb in a stative (intransitive) sentence. Thus:

- BAU a. E a levu na vale.
 it tns big art house
 'The house was big.'
- b. E a vaka-levu-taka na vale na tamata.
 he tns CA-big-tr art house art man
 'The man enlarged the house.'
- a. E a sogo na katuba.
 it tns close art door
 'The door was closed.'
- b. E a sogo-ta na katuba na tamata.
 he tns close-tr art door art man
 'The man closed the door.'

where Bauan levu 'big' and sogo 'close' are stative verbs belonging to different subclasses (see below). This latter fact accounts for the

distinct morphological marking (with and without the causative prefix vaka-)⁸ required by these verbs in active transitive sentences (the b. sentences above). Bauan is, of course, a synchronic VOS language.

The distribution of Pawley's POC stative verbs (ignoring verb morphology) can be given more schematically as:

Stative sentence:
$$\begin{array}{c} \text{NP}_S [\text{V}_{\text{stat}}]_{\text{VP}} \\ [R_1] \end{array}$$

Active transitive sentence:
$$\begin{array}{c} \text{NP}_S [\text{V}_{\text{stat}}]_{\text{VP}} \text{NP}_O \\ [R_2] [R_1] \end{array}$$

where R_1 is the sufferer of the state or the entity in the state and R_2 is the actor or experiencer.

As exemplified by the Bauan sentences given above, Pawley divides POC stative verbs into two subclasses according to their morphological marking in transitive sentences. A-statives, as reflected synchronically by Bauan levu 'big', require both a transitive suffix and the causative prefix POC *paka- (BAU vaka-). B-statives, as reflected synchronically by Bauan sogo 'close', require only a transitive suffix in transitive sentences. Pawley's B-statives differ from what he terms optional transitive verbs only in the role of the subject in NP_S VP sentences. For B-statives this role is identical to that of the object of the corresponding active transitive sentence, as noted above. For optional transitives, the role of NP_S is identical in both NP_S VP and NP_S VP NP_O sentences. Transitive marking for B-statives and for optional transitives is identical. Thus:

BAU a. E a sogo na katuba.

it tns close art door

'The door was closed.'

- b. E a sogo-ta na katuba na gone.

he tns close-tr art door art child

'The child closed the door.'

- a. E a gunu na gone.

he tns drink art child

'The child drank.'

- b. E a gunu-va na wai na gone.

he tns drink-tr art water art child

'The child drank the water.'

where Bauan sogo 'close' is taken to reflect a POC B-stative and Bauan

gunu 'drink' a POC optional transitive. The -t- and -v- of the

transitive suffixes are thematic consonants (see section 3.2).

Pawley distinguishes two further verb subcategories for POC: an

obligatory transitive class occurring only in active transitive

sentences, either with a transitive suffix (subclass A) or without

(subclass B), and a small, possibly null, class of obligatory

intransitive verbs occurring only in active intransitive sentences.

If this latter subcategory is a valid one for POC, one infers it to have

contained for the most part motion verbs.

Pawley's verb and sentence type classification for POC may be summarized in the following table:

TABLE VI

PAWLEY'S POC VERB AND SENTENCE CATEGORIZATION

SUBCATEGORY	SENTENCE TYPE	MORPHOLOGY	ROLE OF NP _S	ROLE OF NP _O
Stative				
A	stative	∅	sufferer	-----
	active transitive	*paka-V- $\begin{bmatrix} *-i \\ *-aki(ni) \end{bmatrix}$	actor/experiencer	sufferer
B	stative	∅	sufferer	-----
	active transitive	V- $\begin{bmatrix} *-i \\ *-aki(ni) \end{bmatrix}$	actor/experiencer	sufferer
Optional Transitive				
	active intransitive	∅	actor/experiencer	-----
	active transitive	V- $\begin{bmatrix} *-i \\ *-aki(ni) \end{bmatrix}$	actor/experiencer	various
Obligatory Transitive				
A	active transitive	V- $\begin{bmatrix} *-i \\ *-aki(ni) \end{bmatrix}$	actor/experiencer	various
B	active transitive	∅	actor/experiencer	?various
Obligatory Intransitive				
	active intransitive	∅	actor/experiencer	-----

The following chart provides a comparison of Pawley's POC verb subcategorization with that developed in the present study for pre-Mokilese:

Proto-Oceanic	Pre-Mokilese
A-stative	stative
B-stative	P-optional transitive
optional transitive	A-optional transitive
-----	suffixless optional transitive
A-obligatory transitive	obligatory transitive
B-obligatory transitive	-----
obligatory intransitive	obligatory intransitive

Three differences can be noted between these systems. First, Pawley does not postulate a class of suffixless optional transitive verbs, hypothesized for pre-Mokilese for the antecedents of Mokilese verbs like rong 'to hear (s-t)' and mijik 'to fear (s-t)', which have the same form in both transitive and intransitive sentences. Second, there appears to be no reason at present to postulate for pre-Mokilese a class of B-obligatory transitive verbs, as exemplified by Bauan ia 'to do, perform, carry out', which appear only in transitive sentences but do not take a transitive suffix. The third difference concerns the treatment of those verbs appearing in intransitive sentences with patient subjects and, with a transitive suffix but no causative prefix, in transitive sentences, typically with agent subjects and patient objects. Pawley treats these as a subclass of stative verbs (his B-statives), while we have treated an analogous class of pre-Mokilese verbs as a subclass of optional transitive verbs (P-verbs).

From the point of view of pre-Mokilese the issue is not merely a terminological one. Pawley's treatment suggests that unaffixed A- and B-statives can, for the most part, be considered to have identical syntactic/semantic properties. Under the analysis of the present work, however, pre-Mokilese unsuffixed P-verbs appeared in transitive sentences (with agent subjects and patient objects) in an imperfective interpretation, in contrast to the perfective interpretation of transitive sentences with suffixed P-verbs. There is no evidence in Mokilese that the same was true of pre-Mokilese statives. This distinction between pre-Mokilese statives and P-optional transitives accounts for the fact that, except in a few exceptional cases (for example, sipw 'broken'), unsuffixed P-verbs did not fall together with statives following the dissolution of the pre-Mokilese verb subcategorization system, but came to constitute an independent P-non-transitive subcategory. While we have not made any strong claims regarding POC transitivity patterns on the basis of our analysis of pre-Mokilese transitivity, it is nonetheless true that the pre-Mokilese analogs of Pawley's A- and B-statives are not as similar as we might expect from Pawley's POC reconstruction. This fact alone seems to suggest that an attempt to reconcile the pre-Mokilese verb subcategorization system hypothesized here with Pawley's POC system is perhaps not a trivial exercise.

Let us first consider Pawley's use of the term stative to refer to intransitive sentences with stative verbs, in contrast to the term active intransitive used to refer to similar sentences with verbs that, in his classification, are not stative. Though his stative sentences and active intransitive sentences differ only in the choice of main verb

(that is, their syntax and morphology are in all other respects identical), one might still claim that this objection is trivial and reparable merely by making stative sentence a subtype of intransitive sentence. However, it is not clear that stative verb, as Pawley defines it, is in all cases distinct from non-stative verb.

Stative verbs appear to differ from non-stative verbs, in one respect, in the case role of the NP_S in an intransitive sentence. For stative verbs, this role is that of the sufferer of or entity in the state; for non-stative verbs, it is the actor or experiencer. Now, it seems to me that the notion sufferer and the notion experiencer need not be distinct, but can, on occasion at least, be taken to represent the same case role. Pawley himself provides us with an example in the case of the Kwara'ae verb mae 'to die, to be dead', which he lists both as an A-stative and as an optional transitive. The issue is not whether Pawley does or does not admit overlapping verb classification--he is not explicit on this point--but that his system forces tokens of the same sentence, with the same meaning, to be classified ambiguously. Since Pawley does not give the Kwara'ae verb in question in full sentences, we will provide schematic ones:

A-stative

a. stative sentence

NP_S mae.

'NP_S died/is dead.'

b. active transitive sentence

NP_S fa'a-mae NP_O.

'NP_S extinguished NP_O/caused NP_O to die.'

Optional transitive

c. active intransitive sentence

NP_S mae.

' NP_S died/is dead.'

d. active transitive sentence

NP_S mae-li-a NP_O .

' NP_S died of/from NP_O .'

Sentences a. and c. above are identical and synonymous intransitive sentences but, under Pawley's classification, are, at the same time, active intransitive and stative. We might, then, conclude that Pawley provides us with some unnecessary terminology for POC sentence classification, and that we need only distinguish transitive sentences and intransitive sentences.

The root of this problem may be notational or model-specific. It is clear that the KWA mae 'die' has both a causative and a close transitive form. Though Pawley is far from explicit on this point, it may be that he intends to adopt a model in which these forms are derived transformationally, the former from a stative sentential source, the latter from a non-stative. In a model such as that of Aronoff (1976), where all word formation is done in the lexicon, one need not refer to stative and non-stative sentences in deriving the Kwara'ae forms in question, but merely to stative and non-stative verbs. In such a model, the ambiguity in Pawley's analysis would not arise.

The Kwara'ae verb in question suggests, however, that the problem may be more substantial, since one infers that not all optional transitive verbs can have a derived causative (that is, can also be

A-stative in Pawley's classification), nor that all A-statives have a simple close transitive (that is, be cross-classified as optional transitive). We must have some means of distinguishing those verbs that have both 'derived' forms. I would like to tentatively put forward the hypothesis that this latter class may be co-extensive with the class of experiencer-subject verbs.

I suggest this hypothesis for three reasons. First, this is precisely the class of verb whose intransitive subject may be considered to be the sufferer of the state, if the verb is classified as A-stative, or the experiencer, if the same verb is classified as optional transitive. Second, these verbs are also problematic in a somewhat different classification of POC (optional) transitive verbs, that of Foley 1976 (see below), which suggests that they may have distinct properties not yet fully appreciated. Third, the Kwara'ae verb in question is such a verb, as are all Mokilese verbs known to me that have both causative and non-causative forms in transitive sentences. For example:

MOK	<u>pwuriamwei</u>	'to be surprised'
	<u>pwuriamwei</u>	'to be surprised at s-t'
	<u>kapwuriamwei</u>	'to surprise s-o'
	<u>mijik</u>	'to be afraid'
	<u>mijik</u>	'to be afraid of s-t'
	<u>kamijiki</u>	'to frighten s-o'
	<u>rong</u>	'to hear'
	<u>rong</u>	'to hear s-t'
	<u>koaronge</u>	'to listen attentively to s-t'

The verb koaronge is problematic since, unlike the other causatives noted here, the experiencer, rather than the stimulus, is the subject. I can only suggest that this verb underwent some historical process, analogous to psych-movement, at an earlier period. It is not unlikely that this verb has undergone some reanalysis, since assimilation of the causative prefix ka- to the following vowel is found, in Mokilese, only in 'causative' forms that are somewhat anomalous. As this is a minor point, I will not justify this claim here.

We might note further that two of the three Mokilese verbs cited above as having both causative and non-causative transitive forms (rong 'to hear' and mijik 'to fear') reflect what we have termed pre-Mokilese suffixless optional transitives. The majority of such verbs in Mokilese, as noted in section 3.1.2.3, are experiencer-subject verbs. It might be pointed out that, though Pawley does not recognize a class of suffixless optional transitives for POC, he in fact cites such a case, again from Kwara'ae:

KWR Nau ku rongo.

I I hear

'I hear.'

Nau ku rongo 'o.

I I hear you

'I hear you.'

This Kwara'ae experiencer-subject verb is cognate with Mokilese rong 'to hear (s-t)' and shares with it the property of having the same form in both transitive and intransitive sentences.

We thus have some evidence for a morphological class of suffixless

optional transitive verbs in POC that might correspond to a semantic class of experiencer-subject verbs. We have also suggested that the property of having both causative and non-causative transitive forms might be a further characteristic of these verbs. The pre-Mokilese suffixless optional transitive subcategory hypothesized earlier cannot be refined to accomodate these suggestions, however, since some Mokilese optional transitives (from earlier suffixless optional transitives) are not experiencer-subject verbs (for example, nim 'to drink (s-t)') and many have no causative form (for example, kapang 'to see (s-t)', kidal 'to know (s-t)'). Furthermore, it is not yet clear that experiencer-subject verbs behave in so totally unified a fashion in any (number of) daughter language(s) that they can be considered a separate subcategory in POC. More investigation is necessary.

From this perhaps overlong digression into the properties of experiencer-subject verbs, let us return to the problem of Pawley's stative verb subcategory. Stative verbs have two syntactic characteristics in POC, according to Pawley; first, their intransitive subject is the sufferer and, second, their transitive object has the same case role as their intransitive subject. Neither of these properties are inferred to hold for non-statives. We have noted, however, that sufferer is a somewhat vague case role. If it can include experiencer, then some non-statives also have sufferer intransitive subjects. Further, if, as tentatively proposed above, all experiencer-subject verbs are treated as a separate subcategory, the residue of Pawley's stative verb class falls rather neatly into two types:

- i) those with actor subjects and patient objects in transitive sentences, and patient subjects in intransitive sentences (that is, process verbs)
- ii) non-process verbs, where the intransitive subject is not the patient

The latter, for the most part, fall into Pawley's A-stative class, while the former, for the most part, fall into his B-stative class. (Pawley's A-statives include verbs with meanings like 'black', 'big', 'full', 'dirty', 'bad', 'great', while his B-statives include verbs with meanings like 'shut', 'left behind', 'scattered', 'broken', 'caught'.) It appears, then, that the true defining characteristic of Pawley's stative subcategory (both A- and B-stative) is the 'quasi-ergative' subject-selection property of the verbs in question (the fact that the intransitive subject has the same case role as the transitive object).

When we consider Pawley's optional transitive subcategory we find that:

- i) for these verbs, in contrast to statives, transitive and intransitive subjects have the same case role
- ii) experiencer-subject verbs aside, the case role of their subject is usually agent, while that of their object is usually goal or location but is rarely, if ever, patient

(Some examples from Pawley's optional transitive class are verbs whose English glosses would be 'to cry (about s-t)', 'to vomit (on s-t)', 'to go (to s-t)', 'to talk (about s-t)', 'to ask (for s-t)'). Thus, while optional transitives differ from B-statives in the correlation of

the case role of transitive and intransitive subject, they share with B-statives the property of an agent transitive subject. Moreover, the transitive morphology of optional transitives and B-statives is identical, as can be seen in Table VI, and is distinct from that of A-statives in not requiring the causative prefix *paka-.

In reconsidering Pawley's POC verb subcategorization solely on the basis of the evidence Pawley himself presents, without regard to any hypotheses concerning pre-Mokilese, one can conclude that Pawley's B-statives and optional transitives could equally well have been considered to be two subclasses of a single optional transitive subcategory, differing only in intransitive subject selection. The fact that B-statives and optional transitives have the same transitive morphology suggests to me that this classification is perhaps preferable.

Such a classification has already been proposed in Foley (1976), following Arms' (1974) classification of Fijian verbs. Foley distinguishes what he terms agent-oriented verbs (A-verbs--Pawley's optional transitives) and patient-oriented verbs (P-verbs--Pawley's B-statives), characterizing the former as 'action verbs [that] commonly occur intransitively. When they occur transitively the nominal in Position II [NP₀--SPH] is generally in the role of Goal or Locative, and can never be Patient' (1976:158). Foley characterizes P-verbs as basically process verbs. As already suggested above, his classification leaves somewhat vague the status of experiencer-subject verbs.

The observations made in this section suggest that Pawley's (1973) POC verb subcategorization can be modified along the lines suggested in

Foley (1976) so as to become nearly identical to the verb subcategorization proposed here for pre-Mokilese. I suggest that this revised POC system admit a class of suffixless optional transitive verbs and, quite tentatively, a class of experiencer-subject verbs. As already noted, these classes may prove to be co-extensive. Their existence should be considered a hypothesis to be tested rather than a conclusion I can claim to have justified here. The modified POC verb subcategorization system may be summarized:

- I Stative -- taking the prefix *paka- in transitive sentences
- II Optional Transitive
 - i) A-verb -- with like- (usually agent) subjects in both transitive and intransitive sentences, and goal/location objects in transitive sentences
 - ii) P-verb -- with patient subjects in intransitive sentences and agent subjects in transitive sentences
 - iii) suffixless -- occurring in transitive sentences without a transitive suffix
- III Obligatory Transitives -- with agent/experiencer subjects
 - i) suffixed
 - ii) unsuffixed
- IV Obligatory Intransitives -- a small, perhaps empty, class of agent subject verbs

V Experiencer Subject -- as already noted, a tentative class. It is likely that such verbs have been distributed among the other classes in daughter languages.

It follows from this classification that we will distinguish only two verbal sentences types for POC at this point; intransitive sentence and transitive sentence. Other putative sentence types are considered to reflect verb subcategorization.

I must reiterate that I am making no strong claims regarding POC in the present work. The POC verb subcategorization system proposed above is one that follows only from the evidence presented in Pawley (1973). The fact that it is so nearly identical to that hypothesized for pre-Mokilese does suggest, however, that other features of the pre-Mokilese verbal system may prove relevant for POC. I make this suggestion in the hope that it might stimulate future research.

3.5 Mokilese After Final Vowel Deletion

3.5.0 Introduction--The Verbal System of Pre-Mokilese

The preceding sections have given an account of the Mokilese verbal system at a period before the application of final vowel deletion. We have claimed that the verbal subcategorization system at that period can be equated roughly with that hypothesized for POC in section 3.4. The most significant area of divergence from this POC system to our pre-Mokilese system is in the case of P-verbs. These are claimed to have developed a four member paradigm, as given in section 3.3.3.0.

The pre-Mokilese P-verb paradigm was at the same time syntactic, aspectual, and derivational. It differentiated transitive from

intransitive constructions, as was also true of the A-optional transitives, but, unlike these, gave aspectual significance to the presence or absence of formal transitive marking in these constructions. Finally, it exploited the descriptive reduplication to create intransitive verbs that could appear in simple intransitive sentences with agent subjects.

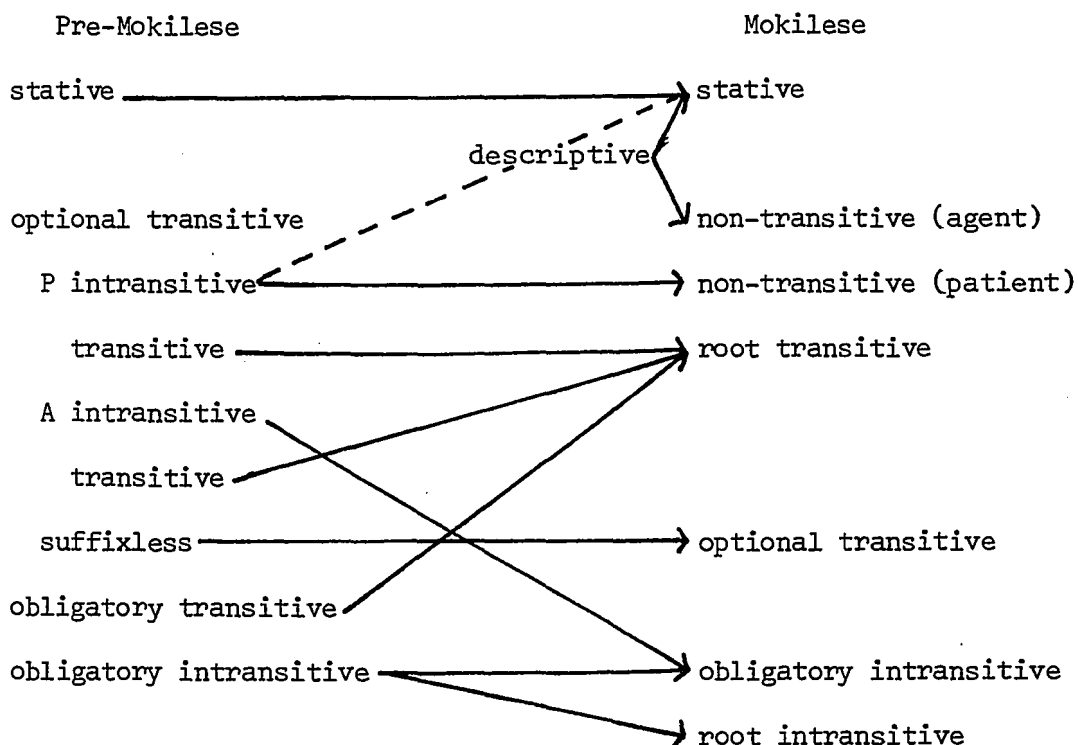
The development of the modern Mokilese verb subcategorization system and transitive paradigm from this pre-Mokilese system will be considered in the present section.

3.5.1 Subcategorization

The following chart summarizes our hypotheses concerning the development of the verb subcategorization system of Mokilese from that of pre-Mokilese. It incorporates those changes considered in section 3.3 and those to be considered in the present section:

FIGURE III

EVOLUTION OF MOKILESE VERB SUBCATEGORIZATION



The stative subcategory remained essentially the same, as did the optional suffixless transitive subcategory (labelled optional transitive in our synchronic analysis of Mokilese). Most former obligatory intransitives remain unchanged, though some appear to have developed into a root intransitive subcategory, to be considered in section 3.5.4. The agent non-transitive subcategory of Mokilese, as considered in section 3.3.5, developed as an extension of the pre-Mokilese reduplicated descriptive derivational process.

The most significant change was the dissolution of the pre-Mokilese A- and P-optional transitive subcategories. This change, we hypothesize, was triggered by the loss of final vowels, which, as noted in section 3.3, removed the pre-Mokilese transitive suffix *-i. As a result we have

claimed in section 3.3 that all transitive verbs in pre-Mokilese (occurring in transitive sentence) were reanalyzed as monomorphemic. Those pre-Mokilese forms that occurred only in transitive sentences, the obligatory transitives and the suffixed forms of older A- and P-optional transitives thus came to constitute a new, larger class of obligatory transitives (which we have labelled root transitives), monomorphemic verbs found only in $NP_S [V]_{VP} NP_O$ constructions. The effects of this change on the older P-transitive aspect distinction will be considered in section 3.5.2.

Since former A- and P-verb intransitive forms could no longer be considered to have 'derived' transitive forms (these forms now being monomorphemic root transitives), they were open to reanalysis. The former, it is claimed, were now no longer distinct from obligatory intransitives, and merged with that class. The latter, however, had idiosyncratic properties; occurring both in simple intransitive sentences with patient subjects and in pre-Mokilese imperfective transitive sentences. Since these properties were shared by no other verb subcategory, these forms came to constitute a separate subcategory--the P-non-transitives. The development of the P-non-transitives will be considered in greater detail in sections 3.5.2 and 3.5.3.

3.5.2 The Transitive Paradigm

In spite of the changes in the verb subcategorization system, the older P-verb paradigm, as a syntactic paradigm, remained intact. That is, for every root transitive from a former P-verb, there was a corresponding P-non-transitive and A-non-transitive found in

intransitive sentences. This fact seems to have exerted pressure on all other root transitives (from older A-verbs and obligatory transitives), as well as on the transitive forms (in -i) of root intransitive verbs, whose development is to be considered in section 3.5.4, to themselves develop a transitive paradigm. The synchronic result was described earlier in section 3.1.3. One might want to suggest that this development was the result of statistical pressure, since it appears that reflexes of older P-verbs constitute the majority of the synchronic root transitive subcategory. However, we need not appeal to statistical considerations alone in accounting for the development of the Mokilese transitive paradigm. It appears that some internal pressure in the direction of the modern paradigm was present even in pre-Mokilese.

The pressure in question came from the PMC 'agentless passive' suffix *-aki. Reflexes of this suffix are found in all Micronesian languages: Ponapeic -ek, KUS -yuhk, GIL -aki, WOL -eg--ag, ULI -(y)ex. In Gilbertese and Kusaiean its reflexes mark a passive-like construction in which an agent can be optionally expressed. Thus:

GIL E taekin-a te rongorongo aio Naareau.

he tell-tr art story this N.

'Naareau told this story.'

E taekin-aki (irou-n Naareau) te rongorongo aio.

he tell-pass by-const. N. art story this

'This story was told (by Naareau).'

KUS Ninac el otwelah fohtoh se.

mother she weave-away basket this

'Mother weaved this basket.'

Fohtoh se otweyuhklac (sin ninac).

basket this weave-pass-away by mother

'This basket was woven (by mother).'

Productive use of this suffix, reconstructable as PMC* -aki, is restricted, to my knowledge, to Mokilese, Gilbertese and Kusaiean. The overt expression of an agent in a passive-like construction with a reflex of *-aki is restricted to the latter two languages. All other Micronesian languages, however, reflect *-aki as a fossilized suffix on verbs with a 'passive' or resultant state interpretation for the most part. This is true of Ponapean, Marshallese, Woleaian, and Ulithian. (Jacobs (1976:119) notes that a prepositional verb (see section 4.2.1.2) expressing the agent is permitted after such verbs in the two last-named languages.)

In section 3.3.1 it was claimed that PMC *-aki is a direct reflex of the POC remote transitive suffix *-aki as it appeared in reciprocal and 'passive' constructions (Pawley and Reid 1975:16). I make this claim because:

- i) reconstructed PMC *-aki is phonologically identical to POC *-aki and has no other obvious source
- ii) both appear in 'passive' constructions
- iii) PMC *-aki can be reconstructed as mutually exclusive with the PMC transitive suffix *-i

This last point can be demonstrated in the following derivations:

poadok+i	poadok+aki	
poadok	poadok+ek	Final Vowel Deletion

In synchronic terms, MOK -ek suffixes to:

- i) all root transitives
- ii) transitive forms in -i, from root intransitives

This latter use will be claimed below to be an innovation. The fact that -ek suffixes to all root transitives suggests, in historical terms, that it was in fact complementary and mutually exclusive with PMC *-i, since the canonical shape of the root transitive is equivalent to the historical stem to which transitive suffixes were added. The suffix *-i was lost in Mokilese through final vowel deletion, while *-aki survived as -ek because only its final vowel was removed. The fact the -ek suffixes freely to all verbs that we claim once took *-i, coupled with the fact that it is less commonly found with Mokilese optional transitives which we claim reflect an older subcategory that did not take *-i, further suggests that -ek is a reflex of what Pawley considers to be the POC remote transitive suffix.

Thus, it would now appear that all pre-Mokilese 'suffixed' transitive verbs, regardless of subcategory, had at least two members of the transitive paradigm--an S_t (transitive sentence) form in the suffix *-i and an S_{iP} (patient-subject intransitive sentence) form in the suffix *-aki. Pre-Mokilese P-verbs had a second S_{iP} form, the unsuffixes verb, and an S_{iA} form, the descriptive. Also, pre-Mokilese A-verbs had an S_{iA} form, the unsuffixes verb, appearing only in simple intransitive sentences with agent subjects. Thus, the only missing paradigm forms were, for A-verbs, an S_{iO} form, and for obligatory

transitives, S_{iO} and S_{iA} forms. These facts may be summarized in the following extended transitive paradigm for pre-Mokilese transitive verbs:

	P-verb	A-verb	Obligatory Transitive
S_t	VERB+i	VERB+i	VERB+i
S_{iP}	VERB+aki	VERB+aki	VERB+aki
	VERB+Ø		
S_{iA}	RED+VERB	VERB+Ø	*
S_{iO}	VERB+Ø	*	*

I hypothesize that, after the merger of all transitive verb forms into the root transitive subcategory, the following changes took place:

- i) Former P-verbs in *-i lost their perfective interpretation, since root transitives from other sources had no such interpretation. (The aspect distinction did not disappear from Mokilese, however, as will be seen in section 3.5.3.) This change led to the reinterpretation of older imperfective P-transitive constructions as incorporated object constructions, where the NP_0 had only generic reference.
- ii) Since older P-verbs used the same form (VERB+Ø) in both S_{iP} and S_{iO} constructions, the alternate S_{iP} form (VERB+aki) spread, for all root transitives, into S_{iO} constructions.
- iii) Root transitives from older obligatory transitives further extended the VERB+aki form into S_{iA} constructions. This innovation, as was seen in section 3.1.3,

has yet to be fully generalized to root transitives from other pre-Mokilese subcategories.

The major innovation in the transitive paradigm after final vowel deletion was, therefore, the extension of Mokilese -ek, the former agentless passive **-aki*, as a mechanism for filling empty slots in the former P-verb paradigm. The suffix -ek has thus become a means of deriving intransitive verbs (verbs for use in intransitive sentences) from transitive verbs. The extent of its use can be seen as a function of the older subcategorization of the transitive verb in question. Those verbs for which the transitive paradigm slots were already filled by other forms make the least use of the ek-intransitive, while those whose history did not provide such forms use it most. It is most widely used in its original function (in S_{iP} sentences) and least in its most innovative function (in S_{iA} sentences).

3.5.3 The Genesis of Perfective Aspect

The aspectual distinction hypothesized for the pre-Mokilese P-verb paradigm did not disappear with the emergence of the modern Mokilese transitive paradigm. On the contrary, it would appear that this distinction has been elaborated and extended. As will be described in section 4.1.2.2, Mokilese has a complex system of perfective marking based on a set of directional enclitics and marking contrasts such as:

Ngoah rapahki woallo.

I search man-that

'I looked for the man.'

Ngoah rapahkihda woallo.

I search-up man-that

'I found the man.'

Ngoah kang mwingehu.

I eat food-that

'I ate (some of) the food.'

Ngoah kangla mwingehu.

I eat-away food-that

'I ate up the food.'

It is not clear when perfective aspect came to be marked in this way, but it is not unlikely that it preceded final vowel deletion. Such use of directionals has been well documented for Kusaiean and Ponapean in Lee (1974) and seems to occur, perhaps to a lesser degree, in Trukic also. Relevant data from Marshallese and Gilbertese are unavailable.

As noted in section 3.1.2.6, perfective marking is almost obligatory for Mokilese reflexes of older P-intransitives in S_{ip} constructions. In somewhat anthropomorphic terms, the P-intransitives faced a dilemma following the dissolution of the optional transitive subcategory of pre-Mokilese. Unique among Mokilese verbs, they appeared in older 'imperfective' transitive and patient-subject intransitive sentences. They might have merged with the stative subcategory, as at least one did (sipw 'broken', cf. sipwang 'to break s-t', but *Ih sipw ra. 'He is breaking branches.') but, for the most part, did not follow this course. Rather, as we have claimed, they developed into the modern Mokilese P-non-transitive subcategory.

In S_{ip} contexts, we might note, their 'telic' properties were

particularly salient however, in that they described the end point of the situation described by their corresponding forms in transitive sentences. While admittedly no more than pure speculation, I would like to hypothesize that this property was reinterpreted, for S_{iP} sentences, as perfectivity. Thus, in almost all S_{iP} constructions, the Mokilese P-non-transitives came to carry perfective marking in the form of a directional enclitic.

3.5.4 Root Intransitive Verbs and the Suffix -i

In this section we will attempt to account for the origin of the Mokilese root intransitive subcategory, those verbs which appear unsuffixed in S_{iA} contexts and take the suffix -i in S_t contexts. Crucial to our account is the claim that the -i transitive suffix of Mokilese is not a reflex of the POC close transitive $*-i$. We turn to this issue first.

Mokilese i-transitive forms are problematic in view of the fact that, if the -i transitive suffix is a reflex of the POC close transitive $*-i$, we must give an account of its failure to undergo final vowel deletion in those cases where it appears on the surface in synchronic Mokilese. Three hypotheses might be put forward concerning the source of Mokilese -i:

- i) that it reflects not POC $*-i$, but the final root vowel of the verb. This may be termed the root final $*-i$ hypothesis.
- ii) that it reflects POC $*-i$ in cases where that suffix was followed historically by another, later deleted, suffix. This may be termed the deleted suffix hypothesis.

- iii) that it reflects neither POC*-i nor a historical final vowel, but some third morpheme. This may be termed the independent *i hypothesis.

The root final *-i hypothesis is undoubtedly true for many synchronic transitive verbs in -i. For example, the final vowel of the transitive verb oaki 'to hide s-t' (compare oak 'hidden') must be considered to be the historical root final vowel in view of the reduplicated form oakkoak. This form suggests the well-attested change of Mokilese $V_1C_1iV_2 \rightarrow V_1C_1C_1V_2$, noted in section 2.1.2. Other examples are:

- i) oari 'to poke s-t'
oarroar 'to poke'
oar 'to poke, poked'
- ii) oapi 'to pull s-t'
oappoap 'to pull'
oap 'to pull, pulled'

An additional case is the obligatory transitive verb dauli 'to pass by s-t', which has the derived descriptive dauluhl 'to pass away', where a final root high vowel is preserved in a long vowel before a following high vowel. (It is not clear whether the original root final vowel was *u (→i/ when final) or *i (assimilating to a following /u/ in the reduplicated form). Both accounts are possible.) Similarly, we can appeal to comparative evidence from Ponapean, which does not have a rule of vowel reduction and thus preserves the final root vowel in descriptive reduplications in environments where Mokilese does not. We can demonstrate that the final vowel of Mokilese kini 'to pinch s-t'

(kinkin 'to pinch', kin 'to pinch, pinched') is a root final vowel on the basis of the Ponapean cognate kinikin 'to pinch'.

There are, however, numerous cases of transitive verbs in -i where other evidence suggests that the -i is not the root vowel. In some, the historical final vowel is preserved in other forms. Examples are:

<u>piki</u>	'to spread sand on s-t'
<u>pik</u>	'sand'
<u>pikapik</u>	'sandy'
<u>kaimwwuji</u>	'to cause s-o to vomit'
<u>kaimwwuj</u>	'to be sickening'
<u>unwwujoa</u>	'to vomit on s-t'
<u>dalenmoangi</u>	'to shave s-o's head'
<u>dalenmoang</u>	'to have a shaven head'
<u>moange</u>	'his head'

A second such class are borrow words which cannot be claimed to have a historical final vowel (though they might, of course, be claimed to have an 'underlying' final vowel in the sort of abstract analysis we rejected in section 3.2). Examples are:

<u>aini</u>	'to put s-o in irons'	<u>ain</u>	'irons, to put in irons'
<u>pihni</u>	'to paint s-t'	<u>pihn</u>	'paint, to paint'
<u>kiki</u>	'to kick s-t'	<u>kik</u>	'to kick'
<u>kuki</u>	'to cook s-t'	<u>kuk</u>	'to cook'
<u>japwoli</u>	'to shovel s-t'	<u>japwol</u>	'to shovel'

In all such cases, where the -i termination is clearly a suffix, the verb onto which it is suffixed (if, in fact, it is suffixed to a verb rather than a noun) is a root intransitive verb appearing unsuffixed in

simple intransitive sentences with agent subjects.

In another large set of cases it is impossible to judge whether the -i termination is the root final vowel or the suffix. Some examples are:

<u>loakjid(i)</u>	'to fish (for s-t)'
<u>pidek(i)</u>	'to go around (s-t)'
<u>widek(i)</u>	'to pour (s-t)'
<u>noaisik(i)</u>	'to give birth (to s-o)'
<u>ali(j)i</u>	'to aim (at s-t)'
<u>padahk(i)</u>	'to teach (s-o)'

All these examples do, however, involve root intransitive verbs.

We can conclude, then, that while many -i final transitive verbs reflect the historical root final vowel, others clearly do not. All these latter cases involve Mokilese root intransitive verbs appearing unsuffixed in simple intransitive sentences with agent subjects.

The deleted suffix hypothesis suggests that clear cases of suffixal -i, as opposed to root final -i, reflect a circumscribed class of pre-Mokilese transitive verbs to which an additional suffix, presumably deleted by final vowel deletion, was added. This extra suffix, however, 'protected' the *-i transitive suffix from deletion. The most likely candidate for this 'extra' suffix is the set of VP-internal object pronouns that are assumed to have been a feature of POC. These pronouns, as already noted, have been lost in Mokilese.

If the protecting suffix was, in fact, the pronominal object, which comparative evidence suggests was obligatory in transitive sentences in any case, then we must conclude that the larger class of

Mokilese verbs which do not reflect POC *-i directly never had that suffix in the first place; that is, were followed directly by VP-internal object pronouns. We have already noted the existence of such a class of verbs, the pre-Mokilese optional suffixless transitives. These verbs, however, differ from those which the deleted suffix hypothesis suggests lacked a transitive suffix in that they are identical synchronically in both their transitive and intransitive uses, while analogous synchronic reflexes of the class of pre-Mokilese optional suffixed transitives are distinct. This contrast can be seen in the following derivations:

PMC	*rongo	*rongo#PRO	*mumuta	*mumuta+i#PRO	
	'hear'	'hear PRO'	'vomit'	'vomit+tr PRO'	
	rong	rong#PRO	mumut	mumuta#PRO	V# Deletion
	--	---	umwwuj	umwwujoa#PRO	other changes

Only by assuming a # boundary between verb and PRO at the point at which final vowel deletion applied can we account for the deletion of final vowels in all cases of suffixless optional transitive verbs like rong 'to hear (s-t)', both in transitive and in intransitive contexts. The same analysis accounts for the survival of final vowels in the transitive form of pre-Mokilese optional suffixed transitive verbs (like umwwujoa 'to vomit on s-t') and, under the same conditions, the survival of the final VC of verbs like poadok 'to plant s-t' (compare poad 'to plant, planted'). Under the above analysis, then, it cannot be claimed that verbs like umwwujoa and poadok did not take *-i in pre-Mokilese, since it is only the presence of this historical suffix that accounts for the distinct reflexes of transitive and intransitive

forms of the pre-Mokilese verbs antecedent to these, in contrast to the single reflex (for example rong) of pre-Mokilese verbs we claim did not take *-i. Therefore, the claim that Mokilese verbs without -i in their transitive forms reflect verbs that did not take *-i in pre-Mokilese must be rejected.

In rejecting the deleted suffix hypothesis, I must confess that the problem of Micronesian reflexes of POC PRO₀ forms is a complex and confusing one. No coherent account is immediately obvious from the data available to me at present. Since these forms have been lost entirely in Mokilese, any thorough treatment of them puts me on unfamiliar ground. This question must await further investigation.

Having concluded that all occurrences of -i final transitive verbs in Mokilese do not reflect historical final vowels, and that non-root final -i is not a reflex of the POC close transitive suffix *-i, we must seek some other source for this suffix in Mokilese. Before suggesting a possible source for the Mokilese -i transitive suffix, let us review some of its characteristics:

- i) it is productive (in the sense of analogically extendible)
- ii) it is not a productive transitivizer in languages other than Ponapeic and Kusaiean. Marshallese employs -ik-; Trukic employs -ni; data from Gilbertese is unavailable. (Note that PON -ih varies with -e as the productive transitivizer.)
- iii) -i transitives involve no morphophonemic alternations

- iv) root intransitive verbs, which take the -i transitive suffix have a transitive paradigm identical to that of pre-Mokilese A-verbs

Let us amplify this final point. Consider the transitive paradigm of older A-verbs and of root intransitives:

	S_t	S_{iA}	S_{iP}	S_{io}
I	root tr.	obl. intr.	root tr.+ek	root tr.+ek
II	root intr.+i	root intr.	root intr.+i+ek	root intr.+i+ek

where I is the transitive paradigm for pre-Mokilese A-verbs and II is the transitive paradigm for Mokilese root intransitives.

For pre-Mokilese A-verbs, a direct reflex of the historical verb root is found only in S_{iA} contexts; for root intransitive verbs, the synchronic unsuffixed form is found only in S_{iA} contexts.

For A-verbs, a reflex of the historical root with the suffix *-i is found in S_t contexts; for root intransitives, the synchronic root plus the suffix -i is found in S_t contexts. For both, -ek intransitive forms are the only ones available for S_{iP} and S_{io} contexts, and are restricted to those contexts.

I would like to suggest that what we observe in these two paradigms is in fact a repetition of history; the use of an -i suffix with what are basically intransitive verbs with agent subjects to allow these to appear in transitive sentences with goal/location objects. The only marked difference in these two patterns, from the time the A-verb pattern arose until the time the root intransitive pattern arose, is in the syntax of -ek. Its pre-Mokilese antecedent *-aki suffixed to the verb root, while, in modern Mokilese, it has been reanalyzed as

suffixing to transitive verbs.

As will be discussed in more detail in Chapter Four, Pawley and Reid (1976:15) suggest that the source of POC *-i was a PAN or pre-PAN locative preposition PAN *i that, in certain circumstances, could follow the verb directly. They suggest the following syntactic alternatives in PAN or pre-PAN:

- i) VERB SUB [i LOC]
- ii) VERB [i LOC] SUB
- iii) VERB-i SUB LOC

where, in case iii), the preposition was captured by the verb and evolved into POC *-i. Evidence suggests, however, that the PAN preposition *i did not disappear as an independent item but continued to function as a locative preposition POC *(q)i. The implication is, then, that suffix-capturing did not affect all verbs that had an *i-NP complement in PAN or pre-PAN, but only a subset of these.

Let us now consider PPN transitivity pattern 1, given in Clark (1973a) as:

VERB SUB i/ki OBJ

Clark notes that this pattern is restricted to A-verbs and suggests that it can be related to a PEO intransitive pattern involving, in one instance, locative complements and the preposition *(q)i, later reinterpreted in PPN as an object marker. This account closely parallels that of Pawley and Reid for POC *-i, except that, in the PPN case, the locative preposition did not appear adjacent to the verb and so could not be captured.

The hypothetical first 'capturing' of PAN or pre-PAN *i suggests

that, at that period, *i-NP complements were either not restricted to A-verbs or that the A-verb/P-verb dichotomy had yet to arise, or that the use of the suffix *-i in pre-POC began with A-verbs and was later extended to P-verbs. It is not clear to me what sort of evidence could be brought to bear here, nor do I want to speculate further regarding pre-POC syntax. I suggest only, and independently of Pawley and Reid's hypothesis, that a class of verbs existed in pre-Mokilese with agent subjects and locative complements introduced by the preposition *i (which survives in Gilbertese and Marshallese as a locative preposition GIL i MAR yiy), probably a subclass of pre-Mokilese obligatory intransitives. At some point subsequent to final vowel deletion, this preposition was captured by the verb it followed, giving rise to the root intransitive subcategory of Mokilese. The fact that the -i transitivizing process is also used to derive transitive verbs from nouns and statives may reflect recent extensions of this process.

This hypothesis accounts for all the properties of the -i transitive suffix noted above; the fact that the root intransitive verbs with which it is used have A-verb syntax, given that the source of the construction was one involving agent-subject intransitive verbs; the productivity of the suffix, given that it is a relatively recent innovation; and the fact that it is found only in Ponapeic and Kusaiean, again as it is assumed to be a recent innovation in those languages. The 'suffix-capturing' mechanism that we hypothesize gave rise to the root intransitive subcategory is treated in more detail in Chapters Four and Five.

Footnotes to Chapter Three

1. The suffix -ek, whose history will be considered in several sections to follow, can be used to derive an intransitive verb from any transitive verb, including those transitives derived from root intransitives by means of the suffix -i. It is not yet clear to me whether ek-intransitives are freely derivable from optional transitives, however.

2. Though POC *-i and *-aki(ni) are not assumed to have been restricted in potential occurrence with particular verbs or verb subclasses, Foley (1976:170) observes that Fijian reflexes of POC *-aki(ni) are rare with what will be termed (section 3.4) P-optional transitive verbs.

3. Vowel reduction is in fact a somewhat more complex process since it also applies to the second vowel (from the left) in strings of the shape:

$$\begin{array}{c} \#(C)V \quad C \quad V \quad CV \\ [+hi] \quad [+hi] \end{array}$$

that is, where both the first and second vowels are high. Thus:

$$\begin{array}{ll} \underline{uduk} & \text{'flesh'} \\ \underline{udukoa} \quad [utk\phi] & \text{'his flesh'} \end{array}$$

However, the process of vowel reduction in Mokilese cannot be stated as a rule of the form:

$$\begin{array}{l} V_2 \rightarrow \emptyset / \#(C)V_1C \quad _ \quad CV \\ \text{where } V_2 \geq V_1 \\ \quad \quad [nh\bar{i}] \quad [nh\bar{i}] \end{array}$$

that is, where the height of the reduced vowel (V_2) is greater than or equal to that of the preceding vowel (V_1). A V_2 which is in fact lower

than V_1 will still be reduced as long as V_1 is not high. Thus:

<u>mwomw</u>		'behavior'
<u>mwomwoaioa</u>	[m ^w om ^w o _{nn} iio]	'my behavior'
<u>mwomwoasa</u>	[m ^w om ^w sa]	'our behavior'

where the second vowel of mwomwoaioa is not reduced since it is followed by the surface geminate [i_{nn}i], but where the corresponding vowel in mwomwoasa is reduced.

4. A situation in the real world is viewed as having a beginning and an end, and usually a middle, though punctual situations, such as that described by the English sentence He gave a shudder., are not conceived of as lasting in real time and thus have no 'middle'.

5. While it might be argued that telicity is a semantic property of individual lexical verbs, it is not completely clear to me that this is the case since the same verb may be used to describe both telic and atelic situations (see below and ft. 6). It might still be the case that telicity is a lexico-semantic property, however, if 'bi-telicity' can be considered an idiosyncratic property of particular verbs. Since the nature of telicity is not, it seems to me, well understood, I choose to reserve judgement on this issue and, for expository purposes, adopt the dominant view that telicity is a property of real world situations.

6. Let me note parenthetically a potential source of confusion with regard to the notion telic situation. It would appear that, though certain situations may be 'naturally' telic in a universal, language-independent sense, this does not prevent individual languages from devising some mechanism(s) by which to interpret these same situations atelically. For example, in describing the telic situation

of a man planting a tree, one may, in English, use the perhaps somewhat forced sentence He is tree planting, which, under the test given above, is atelic. Under some conditions, this situation may even be described by a sentence like He's planting, with no overt reference to the patient (as in "Oh, leave 'im alone; he's planting"). Analogous Mokilese verbs have the same options, as will be made clear in section 3.3.5. The 'grammar' of telic situations in particular languages promises to be an interesting area for future research, but one that is beyond the scope of the present work.

7. The forms koakoaik 'to scratch' and popohk 'to sweep' appear to be descriptives formed on pre-Mokilese obligatory transitives, since they preserve the final consonant of the transitive form. They are, to my knowledge, unique in this respect.

8. BAU -ta is a thematic transitive suffix ultimately derivable from POC *-i, while BAU -taka is a thematic transitive suffix ultimately derivable from POC *-aki(ni).

CHAPTER IV

The Post-verbal Complex

4.0 Introduction

In this chapter we consider the historical development of a part of the Mokilese verb phrase (as defined in section 3.1.1), in particular those verb phrase elements which follow the verb. As a block, these will be termed the post-verbal complex. We treat these forms in some detail because they provide examples of the distinction between enclitic and suffix in Mokilese that, as noted in Chapter 3, is of historical significance. We return to the question of the historical significance of this distinction in Chapter 5.

Section 4.1 will describe the syntactic, semantic, and morphophonemic properties of the post-verbal complex in Mokilese. Section 4.2 will provide relevant comparative data from other Micronesian languages as well as from POC reconstructions, as a basis for reconstructing the shape of the post-verbal complex in PMC. This reconstruction will be attempted in section 4.3. Section 4.4 will be concerned with the changes that have taken place in the post-verbal complex of Mokilese in the course of its development from PMC. Special attention is given throughout the chapter to the status of the hypothetical PMC secondary object marker PMC *akini and its relationship to reconstructed POC forms.

4.1 The Post-verbal Complex in Mokilese

4.1.0 Introduction

The Mokilese post-verbal complex is a set of twelve enclitic

elements, organized into a number of positional and functional classes following the verb. They serve a variety of functions; some marking the case role of following noun phrases, others marking the relation of the clause itself to its context, and others marking the directional/spacial orientation of the verb, as well as perfective aspect.

The basic shape of the complex is as follows:

VERB -ki 'with' - directionals - oang 'towards' / jang 'from'
oar 'and then'

where VERB may be a verb of any subcategory, with or without the suffixes -i and/or -ek.

The directional component of the post-verbal complex is a set of eight items, organized into two mutually exclusive sets--a five-member set here termed the true directionals and a three-member set here termed the semi-directionals. These labels are given for convenience only.

No element from the true directional set can co-occur with an element from the semi-directional set. The true directionals are themselves organized into two positional classes--a set of two items giving what might be termed vertical orientation and a set of three items giving what might be termed horizontal orientation. A 'vertical' item may be followed by a 'horizontal' one. The directional component can be summarized as follows:

	vertical	horizontal
	<u>da</u> 'up'	<u>do</u> 'towards the speaker'
true directionals	<u>di</u> 'down'	<u>la</u> 'away from the speaker'
		<u>we</u> 'towards the hearer, to a known place'
	<u>pene</u>	'together'
semi-directionals	<u>pijoang</u>	'apart'
	<u>jili</u>	'diffuse, in a random pattern'

Each of the components of the Mokilese post-verbal complex will be considered in more detail in section 4.1.2.

4.1.1 Junctural Lengthening

Though three items from the post-verbal complex can, under certain conditions, appear as independent prepositions, all items in the complex are in their unmarked use enclitic to the verb phrase; that is, they form a single phonological unit with items in the verb phrase immediately to their left. In Mokilese, a verb phrase with an enclitic or enclitics carries a single primary stress, on the penultimate mora. Thus:

<u>ókdek</u>	'to lie prone'
<u>okdékda</u>	'to lie back (lit. to lie up)'
<u>okdek dáhwe</u>	'to lie back there (at a known place)'
<u>okdek dahwéh</u>	'to lie back there and then'

where long vowels count as two morae.

The lengthening of the vowels of da 'up' and of we 'to a known place' in the last two examples above is the result of a morphophonemic process that may be termed junctural lengthening. It is this process

that allows us to distinguish clearly between suffixes and enclitics in Mokilese, since it is triggered only by the latter.¹

Junctural lengthening ensures that the syllable immediately preceding an enclitic will be strong--either a closed syllable or one containing a long vowel. If the enclitic in question is consonant-initial and is immediately preceded by a vowel, that vowel is lengthened. If the enclitic in question is vowel-initial and is immediately preceded by a consonant or glide, that consonant or glide is geminated. A consonant-initial enclitic preceded by a consonant or glide triggers no change, since the preceding syllable in such circumstances is of necessity closed. These processes can be demonstrated by the following examples:

- a. loakjidihda 'to fish s-t up'
 loakjid+i#da
 kijoulahjang 'to run off from'
 kijou#la#jang
- b. kadarroang 'to send s-t to'
 kadar#oang
 loakjiddoar 'to fish and then...'
 loakjid#oar
- c. panginki 'to name s-t as'
 pangin#ki
 koakoahkla 'to be tired out'
 koakoahk#la

The collocation of a vowel-initial enclitic and an immediately preceding vowel is a matter of somewhat greater complexity. If the

preceding vowel is high, the operation is difficult to analyze. It may be considered to be either the lengthening of the preceding high vowel or the insertion of an epenthetic glide between the adjacent vowels; the phonetic contrast in Mokilese between $\begin{matrix} V & GV \\ [+hi] & [+hi] \end{matrix}$ and $\begin{matrix} V & hV \\ & [+hi] \end{matrix}$ being imperceptible to me. Thus:

loakjidioar 'to fish for s-t and then..'

loakjid+i#oar

where the final /ioar/ sequence might be considered to be either [iio̯r] or [iio̯r̃]. Both analyses can be viewed as reflecting junctural lengthening; the former, the expected long vowel, the latter, a regular epenthetic glide that has been geminated (recalling that, in Mokilese, all medial y-glides are geminate in any case--see section 1.6.1). Note that junctural lengthening is often not indicated orthographically in such cases; for example, dioar (di-oar), not *dihoar.

If the preceding vowel is non-high, the result of junctural lengthening is, in all cases relevant to us, the following:

$V_1\#V_2^C \rightarrow V_1hC$
[-hi]

as in:

kijoulahng 'to run off towards'

kijou#la#oang

okdekdahwehr 'to lie back there and then...'

okdek#da#we#oar

This latter process is, of course, open to several phonological interpretations, which need not concern us here. The result is, nonetheless, a lengthening of the preceding vowel.

Junctural lengthening, in this form, is a unique characteristic of

Mokilese. Ponapean, at least, has an analogous process, but while that process lengthens vowels under much the same conditions as in Mokilese, it does not geminate consonants. In addition, it appears that, in Ponapean, vowel lengthening often fails to operate in circumstances where it would be expected to operate, under conditions that are somewhat opaque (Kenneth Rehg--personal communication). I am not aware of any analogous process outside of Ponapeic, though Ulithian (Sohn and Bender 1973:46) shows long vowels before directionals in the third person singular object form of transitive verbs. They treat this process as an assimilation of the root-final vowel and the transitive/object suffix.

4.1.2 Syntax and Semantics of the Post-verbal Enclitics

4.1.2.1 The Enclitic ki

The enclitic ki marks the presence, overt or implied, of an NP in a variety of roles:

i) instrument

Ih poalpoalki jiloahpas.

he chop-ki axe-a

'He was chopping with an axe.'

Ngoah poanikhkihdi amahu.

I hammer s-t-ki-down hammer-that

'I hammered it in with the hammer.'

ii) goal/cause/concomitant

Ih duhki limw.

he dive-ki sponge

'He is diving for sponge.'

Ngoah noaski warah pohsso.

I trade-ki his-vehicle boat-that

'I sold him his boat.'

Ngoah inenin liskihla pwa ih wia mehu.

I very shocked-ki-away that he do thing-that

'I was very shocked that he did that.'

Kisai pirin koaulki koaulpas.

we will sing-ki song-a

'We're going to sing a song.'

iii) entity to which a characteristic is attributed

Kisai ohroj lelki jeripeinno.

we all pretty-ki girl-that

'We all find that girl pretty.'

(Compare: Jeripeinno lel. 'That girl is pretty.')

Ngoah inenin mwehuki aiskeiki.

I very good-ki popsicle

'I really like popsicles.'

(Compare: Aiskeiki inenin mwehu. 'Popsicles are very good.')

Ngoah apwalki doadoahkke.

I difficult-ki work-this

'I find this job difficult.'

(Compare: Doadoahkke apwal. 'This job is difficult.')

This third function of ki can be given schematically as:

$NP_1 V_{stat} \text{-} \underline{ki} NP_2$

where NP_1 is an experiencer and NP_2 is the entity in the state named by the verb. An NP of the same case role as NP_2 appears as subject of the stative verb in sentences of the form: $NP_2 V_{stat}$.

We might note that the function of Mokilese ki parallels closely that of the POC remote transitive POC *-aki(ni), as discussed in Pawley (1973). The relationship between MOK ki and POC *-aki(ni) will be considered in section 4.2.2.4.

The NP whose case role is marked by ki follows other NP's that may be said to have 'higher priority'; the direct object or goal/source NP's marked in the verb phrase by oang/jang. Thus:

Ngoah kosohkihdi peipahu jahrpas.

I cut s-t-ki-down paper-that knife-a

'I cut the paper with a knife.'

Ngoah kosohkihdi hjang suhkoahu jahrpas.

I cut s-t-ki-down-from tree-that knife-a

'I cut it down from the tree with a knife.'

There appears to be an acceptability constraint, in terms of the number and length of the intervening constituents, on how far ki can be separated from the NP whose role it marks. Thus, the following sentence is not totally acceptable, though well-formed:

?Ngoah jinoakkihlahng me sakai soausoauo suhkoahpas.

I push s-t-ki-away-to here stone heavy-that stick-here

'I pushed that heavy stone over here with a stick.'

Some speakers seem to permit ki to be removed from the verb phrase to function as an independent preposition when other constituents intervene between the verb phrase and the NP whose role is marked by ki. Thus:

Jerimwein koalikko pokihkihdi jerimwein siksikko suhkoahpas.

boy big-that hit s-t-ki-down boy small-that stick-a

'The big boy hit the little boy with a stick.'

Jerimwein koalikko pokihdi jerimwein siksikko ki suhkoahpas.

boy big-that hit s-t-down boy small-that ki stick-a

'The big boy hit the little boy with a stick.'

Many speakers feel that this last sentence is not fully grammatical, however.

4.1.2.2 Directionals

The directional enclitics have two functions in Mokilese. They mark both direction of movement and perfective aspect. Let us consider the former function first, as exemplified in:

Ih kijoula.

he travel-away

'He left.'

Ih aluhda.

he walk-up

'He walked up.'

Mahnno sangdi.

bird-that fly-down

'The bird flew down.'

True directional enclitics can be followed by a locative complement (a place name, a locative noun like me 'here' or ewij 'inland', a 'relational' noun like pohn 'on top of', or a locative noun phrase introduced by the preposition in 'at'), which marks the locative goal of the motion activity. 'Means-marked' verbs of motion, those whose meaning suggests the means of locomotion (for example, alu 'to walk (with the feet)', sang 'to fly (with wings, in an airplane)', kijou 'to run, to travel (by foot, in a vehicle)') require a directional enclitic if their locative goal is expressed:

Ih kijoula Mwoakilhoa.

he travel-away Mokil

'He travelled to Mokil.'

*Ih kijou Mwoakilhoa.

Ngoah pirin aluhda ewij.

I will walk-up inland

'I'm going to walk inland.'

*Ngoah pirin alu ewij.

Mahnno sangdahla in kohn suhkoahu.

bird-that fly-up-away loc top-of tree-that

'The bird flew off up to the top of the tree.'

*Mahnno sang in kohn suhkoahu.

We might want to view sentences such as the grammatical ones above

as, in some sense, perfective, since they describe a total motion event, the motion activity and its goal, in contrast to sentences like:

Ih kijou.

'He travelled/ran.'

Ngoah pirin alu.

'I'm going for a walk.'

Mahnmo sang.

'The bird flew.'

which could be used to describe the same situations in a sense that could be considered imperfective. In an absolute sense, then, it is not always possible to distinguish between the directional and the aspectual functions of the directional enclitics.

The perfective aspect marking function of the directional enclitics can be seen in the following examples:

imperf. Jeriho kang raisso.

child-that eat rice-that

'The child ate (of) that rice.'

perf. Jeriho kangla raisso.

child-that eat-away rice-that

'The child ate up that rice.'

imperf. Ih daur pennoaw.

he climb c'nut-a

'He climbed after a coconut.'

perf. Ih daurdi pennoaw.

he climb-down c'nut-a

'He climbed up and got a coconut.'

imperf. Pahioaio kuruj mwehnggo.

my-wife-that grind taro-that

'My wife worked at grinding that taro.'

perf. Pahioaio kurujdi mwehnggo.

my-wife-that grind-down taro-that

'My wife ground up that taro.'

imperf. Kama sipwang rahu.

we bend branch-that

'We bent that branch.'

perf. Kama sipwangpijoang rahu.

we bend-apart branch-that

'We broke that branch.'

imperf. Ngoah johmwehu.

I sick

'I'm sick.'

perf. Ngoah johmwehuda.

I sick-up

'I got sick.'

Just as directional enclitics used 'directionally' are in some sense perfective, so directional enclitics used 'aspectually' are often in some sense directional. Consider:

Ih daurdi penno.

he climb-down c'nut-that

'He brought the coconut down (by climbing).'

where ending the event involves bringing the coconut down.

Ih loakjidihda mwumwwo.

he fish-up fish-that

'He caught that fish.'

where ending the event involves bringing the fish up.

Each directional enclitic carries with it a characteristic sense, often that of its directional interpretation though frequently difficult to characterize in that manner. Thus, la 'away' frequently denotes exhaustiveness or excess, di 'down', constraint or negative result, and da 'up', inception, creation, or randomness. These contrasts can best be seen in verbs that occur with different directionals in different interpretations:

Audohda rimehn.

fill-up bottle-that

'Fill up that bottle.'

Audohdi mwoakken ki pil.

fill-down cup-that with water

'Fill that cup with water (by pouring it in).'

Ih audohla rimehu.

he fill-away bottle-that

'He filled that bottle (right up, to overflowing).'

Ih poadokdi suhkoahu.

he plant-down tree-that

'He planted that tree.'

Ih poadokda suhkoahk.

he plant-up tree-those

'He planted those trees (in a random manner).'

Ih poadokla wijahu.

he plant-away place-that

'He planted over that area.'

Ngoah wadekla pukko.

I tally-away book-that

'I read that book through.'

Ngoah wadekdi sakaio.

I tally-down stone-those

'I counted those stones.'

The potential co-occurrence of a given verb and a given directional enclitic seems to be governed by the compatibility of the meaning of the verb with some sense carried by the enclitic in question. Thus:

Ih daunla makahu.

he fill-away trench-that

'He filled in that trench.'

Ih daundi makahu.

he fill-down trench-that

'He filled in that trench and ruined it.'

*Ih daunda makahu.

he fill-up trench-that

Ih jaunda oaio.

he stoke-up fire-that

'He stoked up the fire.'

*Ih jaundi oaio.

he stoke-down fire-that

*Ih jaunla oaio.

he stoke-away fire-that

Though my informants could not find a ready interpretation for the verb-directional combinations in the starred forms above, it is not impossible that, with some reflection, appropriate contexts could be found.

The aspectual function of directional enclitics is treated in greater detail in Harrison (1976:Chapter 9).

4.1.2.3 The Enclitics oang and jang

The enclitics oang 'towards' and jang 'away from' mark a following NP as goal or source, respectively. When used with a verb of motion, oang indicates movement towards a location, with no implication that the location has been or will be reached. Compare:

Ih aluhla Jokoajkoa.

he walk-away J.

'He walked to Jokoajkoa.'

Ih aluhlahng Jokoajkoa.

he walk-away-to J.

'He walked towards Jokoajkoa.'

The noun phrase whose case role is marked by oang/jang must follow these enclitics directly; that is, no other enclitic or constituent may intervene. Thus:

Joamoao padahkioang ngoahi mehu.

my-father-that teach-to me thing-that

'My father taught me that.'

Ngoah kihjang ih mwaniho.

I take-from him money-that

'I took the money from him.'

The enclitics oang and jang may be encoded as prepositions. This option is most common:

- i) when both oang and jang are required in the same clause
- ii) in transitive sentences with overt NP₀, particularly when oang/jang mark a locative or temporal goal/source

Thus:

Ngoah aluhlahjang nehnpwungen ruhmwo oang in wanihmwo.

I walk-away-from middle-of room-that to at door-that

'I walked from the middle of the room to the door.'

Ih kihdi ekij mwingehu oang lakapw.

he put-down some food-that for tomorrow

'He left some food for tomorrow.'

4.1.2.4 The Enclitic oar

The enclitic oar marks a relation between the clause in which it occurs and some wider context that provides a temporal or consequent limit for the situation described by the clause in question. This can be seen in the following examples:

Arai jipwoaldohr kapangda kisai.

they look-here-oar see-up us

'They looked this way and caught sight of us.'

Woallo kaklahr pohn kello sipwla ehn.

man-that jump-away-oar on fence-that broken-away his-leg

'The man jumped over the fence and broke his leg.'

Ngoah joah wadekdahr roj.

I not tally-up-oar finished

'I didn't count them all.'

Ih kanah okdekdahehr ara kanah kipdioar pakid nehn moange.

he then lie-up-there-oar they then fall-down-oar pick (lice)

in his-head

'Then he lay back and they then set about pulling lice
from his head.'

Ngoah pe wadwadekkoar pukke.

I still RED-read-oar book-this

'I'm still reading this book.'

We note in this last example that the limit on the reading is fixed by the modal pe 'still'; that is, the reading continued up till the present. The same sentence without pe is unacceptable.

The semantics of oar are complex and not yet fully understood by me. We might get some insight into its function from its use in noun phrases. For example:

Woal roahmennoar mine me.

man two-oar be here

'Only two men are here.'

Ioar mwingehwahr.

FOC food-aforementioned-oar

'That's the same food.'

Joh armaj kamehlele, a armajjehr.

NEG person believe but person-this-oar

'No one believed it except this person.'

Nominal oar is a quantifier whose scope is the noun phrase to which it is enclitic. It is best rendered in English as 'only' or 'same'. It seems to indicate a sharp limit on the reference of the noun phrase, in the first example in terms of the number of objects, in the others, in terms of other alternative or expected referents. Verbal oar is similar in that it stresses the limit of a situation in time or in temporal sequence.

Probably because it is a quantifier, oar is always phrase final. It is this fact that makes it mutually exclusive with oang/jang. It will be recalled that, when these are enclitic to the verb phrase, the NP whose role they mark must follow directly. Were oar to follow oang/jang, these would be separated from their NP. Were oar to precede oang/jang, it would no longer be phrase final. Thus, the three enclitics in question must be mutually exclusive.

The syntax of oar is somewhat more complex than the above examples show, since it can also be enclitic to the full clause. Compare:

Woal manmanno japoanglahr ih wiahla kasmn.

man magic-that change-away-oar him make-away cat-a

Woal manmanno japoangla ihoar wiahla kasmn.

man magic-that change-away him-oar make-away cat-a

'The magician changed him into a cat.'

Mokilese speakers feel these sentences to be semantically distinct, but I have been unable to discern the nature of the distinction. The semantics of oar are treated in greater detail in Harrison (1976: Chapter 10).

4.2 The Post-verbal Complex--Other Micronesian Languages

4.2.0 Introduction

In the present section we will consider, in a less than exhaustive manner, the relationship between elements of the Mokilese post-verbal complex and items from other Micronesian languages. This comparison is intended to form the basis for a tentative PMC reconstruction of these items. This reconstruction, in turn, will provide a measure for evaluating the changes that have taken place in the post-verbal complex of Mokilese. In section 4.2.1 we will consider the shape of the post-verbal complex in other Micronesian languages, while in section 4.2.2, we will consider the cognacy and of possible POC sources for the items in question.

4.2.1 The Shape of the Complex

4.2.1.1 Ponapean

The Ponapean post-verbal complex differs from Mokilese only in one significant respect, the incorporation of object pronouns within the verb phrase. Rehag (to appear) gives the complex as:

	I	II	III	IV	V	VI	VII
VERB	<u>ki</u>	OBJ	<u>da</u>	<u>do</u>	<u>eng</u>	OBJ	<u>er</u>
			<u>di</u>	<u>la</u>	<u>sang</u>		
			<u>iei</u>	<u>wei</u>			
			<u>long</u>				
			<u>pene</u>				
			<u>peseng</u>				
			<u>seli</u>				

Object pronouns in position II are either direct object of the verb or

object of ki; those in position VI are object of eng/sang. Mokilese reflexes of PMC verb-phrase internal object pronouns, as noted earlier, have been lost. Note that, in contrast to Mokilese, Ponapean has two additional items in what Rehg terms position III, corresponding in Mokilese to the vertical directional position. These items are iei 'outwards' and long 'inwards'.

4.2.1.2 Trukic

The post-verbal complex of Woleaian may serve as a model for Trukic:

VERB - non-particle adverb - OBJ - directional - particle adverb

Among the non-particle adverbs of Woleaian are:

<u>fengal</u>	'together'	
<u>fetang</u>	'apart'	
<u>fetal</u>	'around'	
<u>ppag</u>	'evenly'	(< verb <u>ppag</u> 'to be even')
<u>gach</u>	'well, very'	(< verb <u>gach</u> 'to be good')
<u>mmwai</u>	'slowly'	(< verb <u>mmwai</u> 'to be slow')

WOL fengal, fetang, and fetal correspond semantically to the semi-directionals of Mokilese. The cognacy of these Woleaian and Mokilese forms will be considered in section 4.2.2.3. The remaining non-particle adverbs, including the last three items of the incomplete list given above, appear to be derived from other word classes.

Woleaian directionals form a single, mutually-exclusive set and appear to be representative of Trukic. They are:

tog 'towards the speaker'
lag 'away from the speaker'
tag 'up'
tiw 'down'
long 'inwards'
waiu 'outwards'

Sugita (personal communication) reports that some dialects of the Truk lagoon contrasts wu 'outwards' and wow 'towards the hearer', while, in others, only the former is found. Ulithian appears to allow directionals to precede object pronouns, in which case the directional may optionally be repeated after the object. Thus:

ULI faga-yeyi daxe
 give me up
faga-daxe-yeyi (daxe)
 give up me (up)
 'to pass s-t up to me'

After certain verbs, the directional must precede the object pronoun in Ulithian. For example:

ULI yaga-daxe-yeyi
 reach up me
 'to reach up to me'
*yaga-yeyi daxe

kalla-diye-xo
 look down you
 'to look down at you'
*kalla-xo diye

The particle adverbs, WOL shag 'just' and mwo 'indeed, even', on available evidence, appear to be unique to western Trukic. They will not be considered further here.

Though not considered to be part of the verb phrase, three items that Sohn (1975:284) terms verbal prepositions are of interest to us because of their possible cognacy with items of the Mokilese post-verbal complex. In Woleaian these verbal prepositions have the forms:

<u>ngali</u>	'to it'
<u>tangi</u>	'from it'
<u>yagili</u>	'with it'

Trukese reflects only the first two of these--ngeni 'to it, with it', seni 'from it'.

Verbal prepositions in Trukic resemble transitive verbs in that they take pronoun object suffixes. Together with their NP complement (if any), they stand outside and immediately following the verb phrase, preceding even an NP₀, as can be seen from the following Ulithian example:

ULI Yi be le faga gali-xo tarmwale lee.

I tns tns give to-you boy the

'I will give the boy to you.'

Neither Sohn (1975) nor Sohn and Bender (1973) provide examples in which WOL yagili or the corresponding ULI yixili precede NP₀. They do note, however, that these items may be incorporated into the verb phrase in immediate post-verbal position, as is seen in the following Woleaian examples:

WOL Ye sa teo yagili fengan-iir tag.

he tns carry with together-them up

'He has carried them all up.'

Mal we ye yal yagili lag semal mal.

bird the he fly with-it away a insect

'The bird flew away with an insect.'

Sugita reports (personal communication) that Trukese ngeni 'to it, with it', unlike its cognates in western Trukic, usually follows NP₀ in transitive sentences. However, when used to mark the instrument in a transitive sentence, it optionally precedes the NP₀, though its complement, the NP naming the instrument follows the NP₀. Thus:

TRU John e awata Mary ngeni efóch wóók.

J. he hit M. with one stick

John e awata ngeni Mary efóch wóók.

J. he hit with M. one stick

'John hit Mary with a stick.'

In summary, the syntax of WOL ngali 'to it' and tangi 'from it' closely parallels that of Mokilese oang 'towards' and jang 'away from'. The former, together with their NP complement, follow the verb phrase directly, preceding even NP₀. The latter were analyzed as final in the post-verbal complex, and are followed immediately by their NP complement, preceding NP₀. WOL yagili 'with it', when incorporated into the verb phrase, has a syntax analogous to MOK ki.

4.2.1.3 Marshallese, Kusaiean, and Gilbertese

In comparison with Trukic and Ponapeic, the post-verbal complexes of these languages are unelaborate. Marshallese has a set of

directionals, distributed between two positional slots as follows:

I		II	
<u>tak</u>	'eastward'	<u>tok</u>	'to the speaker'
<u>to</u>	'westward'	<u>l,ok</u>	'away from the speaker'
<u>niña</u>	'northward'	<u>waj</u>	'to the hearer'
<u>roña</u>	'southward'		
<u>lōn</u>	'upward'		
<u>lal,</u>	'downward'		
<u>m,aan</u>	'forward'		
<u>lik</u>	'backward'		
<u>ar</u>	'toward the lagoon'		
<u>añe</u>	'landward'		
<u>meto</u>	'seaward'		

corresponding to positions III and IV of Ponapean and to the 'vertical' and 'horizontal' directionals of Mokilese, except that the first directional position in Marshallese has been elaborated considerably. In all examples available to me, object pronouns follow the directionals in Marshallese. Thus:

MAR Ear tāākjiik tok kom,.

he-tns taxi-tr hither you

'He brought you here by taxi.'

It is not clear to me that either object pronouns or directionals are, in fact, incorporated into the verb phrase in Marshallese. The directionals, for example, can optionally follow NP₀, as in:

MAR Dentake tak eo waj.

strike-tr needle fish the thither

'Strike the needle fish moving towards you.'

Dentake waj tak eo.

strike-tr thither needle fish the

'Strike the needle fish (in a movement) towards you.'

though, as these examples suggest, with slightly different interpretations.

At best, then, we can perhaps consider Marshallese to have the following post-verbal complex:

VERB-directional-OBJ

where there are two directional positions.

The Kusaiean post-verbal complex is almost identical to that proposed for Marshallese, except that object pronouns precede the directionals and the directionals themselves constitute a single, mutually exclusive set as follows:

<u>ma</u>	'to the speaker'
<u>lah/lac</u>	'away from the speaker'
<u>oht</u>	'to the hearer'
<u>ack/yak</u>	'up'
<u>yac</u>	'down'
<u>eni</u>	'together'
<u>elihk</u>	'apart'
<u>acng/yang</u>	'towards'

We might at this point note some additional facts about Kusaiean that have some bearing on the history of the Micronesian post-verbal complex.

Kusaiean possesses two mutually-exclusive transitivizing suffixes, -i and -kihn. Like Mokilese -i, the former is used to derive transitive verbs from nouns and from some statives. I assume that KUS -i is cognate with MOK -i, and that it has had a similar history. That is, I conclude, for reasons similar to those suggested in section 3.5.4 for Mokilese -i, that Kusaiean -i does not reflect the POC close transitive suffix *-i, since this suffix, as in Mokilese, would be lost in Kusaiean through final vowel deletion.

Kusaiean kihn has properties similar to Mokilese ki in that it derives 'accessory' or 'associative' transitives with interpretations like 'to use as', 'to treat as', or 'to do using' from nouns, statives, and intransitive verbs. Significantly, however, KUS kihn, unlike MOK ki, cannot be used with transitive verbs to mark the instrument in a transitive sentence. For this purpose, Kusaiean employs the preposition ke.

Though the function of KUS kihn is similar to that postulated for the POC remote transitive suffix POC *-aki(ni) and though its shape (except perhaps for the lack of a reflex of the initial *a of the POC suffix) is reconcilable with POC *-aki(ni), given the loss of final vowels in Kusaiean, I would argue that it is not a direct reflex of the POC suffix. POC *-aki(ni), like POC *-i, is assumed to have suffixed directly to the verb, blocking the operation of final consonant deletion. Thus, Kusaiean reflexes of POC verbs with these suffixes, like reflexes of these verbs in Mokilese, should reflect POC final consonants. Kusaiean verbs with kihn, however, do not reflect these consonants. Compare:

KUS sihmihs 'to write s-t' (< *sihmihs+i)

sihm 'to write' (< *sihmihs)

whose history, we suggest, parallels that of Mokilese verbs like sipis 'to tie s-t' and sip 'to tie, be tied', as considered in section 3.2.

Were KUS kihn a reflex of POC *-aki(ni) we would expect that, synchronically, it would suffix to transitive verbs preserving POC final consonants; that is, to forms like sihmihs 'to write s-t', which reflect POC final consonants before a subsequently deleted POC close transitive suffix POC *-i. In fact, however, KUS kihn suffixes only to synchronic intransitive verbs like sihm 'to write', which have undergone final consonant deletion and final vowel deletion. Since final consonant deletion, and later final vowel deletion, would have been blocked in Kusaiean by reflexes of POC *-aki(ni), I must conclude that KUS kihn is not a direct reflex of that POC suffix.

In section 3.5.2, we claimed that the Mokilese suffix -ek, before which those consonants and vowels which would otherwise have been deleted are, in fact, preserved, is a reflex of POC *-aki(ni). As noted in section 3.5.2, Kusaiean has the cognate suffix -yuhk, which marks a passive verb form; for example, sihmihsyuhk 'to be written'. We observe that, synchronically, KUS -yuhk suffixes to transitive verbs, including those in which an earlier final V(C) is preserved. This is also true of MOK -ek. I would like to argue that it is these 'passive' suffixes that are the direct reflexes of POC *-aki(ni) in Mokilese and Kusaiean.

Though KUS -i and -kihn must be analyzed synchronically as transitive suffixes, since they can be followed by the suffix -yuhk which derives 'passives' from transitive verbs (Note that transitive

verbs in MOK -i (see section 3.5.4) can also be followed by MOK -ek.), the fact that the verbs to which they suffix have undergone final consonant deletion and final vowel deletion suggests that the suffixal status of these forms might be a relatively recent innovation in Kusaiean. Under this hypothesis, then, we might propose a pre-Kusaiean post-verbal complex with the following shape:

$$*VERB- \begin{Bmatrix} i \\ kihn \end{Bmatrix} -OBJ-directional$$

The implications of this proposal for PMC will be considered in section 4.2.2.4.

Data relative to the post-verbal complex of Gilbertese is difficult to assess. We can identify a single set of directionals, including:

GIL	<u>mai</u>	'towards the speaker'
	<u>nako</u>	'away from the speaker'
	<u>(w)ati</u>	'towards the hearer'
	<u>rake</u>	'up'
	<u>rio</u>	'down'
	<u>mae</u>	'in all directions'
	<u>rikaaki</u>	'backwards'

These can be followed by pronoun object suffixes, as in:

GIL	<u>kare</u>	'to throw'
	<u>karea</u>	'to throw it'
	<u>karemai</u>	'to throw hither'
	<u>karemaia</u>	'to throw it hither'

These data suggest that the post-verbal complex of Gilbertese is similar in shape to that of Marshallese. The following example, taken from Cowell (1951), suggests the alternate order OBJ-directional:

GIL Uotia nako.

take-it away

'Take it away.'

4.2.2 Cognacy of Items in the Post-verbal Complex

4.2.2.0 Introduction

In this section we will consider the possible cognacy of items in the post-verbal complex of Mokilese and items from other Micronesian languages, as discussed in section 4.2.1. We will not, however, consider forms like the verb phrase pronoun objects, which are not reflected in Mokilese. Nor will we consider MOK oar/PON er, which have no secure cognates with comparable syntax in non-Ponapeic languages.

4.2.2.1 True directionals

Forms cognate with the Mokilese true directionals are found in almost all the languages considered. These can be summarized in the following table:

MOK	PON	WOL	TRU	MAR	KUS	GIL	
<u>da</u>	<u>da</u>	<u>tag</u>	<u>tá</u>	<u>tak</u>	<u>ack</u>	<u>rake</u>	'up'
<u>di</u>	<u>di</u>	<u>tiw</u>	<u>tiw</u>	<u>tō</u>	<u>yac</u>	<u>rio</u>	'down'
<u>do</u>	<u>do</u>	<u>tog</u>	<u>to</u>	<u>tok</u>	<u>ma</u>	<u>mai</u>	'hither'
<u>la</u>	<u>la</u>	<u>lag</u>	<u>nó</u>	<u>l,ok</u>	<u>lah</u>	<u>nako</u>	'away'
<u>we</u>	<u>wei</u>	? <u>waiu</u>	(<u>wow</u>)	<u>waj</u>	<u>oht</u>	<u>wati</u>	'thither'

As noted earlier, TRU wow 'thither' is found only in some dialects in the Truk lagoon. The cognacy of WOL waiu 'outwards' with representatives of the 'thither' set in other languages is perhaps doubtful.

MAR tak 'eastward' and to 'westward' appear to have been replaced as markers of 'vertical' orientation by lōn 'upward' and lal, 'downward'.

Cognates of MAR tak and to in other Micronesian languages, in addition to their 'up' and 'down' interpretations, also have the interpretations 'eastward' and 'westward', respectively.

Six distinct elements are reflected in the above chart; the five Mokilese true directionals and their cognates in other Micronesian languages and the pair KUS ma GIL mai 'hither', which appear to reflect POC *mai 'hither'. Three of the five Mokilese true directionals can be related to reconstructed POC directionals. The POC reconstructions in question are POC *nsake 'upwards', *nsipo 'downwards', and *(w)atu 'away, hence'. The Micronesian 'away' set can be related to POC *lako 'to go'.

The possible POC source of the 'hither' series in all languages but Gilbertese and Kusaiean is problematic. One possible source is POC *toka 'to arrive'. However, POC *t is regularly reflected as /t/ only in Woleaian, among the languages under consideration (POC *t > MOK, MAR j; TRU, PON s). Moreover, Gilbertese has the form roko 'to come', that appears to be related to the 'hither' series in other languages. These facts suggest that we might want to reconstruct PMC *soko 'hither, to come'.

It is not clear how many of the PMC directionals were also used as motion verbs. We have already suggested this might have been true for PMC *soko. Evidence suggests this was also the case for PMC *lako 'to go, away' (< POC *lako 'to go'), as evidenced by the following data:

GIL nako 'to go, away'

WOL lag 'to go, away'

ULI loxo 'to go, away'

We might also note that WOL tog (< PMC *soko) is used both as a

directional and as a main verb meaning 'to arrive'.

We might, then, make the following tentative PMC reconstructions:

PMC	*sake	'up'
	*sio	'down'
	*soko	'hither, to come'
?	*mai	'hither' (reflected only in KUS and GIL)
	*lako	'away, to go'
	*wati	'thither'

4.2.2.2 oang and jang

The following are possible cognates of MOK oang 'towards' and jang 'away from':

MOK	<u>oang</u>	<u>jang</u>
PON	<u>eng</u>	<u>sang</u>
WOL	<u>ngali</u>	<u>tangi</u>
TRU	<u>ngeni</u>	<u>seni</u>
MAR	<u>n̄an</u> , <u>n̄ane</u> 'to it'	<u>jān</u> , <u>jāne</u> 'from it'
KUS	<u>acng</u>	*
GIL	<u>angan</u> 'to give'	*

The forms in the right-hand column, in all languages but Marshallese, suggest a PMC *tangi 'from'. (As noted in section 1.5, PMC *ng is regularly reflected as TRU n before i.) Marshallese jān 'from' could be taken to reflect PMC *ng irregularly as n. Some doubt is cast on this hypothesis, however, by the fact that the prepositional verb *tani 'away from' has been reconstructed for POC. This form might suggest that Marshallese alone faithfully reflects POC/PMC *tani 'away from' and that Ponapeic and Trukic ng (< *n) is an irregular

development. Since I am aware of no evidence to decide between these two hypotheses, I can only suggest PMC *ta(n,ng)i 'away from', thus leaving the problem unresolved at present. It appears that this form was a prepositional verb in PMC since its reflexes in all daughter languages take pronoun object suffixes, except, of course, in Mokilese, where these suffixes have been lost.

The cognacy of the forms in the left-hand column is more problematic. The Ponapeic and Kusaiean forms suggest an earlier *angV, with a final vowel of uncertain quality that was lost in these languages through final vowel deletion. The Trukic and Marshallese forms suggest an earlier *ngani. Gilbertese angan 'to give', I would like to suggest, provides a link between these two reconstructions. It is exemplified in the following sentences:

GIL I angan teuaarei te mwani.

I give that-male art money

'I gave that man the money.'

E anganiko te boki.

he give-you art book

'He gave you the book.'

This verb is irregular in Gilbertese in that it does not take the third person singular object suffix -a before an overt NP₀. We can perhaps account for this irregularity by claiming that GIL angan reflects an earlier *anga-ni, where *-ni is the nominal ligature that was the source of the construct suffix in all Micronesian languages. (recall that final high vowels are lost in Gilbertese after nasals.) I suggest, then, that the Gilbertese construction angan-NP₀ is at least

historically parallel to nominal constructions like Gilbertese ira n atuu 'hair of the head'; that is, though synchronically a verb, Gilbertese angan reflects what was historically, in form at least, a nominal construction (*anga ni NP) and preserves the shape of this construction before overt NP₀.

I propose that all the forms of the lefthand column above can be related to a PMC *anga-ni, where Gilbertese reflects the full form, where Ponapeic and Kusaiean reflect the 'root' minus "-ni, and where the other languages reflect the full form, modified to bimoric shape through loss of the initial vowel. Ulithian and Woleaian may also reflect the 'root' independently in the anaphoric locative pronouns ULI yiiyage WOL iyang, where the initial yii/i can perhaps be related to a PMC locative preposition/prefix *i(-).

Marck (n.d.) reconstructs PMC *fanga 'to give' on the basis of a number of forms, including:

GIL anga (sic)
 PON pangala 'to give away'
 TRU niffang 'to give a gift'
 WOL fang(a)

My data, however, include ULI galle 'to give' and also suggest that TRU ngeni can be used as a main verb 'to give'. I would like to suggest, on available evidence, that both Marck's reconstruction and my own are reflected in daughter languages. Until other evidence is brought forth I propose that we reconstruct a doublet PMC *fanga/*anga-ni, the former perhaps a main verb 'to give' and the latter more frequently a prepositional verb 'towards'.

In languages that reflect both PMC *ta(n,ng)i 'from' and *anga-ni 'towards' as source and goal markers, both elements have the same syntax. Reflexes in Ponapeic are post-verbal enclitics occupying, in my analysis, final position in the post-verbal complex. In Trukic they are prepositional verbs which, as noted earlier, follow the verb phrase directly together with their complement NP. We can, I feel, safely reconstruct them as prepositional verbs. Their syntax in Ponapeic and Trukic suggests that they occupied either verb phrase final position or a position immediately following the verb phrase, to the extent that these analyses are distinct, at least at a stage antecedent to Ponapeic and Trukic.

4.2.2.3 The Semi-directionals

Possible cognates for the Mokilese semi-directionals are found only in Ponapean and in Trukic. These are:

MOK	PON	TRU	WOL	ULI
<u>pene</u>	<u>pene</u>	<u>ffengan</u>	<u>fengal</u>	<u>fagali</u>
<u>pijoang</u>	<u>peseng</u>	<u>feseen</u>	<u>fetang</u>	<u>fatagi</u>
<u>jili</u>	<u>seli</u>	<u>fátán</u>	<u>fetal</u>	<u>fadale</u>

Since the meanings of these forms are identical and their shapes so similar it is unlikely that they are not cognate. Only the pijoang set is fairly straightforward, however.

Sohn and Bender (1973:162) suggest that Ulithian fagali and fatagi reflect prefixation of an earlier reciprocal fa- (from POC *pa(R)i-) to the prepositional verbs gali and tagi. While this analysis can be applied transparently to MOK pijoang, allowing that the Mokilese and Ulithian vocalisms can be reconciled, the relationship of the -ne

element of Ponapeic pene to Ulithian gali (from our reconstructed PMC *anga-ni) is not at all clear. If we extend Sohn and Bender's hypothesis to Ulithian fadale, then the element -dale can be identified with Mokilese jili. Trukese fatan is problematic, however, since MOK /j/ usually corresponds to TRU /s/. The provenance of the hypothetical root of the jili series, perhaps as earlier *tali, is unclear.

While it would seem that the Mokilese semi-directionals must be reconstructed for some stage ancestral to Ponapeic and Trukic, it is impossible to proceed with any degree of certainty to such reconstructions. Neither the exact form nor the syntax of these items at some earlier period is transparent. At this time I have found it impossible to do more than to state the available evidence.

4.2.2.4 Cognates for Mokilese ki

The following items are possible cognates for Mokilese ki in other Micronesian languages:

MOK	<u>ki</u>
PON	<u>ki</u> (<u>kin</u> before pronoun object suffixes)
PING	<u>kin</u>
KUS	<u>kihn</u>
MAR	<u>kōn</u> (suppletive <u>kake</u> 'with it') ²
WOL	<u>yagili</u>
ULI	<u>yixili</u> (<u>-xili</u> as a suffix to certain verbs)
GIL	<u>akina</u>

From these forms I reconstruct PMC *akini, where the initial *a is assumed to have been lost irregularly except in Gilbertese and Trukic. Only Mokilese fails to reflect the reconstructed *n of the PMC form, a

fact perhaps related in some way to the loss of object pronouns in that language. The Gilbertese form, with a final /a/, is the form appropriate to third person singular PRO₀ or to overt NP₀.

The semantics of the various reflexes of PMC *akini are comparable but their syntax varies somewhat. In Gilbertese and Kusaiean, reflexes of *akini suffix to intransitive verbs, statives, and, in the latter language, nouns, to derive transitive verbs. The Marshallese reflex is a preposition taking NP complements and, in the suppletive form noted above, pronominal complements. The Trukic forms are prepositional verbs that typically precede directions, as noted in section 4.2.1.2. Trukic reflexes do not, to my knowledge, appear with transitive verbs. WOL yagili, in the form agili, suffixes to verbs ending in reflexes of an earlier *a:

WOL Ye mmwuta-agili metta?

he vomit-agili what

'What did he vomit?'

The syntax of Mokilese ki, as described in section 4.1.2.1, is representative of Ponapeic.

I am not completely clear as to the semantic range of Marshallese kōn. The semantics of reflexes of PMC *akini in other languages, from the data available to me, may be schematized as follows:

	Syntax	Semantics	Ponapeic	Kusaiean	Gilbertese	Trukic
a.	VERB [±stat]	cause/purpose/ concomitant	X	X	X	X
b.	NOUN	to treat as, to use as	X	X	-	-
c.	VERB [+stat]	to regard as	X	X	-	-
d.	VERB	instrument	X	?X	-	-

where syntax refers to the lexical category of the items followed by a reflex of *akini in a given interpretation and where semantics gives the case role marked by a reflex of *akini (in cases a. and d.) or the interpretation given to the verb phrase in which a reflex of *akini appears (in cases b. and c.). Some examples are:

a. MOK Jerimweinnok uruhrki ngoahi.

boy-those laugh-ki me

'Those boys laughed at me.'

Ngoah koakoahkki oai doadoahkko.

I tired-ki my work-that

'I'm tired from/because of my work.'

Ih koaulki koaulpas.

he sing-ki song-a

'He sang a song.'

KUS Tuhlihk ah pwacrkihn wanihsr laltahl ah.

child the happy-kihn parcel their the

'The children are happy with their parcels.'

GIL E tokabetiakina ana reerio.

he proud-akina his radio

'He is proud of his radio.'

WOL I sa ker yagilig.

I tns proud yagili-you

'I am proud of you.'

ULI Lulapa wee ye sa taptape mogoyo yixili-yire saldawe kawee

king the he tns need food yixili-them soldier the

'The king needs food for the soldiers.'

Sukuunu-xili-ya yalolo Merikan.

learn-xili-it language-of America

'Study English.'

Ye be fawu-xili-ya.

he will paddle-xili-ya

'He will row for him.'

We note, particularly from the Ulithian examples, that Trukic reflexes of *akini frequently have a benefactive sense less common for reflexes of *akini in other languages.

b. MOK Ngoah jamanki ih.

I father-ki ih

'I treat him as a father.'

KUS Sohn el ninackihn muhtwacn sac.

John he mother-kihn woman the

'John treats the woman as a mother.'

In Ponapeic, the use of reflexes of *akini in interpretation b. above is restricted to inalienable nouns. The form of the noun to which ki(n) suffixes does not occur independently, but is found only with a following ki(n). It suggests an earlier *-nV suffix. In this regard, it is interesting to note that Trukic and Gilbertese derive denominal

verbs with a similar interpretation to b. by means of a suffix that, in both cases, suggests an earlier *-ni.

c. MOK Ngoah lelki jeripeinno.

I pretty-ki girl-that

'I find that girl pretty.'

KUS Nga kahtokihn loh uh liki loh sihk ah.

I pretty-kihn house this than house my the

'I find this house prettier than mine.'

d. MOK Ngoah poadokkihdi suhkoahu japwolpas.

I plant s-t-ki-down tree-that shovel-a

'I planted the tree with a shovel.'

Ngoah duhduhki sohpu.

I bathe-ki soap

'I am washing with soap.'

KUS Sohn el kahkkih ah soko.

John he tie-kihn rope a

'John is tying (something) with a rope.'

In Ponapeic, ki(n) can be used as an instrument marker with either transitive or intransitive verbs, while, in Kusaiean, this use is restricted to intransitive verbs.

The bulk of the synchronic evidence above suggests that PMC *akini was a prepositional verb marking cause/purpose/concomitant case role with an intransitive verb. It appears that it was at least optionally associated with the post-verbal complex, occupying a slot between the verb and the directional. This is much the same pattern we observe in synchronic Woleaian and in Ponapeic, except that, in the latter,

reflexes of *akini are, for the most part, obligatorily incorporated into the post-verbal complex and have a wider semantic range than that proposed here for PMC *akini. From the Ulithian data available to me, the only clear cases of a verb phrase internal reflex of *akini involve what Sohn and Bender (1973:328-329) analyze as the transitivizing suffix -xili. Compare:

ULI Ye sa tteraxexili-ya Yasor.

he tns sail-xili-it Yasor

'He sailed to Yasor.'

Yi be mele yixili suluyexe ment wóóli Kuwacuren.

I tns stay yixili thirty minute on Kwajalein.

'I will stay for thirty minutes on Kwajalein.'

Gaag senseye bo yixili-yire yaramata.

I teacher for yixili-them people

'I am a teacher for the people.'

where, in the first example, we find the suffix -xili bound tightly to the verb, while in the second and third we find the prepositional verb yixili, analyzed as external to the verb phrase. The Ulithian data is of interest in view of the fact that the proposed Kusaiean and Gilbertese reflexes of PMC *akini are analyzed as transitivizing suffixes in the grammatical studies of these languages available to me. In order to justify the claim that all these forms reflect a PMC prepositional verb, we must reconcile the suffixal and non-suffixal treatments accorded them in synchronic grammars.

Pawley (1973) reconstructs two POC forms similar in both shape and function to our hypothetical PMC *akini--the remote transitive suffix

*-Caki(ni) and the prepositional verb *kini-, both of which mark the object 'as being something that is more remotely associated with the verb, e.g. an instrument, cause or concomitant' (1973:13). Pawley and Reid suggest (1976:16) that the suffix alternate *-Cakini was used with an overt NP₀ or with a PRO₀, while the *-Caki variant appeared in what were fundamentally surface intransitive sentences. We argued earlier (section 3.5.2) that the PMC 'agentless passive' *-aki is a reflex of this latter variant. This hypothesis, however, immediately raises the possibility that PMC *akini is a reflex of the POC suffix *-Cakini.

The conclusion that PMC *aki reflected an earlier suffix was based on the observation that POC final consonants are always preserved before reflexes of PMC *-aki, as are PMC final vowels in languages in which these are regularly lost. These observations are reflected in Mokilese in the fact that the suffix -ek (< POC/PMC *-aki) suffixes only to transitive verbs. The same is not true of synchronic reflexes of the proposed PMC *akini. It does not suffix to forms in which POC final consonants are preserved, except, somewhat trivially, in Ponapeic, where the use of ki(n) has been extended to instrument-marking in transitive sentences (with transitive verbs). It must be stressed again that this function is an innovation of Ponapeic. Were we to claim that the use of ki(n) with synchronically transitive verbs in Ponapeic is not in fact an innovation, but a reflex of the earlier POC *-akini suffix, we would be hard-pressed to account for the fact that the initial vowel *a of the POC suffix is always preserved in reflexes of the POC *-aki variant, used in intransitive contexts, but is never preserved in reflexes of the POC *-akini variant, used with pronominal or noun

phrase objects, as in:

MOK poadokek 'to be planted'
poadokki 'to plant s-t with'
 PON poadongki 'to plant s-t with', where synchronic
 geminate obstruents undergo nasal
 dissimilation in Ponapean

I must conclude, on the basis of this evidence, that Ponapeic -ek and ki(n) have had different histories.

PMC final vowels are preserved before reflexes of the hypothetical PMC *-akini only in languages like Gilbertese in which, for the most part, these vowels were never lost, and before the Ulithian -xili reflex. We assume final vowel deletion to have been a very recent phenomenon in that language since, in many cases, older final vowels are preserved as voiceless vowels. Evidence from Gilbertese and Ulithian, therefore, cannot be used to argue that PMC *-akini was a suffix before which PMC final vowels are preserved.

I would like to propose that PMC had two constructions that are relatable to Pawley's POC remote transitive suffix *aki(ni):

PMC *VERB+aki 'agentless passive'
 *VERB#akini 'verb phrase internal prepositional verb'

the former with the suffix PMC *-aki (< POC*-aki), the latter with the enclitic PMC *akini, a prepositional verb. Evidence suggests that both these constructions were mutually-exclusive with:

PMC *VERB+i 'transitive'

since PMC *+i and *+aki both suffixed to reflexes of the POC verb root and since PMC *akini seems to have occurred only with PMC intransitive

verbs.

It does not follow from the claim that PMC *akini was an enclitic prepositional verb that all its reflexes in daughter languages preserve that status synchronically. One might note, first, that the distinction between a synchronic suffix and a synchronic enclitic is not always clearly drawn. The claim that PMC *akini was an enclitic is based on the evidence that the historical processes of final consonant deletion and final vowel deletion applied to the forms to which it was enclitic, where these processes would, we claim, have been blocked were *akini a suffix at the historical period at which these processes applied. The claim that Mokilese ki is an enclitic synchronically is based on the fact that it triggers the process of junctural lengthening and falls in the domain of the process that assigns stress to the verb phrase. My knowledge of the synchronic phonology of languages like Gilbertese, Kusaiean, and Ulithian is far too limited to enable me to judge whether there are synchronic phonological processes that can be used as evidence to decide whether the forms akina, kihn, and xili should be considered to be synchronic enclitics or suffixes in their respective languages. We might note that the fact that final vowel deletion in Ulithian appears to be blocked before -xili suggests that that element should be given synchronic suffix status.

We might also note that all occurrences of what appears to be the same item in any given language are not necessarily either enclitic or suffixal. In Mokilese, for example, it is not certain that all occurrences of ki should be considered to be enclitic. We note that forms like jamanki 'to treat as a father', inanki 'to treat as a mother',

adanki 'to have as a name', waranki 'to use as a vehicle', etc. can be analyzed in terms of ki and a form of an inalienable noun ($N_{\text{stem}} + n$) that does not occur independently. We might equally well analyze these forms as $N_{\text{stem}} + nki$, however. This is, in fact, the analysis favored by my informants. It would appear, then, that Mokilese ki has been reanalyzed as a suffix (or even as part of a suffix) in this use, while remaining an enclitic in other constructions.

If the above analysis of Mokilese ki is substantially correct, it suggests that morpho-syntactic reanalysis, in terms of what we might describe as 'degree of binding to a preceding formative', can affect different constructions involving the same formative independently; that is, some enclitic x in a construction $a-x$ can be reanalyzed as $a+x$ while the same enclitic x , in a different construction $b-x$ can retain its enclitic status. The claim that morpho-syntactic change can proceed in this manner suggests at least two possible interpretations of the history of the proposed PMC $*-aki$ and $*akini$ and of their relation to the reconstructed POC remote transitive suffix $*-aki(ni)$:

- i) that PMC $*akini$ reflects a change from suffixal to enclitic status for POC $*-akini$, while PMC $*-aki$ ($< POC*-aki$) remained a suffix
- ii) that POC $*-akini$ itself was not a suffix, though POC $*-aki$ was

In order to evaluate these hypotheses, let us consider the nature of the evidence Pawley puts forward in favor of his reconstruction of the POC remote transitive suffix $*-aki(ni)$.

Pawley (1972) reconstructs PEO $*(C)aki(ni)$ on the basis of its

occurrence in twenty languages (including PPN) of the thirty-one languages in his sample. In seven of these languages, the thematic consonant whose presence can be taken to be evidence that *aki(ni) was, in fact, a suffix is given as (C), indicating (Pawley 1972:32) either uncertainty as to reconstructibility or, in synchronic data such as that under consideration, optionality. Pawley does not indicate under what circumstances the thematic consonant is in fact not present in the languages in question. In one of these seven languages, PPN, *ʔaki is reconstructed as an independent preposition. Thus, thematic consonants are only definitely preserved in thirteen of the thirty-one languages of Pawley's sample. Of these, all but two are languages of the Banks Is., San Cristobal-Malaita, and Fiji. The remaining two, Oba and Tasiriki, are spoken in the northern New Hebrides. Evidence that the thematic consonant is preserved before both *-aki and *-akini is presented for only Fijian (Bauan and Wayan), Kwara'ae, and Motu. If one were to claim that POC *akini was an enclitic, rather than a suffix, one could argue that the association of a thematic consonant with reflexes of POC *akini reflects (an) independent change(s) in the status of this element, from enclitic to suffix, during the period in the history of these languages before the application of final vowel deletion. I would like to suggest that this hypothesis at least merits further investigation, particularly a reassessment of the data on which Pawley's original reconstruction was made. Its implications for subgrouping within Oceanic can then be assessed. Further evidence in support of the claim that POC *akini was an enclitic will be presented below.

Pawley reconstructs *(ki)ni as a preposition or prepositional verb

for both POC and PEO. I have found the following supporting data in his work (Pawley 1972, 1973):

Fagani	<u>gini-</u>
Nggela	<u>ni-</u>
Mota	<u>ni-</u>
Bakatana	<u>ni</u>
Tasiriki	<u>'ini-</u>
Bauan	<u>kina</u>
Roviana	<u>-ni-</u>

Roviana -ni- is a verbal suffix before which POC final consonants are preserved. Since we would not expect final consonant deletion to be blocked by a following preposition or prepositional verb, the Roviana form cannot be considered supporting evidence for the reconstruction of an independent (non-affixal) POC $*(ki)ni$. The putative Bauan reflex kina is an anaphoric locative pronoun which is perhaps difficult to reconcile semantically/functionally with an earlier prepositional verb. If it provides evidence for reconstructing such a prepositional verb, it is only of a secondary sort. Of the remaining five putative reflexes of $*(ki)ni$, three have the form ni. This evidence can hardly be regarded as conclusive evidence in favor of an independent POC prepositional verb $*(ki)ni$, as distinct from $*-akini$, as a possible source for the PMC prepositional verb $*akini$.

If we allow that the evidence in favor of reconstructing both a POC prepositional verb and a POC transitive suffix, serving much the same function, is slight, though daughter languages sometimes reflect a suffix and sometimes a prepositional verb, we must ask whether the POC

antecedent of all these forms was a suffix, a prepositional verb, or the same element with both analyses. I know of no evidence to confirm or deny the last of these hypotheses. The first hypothesis involves the claim, stated earlier for PMC *-akini, that all synchronic prepositions or prepositional verbs involve the 'upgrading' of an earlier suffix. We might want to question this hypothesis on the grounds that the 'upgrading' process, though perhaps not unknown, is much rarer than its reverse. Were we to entertain this hypothesis at all, however, we would be forced to ask when this proposed upgrading took place. It would seem that it would have had to have preceded final consonant deletion since, otherwise, we would expect a thematic consonant to be associated with the upgraded suffix, under the hypothesis that final consonants became associated with a following transitive suffix after final consonant deletion took place. If the proposed upgrading did precede final consonant deletion, then we are faced with a strange subgrouping hypothesis, involving all the languages reflecting the upgraded suffix, or with the problem of explaining why the suffix was not upgraded in the languages that preserve the suffix. I conclude, then, that the hypothesis that POC *-akini was a suffix is less likely than the other two hypotheses above.

There is, in fact, a certain amount of evidence that, at least at some pre-POC stage, the antecedent of POC *-akini was not a suffix. Thus, Pawley (1973:123) cites data from Wolio, a non-Oceanic language of the S.E.Celebes, which has two transitive markers, a 'locative' -i and an 'accessory' -aka, that seem to parallel in form and function the reconstructed POC transitive suffixes. Wolio is a language in which

POC final consonants are lost. Compare, in this regard, the following Wolio paradigms:

WLO	<u>aba</u>	'to ask'
	<u>abak-i</u>	'to ask s-o'
	<u>aba-aka</u>	'to ask about s-t'
	<u>tangi</u>	'to weep'
	<u>tangis-i</u>	'to weep over s-t'
	<u>tangi-aka</u>	'to weep because of s-t'

These paradigms clearly suggest that Wolio -i and -aka were not suffixes of the same sort at the time that final consonant deletion applied in that language, since PAN final consonants are preserved before the former but not before the latter.

As noted in section 3.5.4, Pawley and Reid (1976) suggest that the POC transitive suffixes *-i and *-akini reflect earlier PAN prepositions which came to be enclitic to the verb at some pre-POC period, and, one assumes, later became analyzed as verbal suffixes. What I would like to suggest is that the enclitic analysis persisted for *akini in transitive sentences, at least, into the POC period, as evidenced by our reconstructed PMC *akini. We might note, as perhaps additional supporting evidence, the fact that the Tongan preposition 'aki 'with' frequently has a syntax comparable to that of, for example, Mokilese ki. Thus:

TON 'Oku gaohi eni 'aki 'a e mohuku.
 asp make this with nom art grass
 'This is made of grass.'

Fō 'aki ho'ū kofū ha vai mafana mo ha koa.

wash with your clothes art water warm and art soap

'Wash your clothes with soap and warm water.'

Under the hypothesis that POC *akini was a prepositional verb, rather than a suffix, those languages in which its reflexes are associated with a thematic consonant might be considered to form a subgroup, as noted earlier, in which the prepositional verb has been 'downgraded' to suffixal status. This drastic a proposal is not, however, a necessary consequence of the hypothesis presented here. The thematic consonants associated with reflexes of *akini in these languages might represent no more than a relatively recent reanalysis of 'transitive' *akini on analogy with 'intransitive' *-aki, which, evidence suggests, was suffixed rather than enclitic in POC.

All the proposals for POC presented in this section are speculative at present. I put them forward here, nonetheless, in the hope that they will be suggestive of future directions for research.

4.3 The PMC Post-verbal Complex

Pawley (1973) reconstructs the POC verb phrase as follows:

PRO_S T/A V-(tr) (PRO_O) (DIR) (MAN)

where PRO_S and PRO_O^3 are obligatory pronominal markers of the subject and the object (the latter obligatory, of course, only in transitive sentences); T/A is a tense/aspect marker; tr is a transitive suffix; DIR, an optional directional particle; and MAN, an optional manner particle. Ignoring pre-verbal VP elements (PRO_S and T/A), which are irrelevant for our present purposes, and considering the transitive suffix to be part of the verb, the reconstructed POC verb phrase closely

resembles that portion of the PMC verb phrase here termed the post-verbal complex.

The post-verbal complex of PMC can be tentatively reconstructed in the following shape:

*VERB-akini-OBJ-directional

allowing for the possibility, on the basis of the evidence from Marshallese, Gilbertese, and Ulithian, that the relative order of PRO_0 and directional may have been variable. This reconstruction differs from Pawley's reconstruction for POC in two respects: first, in lacking a manner constituent, which, in any case, is not identified explicitly by Pawley, and in giving enclitic status to PMC *akini. As pointed out in the previous section, this latter may not have been a PMC innovation.

We noted earlier that the Ponapeic/Kusaiean transitivizing suffix -i (PON -ih) cannot be assumed to be a reflex of the POC transitive suffix *-i. We suggested, rather, that it reflects an earlier locative preposition. This element must have been incorporated into the verb phrase at some stage ancestral to Ponapeic and Kusaiean and could not have been a suffix at the period when final vowel deletion applied in these languages, since PMC final vowels are not preserved before it. Since this element is not represented as a transitivizer outside of Ponapeic/Kusaiean, it can only tentatively be reconstructed as an enclitic element of the PMC post-verbal complex.

Whether we assume an enclitic *i in the post-verbal complex of PMC or just of pre-Ponapeic/Kusaiean, its position in the complex is problematic. In Kusaiean it is mutually exclusive with the suffix kihn, which we assume to be a reflex of PMC *akini. In Ponapeic, it can be

analyzed synchronically as a verbal suffix since, in Mokilese, it does not trigger junctural lengthening and can be followed by the intransitivizing suffix -ek. It can be followed by the ki(n) reflex of PMC *akini in Ponapeic.

There appear to be two alternative hypotheses for the shape of the post-verbal complex in pre-Ponapeic/Kusaiean:

- i) *VERB- $\left\{ \begin{array}{c} i \\ \text{akini} \end{array} \right\}$ -OBJ-directional
- ii) *VERB-i-akini-OBJ-directional

From i) it follows that *i became a suffix in Ponapeic, moving to the left out of the post-verbal enclitic complex, while, from ii), we must suggest that, in Kusaiean, *i either moved to the right, becoming mutually exclusive with *akini, or *akini moved to the left. Evidence suggests that both have become suffixes in Kusaiean since they may be followed by the passive suffix -yuhk (< PMC *-aki).

I tentatively suggest i) above as the most likely of the two hypotheses, given that the historical mutual-exclusivity of these two 'transitivizers' has been well demonstrated. The synchronic systems of Ponapeic and Kusaiean follow directly from hypothesis i), assuming the following changes:

- I) in Ponapeic, the downgrading of *i to suffixal status
- II) in Kusaiean, the downgrading of both *i and *akini to suffixal status

We must reiterate that it is not clear what stage in the history of the Mokilese post-verbal complex, PMC or pre-Ponapeic/Kusaiean, is represented by hypothesis i) above.

Most Micronesian languages reflect PMC *anga-ni 'towards' and

*ta(n,ng)i 'from' as prepositional verbs following directly after the verb phrase. Evidence that they are incorporated into the post-verbal complex comes only from Ponapeic and Kusaiean (where KUS acng 'towards' has joined the directional series). I will assume that these prepositional verbs were peripheral to the post-verbal complex of PMC, though whether they in fact were a part of it syntactically is unclear. These hypotheses can be summarized in the following reconstruction for the post-verbal complex of PMC:

*VERB- {akini} -OBJ-directional- ({anga-ni
 { ?i } {ta(n,ng)i}})

Little can be said regarding the earlier status of the Mokilese semi-directionals. The only likely cognates for these elements are in Trukic and these, as noted earlier, are not as secure as one would like.

Allowing that the Ponapeic and Trukic forms are cognate, their synchronic syntax remains distinct. In Ponapeic they are mutually exclusive with the true directionals while in Trukic they form part of a set of non-particle adverbs, preceding and co-occurring with the directionals. While they must have been incorporated into the post-verbal complexes of Ponapeic and Trukic at some early period, it is not clear when nor from what earlier source. It is impossible at present to reach any firmer conclusions about them.

4.4 Development of the Mokilese Post-verbal Complex

Ignoring the loss of two PMC directionals (the antecedents of PON long WOL long 'inwards' and of PON iei WOL waiu 'outwards') and the incorporation of the semi-directionals and of oar 'and then' into the post-verbal complex, five significant changes characterize the development of the post-verbal complex of Mokilese from the post-verbal complex

of PMC hypothesized in section 4.3. These are:

- i) the loss of VP internal pronoun objects
- ii) the bifurcation of the directionals into a 'vertical' and a 'horizontal' set
- iii) suffixation of *i and the extension of *ki to sentences with transitive verbs
- iv) full incorporation of oang 'towards' and jang 'away from' into the post-verbal complex
- v) the development of junctural lengthening

Little can be said at present about the first change, except to note that it has also taken place in Pingelapese and, almost completely, in Kusaiean, where a reflex of the older first person singular PRO₀, KUS -yuh, from PMC *ai, alternates with the isolate pronoun nga. The second change is shared by all Ponapeic languages and by Marshallese, but has not occurred elsewhere. It is impossible to evaluate at present.

The third and fourth changes are unique to Ponapeic and Kusaiean. Unlike Ponapeic, however, Kusaiean reflects only PMC *anga-ni 'towards', whose Kusaiean reflex has become a directional. As noted above, both Kusaiean -i and -kihn appear to have become verbal suffixes. I would like to speculate that the downgrading of *i, but not of *akini, into a verbal suffix in Ponapeic, may be linked to the broader syntactic/semantic range of the Ponapeic reflexes of the latter. If these two elements formed a mutually-exclusive set at some pre-Mokilese period, marking locative/accessory 'latent' direct objects, respectively, the change of *i into a true transitive suffix may have triggered a

reanalysis of the latter from a marker of an accessory 'latent direct object' in basically intransitive sentences to an accessory marker in any sentence, transitive or intransitive. This hypothesis remains speculative, however.

The genesis of junctural lengthening is a matter for further speculation. It is possible that the genesis of this process can be related to the full incorporation of oang and jang into the verb phrase. It is impossible to attribute the rise of junctural lengthening in Mokilese in V#C and C#V contexts to any reanalysis of surface phonological patterns at an earlier stage in the history of Mokilese; that is, in the former case, to 'underlying' or antecedent morpheme final long vowels or to the juxtaposition of adjacent vowels across some juncture, and, in the latter case, to an earlier VCiV sequence which, as noted in section 2.1.2, gives rise to synchronic medial geminate consonants. I will not develop every possible account of the origin of junctural lengthening deriving from the assumption that the process reflects earlier surface patterns. It should be sufficient to point out that, under one such hypothesis, we would be led to conclude that, at some earlier period, the final vowel of every formative to which an enclitic can be added must have been long and that every synchronic consonant final formative to which an enclitic can be added must have ended in *i. Both these suggestions are empirically false; the latter patently absurd and the former disproved within the post-verbal complex itself, where all majority of the Mokilese directionals are reconstructable without a long final vowel (see section 4.2.2.1).

We might want to view the process of junctural lengthening, from a

functional point of view, as both a means of highlighting enclitic junctures and as a means of preventing long sequences of short open syllables that are disfavored in Mokilese, as further evidenced by the process of vowel reduction, described in section 3.2. The only likely clue to the origin of junctural lengthening comes from a historical process assimilating adjacent non-high vowels at a relatively recent stage in the history of Mokilese. Compare:

POC	*muqa	'front'
GIL	<u>moa</u>	'front'
MOK	<u>mwooa</u> ~ <u>mwoh</u>	'in front of it'
	<u>mwohn</u>	'in front of'

This process seems to have been obligatory when a consonant followed but optional otherwise. The same process can also be seen in Mokilese reflexes of vowel-final verbs with the PMC 'agentless passive' suffix *-aki. For example:

<u>pina</u>	'to cover s-t'
<u>pinahk</u>	'to be covered'
<u>insinge</u>	'to write on s-t'
<u>insingehk</u>	'to be written'
<u>kiroa</u>	'to peel s-t'
<u>kiroahk</u>	'to be peeled'

I would like to suggest that the genesis of junctural lengthening in Mokilese can be found in pre-Mokilese sequences of a directional enclitic and oang 'towards' (from PMC *anga-ni). Since the former are all vowel-final in Mokilese, and the latter vowel initial, and since the latter followed the former directly, even in PMC under the

hypothesis presented in section 4.3, the pressure towards assimilation of the adjacent vowels must have been strong. This assimilation would have had, as a consequence, the complete incorporation of oang, and, one assumes along with it, jang, into the post-verbal complex. It also provided a model for vowel lengthening between enclitics when the first was vowel-final and the second consonant-initial; that is, $V\#oang \rightarrow Vhng$ could be generalized to $V\#C \rightarrow VhC$. This process, I hypothesize, was further generalized in Mokilese to include the mirror image cases ($C\#V \rightarrow CCV$), though, as will be recalled, it remains restricted to $V\#C$ cases in Ponapean. This hypothesis also accounts for the distinct behavior of $V\#V$ sequences with respect to junctural lengthening, since $[+hi]$ such sequences are not subject to the historical assimilation we assume to lie behind the junctural lengthening process. I am aware of no other hypothesis concerning the origin of junctural lengthening that accounts for these facts.

Footnotes to Chapter Four

1. This process is also triggered by a set of determiners enclitic to the noun phrase. Thus:

<u>woal</u>	'man'
<u>woallo</u>	'that man'
<u>woal laplappo</u>	'that important man'
<u>woal laplap roahmenno</u>	'those two important men'

Mokilese enclitic determiners will not be considered further here, however.

2. Bender (personal communication) points out that MAR ̄C suggests an earlier *iCa, where the *a is lost through final vowel deletion. This observation suggests a pre-Marshallese form reminiscent of GIL akina. I tentatively suggest, then, that the Marshallese kōn reflects an earlier third person singular form of the PMC prepositional verb *akini.

3. There appears to be some confusion regarding the status of POC PRO_S and PRO₀. Pawley suggests (1973:113) that these stand outside the VP but, in later work (Pawley 1975:8-9, Pawley and Reid 1976:3), following Pawley's 1972 proposals for PEO, these are included within the VP. I will assume the latter analysis here.

CHAPTER V

Boundary Change in Mokilese

5.0 Introduction

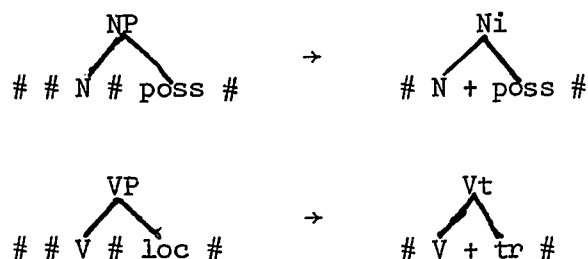
This chapter will attempt to give some theoretical perspective to the partial account of the history of Mokilese morphosyntax presented in the preceding chapters. We will consider only changes that are describable in terms of boundaries between adjacent morphemes:

- i) changes in boundary type
- ii) the movement or loss of boundaries

The former are exemplified in the history of N-poss constructions in Mokilese, described in Chapter Two, and in the history of the Mokilese -i transitive suffix, as described in Chapters Three and Four. The latter is exemplified in the account given in Chapter Three of the evolution of the POC close transitive suffix **-i* from POC to Mokilese. Other cases will be presented below. We will begin by considering changes of the first sort. This discussion will lead directly into a consideration of changes of the second sort.

5.1 Enclitic and Suffix

Ignoring the category labels for the present, the two cases of boundary type change mentioned above might be diagrammed:



that is, as changes from what we will term an enclitic boundary (#) to

a morpheme/formative boundary (+).

The morphophonemics of modern Mokilese suggest that, in that language, the distinction between enclitic and suffix is not a trivial one, since only the former trigger the process of junctural lengthening. Such direct evidence for the enclitic/suffix distinction is, unfortunately, often elusive in other languages. In terms of the operation of junctural lengthening, the distinction between enclitic and suffix in Mokilese can be demonstrated by examples like the following:

<u>loakjid</u>	'to fish'
<u>loakjidi</u>	'to fish for s-t'
<u>kidim</u>	'to wrap s-t'
<u>kidimek</u>	'to be wrapped'
<u>adma</u>	'to behead'
<u>admai</u>	'to behead s-t'

where +i and +ek are suffixes, and:

<u>loakjiddoar</u>	'to fish and then'
<u>admahda</u>	'to behead with an upward stroke'

where #oar and #da are enclitics.

Evidence for the change from # to + boundaries in Mokilese has been shown to be present in the operation of the historical processes of final consonant deletion and final vowel deletion. At the period at which they operated, both of these processes are assumed to have applied before the # boundary, but to have been blocked by the + boundary. We demonstrated that neither of these processes operated on the final segment of the verb root before the historical close transitive suffix *+i, as evidenced by alternations like sipis 'to tie

s-t' (< *sipis+i#)/sip 'to tie, be tied' (< *sipis#) and umwwujoa 'to vomit on s-t' (< *umwwujoa+i#)/umwwuj 'to vomit' (< *umwwujoa#). We also noted that final consonant deletion, but not final vowel deletion, applied to the final segment of the nominal root before possessive markers, as evidenced by alternations like kil 'skin' (< POC *kulit) and kilin 'his skin' (< POC *kulit#ña). The first cases suggest that the close transitive suffix was associated with the boundary +, while the second suggests that the boundary between noun and possessive marker changed from # to + between the time of final consonant deletion and the time of final vowel deletion.

5.2 Theories of Boundary Assignment

Boundary symbols like # and + are, of course, merely notational devices, of no explanatory value, either synchronically or diachronically, except in the context of an empirical theory of boundary assignment. Outside the context of such a theory they are no more than a convenient means by which to display the fact that given phonological rules have distinct domains of application. In diachronic terms, it is of no value to say that a boundary has changed, since boundaries are notational devices. A change in boundary type must reflect some more substantive change in linguistic structure. This chapter will attempt to identify some of these substantive grammatical changes.

As a starting point this section will provide a brief review of some proposed theories of boundary assignment and will evaluate them in terms of their potential value in accounting for what we have termed changes in boundary type. We will consider first the principles of

of boundary assignment found in the Sound Pattern of English (SPE) and, second, a number of theories based on the principle of phonological rule ranking.

The SPE conventions for the assignment of the # and + boundaries, given in section 2.3, are repeated here for convenience:

- i) Place a + (formative) boundary before and after each lexical formative in the surface syntactic string.
- ii) Place a # (word- in SPE terminology) boundary in conjunction with each major category bracketing in the surface string, where a major category is defined as 'one of the lexical categories "noun", "verb", "adjective", or [by] a category such as "sentence", "noun phrase", "verb phrase", which dominates a lexical category.' (SPE:366)

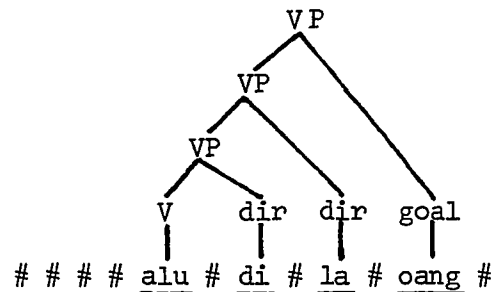
Sequences of + boundaries are reduced by convention to a single +. # boundaries supersede + boundaries. Sequences of two or more # boundaries mark the division between phonological words.

From the point of view of the analysis of Mokilese and of pre-Mokilese presented in the preceding chapters, these conventions provide 'correct' boundary assignment in the following cases:

- i) noun-poss constructions at the period in pre-Mokilese before the application of final consonant deletion



ii) verb-enclitic constructions in contemporary Mokilese

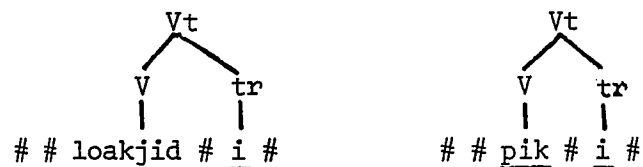


The 'correct' single # for verbal enclitics follows directly from such a right-branching analysis. Moreover, this appears to reflect the proper constituent structure, since the sequences:

<u>aluhdi</u>	'to walk down'
<u>aluhdihla</u>	'to walk off down'
<u>aluhdihlahng</u>	'to walk off down towards'

are all possible verb phrases (under the interpretation of verb phrase given in section 3.1.1), while no sequence of verbal enclitics appears itself to be a constituent.

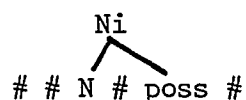
The SPE boundary assignment conventions do not yield the 'correct' boundaries in the case of contemporary Mokilese i-transitive verbs under the following analysis (using loakjidi 'to fish for s-t' and piki 'to spread sand on s-t' as examples):



The above analyses predict that junctural lengthening should apply over the internal # boundary in these constructions, which it does not.

If we assume, in the case of contemporary Mokilese inalienable nouns, that the formative to which the possessive suffixes are affixed

is itself a member of the category noun, and has been so throughout the history of Mokilese, then the SPE boundary assignment conventions would yield:



where the internal # boundary would have failed to block the deletion of the final vowel of the nominal root at the period at which that rule applied.

Within the framework of SPE phonology there are a number of ways of 'correcting' such 'incorrect' boundary assignments. The first case might be obviated by a simple claim that junctural lengthening applies only before enclitics marked as triggering that rule. The -i transitivizer would not be among these. While this solution is of course permissible within the theory, it is clearly ad hoc. Any of the cases in question could be handled by a readjustment rule changing # to + in the structures in question. This device was recognized even by Chomsky and Halle (SPE:13) as ad hoc but, one assumes, they did not view it as totally unmotivated.

The sort of motivation Chomsky and Halle had in mind has, in later work, provided the foundation for another approach to boundary assignment, in terms of phonological rule ranking. This approach was presaged in the SPE conventions for phonological rule application. In SPE, any rule whose domain can be interpreted as a phonological string straddling a boundary applies freely over the + boundary but is blocked by the # boundary unless that boundary is mentioned explicitly in the environment of the rule. Rules in which the boundaries # or + are

explicitly mentioned apply only if those boundaries are present.

These conventions were developed in McCawley (1968) and Stanley (1972) into a theory of rule application whereby boundaries are ranked from stronger to weaker in accordance with whether rules applying when a given boundary is present in surface structure also apply when other (weaker) boundaries are present. The strongest boundary allows only the application of rules explicitly mentioning that boundary; the weakest, one infers, allows any rule to apply over it.

The approach to boundary assignment that follows from theories of this sort is not always clear. One assumes that readjustment rules, applying globally, could alter boundaries when necessary. Stanley (1972), though his proposals are somewhat vague, seems to be suggesting that boundaries are a property of individual (classes of) affixes, as listed in the lexicon. These classes, in turn, appear to be formulated on the basis of how phonological rules apply to the stem-affix sequences in which the affixes in question appear. In theory, then, the number of distinct boundaries is infinite, constrained only in individual grammars by the way in which phonological rules apply.

Aronoff (1976) provides a more constrained version of such a theory. In his model, morphologically complex words are built by what he terms word formation rules (WFR's), which he considers to form a rule component of the lexicon. Boundaries are viewed as properties of these word formation rules. With certain exceptions, the number and ranking of boundaries is constrained by the way in which WFR's function.¹ While word formation rules are fundamentally lexical in his model, the actual introduction of phonological substance by such rules is considered to

be a phonological operation. These operations, Aronoff suggests, can take place at three points only; pre-phonologically, post-cyclically, and post-phonologically. He associates the first with WFR's involving a + boundary, over which all phonological rules apply, the second with a # boundary, over which cyclic rules do not apply, and the third with a ## boundary, over which no phonological rules apply. Thus, in Aronoff's approach, boundary types are governed in a strict sense by considerations of phonological rule applicability.

5.3 Boundary Change

The approaches to boundary assignment outlined in the previous section suggest three grammatical concomitants of boundary type choice:

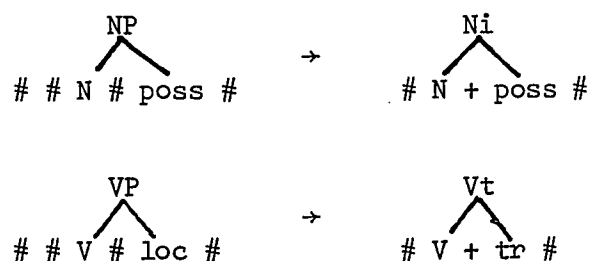
- i) phonological rule applicability
- ii) lexical listing (in the case of the SPE + boundary)
- iii) syntactic surface structure (in the case of the SPE # boundary)

In diachronic terms, the first concomitant implies that a change in boundary type takes place when a change occurs in the domain of a particular phonological rule or rules. As already suggested in section 2.3, this conclusion is a tautology. The claim that a given boundary has changed because some rule(s) applies/no longer applies across it might equally well be stated as a claim that some rule(s) applies/no longer applies across a given boundary because the boundary has changed. In Aronoff's model, for example, the claim that the boundary # has changed to + in a given string because cyclic rules now apply to the entire string holds equally well if the order of the two propositions is reversed.

A diachronic interpretation of the second concomitant above is, at worst, trivial and, at best, question-begging. The claim that the boundary between formatives has changed because one of the formatives no longer exists is an empty one. One must ask what caused the loss of the formative in the first place.

The third concomitant is more interesting because it links boundary types and changes in boundary type to linguistic structures and structural changes in which the boundaries play no necessary part. That is, syntactic surface structures and changes in syntactic surface structure exist independently of the boundary notation, in contrast to the phonological rules of concomitant i), whose applicability is signalled by boundaries. In diachronic terms, the third concomitant implies that a change in boundary type follows directly from a change in syntactic surface structure, without itself being the change.

Let us now consider what sort of syntactic change results in a change in boundary type. In the two examples of change in boundary type given in section 5.1 (and repeated here for convenience), it is clear that neither the linear order nor the constituency of the formatives has changes:



The only change has been in category node labelling.

In section 2.1.2 we argued that noun-poss constructions in modern

Mokilese are dominated by the lexical category node Ni (inalienable noun); that is, that these constructions define a subcategory of the lexical category noun in Mokilese. Allowing for certain idiosyncratic properties of possessive classifiers and of the construct form, this analysis is supported by the fact that noun-poss constructions have a syntax comparable to that of simplex nouns. Thus:

pwohla soal riawwo

ball black two-that

'those two black balls'

mijoa soal riawwo

eye-his black two-that

'his two black eyes'

where pwohla 'ball' is an alienable noun and mijoa 'his eyes' is an inalienable noun.

In section 2.1.1 we argued, on the basis of evidence from Indonesian, that noun-poss constructions in pre-Mokilese (?PAN) might have been directly dominated by the category node NP. We will not repeat that argument here. The very fact that final consonant deletion applied to the nominal root in this construction can be interpreted as a second, rather weak argument in favor of this analysis. Thus, final consonant deletion applied to nouns before possessive markers in much the same way we infer it would have applied before adjectives, numerals, or any other constituent of the noun phrase. This suggests that the relationship between the noun and the possessive marker at the period in question was of the same order as the relationship between the noun and another constituent of the noun phrase. We might want to conclude from

this observation that noun-poss constructions were directly dominated by the node noun phrase.

The V node (or Vt--transitive verb) directly dominating verb-i constructions in contemporary Mokilese can be justified, as shown in Chapter Three, by the fact that i-transitive verbs are in all other respects identical to morphologically simplex transitive verbs; that is, they take the suffix -ek and the full complement of post-verbal enclitics. The corresponding VP node in the hypothetical antecedent pre-Mokilese construction is somewhat harder to justify. One might give the historical argument, outlined in section 4.3 that the pre-Mokilese antecedents of both -i and ki were mutually exclusive enclitics and that only the syntax of the former has changed. Since the construction of which the latter is a constituent is a VP, we can assume the same to have been true of the former before any change took place.

A final argument applicable to the pre-Mokilese stages of both noun-poss and verb-i constructions is a definitional one. It holds that, by definition an enclitic is always enclitic to a phrase, not to a lexical category. Thus, if it is possible to demonstrate on the basis of evidence from some historical phonological process that a given formative was an enclitic at a given period, then it follows, by definition, that the construction in which that formative appeared was a phrase. We will attempt to justify this definitional claim in terms of a modified approach to boundary assignment in section 5.7.

In summary, the two examples of boundary type change presented in this section also involve change in the labeling of nodes; that is, categorial change. The study of categorization and of categorial change

would thus appear to be a promising area of investigation in the search for an empirical account of boundary type changes. We now turn to a consideration of these notions.

5.4 Categorization

A full explication of the nature and role of categorization in grammar goes well beyond the scope of the present work. Our discussion will be restricted, as far as is possible, to a consideration of the role of categorization in boundary assignment. It follows, of course, that the conclusions we reach, if valid, will have broader implications. These cannot be dealt with in detail, however.

The significance of categorization in the SPE boundary assignment conventions is obvious. In effect, ## marks the boundary between adjacent major categories (both phrasal and lexical); # marks the boundary between adjacent major and 'minor' categories; + marks the boundary between adjacent minor categories or between non-categorial morphemes, if such in fact exist.

In the syntactic theory on which SPE rests, the set of categories, or, at least, major categories is given, in the sense that that set is held to be universal (SPE:8). Minor categories, one infers, may be language-specific. The universal set of lexical and phrasal categories is used, in generative syntax, in the generation of syntactic deep structures (the so-called 'standard' theory), or in the statement of underlying semantic configurations (in generative semantics).

Boundaries, however, are assigned in terms of these categories as they are reflected in syntactic surface structure. Under the most obvious interpretation, these surface categories are universal in that

they are isomorphic with underlying (deep/semantic structure) categories. This putative isomorphism is not at all obvious, however. Given a syntactic theory in which underlying structures are relatively abstract, many students have, over the past decade, shown that certain surface categorial distinctions are neutralized at a deeper level. For example, Lakoff (1966, 1970) gives an analysis of English adjectives in which their underlying syntax is not distinct from that of English verbs. He proposes a syntactic category verb which is subcategorized in the lexicon in terms of the two features [\pm stative] and [\pm adjective], which guarantee proper lexical co-occurrence and transformational derivation for particular exponents of the category verb. This analysis implies a recognition that, although at some 'deep' level verbs and adjectives have common properties, their surface syntax differs in ways that are specific to English. Thus, whether we label these surface categories verb and adjective or $V_{[-adj]}$ and $V_{[+adj]}$ they are distinct and language-specific on the surface. That is, universal underlying verb must be converted, under language-specific conditions relevant to English, into verb or adjective/ $V_{[-adj]}$ or $V_{[+adj]}$ in the course of a syntactic derivation.

If we adopt a very concrete approach to syntax such that underlying structures are isomorphic, or nearly so, to a subset of possible surface structures, as, for example, in Emonds (1970), then it would appear to follow that underlying categories are isomorphic with surface categories. If, in the sense of the preceding paragraph, the latter are language specific, then so are the former.

The only universal interpretation of surface grammatical

categorization that seems to follow from these remarks is that these form a finite, universal set upon which all languages can draw, though no language need distinguish all members of this set on the surface. In any event, it remains the case that those categorial distinctions relevant to language-specific syntactic rules/constraints (those categories that appear in surface structures, one might infer) must be acquired in the same way that any language-specific grammatical property is acquired, on the basis of some non-universal feature of the input data. It remains to demonstrate, however, that boundary assignment is sensitive to these language-specific categories (or subcategories) and not, in an abstract syntax, for example, to those categorial distinctions that one might still assume to be universal in underlying structures. In the following sections, we will attempt to show that the former assumption provides a satisfying interpretation for the phenomenon of boundary type change as observed in the history of Mokilese.

5.5 Categorization and Change

5.5.0 Introduction

This section will explore the nature of categorial change. Evidence from the history of Mokilese suggests three types of categorial change, the last subsuming three subtypes. The classification we propose is probably not exhaustive. It can be given as:

- i) change in category membership
- ii) syntactic reanalysis
- iii) change in the number of categorial distinctions
 - I loss of a category distinction

IIa. downgrading

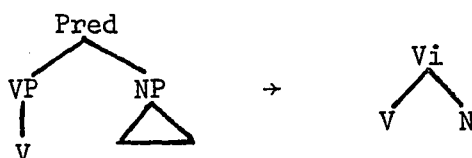
b. recategorization

5.5.1 Change in Category Membership

At least two isolated cases of change in category membership have been noted in the history of Mokilese. One is the shift of the verb sipw 'broken' from the pre-Mokilese optional transitive class to the Mokilese stative class, as noted in section 3.5.3. The second is the development of the POC verb *lako 'to go' into the directional enclitic la 'away' of Mokilese. Evidence from Gilbertese and from western Trukic suggests that, in PMC, this shift was underway but had not gone to completion, since GIL nako and WOL lag function both as motion verbs and as directionals. As will be made more explicit below, change in category membership is most often a result of other categorial changes.

5.5.2 Syntactic Reanalysis

I use the term syntactic reanalysis to refer to categorial changes concomitant with changes in the rules generating syntactic structures; the loss, addition, or restructuring of syntactic patterns. The one clear case of such a change that comes to mind is the evolution of object incorporation in Mokilese. This involved a change from an earlier predicate containing a suffixless transitive P-verb to a compound intransitive verb built from a non-transitive verb (or one of its paradigm equivalents) and a noun with generic reference. Details aside, this change may be diagrammed:



This putative reanalysis is of such complexity that I will not attempt to dissect it here. Some hypotheses regarding its motivation and progress have already been suggested in section 3.5.3.

Other possible cases of syntactic reanalysis in Mokilese are the evolution of noun-poss constructions and the development of i-transitive verbs, discussed above. As will be made clear in section 5.6, syntactic reanalysis is perhaps not distinct from other types of categorial change.

5.5.3 Change in Categorial Distinctions

5.5.3.1 Loss

True cases of the loss of a categorial distinction are difficult to identify in the history of Mokilese. The only likely case is the A-verb/P-verb optional transitive distinction of pre-Mokilese. As demonstrated in Chapter Three, it can be reconstructed for pre-Mokilese on the basis of synchronic differences in the shape of the transitive paradigm of older A- and P-verbs, but is presumed to have disappeared from the synchronic subcategorization system of Mokilese as a result of recategorization (see section 5.5.3.3).

5.5.3.2 Downgrading

I give the term downgrading to the categorial change resulting from a shift in the 'grammatical function' or 'meaning' of, in most cases, individual lexical items of a given category. Its usual result is a shift from major to minor category status. The shift of POC *lako 'to go' to Mokilese la 'away' is, in this sense, a downgrading. Downgrading often involves a period of dual category membership, as in the case of GIL nako and WOL lag, noted above, or of categorial indeterminacy. This seems to be the case with what Shopen

terms the 'quasi-modals' in English (1972:182-194). Shopen notes that the English verb go can appear in syntactic contexts appropriate to modals like can but that these contexts are restricted to those not requiring inflection, presumably because modals in English do not inflect. Thus:

- a. I can eat with John on Mondays.
- b. He can eat with John on Mondays.

- a. I go eat with John on Mondays.
- b. *He goes eat with John on Mondays.
- c. *He go eat with John on Mondays.

Thus, the modal use of go is restricted to contexts where no inflection appears on the verb go. Even as a modal, it remains a verb.

The downgrading process has been widely reported in the literature. Benveniste (1968) treats the development of periphrastic perfectives and futures in Romance in terms of a process he labels 'auxiliation', within the broader framework of the 'mutation' (Fr. transformation) of linguistic categories. He also cites examples from non-Indo-European languages. As will be made clear in section 5.6, downgrading is but a single link in a much broader process of semantic change, as described in Givón's (1971, 1973) remarks on the evolution of morphology, in Jacobs' (1975) study of syntactic change in the Cupan languages of California and his (1976) discussion of passive-like constructions in Micronesian languages.

5.5.3.3 Recategorization

The term recategorization may be given to a change whose result is the realignment or reanalysis of existing lexical categories. We have noted numerous instances of such changes in the history of Mokilese:

- i) the split of the pre-Mokilese nominal category into two distinct subcategories; alienable noun and inalienable noun
- ii) the profound reanalysis of the pre-Mokilese verbal system outlined in Chapter Three

Details of these changes will not be repeated here.

5.6 Mechanisms of Categorical Change

5.6.0 Introduction

It was suggested in section 5.5 that the three basic types of categorial change proposed there might not be completely distinct. Change in category membership in all instances seems to be the result of some other change: a downgrading, in the case of PC *lako 'to go' > MOK la 'away', or a reanalysis, in the case of the change in category membership of MOK sipw 'broken', for example.

It is far from clear that syntactic reanalysis is independent of other categorial changes. Thus, we have suggested that the recategorization of pre-Mokilese P-optional transitives into distinct obligatory transitive and non-transitive categories may have triggered the reanalysis of suffixless P-verb transitive constructions into incorporated object constructions. This account, however, could not hold for the incorporated object constructions of a language like Fijian, if these are relatable to an earlier suffixless transitive

construction, since there is no evidence that a similar recategorization has taken place in that language.

The reanalysis of $[_{NP} \text{ N-poss}]_{NP}$ constructions as $[_{Ni} \text{ N-poss}]_{Ni}$ can be interpreted as the result of the recategorization of pre-Mokilese nouns. Though we cannot completely discount syntactic reanalysis as a primary type of categorial change, we will not explore it in greater depth here. We take this course for two reasons; first, because there is some evidence that these reanalyses can result from changes in the category distinctions themselves (for example, through recategorization) and, second, because a detailed consideration of the nature of syntactic reanalysis leads directly into the question of the nature of syntactic change itself. Our present aims are more limited.

In the present section we will consider in more detail the processes of downgrading and recategorization, in an attempt to isolate the mechanisms by which such changes take place. We tentatively propose three such mechanisms:

- i) morphological reanalysis
- ii) semantic reanalysis
- iii) semantic 'bleeding'

The discreteness of the second and third proposed mechanisms is not completely clear.

I stress again the very tentative nature of the proposals to be made in this section. A full explication of each would require independent exemplification and elaboration of a scope far beyond that of the present work. In spite of the fact that I cannot hope to justify these proposals fully, I put them forward in the belief that they are

fundamentally sound and can provide some insight into the historical changes in Mokilese described here.

5.6.1 Morphological Reanalysis

Morphological reanalysis is the process by which the internal analysis of a string of formatives is changed. It suggests three logical possibilities:

- i) the introduction of a boundary where none existed previously; that is, the change from a morphologically-simplex to a morphologically-complex analysis
- ii) the shift of the position of a boundary; that is, the redistribution of phonological segments between adjacent formatives
- iii) the loss of a boundary; that is, the change from a morphologically complex to a morphologically simplex analysis

While I know of no examples of the first type in the history of Mokilese, an example is provided by the reanalysis of the final /s/ of English peas, as in peas porridge hot, as a plural suffix (that is, peas → peas+s).² The second type of morphological reanalysis is exemplified in Mokilese by the shift of the boundary between a verb and a transitive suffix to the left of a preceding consonant, if any, following final consonant deletion in Mokilese. The loss of the boundary in these forms after the application of final vowel deletion provides an example of the third type of morphological reanalysis. As discussed in section 3.2, both the shift of the + boundary and its eventual loss in the history of Mokilese transitive verbs can be

related to a compositionality constraint according to which, as far as possible, a morphologically complex form be analyzable in terms of a morphologically simplex form plus some affix. The details of the history of Mokilese transitive verbs in terms of this constraint, considered in the section noted above, will not be repeated here.

5.6.2 Semantic Reanalysis

Semantic reanalysis is perhaps the most vague of the three mechanisms of categorial change proposed here. It is intended to refer to changes in the overt marking of semantic distinctions; either the reassignment of a semantic distinction to some new syntactic or morphological device or to the introduction of formal marking for some semantic distinction not previously marked. The vagueness of the concept perhaps reflects our as yet limited understanding of the relationship between meaning and form in natural language. I do not propose, therefore, to 'explain' the mechanism, but merely to note instances in which it appears to have operated. Two such cases might be:

- i) the reanalysis of the aspectual distinction for
pre-Mokilese P-verbs
- ii) the creation of an alienable/inalienable distinction
for Mokilese nouns

In section 3.3.2.1, it was proposed that, at the period of pre-Mokilese before final vowel deletion, P-verbs were used transitively both with and without a transitive suffix, the former marking what appears to have been perfective aspect, the latter imperfective. Thus, the transitive suffix marked transitivity (for A-verbs) and perfective

transitivity (for P-verbs). Following the loss of final vowels it was claimed that suffixed transitive verbs were reanalyzed as morphologically simplex and were recategorized as root transitives. The loss of transitive/perfective marking for P-verbs did not, however, lead to the disappearance of the aspectual distinction. Rather, the perfective marking function of the older *-i suffix was transferred to the directional enclitics and was extended throughout the Mokilese verbal system. The unsuffixed/imperfective transitive P-verb forms, however, no longer contrasted with suffixed/perfective transitive forms. These were reanalyzed semantically as generic predicates and syntactically/categorially as incorporated object constructions. While we cannot prove that the semantic reanalysis suggested in the above account did in fact take place, it appears to be the only account that, as noted in Chapter Three, relates Ponapeic/Kusaiean incorporated object constructions, Trukic/Marshallese semi-transitive constructions, and the Polynesian 2s and 2o transitivity patterns for P-verbs. Moreover, no other account, it seems to me, explains the fact that perfective aspect marking by means of directional enclitics is well-developed only in those Micronesian languages which also show object incorporation.

In this case, the semantic reanalysis proposed was triggered by the morphological reanalysis of suffixed forms of the older suffixed optional transitive category. It resulted in the recategorization/semantic reanalysis of unsuffixed P-verb transitive constructions and, as will be further explicated in the following section, contributed to the semantic bleeding of the directional enclitics.

The rise of an alienable/inalienable distinction in Mokilese

nouns is less tangible. We assume such a distinction to be latent (universal in some cognitive sense) in all languages. The innovation in Mokilese was the move to specialize possessive marking by means of enclitics in immediate construction with the possessed noun for inalienable possession. Any proposal regarding the 'cause' of the crystallization of the alienable/inalienable dichotomy in pre-Mokilese is necessarily speculative given the evidence available. An early innovation, perhaps first as an option, of a possessive classifier system may have triggered the reanalysis. This proposal is, of course, question begging. The results of the semantic reanalysis are clear, however; these being the recategorization of the nominal category into two subcategories and the syntactic reanalysis of $[N\text{-poss}]_{NP}$ as $[N\text{-poss}]_{Ni}$ constructions. This latter change is, however, somewhat more complex, as will be demonstrated in the following section.

5.6.3 Semantic Bleeding

Semantic bleeding describes the process by which formatives lose their substantive meaning and take on what has traditionally been termed grammatical meaning. Jacobs (1976:121) terms the process grammaticalization, which he characterizes as

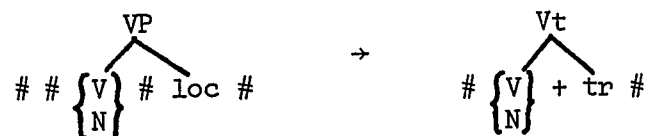
'the process through which morphemes lose their intrinsic semantic content, taking on whatever part of the content the containing syntactic construction distributes to it, but primarily functioning as a grammatical marker rather than as a content element. Typically any meanings associated with such marker [sic] vary considerably according to context although

the range is sometimes restricted by remnants of the likely original content.'

Semantic bleeding is a continuum, however, and it appears that Jacobs' description of 'grammaticalization', along with the examples he presents, characterizes only a part of it. At one end of the scale it is the mechanism involved in downgrading, the shift from major category to minor category status (however the distinction between these two sorts of category is to be characterized). The history of Mokilese provides examples of further stages in the process of semantic bleeding. For example, the transfer of perfective aspect marking to the directional enclitics has bled these of some of their directional meaning, though, as noted in section 4.1.2.2, not entirely so, since the choice of directional/perfective enclitic for a particular verb is still in part dependent on some intrinsic semantic content of the enclitics themselves.

The logical end point of the semantic bleeding process is the complete loss of all the intrinsic semantic content of a formative and the taking on of grammatical functions assigned to it by the construction of which it forms a part. In cases of total bleeding, the function of the formative is to mark/signal a construction type. A possible example is the Fijian common article na, which seems to serve no function other than to signal the fact that what is to follow is a common noun phrase. In some sense, then, it marks the category noun phrase.

Mokilese presents at least two cases of this final stage in semantic bleeding. The first is the change:



in the history of the -i transitive of contemporary Mokilese, whereby the pre-Mokilese locative preposition *i became a marker of the category transitive verb; in this case, a mechanism for deriving transitive verbs from items of other categories. It is likely that the loss of prepositional function for pre-Mokilese *i provided some impetus for this change, but it is not clear that this loss was a necessary condition for the change.

I come to this conclusion because there is evidence, already noted in section 4.2.2.4, that this change, or one almost identical to it, had occurred previously in the history of Mokilese. Its earlier occurrence was the development of the POC close transitive suffix *-i. As already noted, Pawley and Reid (1976:15) suggest that in PAN (or pre-PAN) the items *i and *aken, antecedent to POC *-i and *-aki(ni), were present as locative and accessory prepositions, respectively. They suggest that these PAN (or pre-PAN) items were found in the following three constructions:

- i) V SUB $\begin{bmatrix} i & \text{LOC} \\ \text{aken} & \text{ACC} \end{bmatrix}$
- ii) V $\begin{bmatrix} i & \text{LOC} \\ \text{aken} & \text{ACC} \end{bmatrix}$ SUB
- iii) $\begin{bmatrix} \text{V-i} \\ \text{aken} \end{bmatrix}$ SUB $\begin{bmatrix} \text{LOC} \\ \text{ACC} \end{bmatrix}$

In iii), they suggest, these prepositions were 'captured' by the verb. From that point their history can be taken to be a repetition (or, rather, a precursor) of that of the Mokilese -i transitive, developing

into the POC transitive suffixes.

The preposition *i, of course, remained in POC, to be lost eventually in Mokilese at what we assume to have been a relatively recent period. One objection might be raised at this juncture, however, under the hypothesis that the POC transitive suffixes were completely bled of their intrinsic semantic content; that being the fact that POC *-i and *aki(ni) are not completely devoid of meaning since, in addition to marking transitivity, they retain some independent meaning in that they signal the case role of the direct object.

Two points are relevant here. First, we have argued that POC *-i and *aki(ni) did not in fact become verbal suffixes at the same period, suggesting, rather, that *akini remained an enclitic, in the history of Mokilese at least, while *-i functioned as a transitive marker and, in PMC, *-aki marked an agentless passive construction and later, in Mokilese, developed into a marker of non-transitive forms of transitive verbs (the history of *-aki being the second case of total semantic bleeding suggested above). Under this analysis, then, *-i and *-aki(ni) were never independent transitive markers at the same period.

Second, while a formative bled completely of its meaning can be said to function as a category marker, it does not necessarily follow that all category markers are completely devoid of meaning. I would like to suggest that category markers can, in fact, retain semantic content under the following characterization of the notion lexical category marker:

A lexical category marker is any formative, in a construction directly dominated by a lexical

category, which has the following properties:

- i) its meaning is inherent in the dominating category and/or
- ii) the meaning contrast it signals is a necessary contrast for the dominating category as it is defined in the language in question

Under this characterization, Mokilese -i is a lexical category marker because it marks the fact that the element to which it is suffixed is a transitive verb. Similarly, Mokilese -ek is a lexical category marker because it marks forms which all Mokilese transitive verbs must have in order to appear in the non-transitive syntactic constructions of the Mokilese transitive verb syntactic paradigm. Finally, under the above characterization, the Mokilese possessive suffixes are also lexical category markers since they signal a set of contrasts necessary for all members of the category inalienable noun; that is, the full range of possible possessors for the class of nouns that must, in all their occurrences, be possessed.

This section has attempted to characterize the process of semantic bleeding as a mechanism of semantic reanalysis and categorial change. We have noted that the change from major to minor category status involves semantic bleeding, as in the change from POC *lako 'to go' to MOK la 'away'. The same is true of cases of semantic reanalysis such as the transfer of perfective aspect marking function to the directional enclitics. We pointed out that the 'bleeding' is gradual and only reaches completion when the sole remaining function of a

formative is what we have termed category marking. While it is perhaps not proper to say that semantic bleeding 'causes' categorial change, it appears to be a necessary concomitant of such change. The process requires further study.

We also suggested, at this point rather tentatively, that lexical category marking can be noted as a special case of category marking. A lexical category marker can be characterized as a formative that has been sufficiently bled so that whatever meaning or meaning contrast it signals can be viewed as a property of a lexical category of sub-category. We will demonstrate in section 5.7 that the notion is a useful one in giving an account of boundary type changes in Mokilese.

5.6.4 Mechanisms of Categorial Change--A Summary

This section has provided but a few suggestions for the interpretation of categorial change. We noted first that some categorial changes in Mokilese seem to have been the result of morphological reanalysis in accordance with a compositionality constraint. Second, we suggested that many categorial changes seem to have been the result of semantic reanalysis, the formal marking of new semantic distinctions or the reassignment of existing distinctions to new markers. A special instance of such reanalysis is the creation of semantically-based lexical category distinctions, as in the case of the Mokilese Na/Ni dichotomy. A not infrequent result of semantic reanalysis is the semantic bleeding of those formatives that become overt markers of some semantic distinction or of some other categorial distinction. As a special case, we noted the evolution of lexical category markers.

5.7 Category Change and Boundary Type Change

We are perhaps now in a position to comment briefly on the nature of the change from a # boundary to a + boundary, noted at least three times in the history of Mokilese; in the change from $[N\#poss]_{NP}$ to $[N+poss]_{Ni}$ and, on two separate occasions, in the change from $[V\#loc]_{VP}$ to $[V+tr]_{Vt}$. These cases all involve a change in the nature of the dominating category, from phrasal to lexical. Moreover, in all three cases, the affixal element can be considered to have become a lexical category marker after the change.³ We propose then, that the + boundary reflects not, as in SPE, the fact that neither of the adjacent formatives is a member of a major category, but that the affixal formative associated with a + boundary is a marker of the lexical category dominating the construction in which it appears. This interpretation seems to hold for the Mokilese cases considered here. It remains to refine the theoretical principles on which this interpretation is based with respect to other languages.⁴

5.8 Summary

This chapter has investigated the nature of boundary change in Mokilese and has attempted to demonstrate that, in most cases, such change is associated with categorial change. The nature of categorial change, with reference to the history of Mokilese, was explored. We concluded that the change from # to + boundary is associated with lexical category marker status.

Footnotes to Chapter Five

1. As with all the approaches summarized here, Aronoff's has been greatly oversimplified. I trust that, nonetheless, I have not misrepresented his, or other, proposals.

2. I am grateful to Byron Bender for suggesting this example to me.

3. Chomsky and Halle suggest (1968:370) that the change from # to + required in the adjustment of syntactic surface structures like $[_A \# [long]_A \# er]_A$ and $[_V \# [kēp]_V \# d]_V$ to phonological underlying structures like $[_A long + er]_A$ and $[_V kēp + d]_V$ be effected by rules which eliminate a category node (in these cases, a lexical category node directly dominated by the same lexical category node). This proposal differs markedly from the one suggested here in that it involves a readjustment rule (a device, as already pointed out, of little historical explanatory value) that, in our terms, is superfluous, since a + boundary would be assigned to the above syntactic surface structures by the convention proposed here in any case.

4. We have not considered the full range of uses to which the boundaries # and + have been put in the analysis of English; for example, Aronoff's claim (1976:121ff) that the distinction between pairs like:

a.	b.
cómparable	compárable
préférable	preférable
divisible	dividable
perceptible	perceivable

is one of boundary type, + in the a. cases and # in the b. cases. Many alternative approaches come to mind. The one I would put forward tentatively here is that both columns in fact involve the same + boundary, the distinction between them being that the a. cases are listed independently in the lexicon and are not derived by a process analogous to a word formation rule, while the b. cases represent the output of a productive process deriving -abl adjectives from listed verbs. I cannot explore the implications this suggestion holds for a model of derivational morphology here, however.

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