

KUNWINJKU

A Language of
Western Arnhem Land

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fulfilment of the requirements
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Except where otherwise acknowledged in the text this thesis represents the original research of the author.

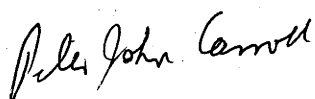

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EXPLANATORY NOTES

ABBREVIATIONS

A	Agent, Transitive Subject
ABL	Ablative
C	Consonant
CAUS	Causative
COM	Comitative
CONT	Continuous
DE	Demonstrative
du	Dual Number
exc	Exclusive (of hearer)
f	Feminine Gender
GEN	Genitive
hum	Human
IMP	Imperative
IMPLIC(I)	Implicated
inc	Inclusive (of hearer)
INSTR	Instrument
m	Masculine Gender
N	Noun
NEG	Negative
NP	Noun Phrase
O	Object
PART	Particle
pl	Plural Number
PREP	Preposition
PRO	Pronoun
REFL	Reflexive
REL	Relative Pronoun/Relativiser

S	Subject
SE	Sentence
sg	Singular Number
T	Transitive
V	Vowel (in phonology, e.g. CVC) Verb (in syntax, e.g. AVO)
VP	Verb Phrase

SYMBOLS

'	Stress
∅	Zero Form
\$	Syllable Boundary
#	Word Boundary
+	Morpheme Boundary
+H	Includes Hearer
+S	Includes Speaker
-H	Excludes Hearer
-S	Excludes Speaker
/	Alternative Forms
/ __ V	In the Environment of V
/x/	x is a Phoneme
1	First Person (exclusive)
1&2	First and Second Person (First Person Inclusive)
2	Second Person
3	Third Person
x → y	x becomes y
~	Alternates with

ALPHABETICAL ORDER

The alphabetical order used for Kunwinjku is:

a b d dj e h i k l m n ng nj o r rd rl rn rr u w y

TEXTUAL EXAMPLES

Examples cited in the thesis and the two texts given in Appendix B are presented in three parts. The first line is Kunwinjku text in which spaces indicate word boundaries and dashes indicate morpheme boundaries. The second line provides literal glosses giving meanings by word and

grammatical information by symbol and abbreviation. As far as is possible each literal translation of line two commences under the beginning of the appropriate morpheme of line one. The third line provides a free English translation with additional and explanatory information in parentheses. The symbols in the square brackets at the end of the first line of each example are a code that indicates the particular informant and the story from which the example is taken. Examples without a square bracket reference are from elicited material, which has usually been indicated in the discussion.

ABSTRACT

Kunwinjku is a prefixing language with noun classification, spoken at Oenpelli and known in other areas of Western Arnhem Land in the Northern Territory of Australia. Its traditional territory is adjacent to other prefixing languages such as Maung, Gunbalang, Dangbon, Djeibmi and Mengerr. Not all of these languages have noun classification.

Kunwinjku has an extensive prefixing system in a complex verb morphology. Suffixes also occur with the verb to indicate tense, mood and aspect. A few local cases, but none of the major syntactic cases, occur with nominals. One part of the pronominal system differentiates four persons and three numbers, while the other part only differentiates three persons and two numbers.

This thesis is designed to supplement and correct (in part) the published grammar (Oates 1964). There are two main parts, Phonology and Syntax. Morphology, which was the main section in Oates, is considered in passing when it is pertinent to matters being discussed in the two main sections. Aspects of the morphology can be seen in different sections of the thesis - pronominal system (section 5.1.4), verbal morphology (sections 5.1, 5.2, 7 and Appendix A), nominal prefixing (sections 5.1.2, 8.3.3) and nominal suffixes (section 8.3.5).

The phonemic system proposed has one less phoneme than that of Oates (no laminal lateral) and is justified by minimal and near minimal contrasts (section 3). The phonemic status of glottal stop is considered (section 2.9). Natural classes are established by distribution patterns of the phonemes. Prefixing and suffixing alternations are discussed and a distinctive feature classification is proposed. Principles proposed by Ladefoged (1971) are followed and some of the features proposed have a phonetic rather than a classificatory basis. A multivalued feature of vowel height is shown to be more adequate to describe the vowel raising that occurs in some verb suffixes.

The syntactic discussion is basically a presentation of surface structure with concentration on the constituents of a simple sentence and their order. It is proposed that the underlying order is that

found in the prefixing system which differs from the most frequent surface order. A short section indicates some of the ways in which one simple sentence may be subordinated to another.

The appendixes contain a paper on Kunwinjku verb suffixation and two texts with translations.

INTRODUCTION

1 KUNWINJKU

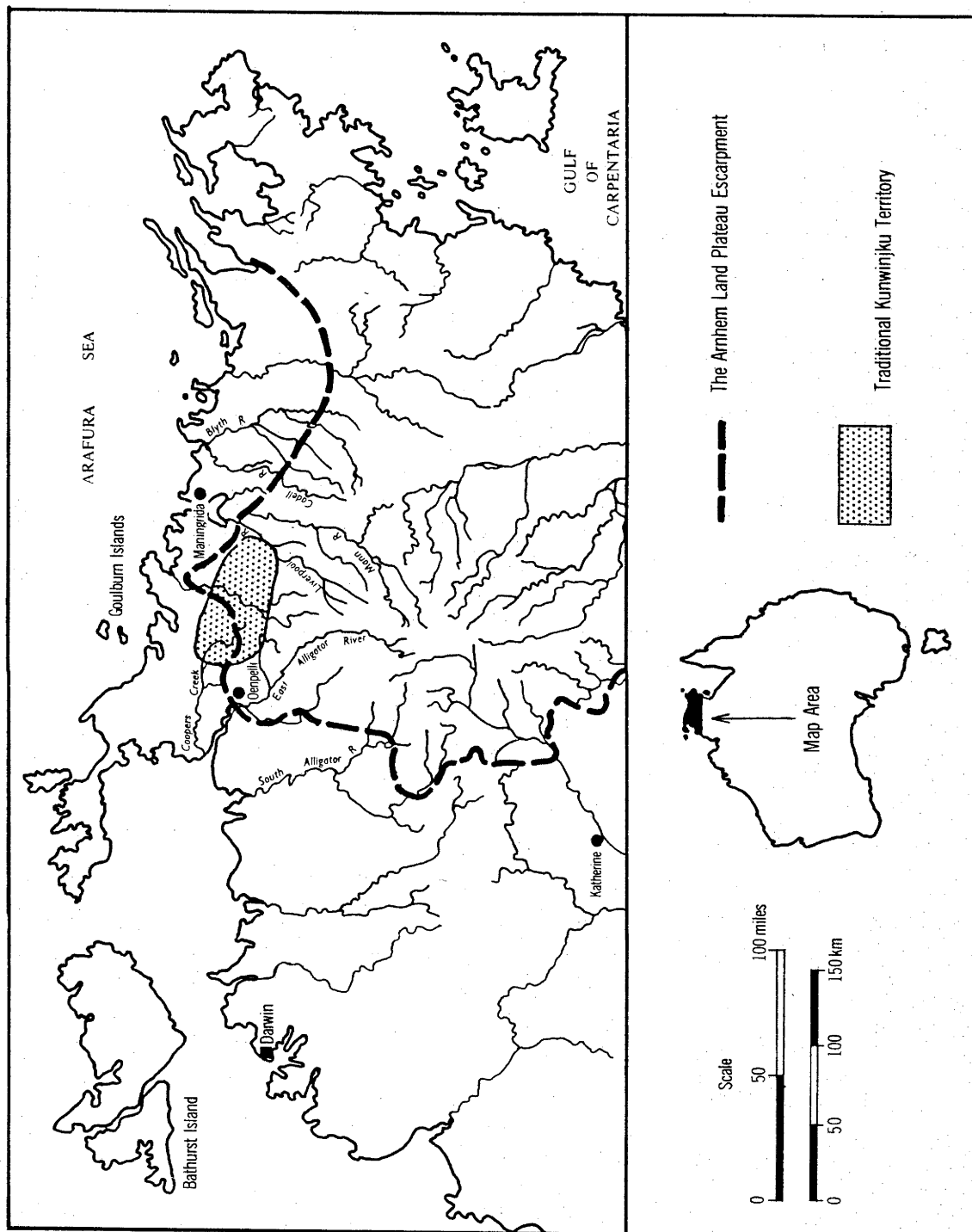
This is the language spoken by Aboriginal people at Oenpelli in the Northern Territory. It is said to be known or understood by Aboriginals within the area bounded by Darwin, Goulburn Island, Maningrida and Katherine (see map). The population of Oenpelli and its outstations is 600, and there would be another 300-400 in the larger area who know Kunwinjku, though for some of them it would be a second language.

The traditional spelling of the language name has been Gunwinggu. My research has indicated that the nasal at the end of the second syllable is a laminal nasal not a velar nasal. This has been the basis for the spelling Gunwinjgu as used by the Australian Institute of Aboriginal Studies (see Appendix A). Kunwinjku people are aware that white Australians say their language name with a velar nasal and in conversation with them will say the word in this way, though amongst themselves they use the laminal nasal. The spelling of the name used in the thesis is that of the orthography adopted by the Oenpelli Literature Project (see section 2).

1.1 TRADITIONAL TERRITORY

The nominal root -winjku means 'fresh water' and the Kunwinjku are said to be the fresh water people of Western Arnhem Land. Their territory is approximately twenty miles from the coast at its closest point and this distinction is important. When Kunwinjku people visit relatives at coastal centres (e.g. Goulburn Island and Maningrida) a frequent complaint is that there is 'no beef'. I interpret this to be a complaint against the predominance of sea foods in the diet there. Kunwinjku people much prefer meat, such as kangaroo, emu etc. from a traditional perspective and also bullock and buffalo from the Oenpelli abattoirs. On one occasion I was camping with a group of Kunwinjku people when they caught a salt water fish that had been trapped in one of the billabongs after the end of the wet season. To my surprise they did not eat it, and gave the reason that they, as fresh water people, did not know the proper way to prepare it. We were in an area where there was good hunting and no need for them to use it. Should however there have been a lack of preferred food, and hungry people, I have no doubt that it would have been eaten.

The traditional territory of the Kunwinjku stretches from the upper reaches of the Coopers Creek, north of Oenpelli, to the Liverpool



River, south-west of Maningrida. It extends into the sandstone plateau and escarpment to the south. The area is shown approximately on the map and includes hills, plains, woodland, swamp and sandstone. The rivers provide a useful guide to divisions within the Kunwinjku - those whose country is adjacent to or near Coopers Creek, or the Gumaderr or Liverpool Rivers. Within this area there are over forty land-owning clans (kunmokurrkurr), membership of which is determined by paternal descent. There are differences linguistically and socially between groups of Kunwinjku east and west of the Gumaderr River.

Neighbouring languages include Gunbalang to the north-west between the mouths of the Gumaderr and Liverpool Rivers, Dangbon to the south and south-east between the Liverpool, Mann and Gumaderr Rivers, Maung to the north of Coopers Creek, who are now settled at Goulburn Island, and the Djeibmi south and south-east of Oenpelli between the East and South Alligator Rivers. Kunwinjku groups near the border with these other languages are referred to as 'Dangbon side' or 'Maung side' etc. This indicates, among other things, that intermarriage occurs between this group of Kunwinjku and the other group concerned, and the link is reflected in the speech of the particular Kunwinjku group.

To the west of the Kunwinjku area, in the actual region of Oenpelli, there were a number of small language groups that are almost extinct - Mengerr, Erre, Uningangk and Amurrak. Remnants of some of these groups live at Oenpelli and my preliminary investigations have revealed that those languages are much closer to one another than any of them are to Kunwinjku. Mengerr (Mengeri) was one of the languages studied by Harris (1969). These other languages were located on the black soil plains in the Oenpelli area and I intend on my return to Oenpelli to study these languages further to determine the extent of their relationship to Kunwinjku and to the salt water languages of the north (e.g. Maung, Iwaidja, Marrgu).

1.2 SOCIAL SITUATION

Oenpelli became a mission of the Church Missionary Society (C.M.S.) in 1925. It is now an independent Aboriginal community, with its own governing council. Financial and other assistance is received from government agencies such as the Departments of Aboriginal Affairs, Education, Health and Northern Australia. Advisers employed by the Oenpelli Council include missionaries of the C.M.S. as well as others. Events before and after 1925 have had an effect on the Oenpelli of today and on the Kunwinjku people.

The explorer Ludwig Leichhardt passed near to Oenpelli in 1845 while travelling from Brisbane to Port Essington on the north-west tip of Arnhem Land. He spoke with Aborigines not far from the site of Oenpelli and recorded some of their words (Leichhardt 1847:502-518). Aborigines have shown me a place about eight miles distant from Oenpelli where Aborigines first saw a white man, possibly Leichhardt.

In the 1880s buffalo shooters moved into the Alligator Rivers area, where water buffalo, released from abandoned military settlements on the northern coast, had spread and multiplied. One of these shooters was Paddy Cahill who settled in the Oenpelli area and in 1906 took out a dairy lease on the present site of Oenpelli. He played host to Baldwin Spencer in 1912 (Spencer 1914:ix), and in 1916 the government took over Cahill's property and established an experimental dairy with Cahill as Manager. After the First World War industrial troubles in Darwin brought the dairy experiment to an end and a period of inactivity followed before the government invited the Church Missionary Society to accept responsibility for Oenpelli.

In the few years before 1925 many Aborigines left Oenpelli and went to work on various stations further west. These were members of smaller groups from the plains around Oenpelli (Mengerr etc.). After the first C.M.S. missionaries began work at Oenpelli members of the Kunwinjku tribe began to visit Oenpelli. Initially these were the group whose country was near the Coopers Creek. Over a period of approximately forty years the Kunwinjku people left their country and settled at Oenpelli. There was no large scale migration but gradually occasional short visits became longer and more regular till most people spent most of their time at Oenpelli and made occasional visits to their own country or to other settlements.

Nearly all of these people accept the identification as Kunwinjku, though there are differences between the speech of people from different parts of the Kunwinjku area. Some of the Aborigines disregard these differences, equating them with the different type of English spoken by Australians of different background, by British people and by Americans. The existence of these different groups side by side has had an effect on the language itself. This can be seen in the noun classification system (section 8.3.3), in which the use of prefixes and concordant adjectives with nouns is disappearing. Some Aboriginal parents claim that their children no longer speak their own family language. This applies particularly to families from the borders of the Kunwinjku area.

Their children follow the linguistic habits of their peers rather than their parents.

Uranium discoveries in the area (the biggest deposit and the richest deposit in the world) have forced Aboriginals to voice their concern for their traditional country and the many Mythological Sites within it. This has been part of the general move for land rights within Arnhem Land, but as early as 1967 Aboriginal groups began to leave Oenpelli and establish outstations in their own country. There have been six such groups whose distance from Oenpelli varies from ten to sixty miles. These groups still retain their links with Oenpelli and if government policy allows them to retain a measure of independence it will be interesting to see if further dialectal differences develop as they remain settled in their own country.

1.3 RESEARCH AIMS AND FIELD WORK METHODS

Following initial linguistic studies at Monash University and the Summer Institute of Linguistics (S.I.L.) I became the resident linguist of the C.M.S. at Oenpelli in 1967. My task was to learn about Kunwinjku language and culture with the following practical aims: (i) to help Kunwinjku people record their legends and traditions and develop a body of Kunwinjku literature; (ii) to begin a programme of vernacular literacy under the control of the Oenpelli council, and primarily for adults (this has provided material and Aboriginal instructors for the bilingual programme introduced into the Oenpelli school in 1975 and 1976); (iii) to help interested Europeans to learn Kunwinjku and to better understand the Kunwinjku people they are working with; (iv) to translate the New Testament for the Oenpelli church.

During my initial years I worked regularly with three men, Anchor Wurrkidj, Sandy Naren and Jacob Nayinggul, and in 1969-70 attended the S.I.L. advanced course (in Brisbane). Subsequently I continued to work with Jacob and also consulted many of the Oenpelli artists. These men told me traditional stories, which have been recorded and transcribed and processed in a computer concordance program to give a print-out of every occurrence of each word and morpheme (in these texts) in alphabetical order and with a limited context. This has proved a valuable research and reference tool, and the stories provided basic linguistic data for my research.

The development of the Oenpelli Literature Project in fulfilment of the literature and literacy aims of my research has provided a group

of literate Kunwinjku speakers. Consultation with them has deepened my understanding of many aspects of the language.

The aim of this thesis is to supplement the tentative grammar already published (Oates 1964). It has an extensive discussion of phonology particularly in relation to recent developments in generative phonology and a consideration of some aspects of the surface syntax. Morphology is treated in passing where pertinent to the discussions of phonology and syntax. On the completion of this thesis I will return to Oenpelli to continue my research towards the aim of producing a comprehensive grammar, to which it is hoped Kunwinjku native speakers will make a major contribution.

1.4 THE KUNWINJKU LANGUAGE

Kunwinjku is a verb-prefixing noun-classifying language (Capell 1956:32). Four classes of nominals are distinguished by prefix, though not all nouns have a prefix. Verb prefixes indicate pronominal subject, agent and object, incorporated noun subject, agent and object, adverbial modifiers and aspect. Two derivational prefixes are part of the verbal complex. Tense, mood and aspect are indicated by verb suffixes.

The pronominal system has two sub-types, one with a singular, dual and plural number distinction as well as marking first person for the inclusion and exclusion of the hearer (the traditional three-person system has been reinterpreted as a four-person system). The other has no inclusive exclusive distinction in first person and only a singular and non-singular distinction in number.

The phonology is represented by stops and nasals at five places of articulation, with laterals and rhotics at two of these. There are two semi-vowels and five vowels. Glottal stop is a phoneme.

Syntactic cases do not occur but there are some local cases indicated by nominal suffixes. The most frequent order of constituents in a sentence is agent, verb, object, which is interpreted as a development from an underlying order agent, object, verb.

In a classification based on cognate densities (O'Grady *et al.* 1966:29-31) Kunwinjku was grouped as a related language to Dangbon in the Binin subgroup of the Gunwinggic Group. Gunbalang was the member of the other subgroup. Rembarnga was the member of another Group which with the Gunwinggic Group was part of the Gunwingguan Family. Other languages I have referred to, such as Maung, Iwaidja, Amurrak, Mengerr, Erre and Uningangk, were members of other families. A similar outline is presented in Oates and Oates (1970:7-13). Harris (1969:

150-151) as a result of her comparative study lists Kunwinjku and Djeibmi as dialects of Kunwinjku which is a related language to Gunbalang and Dangbon, which are all apart of the Gunwinggic Group of the Gunwingguan Family.

1.5 LITERATURE

The language and culture of the Kunwinjku people have been studied by a number of anthropologists and linguists. As a group they are often specifically referred to in the literature, and are also included in general references such as 'people of western Arnhem Land' or 'people from the Alligator Rivers area' etc. Ronald and Catherine Berndt have reported extensively on Arnhem Land and its people. One volume (Berndt and Berndt 1970) was specifically on the Kunwinjku. There are frequent references to the Kunwinjku, both specific and general, in their introductory book (Berndt and Berndt 1952) and in their comprehensive volume (Berndt and Berndt 1964). Baldwin Spencer (1914, 1927) has also reported on the anthropology of the area.

The first linguist to study and record Kunwinjku was Arthur Capell, who published his findings in a number of early articles (1940, 1942, 1943). He has also referred to the language in later works (1956, 1967). In 1952 the language was the subject of an M.A. thesis for Sydney University (Oates 1964), which I have referred to in my discussions. Joy Harris (1969) included it in her comparative study of the Gunwingguan family of languages for a Ph.D. thesis at the Australian National University. Björn Jernudd (1974) conducted a palatographic study of Kunwinjku articulation which is one of a very few such studies of Australian Aboriginal languages.

PHONOLOGY

2 SEGMENTAL PHONEMES AND THEIR ARTICULATION

Kunwinjku has five vowels, sixteen consonants, and glottal stop as segmental phonemes. Consonants have five points of articulation and five different types of articulation. Glottal stop is interpreted as a segmental phoneme, restricted in occurrence to the syllable final position. The five vowels contrast in height between high, mid and low, and between front, central and back.

<i>Manner of Articulation</i>	<i>Point of Articulation</i>	<i>APICAL</i>		<i>PERIPHERAL</i>	
		<i>Alveolar</i>	<i>LAMINAL Retroflex</i>	<i>Velar</i>	<i>Bilabial</i>
Stop		d	rd /ɖ/	dj /ɡ/	k /g/ b
Nasal		n	rn /ɳ/	nj /ŋ/	ng /ŋ/ m
Lateral		l	rl /ɭ/	-	-
Rhotic		rr /r/	r /ɻ/	-	-
Semi-vowel		-	-	y	w
Glottal Stop		h /ʔ/			
<i>Vowels</i>	<i>Front</i>	<i>Central</i>		<i>Back</i>	
High	i	-		u	
Mid	e	-		o	
Low	-	a		-	

Table 1 Segmental Phonemes

2.1 APICAL

2.1.1 Alveolar

Stop 'd', Nasal 'n', Lateral 'l', Rhotic 'rr' /r/.

The active articulator is the tongue tip which makes contact with the front of the alveolar ridge, just behind the top teeth, a little more fronted than the alveolar articulation in English.

2.1.2 Retroflex

Stop 'rd' /ɖ/, Nasal 'rn' /ɳ/, Lateral 'rl' /ɭ/, Rhotic 'r' /ɻ/.

The active articulator is the tongue tip which makes contact with the back of or just behind the alveolar ridge. It is difficult for an English native speaker to accurately and consistently distinguish between the two Kunwinjku apical articulations. This is because the English alveolar articulation normally occurs in a position that is between that of the two Kunwinjku apical articulations.

2.1.3 Neutralisation

The retroflex consonants are restricted in their occurrence, and in a number of positions the contrast between retroflex and alveolar consonants is neutralised. The retroflex nasal does not occur in the word initial position. For some speakers the retroflex lateral and stop do not occur in the word initial position, but for other speakers they have a limited frequency in that position. The alveolar rhotic does not occur in the word initial position and the retroflex rhotic does not occur in the syllable coda.

2.2 LAMINAL

Stop 'dj' /g/, Nasal 'nj' /ŋ/, Semi-vowel 'y'.

The active articulator is the blade of the tongue which makes contact with an area of the mouth that may extend from the palate to the lower teeth. In a palatographic study, Jernudd (1974:98) gave the following articulatory interpretation for the laminal stop and nasal:

In all cases a substantial part of the tongue (the dorsal *and* predorsal areas) articulates on a place of articulation that stretches from the dental to the palatal positions, sometimes more front, sometimes more back, sometimes over the whole of the available area.

This gives a wide-ranging place of articulation, and following Dixon (1970:81-82) I refer to this group as 'laminal'.

An investigation was conducted to determine if there is any allophonic variation in the place of articulation of the laminals in relation to contiguous vowels. Its aim was to determine if there were any patterns of complementary distribution between dental and palatal laminals in relation to front or back vowels. No such patterns were found.

2.3 PERIPHERAL

2.3.1 Bilabial

Stop 'b', Nasal 'm'. Articulation is between the two lips.

2.3.2 Dorso-velar

Stop 'k' /g/, Nasal 'ng' /ŋ/.

The active articulator is the dorsal part of the tongue which makes contact with the velar area. The articulation may be more fronted or backed depending on whether the contiguous vowel is a front or back vowel.

2.3.3 Semi-vowel

The semi-vowel 'w' has not been classified as either bilabial or dorso-velar. It patterns as a bilabial consonant in some areas and as a dorso-velar in other areas. To refer to it as the peripheral semi-vowel provides adequate distinctiveness.

2.4 STOPS

Stops occur at five points of articulation and may be geminate and non-geminate. In the syllable initial position they are voiced and in the syllable final position they are voiceless. In word final position they may be aspirated.

Some speakers have an unusual feature in their occasional aspiration of word final stops, particularly velar stops. This involves a slightly longer than normal closure phase, followed by a glottal stop with an accompanying nasal release of air. It seems to be limited to some people from the Gumaderr River area (50 miles east of Oenpelli) and may be a dialectal or idiolectal feature. The occurrence of oral stops with a delayed, glottalised release of air through the nasal passage has also been reported in languages from north-eastern Arnhem Land (Schebeck n.d.).

A full investigation of this feature in Kunwinjku has not been carried out, but as it occurs word finally before a pause, its function may be to mark the end of a phonological phrase. Osborne (1974:11) reported a similar function for the glottal stop in Tiwi. Note, however, that he is discussing a glottal stop and not a glottalised oral stop.

The significance of the glottal stop in Tiwi depends on the restriction of its occurrence to sentence final position. It signals the ends of sentences.

The glottal stop in Kunwinjku does have distinctive functions and needs to be represented in the orthography. However the glottalisation of oral stops by some speakers of Kunwinjku is not distinctive, and does not have the direct relation to the end of the sentence that the glottal stop does in Tiwi, but it does have a function in relation to

pauses in speech and it appears to be a similar phenomenon to that reported by Schebeck.

2.5 NASALS

Nasals parallel the oral stops with consonants of both series occurring at each of five points of articulation, and may be geminate and non-geminate.

2.6 LATERALS

Laterals occur at the two apical points of articulation. A third lateral is included by Lynette Oates in her analysis (1964:11). It is called 'alveopalatal' which would be laminal in my terminology, and she symbolised it by 'lj'. It is a rare phoneme for which I have only been able to find eight examples in her grammar. This 'alveopalatal' or laminal lateral is not present in the speech of my informants who use the other laterals as indicated.

	<i>As Oates</i>		<i>The Author</i>
p. 11	mililj	'small fish trap'	milirl
p. 15	gungedjeljg	'cold weather'	kunkedjelk
p. 16	guljburu	'tomahawk'	kurlbburru
p. 26	-guljg	'soil, earth'	kunkurlk
p. 27	-biljmurŋ	'corroboree stick'	-birlmurrng
	-yalj	'string'	-yarl
p. 54	-biljbilj-me	'to beat time'	-birlbbirl-me
p. 104	mangaralaljmayn	'cashew nut'	mankarralarlhmanj

2.7 RHOTICS

Rhotics occur at the two apical points of articulation; the alveolar rhotic is a flap and the retroflex rhotic is a resonant. The two rhotics contrast intervocalically following an open syllable but are restricted in their occurrence elsewhere, where the contrast is neutralised. The resonant occurs only in the syllable initial position (never word finally nor preceding a consonant). The flap never occurs word initially, but does occur syllable initially, following a CV syllable (i.e. intervocalic). It also may occur in the syllable final position of CVC syllables and as the first consonant in the consonant cluster in CVCC syllables.

The alveolar flap alternates with the alveolar stop following some prefixes in both verbs and nouns (see section 5.1 for discussion and examples).

2.8 SEMI-VOWELS

Peripheral and laminal semi-vowels occur. Jernudd (1974:100) described the articulation of the laminal (palatal) semi-vowel as:

the imprint is divided - what there is covers and follows the side teeth, but not so as to cover the front teeth. The groove in the tongue that thus did not produce an imprint allows air to pass between the palate and the articulator, to render a fricative or vowel-like sound.

The peripheral semi-vowel is not specified for labial or velar articulation. Phonotactics and other factors discussed below suggest that velar characteristics are the more important. The semi-vowel is labial in terms of the lip rounding that is part of the articulation, and back (or velar) in terms of the tongue position which is very close to, if not the same as, the high back vowel 'u'.

2.9 GLOTTAL STOP

Glottal stop has been classified as a segmental phoneme. As it only occurs at the end of syllables, it would be possible to regard it as a phonemic syllabic feature. The following factors are pertinent in deciding which of these alternatives should be adopted.

(i) There is phonemic contrast between the glottal stop and at least some of the oral stops (it is only the less common oral stops - retroflex and laminal - for which no contrast has been found).

bek	'death adder'	beh	'from'
yok	'bandicoot'	yoh	'yes'
manbolk	'place'	manbolh	'road'
birrabkeng	'he met him'	birrahkendoy	'he put him in it'
djudmeng	'he pierced it'	djuhmeng	'he swam'
(with a stick)			

(ii) There is contrast between the presence and absence of the glottal stop:

(a) kinship terms and their vocatives:

djedje	'mother's child'	djedjeh	'child' (as addressed by its mother)
ngabba	'father'	ngabbah	'father' (as addressed by his children)

(b) continuous aspect in non-past verb forms:

nga-re	'I (will) go'	nga-h-re	'I am going'
nga-ngun	'I (will) eat'	nga-h-ngun	'I am eating'

(iii) Glottal stop has a different distribution from the oral stops. They may occur either syllable initially or syllable finally, but glottal stop only occurs syllable finally. If it is interpreted as

a segmental phoneme it would be the only consonant not to occur in the syllable initial position.

(iv) Kunwinjku has three non-suspect syllable types (see section 4 below), CV, CVC, and CVCC. Glottal stop may occur following each of these three syllable types. If glottal stop is interpreted as a segmental phoneme, this will mean the creation of an additional syllable type, CVCCC, with glottal stop being the only consonant to occur in the syllable final position. This syllable type is very rare and has only been found in two words:

nakurrngh 'son-in-law' (as addressed by his mother-in-law)
kerrnghkerrngnge 'new'

In section 2.4 above I have briefly reported the phenomenon of oral stops with a glottalised release, which has been interpreted as being non-phonemic. It is possible that further investigation may indicate that this feature is phonemic, at least in the particular dialect area where it appears to predominate. If this interpretation proved to be so, then it would provide more examples of this CVCCC syllable type.

In my previous work (Carroll n.d.) and also in Oates (1964:9) the glottal stop has been interpreted as a segmental phoneme. McKay in his recently completed study of Rembarnga (a language related to Kunwinjku) has proposed that the glottal stop be treated as a 'phonemically distinctive syllabic feature' (1975:37). He justifies this interpretation in an extended discussion, citing factors similar to those I have indicated above, and also includes morphological evidence from Rembarnga not found in Kunwinjku.

A similar analysis is a possibility for Kunwinjku, which would mean that the glottal stop would be interpreted as a phonemic syllabic feature that occurs in the syllable final position. Or in other words the glottal stop is the phonetic realisation of a distinctive feature of the (whole) syllable. The glottal stop in Kunwinjku needs to be written because of its distinctive function in minimal pairs and because of the grammatical significance attached to its presence compared with its absence.

Capell (1967:91-92) raises the possibility of glottalised consonants other than stops occurring in Kunwinjku. He suggests a word such as kunmilh 'forehead', the final syllable of which would be viewed as CVCC if the glottal stop is interpreted as a segmental phoneme, could also be interpreted as a CVC syllable by regarding the 'lh' cluster as a glottalised consonant. He does not develop the

suggestion and it seems it would be necessary to posit two series of consonants - glottalised and non-glottalised. He would still need to account for words such as yoh 'yes' in which the glottal stop follows a vowel, but this could be done by two series of vowels - glottalised and non-glottalised.

This suggestion with its duplication of phonemes is unwieldy, but with its stress on the syllable closure feature of the glottal stop it points to the solution adopted by McKay. Indirectly it raises the point I have already touched on, as a possibility, in relation to my interpretation of the glottalised oral stops. A glottal stop following an oral stop is interpreted by me as a feature of the release of the stop (in free variation with oral stops without this feature). Elsewhere the glottal stop is interpreted as a segmental phoneme. As I have pointed out above this is a matter for future investigation.

Returning to McKay's proposal, Rembarnga has morphological evidence supporting the syllabic interpretation that is not found in Kunwinjku. In the future tense formation of some verbs, repetition or insertion of consonants occurs. For verb stems ending consonant and glottal stop, it is the preceding consonant and not the glottal stop that is repeated. Similarly two suffixes with initial stops insert a homorganic nasal when suffixed to stems without a final oral stop or nasal. In stems ending vowel and glottal stop, the nasal is inserted following the vowel. The evidence from these two areas of Rembarnga morphology indicates that in both cases the glottal stop is treated differently from other consonants (McKay 1975:38-39).

The evidence from Kunwinjku is the opposite, in that glottal stop is treated in the same way as the other consonants. Alternation between the alveolar stop and the alveolar rhotic occurs after certain prefixes (see section 5.1). In part the alternation can be described as saying that the rhotic occurs intervocally and the stop occurs word initially or following a consonant.

nga - rrurndeng	'I will go back'
durndi	'he went back'
ka - rrurndeng	'he will go back'
kam - durndeng	'he will come back'
kah - durndeng	'he is going back'
kamh - durndeng	'he is coming back'

The glottal stop affects the alternation in the same way as other consonants.

I have already referred to the unique syllable (CVCCC) type that would have to be posited if glottal stop were interpreted as a segmental phoneme. Here again the Rembarnga evidence is much stronger than the Kunwinjku evidence. In Kunwinjku this syllable type $CVC_1C_2C_3$ is realised by the alveolar rhotic 'rr' as C_1 , by the velar nasal 'ng' as C_2 , and by glottal stop as C_3 , with only two words found to exemplify the syllable type. In Rembarnga C_1 may be represented by any of the four liquids, 'l, ɭ, r, ɾ', or by the laminal semi-vowel 'y', C_2 by the velar nasal 'ŋ' and C_3 by glottal stop.

In two crucial areas Kunwinjku does not have as strong evidence as Rembarnga for interpreting glottal stop as a syllabic feature. I have chosen to interpret the glottal stop in Kunwinjku as a segmental phoneme with restricted distribution, because Kunwinjku does not have evidence comparable to that found in Rembarnga that would justify adopting McKay's interpretation of glottal stop in place of its traditional classification as a segment, and because there is morphological evidence in Kunwinjku to show that glottal stop is treated like other consonants.

2.10 VOWELS

Five vowels occur, as is the case with many of the non-Pama-Nyungan languages of the north and north-west parts of the continent. The vowels are set out in Table 2.

	<i>Front</i>	<i>Central</i>	<i>Back</i>
High	i		u
Mid	e		o
Low		a	

Table 2 Kunwinjku Vowels

The basic phonetic realisations of these vowels are plotted on the standard I.P.A. Chart (I.P.A. 1949:5-6) in Table 3. The I.P.A. Cardinal Vowels are marked on the outside of the chart. The Kunwinjku vowels are plotted inside the figure.

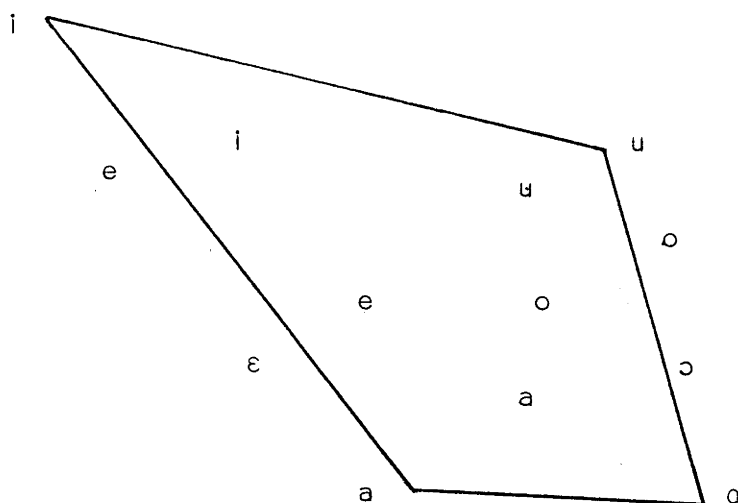


Table 3 *Kunwinjku Vowels in relation to the I.P.A. Cardinal Vowels*

In closed syllables there is a tendency for the more close equivalents of these basic vowel realisations to occur.

2.11 Diphthongs

The only phonetic vowel clusters that occur in Kunwinjku have a high vowel as the second member of that cluster. This second vowel is in non-syllabic position, when compared with the non-suspect syllable patterns of the language, and is interpreted as the corresponding semi-vowel, thus making the phonetic vowel cluster a diphthong. In some instances this establishes consonant clusters at the end of a syllable but such clusters of consonants are a feature of the language as evidenced by the CVCC syllables in words such as kunrurrk 'house' and kundulk 'tree'.

Eight diphthongs occur. Each of the non-high vowels glide to both high vowels and each high vowel glides to the other high vowel. Examples of the glides are:

- high front to high back 'i^u' interpreted as 'iw'
- kundiw 'liver'
- mid front to high front 'eⁱ' interpreted as 'ey'
- kunney 'elbow'

mid front to high back 'e^u' interpreted as 'ew'

mandjewk 'wet season'

low central to high front 'aⁱ' interpreted as 'ay'

yimray 'come here'

low central to high back 'a^u' interpreted as 'aw'

wurdyaw 'child'

mid back to high front 'oⁱ' interpreted as 'oy'

yoy 'he was asleep'

mid back to high back 'o^u' interpreted as 'ow'

karnbow 'tree snake'

high back to high front 'uⁱ' interpreted as 'uy'

kuluybirr 'fish type'

Two potential diphthongs do not occur. They are

- (i) high front vowel followed by the laminal semi-vowel;
- (ii) high back vowel followed by the peripheral semi-vowel.

This suggests the semi-vowels share height and place features with the corresponding vowels (see section 6.3 for a discussion of Kunwinjku features), i.e.

'y' and 'i' + high - back (3 high multivalued)

'w' and 'u' + high + back (3 high multivalued)

There is a general constraint in the language. The semi-vowel of a diphthong may not be preceded by a high vowel with the same degree of backness in the same syllable. Within the alternations of the verb suffixing system, the sequence vowel + semi-vowel potentially occurs in two of the verb classes. At an intermediate stage in the derivation the sequence 'i y' occurs when the suffix '-y' is added to a stem ending in '-e'. The operation of two rules, vowel raising that changes 'e' to 'i' and 'y' deletion, leads to the occurrence of the vowel 'i' only at the surface level (see discussion in section 5.2.3).

3 PHONEMIC CONTRAST

The phonemic system proposed here is substantiated by the following sets of minimal or near minimal contrasts.¹

3.1 ORAL STOPS

3.1.1 Word Initial Position

d angbalhmeng	'mouth closed'
rd arda	'younger brother'
dj ang	'mythological site'
k ang	'he took it'
b angkerreng	'end of wet season'

3.1.2 Syllable Initial Position

3.1.2.1 intervocalic

yi dd ok	'may be'
nango rd o	'man with leprosy'
nako dj ok	'subsection name'
ko k ok	'older brother'
dolo b o	'bark'

3.1.2.2 following a consonant

kun d ulk	'tree'
kun rd urdu	'heart'
kun dj ud	'neck'
kun k uk	'body'
kun b un	'ankle'

3.1.3 Syllable Final Position

3.1.3.1 word medially

be d berre	'theirs'
kunbe rd kimuk	'a big tail'
de dj madurrrkmeng	'he pulled out roots'
name k be	'that man'
ngabe b ke	'I will appear'

3.1.3.2 word finally

kunda d	'thigh'
kunba rd	'knee'
ngadja dj	'mother's brother'
kunma k	'good'
karda b	'spider'

3.1.4 Apical Contrast

ka dd um	'above'
ka rd ab	'spider'
kunbi d	'hand'
di rd	'moon'
kanma d bu	'wait for me'
ma rd balk	'place'

¹ There are spaces adjacent to the segments being contrasted.

3.2 NASALS

3.2.1 Word Initial Position

n ang 'he saw it'

-

nj ale 'what'

ng alngale 'who'

m ang 'I will get you'

3.2.2 Syllable Initial Position

3.2.2.1 intervocalic

ka n omeng 'he smells it'

ka rn ubirr 'mussel'

ka nj ok 'cousin'

ka ng okme 'he will bark'

denge mok 'a sore foot'

3.2.2.2 following a consonant

kun n ey 'elbow'

-

kun nj am 'intestine'

kun ng ad 'waterhole'

kun ma lng 'spirit'

3.2.3 Syllable Final Position

3.2.3.1 word medially

ma n kabo 'river'

ma rn bom 'he made it'

ma nj bom 'he thanked him'

ngalya ng do 'a spirit'

ma m mam 'father's father'

3.2.3.2 word finally

karrowe n 'he is sick'

nawe rn 'many'

dje nj 'fish'

birriwe ng 'they threw it away'

narange m 'male'

3.2.4 Apical Contrast

ka n dayh 'kangaroo type'

ka rn bow 'tree snake'

yima n 'like'

nama rn de 'devil'

boke n h 'two'

ke rn alk 'ibis'

3.3 LATERALS

3.3.1 Word Initial Position

l odkimuk 'thick'

rl odkimuk 'big splinter'

l oklok 'lizard type'

rl obmeng 'he ran'

3.3.2 Syllable Initial Position

3.3.2.1 intervocalic

kornobo lo	'wallaby'
bo r lo ko	'snake type'
ba l eh	'where'
mandulkda r l eh	'tree'

3.3.2.2 following a consonant

ngan l idkeng	'he pinched me'
kum r l obmeng	'he came running'

3.3.3 Syllable Final Position

3.3.3.1 CVC syllable

kukabe l	'early morning'
kunbe r l	'arm'
namarnko l	'barramundi'
namaddo r l	'bird type'

3.3.3.2 C₂ of C₁VC₂C₃ syllable

kebba l kdjurri	'bird type'
kunba r l kbu	'digging stick'
ba l hmeng	'it was full'
ba r l hmeng	'he peeled it'

3.4 RHOTICS

nga r e	'I will go'
nga r r e	'we will go' / 'you and I will go'
kunka r e	'leg'
kunka r r e	'long ago'
du r uk	'dog'
kurlbbu r r u	'axe'
ko r e	'to, at' (kore ~ kure)
ngo r r ewoneng	'yours' (ngorrewoneng ~ ngurrewoneng)

3.5 LIQUIDS AND APICAL STOPS

3.5.1 Syllable Initial Position - intervocalic

ngu dd a	'you'	ku rd ukadji	'emu'
kurlbbu r r u	'axe'	du r uk	'dog'
kunku l ah	'skin'	kundju r l e	'shade'
kabene d i	'they will stand'	rda r d a	'younger brother' (as addressed by older brother)
ka r r ang	'mother' (as add- ressed by her children)	nawa r an	'rock python'
balaba l a	'table'	da r l eh	'dry'

3.5.2 Syllable Final Position

be d berre	'theirs'	kunbe r d	'tail'
Nimbabi r r	'hill name'	-	
kukabe l	'early morning'	kunbe r l	'arm'

kunbo d me	'back'	bo rd	'fly'
kunwo rr	'leaf'	-	
kordbo l bok	'frog'	bo rl borl	'white ant'

3.6 ORAL STOPS AND GLOTTAL STOP

kaki h	'it's soft'	be h	'from'
kaki d	'sick from sorcery'	be d berre	'theirs'
r di rd	'moon'	kunbe rd	'tail'
nakidjki dj	'spirit'	de dj madur rk meng	'he pulled out roots'
kiki k	'bird type'	be k	'death adder'
bolibli b	'bird type'	be b keng	'he appeared'

3.7 SEMI-VOWELS

w ak	'crow'
y ak	'finished'
w oybuk	'true'
y oy	'he was sleeping'
kun w ok	'word'
y ok	'bandicoot'

3.8 VOWELS

yuw i rrinj	'he did not sleep'
w e rrinj	'he threw himself down'
yaw a rrinj	'he was in want'
w o rrinj	'he gave it to himself'
yaw u rrinj	'young boy'
midbom	'he doesn't know it very well'
med	'wait'
madbom	'he waited'
mod	'fly'
mu dwern	'thick hair'
ngay i meng	'I said it'
ngay e meng	'I was ashamed'
ngay a meng	'I speared it'
kunb e rd	'tail'
kunb a rd	'knee'
b o rd	'fly'

k a r e 'he will go'

k o r e 'to, at'

k u r e d 'camp'

4 DISTRIBUTION OF PHONEMES

4.1 SYLLABLE TYPES

Each of the three syllable types that occur in Kunwinjku must begin with a consonant: CV, CVC, CVCC. However some words do begin with a vowel, e.g. place names inherited from other language groups, Injalak, and loan words for cultural items foreign to the Kunwinjku, adjbudj - 'beach'. In careful speech Kunwinjku speakers insert semi-vowels in the initial position of such loan words, resulting in Yinjalak and wadjbudj.

The status of the glottal stop as a segmental phoneme with restricted distribution has already been discussed (section 2.9). Each of the three basic syllable types may be followed by glottal stop. This establishes another syllable type CVCCC because the glottal stop has been interpreted as a consonant. This additional syllable type is rare, with only two examples in my data, and is being treated as an exception.

CV	syllable + glottal stop = CVC	e.g. yoh 'yes'
CVC	syllable + glottal stop = CVCC	e.g. ngoyh 'ready'
CVCC	syllable + glottal stop = CVCCC	e.g. nakurrngh 'son-in-law' (as addressed by mother-in-law')

Because I am treating this CVCCC syllable type as an exception there is no need to have two sets of syllable types, with and without the glottal stop, so that the CVC syllable type includes the CV syllable + glottal stop. The distribution patterns within the CVCC syllable establish two sub-types, with and without glottal stop.

4.2 DISTRIBUTION WITHIN SYLLABLES

The following general restrictions are part of the distribution patterns:

- (i) Glottal stop does not occur in the syllable initial position.
- (ii) Retroflex rhotic does not occur ~~contiguous with a consonant~~ ~~or~~ in the syllable coda.
- (iii) Retroflex nasal and alveolar rhotic (and for some speakers the retroflex stop and lateral) do not occur in the word initial position.

4.2.1 CV and CVC Syllable Types

$$C_1V(C_2)$$

- C_1 - all consonants but glottal stop occur
 V - all vowels occur
 C_2 - all consonants but the retroflex resonant occur

4.2.2 CVCC Syllable Type

$$C_1VC_2C_3$$

- C_1 - all consonants but glottal stop occur
 V - all vowels occur

Consonant Cluster

4.2.2.1 C_3 is glottal stop

If C_3 is glottal stop, then C_2 may be any nasal, any liquid (but the retroflex resonant), or either semi-vowel. That is all consonants but oral stops may occur before glottal stop in this consonant cluster.

4.2.2.2 C_3 is not glottal stop

C_2 may be either lateral, the alveolar flap, or the peripheral semi-vowel. The non-occurrence of the laminal semi-vowel is regarded as an accidental gap.

C_3 may be labial stop, velar stop or velar nasal. The non-occurrence of the labial nasal is regarded as an accidental gap.

CVCC with glottal stop

C_2	C_3
l	
rl	
rr	
w	
y	
	h
m	
n	
rn	
nj	
ng	

CVCC without glottal stop

C_2	C_3
l	
rl	b
rr	k
w	ng
(y)	(m)

Table 4 Consonant Cluster in the CVCC syllable type

Distribution patterns within this consonant cluster suggest the following natural classes:

- (i) liquids and semi-vowels - occur as C_2 where C_3 is not glottal stop;
- (ii) nasals, liquids and semi-vowels - occur as C_2 when glottal stop is C_3 ;
- (iii) peripheral stops and nasals - occur as C_3 ;
- (iv) stops - only group absent from C_2 when C_3 is glottal stop.

4.3 DISTRIBUTION ACROSS SYLLABLE BOUNDARIES

Clusters of two or three consonants may occur across syllable boundaries. A two-consonant cluster comprises a syllable final consonant and a syllable initial consonant. A three-consonant cluster comprises a syllable final cluster followed by a syllable initial consonant. When the syllable boundary coincides with a morpheme boundary, there are no significant restrictions on the occurrence of phonemes. The general restrictions as set out in section 4.2 still apply. The less frequent phonemes, such as retroflexes, laminals and laterals, do not occur in all possible combinations, but this is interpreted as accidental gaps due to their restricted occurrence in general rather than to any specific distribution within these clusters.

A more significant distribution pattern emerges when intra-morphemic clusters across syllable boundaries are examined. The key position is that of the initial consonant of the second syllable.

4.3.1 CVC syllable without glottal stop

$CVC.C_x$

C_x may be any oral stop, any nasal, or either semi-vowel. That is the liquids are set apart by their absence.

4.3.2 CVC syllable with glottal stop

$CVh.C_x$

C_x may be the labial stop, labial nasal, velar stop or the peripheral semi-vowel, i.e. 'b, m, k, w'. The velar nasal is the only peripheral consonant not occurring.

4.3.3 CVCC syllable without glottal stop

$CVCC.C_x$

C_x may be the labial stop, labial nasal, velar stop or velar nasal, i.e.

'b, m, k, ng' - the peripheral stops and nasals, with the peripheral semi-vowel being the only peripheral consonant not occurring.

4.3.4 CVCC syllable with glottal stop

CVCh.C_x

C_x may be the labial stop, labial nasal, velar stop or peripheral semi-vowel, i.e. 'b, m, k, w'. The velar nasal is the only peripheral consonant not occurring.

In sections 4.3.2, 4.3.3 and 4.3.4 the peripheral consonants are grouped as a class by their occurrence in this C_x position. In each section, one of the peripheral consonants is absent (either the velar nasal or peripheral semi-vowel), which may just be an accidental gap. The velar nasal does not occur following glottal stop.

4.4 NATURAL CLASSES BASED ON DISTRIBUTION PATTERNS

(i) Oral stops - do not occur as C₂ in C₁VC₂C₃ syllables with glottal.

(ii) Nasals - do not occur as C₂ in C₁VC₂C₃ syllables without glottal.

(iii) Liquids¹ - do not occur in intra-morphemic consonant clusters across syllable boundaries following the CVC syllable without glottal.

(iv) Liquids and semi-vowels - occur as C₂ in C₁VC₂C₃ syllables without glottal stop.

(v) Nasals, liquids and semi-vowels - occur as C₂ in C₁VC₂C₃ syllables with glottal stop.

(vi) Peripherals² - occur as C₃ in C₁VC₂C₃ syllables without glottal stop (the peripheral semi-vowel is absent); occur syllable initially in intra-morphemic consonant clusters across syllable boundaries.

¹ The evidence to separate liquids from the class of oral sonorants (liquids and semi-vowels) is not very strong.

² The non-occurrence of stops and nasals as C₂ in C₁VC₂C₃ syllables without glottal stop may be interpreted as a basis for forming a natural class of stops and nasals. However in Kunwinjku there is a stronger case for establishing a class of peripheral stops and nasals. They occur in the C₃ position in these syllables.

5 MORPHOPHONEMIC ALTERNATION

A key aim in my research into Kunwinjku has been that it be of practical value to Kunwinjku speakers and their vernacular literature programme, with the result that I have been more concerned with the surface forms than with the underlying phonological representations. There is little morphophonemic alternation, so that underlying forms would most likely be very similar to the surface forms. Such alternation as occurs is in two grammatical categories: (i) the prefixing systems of both verbs and nouns involving alternation between the alveolar stop and rhotic; (ii) the verb suffixing system involving vowel alternation.

5.1 PREFIXING ALTERNATION

This involves alternation between the alveolar stop and rhotic (flap) in the root initial position of certain verbs and nouns when there is a variation in the preceding prefix.

5.1.1 Verbs

The Kunwinjku verb uses prefixes to mark pronominal subject and object, incorporated noun subject and object, adverbial modifier and aspect.

-durnde	'to go back'	
-durndi	'he went back'	verb root initial 'd'
kum-durndi	'he came back'	CVC prefix
kane-durndi	'you and I went back'	CVCV prefix
nga-rrurndi	'I went back'	CV prefix
yi-rrurndi	'you went back'	CV prefix

5.1.2 Nouns

Kunwinjku has four classes of nouns. Class 1 (prefix na-) is generally masculine, Class 2 (prefix ngal-) is generally feminine, Class 3 (prefix kun-) is neuter generic and Class 4 (prefix man-) is neuter specific. Some nouns do not have a prefix and class membership is determined by the prefix of the concordant adjective.

danek	'clan name'	noun root initial 'd'
ngal-danek	'woman of <u>danek</u> clan'	CVC prefix
birri-danek	'people of <u>danek</u> clan'	CVCV prefix
na-rranek	'man of <u>danek</u> clan'	CV prefix
-dulk	'tree'	noun root initial 'd'
dulkkimuk	'a big tree'	noun root initial 'd'
kun-dulk	'tree'	CVC noun class prefix
ku-rrulk	'in the trees'	CV prefix
-dalk	'grass'	noun root initial 'd'
dalkwern	'thick grass'	noun root initial 'd'
kun-dalk	'grass'	CVC noun class prefix
ku-rralk	'in the grass/bush'	CV prefix

5.1.3 Conditions for Alternation

The alveolar stop occurs word initially, following a consonant and following two-syllable prefixes. The rhotic occurs following an open syllable prefix. The alternation can be stated: a root initial alveolar stop 'd' changes to the alveolar rhotic 'rr' when it follows a word initial CV prefix.

root initial d → rr / # CV + _____

or in terms of the distinctive feature system proposed in section 6:

root initial (-sonorant) → (+sonorant) / # CV + _____
 [-syllabic]
 [+apical]
 [-retroflex]
 [-lateral]

Amongst texts of traditional stories collected during my time at Oenpelli, two words have been recorded that provide exceptions to the above rule.

(i) ka - 'bo - rrulubun 'it dives into water'

(ii) nga - 'dedj - madurkme 'I will pull out roots'

Exception (i) has two open syllable prefixes before the root:

ka - 3rd singular agent or subject, non-past tenses

(see discussion in sections 5.1.4 and 7.3.1)

-bo- incorporated noun root 'water'

The rule will cover this exception, if it is extended so that it applies after a CV prefix following a morpheme boundary as well as after a CV prefix following a word break. Exception (i) with two CV prefixes ('ka' - + '-bo-') provides the environment for this extended rule to operate. Words with a two-syllable prefix (e.g. 'birri-', 'kane-') are excluded.

The revised rule would be:

$$\text{root initial} \rightarrow \text{rr} / \begin{matrix} \# \\ + \end{matrix} \text{CV} + \underline{\hspace{1cm}}$$

Exception (ii) breaks the rule in that the stop occurs following a word initial CV prefix, where the rhotic would be expected. The stop always occurs before a stressed vowel, that is in a stressed syllable. The rhotic occurs following a stressed vowel, that is in an unstressed syllable. The second syllable in exception (ii) is stressed and therefore the stop could be anticipated. I have suspected that stress may be a factor in this alternation but have not included it in this rule as grammatical conditions seem to be required and because a comprehensive analysis of stress has not been carried out. All occurrences of the alternation in nouns and verbs are at morpheme boundaries.

This second exception points to the need to carry out an investigation of stress, which may show that the grammatical conditions are not required. On the other hand further investigation may fail to find other words similar to ngadedjmadurrkme and thus show that this particular word is an exception and that grammatical conditions are required.

5.1.4 The Pronominal System

Alternation between the alveolar stop and rhotic occurs in the pronominal system, but does not seem to be governed either by the above rule or its conditions. The pronominal system may be divided into two sub-systems:

- (i) with no dual and no inclusive-exclusive distinction in first person - the free pronoun in its cardinal and reflexive forms;
- (ii) with a dual and the inclusive-exclusive distinction in first person - the free pronoun in its oblique form and the intransitive verb prefix.

Pronominal systems are traditionally analysed in terms of three persons. The Kunwinjku system, for the oblique forms of the free pronoun and for the intransitive verb prefix, in both form and structure is a four-person system. The additional person category is the 'first person inclusive forms' which I have labelled '1st & 2nd' person. I have retained the number categories, singular, dual and plural. The first and second singular involves two people (speaker and hearer) and the first and second person dual involves three people (speaker and two hearers). For the number classification of these two categories, the Kunwinjku focus is on the actual number of hearers (see section 7.3.1). The pronominal forms are set out in Table 5.

<i>Person</i>	<i>1st (+S -H)</i>	<i>1st & 2nd (+S +H)</i>	<i>2nd (-S + H)</i>	<i>3rd (-S -H)</i>	
<i>Number and Type</i>					
<u>SINGULAR</u>					
Prefix	nga-	ngarr-	yi-	ka-* / ϕ	
<u>Pronouns</u>				<u>Masculine</u>	<u>Feminine</u>
Oblique	ngarduk	ngarrku	ke-	nuye	ngarre
Cardinal	ngaye	-	ngudda	nungka	ngaleng
Reflexive	ngayeman	-	yingan	nungan	ngalengman
<u>DUAL</u>					
Prefix	ngane-	kane-	ngune-**	(ka)*bene-	
<u>Pronoun</u>					
Oblique	ngarrewoneng	karrewoneng	ngurrewoneng**	berrewoneng	
<u>PLURAL</u>					
Prefix	ngarri-	karri-	ngurri-	(ka)*birri-	
<u>Pronouns</u>					
Oblique	ngadberre	kadberre	ngudberre	bedberre	
Cardinal	ngad	-	ngudda	bedda	
Reflexive	ngadman	-	ngudman	bedman	

Table 5 *Pronominal System*

* 'ka-' has been analysed as a third person allomorph, conditioned by tense. It occurs in all non-past tenses. Generally it is omitted in past tenses though some verbs in past tense have the form 'ku-' ~ 'ka-' when the aspect prefix '-m-' occurs. Maung, a language to the north of Kunwinjku, uses prefixes to mark tenses and 'ka-' may be interpreted as an auxiliary tense marker, occurring in third person only. However the occurrence of a demonstrative pronoun, na-ka, ngal-ka, supports the third person interpretation that I have adopted.

** In these dual forms free variation between the vowels 'o' and 'u' occurs. Ngone- and ngorrewoneng are alternative forms to those given in the chart.

This discussion will focus on the non-singular forms in Table 5. The alveolar stop occurs in the plural pronoun forms and the alveolar rhotic occurs in the plural verb prefixes and the dual oblique pronoun forms.

Comparing the plural forms, the following person stems may be isolated:

- ngad-, for first person,
- kad-, for first & second person,
- ngud-, for second person,
- bed-, for third person.

To these stems may be added -berre, -da, -man, to form the oblique, cardinal and reflexive pronouns respectively. If the 'd → rr' rule is assumed the prefix may be analysed as the same stems plus 'i' with the application of the rule. If the rule is not assumed, then it is necessary to have two stems for each person.

If these plural stems are next compared with the dual forms and the first singular forms, it is possible to isolate a root for each person.

- | | | |
|-----------|--|-------|
| 1st | - ngad, ngane-, ngarrewoneng, ngaye, nga-, | nga-, |
| 1st & 2nd | - kad, kane-, karrewoneng, | ka-, |
| 2nd | - ngud, ngune-, ngurrewoneng, | ngu-, |
| 3rd | - bed, bene-, berrewoneng, | be-. |

To these person roots may be added -ne-, -rrewoneng for dual and '-d' for plural.

Comparing the occurrences of the stop and rhotic in the chart, it can be seen that the stop always occurs in CVC syllables and the rhotic always occurs between vowels, i.e. in a CV syllable following another CV syllable. This suggests that the following rule is appropriate in the pronominal system at least:

d → rr / V _____ V

In the rule given in section 5.1.3 the grammatical environment of a 'root initial d-' was incorporated in the rule. It is possible using this rule to provide another explanation for the forms of the plural verb prefixes. The following person roots have been isolated after comparing plural, dual and 1st singular forms:

- 1st - nga-
- 1st & 2nd - ka-
- 2nd - ngu-
- 3rd - be-

In the transitive verb prefix the form '-di' marks plural agent (see section 7.3.3). If this form is added to the above roots, with '-di' being treated by the rule in 5.1.3 as a root being added to a prefix, then the following results will be obtained:

nga + di → ngarri-
 ka + di → karri-
 ngu + di → ngurri
 be + di → berri → birri

In the third person a type of vowel harmony operates to provide the final surface form. Within the pronominal system for the third person there is alternation between 'e' and 'i'.

This additional solution works well for the plural verb prefix but is not so appropriate for the dual oblique pronoun, as I have found no evidence to suggest that -rrewoneng ever occurred with a root initial 'd'.

Two forms of the rule have been given:

root initial d → rr / # CV + _____ (section 5.1.3)

d → rr / V _____ V

These may be combined:

d → rr / # CV _____ V

and in terms of the feature system proposed (see section 6) would be expressed:

d	→	rr	/	#	CV	_____	V
[-sonorant]		[+sonorant]				[-syllabic]	
						[+apical]	
						[-retroflex]	
						[-lateral]	

That is the alveolar stop becomes the alveolar rhotic in an intervocalic position, when the preceding CV syllable follows a word break. This combined rule does not cover the two exceptions referred to in section 5.1.3.

The revised rule is more phonological as the environment is intervocalic rather than root initial and the morphological boundary condition is not required. The rule could well become completely phonological if further field work and analysis shows that stress is the key to the alternation.

5.2 SUFFIXING ALTERNATION

The Kunwinjku verb uses its suffixing system to mark tense, mood and aspect. These three functions are structurally part of a single suffixing system.

Characteristic forms of the suffix establish thirteen verb classes (some with very restricted membership) which can be combined into six groups with various subgroups (Carroll, forthcoming).

Vowel alternation occurs in some verbs of some of these classes. This involves verbs with nine different root suffixes, from eight different verb classes and involves approximately thirty-five verbs.

Alternation occurs between three pairs of vowels, 'o ~ u', 'e ~ i', 'a ~ e', in various grammatical categories and in various phonetic environments. The alternation of 'e' with both 'a' and 'i' suggests they form a group separate from 'o' and 'u'. To the vowels 'o, u' I have given the feature [+back], and to the vowels 'i, e, a' I have given the feature [-back].

5.2.1 Alternation between 'o' and 'u'

Alternation 1

In verb class 8, the root form -yo- changes to -yuwirrinj in the Past Negative.

o → u / __w e.g. yo → yuwirrinj 'to lie down'

Alternation 2

In verb class 4, the root form -bu- changes to -bom in the Past Definite Tense.

u → o / __m e.g. bu → bom 'to hit'

Free variation occurs between these vowels in the pronominal system.

ngone- ~ ngune- 2nd dual intransitive verb prefix

ngorrewoneng ~ ngurrewoneng 2nd dual oblique pronoun

5.2.2 Alternation between 'e' and 'a'

Alternation 3

In verb class 9, the root form -re- changes to -rawinj in the Past Negative and to -ray in the Imperative.

e → a / __w, y e.g. re → rawinj, ray 'to go'

The occurrence of the form -rey in the past continuous tense indicates that it is the grammatical category rather than the phonetic environment that is significant for the alternation.

Alternation 4

In verb class 5, the root form -ma- changes to -mey in the past definite tense and to -meyi in the past negative.

a → e / y e.g. ma → mey, meyi 'to get'

Free variation occurs in relation to the form -meyi as some speakers say -mayi. Alternation 4 represents the natural phonetic process of assimilation. However the key to this alternation in Kunwinjku must be the grammatical category of the verb concerned. In other classes, verb forms such as -ray, -nayi and -wayi occur. If the alternation above were triggered by the phonological environment alone one would expect forms such as -rey, -neyi and -weyi to occur in those classes.

5.2.3 Alternation between 'e' and 'i'

Alternation 5

In verb class 1, the root -me- changes to -mi- in the past continuous tense, and in class 5, the verb roots -de- and -dje- change to -di- and -dji- in the past definite tense. In each class 'y' is the suffix for the relevant tense.

e → i / __y e.g. wulebme → wulebmi 'to swim'
 durnde → durndi 'to go back'
 dudje → dudji 'to throw'

Alternation 5 represents the natural phonetic process of assimilation. However the key to this alternation in Kunwinjku must be the grammatical category of the verb concerned rather than the phonological environment. In another class the verb form -rey occurs. If alternation 5 was triggered by the phonological environment alone, one would expect the form -ri in this other class.

This alternation is in a feeding relationship to the 'y' deletion rule that operates because of the general constraint against the occurrence of the high front vowel followed by the laminal semi-vowel in the same syllable. Alternation 5 gives forms -wulebmiy, durndiy, dudjiy.

'y' deletion y → ∅ / i__ e.g. wulebm̩iy → wulebm̩i
 durnd̩iy → durnd̩i
 dud̩jiy → dud̩ji

Alternation 6

In verb class 10, the root -rre- changes to -rrinj in the past definite tense and in verb class 12, the root -me- changes to -minj

in the past definite tense.

e → i / nj e.g. burre → burrinj 'to hit oneself'
makme → makminj 'to become good'

Alternation 7

In verb class 10, the root -rre changes to -rrimen in the imperative and to -rrimeninj in the past negative. The root -me- in class 12 changes to -mimen in the imperative. In class 13, the root -we- changes to -wimen in the imperative and to -wimeninj in the past negative.

e → i / m e.g. burre → burrimen, burrimeninj
makme → makmimen
dowe → dowimen, downeninj 'to be sick'

Free variation occurs between these vowels in the word ngalmangeyi ~ ngalmangiyi 'long-necked turtle'.

5.2.4 Are these Alternations Phonological Rules?

These alternations are written in the form of phonological rules but it is not claimed that they are natural rules. The alternations occur in some tense categories of some verbs. Kunwinjku has thirteen verb classes (some with restricted membership) and alternations occur in verbs from eight of these classes. Five categories are marked by the verbal suffix and the alternations can occur in four of these categories. Of sixty-five possible categories in all classes, the alternations occur in fifteen of these, i.e. approximately 23%. It occurs in ten of thirty-two verb suffix forms, most of which may be formed into compound verbs, making a total of at least thirty-five verbs in which one or more of the alternations may occur.

The alternations are not generalised throughout the language. Elsewhere free variation occurs between the two vowels involved in each alternation. Alternation 3, involving -re- 'to go' in verb class 9, has the form -ray in one category and the form -rey in another, indicating that the grammatical category is important for the application of the rule and that the phonological environment is irrelevant.

It is possible that some of these alternations are the remains of what may have been productive rules at an earlier stage of the language. They may now be regarded as 'morphologised rules'. Morphologisation occurs when the environment of a phonetically plausible rule is reinterpreted as a morphological one (Hyman 1975:175). Four of the seven alternations under discussion (numbers 1, 4, 5 and 6) are phonetically plausible, being assimilation rules. A closer examination of these

rules indicate that they are in effect morphologised rules.

Alternations 5 and 6 may also be interpreted as examples of rule inversion (Hyman 1975:176, 183; Venneman 1972). Rule inversion occurs when a derived form of a given rule is reinterpreted as the base form. The products of rule inversion may appear to be natural rules. Alternations 5 and 6 ($e \rightarrow i / __y$, $e \rightarrow i / __n$) are examples of assimilation.

Kunwinjku now has a five-vowel system. At the stage when it had a three-vowel system, the forms in alternation 5 might have been:

durndi durndiy

which in a five-vowel system became:

durnde durndi (y)

Likewise the forms of alternation 6 in a three-vowel system might have been:

burri burring

which in a five-vowel system became:

burre burring

With the change from a three- to a five-vowel system it is plausible to assume a rule such as:

$i \rightarrow e / __ \#$

from which 'e' has now been interpreted as the base form for:

$e \rightarrow i / __y, nj$

and so is an example of rule inversion. The rre ~ rri suffix is reflexive. Other Australian languages use rri / ri / for reflexives (Dixon 1972:16-17).

There are only four alternations (1, 4, 5 and 6) with any claim to naturalness. Alternation 1 raises a back vowel in the environment of the back semi-vowel. Alternations 4 and 5 raise front vowels in the environment of the laminal semi-vowel. Alternation 6 raises a front vowel in the environment of a laminal nasal. For alternations 4 and 5, the morphological environment is important as well as the phonological environment. This leaves the rules of alternations 1 and 6 as being those with the strongest claim to being natural phonological rules. Hyman (1975:171) defined natural rules as:

rules which linguists generally agree are natural all have in common the property of being phonetically motivated.

Yet even with these two alternations, that so far have passed the tests, there remains a problem. Alternation 1, in which $o \rightarrow u / __w$, is not paralleled elsewhere in the suffixing system, so that it only applies to one tense category of one verbal form in one verb class.

Nowhere else does 'o' occur before 'w' to provide evidence to support or contradict the classification of this alternation as a natural phonological process. Likewise alternation 6, in which $e \rightarrow i / __nj$, is not paralleled elsewhere in the suffixing system. This alternation has a slightly wider application than alternation 1, in that it applies to one tense category in two verbal forms. Nowhere else does 'e' occur before 'nj' in the suffixing system.

In view of the lack of corroborating evidence, it is necessary to conclude that alternations 1 and 6, despite their appearance of naturalness, are conditioned by the grammatical category (or morphological environment) of the appropriate verbs.

A comparison of the environment 'm' in alternations 2 and 7, and of 'w' in alternations 1 and 3, shows that a rather neat generalisation may be made.

$e \rightarrow i / __m$ (alternation 7)

$u \rightarrow o / __m$ (alternation 2)

$e \rightarrow a / __w$ (alternation 3)

$o \rightarrow u / __w$ (alternation 1)

If 'm' is classified as [-back] (as are 'i, e, a'), and if 'w' is classified as [+back] (as are 'o, u'), then 'm' and 'w' may be grouped together because they both raise vowels with the same degree of backness and lower vowels with the opposite degree of backness. This makes the claim that 'm' and 'w' are a natural class.

There is slight supporting evidence for this in the phonotactics (section 4.3) in the distribution pattern of phonemes across syllable boundaries. The natural class of peripheral consonants occurs in these patterns. Within these patterns there is complementary distribution between the occurrence of 'w' and 'ng'. That is in some patterns 'm' and 'ng' are the two sonorant peripheral consonants that occur, and in other patterns 'm' and 'w' occur. It is generally recognised that 'm' and 'ng' are a natural pair, but the same general recognition does not apply to 'm' and 'w'.

Classifying 'm' as [-back] makes the claim that the relation between 'm' and 'w' is the same as that between 'i' and 'u', or that the relation between 'm' and 'i' is the same as that between 'w' and 'u'. I do not wish to make either of these claims, and I can offer no other evidence to support this grouping of 'm' and 'w'.

Natural phonological rules are used to establish natural classes of phonemes, which should then be reflected in the distinctive feature system. I have already indicated some of the implications of grouping

'm' and 'w' that I do not accept. The unnaturalness of this grouping can be seen better from a closer look at the alternations involved. Of these four alternations, only one (alternation 1) represents a natural phonetic process - that of assimilation - and even this alternation is more likely to occur because of grammatical rather than phonological factors.

This grouping of 'm' and 'w' enabled a neat and attractive generalisation to be made. However, this grouping does not represent a natural class, and the alternations referred to are not natural phonological rules. In recent developments in phonological theory there has been a movement towards a more natural phonological presentation and away from the more abstract approaches as typified by *Sound Pattern of English*. Ladefoged with his concern for the phonetic validity of a feature system represents one such development, and people like Hyman and Venneman with their concern for natural or 'phonetically plausible' rules are others. The distinctive feature system proposed for Kunwinjku (see section 6) is one based more on phonetic criteria rather than the classificatory value of the features.

6 CLASSIFICATION BY DISTINCTIVE FEATURES

In discussing a feature system for Kunwinjku, I have made no attempt to establish or justify a universal feature system. My purpose is language specific, and an attempt to classify Kunwinjku phonemes by their distinctive features, according to the natural classes of sounds, determined by the phonotactics of the language (see section 4.4).

These classes are:

- stops - oral and glottal
- sonorants - nasals, liquids and semi-vowels
- vowels
- peripherals

6.1 BINARY FEATURES

The binary nature of distinctive features is an important part of generative phonological theory, that has not been without challenge, despite its widespread acceptance. Ladefoged is one who has challenged the universal applicability of binary features, and cites two areas of phonetics in which he claims nearly all languages operate in a non-binary way - articulatory place feature and vowel height (1971:91-95). He is supported by Hyman (1975:55) in regard to vowel height.

Halle (1957) is an attempt to justify a system containing only binary features. A major assumption made is that a system with fewer features is better than a system with a greater number of features. He qualifies this assumption by preferring a consistently binary system with more features to a mixed binary and ternary system with fewer actual features. In the classification of vowels two binary features, 'compact - noncompact' and 'diffuse - nondiffuse', are preferred to one ternary feature 'compact - diffuse' (Halle 1957:72). Mixed systems have the inherent problem of establishing a comparative grading or 'exchange rate' between binary and ternary features, which is needed for evaluation procedures based on the counting of features.

His strongest point in support of binary features only is in relation to evaluation procedures for alternative analyses. He has only shown that when comparing different analyses, it is important that they have the same theoretical base. He has not justified his claim that features should be only binary.

It is interesting to read Halle's (1973) review of Ladefoged (1971) and to compare the point made in conclusion:¹

It is my guess - and the decision to pursue a particular line of inquiry, rather than another, never rests on anything more solid than a researcher's guess - that progress is to be made by trying to answer these questions, rather than by giving up the claim and thereby declaring the questions uninteresting. Ladefoged currently sees the matter in a different light. The history of the science of language during the next few decades will decide which of these two opposite guesses was more nearly correct (1973:933).

with the statement in his earlier work:

In using the distinctive feature system one commits oneself to the view that all features are of a simple binary type: i.e. one restricts oneself to asking about the phonetic features of a language only questions that can be answered by 'yes' or 'no'. It is impossible to know *a priori* whether this is a wise decision or not (1957:66).

Hyman (1975:57) comments:

Thus it seems to be an important argument that since many features ... are binary, it is advantageous to view all features as such.

and then points out that:

Unfortunately the implications of non-binary features have not been revealed as yet, since few if any complex phonological descriptions have attempted to apply, for example, Ladefoged's (1971) multivalued features in phonological rules.

In my discussion of vowel features (section 6.3.3) I propose rules using a multivalued feature of vowel height to account for vowel raising and lowering. The limited nature of the alternation thus accounted for weakens these rules as an answer to Hyman's challenge, but it does point to the type of rule that would demonstrate the advantage of a multivalued feature of vowel height.

Trubetzkoy (1969) discussed three types of oppositions - privative, gradual and equipollent. A privative opposition is one in which one member of the opposition is marked by the presence of a feature and the other member by its absence. This corresponds to the standard binary feature with its plus or minus value. An equipollent opposition is one in which both members are logically equivalent. Gradual oppositions are said to be more rare and less important than privative oppositions, and are defined as:

oppositions in which the members are characterised by various degrees or gradations of the same property. For example: the opposition between two different degrees of aperture in vowels (1969:75).

¹ Strictly applies to point 4 of review but also pertinent to point 3 concerning binary or multivalued features.

It is pertinent that Trubetzkoy illustrates gradual opposition with vowels differing in their degree of aperture. In the discussion above Halle, Hyman and Ladefoged all point to the problems in classifying vowels, and particularly vowel height by a system of binary distinctive features. My purpose in this discussion is not to challenge binary features as such, but rather the claim that binary features have universal applicability.

6.2 CLASS FEATURES

Syllabic - these sounds form the syllable peak or nucleus. Non-syllabic sounds do not, and are part of the syllable onset or coda. Vowels in Kunwinjku are [+syllabic]; all other segments are [-syllabic].

Sonorant - these sounds involve a continuous stream of air throughout the sound, which may be oral or nasal. Non-sonorant sounds make a complete interruption to the air flow. Stops in Kunwinjku are [-sonorant]; all other segments are [+sonorant].

Glottal this feature applies to [-sonorant] sounds (i.e. stops). Oral stops are [-glottal] and the glottal stop is [+glottal].

Nasal - this feature applies to [+sonorant] sounds. Sonorants whose articulation involves the nasal cavity are [+nasal]; other sonorants are [-nasal].

The use of these four features enables the following classification of Kunwinjku sounds to be made.

<i>Class</i>	<i>Oral Stops</i>	<i>Glottal Stop</i>	<i>Nasals</i>	<i>Liquids & Semi-vowels</i>	<i>Vowels</i>
Features					
Syllabic	-	-	-	-	+
Sonorant	-	-	+	+	+
Glottal	-	+			
Nasal			+	-	-

Table 6 Class Features

In this classification liquids and semi-vowels are not separated, and constitute a class of oral (non-nasal) sonorants. In section 4.4 above it was suggested that liquids were a separate class on the basis of their non-occurrence in one type of intra-morphemic consonant clusters across syllable boundaries. By itself this is not very strong evidence for a separate class of liquids and at this stage of the classification liquids and semi-vowels are treated as a class, which is

supported by their occurrence as C_2 in $C_1VC_2C_3$ syllables without glottal stop. The feature glottal may be redundantly specified as [-] for nasals, liquids and semi-vowels, and for vowels. Likewise the feature nasal may be redundantly specified as [-] for oral stops and for glottal stop.

6.3 ARTICULATORY FEATURES

In this section alternative proposals for distinctive features will be discussed (i) according to a strict binary system and (ii) according to a mixed system that is basically binary but allows multivalued features.

The phonological justification for these proposed systems is based on the phonotactics of Kunwinjku which established various natural classes (section 4.4). The phonotactics do not provide sufficient data for individual classification of each phoneme, and where such data are lacking articulatory features are used.

6.3.1 Consonants - Binary only

The class features (section 6.2) have established five classes: oral stops, glottal stop, nasal sonorants, oral sonorants (liquids and semi-vowels) and vowels.

Australian languages may have up to six contrasting places of articulation: bilabial, lamino-dental, lamino-palatal/alveolar, apico-alveolar, apico-domal (retroflex) and dorso-velar (Dixon 1970:80-84). These six may be classified into three types of articulation: peripheral (bilabial and dorso-velar), apical and laminal. Some languages only have place of articulation contrast in four positions, with only one laminal and one apical. Kunwinjku has contrast at five positions with two apicals and one laminal as well as the two peripherals.

Chomsky and Halle (1968:304) propose the features 'coronal' and 'anterior' and define them:

Coronal sounds are produced with the blade of the tongue raised from its neutral position: noncoronal sounds are produced with the blade of the tongue in the neutral position.

Anterior sounds are produced with an obstruction that is located in front of the palato-alveolar region of the mouth; non-anterior sounds are produced without such an obstruction.

Applying the two features, 'coronal' and 'anterior', to the five Kunwinjku consonantal articulations leads to the following classification:¹

¹ An additional feature is needed for complete specification of the five consonantal articulations.

bilabial	[+anterior, -coronal]
velar	[-anterior, -coronal]
alveolar	[+anterior, +coronal]
retroflex	[-anterior, +coronal]
laminal	[+anterior, +coronal]

The classification of laminal consonants as [+anterior] presents a problem. The laminal place of articulation in Kunwinjku stretches from dental to palatal positions (see section 2.2) and while some laminal sounds may normally be regarded as [+anterior] it is not certain that this is the case in Kunwinjku. For the purposes of this discussion I have chosen to use the feature [+anterior] for the laminal. This leads to an unnatural grouping within the [+coronal] consonants. The laminal is grouped with the alveolar, which is separated from the retroflex. If laminals are classified as [-anterior], the problem still remains, as the laminal is then grouped with the retroflex apical which is still separated from the alveolar apical. Laminal consonants might best be regarded as neutral and unspecified for the feature laminal. Among the [+coronal] consonants then, alveolar would be [+anterior], retroflex would be [-anterior] and laminal [o] or unspecified for anterior. The feature system would still fail to capture the generalisation that in Kunwinjku alveolars and retroflexes should be grouped together. The feature anterior would be very appropriate in Australian languages with two laminal series of consonants.

In Kunwinjku, it is more natural to group the two apicals and separate them from the laminal rather than group either one with the laminal. Evidence for this grouping comes from neutralisation that occurs between the apical nasals and between the apical rhotics. Contrast between the alveolar nasal and the retroflex nasal is neutralised in the word initial position, as the retroflex nasal does not occur. For some speakers the contrast between the alveolar stop and the retroflex stop is neutralised in this position, as the retroflex stop does not occur there. For other speakers the retroflex stop has limited frequency in this position. Contrast between the apical rhotic and the retroflex rhotic is neutralised in the word initial position, where the alveolar rhotic does not occur, and in the syllable coda position, where the retroflex rhotic does not occur.

It is possible to overcome this grouping problem by adding the feature 'distributed' (Chomsky and Halle 1968:312) and placing it

above the feature anterior in the hierarchy. Applied to Kunwinjku, it would be similar to my use of the feature laminal in the proposed adapted binary system (see section 6.3.2). Laminal consonants would be [+distributed] and alveolars and retroflexes [-distributed]. This would provide the following classification:

	bilabial	velar	alveolar	retroflex	laminal
coronal	-	-	+	+	+
distributed			-	-	+
anterior	+	-	+	-	

This properly groups alveolars and retroflex consonants separately from laminals, but does not help with classification of laminals for the feature anterior. The articulatory description (section 2.2) suggests that both + and - are appropriate. It is better to specify the laminal as neutral for the feature anterior, which captures the fact that the relative frontness of the laminals is not distinctive.

In accordance with the descriptive aim of my research, and my greater concern with the surface forms rather than underlying phonological abstractions, I prefer to use features with greater phonetic accuracy than the standard Chomsky and Halle feature system. This enables me to avoid the problems raised above as well as providing a classification more suited to the practical aims of my study. Following the principle of using the minimal number of features results in false claims being made in Kunwinjku phonology.

In place of the feature coronal, I propose a feature peripheral. A natural class of peripheral stops and nasals is suggested by the phonotactics (see section 4.2.2.2). In effect this is really only a change in name as peripheral has the opposite application to coronal. This means that bilabials and velars are [+peripheral] and that apicals and laminals are [-peripheral].

An additional feature is needed within the class of non-peripheral consonants. In accordance with the three groupings of Australian consonants it would either be apical or laminal. I propose a feature apical for Kunwinjku.

Peripheral sounds are articulated at the extreme edges of the oral cavity, that is in the region of the lips and the velum. Non-peripheral sounds are articulated between these regions.

Apical sounds use the tip of the tongue in their articulation. Alveolar and retroflex sounds are [+apical] and other consonants are [-apical].

This means that peripheral consonants are [+peripheral, -apical], that apical consonants are [-peripheral, +apical], and that laminal consonants are [-peripheral, -apical]. This negative specification of laminals contrasts with the adapted binary system (section 6.3.2) where I stress the independent character of the three basic types of consonantal articulation - peripheral, apical, laminal - with three positive features adapting suggestions made by Ladefoged (1971:43, 44, 91, 94).

The use of two features, peripheral and apical, in the conventional binary way would separate the major classes of consonants as follows.

Oral stops

+peripheral	b, k
-peripheral	dj, d, rd
+apical	d, rd
-apical	dj, b, k

Nasal sonorants

+peripheral	m, ng
-peripheral	nj, n, rn
+apical	n, rn
-apical	nj, m, ng

Oral sonorants

+peripheral	w
-peripheral	y, l, rl, rr, r
+apical	l, rl, rr, r
-apical	y, w

The feature apical fulfils an additional function within the class of oral sonorants. It separates the semi-vowels 'w' and 'y' which are [-apical] from the liquids which are [+apical].

An additional feature is needed within the class of oral sonorants that are [+apical] to distinguish laterals from rhotics and I propose a feature lateral.

Lateral sounds are ones in which the air flow passes the sides of the tongue while there is a complete closure made by the tip of the tongue. The two laterals are [+lateral] and the two rhotics are [-lateral].

Features proposed so far leave twelve consonants grouped in six pairs and the five other consonants have been isolated - h, w, dj, nj, y. The pairs of consonants are:

Oral stops

+apical	d, rd
+peripheral	b, k

Nasal sonorants

+apical n, rn

+peripheral m, ng

Oral sonorants [+apical]

+lateral l, rl

-lateral rr, r

A feature making a distinction between front and back consonants would be sufficient to distinguish each of these pairs, with the result that:

d, b, n, m, l, rr could all be [+front]

rd, k, rn, ng, rl, r could all be [-front]

The choice of name for this feature is not vital at this stage, and terms such as anterior or back could be used in place of front. The point to be noted is that if one such feature is used it is making the claim that the relation between velars and labials is the same as between back apicals and front apicals. With the four pairs of apicals the relationship is the same, that of retroflexion, but as I do not wish to claim that the relation between the back and front peripherals is the same as that between the retroflex apicals and the non-retroflex apicals, I prefer not to use a feature such as back or anterior. Instead within the class of apicals I propose a feature retroflex and within the class of peripherals a feature labial. I have already indicated my preference for phonetic accuracy over classificatory value in my distinctive feature classification. To strive for the minimum number of features leads to false claims being made.

Retroflex: this feature applies to [+apical] sounds. It is defined as those sounds in which the tip of the tongue articulates with the domal area of the roof of the mouth. Non-retroflex sounds are articulated in the alveolar region.

Labial: this feature applies to [+peripheral] stops and nasals. It is defined as those sounds articulated with the lips. 'm and b' are [+labial] and the velars 'k and ng' are [-labial].

Table 7 indicates how the articulatory features specify the places of articulation of Kunwinjku consonants.

<i>Articulation</i>	<i>Velar</i>	<i>Labial</i>	<i>Alveolar</i>	<i>Retroflex</i>	<i>Laminal</i>
<u>Feature</u>					
Peripheral	+	+	-	-	-
Apical	-	-	+	+	-
Retroflex			-	+	
Labial	-	+			

Table 7 Binary Articulation Features

6.3.2 Consonants - Adapted Binary

Ladefoged (1971:43) has suggested that place of articulation is one area of phonetics that most languages use in a non-binary way (a second area is vowel height; see section 6.3.3). He has made two suggestions as to how to deal with place of articulation in a non-binary way. One is a linearly ordered set of values operating in a scalar feature, and the other is an unordered set of independent values within a multivalued feature. The first has advantages in relation to alternations involving consonants with adjacent places of articulation and the second has advantages for alternations involving consonants whose places of articulation are not adjacent. His proposals have not been developed in any complex phonological descriptions (Hyman 1975:57), and he appears to prefer to use the scalar proposal for vowel height. For the purposes of the discussion here, I wish to take and adapt his concept of 'independence' as related to place of articulation, which in Kunwinjku is extended to include the active articulator as well as the passive articulator.

An alternative proposal is made:

each place of opposition could be regarded as a separate binary feature ... operating within a convention that states that a plus value for any one of these features implies a minus value for all the others (Ladefoged 1971:91, 92).

My adapted binary system is based on the concept of independent features together with this suggested convention. It differs from the standard binary system (section 6.3.1) in that three features, apical, laminal and peripheral, are used with positive specification in place of two features, apical and peripheral, used in the standard system. This means that three features in Table 10 are different from the other features, and this has been marked on the chart. The additional feature in Table 10 means that some features specified negative in Table 9 are now blanks in Table 10. This objection could be overcome by redundantly using negative specification in Table 10 in place of blanks.

The advantage provided by this adapted system is that it shows clearly the three basic types of articulation that Kunwinjku shares with all Australian languages - apical, laminal and peripheral. This is an important phonetic fact that ought to be recognised in a distinctive feature system. The standard binary system does not show this clearly as the hierarchy inherent in the system is one in which one of the independent features is subordinated to the other features.

The adapted binary system uses an additional feature to capture further phonetic facts. It takes the system one step closer to a traditional articulatory description. I have already moved in this direction by preferring to use the features retroflex and labial instead of one feature anterior. I do not wish to present what is basically a traditional articulatory description formalised as a feature system. My adapted binary feature system differs from such a system in that it combines labials and velars in the feature peripheral, and it combines alveolars and retroflexes in the feature apical.

In section 6.3.1 I have drawn attention to a significant feature of the articulation of consonants in Australian language as a whole. Australian languages may have consonants at four, five or six places of articulation. The places of articulation in any language divide into three groups:

labials and velars	<u>peripherals</u>
alveolars and retroflexes	<u>apicals</u>
dental and palatal	<u>laminals</u>

A separate binary feature is specified for each of the three groups - peripheral, apical and laminal. Australian languages with six places of articulation would use these three independent features, and each would be subdivided into two. Languages with less than the maximal (six) places of articulation would need to subdivide some but not all of these features. The actual features subdivided would depend on which series of consonants were present and absent. Some languages have two laminals and one apical, some have two apicals and one laminal and some have one apical and one laminal. Kunwinjku with two apicals and one laminal does not need to subdivide the independent feature laminal.

This system divides the three major classes of Kunwinjku consonants as follows:

Oral stops

+apical	d, rd
+laminal	dj
+peripheral	b, k

Nasal sonorants

+apical	n, rn
+laminal	nj
+peripheral	m, ng

Oral sonorants

+apical	l, rl, rr, r
+laminal	y
+peripheral	w

Laminal: these sounds use the blade of the tongue in their articulation. Non-laminal sounds do not use the tongue blade (the blade of the tongue is used here in contrast to the apical and dorsal areas).

There is need for subdivision in the features peripheral and apical in the classification of Kunwinjku consonants. The same features as proposed in the binary system (section 6.3.1) are most appropriate. That is a feature retroflex within the apicals, and a feature labial within the peripherals. This provides for an alternative feature classification that uses binary features in some areas, and adapted binary features for articulatory place (modifying Ladefoged's suggestion) and following Ladefoged uses a multivalued feature for vowel height. This alternative feature system is set out in Table 10 and may be compared with the full binary system set out in Table 9.

6.3.3 Vowels - Binary and Multivalued

Kunwinjku has five vowels, with three divisions of vowel height and three divisions in the front - back dimension.

i	high	front
e	mid	front
a	low	central
o	mid	back
u	high	back

Three binary features are needed to fully specify these vowels, and I propose high, low and back, so that:

i	[+high, -low, -back]
e	[-high, -low, -back]
a	[-high, +low, -back]
o	[-high, -low, +back]
u	[+high, -low, +back]

The vowel 'a' is fully distinguished from the other vowels without being specified for backness. It has been classified as [-back] because

it is linked to the vowel 'e', although it is realised phonetically as a central vowel.

In an extended discussion on binary features, I suggested that Kunwinjku vowels provided an example of how a multivalued feature system might be used in place of a system of binary values (section 6.1). The example is from the vowel alternations in the verb suffixing system in which the process of assimilation leads to vowel raising.

The following generalisations may be made:

(i) the 'a ~ e' and 'e ~ i' alternations suggest they form a class which is indicated by their sharing the feature [-back];

(ii) the 'o ~ u' alternation suggests they form a class which is indicated by their sharing the feature [+back];

(iii) the alternation between the three front vowels suggests the relationship a:e is the same as e:i and o:u.

It is difficult for generalisation (iii) to be captured in a binary feature system as outlined above.

e.g. a [-high, +low] : e [-high, -low]

e [-high, -low] : i [+high, -low]

o [-high, -low] : u [+high, -low]

It is also difficult to write rules for the vowel raising alternations with a binary feature system. If Ladefoged's suggestion for a multi-valued feature system of vowel height (he was not the first to point out the inadequacies of a binary system in relation to vowel height) is followed then the two vowel features are sufficient, high and back.

High - the relative height of the highest point of the tongue is the pertinent aspect. Value 3 is assigned to the high vowels 'i, u', value 2 to the mid vowels 'e, o' and value 1 to the low vowel 'a'.¹

Back - the position of the highest point of the tongue in relation to the back of the mouth is the pertinent aspect. The two vowels closest to the back of the mouth 'o, u' are [+back] and the other three vowels 'i, e, a' are [-back]. The two semi-vowels may be specified for these features. The laminal semi-vowel 'y' is [-back], height value 3 (the same as 'i'). The peripheral semi-vowel 'w' is [+back], height value 3 (the same as 'u'). The class feature syllabic separates each semi-vowel from its corresponding vowel.

Table 8 shows how the two features, high and back, specify Kunwinjku vowels.

¹ This is the opposite to McKay's system, and it fits the Kunwinjku rules better (McKay 1975:33).

These may be collapsed into:

[x high] → [x+1 high] / [———]	[-syllabic]
	[+syllabic] [αback]
	[αback] [3 high]

It is clear from the rules written with the multivalued feature of vowel height that assimilation occurs; when a vowel (not of maximum height) is followed by a semi-vowel with the same degree of backness, the vowel height is raised by one degree. This is not so obvious from the binary rules.

The purpose of the multivalued feature of vowel height is evident. By specifying vowel height as 'x', which may be any of the values 1, 2 or 3, then if the environment for vowel raising occurs, 'x' is increased by one (the vowel raising rule will not apply to a vowel of maximum height 3). If an environment for vowel lowering occurred the rule could be applied in reverse with 'x' being decreased by one (vowel lowering would not apply to a vowel of minimum height 1).

The use of the multivalued feature of vowel height captures the generalisation (albeit a generalisation of limited application) more effectively than the binary feature classification could. This discussion has been presented, not to justify multivalued features in place of binary features, but rather to indicate a process handled better by a multivalued feature, and to support my contention that a mixed (binary and multivalued) feature system better reflects the phonetic facts of Kunwinjku than a strictly binary feature system.

	d	rd	dj	b	k	h	n	rn	nj	m	ng	l	rl	rr	r	y	w	i	e	a	o	u
<i>Class Features</i>																						
Syllabic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
Sonorant	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Glottal	-	-	-	-	-	+																
Nasal							+	+	+	+	+	-	-	-	-	-	-					
<i>Consonantal Features</i>																						
Peripheral	-	-	-	+	+		-	-	-	+	+	-	-	-	-	-	+					
Apical	+	+	-	-	-		+	+	-	-	-	+	+	+	+	-	-					
Lateral												+	+	-	-							
Retroflex	-	+					-	+				-	+	-	+							
Labial				+	-					+	-											
<i>Vowel Features</i>																						
High																+	+	+	-	-	-	+
Low																-	-	-	+	-	-	-
Back																-	+	-	-	-	+	+

Table 9 Kuvwinjku Phonological Features - Binary

	d	rd	dj	b	k	h	n	rn	nj	m	ng	l	rl	rr	r	y	w	i	e	a	o	u	
Class Features																							
Syllabic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	
Sonorant	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Glottal	-	-	-	-	-	+																	
Nasal				+	+		+	+	+	+	+	-	-	-	-	-	-						
Consonantal Features																							
* Peripheral				+	+				+	+							+						
* Apical	+	+					+	+				+	+	+	+								
* Laminal			+						+								+						
Lateral												+	+	-	-								
Retroflex	-	+					-	+				-	+	-	+								
Labial			+	-					+	-													
Vowel Features																							
** High																	3	3	3	2	1	2	3
Back																-	+	-	-	-	-	+	+

* adapted binary features

** multivalued feature

Table 10 Kumwinjku Phonological Features - Multivalued, Binary and Adapted Binary

SYNTAX

7 THE VERBAL COMPLEX AND ITS SIGNIFICANCE

7.1 INTRODUCTION

Most Australian languages have relatively free word order of the basic constituents of the sentence. Syntactic functions are often indicated by case markings. Kunwinjku has no syntactic case marking (some local cases are indicated by nominal suffixes) and still has considerable variety in word order. This variation is not as random as it might appear at first, as there are a number of constraints that apply. In intransitive sentences subject usually precedes the verb, though it may also follow it.

In transitive sentences, the agent (transitive subject) generally precedes the verb, though the reverse order does occur. The object usually follows the verb but it may also precede the verb. When both agent and object precede the verb, the order is agent, object, verb. When they both follow the verb, the order is verb, object, agent. So a basic constraint on word order in the transitive sentence is that the object occurs adjacent to the verb.¹ The most frequent word order at surface level is agent, verb, object (AVO), and the next most frequent order is agent, object, verb (AOV). This second most frequent order corresponds to the order of the prefixes in the transitive verb complex, which raises the question that this order - agent, object, verb - may be the basic underlying order (see section 8.1.5).

Kunwinjku, like most of the other languages of the north and north-western parts of the continent, has a complex verb morphology. It is one of the verb prefixing languages (Capell 1956:31) that also have noun classification. In the Kunwinjku verb complex, prefixes are used to indicate pronominal agent, object and subject, incorporated noun object and subject, adverbial modifier and aspect. Suffixes indicate tense, aspect and mood.

¹ In the texts studied, two exceptions to this constraint occur; in one the meaning from context makes it obvious which noun phrase is object and which is agent, and in the other cross reference to the verbal prefix indicates which noun phrase is agent and which is object.

In both transitive and intransitive sentences, the verbal complex will include the basic syntactic information that identifies subject, agent and object and makes associated noun phrases redundant. In many instances this is equivalent to a sentence in other languages. Associated noun phrases do of course occur, but they are not necessary.

The absence of syntactic case marking on nouns, together with a relatively free word order, suggests that there could be confusion in identifying the syntactic function of noun phrases when they occur. Number and person of the agent, object or subject must be specified in the verb prefix and the function of the various noun phrases is indicated by cross reference.

The transitive pronominal prefix has been analysed as a portmanteau morpheme that specifies the relationship between person of agent and person of object (see section 7.3). When both the agent and object are third person, and they share the same number category, the prefix does not indicate which of the two third persons is agent and which is object. In such a situation, word order is the major guide with meaning from immediate context necessary in some instances.

7.2 OUTLINE OF THE VERBAL COMPLEX

A sketch of the verb morphology has been published (Oates 1964: 36-60). My research has shown the general picture presented to be reliable, with the need for correction of some details. I have found it possible to present some aspects of the morphology in a clearer and more accurate way. In my discussion here I do not propose to present a comprehensive picture of the verb morphology, but to consider aspects of it that are most pertinent to the syntactic matters discussed.

Verb prefixes indicate pronominal subject (intransitive), agent and object (transitive), incorporated noun subject (intransitive) and object, adverbial modifiers and aspect. Suffixes indicate tense, aspect and mood (see section 7.5 for agent incorporation).

e.g. pronominal subject

nga - re - ϕ
1sgS go NON-PAST
I go.

kabene - rlobme - ϕ
3duS run NON-PAST
They (2) run.

yi - re - ϕ
2sgS go NON-PAST
You go.

kabirri - rlobme - ϕ
3plS run NON-PAST
They (3+) run.

pronominal agent and object

ngan	- bu - n	nga	- bu - n
3sgA-1sg0	hit NON-PAST	1sgA-3sg0	hit NON-PAST
He (will) hit me.		I (will) hit him.	
ngune	- ma - ∅	ngun	- di - ma - ng
2duA-3sg0	get IMP	3A-2sg0	plA get NON-PAST
You (2) get him!		They will get you.	

incorporated noun subject

ku - m - bo - bebme - ng
 3sgS motion water come out PAST
 towards
 speaker
 Water appeared.

incorporated noun object

karri - bid - na - rrinj
 1&2plA-3sg0 hand see REFL
 You and I saw our hands.

kabene - dulk - djobke - ∅
 3duA-3sg0 tree chop NON-PAST
 They (2) chop trees.

adverbial modifiers

ngarri - djarrk - re - ∅
 1plS together go NON-PAST
 We go together.

yi - djal - bimbo - m
 2sgA-3sg0 only paint PAST
 You only painted it.

nga - yawoyh - re - ∅
 1sgS again go NON-PAST
 I will go again.

bene - bal - rlobme - ng
 3duS just run PAST
 They just ran (and ran - i.e. they went a great distance).

aspect

kane - h - re - ∅
 1&2duS CONT go NON-PAST
 You and I are going.

ngarri - m - re - ϕ
 lp1S motion go NON-PAST
 towards
 speaker

We will come.

The aspectual prefix '-m-' marks motion towards the speaker, and changes verbs of 'going' to verbs of 'coming', and verbs of 'taking' to verbs of 'bringing'.

Verbal suffixes indicate tense, mood and aspect, which are structurally part of a single suffixing system. Characteristic forms of the suffix establish thirteen verb classes (some with very limited membership) which may be combined into six groups with various subgroups. The suffixing system includes reflexive and reciprocal forms of the verb in one class, and another class covers verbs formed by the addition of a derivational affix to nouns and adjectives. The suffixing system as a whole is discussed in Carroll (forthcoming, see Appendix A) and the following examples are cited to give a brief overview of the system. e.g. verb root '-ka-' to take

Imperative	yi - ka - ϕ	You take it!
Non-past	nga - ka - n	I will take it.
Past completed	ngune - ka - ng	You (2) took it.
Past continuous	ngarr - ka - ni	You and I were taking it.
Past negative (minj)	nga - ka - yi	I did not take it.

verb root '-ma-' to get

Imperative	yi - ma - ϕ	You get it!
Non-past	ka - ma - ng	He will get it.
Past completed	yi - me - y	You got it.
Past continuous	nga - ma - ngi	I was getting it.
Past negative (minj)	nga - ma - yi	I did not get it.

verb root '-yo-' to lie down

Imperative	ngone - yu - n	You (2) lie down!
Non-past	ka - yo - ϕ	He will lie down.
Past completed	nga - yo - nginj	I lay down.
Past continuous	nga - yo - y	I was lying down.
Past negative (minj)	nga - yu - wirrinj	I did not lie down.

the reflexive '-rre'

Non-past	nga-bu - n	I will hit him.
	nga-bu- rre	I will hit myself.
Past completed	nga-djobke - ng	I cut it.
	nga-djobke - rrinj	I cut myself.

Past continuous	nga-na - ni	I was looking at him.
	nga-na - rreni	I was looking at myself.

the derivational suffix '-men'

-mak	adjective root	'good'
-makmen	verb root	'to become good'
-kimuk	adjective root	'big'
-kimukmen	verb root	'to grow' (literally to become big)
-ngordo	noun root	'leprosy'
-ngordomen	verb root	'to become sick with leprosy'
djoleng	noun	'cooked meat'
djolengmen	verb root	'to cook meat'

Various combinations of prefixes can occur, which have the effect of producing relatively long words.

e.g. karri - bal - djarrk - durrkmirra - nginj
1&2p1S just together work PAST

We just worked together.

birri - yawoyh - djarrk - mirnde - moname - rrinj
3p1S again together group assemble PAST REFL
They assembled together again as a group.

bene - yawoyh - red - na - ng
3duA-3sg0 again camp see PAST
They saw the camp again.

7.3 PRONOMINAL VERB PREFIXES

The prefixing system is an important part of verb morphology particularly in relation to Kunwinjku syntax. I propose therefore to discuss this aspect in more detail than other aspects. It is the prefixing system that I have been able to present in a clearer and more accurate way than was done by Oates (1964). The prefixing system can be presented in three parts:

- intransitive prefix,
- transitive prefix for second and first person object,
- transitive prefix for third person object, which in form is an extension of the intransitive prefix.

7.3.1 Intransitive Prefix

Oates (1964:42) analysed this in terms of the traditional categories of singular, dual, trial and plural number, and of first person, inclusive and exclusive of hearer, and second and third person, as set out below.

Singular	1	nga-	I
	2	yi-	you
	3	ka-	he, she, it
Dual	1	ngane-	we exclusive
		ngarr-	we inclusive
	2	ngune-	you
	3	kabene-	they
Trial	1	kane-	we inclusive
Plural	1	ngarri-	we exclusive
		karri-	we inclusive
	2	ngurri-	you
	3	kabirri-	they

Table 11 Intransitive Verb Prefix (traditional)

This system can be reanalysed in terms of four person categories:

+ speaker	- hearer	(1st person exclusive)	1
+ speaker	+ hearer	(1st person inclusive)	1 & 2
- speaker	+ hearer	(2nd person)	2
- speaker	- hearer	(3rd person)	3

and three number categories:¹

Basic (singular)

Basic + 1 (dual)

Unlimited (plural)

In terms of actual numbers the basic or singular form of the 1st & 2nd person involves two people and its basic + 1 or dual form involves three people. Number consistency is maintained for this person if only the number of hearers is considered in the number calculation. The basic or singular number is one speaker and one hearer, the basic + 1 or dual number is one speaker and two hearers, and the unlimited or plural number is one speaker and three or more hearers. McKay

¹ See Glasgow (1964) for a similar reanalysis of the Burera (of northern Arnhem Land) pronominal system.

(1975:101-105), in analysing a similar system in Rembarnga, used the terms:

- minimal number for singular or basic number;
- unit augmented number for dual or basic + 1 number;
- augmented number for unlimited or plural number.

I have preferred to retain the singular, dual and plural number categories with the qualification for the 1st & 2nd person as outlined above. Justification for this reanalysis can be seen in the actual forms of the Kunwinjku prefix, with -ne- a dual marker and -rri- a plural marker. There is no need for a Trial number category, as Oates employed for one person only, and there are no gaps in the paradigm.

Person		Singular	Dual	Plural
1	+S -H	nga-	ngane-	ngarri-
1 & 2	+S +H	ngarr-	kane-	karri-
2	-S +H	yi-	ngune-	ngurri-
3	-S -H non-past	ka-	kabene-	kabirri-
	past	∅	bene-	birri-

Table 12 Intransitive Verb Prefix (reanalysed)

It is a feature of the third person prefix that the ka- only occurs in non-past forms, and is omitted from the three past forms. This is the only tense distinction in the prefixes. In subsequent tables I will use the convention of bracketing the ka- to indicate its restricted occurrence. The final two rows of the above column would then become one row:

3	-S -H	(ka)-	(ka)bene-	(ka)birri-
---	-------	-------	-----------	------------

The prefix ku- (ka- for some speakers) occurs with verbs in the past tense that also have the aspect prefix '-m-'. Its occurrence is for phonological reasons. All syllables in Kunwinjku begin with a single consonant, and if in the past tense a verb with a third person singular subject occurs without ku- (or ka-) but with the aspect prefix '-m-', then a syllable initial consonant cluster would occur. The use of ku- (~ ka) eliminates what would be an unnatural cluster in Kunwinjku.

e.g. -ka- to take

kakan	'he takes it'	kumkan	'he brings it' (here)
kang	'he took it'	kumkang	'he brought it' (here)
		(~kamkang)	

The form mkang is unacceptable.

I have analysed ka- as a third person allomorph conditioned by tense:

ka-,	kabene-,	kabirri-	occur in non-past tenses
∅,	bene-,	birri-	occur in past tenses
ku- (~ka-),	bene-,	birri-	occur in past tenses with the aspect prefix '-m-'

It would be possible to analyse ka- as an auxiliary tense marker occurring with the third person, marking the non-past tense. Two neighbouring and related languages, Maung (Capell and Hinch 1970:73-75) and Gunbalang (Harris 1969:33-35), mark tense distinctions in their prefixing as well as their suffixing systems. The somewhat limited nature of the tense reference of Kunwinjku ka- weakens the case for its analysis as a tense particle. The form ka occurs in the third singular masculine cardinal pronoun nungka (section 5.1.4) and as a demonstrative pronoun that occurs with class prefixes, na-ka, ngal-ka. This use of ka elsewhere in Kunwinjku with a third person reference supports the third person interpretation I have adopted.

7.3.2 Transitive Prefix with Third Person Object

This prefix is based on the intransitive prefix. It is convenient to consider it in the following order: third person singular object, plural object and dual object. The only variation in the singular object forms from the intransitive forms is in the third person singular where bi- occurs in place of '∅' for human objects. The plural object forms comprise the singular object forms with the addition of -ben-. The only exception to this is in the forms for third person dual and plural agent to third person plural object. (ka)bindi- occurs in place of a theoretical (ka)beneben- for dual agent, or (ka)birriben- for plural agent. The dual object forms comprise the plural object forms with the addition of the prefix -bene-. Forms for third person dual and plural agent to third person dual object provide exceptions as (ka)bindi- occurs in place of a theoretical (ka)benebenbene- or (ka)bindibene- in the dual, and (ka)birribenbene- or (ka)bindibene- in the plural. There is no number distinction in the non-singular forms of third person agent to third person object. (ka)bindi- is the prefix for third person non-singular agent to third person non-singular object.

The marker for third person singular object is '∅' added to the intransitive forms, and for plural object is -ben-. Third person dual object forms are marked by the addition of -bene- to the plural object forms.

<i>Number of Agent Person of Agent</i>	<i>Singular</i>	<i>Dual</i>	<i>Plural</i>
SINGULAR OBJECT			
1 (+S -H)	nga-	ngane-	ngarri-
1 & 2 (+S +H)	ngarr-	kane-	karri-
2 (-S +H)	yi-	ngune-	ngurri-
3 (-S -H)	(ka)/(ka)bi-	(ka)bene-	(ka)birri-
PLURAL OBJECT			
1 (+S -H)	ngaben-	nganeben-	ngarriben-
1 & 2 (+S +H)	ngarrben-	kaneben-	karriben-
2 (-S +H)	yiben-	nguneben-	ngurriben-
3 (-S -H)	(ka)ben-	(ka)bindi-	
DUAL OBJECT			
1 (+S -H)	ngabenbene-	nganebenbene-	ngarribenbene-
1 & 2 (+S +H)	ngarrbenbene-	kanebenbene-	karribenbene-
2 (-S +H)	yibenbene-	ngunebenbene-	ngurribenbene-
3 (-S -H)	(ka)benbene-	(ka)bindi-	

Table 13 Transitive Verb Prefix for Third Person Object

The prefix form -di specifies plural agent (see section 7.3.3) and is historically related to the plural prefix forms with -rri- following the operation of the 'd → rr' rule (see section 5.1).

e.g. nga- + di → ngarri-
(ka)bi- + di → (ka)birri-

This provides an alternative derivation from that offered in the discussion of the pronominal system (see section 5.1.4) where it was suggested that be- + di → berri → birri. The derivation there was arrived at from a comparison between forms of the free pronouns and the prefix. The derivation offered here comes from an internal analysis of the prefix. Alternation between the vowels 'e' and 'i' occurs in the third person pronominal forms, and to decide which of the two derivations offered for birri- is more appropriate, it would be advantageous to know the relation between the development of the pronominal system and the change from three to five vowels.

This same plural agent marker is a factor in the derivation of the (ka)bindi- prefix for the relation between non-singular third person agent to non-singular third person object,

i.e. (ka)ben- + di → (ka)bendi- → (ka)bindi-

To complete this derivation it is necessary to assume vowel harmony to arrive at the surface form (ka)bindi-. Such vowel harmony has already been assumed in the pronominal system (see section 5.1.4).

7.3.3 Transitive Prefixes with Non-third Person Object

This distinction in the transitive pronominal prefixes between third person on the one hand and between first and second person on the other hand is not unknown in Australian pronominal systems. Dixon said (1972:8):

Third person pronouns are often set off morphologically and syntactically from the first and second person forms. In some languages third person forms inflect on the pattern of nouns, rather than of other pronouns ... Third person pronouns often carry a demonstrative meaning, and sometimes involve an obligatory specification of the proximity of the object referred to.

The distinction between first and second person pronouns and between third person pronouns is an important part of the hierarchy set up by Silverstein (forthcoming) in his discussion of grammatical hierarchies.

Kunwinjku transitive prefixes have been discussed by Oates (1964: 43-45). A rather confusing picture is presented for two reasons:

(i) third person object is not treated separately from first and second person object, though the charts on pages 119-120 point to this important distinction;

(ii) an attempt was made to establish agent (transitive subject) and object allomorphs for each person and number involved. This unnecessarily complicated the presentation, which is admitted (1964:45):

Rules as to when each allomorph occurs have been worked out but these are too complex to be practicable.

The prefix should be viewed as a unity, with the key being the relationship involved, i.e. third person singular agent to first person singular object etc., rather than trying to isolate allomorphs for particular agent and object forms. Relevant categories ought to be considered in the following order:

person of object,	first, second
person of agent,	first, second, third
number of agent,	singular, plural
number of object,	singular, dual, plural

I have analysed the transitive prefix as a portmanteau morpheme indicating the relationship between person of agent and person of object. The system is most clearly seen by considering the various forms for both singular agent and object. These basic forms are extended within the system to indicate singular and plural number of

the agent, and singular, plural and dual number of the object. Four basic forms show the relationship between singular agent and object.

third person agent to first person object, *ngan-*
 third person agent to second person object, *ngun-*
 second person agent to first person object, *kan-*
 first person agent to second person object, *Ø-*

Each of the explicit prefixes ends with the phoneme 'n'. Elsewhere I have analysed *nga-*, *ngu-*, *ka-* as person markers (section 5.1.4). It is tempting to consider this final 'n' as a marker that reverses the person reference.

i.e. *nga-* first person agent to third person object
ngan- third person agent to first person object

This change of relation can also be seen in the other persons but is not so obvious:

e.g. *ngu(rri)-* second person (plural) agent to third person object
ngun- third person agent to second person object

The forms *ka-* and *kan-* present a special problem for analysis in this way. The form *ka-* occurs as a third person subject or agent marker, and also occurs as part of the first & second person non-singular agent or subject as *ka(ne)-* in the dual, and *ka(rri)-* in the plural. In the singular the prefix *kan-* indicates the relation second person to first, and in the non-singular it indicates the relation between third person and first person as well.

It is possible that a diachronic analysis of the Kunwinjku pronominal system may suggest a function for the 'n' similar to that suggested above. In terms of my synchronic analysis, I am committing the same error that I criticised Oates for, when I try to further analyse this transitive relational prefix.

The various relationships ought to be considered first for singular number of both agent and object. To change from singular agent to non-singular agent *-di-* is added to the prefix with some exceptions. The forms for plural object are mostly the same as those for singular object. The oblique free pronouns are normally used with the plural object. To change from singular object to dual object *-bene-* is added to the prefix with some exceptions. Oblique free pronouns may be used with dual object.

There is potential ambiguity in the system as the same prefix form may indicate different relations. In some cases this ambiguity does not occur because of the meaning gained from the immediate context. In those instances where context is no help in avoiding ambiguity the

appropriate free pronouns are used. The cardinal pronoun will be used to specify agent, and the oblique pronouns will be used to specify object.

The same prefix is used to specify the relation between second person agent and first person non-singular object and that between third person agent and first person non-singular object. Where the identity of the person of the agent is not obvious from the immediate context, then the appropriate cardinal pronoun will be used to specify it. It should be realised that when the prefix *kan-* occurs in text material in reported speech, its reference would be to third person agent. It is only in direct speech that ambiguity may occur, which would be removed by the use of the appropriate cardinal pronoun.

There is no inclusive/exclusive distinction in the prefix, for person of object. The form of the 'first and second' person is that used for first person non-singular. If it is necessary to specify the reference of the object, as to whether it includes or excludes the hearer, this will be done by using the appropriate oblique pronoun. The pronouns are set out in section 5.1.4. The forms of the prefix are set out in Table 14.

<i>Number of Object</i>	<i>Singular</i>	<i>Plural</i>	<i>Dual</i>
<i>Person and Number of Agent</i>			
FIRST PERSON OBJECT			
Second Person			
Singular	kan-	kan-	kanbene-
Non-singular	kandi-	kandi-	kandi-
Third Person			
Singular	ngan-	kan-	kanbene-
Non-singular	ngandi-	kandi-	kandi-
SECOND PERSON OBJECT			
First Person			
Singular	∅	∅	benbene-
Non-singular	ngundi-	bi-/ngundi-	bi-/ngundi-
Third Person			
Singular	ngun-	ngun-	ngunbene-
Non-singular	ngundi-	ngundi-	ngundi-

Table 14 Transitive Verb Prefixes for First and Second Person Objects

This prefix has been analysed as a transitive verb prefix marking the relation between agent and object in transitive sentences. This generalisation must be modified for when the prefix occurs in ditransitive sentences (section 8.1.2) and in verbs with the derivational prefix marne- (section 7.4.1). In ditransitive verbs the prefix relates agent and indirect or implicated object. In verbs with the prefix marne-, the transitive prefix may relate agent and object as is normal, or it may relate agent and implicated object or beneficiary. In glosses supplied with examples in other sections of this thesis and with the texts in Appendix B, for this prefix I indicate the person and function of agent but only the person for the other party included in the pronominal reference so that:

ngun- is glossed 3sgA-2sg

ngan- is glossed 3sgA-1sg

7.4 DERIVATIONAL PREFIXES

7.4.1 Implicated

The prefix marne- occurs with both transitive and intransitive verbs following the pronominal prefixes. It adds an argument to the verb that can make transitive verbs ditransitive in function, and intransitive verbs directional or transitive. The transitive pronominal prefixes occur with verbs with marne-.

This prefix has been described as the marker of indirect object (Oates 1964:51), which is true as it occurs most frequently with verbs with a ditransitive function.

yolyolme 'to talk'

marneyolyolme 'to talk about something, to tell stories'

yime 'to speak'

marneyime 'to tell someone something'

However it does not occur with verbs that are not ditransitive so that its function is more than just the marker of indirect object.

In transitive verbs the additional argument marked by the presence of marne- may be incorporated into the verbal complex as a nominal or may occur as a separate noun phrase in the sentence. This additional argument may be an implicated object or a beneficiary but it normally is the direct object with the pronominal object marked by the transitive verb prefix assuming the function of the implicated object or beneficiary.

kan - bun 'he will kill us'
 kan - marne - bu - n kunj
 3sgA-1pl kill NON-PAST kangaroo

He will kill a kangaroo for us.

In this example marne- focuses attention on the separate noun kunj, which is the direct object. The transitive prefix kan- marks the relation between third person agent and first person beneficiary.

bi -marne - bong - yo - y [AA]
 3sgA-3sg string lay PAST CONT

He has the string for her (literally lying there).

bi - marne - mim - bulhm - i [D-Y]
 3sgA-3sg eye close PAST CONT

He was closing his eyes for her.

In these two examples marne- focuses attention on the incorporated nominals bong- and mim- which are direct objects. The transitive prefix bi- in each example indicates the relationship between third person agent and third person implicated object.

mayh yi - marne - bu - n nuye [JM&P]
 animal 2sgA-3sg kill NON-PAST his

You kill the animal (that is) his (the spirit's).

Here marne- focuses attention on the oblique pronoun nuye, and the involvement of an additional person. The transitive prefix marks the relation between second person agent and third person object, which also occurs outside the verbal complex as mayh.

bindi - marne - ka - ng wurdwurd dja daborrabolk [Den]
 3plA-3pl take PAST children and old people

They took some (food - referred to earlier) for the children and old people.

In this example marne- focuses attention on the direct object 'food' which has been referred to earlier in the text. The transitive prefix marks the relation between agent and indirect object.

ngan - marne - baye - ng
 3sgA-1sg bite PAST

It (dog) bit me (because I damaged the mythological site).

In this example marne- focuses attention on the reason for the action (indicated by the context of the story) - damage done to a mythological site. The prefix indicates the relation between third person agent and first person object.

In intransitive verbs the prefix marne- directs attention to something outside the verbal complex. If this additional argument is

a person, the verb is transitive, and if it is a place, the verb is directional. The transitive pronominal verb prefixes occur with intransitive verbs with marne-.

bebme	'to appear, to come out'
marnebebme	'to appear to someone or something'
	'to meet someone'
re	'to go'
marnere	'to go to someone'

The following examples from text material illustrate the use of marne- with the intransitive verb bebme. In the first example marne- focuses attention on a place and the verb is directional. In the second example the verb bebme occurs twice; once without marne- where it occurs in relation to a place to which there is no special attention directed, and secondly in relation to people who are met for a specific purpose (hospitality) and the verb is transitive.

- (i) bene - wa - m bene - marne - bebme - ng nawaran djang [C265]
 3duS go PAST 3duA-3sg come PAST python site
 They went and they came to the python site (for ceremonial purposes).
- (ii) ∅ - bebme - ng Kumarderr, wanjh ben - marne - bebme - ng
 3sgS come PAST (place) then 3sgA-3pl come PAST
 birri - wo - ng bakki manme [And]
 3plA-3sg give PAST tobacco food

He arrived at Kumarderr and came to them (met them - for hospitality). They gave him tobacco and food.

The word ngarrbenmarnerey occurs in a published text (Berndt & Berndt 1951:38, 49). Literally it means 'we used to go to them about it'. The 'them' is the traditional owners of the country from whom advice is sought on matters relating to that country. In the context of the story the meaning is given as 'we (listen to) them about it' or in a general rendering 'we should pay some attention to those people'.

7.4.2 Comitative

The prefix -yi- occurs with transitive and intransitive verbs. It has been described as a marker of 'personal or impersonal object' (Oates 1964:51) and as:

A personal or impersonal infix, with usually an object meaning, referring back to some person, creature, inanimate object, and so on, already mentioned (Berndt & Berndt 1951:49).

The prefix does refer to objects of the verbs it occurs with, but this

does not fully explain its significance as it also occurs with intransitive verbs. It is a comitative prefix that often applies to the object of a transitive verb but may also apply to other noun phrases. It can refer to a noun incorporated in the verb complex (see section 7.5) or to a noun phrase elsewhere in the sentence. Something of the range of its meaning can be seen from the following examples.

nga - kuk - yi - kolu - y
 1sgS body COM go down PAST
 I went down with the body (of the kangaroo).

bi - yi - na - ng
 3sgA-3sg0 COM see PAST
 (hum)

He saw him with it (the animal he killed).

kabi - yi - barndi - ϕ
 3sgA-3sg COM climbed (a hill) NON-PAST
 He climbed a hill with him (on his shoulders).

bene - kuk - yi - bebme - ng
 3duS body COM appear PAST
 They appeared with the body.

nga - kole - yi - kurrme - ng
 1sgA-3sg spear COM leave PAST
 I left the spear with him.

kabi - yi - lobme - ϕ
 3sg COM run NON-PAST
 He runs with him.

This final example presents a problem in that it is an intransitive verb with a transitive verb prefix. This suggests that the prefix *-yi-* is a derivational prefix like *-marne-*, taking the transitive verb prefix. It also suggests the origin of the prefix *-yi-*, which only occurs following an incorporated nominal or the prefix *bi-*. In relation to the incorporated nominal it could be interpreted as a suffix of the nominal, so that the nominal that is incorporated is not just a noun root but is a derivational noun stem. Other types of compound nominal stems may be incorporated into the verbal complex (see section 7.5).

The normal comitative suffix with nouns is *dorreng* (see section 8.35), but in texts I have collected I have found one example of *-yi* as a comitative suffix. It comes in a story telling of the origins of different tribal groups in the western Arnhem Land area, and concerns the Djeibmi group, whose country is famous for quality bamboo ideally

suited for spears. The word is nakoleyi and the informant gave the gloss 'spear men'. Others have suggested the meaning of the suffix -yi as 'maker of' (Oates 1964:30) and nakoleyi would mean 'makers of spears'. A separate story telling of the relations between various tribal groups and the trade exchange that occurred between these groups supports the comitative interpretation. Groups from the south-west of Oenpelli (the direction of the Djeibmi and others) brought bamboo spears to ceremonial exchanges (see Berndt & Berndt 1964:116). This is the group described as nakoleyi to which I give the meaning 'a man with spears'. The story in which nakoleyi occurs is a restricted story telling the exploits of a dreamtime creator hero. The secret nature of that story indicates that it is a type of narrative that would use and preserve old words.

I am suggesting that at an earlier stage of the language -yi was a nominal comitative suffix. That suffix is now -dorreng, which has replaced -yi in all but a few environments. The earlier suffix remains in the derivational stem of incorporated nominals, from which it was extended to apply following the prefix bi- to indicate the comitative function with a third person pronominal involvement. It is pointed out in section 7.5 that only nouns of class 3 and 4 are normally incorporated into the verb complex. bi- is the pronominal form that applies to nouns of class 1 and 2.

What once may have been a comitative nominal suffix is now a derivational verb prefix. It makes an intransitive verb stem a transitive verb with the transitive pronominal prefix in place of the intransitive prefix. This reinterpretation of yi can be seen by its occurrence in verbal complexes without incorporated nominals, as in bi-yi-nang 'he saw him with it' (above) and in:

njalekah ngan - yi - bebme - ng kore bininj [D44]

why 3sgA-1sg appear PAST to man

Why has he appeared with me to these people? - literally
or Why has he taken me to these people?

Further evidence in support of this reinterpretation can be seen in the occurrence of yi with the verb -ka. Normally -ka means 'to take' but yika means 'to go for', as in kunyarl yikang 'he went for string'. The verb may have an incorporated nominal:

ø - rerrng - yi - ka - ng

3sgA-3sg wood go for PAST

He went for firewood.

and it may occur with just the transitive verb prefix:

ka - m -re - ϕ kunubeywu kan - yi - ka - n [D46]
 3sgS motion go NON- maybe 3sgA-lpl go for NON-PAST
 towards PAST
 speaker

He (rainbow) will come, maybe he will go for us
 i.e. maybe he will eat us - which is what he did.

7.5 NOMINAL INCORPORATION

Examples of noun incorporation within the verbal complex have already been given (section 7.2). This section will give further examples to illustrate the extent of this feature. Nouns are incorporated as subject, object and agent. The free form of the noun, when it has no prefix, or the noun root is what is incorporated. Nouns incorporated are normally class 3 with kun- prefix, though there are some from class 4 (man- prefix). The noun yaw 'baby' appears to be an exception. Compound stems may also be incorporated.

Subject incorporation

kunkodj 'head'
 bene - kodj - yibme - ng
 3duS head sink PAST
 Their heads were submerged.

kunkarre 'leg'
 nga - karre - babang
 1sgS leg is sore
 My leg is sore.

Object incorporation

kunwarde 'rock'
 yi - warde - djalkma - ϕ
 2sgA-3sg rock split IMP
 You split the rock!

mankole 'spear'
 nga - kole - me - y
 1sgA-3sg spear get PAST
 I got the spear.

Agent incorporation

kunydme 'tooth'
 ngan - yidme - kadju - ng
 3sgA-1sg tooth chase NON-PAST
 A/my tooth hurts me.

kunbid 'hand'
 ngan - bid - kadju - ng
 3sgA-1sg hand chase NON-PAST
 My hand hurts me.

The verb kadju- is the only example of incorporated agent I have in my data. This is an idiomatic usage which could have been glossed as 'my tooth hurts' and 'my hand hurts'. The form of these two examples is definitely transitive as kadju- is a transitive verb, and the prefix ngan- definitely signals a third person agent which must be the incorporated noun in each example.

Incorporation of free form

djarnngal 'forked stick'
 nakudji bininj ϕ - djarnngal - djobke - ng
 one man 3sgA-3sg forked stick chop PAST
 One man chopped forked sticks.

djoleng 'cooked meat'
 ϕ - djoleng - me - y
 3sgA-3sg cooked meat get PAST
 He got the cooked meat.

Incorporation of special root

kukku 'fresh water' incorporated root bo-

The normal word for fresh water is kukku. The root form bo occurs in a number of places in the morphology. It does not occur by itself. The verb 'to drink' is bongu- which literally is bo 'water' + ngu 'to eat'. When an adjective qualifies the word 'water', the most natural way to do this is to form a compound with the root bo:

e.g. ku - bo - yahwurd - 'a small quantity of water'
 ku - bo - kimuk - 'a large quantity of water'

This root bo- may be incorporated as the subject of an intransitive verb and as the object of a transitive verb.

bo- 'water' as subject

ϕ - bo - bi - bo - bidbu - ni kadum
 3sgS water REDU¹ water rise PAST CONT high
 The water was rising continually and it was deep.

ka - bo - yo - ϕ
 3sgS water lie NON-PAST
 Water is lying there.

¹ Reduplication of verb roots occurs to mark emphasis and continuity.

bo- 'water' as object

bene - bo - yawa - ni
3duA-3sg water search PAST CONT

They were searching for water.

yi - m - bo - ka - n ngarduk
2sgA-3sg motion water take NON-PAST me
towards
speaker

You will bring water to me.

the noun yaw 'baby'

This word is the one noun that may be incorporated that does not belong to class 3 or 4. It may be class 1 with the prefix na- when used to refer to a baby boy, and it may be class 2 with the prefix ngal- when used to refer to a baby girl. It most frequently occurs with the verb ma- 'to get' and means 'to become pregnant (literally to get a baby)'. This could be viewed as a compound verb, and thus not be an exception to the rule that only class 3 and 4 nouns may be incorporated. However the noun yaw in yawma refers to the baby in the womb and it could be regarded as a noun of class 3 (as are all body parts) unless reference is to a specific child whose sex is known, when it would have a class 1 or class 2 prefix. It also occurs with verbs other than ma- as both subject and object.

yaw as subject

ka - h - yaw - yo - ø
3sgS CONT baby lie NON-PAST
The baby is lying there.

yaw as object

bi - yaw - ngu - neng
3sgA-3sg baby eat PAST
She ate the baby.

bi - yaw - wukme - ng
3sgA-3sg baby swallow PAST
She swallowed the baby.

Compound incorporation

A number of examples of incorporation of compound nominal stems occur in my data. They are of two types: one is of a noun root and qualifying adjective root and the other is of a noun root and another noun.

bindi - keb - mayh - wo - ng (kunkeb 'nose')
 3plA-3pl beak bird give PAST
 They gave them birds' beaks.

bindi - denge - kimuk - wo - ng (kundenge 'foot')
 3plA-3pl foot big give PAST
 They gave them big feet.

Object incorporation in ditransitive verbs

In ditransitive verbs the pronominal prefix cross-references agent and implicated object. The direct object may be incorporated into the verb as a nominal root.

ngun - bukka - ng mankole
 3sgA-2sg show PAST spear
 He showed you a spear.
 incorporated - ngunkolebukkang.

ngan - bukka - ng kunkarremok
 3sgA-1sg show PAST sore leg
 He showed me his sore leg.
 incorporated - ngankarremokbukkang.

yiben - munkewe - ø
 2sgA-3pl send IMP
 you send them!
 yiben - marne - munkewe - ø mankole
 2sgA-3pl IMPLIC send spear
 you send them a spear!
 incorporated - yibenmarnekolemunkewe!

kabindi - wo - n kunwarde
 3plA-3pl give' NON-PAST money
 they will give them money.
 incorporated - kabindiwardewon.

8 THE SIMPLE SENTENCE AND ITS CONSTITUENTS

8.1 VERBAL SENTENCES

8.1.1 Transitive

The importance of the verbal complex in Kunwinjku sentences has been pointed out (section 7.1). Here the discussion concerns the basic constituents of the different sentence types, and their order. It is a general consideration of Kunwinjku surface structure, though suggestions concerning the deep structure are made (section 8.1.5). Transitive sentences may contain a transitive verb, an agent noun phrase, and an object noun phrase. The only obligatory constituent is a transitive verb.

bindi - bimbu - ni [D168]

3plA-3pl paint PAST CONT

They were painting them.

yi - kodj - baye - men [D86]

2sgA-3sg head bite IMP

You bite (her) head!

The agent of the verb may be expressed by a noun phrase which may precede or follow the verb.

kundjak ngun - ma - ng [JM&P]

fever 3sgA-2sg get NON-PAST

Fever will get you.

mimih ngun - bu - n [JM&P]

3sgA-2sg kill NON-PAST

Mimi will kill you.

wanjh ϕ - bekka - ni ngalbu ngalbininjkobeng [D86]

then 3sgA-3sg hear PAST DE wife
CONT

Then (his) wife used to hear it (the bird).

wanjh kan - na - ni ngalmekbe ngalbininjkobeng [D86]

then 3sgA-1pl see PAST DE wife
CONT

Then that wife used to see us.

The object of the verb may be expressed by a noun phrase which may follow or precede the verb.

bene - karu - y mandanek¹ [D168]
 3duA-3sg dig PAST cheeky yam
 They (two) dug yams.

ka - ma - ng kurlbburru [D86]
 3sgA-3sg get NON-PAST stone axe
 He will get a stone axe.

bininj nga - na - ng [D86]
 man 1sgA-3sg see PAST
 I saw a man.

yok ngarr - bu - n [And]
 bandicoot 1&2sgA-3sg kill NON-PAST
 You and I (we two) will kill a bandicoot.

Both the object and the agent of the transitive verb may be expressed by noun phrases which occur in varying orders.

agent, verb, object

mimih ka - karrme - ø kunj [JM&P]
 3sgA-3sg has NON-PAST kangaroo
 Mimi has a kangaroo.

Nabirnkuluwa bi - bo - m Mirnaliwo [D91]
 3sgA-3sg kill PAST
 Nabirnkuluwa killed Mirnaliwo.

agent, object, verb

yika wurdwurd kabindi - kelehme - ø [JM&P]
 DE children 3plA-3pl frighten NON-PAST
 Some (stories) frighten children.

daluk bokenh ngad kandi - h - kengem - i [D168]
 woman two 1pl 3plA-3pl CONT afraid PAST CONT
 The two women were afraid of us.

object, verb, agent

wanjh bininj bokenh namekbe bindi - kengem - i [D168]
 then man two DE 3plA-3pl afraid PAST CONT
 Then those two women were afraid of these two men.

¹ Mandanek is a variety of yam that is very bitter unless prepared properly.

wurd $\emptyset$ - me - y manmekbe Mirnaliwo [D91]
 child 3sgA-3sg get PAST DE
 That Mirnaliwo has got a child (in her womb).

verb, object, agent

wanjh kan - bu - n kadberre mimih [JM&P]
 then 3sgA-1pl kill NON-PAST 1&2pl
 Then the mimi will kill us.

 ka - na - n nuye kunwarde Nabulanj [Den]
 3sgA-3sg see NON-PAST his money (subsection name)
 Nabulanj will see (i.e. get) his money.

verb, agent, object

bi - bo - m marrkidj ngali ngalbu daluk [D91]
 3sgA-3sg kill PAST clever man DE woman
 The clever man (a native doctor) killed the woman.

Two noun phrases follow the verb in this example. Normally one would interpret marrkidj as object and ngali ngalbu daluk as agent. This example is taken from a well-known story in which a woman is killed by her husband because she is unfaithful. The agent must therefore be marrkidj and the object ngali ngalbu daluk. This particular order of constituents, with the agent between the verb and the object, must be regarded as an exception to the normal ordering of constituents.

object, agent, verb

naka birrikare birri - yim - i [D168]
 DE old people 3plA-3sg do PAST CONT
 The old people used to do that.

Two noun phrases precede the verb. Normally one would interpret naka as the agent and birrikare the object. The verb prefix birri- signals a plural agent and singular object. Therefore naka must be interpreted as object and birrikare as agent. This particular order of constituents, with the agent between the object and the verb, must be regarded as an exception to the normal ordering of constituents.

These last two examples are the only instances in which the agent separates the verb and the object. The most frequent order is agent verb object, and while a variety of orders exists, there is a general constraint on the ordering of constituents, in that the object is always adjacent to the verb. There are four basic orderings that can be grouped into two sets of two:

AVO VOA & AOV OVA

That is the object may precede or follow the verb (most frequently it follows the verb) and the agent may precede or follow the object-verb complex (most frequently it precedes it). The basic constituent is the object-verb complex which may occur in either order, and the agent noun phrase may be permuted around this complex. It is an exception for it to divide this complex. The occurrence of this object-verb complex provides evidence for a constituent verb phrase.

The general constraint on order of constituents in the transitive sentence also occurs in the transitive verb complex. When both agent and object prefixes occur the order must be agent object verb. That is the object is adjacent to the verb. This of itself need not indicate anything of great significance, because the order of prefixes is not necessarily connected with the order of constituents in the sentence. However the general constraint on order that applies both to the sentence and the transitive verb complex suggests some degree of similarity. If one takes the order in the verb complex, agent object verb, as being the underlying order, then by the device of copying rules that Chomsky adjoin first the object and then the agent to the verb one gets the surface order agent, object, verbal complex. Scrambling transformations may then apply to these three constituents, with the constraint that the object is always adjacent to the verb, to give the various orders that may occur at the surface level. When both the object and the agent of the verb are expressed by NPs, they may occur in varying orders:

AVO	50% frequency	VOA	6% frequency
AOV	16% frequency	VAO	6% frequency
OVA	16% frequency	OAV	6% frequency

These statistics are based on a study of simple sentences in a selected sample of texts that included 352 simple sentences, of which 170 were transitive and of which only 18 sentences contained both agent and object NPs. In sentences that only contained the agent NP in addition to the verb, 62% of the sentences had the agent preceding the verb and 38% had it following the verb. In those sentences which only contained the object NP in addition to the verb, 68% of the sentences had the object following the verb and 32% had the object preceding the verb.

A majority of sentences with the the A and the O NPs have the order AVO. A majority of the sentences with agent NP and the verb have the order AV. A majority of sentences with object NP and the verb have the order VO. This indicates that the most frequent order is agent verb object.

In the transitive verb complex, both the agent and the object may be indicated by prefixes:

yi - warde - djalkma - ø [AA]
2sgA-3sg rock split IMP
You split the rock!

and the order within the verb complex will always be agent object verb. This corresponds with the second most frequent ordering of the constituents of the simple transitive sentence in my data.

It is interesting to note that Oates gives the order agent object verb as the usual order in a Kunwinjku sentence:

The Gunwinggu sentence consists of three major constituents: the actor, which usually occurs sentence initial; the action, which usually occurs sentence final; and the object, which usually occurs sentence medial (Oates 1964:75-76).

This order corresponds to that of the prefixes in the verbal complex. If one interprets her 'usually' as meaning the most frequent, there is a difference between her conclusions and mine. Does this mean there has been syntactic change in the twenty years since she worked at Oenpelli (field work May-November 1952)? This is possible, but examination of data given in her grammar (pages 80-115) reveals twelve examples of transitive sentences with both agent and object noun phrases. Of these nine or 75% have the order agent verb object and 25% the order agent object verb. Her data support my generalisation that the most frequent order is agent verb object. Her generalisation that the object usually occurs sentence medial is made on a different basis from mine, in that she includes in her consideration sentences that do not have both agent and object NPs.

'Interrog.	Object	Action
yidog	manme	yidjare
Do you want some food?'		

So both my investigations and data cited by Oates indicate that the most frequent order is agent verb object in the simple sentence.

All the examples given above are taken from text material.

In elicitation of transitive sentences with both object and agent noun phrases the order of constituents invariably is agent, verb, object - the most frequent order in texts.

daluk bi - bo - m bininj
woman 3sgA-3sg hit PAST man
A woman hit a man.

kundulk bi - bo - m bininj
tree 3sgA-3sg hit PAST man
A piece of wood hit a man.

duruk bi - na - ng bininj
 dog 3sgA-3sg see PAST man
 A dog saw a man.

bininj ø - na - ng duruk
 man 3sgA-3sg0 see PAST dog
 (non-human)
 A man saw a dog.

8.1.2 Ditransitive Sentences

Ditransitive sentences may contain a ditransitive verb, an agent noun phrase, an object noun phrase and an indirect object or implicated (IMPLIC) noun phrase. As was the case with the transitive sentence, the language structure poses a number of problems. It is very rare for all three noun phrases to occur in one sentence - no such example has been found in text, but some have been obtained during elicitation.

In the discussion of the verb prefix marne-, it was pointed out that when the prefix occurred in the verb complex, then the object indicated by the pronominal transitive verb prefix became an indirect object. A similar principle applies in ditransitive sentences. The transitive agent-object prefix occurs in ditransitive verbs. In transitive verbs it relates agent and object, but in ditransitive verbs it relates agent and indirect or implicated object.

There is some variation in the order of constituents of the ditransitive sentence. The following examples are from elicited data.

bininj bi - wo - ng djurra daluk (A,V,O,IMPLIC)
 man 3sgA-3sg give PAST book woman
 A man gave a book to a woman.

ngaleng bi - wo - ng bininj djurra (A,V,IMPLIC,O)
 she 3sgA-3sg give PAST man book
 She gave a man a book.

ngaye djurra nga - wo - ng nungka (A,O,V,IMPLIC)
 I book lsgA-3sg give PAST him
 I gave him a book.

These three examples suggest a common order of constituents, agent noun phrase, verb, implicated noun phrase, with the object noun phrase occurring in any position other than sentence initial.

The obligatory constituent is a ditransitive verb:

bindi - keb - mayh - wo - ng [D168]
 3plA-3pl nose bird give PAST
 They gave them noses like birds' beaks.

bindi - denge - kimuk - wo - ng [D168]
 3plA-3pl foot big give PAST
 They gave them big feet.

As was the case with transitive sentences, both object and agent noun phrases may precede or follow the verb. The key factor in this type of sentence is the position of the implicated (IMPLIC) noun phrase. Normally it follows the verb, but it may also precede the verb.

kan - wo - ng ngadberre [B6]
 3sgA-1pl give PAST 1pl
 She gave us (our language).

Agent and implicated noun phrases

There are three examples in which the implicated noun phrase follows the verb. The agent noun phrase precedes the verb in two sentences and follows it in one sentence.

ngali bi - kuk - bukka - ng ngali (A,V,IMPLIC) [B7]
 DE 3sgA-3sg body show PAST DE
 She showed **the** body to the other woman.

kan - wo - ng ngadberre ngalbadjan (V,IMPLIC,A) [B6]
 3sgA-1pl give PAST 1pl mother
 Mother (dreamtime creator) gave it (our language) to us.

Object and implicated noun phrases

There are four examples of sentences with both the object and implicated noun phrases. In two of these the implicated noun phrase follows the verb and in two it precedes the verb. In these few examples the object precedes the verb when the implicated noun phrase occurs. In sentences without the implicated noun phrase the object may precede or follow the verb.

wurdwurd yika ngarri - ben - wo - ng (IMPLIC,O,V) [Den]
 children DE 1plA 3pl give PAST
 We gave some (lily roots) to the children.

ngalbu daluk bininj birri - wo - ni (O,IMPLIC,V) [D168]
 DE woman man 3plA-3sg give PAST CONT
 They were giving (another) woman to the man.

kummekbe kunu birri - yolyolm - i ngadberre (O,V,IMPLIC) [D86]
 DE thing 3plA-3sg talk PAST 1pl
 CONT
 They were talking ^{to us} about that thing.

It is not possible to make an adequate generalisation from so few examples. The order A, O, V, IMPLIC is the most common order in the sentence. Within the verbal complex the obligatory order is A - IMPLIC,

V. The prefix marking agent is the same in both transitive and ditransitive verbs. In transitive verbs it marks the relation between agent and object and in ditransitive verbs it relates agent and implicated object.

8.1.3 Intransitive

Intransitive sentences may contain an intransitive verb and a subject noun phrase which, if it occurs, may precede or follow the verb, which is the only obligatory constituent.

bene - re - y [D38]

3duS go PAST CONT

They (two) were going.

karri - bale - ϕ [D86]

1&2plS walk NON-PAST

You (pl) and we walk (along).

The subject of the verb may be expressed by a noun phrase which normally precedes but may follow the verb.

mandjewk birri - burriwe - ng [D168]

year 3plS pass PAST

(Many) years passed (by).

ϕ - bal - wa - m ngalmekbe daluk [D91]

3sgS walk go PAST DE woman

That woman (just) went away (on foot).

As was the case with the transitive and ditransitive sentences, there are many examples where there is no explicit noun phrase indicating the subject, such information being conveyed in the prefixes of the verbal complex. In the texts studied, 44% of the intransitive verbs did not have any associated noun phrases, 30% had a subject noun phrase, and 26% had locative or time phrases. The subject preceded the verb in 88% of the intransitive sentences in which a subject noun phrase occurred.

8.1.4 Adverbial Functions

Other constituents of verbal sentences include those indicating adverbial functions such as time, manner and location. These functions

are normally expressed by single words, though locative phrases do occur. These constituents may precede or follow the verb, and it is unusual for there to be more than two of them in any sentence. In the following examples the adverbial constituent is underlined.

kaluk bu karri - dowe - n [D86]
 later when 1&2plS die NON-PAST
 Later when we die.

kunkare daluk bokenh bene - h - ni kured [And]
 some time ago woman two 3duS CONT sit camp
 Some time ago two women were sitting in camp.

nungka ngokko ϕ - dokme - ng [And]
 he already 3sgS go first PAST
 He has already gone first.

ngun - kadju - ng kumunun [JM&P]
 3sgA-2sg chase NON-PAST night
 He will chase you at night.

werrk ϕ - durnd - i [B5]
 quick 3sgS return PAST
 He returned quickly.

ka - nalkbu - n mungoyh [D46]
 3sgS cry NON-PAST always
 He always cries.

ϕ - kele - rlobme - ng kakbi mungoyhmungoyh [And]
 3sgS fear run PAST north all the time
 He ran north (being) afraid all the time.

yi - rranjbu - ϕ werrkwerrk [Han]
 2sgA-3sg spear IMP quickly
 Spear it quickly!

kondah yi - m - ra - y [Han]
 here 2sgS motion go IMP
 towards
 speaker
 Come here!

nuye kured ϕ - bebme - ng [And]
 his camp 3sgS appear PAST
 He appeared at his camp.

Ngalyod $\emptyset$ - wa - m kandji [D91]
 rainbow 3sgS go PAST below
 The rainbow (serpent) went underground.

ngalbuyika birri - m - wo - ng koyek [D91]
 another 3plA-3sg motion give PAST east
 towards
 speaker
 The gave him another wife from the east.

kunwarde bindi - bimbo - m [D168]
 rock 3plA-3pl paint PAST
 They painted them on rock.

ngarr - ngu - n kore kudjurle - mak [Han]
 1&2sgA-3sg eat NON-PAST in shade good
 We will eat it in (a place with) good shade.

8.1.5 Deep Structure

The Kunwinjku verbal complex has prefixes that mark subject, agent and object. Separate noun phrases marking these functions may occur in a sentence but they are not obligatory. The order of prefixes within the verbal complex (section 7.1) differs from the most frequent order in the transitive sentence (section 8.1.1). This is not unusual in language, as was pointed out by Longacre (1964:36-37):

the fact that the word may constitute a minimal clause in some languages in no way invalidates the distinction between clause and word ... a comparison of even elaborate verb structures (e.g. Candoshi, Quechua, Eskimo) with clauses reveals that the two levels of organisation differ in relative rigidity and expandability.

The most obvious difference between the Kunwinjku transitive sentence (clause in Longacre's terms) and verb is the fixed order of constituents in the verb and the fairly free order of constituents in the former. The most frequent order in the sentence is agent, verb, object compared to the order agent, object, verb within the verbal complex.

Rembarnga (McKay 1975:256) like Kunwinjku has variation in the order of constituents in the transitive sentence and the optional absence of the independent noun phrases. The normal but not invariant order in the transitive sentence is agent, object, verb. This order is given as the underlying order of a transitive sentence from which either or both noun phrases may be deleted to give the surface form. This analysis could be adopted for Kunwinjku with scrambling transformations to provide for the different orderings of constituents that may occur at the surface level.

It is proposed for Kunwinjku that the order in the deep structure is the same as in the transitive verb:

i.e. NP_A NP_O verb

In moving from deep structure to the surface forms two copying rules apply (Postal 1963:349):

(i) NP_O is copied and Chomsky adjoined to the verb;

(ii) NP_A is copied and Chomsky adjoined to the verb resulting from the application of rule (i).

From an underlying NP_A , NP_O , verb

copying rule (i) gives NP_A , (NP_O), verb - [prefix O + verb]

which following the application of copying rule (ii) gives the surface order (NP_A), (NP_O), verb - [prefix A + prefix O + verb]

This can be represented as:

	NP_A	NP_O	verb
	1	2	3
Transformation object copy -	1	(2)	2+3
Transformation agent copy -	(1)	(2)	1+2+3

The brackets indicate that once the noun phrase is copied, its occurrence at the surface level is optional.

Various scrambling transformations may then be applied to give the different surface order of constituents, with the general constraint that the object noun phrase when it occurs is adjacent to the verbal complex. This constraint provides motivation for the establishment of a node VP, consisting of the object noun phrase and the verbal complex. This suggests the following phrase structure for the transitive sentence:

T SE - $NP(A)$ VP(T)
 VP(T) - $NP(O)$ VC(T)
 $NP(A,O)$ - DE N Adj Num
 $NP(A,O)$ - Pro

Applying a similar analysis to the ditransitive sentence suggests a deep structure:

NP_A , NP Implic, NP_O , verb

to which two copying rules apply:

- (i) NP Implic is copied and Chomsky adjoined to the verb;
- (ii) NP_A is copied and Chomsky adjoined to the verb resulting

from the application of rule (i).

From an underlying NP_A , NP Implic, NP_O , verb

copying rule (i) gives, NP_A , (NP Implic), NP_O , verb [Implic + verb]

to which copying rule (ii) applies to give the surface order,

(NP_A), (NP Implic), NP_O , verb [A + Implic + verb]

The brackets indicate that once the noun phrase has been copied, its occurrence at the surface level is optional. The direct object is not copied and it would remain one of the sentence constituents. It may be optionally incorporated into the verbal complex as a nominal root (sections 7.5 and 7.4.1). Scrambling transformations are then applied to give the various orders of constituents that may occur at the surface level.

The derivation may be represented as:

	NP_A	NP Implic	NP_O	verb
	1	2	3	4
Transformation implic copy	1	(2)	3	2 + 4
Transformation agent copy	(1)	(2)	3	1 + 2 + 4

The underlying structure for the intransitive sentence is:

NP_S , verb

to which one copying rule applies,

NP_S , is copied and Chomsky adjoined to the verb;

From an underlying NP_S , verb

this copying rule gives: (NP_S), verb [prefix S + verb]

which may be represented as,

	NP_S	verb
	1	2
Transformation subject copy	-(1)	1 + 2

Once the copying rule has applied the occurrence of the noun phrase is optional. A scrambling transformation may apply to move the subject noun phrase to follow the verb.

8.2 NON-VERBAL SENTENCES

This class of sentences covers the juxtaposition of two noun phrases without a copula and may be called equational. Generally the subject or topic precedes the predicate or comment, though the reverse order does occur. The noun phrases may occur in the fuller form with noun and adjective or determiner, or in a reduced form as a noun or pronoun, or an adjective or a determiner.

nuye	namekke	mayh	[JM&P]
comment	topic		
his	DE	animal	

These animals (are) his.

ngallekke	daluk	ngalbininjkobeng	nungka	muyeni	[AA]
	topic		comment		
DE	woman	spouse	he	his	

This woman (is) his own wife.

yika	kunwoybuk	[JM&P]
topic	comment	
DE	true	

Some (are) true.

Nabinkuluwa	marrkidjbu	[D91]
	topic	comment
		clever man

Nabinkuluwa (was) a clever man.

Nangale	nanu	bininj
comment	topic	
who	DE	man

Who (is) that man?

manih	manme	wurd - kenh
	topic	comment
DE	food	children for

This food (is) for children.

The topic noun phrase may be omitted, in which case a particle may introduce the sentence.

[illegible]

djaying nabang [D86]
PART cheeky
Maybe (he is) cheeky.

An equational sentence is one way of indicating possession (see sections 8.3.2 and 8.3.5 for other ways). Such a sentence is comprised of a noun phrase and a possessive or oblique pronoun.

mimih nuye
 his
(They are) the mimi's.

karrard dja ngabbard bedda berrewoneng
mother and father they theirs (dual)
(It was) mother's and father's.

8.3 PHRASES

There are three basic types of phrase in Kunwinjku. One is the verb phrase (section 8.1.1 & 8.1.5) and there are two kinds of phrases involving nouns, which I have called the noun phrase and the prepositional phrase.

8.3.1 Verb Phrase

In intransitive sentences and many transitive and ditransitive sentences this is just the verb. In other transitive and ditransitive sentences it comprises the verb and the object noun phrase and the two constituents may be in either order.

bininj ϕ - bo - m kunj
NP agent VP
man 3sgA-3sg kill kangaroo (NP object)
A man killed a kangaroo.

daluk	bokenh	ngad	kandi	- h	-kengem-	i	[D168]
NP agent		VP					
		NP object					
woman	two	1p1	3p1A-1p1	CONT	fear	PAST	CONT
The two women were afraid of us.							

8.3.2 Noun Phrase

The constituents of the noun phrase include determiner, modifier, noun, pronoun, numeral. These occur in varying orders, with the determiner and modifier generally preceding the noun and the pronoun and numeral generally following it. Any one or more of these constituents will form the noun phrase. The determiners are the various kinds of demonstratives, and the modifiers are the adjectives. When the pronoun occurs with other constituents it is normally in the oblique form, except when it occurs in the appositional noun phrase. Numerals may precede or follow the noun but in the texts I have studied the numeral 'one' mostly precedes the noun (70% of instances) and the numeral 'two' almost always follows the noun (90% of instances). This could be because the numeral one -kudji takes the class prefixes of the noun and the adjective and it occurs in the normal position for the modifier, whereas the numeral two bokenh does not have the class prefixes. Examples of noun phrases are:

nahni	daluk	bokenh	[D38]
-------	-------	--------	-------

DE	woman	two
----	-------	-----

these two women

bininj	nakudji	[D91]
--------	---------	-------

man	one
-----	-----

one man

bininj	bokenh	namekbe	[D168]
--------	--------	---------	--------

man	two	DE
-----	-----	----

those two men

daluk	ngalmekbe	[D91]
-------	-----------	-------

woman	DE
-------	----

that woman

kunkimuk	kunngad	[D38]
----------	---------	-------

big	hole
-----	------

a big hole

bininj	nabuyika
--------	----------

man	another
-----	---------

another man

Possessive Noun Phrase

In the possessive phrase a noun or noun phrase and a possessive pronoun occur, and may be in either order and the pronoun possesses the noun.

kunmalng kadberre
shadow our
our shadows

bedberre kunred
their camp

karrard dja ngabbard berrewoneng
mother and father their (dual)
their mother and father

ngarduk ngadjadj
mine uncle
my uncle

There are three other types of noun phrase.

appositional

ngad mimih, ngarri - yime - ng [D40]
lpl lplA-3sg do PAST
We, mimi, we do it.

ngad bininj karri - ni [B1]
lpl man l&2plS sit
We men, we sit.

sequential

(i) kundad - mak, kundad - buyika, kundjorrh, kunberl, kunberd [D40]
leg first leg other side arm tail
First one leg, then the other leg, side, arms, tail.

(ii) kunj, ngarrbek, djebuyh, nayin [JM&P]
kangaroo echidna possum snake

In both these examples the sequential noun phrase is the object of a transitive verb. The first example follows the verb birridjobkeyi 'they used to cut'. The second example follows the verb and agent noun phrase, mimih kakarrme 'mimi has'.

conjoined

karrard dja ngabbard
mother and father

ngabbard dja ngaye dja benebokenh bininj
father and I and two men

balanda dja bininj
white man and Aboriginal

8.3.3 Noun Classification and the Noun Phrase

Kunwinjku nouns may be grouped into four classes generally distinguished by prefix. Not all nouns have prefixes, and their class membership may be indicated by the prefix of a concordant adjective. The classes are:

- class 1 prefix na-
- class 2 prefix ngal-
- class 3 prefix kun-
- class 4 prefix man-

Adjectives qualifying nouns generally take prefixes that agree with the noun prefix:

na-rangem	na-kimuk	'big boy'
ngal-daluk	ngal-kimuk	'big woman'
kun-warde	kun-kimuk	'big rock'
man-mim	man-kimuk	'big seed'

It has been stated that class membership is a division of nouns into four genders (Oates 1964:24-29). Class 1 is masculine gender, class 2 is feminine, class 3 is 'earth' neuter and class 4 is 'vegetable' neuter. Exceptions to this gender classification and to the concordant prefixing of adjectives do occur. Gender is certainly a factor in the classification system but it is misleading to describe it as a classification into four genders.

Capell (1956:40) commented on noun classification in Australian languages:

no one language has more than nine of them ... if languages in which only four or five classes exist are studied, it is extremely difficult to see any system in the classification. For such languages there is no longer any real system ... All that can be definitely said here is that nouns indicating males go into one class and nouns indicating females into another, but this does not imply that one class can be designated 'male' and another 'female'.

In Kunwinjku nouns with male reference are generally class 1 nouns, those with female reference are generally class 2 nouns and those with neuter reference are nouns of class 3 or 4. The exceptions that do occur are discussed below and their occurrence makes it unwise to label each class by the gender of some of its members.

Class 1 nouns

Oates suggested (1964:24-26) the following groups comprise the membership of this class:

- 1 with na- prefix, e.g. narangem 'boy'
- 2 male sex, e.g. bininj 'man', kornkumo 'father'

- 3 birds, animals and insects, e.g. kunj 'kangaroo', wak 'crow', duruk 'dog', djak 'ant', manimunak 'goose'
- 4 minerals and metals, e.g. kulbburru 'tomahawk', djalakirradj 'wire'^k
- 5 miscellaneous, e.g. delek 'white paint', bulng 'boil', manburrrba 'men's clothes', medjek 'goose wing fan'

To these I can add:

- 6 words related to spirits and ceremonies, e.g. mimih 'spirit',
nakidjkidj 'spirit', djang 'ceremonial site', mirrk 'ceremony'
- 7 dolobo 'bark' - an item traditionally collected by men

These seven groups present a rather heterogeneous collection: there are men and spirits (presumably male), there are animals and other living things, which may be thought of as male if femininity is not explicit. It is possible to provide gender criteria for some of the items in this class, but what about all the neuter items? It could be said they are masculine because they are items obtained and used by men. This will not remove the difficulty as there are neuter items that are used by men in both class 3 and class 4.

e.g. kundjakol 'fire stick' (class 3)

lama, lawk 'spear types' (class 4)

Comparing lama and lawk of class 4 with delek and djalakirradj of class 1, it is found that they are all neuter words, that they are all objects used specifically by men, and they occur in different classes. Gender is a category that has some relevance to class 1 but it cannot be called a purely masculine class.

Class 2 nouns

This class is labelled 'feminine gender' by Oates and no exceptions are given. There are a relatively small number of nouns in this, of which 75% have the class prefix ngal-. It is this class in which the category of gender is most pertinent and I have found an exception in my data. It is the word ngalmangeyi, a species of turtle (some speakers say ngalmangiyi). It has the feminine class 2 prefix ngal- but different informants are inconsistent in their use of adjectives with this noun.

The words will have determiners with the ngal- prefix:

ngal - lekke ngal - mangeyi

DE turtle

this turtle

but two different informants in separate stories use the word sometimes with a class 1 word and sometimes with a class 2 word.

class 1

bi - na - ng na - ni nawu ngal -mangeyi
 3sgA-3sg see PAST DE REL turtle

He saw something that (was) a turtle.

na - kudji ngal - mangeyi
 one turtle

class 2

ngal - mangeyi ngal - yahwurd
 turtle small

(a) small turtle

ngal - mangeyi ngal - ka ngal - komkuyeng
 turtle DE long-necked

that long-necked turtle

This confusion between genders suggests language change is occurring. The informants are telling stories about the turtle and the dreamtime, when animals were thought of as people. Many of these dreamtime beings are sexless and theoretically could be class 1 nouns. The turtle as a living animal could be a class 1 noun, but its form has the class 2 prefix. I have no specific evidence in relation to this word to indicate in which direction the change is occurring, but if the system is becoming less gender oriented, then it is most likely that the word ngalmangeyi was once treated as a class 2 and possibly feminine noun, and because of factors such as those indicated above, some speakers are treating it as a class 1 noun. The confusion between the two classes for this particular word is well illustrated by the following two examples taken from one story of one informant:

ngal - mangeyi nungan $\emptyset$ - kole - me - y
 turtle he 3sgA-3sg spear get PAST

Turtle got a spear.

ngaleng - man ngal - mangeyi $\emptyset$ - wa - m
 she REFL turtle 3sgS go PAST

Turtle herself went.

Class 2 nouns, which are almost exclusively feminine, are the most gender oriented of the four classes. Yet exceptions occur that warn against the acceptance of gender as the criterion for noun classification.

Class 3 and 4 nouns

Formal distinction of these classes is by prefix: kun- for class 3 and man- for class 4. They are labelled neuter by Oates (1964:26-29), and there are exceptions to the gender criterion in both classes.

1 kunwaral 'spirit, shadow'

This word is in the form of class 3 but it is used with class 1 adjectives. This may be explainable in that 'shadow' may be thought of as a body part and therefore a class 3 noun. The meaning has extended to include certain types of spirits, so that the word has become regarded as a class 1 noun.

2 kunmadj 'swag'

This word is in the form of class 3. If its association with camp and therefore earth and place is most relevant, then class 3 is appropriate, but if its use by men is more relevant, then class 1 may be more appropriate. In my data, I have examples of it used with class 1 and class 4 adjectives.

kun	-	madj	man	-	mekke	boken
		swag			DE	two
those two swags						

3 mandjewk 'rain'

This word has the form of a class 4 noun but occurs with class 1 adjectives.

man	-	djewk	na	-	wern
		rain			many
lots (of) rain					
na	-	djal	-	kimuk	man - djewk
		just		big	rain
just (a) big rain					

4 mankung 'bush honey'

This word has the form of a class 4 noun but it occurs with class 1 adjectives. If it is regarded as food in a tree, which is where the wild bees make their hive, then it may appropriately be a class 4 noun. However if its primary association is with the wild bees, which as living things are class 1, then class 1 would be more appropriate.

man	-	kung	na	-	wern					
		honey			many					
lots of wild honey										
man	-	kung	na	-	ni	ka	-	h	-	ni
		honey			DE	3sgS		CONT		sit

This honey is here.

The two neuter classes have been described by Oates (26-29) as 'earth' (class 3) and 'vegetable' (class 4). Class 3 includes body parts, language names, sicknesses, abstract concepts, camp, implements, weather, genus and geographical names. Class 4 is generally of specific varieties of plants and trees. Exceptions to class 4 are:

mandjimdjim	'beetle'
manbolh	'track'
mankabo	'river'
manlabarl	'billabong'

Apart from body parts in class 3, neuter covers all the items, but, as has already been pointed out, there are neuter words in class 1, so that again exceptions question the appropriateness of gender criteria for noun classification.

What then may be said about noun classification? Gender was assumed by Oates (1964:24) to be the basis of the system, but while it may have been the case that at an earlier stage the language had a consistent four-class gender system, it certainly is not so now. It seems that noun classification is an arbitrary division of nouns with gender providing some guide. Two factors from the Aboriginal situation cannot be ignored. One is lexical borrowing which leads to a high rate of vocabulary replacement. The other is the tabooing of words because of death or ceremonial reasons. Lexical borrowing has been made into different and changing systems. Words from the same class in one language have been borrowed and arbitrarily grouped into different classes (Capell 1956:40).

The particular social situation at Oenpelli has affected the Kunwinjku system. Kunwinjku speakers began to settle at Oenpelli during the 1930s. Subsequently other groups settled there. Among these other groups were people who claimed to be Kunwinjku, but who had close affiliation to other groups such as Dangbon and Gunbalang (related languages to Kunwinjku). Gunbalang has a noun classification system similar to Kunwinjku but Dangbon has no such system. There is a considerable amount of common vocabulary shared by the three languages and Dangbon has no nominal prefixes. Change has occurred in the Kunwinjku classification system because speakers of these three different languages have lived in the one community. In everyday speech one will hear inconsistency in the use of prefixes of adjectives in agreement with nouns. Sometimes a different prefix is used and sometimes no prefix is used.

A number of generalisations may be made concerning these noun classes. Animate nouns occur in classes 1 and 2, while inanimate nouns occur in classes 3 and 4 (some inanimate nouns do occur in class 1). Feminine nouns occur in class 2 while non-feminine animate nouns occur in class 1 (class 2 is where gender is most pertinent). Plant or vegetable nouns occur in class 4 and other inanimate nouns occur in class 3. It is mostly place names, body parts and generic terms that occur in class 3.

8.3.4 Prepositional Phrase

There are two kinds of prepositional phrase, locative and comparative. The locative phrase consists of the preposition kore 'to, in, at' followed by a noun phrase.

kore kullabar1

PREP billabong

in the billabong

kore Kunbalanya

PREP Oenpelli

to Oenpelli

The comparative phrase consists of the preposition yiman 'like, as' followed by a noun phrase.

yiman ngalyod

PREP rainbow (serpent)

like the rainbow serpent

yiman ngad mimih

PREP 1pl

like us mimi

The postpositional phrase is similar to the prepositional in that it consists of a noun phrase followed by a preposition. The only example I have is with the word kandji 'underneath' (see section 8.1.4). In principle it compares with the nominal suffixes discussed in section 8.3.5. It is considered because kandji is used independently and is not just a nominal suffix.

bene - bal - djal - yo - nginj kuronj kandji

3duS just only lie PAST CONT water underneath

They were just only lying under the water.

would be evident from the contextual meaning and from position in the sentence.

bininj bi - bo - m daluk kundulk
 man 3sgA-3sg hit PAST woman stick
 A man hit a woman with a stick.

Comitative

The suffix -dorreng indicates accompaniment or having.

ngaye nga - na - ng nungka djarrang - dorreng
 I lsgA-3sg see PAST him horse COM
 I saw him with a horse.

wanjh kundjawurrk - dorreng nga - m - wa - m kondanj kunu
 then beard COM lsgS motion go PAST here
 towards
 speaker

Then I came here with a beard.

Causative

The traditional case labels do not quite apply to this suffix. In some respects it approaches dative, but it does not have the purposive component common to the dative case in other Australian languages. The suffix -kah occurs mainly in relation to fighting and causative is the most appropriate case label.

bininj bene - bu - rrinj daluk - kah
 man 3duS hit REFL woman CAUS
 The men were fighting about (because of) women.

kabi - bu - n daluk - kah
 3sgA-3sg hit NON-PAST woman CAUS
 He will hit him because of the woman.

The morphology of two interrogative particles illustrates the meaning of this suffix. The particle njale means 'what' and is used to introduce questions. The particle njalekah means 'why' and it can be interpreted literally as 'what - because of'.

Genitive

The suffix -kenh is derivational, and indicates possession, though in some contexts it could be glossed with the dative meaning 'for'. The two examples may both be interpreted in either of these ways (see section 8.2 and 8.3.2 for examples of other possessive expressions).

kunrurrk Kunwinjku - kenh

house GEN

the Kunwinjku house *or* the house for Kunwinjku

manih manme wurd - kenh

DE food child GEN

This food is for the children *or* this food is the children's.

The suffix -waken occurs with fish and reptiles and indicates their habitat. It could be glossed as 'in' or 'through' but a more accurate gloss is 'dweller'. It is similar in form and function to the genitive suffix -kenh, and like it may be glossed as 'belonging to'. Both -waken and -kenh are derivational suffixes.

djenj kurrula - waken

fish salt water dweller/belongs to
a salt water fish

djenj kubo - waken

fish fresh water dweller/belongs to
a fresh water fish

nayin kuwarde - waken

snake rock dweller/belongs to
a rock snake

kungol - waken

cloud dweller/belongs to
an aeroplane

9 SUBORDINATION

This section presents the various ways that clauses may be related to one another at the surface level. Six different types of subordination are set out with examples, and each type involves a conjunction or relative pronoun.

9.1 RELATIVE CLAUSES

The two clauses involved in this type of subordination share a co-referential noun phrase, which may be subject, agent or object in either the main or subordinate clause. One of these phrases is omitted and replaced by the relative pronoun (REL). There is variation in the use of this relative pronoun. Kunwinjku has four noun classes (section 8.3.3) that have prefixes na-, ngal-, kun- and man-. For some speakers the relative pronouns are nawu, ngalbu, kunu and manbu respectively for each class. Historically these forms of the relative pronoun can be seen as a combination of the class prefix of the particular noun and the subordinating conjunction bu (sections 9.2 and 9.3) with some modifications.

class 1	na-	+	bu	→	nawu
class 2	ngal-	+	bu	→	ngalbu
class 3	kun-	+	bu	→	kunu
class 4	man-	+	bu	→	manbu

Other speakers however may use nawu for nouns of all classes, or they may use manbu for nouns of class 3 and 4. Some speakers use nawu for plural class 2 nouns. This free variation is interpreted as part of the general breakdown of the noun classification system.

mimih	ka	- karrme	- ∅	...	nayin	[JM&P]
	3sgA-3sg	has	NON-PAST		snake	
nawu	kuwarde	- waken	nawaran			
REL	rock	dweller	python			

Mimi has a (pet) snake which is the rock-dwelling python.

Here the co-referential phrases are object in the main clause and subject in the subordinate clause, with the relativiser occurring in the subordinate clause.

kab ngarr -benbene - bimbu - n nawu daluk bokenh [D168]
 let 1&2sgA 3du0 paint NON- REL woman two
 PAST
 ngad kandi - kengem - i
 us 3plA-1pl afraid PAST CONT

Let us paint those two women who are afraid of us.

Here nawu is used with the class 2 noun daluk 'woman'. In this example the object of the main clause and the agent of the subordinate clause are co-referential, with the relativiser occurring in the main clause.

namekbe bininj nawu nabininjkobeng ka - rrolka - n [D86]
 DE man REL spouse 3sgS get up NON-PAST
 ka - ma - ng kurlbburru
 3sgS get NON-PAST axe

That man, who is the husband, will get up and get an axe.

Here the agent of the main clause and the subject of the subordinate clause are co-referential, with the relativiser occurring in the subordinate clause.

wanjh namekbe bininj nawu birri - mirnderri [D45]
 then DE man REL 3pls many
 birri - nalkbu - ni la birri - bu - rreni
 3pls cry PAST CONT and 3pls hit REFL
 Then those people, who were many, were crying and hitting themselves.

Here the subject of the main clause and the subject of the subordinate clause are co-referential with the relativiser occurring in the subordinate clause.

ku - m - durnde - ngi madjawarr [D46]
 3sgS motion go back PAST CONT spear
 towards
 speaker
 manbu $\emptyset$ - djab - da - nginj
 REL 3sgS ground stand PAST

The spears which stood (stuck) in the ground came back.

Here the relativiser manbu is used with a class 4 noun, and occurs in the subordinate clause. The co-referential noun phrases are the subject of the main clause and the subject of the subordinate clause.

mandjalmekbe $\emptyset$ - djare - ni manbu [D46]
 DE 3sgA-3sg want PAST CONT REL
 ngokko $\emptyset$ - ngu - neng
 already 3sgA-3sg eat PAST

He was wanting only the food that he had already eaten.

Here the relativiser manbu is used in relation to a class 4 noun manme that is understood from the context of the story. Note the man- prefix of the determiner (DE). The co-referential noun phrases are object in both the main and subordinate clause. The relativiser occurs in the subordinate clause.

9.2 TEMPORAL CLAUSES

The subordinate clause has a time link with the main clause. It is introduced by bu and may precede or follow the main clause.

bu ngaye nga - yawurd - ni, ngandi - marne - yolyolm - i [JM&P]
 when I lsgS small be 3plA-1sg IMPLIC tell story PAST
 CONT

When I was small, they used to tell me stories.

ngandi - marne - yime - ng korroko bu [JM&P]
 3plA-1sg IMPLIC say PAST long ago when
 birri - h - yolyolm - i
 3plA-3sg CONT tell story PAST CONT
 They told me this long ago when they used to tell stories.

9.3 CONDITIONAL CLAUSES

This is very similar in form to temporal subordination (section 9.2). The difference is in the time reference of the main clause, which in conditional subordination must be a non-past tense. The conditional clause precedes the main clause.

bu yi - na - n kelebuk, yi - bawo - ϕ [JM&P]
 if 2sgA-3sg see NON- tame 2sgA-3sg leave IMP
 PAST

If you see any tame animals, leave them alone.

warde yi - bu - n yi - yame - ϕ [JM&P]
 if 2sgA-3sg kill NON-PAST 2sgA-3sg spear NON-PAST
 ngun - kadju - ng kumunun ngun - bu - n
 3sgA-2sg chase NON-PAST night 3sgA-2sg kill NON-PAST
 If you kill or spear (his pets) he will chase you at night and
 kill you.

9.4 LOCATIONAL CLAUSES

Locational clauses are linked to the main clause by kore and normally follow it.

birri - yerrka - rrinj kore ϕ - kuk - yo - y [D45]
 3plS sit PAST REFL PREP 3sgS body lie PAST
 They sat themselves down where the body lay.

wanjh ø - durnd - i kore birri - madj - kurrme - ng [And]
 then 3sgS go back PAST PREP 3plA-3sg swag put PAST
 Then he returned to where they had left their swags.

9.5 CAUSATIVE CLAUSES

Causative clauses are linked to the main clause by dja and normally follow it.

kan - wo - ø manimunak dja nga - marrwe - dowe - ng [And]
 2sgA-1sg give IMP goose 1sgS food sick PAST
 Give me some goose because I am hungry.

yawn kandi - h - na - n dja mayh [J-G]
 don't 2plA-1sg CONT see NON-PAST creature/devil
 nganbene - bo - m ngarduk yabok
 3sgA-1du hit PAST my sister
 Don't look at me because a devil has hit me and (killed) my sister.

9.6 PURPOSIVE CLAUSES

Purposive clauses are linked to the main clause by ba and normally follow it.

yoh ka - mak yi - ni -n ba kan - bukkabukka - n
 yes 3sgS good 2sgS sit IMP so 2sgA-1sg teach NON-PAST
 ngadberre [Han]
 us

Yes, it is good that you stay here, so that you can teach us.

birri - rerrng - me - y ba mayh ka - ru - ng [Den]
 3plA-3sg wood get PASTso animal 3sgS burn NON-PAST
 They got firewood to burn the animal's fur.

APPENDIXES

APPENDIX A

KUNWINJKU CONJUGATIONS

GUNWINJGU* - CONJUGATION BY SUFFIXATION

Peter J. Carroll¹

Gunwinjgu² is a prefixing, noun-classifying language of Western Arnhem Land. Prefixes mark pronominal subject and object, incorporated noun subject and object, adverbial modifier and aspect. Suffixes mark aspect, tense and mood. The following examples show the structure of the verb. The verb root is underlined.

bene - yawoyh - djarrk - durrkmirra - nginj (class 6)

they again together worked (past completed)

nga - yawoyh - red - na - ni (class 3)

I again camp was seeing (past continuous)

nga - m - re nga - re (class 9)

I will come I will go

minj ku - m - bo - bebme - ninj (class 1)

not it water appeared (past negative)

'm' is an aspect prefix indicating motion towards the speaker.

Verb suffixes have the triple function of indicating tense, mood and aspect, which structurally are part of a single suffixing system. 'The fact that the five suffixes form a consistent pattern in each class indicates that they function as a unity' (Oates 1964:46). Characteristic forms of the suffix establish thirteen verb classes (some with very restricted membership) which can be combined into six groups with various subgroups. The following examples illustrate verb class membership.

Class 1 (Oates 1A) suffix -me

-lobme	to run
-karrme	to have
-kurrme	to put
-yibme	to sink

* To appear in Dixon ed. (forthcoming).

The language name here is spelt in accordance with the Australian Institute of Aboriginal Studies standard.

Class 2 (Oates 1B) suffixes -ke, -nje, -ye, -we

-djobke	to chop
-dadjke	to cut
-kinje	to cook
-munkewe	to send
-marrwe	to be hungry
-baye	to bite

Class 3 (Oates 2A(i)) suffixes -ka, -na, -wo, -ngu

-ka	to take
-manka	to fall down
-na	to see
-wohna	to keep watch
-wo	to give
-bawo	to leave
-ngu	to eat
-bongu	to drink

Class 4 (Oates 2A(ii)) suffixes -bu, -wa

-bu	to hit
-bidbu	to climb
-yawa	to search
-mulewa	to inform

Class 5 (Oates 2B (i) & (ii))

suffixes -ru, -du, -lu, -dju, -do, -dje, -de, -ma

-ru	to burn
-karu	to dig
-djakdu	to rain
-kolu	to go down
-kadju	to follow
-do	to throw stones
-dahkendo	to put in a container
-borrhborrdje	to shake off
-durnde	to return
-ma	to get
-djalkma	to split

Class 6 (Oates 3A) suffixes -da, -rra

-wokda	to talk
-bengmidjda	to forget
-rra	to stand

Class 7 (Oates 3A) suffixes -di, -rri, -ni

-di	to stand
-wokdi	to talk
-dirri	to play
-durrkmirri	to work
-ni	to sit
-wayini	to sing

Class 8 (Oates 3B) suffix -yo

-yo	to lie down
-bukirriyo	to dream

Class 9 (Oates 4) suffix -re

-re	to go
-djalkmire	to tear

Class 10 (Oates 5) suffix -rre (reflexive)

-burre	to hit oneself
-dadjkerre	to cut oneself

Class 11

-mak	to be good
-djare	to like
-babang	to ache

Class 12 (Oates 6A & B) suffix -men

-makmen	to become good
-kimukmen	to grow
-djaremen	to want

Class 13

-rrowe	to be sick
--------	------------

In some classes monosyllabic verb roots occur as the form of the suffix which may also compound with other verb roots to form verbs of

the same class. In some instances these monosyllabic verb roots are forms given in Capell's Common Australian (Capell 1956:90-93), e.g.

- na to see &
- ka to take (class 3)
- bu to hit (class 4)
- ma to get (class 5)
- ni to sit (class 7)

N.B. Verbal auxiliaries in other languages are suffixes in Gunwinjgu (Dixon 1972:15).

I have grouped the verbs into thirteen classes. Oates has six classes, four of which are subdivided (1 A and B, 2 A and B, 3 A and B, 6 A and B) and two of these are further subdivided (2 A i and ii, 2 B i and ii) making a total of twelve separate groups of verbs. My class thirteen has only one example, '-rrowe to be sick', which is given by Oates as an exception.

The five categories indicated by the suffixing system are past and non-past, a completed and a continuous aspect within past tense, past negative and the imperative. Oates's reduced number of verb classes is an attempt to group verbs with similar patterns in the different categories of the suffix. If one examines each of the five categories it is possible to make different groupings of the verb classes according to the category chosen. A basic division in the verb classes is according to which category uses the base form of the verb. Classes 3, 4, 5 and 6 do this in the Imperative and classes 1, 2, 7, 8, 9, 10, 11 and 12 do it in the non-past category. This division is not consistently followed in the other categories, but is almost paralleled in the past negative where classes 3, 4 and 5 use 'yi' and the other classes use '-inj'.

The verb classes and their suffixes in the various categories are set out in the following chart.

- ∅ indicates that the base form is used in this category;
- + indicates an addition to the base form;
- indicates a replacement of the base form.

GUNWINJGU CONJUGATIONS

<i>Verb Class</i>	<i>Suffix (base form)</i>	<i>Imperative</i>	<i>Non-past</i>	<i>Past Completed</i>	<i>Past Continuous</i>	<i>Past Negative</i>
1	-me	+n	∅	+ng	-mi	+ninj
2	-ke -nje -ye -we	+men	∅	+ng	+yi	+meninj
3	-ka -na -wo -ngu	∅	+n	)) +ng) +neng	+ni	+yi
4	-bu -wa	∅	+n	+m	+ni	+yi
5	-du -ru -lu -dju -do -de -dje -ma	∅	+ng	))) +y)) -di -dji -mey	+ngi	+yi *
6	-da -rra	∅	+n	+nginj	+nj	+ngimeninj
7	-rri -ni -di	+n	∅	∅	∅	+wirrinj
8	-yo	-yun	∅	+nginj	+y	+wirrinj
9	-re	-ray	∅	-wam	+y	-rawinj
10	-rre	+men	∅	-rrinj	+ni	+meninj
11	-mak -djare -babang	+nin	∅	+ni	+ni	+niwirrinj
12	-men	-mimen	∅	-minj	-meni	-meninj
13	-we	+men	+n	+ng	+ni	+meninj

* Some speakers say meyi in lieu of mayi.

Comments:¹1. There is evidence of vowel raising.

e.g. class 8 - past negative:

-yuwirrinj occurs where -yowirrinj is expected.

i.e. o → u / __ w

classes 10 and 13 - imperative and past negative:

-rrimeninj occurs where -rremeninj is expected,

-wimen occurs where -wemen is expected.

i.e. e → i / __ m (This does not apply to class 2 verbs.)

2. There is evidence of vowel lowering.

e.g. class 4 past completed:

-bom occurs where -bum is expected.

i.e. u → o / __ m

3. There is no transitivity distinction in relation to class membership.

4. Classes 1 to 5 are open with no semantic basis. Classes 6 to 13 are closed with some semantic basis.

class 7 verbs involve sitting or standing;

class 8 verbs involve lying down;

class 10 are reflexives.

5. Some verb roots occur in both class 1 and class 2. In class 1 they are intransitive with the '-me' suffix, and in class 2 they are generally causative with the '-ke' suffix. This does not apply to all verbs ending in '-me' or '-ke'.

e.g. -bakme to break

i.e. bakmeng it broke

-bebme to appear

i.e. bebmeng it appeared

-warrhme to fall

i.e. warrhmeng it fell

-bakke to cause to break

bakkeng he broke it

-bebke to cause to appear

bebkeng he brought it out

-warrhke to cause to fall

warrhkeng he dropped it

¹ The discussion of suffixing alternation (section 5.2) includes other alternations as well as the examples of vowel raising and lowering referred to here.

Notes

¹ The author has been resident linguist of the Church Missionary Society at Oenpelli since 1967, and is at present a Postgraduate student in the Department of Linguistics in the School of General Studies at The Australian National University. Grateful acknowledgment is made of the helpful comments and suggestions from Mrs H. Mangiru, Mrs R. Maralngura and Miss M. Rowe of the Oenpelli Literature Project.

² Gunwinggu is spoken by approximately 600 people resident at Oenpelli and its outstations, and by another 400 resident in an area bounded by Darwin, Katherine and Maningrida, some of whom speak it as a second language. It has been studied by Capell, Oates and Harris. The orthography used is that adopted by the Oenpelli Literature Project, which is:

b	- bilabial stop	m	- bilabial nasal
d	- alveolar stop	n	- alveolar nasal
dj	- laminal stop	nj	- laminal nasal
rd	- retroflex stop	rn	- retroflex nasal
k	- velar stop	ng	- velar nasal
h	- glottal	l	- alveolar lateral
rr	- flap	rl	- retroflex lateral
r	- retroflex resonant		
w, y	- semi-vowels	a, e, i, o, u	- vowels

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APPENDIX B

KUNWINJKU TEXTS

During my period at Oenpelli many texts have been collected, some by tape recording and subsequent transcription and others written by Kunwinjku participants in the Oenpelli Literature Project. Ninety-one of these texts have been processed in a computer concordance program, providing a print-out of each occurrence of every word in a limited context. This print-out has been an important research and reference tool in my study of Kunwinjku. Two of these stories are included here, being the stories that have provided the greatest number of examples cited in the thesis. Other Kunwinjku texts have been published in Oates (1964:89-116) and in Berndt & Berndt (1951).

Text JM&P

Narrator: Jacob Nayingul

The text tells the story of the mimi spirit and his pets that live in the sandstone country of western Arnhem Land.

korroko bu ngaye nga - yawurd - ni,
long ago when I lsgS small was
Long ago when I was small,

ngandi - marne - yolyolm - i
3plA-lsg tell story PAST CONT
they were telling me stories,

bu mimih ka - karrme - nuye mayh
that 3sgA-3sg has NON-PAST his animal
that mimi has his (own) animals.

Mimih ka - karrme - kunj, ngarrbek,
3sgA-3sg has NON-PAST kangaroo echidna
Mimi has kangaroos, echidnas,

djebuyh, nayin nawu kuwarde - waken, nawaran.
possum snake which rock dweller python
possums and rock pythons.

nuye ka - karrme - Bu karri - bu - n
his 3sgA-3sg has NON-PAST if l&2plA-3sg kill NON-PAST
He has his (animals). If we kill

nawu karri - na - n kelebuk,
 REL 1&2plA-3sg see NON-PAST tame
 what we see (are) tame animals,

wanjh kan - bu - n kadberre mimi^h
 then 3sgA-1pl kill NON-PAST us
 then mimi will kill us.

Nungka nuye karri - bu - n kaluk
 it his 1&2plA-3sg kill NON-PAST later
 (If) we kill his (animals) then later

kunnekke kan - bu - n.
 DE 3sgA-1pl kill NON-PAST
 he will kill us because of it.

Bu karri - na - n kelebuk, karri -bawo - n
 if 1&2plA-3sg see NON-PAST tame 1&2plA-3sg leave NON-PAST
 If we see tame animals, we leave them alone,

wanjh mimi^h ka - njilng - mak kunnuka. Ka - djare - ϕ
 then 3sgS conscience good DE 3sgA-3sg want NON-PAST
 then mimi will be happy because of this. He wants

nuye nammekke mayh, kelebuk nuye. Ngaleng nawu kele,
 his DE animal tame his it that wild
 these animals of his, his tame ones. Those that are wild,

yiman kunj, ka - yame - ϕ , ka - ngu - n.
 like kangaroo 3sgA-3sg spear NON-PAST 3sgA-3sg eat NON-PAST
 like kangaroo, he will spear and eat.

Ngandi - marne - yolyolme - ng korroko kobakobanj
 3plA-1sg tell story PAST long ago old people
 Long ago the old people told me this story,

ngandi - marne - yolyolme - ng, birri - yime - ng
 3plA-1sg tell story PAST 3plS say PAST
 they told me this, they said,

bu yi - na - n kelebuk yi - bawo - ϕ
 if 2sgA-3sg see NON-PAST tame 2sgA-3sg leave IMP
 if you see tame animals, leave them alone,

mimi^hnuye. Warde yi - bu - n yi - yame - ϕ
 his if 2sgA-3sg kill NON-PAST, 2sgA-3sg spear NON-PAST
 they belong to mimi. If you kill or spear one,

ngun - kadju - ng kumunun ngun - bu - n,
 3sgA-2sg chase NON-PAST night 3sgA-2sg kill NON-PAST
 he will chase you at night and kill you,

yi - bengwarrme - n ngun - bengwarrewo - n
 2sgS go mad NON-PAST 3sgA-2sg make you mad NON-PAST
 you will go mad, he will make you mad,

yika kundjak ngun - ma - ng mimih ngun - bu - n.
 DE fever 3sgA-2sg get NON-PAST 3sgA-2sg kill NON-PAST
 sometimes fever will get you, mimi will kill you.

Njalekah? mayh yi - marne - bu - n
 Why animal 2sgA-3sg (his) kill NON-PAST
 Why? You kill his animal,

nawu kelebuk nuye, ngandi - marne - yime - ng,
 REL tame his 3plA-1sg (this) say PAST
 which is his tame (pet), they told me this.

Korroko bu birri - h - yolyolm - i
 long ago when 3plA-3sg CONT tell story PAST CONT
 Long ago when they were telling stories,

bolkkime nuk, minj kabirri - yolyolm - i
 today I am not sure not 3plA-3sg tell story NON-PAST
 today I am not sure, they do not tell stories,

bad korroko ngandi - marne - yolyolm - i ngadberre.
 but long ago 3plA-1sg tell story PAST CONT us
 but long ago they were telling us stories.

Ngaye bu ngandi - marne - yolyolm - i
 I when 3plA-1sg tell story PAST CONT
 I, when they were telling me stories,

wanjh nga - burrbu - n yika
 then 1sgA-3sg know NON-PAST DE
 then I know some stories;

yika kabirri - djal - yolyolme - ϕ wurdwurd - kenh
 DE 3plA-3sg just tell NON-PAST children for
 some they just tell for the children,

yika kunwoybuk, yika wurdwurd kabindi - keleh - me
 DE true DE children 3plA-3pl frighten NON-PAST
 some are true, some frighten the children,

kandi - keleh - mi.
 3plA-1pl frighten PAST CONT
 they used to frighten us.

Text D168

Narrator: Sam Manggudja Ganaraj (Garnarradj)

Nanih korroko ngandi - marne - yolyolm - i
 DE long ago 3plA-1sg tell story PAST CONT
 Long ago they used to tell us this story,

birri - mulewa - ni ngadberre, ngalbu daluk
 3plS tell PAST CONT us DE woman
 they used to tell us about a woman

bininj birri - wo - ni. Ngalmekbe daluk
 man 3plA-3sg give PAST CONT DE woman
 they were giving to a man. That woman

minj ø - djareni -wirrinj nuye, minj ø - djareni -wirrinj,
 not 3sgA-3sg want PAST NEG him not 3sgA-3sg want PAST NEG
 she did not want him, she did not want him,

bi - kengem - i. Yimerranj korroko,
 3sgA-3sg afraid PAST CONT it happened long ago
 she was afraid of him. This happened long ago,

kore bindi - yimowo - ng. Bindi - bimbu - ni
 when 3plA-3pl do that PAST 3plA-3pl paint PAST CONT
 when they did those things. They used to paint them,

wanjh bininj bokenh namekbe bindi - kengem - ni
 then man two DE 3plA-3pl frighten PAST CONT
 then the two women were frightened

nani njanu daluk bokenh. Bene - wa - m wanjh bene me - y
 DE woman two 3duS go PAST then 3duA-3sg get PAST
 of those two men. They went and got,

bene - karu - y, mandanek bene - me - y.
 3duA-3sg dig PAST yam 3duA-3sg get PAST
 they dug and they got some (cheeky) yam.

Bene - wa - m bene - do - y, bene - duyrawo - ng
 3duS go PAST 3duA-3sg crush PAST 3duA-3sg mix PAST
 They went and crushed it, they mixed

delek la mandanek, wanjh bene - wa - m
 white ochre and yam then 3duS go PAST
 white ochre and (cheeky) yam, then they went

kuwarde bindi - bimbo - m. Bene - yime - ng,
 rock 3plA-3pl paint PAST 3duS say PAST
 and they painted the women on rock. They said,

kab ngarr - benbene - bimbu - n nawu daluk bokenh
 let 1&2sgA 3du paint NON-PAST women two
 Let us paint those two women,

ngad kandi - kengem - i. Wanjh bene - wa - m
 us 3plA-1pl afraid PAST CONT then 3duS go PAST
 they are afraid of us. Then they went,

bene - bimbo - m kuwarde kururk, bindi - bimbo - m
 3duA-3sg paint PAST rock house 3plA-3pl paint PAST
 they painted in a cave, they painted

nahni daluk bokenh, bindi - bard - kimuk wo - ng
 DE woman two 3plA-3pl knee big give PAST
 those two women, they gave them big knees,

bindi - denge - kimuk - wo - ng,
 3plA-3pl foot big give PAST
 they gave them big feet,

bindi - keb - mayh - wo - ng,
 3plA-3pl nose bird give PAST
 they gave them birds' beaks (for noses),

bindi - ney - kimuk - wo - ng.
 3plA-3pl elbow big give PAST
 they gave them big elbows.

Bene - yime - ng kab ngarr - rohrokme - y,
 3duS say PAST let 1&2sgS try and see PAST
 They said let us try and see (what has happened),

warde ngarr - benbene-bu - n. Wanjh bindi - bimbo - m
 maybe 1&2sgA 3du kill NON-PAST then 3plA-3pl paint PAST
 maybe we will kill those two. Then they painted them,

bindi - yakwo - ng, wanjh bene - wa - m, bene-wam wanj,
 3plA-3pl finish PAST then 3duS go PAST
 they finished the painting, then they went, they went then,

bindi - na - ni, bene - yim - i
 3plA-3pl see PAST CONT 3duS wonder PAST CONT
 they were watching them, they were wondering,

baleh ka - yime kabene - ngordo - men. Birri - wa - m wanjh
 when 3sgS to happen 3duS leprosy get 3plS go PAST then
 when they will get leprosy. They went then

mandjewk birri - burriwe - ng, bindi - na - ng,
 rains 3plS passed PAST 3plA-3pl see PAST
 and many years passed and they watched them,

wanjh ngokko bene - ngordo - minj namekbe daluk bokenh.
 then already 3duS leprosy get DE woman two
 and already those two women had got leprosy.

Bene - yime - ng bad woybuki, ngarr - benbene - bo - m.
 3duS say PAST but true 1&2sgA 3du hurt PAST
 They said, it's true we have hurt them.

Wanjh bene - wa - m bene - ngordo - minj, bene - wa - m
 then 3duS go PAST 3duS leprosy got 3duS go PAST
 Then they went, their leprosy got worse, they went,

wanjh bene - dowe - ng namekbe daluk boken.
 then 3sgS die PAST DE woman two
 then those two women died.

Kumekbe birri - yim - i nawu wanjh birriwern mak
 DE 3plA-3sg do PAST CONT REL then many then
 Many used to do this then,

nawu bindi - kengem - i. Birri - kele - ni
 REL 3plA-3pl afraid PAST CONT 3plS fear PAST CONT
 to those (girls) who were afraid of them. They were frightened,

daluk ngalbu ngalkeleni, birri - bimbu - ni
 woman DE frightened 3plA-3sg paint PAST CONT
 a woman was frightened, they used to paint her,

∅ - ngordo - meni, bakkabakmi ∅ - re - y
 3sgS leprosy PAST CONT joints stiffened 3sgS go PAST CONT
 she would get leprosy, her joints would stiffen, she would go,

∅ - dowe - ni. Kummekbe birri - yim - i korroko,
 3sgS sick PAST CONT DE 3plA-3sg do PAST CONT long ago
 she would die. They did this long ago,

bolkkime minj ngarri - yime - $\emptyset$ kunu, burrkyak
 today not 1plA-3sg do NON-PAST DE no
 Now we do not do that, no!

naka birrikare birri - yim - i. bonj
 DE old people 3plA-3sg do PAST CONT finish
 That's what the old (first) people used to do. The end.

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