32 Warumungu (Australian – Pama-Nyungan)

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1 Introduction

Warumungu is a language spoken by a few hundred people in the central part of the Northern Territory of Australia around Tennant Creek. The speakers have suffered greatly from the invasion of their country and their dispossession. Through some successful land claims, they have regained some of this country, and many continue to work to overcome the tragic effects of the invasion on their families, health, culture and language. The language is undergoing rapid change (as are many surviving Australian languages), and the morphology used by younger speakers differs greatly from that used by older speakers. The analysis here is based largely on analysis of older speakers' speech as in Hale 1959 and Heath 1977. (For annotated list of abbreviations used in this chapter, see appendix at end of chapter.)

Warumungu is a Pama-Nyungan language.[1] It is both a neighbour and a close relative of Warlpiri, whose morphology has been widely discussed (e.g. K. Hale 1973b, 1982, 1983; Nash 1986). Like Warlpiri and many other Pama-Nyungan languages, Warumungu is a suffixing language (although new verbs may be formed by compounding 'preverbs' with the verb root). Phonologically, Warumungu is set apart by the presence of three realizations of stops. Grammatically, it is a language with an Ergative-Absolutive case-marking system, but with subject–object cross-referencing by pronominal clusters. Word order is reserved mostly for pragmatic functions, while the main grammatical functions are expressed by nominal suffixes and pronominal clusters.

It is not possible to give a complete morphological description of Warumungu here. I shall focus instead on some aspects of the phonology and functions of word formation that seem interesting. These include:

morphophonological properties

(i) a fortis–lenis distinction in part distinctive and in part conditioned morphologically and phonologically. This interacts with a syllable-counting choice of case-suffix allomorph, and with verb reduplication.
(ii) complete vowel assimilation for most case suffixes

word formation properties

(i) a slot-and-filler (template) structured pronominal cluster
(ii) reduplication to indicate aspect, the form of which varies according to tense and conjugation
(iii) portmanteau verb inflection indicating associated motion, tense and aspect
(iv) derivational case

morphosyntactic properties

(i) the representation of grammatical functions by the interaction of pronominal clusters and case suffixes
(ii) the areal feature of using the ALLATIVE case suffix to represent location in a transitive sentence and a suffix homophonous with the ERGATIVE to represent location in an intransitive sentence

There are six principal classes of morphemes: nominals, preverbs, verb roots, bound pronouns, particles and suffixes.

Nominals form an open class that also contains several closed subclasses: demonstratives, genitive pronouns and predicative nouns. Nominal roots are always two or more syllables long, and may appear uninflected. Predicative nouns have more restricted possibilities for inflection. Nominal roots can be used to stand for things, or as predicates, whether as adjectives, secondary predicates or as the main predicate in a verbless sentence.

Verb roots form a semi-closed class (probably not more than a hundred or so), falling into four main conjugations. Verb roots may be one, two or, arguably, three syllables long. Verbs never appear uninflected. New verbs are formed productively by suffixing one of several bound verb roots to nominals or preverbs. Inflected verbs can only act as predicates in finite clauses; they have to be nominalized to appear as predicates in non-finite clauses. With one or two exceptions, verb roots are rigidly either transitive or intransitive.

Preverbs form an open class whose members have a status indeterminate between being free and bound. They attach loosely to verbs, although some preverbs may sometimes act as nominals in taking case suffixes. Preverbs may be one or more syllables long. If monosyllabic, their vowel is lengthened. They differ from regular words in permitting a wider range of final consonants, including stops.

Pronouns are a closed class. Non-subject pronouns are always bound (in a template structure), while subject pronouns may sometimes be free. Subject pronoun roots are all disyllabic. The boundaries and inflections of non-subject pronouns are not clear, but most non-subject pronoun roots are also disyllabic. Pronominal clusters always start with /a/.

Particles are a closed class. They do not inflect. They include both free particles (which are two or more syllables long) and enclitic particles (which may be monosyllabic). I represent the latter with a plus (+) boundary.

Suffixes include affixes attaching to nouns and verbs. I represent them with a hyphen (-) boundary. They may be monosyllabic, and the range of consonants appearing morpheme-initially is wider than those which can occur word-initially.

2 Phonology

2.1 Inventory

Warumungu has a typical Australian three-vowel system: /i/, /a/ and /u/. Each can be long, written 'aa', 'iyi' or 'ii', and 'uwu' or 'uu'. It has a typical Australian consonant system, with five places of articulation, and the usual manner possibilities. The existence of a second stop series is the only unusual feature. Table 32.1 shows allophones (in square brackets) and the orthographic representation in boldface.[2] Free-standing words are two or more syllables long, with the exception of a few words with long vowels: /piyi/ 'burnt-out country'. Borrowed English monosyllables are given long vowels: /yaat/ 'yard', /joop/ 'shop'. The minimum word structure is: (C)V(V)C(C)V(C).[3] Thus, consonant clusters cannot appear word-initially or word-finally.[4] They can, however, start bound morphemes: e.g. the verb suffix /-rrkarl/ FUTURE.AWAY.

Primary stress is assigned to the first syllable of a morpheme of two or more syllables. In a monomorphemic word of four or more syllables, secondary stress is assigned to alternating syllables: Wárumùngu. In complex words the primary stress on a morpheme is weakened following a primary stress: /ngáppa/ 'water', /ngápa-kàjji/ 'water' LEST. Reduplications, even frozen ones, act as complex words for stress assignment: /kíjji-pàkkarla-pàkkarla/ 'hawk species' (neither /kijji/ nor /pakkarla/ seem to have independent meaning).

Monosyllabic suffixes form units with the preceding syllables for stress assignment. Thus a trisyllabic word with a monosyllabic suffix acts like a quadrisyllabic monomorphemic word: /pápulù-kku/ 'house' DATIVE, while a two-syllable suffix retains its stress: /pápulu-kkùna/ 'house' ALLATIVE/ LOCATIVE. All preverbs (whether one or more syllables long) have primary stress, and the stress on the initial syllable of the verb is weakened to secondary stress: /púu-wàngka-n/ 'moo-talk' PRES = 'to bellow'.

Word-initially, most sounds can appear, with a few exceptions. The following are relevant here:

Table 32.1 Phonetic chart

	bilabial		apico-alveolar		apico-post alveolar		lamino-palatal[a]		dorso-velar	
stop ~										
long voiceless	[pː]	**pp**	[t:]	**tt**	[ʈː]	**rtt**	[c:~t̠ː]	**jj**	[kː]	**kk**
short voiceless	[p]	**pp**	[t]	**tt**	[ʈ]	**rtt**	[c~t̠]	**jj**	[k]	**kk**
short voiced	[p~b]	**p**	[t~d]	**t**	[ʈ~ɖ]	**rt**	[c~t̠~ɟ~ɖ]	**j**	[k~g]	**k**
nasal	[m: ~m]	**m**	[n:~n~dnᵇ]	**n**	[ɳː~ɳ]	**rn**	[ɲː~ɲ~n̠~ɲ̠]	**ny**	[ŋː~ŋ]	**ng**
lateral			[l:~l~dl]	**l**	[ɭː~ɭ]	**rl**	[ʎ:~l̠~ʎ~l̠]	**ly**		
flap			[ɾ~r]	**rr**						
semivowel	[w]	**w**			[ɻ]	**r**	[y]	**y**		

Notes:

[a] Lamino-dentals are sometimes used instead of these.

[b] The very oldest speakers occasionally pre-stopped alveolar nasals and laterals instead of lengthening them.

(i) There is no contrast in voice or length. Stops are phonetically short and usually voiced, although initial /k/ may be voiceless. Bound morphemes, however, show a voicing alternation: for example, /-kkari ~ -kari/ ([-kaɹi]~[-gaɹi]) RELATIVE suffix.

(ii) There is no contrast between apico-alveolars and apico-postalveolars. They are written as /n/, /l/ and /t/. Bound morphemes, however, retain this distinction: for example, /-rni-~-rnti-~-rti-/ CAUSATIVE suffix, /-ntti~-ntta~-nttu/ ERGATIVE/LOCATIVE allomorph.

Word-finally, vowels are most common. Some sonorant consonants can occur: flaps, laterals and non-peripheral nasals. A handful of words have phonetically short and voiceless final stops.

   Length and voicing of stops are distinctive word-medially, as Heath (1977) observes. That is, long voiceless stops contrast with short voiced stops: /api/ [abi] 'go' FUTURE, /lappi/ [lap:i] 'chest', /wajjingkarr/ [wac:iŋgaɾ] 'echidna', /wajirrki/ [waɟiɾgi] 'vegetation'. Short voiceless stops alternate predictably with short voiced stops in the initial position of certain suffixes, depending on the number of morae in the stem: [babulu-kuna] 'house' ALL/LOC, and [manu-guna] 'country' ALL/LOC.[5] Voiceless stops do not contrast with each other in length. The contrast can be seen as a fortis–lenis distinction, with the actual phonetic realization of fortis depending on the position in the word.

   In a disyllabic word $C_1VC_2(C_3)$, C_2 is normally long if a nasal or lateral,[6] and voiceless and long if a stop. In a disyllabic word $C_1VC_2C_3V(C_4)$ the cluster C_2C_3 is normally long,[7] and C_3 is voiceless if a stop.

jana	[ɟan:a]	'high'
jala	[ɟal:a]	'mouth'
makku	[mak:u]	'flesh'
wankka	[wan.k.a]	'I don't know'
lirrppi	[liɾ.p.i]	'fingernail, claw'

Like pre-stopping and fortition in other Pama-Nyungan languages (Jaeger 1983, McKay 1980, Henderson 1992, Hercus 1972), fortition here is a manifestation of primary stress in the minimal word, a way of making the stressed syllable heavy. However, there are lexical exceptions.

Exceptions				Regular		
turtu	[ɖuɖu]	'sleep'		wurttu	[wuʈ:u]	'wind'
apan	[aba-n]	'go' PRES		apparr	[ap:aɾ]	'language'
yarnti	[yaɳɖi]	'one'		parnttarr	[baɳ.ʈ.aɾ]	'crack'
lurnku	[luŋgu~lu:ŋgu]	'kingfisher'		jurnkku	[ɟuɳ.k.u]	'nape'
yungga	[yuŋga]	'lie'		lungkku	[luŋ.k.u]	'lightning'
warlji	[waɭɟi]	'own, family'		waljji	[waʎ.c.i]	'bloodwood'

Some, but not all, of these are traceable to earlier monosyllables, [luuṇ+gu],[8] or reduplications of monosyllables, [ḍuu+ḍuu].

Here I use the orthographic convention of double consonants for fortis (long or short) stops (but not for nasals and laterals), and single consonants for lenis stops.

2.2 Major phonological processes

These include the following:

2.2.1 Vowel coalescence   In a sequence of two vowels, the first vowel is normally deleted, and the second may be lengthened. This coalescence is virtually obligatory inside words, /kumpp(u)-(y)ilppi/ [kump:i:lp:i] 'big' EXCESS = 'too big'. It is optional across word boundaries. If the second word starts with a semi-vowel, it is usually deleted too.

(1)   Kilyirr-(i) + ajj(u)   (y)ungka-n jina.   [kiʎiɾac:uŋgan]
      sun-ERG/LOC + me burn-PRES foot.ABS
      'The sun is burning my foot.' [KH[9]:SN:7]

2.2.2 Alveolar and postalveolar alternation   Following an alveolar flap an apico-alveolar is realized as an apico-postalveolar: /paki-nnyi/ 'spear' PAST.PUN, /marri-rnnyi/ 'call' PAST.PUN. (A similar phenomenon of neutralizing apical distinctions following a trill is found in Warlpiri (Nash, p.c.).)

2.2.3 Nasal + stop cluster dissimilation   Certain sequences of nasal + stop and nasal + stop in the same word are sometimes subject to dissimilation: /yarnti/ 'one' ABSOLUTIVE, /yarni-njji~yarnti-jji~yarnti-njji/ 'one' ERGATIVE/ LOCATIVE. This is an areal phenomenon, more strongly manifested in Mudburra (McConvell 1988).

2.2.4 Vowel assimilation   Vowel assimilation can be complete (between nominals and certain case suffixes).[10]

nanttu	nantu-ngku	[nandu-ŋgu]	'humpy' ERG/LOC
marla	marla-ngka	[maḷa-ŋga]	'shade' ERG/LOC
kartti	karti-ngki	[gaḍi-ŋgi]	'man' ERG/LOC

I shall write the vowel in such suffixes as V, /-ngkV/.

Partial vowel assimilation is found in pronoun clusters, and between verbs and some suffixes. Elements showing partial vowel assimilation have underlyingly high vowels (/i/ or /u/) in their initial syllables. If the final vowel of the root is high, then the suffix assimilates to it. If the final vowel is low, then the suffix appears in its underlying form; for example:

nyi-njjirra   'sit' FUTURE.HITHER
ngu-njjurra   'lie' FUTURE.HITHER
ja-njjirra   'stand' FUTURE.HITHER

2.2.5 Fortis–lenis alternations   The most striking morphophonological process (first systematically analysed in Heath 1977) concerns associations of stress, segment length, mora and voice, which appear as several fortis–lenis alternations, including:

(a)   a predictable alternation in disyllabic stems between long voiceless stops and short voiced stops depending on the affixation of certain suffixes (case suffixes, reduplication, some pronominal cluster parts, and, arguably, some verb inflectional suffixes): for example, [nan.t.u.] 'humpy', 'hut', [nandu-gu] 'humpy' DAT.

(b)   a strong tendency for the onset of the third syllable in three-syllable words to be lenis, /payinti/ [bayindi] 'now'. This includes those created by vowel coalescence: /murrkka/ [muɾ.k.a] 'hair', /murrkkalki/ [muɾkalgi] 'headband' (with ASSOCIATIVE derivational suffix /-alkki/). Contrast this with /payintalkki/ [bayindalki] 'new'.

(c)   arising from (b), is the predictable alternation of the initial stops of the case suffixes, /papulukku/ [babuluku] 'house' DATIVE, /manuku/ [manugu] 'country' DATIVE, as well as some reduplicated verbs: /pakkil/ [bak:il] 'spear' FUTURE, /pakkakil/ [bakagil] 'spear' FUTURE.CONTINUOUS.

(d)   a less predictable alternation involves the initial consonants of some verb suffixes, which depend partly on verb class and partly on root length.

paki-n-jirra   'cook' FUTURE.HITHER   L conjugation
nyi-n-jjirra   'sit' FUTURE.HITHER   R conjugation
                                              (1-syllable root)
mana-n-jjirra   'seek' FUTURE.HITHER   R conjugation

3 Word formation

Word-formation possibilities in Warumungu include compounding, suffixation, reduplication, and template (for pronouns).

3.1 Compounding

3.1.1 Noun compounding   Nouns may compound with other nouns to form nouns. Such forms are not common in our data. The order matches the preferred order in syntactic noun phrases: namely, head modifier.

| jala-jirrppa | mouth-quiet | 'bird sp.', 'Little Corella' |
| lappi-pulyurrulyurru | chest-red | 'bird sp.', 'Port Lincoln Parrot' |

I list a few types of compound:

kujjarra yarnti two-one	'three'	**coordinate**
parrakurl ngapa-kari billy can water-REL	'quart-pot'	**noun and derived noun**
jina-kari parrkkama-nj(i)-alkki foot-REL grasp-NOM-ASSOC	'horseshoe tongs'	**two derived nouns**
ngappa kangkurr-kangkurr water immersed-immersed	'rainy/wet weather'	**noun and preverb**
kárlampi-jùrrujùrru creek-?	'vine sp.'	**noun and frozen form**

3.1.2 Preverb–verb compounds   Preverb-verb compounding is very productive. Combining members of the open class of preverbs with the closed class of verb roots is one of the main ways Warumungu expresses different kinds of verbs.

The most productive preverbs are those that quantify an argument of the verb, and those that describe how an action is performed, or the resultant state from that action. (Whether a state, manner or a resultant state is described depends on the verb as well.)

Medium

kangkurr-wanppa-	immersed-fall	'swim'
kangkurr-ngarapu-	immersed-throw	'throw in water'
kangkurr-ngu-	immersed-lie	'float'

Direction

| palyal-ngarapu- | out-throw | 'spill' |
| palyal-parta- | out-start | 'rise, to get up' |

Manner

wuruly-para-	hiding-take	'steal'
wuruly-nyirri-	hiding-put	'hide'
wuruly-kura-	hiding-run	'take lover'
wuruly-wangka-	hiding-talk	'backbite'
wililik-ngu-	hanging-lie	'hang' (intr.)
wililik-nyirri-	hanging-put	'hang' (tr.)
wililik-juku-	hanging-carry	'carryhanging'

Result

mulymuly-jajja-	hole-eat	'eat into holes (e.g. clothes moth)'
muly-kupu-	hole-cook	'burn a hole in something'

Quantifier

lalkki-nyi-	separate-sit	'sit separately'
lalkki-para-	separate-take	'eachtake'
lalkki-apa-	separate-go	'split up, go'

Some preverbs may add Dative arguments, as in (2), in which the verb /pakanta/ normally takes only an Absolutive object. Otherwise preverbs do not affect the argument structure of the verb they attach to, with a few exceptions, as in (3).

(2)   Land Council-jji apparr   anyungkku pakanta   pakarli-kkina,
      Land Council-ERG word.ABS we.pl.incl.NS poke-PRES paper-ALL
      kaji-paka-nta   anyungkku, anyinginyi-kki   manu-ku.
      benefit-poke-PRES we.pl.incl.NS we.pl.incl.GEN-DAT country-DAT
      'As for Land Council it writes stuff on paper for us, it writes it for our benefit for our country.' [JS:HNJ:86n][11]

(3)   Wirnkkalki laarr-ngarapu-njjan.
      dingo.ABS   ?-throw-PRES
      'Dingoes howl together.' [JS:BNN:nd]
      [from *ngarapu* 'throw', which normally takes ergative subject, absolutive object]

3.2 Suffixation

Suffixation is a prominent feature of Warumungu morphology. It is used both for derivation and for inflection. With respect to morphophonological processes, suffixes are of two types: those that are involved in fortis–lenis alternations (and vowel assimilation), and those that are not. The latter behave more like compounds. The division corresponds roughly to the division between inflection and derivation. I discuss them in turn.

3.2.1 Inflection

3.2.1.1 Noun inflection – Case   Case suffixes fall into two types based on their meanings. 'Semantic case suffixes' are those with meanings akin to English prepositions: for example, /-ngara/ ABLATIVE 'from', /-kVna/ ALLATIVE/LOCATIVE 'to, at, in', /-kajji/ LEST 'for fear of', as in (4), etc. A subclass of these, 'derivational case suffixes', act more like derivational affixes (see section 3.2.1.2).

'Grammatical case suffixes' are those which express grammatical relations (subject, object, indirect object), like /karriny-ji/ in (4). A noun without a case suffix is interpreted as having Absolutive case – /nanttu/ in (4) and /wangarri/ in (5) – or as being the main predicator, or as agreeing with some argument with Absolutive case – /kumppu/ and /pulyurrulyurru/ in (5).

(4)   <u>Karriny-ji</u> +ajjul nyirri-njina   <u>nanttu</u>, <u>ngapa-kajji</u>.
      people-ERG +3pl.S put-PAST.CONT humpy, water-LEST
      'The people were erecting humpies for fear of the rain.' [JS:PND:RS]

(5)   Nyirri-nyi   +ama <u>wangarri</u> <u>kumppu</u> <u>pulyurrulyurru</u>.
      place-PAST.PUN +he   rock ABS big.ABS   red.ABS
      'He placed a big red hill.' [JS:PND:RS]

The inflectional case suffixes generally show two main types of allomorphy: vowel assimilation (triggered by the final vowel of the stem) and a fortis–lenis alternation (triggered by whether or not the stem has two morae). Aside from these, the Ergative/Locative case has a range of allomorphs. All three processes are illustrated below:

'humpy'	[nan.t.u]	[nandu-ŋgu]	'house'	[babulu]	[babulu-cu]
'shade'	[mal:a]	[mala-ŋga]	'dog'	[gunaba]	[gunaba-ca]
'man'	[gaṭ:i]	[gaḍi-ŋgi]	'woman'	[giɾiji]	[giɾiyi-nti]

I discuss each in turn.

The vowels of most case suffixes assimilate in place entirely to the final vowel of the stem to which the suffixes attach. Non-alternating case suffixes all have /a/ as their first vowel.

	stem		
kartti 'man'	ngappa 'water'	manu 'country'	
karti-ki	ngapa-ka	manu-ku	**Dative**
karti-kina	ngapa-kana	manu-kuna	**Allative/Locative**
karti-ngki	ngapa-ngka	manu-ngku	**Ergative/Locative**
karti-kajji	ngapa-kajji	manu-kajji	**Lest**
karti-ngara	ngapa-ngara	manu-ngara	**Ablative**

Presumably this vowel assimilation was involved in the merger of an original locative /*-ngka/ with an ergative /*-ngki~-ngku/.[12]

The Ergative has several allomorphs, depending on whether the stem has two morae on what the final segment is, and on whether there is a nasal stop cluster in the stem (see table 32.2). The allomorphy is undergoing change in the speech of younger speakers.

Forms like /ngapa-kapurtu-njul/ (as opposed to /ngapa-ngka/ and the unattested */ngapa-kapurtu-njju/) show that the allomorphy selection is

sensitive to certain morpheme boundaries. Other suffixes – for example, the derivational case suffix /-jangu/ – create words which are treated as plain polysyllabic words: /ngapa-jangu-njju/.

Among older speakers, only a few bisyllables take the irregular allomorphy. They include frozen reduplications, /turtu/ 'sleep'. These are sometimes realized with a long vowel (and so pattern with /kaarnu/ in having three morae), but often there is no phonetic long vowel. Some speakers have alternations, as with /lurnkkurr/ and /kirriji/ in table 32.2. The fortis–lenis alternation in the stem is quite regular for older speakers: if the speaker uses the two-mora allomorph, the medial consonant of the stem is lenited, but the same speaker will not lenite the medial consonant if using the three-mora allomorph.

Younger speakers seem to be generalizing the three-mora pattern, at the expense of the other patterns. They also rarely use the stem fortis–lenis alternations.

stem	meaning	older speaker	younger speaker
kilyirr	'sun'	[giʎiɾ-i]	[giʎiɾ-iɲci]
marttan	'stone knife'	[maḍan-da]	[maṭan-ca]
yingal	'scared'	[yiŋal-iɲci]	[yiŋal-ca]
pulkka	'old person'	[bulga-ŋga]	[bulga-ɲɟa]

3.2.1.2. *Verb inflection* Verbs fall into four major conjugations, labelled according to their future form: the ∅, Y, L and R conjugations. The Y, L and R have monosyllabic members which behave slightly differently. Verbs are inflected for tense, aspect and mood. They also have portmanteau inflections which include associated motion. The conjugations differ with respect to transitivity and with respect to fortis–lenis alternations (see table 32.3).

The ∅ conjugation consists mostly of intransitive verbs. One form, wanppan/ 'fall' PRES shows a rigidly fortis consonant. Otherwise stem-medial consonants are lenis. Suffix-initial consonants are all lenis, with the exception of one irregular transitive form, /jajjan/ 'eat' PRES, in which the /jj/ is analysable sometimes as part of the stem and sometimes as part of the suffix: /jaji/ 'eat' FUT, / janyi~ jajanyi/ 'eat' PAST.PUN, /jajjina/ 'eat' PAST.CONT, /jajakurn/ 'eat' ADMON.

The Y conjugation consists of transitive verbs. It shows some fortis–lenis alternation in suffix-initial consonants: /para-njan/ 'get' PRES, /wuru-njjan/ 'hit' PRES *with thrown object*.

The L conjugation consists of strongly transitive verbs. This is the only conjugation with a consistent fortis–lenis alternation in stem form, /pakanta/ 'spear' PRES, /pakkil/ FUT. Suffix-initial consonants are lenis, except for some suffixes after the one monosyllabic L-conjugation root, /ku-/ 'have'.

The R conjugation, the largest conjugation, contains both transitive and intransitive verbs, and three monosyllabic stance verbs. It shows fortis–lenis alternation in some suffix-initial consonants. Some forms, like /ngattanta/ 'find' PRES, show rigidly fortis consonants.

Table 32.2 Ergative allomorphy

ERGATIVE allomorphs	Type of noun stem	Phonetic	Translation	Spelling of stem
	Two morae			
-ngkV	V-final	[maɭa-ŋga]	'leaf'	marla
		[waʎɟi-ŋgi]	'bloodwood'	waljji
-V	rr-final	[abar-a]	'language'	apparr
		[luŋguɾ-u]	'rib'	lurnkkurr
-tV	n-final	[gayin-di]	'boomerang'	kayin
-rtV	m-final	[gaɾim-ḏi]	'blood' (written /karrirnti/)	karrim
-jV	ny-final	[ɟaɾaɲ-ɟa]	'tongue'	jarany
-injji	l-final	[yiŋal-iɲci]	'scared'	yingal
	Three or more morae			
-njjV~jjV[a]	V-final	[makuɾa-ɲca]	'cold.weather'	makkurra
		[giɾiɭi-ci]	'woman' (younger speakers)	kirriji
		[mayibaṭula-ɲca]	'mountain devil' (lizard sp.)	mayiparttula
		[gaaɳu-ɲcu]	'boy'	kaarnu
	l-final	[giɭilɟiḻil-ci]	'galah' (bird sp., frozen redup.)	kirlilkirlil
	rr-final	[waɾagur-cu]~	'hole'	warakurr
		[waɾagu-ɲcu]		

Morpheme	Condition	Form	Gloss	Surface
	irreg. bisyllables	[yaɲi-ɲci]~ [yaɳɖi-ci]	'one'	yarnti
		[walji-(ɲ)ci]	'own'	warlji
		[luŋkur-cu]	'rib'	lurnkkurr
-ntti	-ji ~ -nyi final three-syllable	[giɾiyi-nti]	'woman'	kirriji
-nttu	-ju final three-syllable	[gambawu-ntu]	'father'	kampaju
-ttV	n-final (alternates with -jV)	[walugun-tu]~ [walugun-cu]	'fire'	warlukun
-jjV	n-final polysyllable, or after nasal stop cluster	[gaɭambi-ci]	'creek'	karlampi
irregular grammatical morphemes				
-njil		[gulalgi-nɟil]	'middle'	kulalki
-njul		[ŋaba-gabuɖu-ɲɟul]	'water-without'	ngapa-kapurtu
-ul	on dual	[buɭuɳu-guɻuɾ-ul]	'child-two'	purlungu-kujjurr

Note:

a I have not found a way of predicting when the forms with and without /n/ will appear.

Table 32.3 Typical tense inflections, organized by conjugation

Conjug. and gloss	Future	Present	Past punctual	Past continuous	Admonitive	Nominal stem[a]
Ø 'go'	api	apa-n	api-nyi	api-na	apa kurn	api-ji-
Ø 'fall'	wanppi	wanppa-n	wanppi-nyi	wanppi-na	wanppa-kurn	wanppi-ji-
Ø 'eat'	jaji	jajja-n	ja-nyi~jaja-nyi	jajji-na	jaja-kurn	ja-ji-
Y 1-syll. 'see'	nya-yi	nya-njjan	nya-nyi	nya-njina	nya-ngkkurn	nya-nji-~nya-njji-
Y 2-syll. 'get'	pari	para-njan	pari-nyi	pari-njina	para-ngkurn~para-ngkkurn (*rare*)	pari-nji-
Y 2-syll. 'throw'	wuru	wuru-njjan	wuru-nyu	wuru-njuna~wuru-njina	wuru-ngkkurn	wuru-nju-
Y 2-syll. 'sing out'	kula-yi[b]	kula-njan	kula-nyi	kula-njina	kula-ngkurn	kula-nji-
Y 3-syll. 'leave'	pangkali	pangkala-njjan	pangkala-nyi	pangkala-njina	pangkala-ngkkurn	pangkala-nji-
L 1-syll. 'have'	kunul	ku-nta	ku-mnyu~ku-nyu	ku-yina~ku-yuna	ku-nkkurn	ku-nju-~ku-njju-
L 2-syll. 'spear'	pakkil	paka-nta	paki-nnyi~paki-nyi	paki-njina	paka-nkurn	paki-nji-
R 1-syll. 'sit'	nyii-ni	nyi-nta	nyi-nyi~nyi-nyi-nnyi~nyi-nni[c]	nyi-yina	nyi-nkkurn	nyi-nji-~nyi-njji-
R 2-syll. 'seek'	mana-rri	mana-nta	mana-nyi~mana-nni	mana-yina	mana-nkkurn	mana-nji-

Notes:

[a] The nominal participial stem can never appear without a following suffix.

[b] Some speakers treat this as an R-conjugation verb.

[c] These forms with /-nm-/ have only been heard from older speakers.

Speakers show some variation in inflection forms, because the system is quite complex, involving choice of conjugation and the interaction between fortis–lenis alternations in stems and suffixes.

An important inflectional category in Warumungu and nearby languages such as Arrernte (Wilkins 1989, 1993) and Kaytetye (Koch 1984) is 'associated motion'. The motional forms are extremely common, and can be added to any simple verb stem. They form portmanteau affixes with tense and aspect. The four categories are motion/direction towards deictic centre, motion/direction away from deictic centre, 'setting off' and neutral. They can indicate direction, or they can include a motion component:

(6) Ngalanya yuwaji   ngunjjirranta   kajunu.
     this   road.ABS lie-PRES.AWAY north
     'This road goes north.' [KH:GB:43]

(7) Wangarri +ajju   wanppi-rrajina
     money.ABS +1sg.NS fall-PAST.CONT.AWAY
     'The money fell out of my pockets as I was walking along'
     [JS:RT:12-8-92]

They can also be used for projected deictic centres:

(8) Wangki-nyi   +ama '. . . Panupurtta +arn(i)+a   **parti-rrkarl.**'
     say-PAST.PUN +3sg.S   that.way   +1sg.S+FUT set.off-FUT.AWAY
     Jung(a)+arnp(a) +ama **parti-rrarni**.
     true+indeed   +3sg.S set.off-PAST.PUN.AWAY
     'He said, "I will set off away that way." Sure enough he set off away.'
     [JS:PND:RS]

In the narrative in which (8) and (9) occur, the speaker (snake) says he will go away from the current place of speaking (deictic centre). The AWAY suffix is used. The narrator takes the snake's point of view, and also uses the AWAY suffix to report the snake leaving the projected deictic centre. In (9), the snake tells the two boys to come inside him, using the HITHER suffix. This time the narrator uses the neutral form to report the boys going inside the snake.

(9) Wangki-ny(i) +apulu, '**Jarrpi-jirra**   +akkul kantu.'
     say-PAST.PUN +3du.O enter-FUT.HITHER +2du.S inside
     Jung(a) +arnp(a) +awul **jarrpi-nyi**.
     true + indeed   +3du.S enter-PAST.PUN
     'He said to them two, "You two come inside." Sure enough they went inside (his mouth).' [JS:PND:RS]

As can be seen from the examples, the associated motion forms vary for different tenses and moods. Table 32.4 shows a typical L-conjugation paradigm.

Table 32.4   Paradigm for L-conjugation verb /pakki-l/ 'spear'

Associated motion

Tense	neutral	hither	away, while going along away	setting.out
future	pakki-**l**	paki-**n-jirra**	paki-**nti-(rr)-karl**	paki-**nti-(rr)-parti**
imperative	pakki-**l+a**	paki-**n-jirra**	paki-**nti-(rr)-karl+a**	paki-**nti-(rr)-part+a**
present	paka-**nta**	paki-**nti-rr-apa-n**	paki-**nti-rr-a-nta**	paki-**nti-(rr)-parta-n**
past punctual	paki-**nyi~** paki-**nnyi~** paki-**nni**	paki-**nti-(rr)-ka-rni** ~paki-**nji-(rr)-ka-rni**	paki-**nti-rr-a-rni**	paki-**nti-(rr)-parti-nyi**
past continuative	paki-**njina**	paki-**nti-rr-a-jina**	*gap in paradigm*	paki-**nti-(rr)-parti-na**
admonitive	paka-**nkurn**	paki-**nti-(rr)-pun-kkurn**	paki-**nti-rr-arn-kkurn**	paki-**nti-(rr)-parta-kurn**
optative/irrealis	paka-**nnga(ri)**	paki-**nti-(rr)-pun-nga(ra)**	paki-**nti-rr-arn-nga(ra)**	paki-**nti-(rr)-parta-nga(ra)**

Notes:

(i)   Boldface indicates the ending. Hyphens in the boldfaced elements indicate commonality of form, and only occasionally do these hyphenated forms have a clearly associated meaning.

(ii)   Parentheses around (rr) indicate that some speakers omit this before a following consonant.

(iii) The imperative clitic /a/ is represented with a plus boundary sign +.

(iv)   The blank in the table for PAST CONTINUOUS AWAY appears to be a genuine gap in the paradigm.

A summary of the different endings is given in table 32.5. The choice between the fortis /-jjirra/ and the lenis /-jirra/ depends on verb class. Forms shown above beginning /-rrC/ (e.g. /-rrkarl/) become /-rriC/ for R-conjugation verbs (including the monosyllabic verbs of that conjugation). Some verb classes show special augments between the nuclear root and the suffixes above which begin with /-rr/ (augments are /-nji-/ and /-nti-/).

3.2.2 Derivation   Derivational suffixes fall into two main types, those that create words of a different category from the stem to which they attach, and those that create words of the same category as the stem to which they attach.

3.2.2.1 Category-changing   Category-changing suffixes create denominal verbs and deverbal nouns. New verbs can be created from nouns by suffixing one of three bound verb roots of the R conjugation. The bound verb root /-ji-/ (INCHOATIVE) creates intransitive verbs, which are often, but not always inchoative.

Table 32.5 Suffixes for motional verb forms

	hither	*away*	*setting.out*
future	-jjirra~ -jirra	-rrkarl	-rrparti
imperative	jjirra~ jirra	rrkarl + a	rrpart + a
present	-rrapan	-rranta~-jjirra(r)nta ~-jirra(r)nta	-rrparta-n
past punctual	-rrkarni	-rrarni	-rrparti-nyi
past continuative	-rrajina	——	-rrparti-na
admonitive	-rrpunkkurn	-rrarnkkurn	-rrparta-kurn
optative /irrealis	-rrpunnga(ra)	-rrarnnga(ra)	-rrparta-nga(ra)

yingal	'afraid'	yingal-ji-	'to become afraid'
English	'lead'	lead-ji-	'to lead (intr.)'
English	'work'	work-ji-	'to work (intr.)'

Transitive factitive or causative verbs (CAUSATIVE) can be formed from nominals by suffixing the bound verbs /-rni-~-ni-~-ti-~-rti-~-rnti-/ or /-mu-/:

yingal	'afraid'	yingal-mu-	'to make afraid'
piliyi	'good'	piliyi-rni-	'to make'
English	'tease'	tijim-ni-[13]	'to tease'
English	'read'	readim-mu-	'to read'

Neither of these bound verbs show fortis–lenis alternations; nor do the stems when they are attached: for example, /kumppu-ji-/ big-INCHO 'grow up'.

New verbs can also be created by suffixing one of the monosyllabic stance verbs: /turtu/ 'sleep', /turtu-ngu-/ 'to sleep'. The reason for analysing these as suffixation, rather than as a preverb–verb compound, is that, whereas regular compounding has no effect on the conjugation of the verb, in these cases the resulting verb may act like a polysyllabic R-conjugation verb (suffixing), or like a monosyllabic R-conjugation verb (compounding). Thus the FUTURE of /ngu-/ 'to lie' is /nguunu/, while the FUTURE of /turtu-ngu-/ is /turtu-ngu-rru/ (polysyllabic) or /turtu-nguunu/ (monosyllabic).

All deverbal nouns are formed on verb stems consisting of verb plus a nominalizing marker whose form is /-ji-~-ju-~-nji-~-nju-~-njji-~-njju-/, depending on the conjugation of the verb, the number of syllables and the final vowel of the verb root. These deverbal noun stems are used with derivational suffixes as nouns (10, 11), and with nominal inflectional suffixes as the base for various tenseless participial clauses (12). However, unlike nouns, deverbal noun stems can never appear in isolation.

(10)   miyili-kkari <u>nya-nj(i)-alkki</u>
        eye-REL   see-NOM-ASSOC
        'spectacles'

(11)   wangka-<u>j(i)-ara</u>
        talk-NOM-INTENS
        'one who talks too much'

(12)   Watti + ankkul api-nyi   Barunga-kkana
        far + 1plexcS   go-PAST.PUN Barunga-ALL
        festival-kku <u>nya-njji-ki</u>.
        festival-DAT see-NOM-DAT
        'We went far to Barunga to see the festival.'   [JS:PND:86]

The nominalizing suffix has no effect on the stem verb. The nominalizing suffix itself is sometimes voiceless after monosyllabic verb stems (12). However, if the suffix /-alkki-/ is attached, the nominalizing suffix is usually voiced (10).[14]

   Nominalized verbs are used to form non-finite clauses. The suffix indicates what is the controller. Thus the Allative/Locative suffix shows control by the object of the matrix clause.

(13)   Pina-ny(i)   +ajurnu <u>wina-njji-kina</u>+karn.
        hear-PAST.PUN +3pl.NS sg.-NOM-ALL/LOC+now
        'He heard them singing then.' [JS:PND:RS]

3.2.2.2 Category-maintaining morphology   While Warumungu has no formally distinct class of adjectives as opposed to nouns, some derivational affixes create nominals that denote entities, and others create nominals which focus on having a particular property. Thus /nginngin/ 'thievingly' is used as a preverb or as an action nominal describing how an action is carried out. When suffixed with /-yilppi/ EXCESSIVE it means 'thief', /nginngin-yilppi/. On the other hand, /kurlppu/ 'honey, sugar' denotes a thing, but when suffixed with /-jangu/ HAVING, /kurlppu-jangu/ denotes a property, 'sweet'. These properties can in turn be used to denote things: /yurrkkurlu/ 'snake', /yurrkkurlu-jangu/ snake-HAVING 'Aboriginal doctor'.

   Suffixes like /-jangu/ have been called 'derivational case' markers because while they can create new words, they can also show agreement, including double case marking:[15]

(14)   . . . wanga-nta +ama karlkkurr nyayi-jangu-njju
        . . . cut-PRES+3sg.S   grass.ABS what-HAVING-ERG
        nipi-nipi-jangu-njju.
        scissors-HAVING-ERG
        'She cuts the grass with something, with scissors.'[JS:PND]

Their meanings do not distinguish them clearly from semantic case suffixes. Phonologically, however, they behave differently. These suffixes do not trigger fortis–lenis alternations in the noun to which they attach; nor do they themselves have voiceless allomorphs, as the lack of contrast between the stems and endings of /kurlppu-jangu/ and /yurrkkurlu-jangu/ shows.

3.3 Reduplication

Warumungu uses both total and partial reduplication. Total reduplication is common on nouns, and can act like the case suffixes that cause fortis–lenis alternation:

pulkka   'old man'   pulka-pulkka   'old people'

Partial reduplication is uncommon on nouns,[16] is probably prefixing, and does not seem to show the same fortition alternation.

ngarnkka	'fast'	ngarnkkarnkka	'very fast'
pulyurr(u)-	'red' (preverb)	pulyurrulyurru	'red'
marluka	'old person'	marlarluka	'old people'

Partial reduplication on verbs is complex. In meaning it appears to express a continuative aspect. If the verb complex includes a preverb, then the usual strategy is to reduplicate the preverb, not the verb. The form of reduplication differs according to the tense and to the conjugation, but the most significant difference in form is between the FUTURE (and the IMPERATIVE which is based on it) and the other tenses (see table 32.6).

   Reduplication strategies for different conjugations and roots of different numbers of syllables constitute an area where speakers diverge in interesting ways.

3.4 Template

Pronouns fall into two types, those that represent direct arguments of the verb with functions such as subject, object and indirect object, and those which represent adjunct or oblique functions. The latter act like nouns; the former are obligatory, acting sometimes like agreement markers (17), and sometimes like full pronouns, albeit restricted in position (15) and (16). They occur initially or after the first major constituent (verb, noun phrase, etc.), and only rarely later in the clause (17):

(15)   Warakurr-kkuna +ajjul kupu-nta kuyu   puliki.
       hole-ALL   +3pl.S cook-PRES meat.ABS bullock.ABS
       'They cook beef in an earth oven.' [JS:BN:Cooking]

Table 32.6 Verb reduplication forms

	Non-future type		
1			
Ø conjugation PAST CONTINUOUS	partina	partartina	'set out' intr.
L conjugation PRESENT	pakanta	pakkal-pakanta[a] ~pakal-pakanta	'spear'
Y conjugation PAST CONTINUOUS	kulanjina	kulakulanjina	'sing out'
R conjugation PAST CONTINUOUS	manayina	manamanayina	'seek'
2	**Future type**		
Ø conjugation FUTURE	parti	partarti	'set out' (intr.)
L conjugation FUTURE	jarrpi	jarrpapi (common)~jarrparrpi	'enter' (intr.)
	jarrppi-l	jarrppapil~jarrpapil (common)~jarrpparrpil	'enter' (tr.)
	pakki-l	pakkakil~pakakil	'spear'
	wangi-l	wangingil <sic>	'cut'
	kuppu-l	kuppupul~kupupul	'cook' (tr.)
	nyirri-l	nyirrirlirl	'put'
	kunul~kunurl (PRES kunta)	kunumul~kununurl	'have'
R conjugation FUTURE	kura-ri	kuranani	'run'
	nyii-ni (PRES nyinta)	nyinini	'sit'
Y conjugation IMPER	kula-y+a	kulayay+a~kulanan+a[b]	'sing out'
Y conjugation FUTURE	nya-yi (PRES nyanjjan)	nyayayi~nyaayi	'see'
	pari (PRES paranjan)	parari	'get'

Notes:

[a] A linking /l/ is often found in reduplication in Australian languages. It may reflect a conjugation marker (Patz 1982), transitivity (Koch 1984), or may have no clear function (Alpher 1973, 1991; Breen 1974, Kirton 1978, Wilkins 1989).

[b] This verb is sometimes also treated as an R conjugation verb.

(16) Narra-warinyi   +<u>arni</u>.
   ground-INHABITANT +1sg.S
   'I am a ground-dweller.' [JS:PND:88w]

(17) Disco-kina   pika-pikka +<u>ajjul</u> warlan-ja-nta.
   Disco-ALL/LOC children.ABS +3pl.S dance-stand-PRES
   'At the disco the children dance.' [JS:PND: young speaker's Warumungu]

All non-null pronouns start with /a/.[17] The third-person singular subject pronoun is either null or realized as /ama/ (18), a form which does not otherwise take part in the pronominal cluster system but resembles a demonstrative. The third-person singular object pronoun is null (a paradigmatic zero) (19).

(18) Palyupalyu   +<u>ama</u> purluju kumppu, munkku   kumppu.
   blue.tongue.lizard.ABS +3sg.S head.ABS big.ABS   stomach.ABS big.ABS
   'The blue tongue lizard has a big head, and a big stomach.' [JS:HNJ:86n]

(19) Purrumu-rra!
   touch-IMPER
   'Touch it!'

Pronouns occur either as enclitics (with reduced stress on the initial syllable) in pronominal clusters, or occasionally as phonologically independent words (with full stress on the initial syllable). There is no major formal difference between bound pronominal clusters and 'independent' pronominal forms, except that since the former all begin in the vowel /a/, the latter may add an initial epenthetic /y/[18] – hence the interjection /yangi/! 'Hey you!' (2sg. /angi/). This epenthesis is regular for the second-person singular form, but is rare for the other pronouns.

   Like many Australian languages, Warumungu uses one pronominal form for transitive and intransitive subjects (whether the verb requires of its subject Ergative case (20) or Absolutive case (17)), and another form for objects (whether the verb requires of its object Absolutive case (21) or Dative case (22)), although if the object is third-person singular Dative, there is a special form (23).

(20) Warra+<u>ajjul</u> kunta   wangarri-kari,[19] wakkapi-njji.
   not +3pl.S   have-PRES money-REL,   many-ERG
   'Many of them don't have bankbooks.' [JS:PND]

(21) Ngatta-nyi+karn   +<u>ajurnu</u> akinyi   karriny.
   find-PAST.PUN +now +3pl.NS his.ABS people.ABS
   'He found his people then.' [JS:PND:RS]

(22) Yama +<u>ajurnu</u> jarti-ki+karn   pikapikka-ka ngu-nngara.
   leave +3pl.NS other-DAT+now children-DAT lie-OPT+FUT
   'Some should be left for the other children.' [JS:PND 24/6/86]

Table 32.7 Pronominal clusters (1)

	Subject	Subject + 3sg. dative	Subject + reflexive	Subject + reflexive dative
1sg.	arni	arnakku	arnajju	arnaju-kku(l)
1du.incl.	ayil	ayilikki	ayilirni	ayilirni-kki(l)
1du.excl.	ajjil~ajil	ajilikki	ajirni	ajirni-kki(l)
1pl.incl.	anyul	anyulukku	anyurnu ~anyulurnu	anyurnu-kku(l)
1pl.excl.	ankkul~angkkul	ankulukku ~angkulukku	ankurnu ~angkurnu	ankurnu-kku(l) ~angkurnu-kku(l)
2sg.	angi	angakku	angurnu ~angkurnu	angurnu-kku(l)
2du.	amppul	ampulukku	ampurnu ~ampulurnu	ampurnu-kku(l)
2pl.	a(rr)kkul	a(rr)kulukku	a(rr)kurnu	a(rr)kurnu-kku(l)
3sg.	(ama)	aku	awurnu	awurnu-kku(l)
3du.	awul	awulukku	awulurnu	awulurnu-kku(l)
3pl.	ajjul	ajulukku	ajurnu~ajulurnu	ajurnu-kku(l)

Note: /angkurnu/ and /ajulurnu/ have only been heard from younger speakers.

(23)   Kujjarra-yarnti+karn +<u>aku</u>   ngu-nngar+a
       two-one.ABS+now   +3sg.DAT lie-OPT+FUT
       kiwari-ki ala-ka+nya.
       child-DAT that-DAT+EMPH
       'That child will have three left then.' [JS:PND 13/11/86]

If a sentence has both a subject pronoun and non-subject pronoun these form
an inseparable group, a 'pronominal cluster', which is sometimes impossible
to divide into recognizable subject and non-subject morphemes.

(24)   Kupu-njuna   +<u>arnajurnu</u> kantirri   marnukuju-jangu.
       cook-PAST.CONT +1sg.S.3pl.NS bread.ABS grape-HAVING.ABS
       'I used to cook them bread with sultanas.' [JS:PND]

A form such as /árnajùrnu/ has primary stress on the first syllable and second-
ary stress on the third syllable (see table 32.7).
    The reflexive and reflexive Dative are illustrated below. Observe that the
subject of a sentence with a reflexive object receives Ergative case just as it
would if the object were not reflexive (25). The reflexive can represent an
Absolutive object as in (25) or a Dative argument as in (26), in which the verb
/wangka-/ normally takes an Absolutive subject and a Dative non-subject.

(25) Napurrula-jja +<u>awurnu</u>   karrju-nyu   blanketi-jji.
      Napurrula-ERG +3sg.S.REFL cover-PAST.PUN blanket-ERG
      'Napurrula covered herself with a blanket.' [JS:BN:C3.2:29]

(26) Kina   +awurnu   wangka-n.
      alone.ABS +3sg.S.REFL talk-PRES
      'He talks to himself.'   [JS:PND:88n]

(27) Kartti-l +<u>awurnu-kkul+a</u>   kayin.
      trim-FUT +3sg.S.REFL.DAT+FUT boomerang.ABS
      'He will trim a boomerang for himself.'   [JS:BN:C3.2:12]

(27) illustrates another feature of Warumungu pronominal clusters: an element representing FUTURE tense (/a/) or IRREALIS mood (/aparn/) can attach to the clusters.[20]

There is no point in trying to create pronominal clusters by a binary-branching structure with a head. Rather, an exocentric word structure rule, or a position class template is needed.

Position 1	Position 2	Position 3	Position 4
Subject	Non-subject	Dative	Future
	Reflexive	Dative-reflexive	Irrealis
		Inversion marker	

While the first four forms[21] could be analysed as having some sort of case marker for non-subject, the last two forms cannot be so analysed. In these the /-ngkki/ seems best analysed as an inversion marker: 'reverse the assignment of grammatical functions'. This suggests that the action of a third person on a first person is considered more marked than the reverse (Silverstein 1976).

Pronouns also have special GENITIVE (GEN) forms. These consist of nouns formed by suffixing /-nyi/ or /-nginyi/ to non-subject pronouns /ajju, ajjinyi/, with two exceptions: 1 dual inclusive, which is formed on the root for the subject and REFLEXIVE, and the third-person singular pronoun, which is formed on the DATIVE of the third-person singular /aku/, (the third-person singular non-subject pronoun is otherwise a zero morpheme). /-nginyi/ is added if there is an augment in the non-subject form: for example, /ampu-kku/ 3sg.S – 2du.NS, /ampi-ngi-nyi/ 2du. GEN, and for third person non-singular forms (see Mylne 1996 for an alternative analysis).

These genitive pronouns act like nouns, in that they appear anywhere in the sentence and take noun-type case suffixes. With Absolutive or Ergative case, they modify the element acting as subject or object (28). With other case suffixes, they may modify some other element (29), or they may fill the role themselves (30).

Table 32.8 Pronominal clusters (2)

	1st person non-subject	2nd person non-subject	3rd person non-subject
1st pers.subj.			
1sg.-S->NSsg.		arnangkku	arni
1sg.S->NSdu.		arnampukku ~arnapukku	arnapulu
1sg.S->NSpl.		arnturrkku	arnajurnu ~arnajunu
1du.excl.-S->NSsg.		ajilimkki ~ajilinkki	ajjil
1du.incl.-S->NSsg.			ayil
1pl.excl.S->NSsg.		ankulumkku	ankkul
1pl.incl.S->NSsg.			anyul
1pl.excl.S->NSpl.		alkurntukku~alkutukku	ankuljarni
1pl.incl.S->NSpl.			anyuljarni
2nd pers.subj.			
2sg.S->NSsg.	angaijju~anganjju		angi
2sg.S->NSdu.	angajikki		angapulu
2sg.S->NSpl.	angankku		angajurnu ~angajunu
2du.S->NSsg.	ampulajji		amppul
2pl.S->NSpl.	akularnkki		akuljarni
3rd pers.subj.			
3sg.S->NSsg.	ajju	angku	(ama)
3sg.S->NSdu.	ajikki (1 excl. object)	ampukku	apulu

3sg.S->NSdu.	ayingkki (1 incl. object)	arrkku	ajurnu ~ ajunu
3sg.S->NSpl.	ankku (excl.)		
3sg.S->NSpl.	anyungkku (incl.) ~anyukku		
3du.S->NSsg.	awulajji	awulurnkku ~awulunkku	awul
3pl.S->NSsg.	ajulajji	ajulurnkku	ajjul
3pl.S->NSpl.	ankuljarni-ngkki (excl.)	ajurntulkku ~ajultukku	ajuljarni
3pl.S->NSpl.	anyuljarni-ngkki (incl.)		

Notes:

1 3pl.S->NSpl. means a third-person plural subject acting on a plural non-subject.

2 The table shows an absence of dual pronouns combined with either dual or plural pronouns, so-called 'dual neutralization'. (The form /awulupulu/ awulupulu/ has been heard from a younger speaker, for a third-person dual object, but it was unclear in context whether the subject was singular or dual.) The plural is used instead of the dual when such situations arise. (Hale (1973b) compares different strategies for dual neutralization in Eastern Warlpiri, Warumungu and Yuendumu Warlpiri. See also McConvell 1980.)

Wuru-nyu   akuljarni   'you two shot them two'   or   'you mob shot them two'
shot-PAST.PUN   or   'you two shot all of them'   or   'you mob shot all of them'

3 The table also shows that, while the first part of the pronominal cluster is normally made up of the subject pronoun and the second of the non-subject, there are some forms for which this is not true:

3sg.S 1du.incl.NS	ayingkki
3sg.S 1pl.incl.NS	anyungkku
3sg.S 1du.excl.NS	ajikki
3sg.S 2du.NS	ampukku
3pl.S 1pl.incl.NS	anyuljarningkki~anyuljarnikki (cf. anyuljarni: 1pl.incl.S 3pl.NS)
3pl.S 1pl.excl.NS	ankuljarningkki~ankuljarnikki (cf. ankuljarni: 1pl.incl.S 3pl.NS)

Table 32.9 Formation of genitive pronouns

Person	Base	Genitive
1sg.	ajju (non-subj.)	ajjinyi
1du.incl.	ayil (subj.)	ayilinginyi
	ayi-ngkki (non-subj.)	
	ayil-irni (refl.)	
1du.excl.	aji-kki (non-subj.)	ajinginyi
1pl.incl.	anyu-ngkku (non-subj.)	anyinginyi
1pl.excl.	ankku (non-subj.)	ankkinyi
2sg.	angku (non-subj.)	angkinyi
2du.	ampu-kku (non-subj.)	ampinginyi
2pl.	arrkku (non-subj.)	arrkkinyi
3sg.	aku (DAT)	akinyi
3du.	apulu (non-subj.)	apilinginyi
3pl.	ajurnu (non-subj.)	ajurnunginyi

(28)   Karnanti   <u>akinyi</u>, kampaju <u>akinyi</u> +angkuljarnikki
       mother.ABS his.ABS, father.ABS his.ABS +1pl.excl.3pl.S.INVERT
       kili+karn   api-karni   karlampi-kkina.
       angry+now go-PAST.PUN.HITHER creek-ALL/LOC
       'His mother and father angrily came to us to the creek.' [KH:SN:73]

(29)   Kartungunyu-kk(u) +aku   <u>akinyi-kki</u>   kartti
       wife-DAT   +3sg.DAT his-DAT   man.ABS
       kujuwa-ji-nyi
       bereaved-INCHO-PAST.PUN
       'A man is bereaved of his wife.' [JS:MNM:C3.1:21]

(30)   *Ajjinyi-ngara* pari-njirrarni.
       my.ABL   take-PAST.PUN.AWAY.
       'He took it away from me.' [KH:SN:21]

Annotated abbreviations

ABL	ABLATIVE	semantic case suffix
ADMON	ADMONITIVE	verb inflectional suffix
ALL	ALLATIVE	semantic case suffix, switch reference marker
ASSOC	ASSOCIATIVE	derivational suffix on nouns and nominalized verbs

AWAY	away from deictic centre	associated motion, part of portmanteau verb suffixes
ABS	ABSOLUTIVE	interpretation of lack of marking on nouns as grammatical case on subject of intransitive sentence, object of transitive sentence.
CONT	CONTINUOUS	aspect, marked by suffix or reduplication on verbs
DAT	DATIVE	grammatical case suffix marking object, semantic case suffix marking indirectly affected participants and directions
du.	dual	number feature of pronominals
EMPH	EMPHATIC	clitic attaching to demonstratives
ERG	ERGATIVE	grammatical case suffix marking subject of transitive sentence, semantic case suffix marking Locative and Instrument
excl.	exclusive	feature of first-person plural pronominals, 'excluding Hearer'
EXCESS	EXCESSIVE	derivational suffix on nouns, 'too much'
FUT	FUTURE	verb inflectional suffix; clitic attaching to pronominal clusters and optative verb inflection
GEN	GENITIVE	form of pronoun
HAVING		derivational case suffix on nouns
HITHER	towards deictic centre	associated motion, part of portmanteau verb suffixes
IMPER	IMPERATIVE	clitic attaching to verb inflected for FUTURE
incl.	inclusive	feature of first person plural pronominals, "including Hearer"
intr.	intransitive	property of verb root
INCHO	INCHOATIVE	bound verb attaching to nouns to create derived intransitive verbs
INHABITANT		derivational case suffix on nouns
INTENS	INTENSIFIER	suffix attaching to nominalized verbs, 'do something too much'
INVERT	INVERSION	suffix attaching to pronominal clusters inverting subject and non-subject
LEST		semantic case suffix on nouns
LOC	LOCATIVE	interpretation of ERGATIVE in intransitive sentences and ALLATIVE in transitive sentences
NOM	NOMINALIZER	nominalising verb suffix
NS	NON-SUBJECT	property of pronominal clusters
OPT	OPTATIVE	verb inflectional suffix
PAST.PUN	PAST PUNCTUAL	verb inflectional suffix
pl.	plural	number feature of pronominals
PRES	PRESENT	verb inflectional suffix
REFL	REFLEXIVE	feature of pronominals

REL	RELATIVE	semantic/grammatical case suffix on nouns linking nouns together
S	SUBJECT	property of pronominal clusters
sg.	singular	number feature of pronominals
tr.	transitive	property of verb root

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NOTES

1 Warumungu's exact genetic relationship to other subgroups of Pama-Nyungan is still being debated. It is surrounded by great language diversity. To the south are Arandic languages (Kaytetye and Alyawarr), to the north and west the Ngumbin-Yapa languages Warlpiri, Warlmanpa and Mudburra, to the east Wakaya, and to the north and north-east the non-Pama-Nyungan languages Jingilu and Wambaya. It is most clearly related to the Ngumbin-Yapa languages, and to the Arandic languages. However, Warumungu and its neighbours share many properties which cannot be classified as clearly arising from shared inheritance or from areal diffusion. Diffusion and convergence of grammar are undoubtedly helped by the fact that many Warumungu people are multilingual, and have relations who identify with different languages.

2 Warumungu people have been using the spelling system given in table 32.1 since 1983. In this paper I shall use // to enclose forms given in this spelling system.

3 I have found no clear examples of long vowels past the first syllable of a morpheme.

4 Inside monomorphemic words, the following clusters are possible ('peripheral' refers to bilabial and velar, and 'non-peripheral' to the remainder):

> (i)   all homorganic nasal stop clusters
>
> (ii) homorganic lamino-palatal lateral stop clusters
>
> (iii) heterorganic clusters: non-peripheral nasals followed by peripheral stops or peripheral nasals

(iv) heterorganic lateral clusters: laterals followed by peripheral stops or /m/ or /w/ (the latter two are rare)

(vi) heterorganic flap clusters: flaps followed by peripheral stops or nasals, or palatal stops

(vii) heterorganic stop clusters: non-peripheral stop (usually /j/) followed by /p/. These are very rare, and are found mostly in names for birds. These names are often onomatopoeic and/or shared with other languages.

5 Literate speakers tend not to write this distinction, a tendency reinforced by their preference for writing suffixes of more than one syllable (and hence with a stress on their first syllable) as separate words: /papulu kuna/, but /papuluku/ ('house' DAT).

6 Length of nasals and laterals is not marked in the orthography because it seems predictable.

7 It is hard to attribute length to one segment or the other by ear, hence the transcription convention C.C. for long clusters and C: for single long consonants.

8 Compare Warlpiri /lurnpa/ 'kingfisher', where /-pa/ is the usual augment for making consonant-final stems conform to the vowel-final word structure constraint.

9 The initials in square brackets refer to the source: KH: K. Hale's field-notes: speaker XX; JS: YY, J. Simpson's field-notes: speaker YY.

10 From now on forms in square brackets will be semi-phonetic, for showing voicing alternations.

11 [JS:HNJ:86n] refers to the source in my notes.

12 Warlpiri separates the two: ergative /-ngki ~ -ngku/ and locative /-ngka/. Roughly, Warumungu uses the ergative for location in an intransitive sentence, the allative for location in a transitive sentence, as do some neighbouring languages. However, the coalescence of the two case functions apparently has different sources in different languages (Wambaya: Nordlinger 1993; Wakaya: Breen 1974; Alyawarra: Yallop 1977).

13 Transitive English verbs borrowed into Warumungu have the Kriol transitive marker /-im/ included.

14 This alternation has not been adequately analysed, but it may reflect a tendency towards dissimilation of sequences of fortis/lenis stops, a phenomenon found in Ngalakgan (Brett Baker, work in progress).

15 Double case marking is a widespread phenomenon in Australian languages (Dench and Evans 1988). Warumungu does not show as much as Warlpiri (K. Hale 1982, Nash 1986, Simpson 1991). Part of the function of double case marking is fulfilled by the existence of different case markers to indicate location in transitive and intransitive sentences.

16 *marlarluka* may be a borrowing from languages further north in which this form appears and in which this type of reduplication is more productive, e.g. Wambaya (Nordlinger 1993), Mangarayi (Merlan 1982).

17 This suggests reanalysis from agreement markers following an original verb suffix or auxiliary ending in /a/, such as the Warlpiri /ka/ PRESENT and /lpa/ PAST IMPERFECT.

18   Some younger speakers reanalyse the bound pronouns as nouns, inflecting subject pronouns for Ergative: /arni-njji/ for /arni/.

19   The examples here are spelled in accordance with speakers' preferences for not marking the fortis–lenis distinction suffix-initially.

20   This is an areal feature, more pronounced in Jingilu (Chadwick 1975) and Wambaya (Nordlinger 1993).

21   The forms /arnampukku/ and /angajikki/ suggest that for /ajikki/ and /ampukku/ at least /kki/ and /kku/ should be treated either as part of the stem of the non-subject pronoun or as suffixes marking non-subject.