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Date April 21, 2004

BARDI VERB MORPHOLOGY IN HISTORICAL PERSPECTIVE

A thesis presented

by

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to

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Bardi Verb Morphology in Historical Perspective

This dissertation is an investigation into the structure of verbal predicates in Bardi, a Nyulnyulan language from the North-Western Australian coast. I examine possible synchronic analyses and reconstruct the history of the systems between Proto-Nyulnyulan and the modern attested languages. There has been very little previous work on the history of complex predicates, and no detailed historical reconstruction for the Nyulnyulan family. The results presented here are a significant contribution to a topic in linguistics that it has only recently become possible to research.

My analysis of Nyulnyulan verbal morphology and predicate formation is both synchronic and diachronic. I give an analysis of the structure of verbal predicates in the modern languages, and present reconstructions to show how they have changed over time. Synchronically, I address issues in the analysis of predicate structure that rely on fundamental assumptions about the nature of generative grammar. I also highlight the some of the many intriguing diachronic problems in the Nyulnyulan languages. Why, for example, should so few inflecting verb roots be cognate between Eastern and Western Nyulnyulan when the lexicon as a whole is very similar? I present the first reconstruction of the Proto-Nyulnyulan verbal system and show in detail what changes Bardi has undergone. I place this analysis in the context of current theoretical research on complex predicates.

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Thanks also to the One Arm Point community and the Bardi Aborigines Association (and its Chairs and Administrators) for permission to work on the Bardi language. The Kimberley Language Resource Centre in Halls Creek and Fitzroy Crossing provided logistical support and administered my grants from AIATSIS. Thanks to Edgar Price in particular. Thanks also to Lucy Marshall, Maudie Lennard, June Oscar, Patsy Bedford, Mona Oscar and the old men from Fitzroy Crossing (now passed away) who welcomed me to their country and showed me around. While in Broome Joyce Hudson and Joe Blythe very kindly let me stay (and even better didn't mind me leaving at 4am).

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The library and access staff at AIATSIS were helpful in accommodating my schedule and requests; thanks in particular to Grace, Barry, Caroline and Eleanor. My fieldwork was funded from two grants from AIATSIS: G2001/6505 'Recording Bardi social history' and G2003/6761 'Bardi grammar research' and I gratefully acknowledge this assistance.

I have relied on unpublished data for many languages. Special thanks to Bill McGregor for access to his data on Warrwa, Nyulnyul and various Worrorran languages; to Heather Jenkins for permission to view her father Howard H.J. Coate's work on Yawijibaya, Umiida and Unggarrangg; Peter Bindon for access to Anthony Peile's Jabirr-Jabirr and Nimanburru notes and tapes; Diane Appleby and her mother, Doris Edgar, for an advance copy of the audio CD accompanying *Yawuru Ngan-ga*. Joe Blythe helped me with the Jaru and Kija data. Thanks also to Bronwyn Stokes (and Andrea) for interesting correspondence and conversations in Broome about Nyikina verb semantics. Naturally, all errors of fact and interpretation are mine, not theirs.

I have discussed numerous aspects of this dissertation with various people at various times. In particular I would like to thank Barry Alpher, Avery Andrews, Gülşat Aygen, Cedric Boeckx, Miriam Butt, Alan Dench, Alice Harris, Joyce Hudson, Bill McGregor, Toby (C.D.) Metcalfe, David Nash, Gabriel Poliquin, Conor Quinn, Vieri Samek-Lodovici, Eva Schulze-Berndt, Jane Simpson and Jie Zhang. The work of Eva Schulze-Berndt, especially Schultze-Berndt (2000), helped me refine my views of Bardi and gave me many ideas for

paths of investigation. I owe a special debt to the late Ken Hale, for his encouragement and example of meticulous work in combining theory and field work on Australian languages.

I am very grateful to my committee, Jay Jasanoff, Harold Koch and Susumu Kuno, for their time, patience and guidance. Actually, more than grateful, especially to my кинжально острый advisor Jay. I apologize that my example sentences contain neither marsupials nor tuataras, a defect I hope to rectify in future research.

My parents have cheerfully served as the "interface" between me and various aspects of the real world on more occasions than I like to admit, especially when I was 250km down a dirt road with no internet and dodgy power, but also when I was in Boston with neither of the previous excuses!

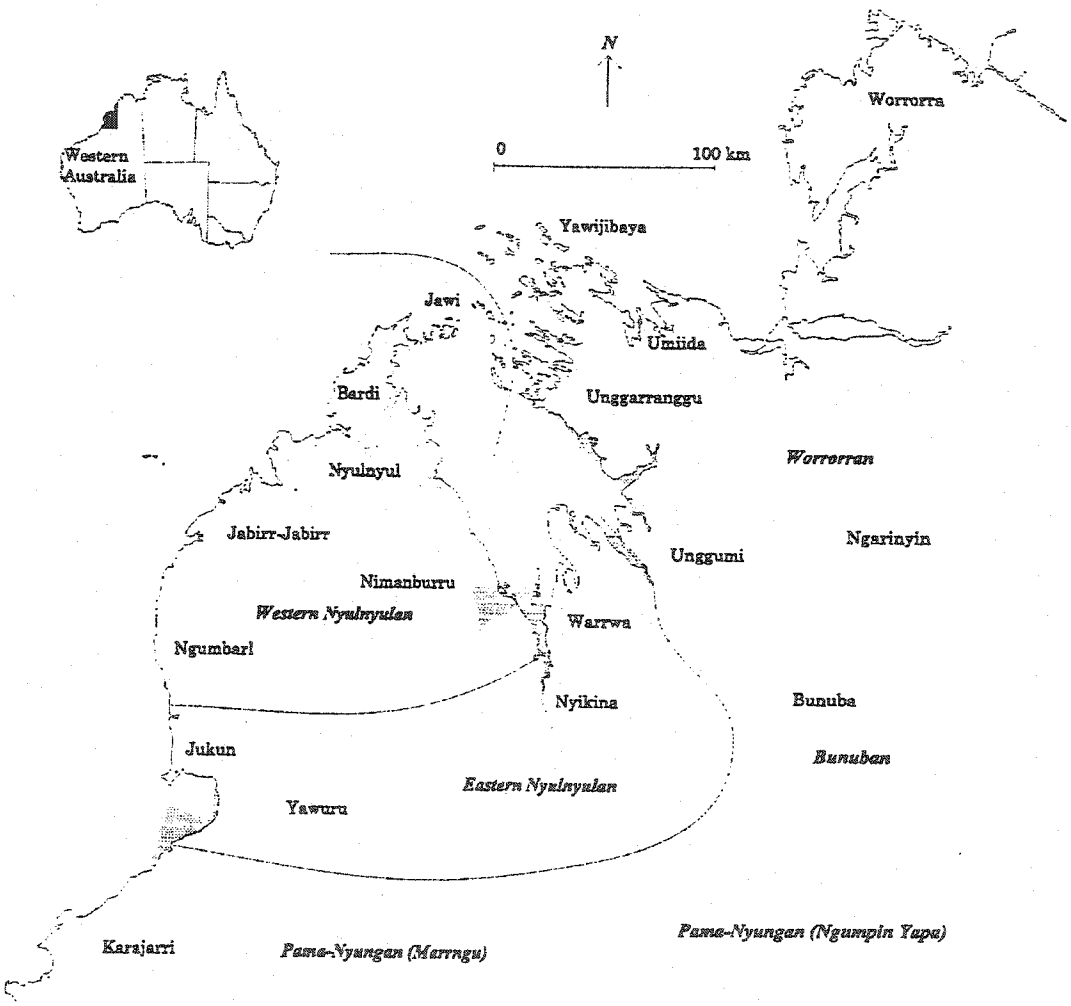
And, in the Bardi discourse position for important topicalized information, thanks (and more) to William, for turning my complex predicates into complex ungulates, and for all the rest.

Note

At the time of writing this dissertation, a Native Title claim was in progress over Bardi and Jawi country and the surrounding sea (claim number WAG 49/98). I have had no access to material used in the land claim and my work has not formed part of the evidence submitted to the Court.

While working on Bardi, particularly on the older materials, I have come across a great deal of materials which involves ceremonial language and which is gender-restricted. None of this material is included here. At the request of Bardi elders, I have written the names of speakers now deceased in citation of examples. Speaking these names aloud in the presence of close relatives may cause offence or distress.

Map of the Western Kimberley



Abbreviations

Glosses

1+2	first and second person
1	first person
2	second person
3	third person
ABL	ablative
ABS	absolutive
ACC	accusative
AND	comitative use of plural
APPL	applicative
ASP	aspect
AUG	augmented
CAUS	causative
COMIT	comitative
COMP	complementizer
CONJ	conjunction
CONTEMP	contemporaneous action
CONT	continuous
DAT	dative
DL	dual
DO	Direct Object
EMPH	emphatic
EN	epenthetic nasal
ERG	ergative
FOC	focus
FUT	future
F	feminine
GEN	general (=gerund) prefix
GER	gerund
GROUP	group plural
G	glide
HABIT	habitual
IMPF	imperfective
IMP	imperative
INAN	inanimate
INDEF	indefinite quantification
INST	instrumental
INTENS	intensive
INTERROG	interrogative
IO	Indirect, oblique Object
IRR	irrealis
IT	intransitive
K.O.	kind of, species of
LAT	lative
LOC	locative
L	lateral
MID.PERF	middle perfect
MIN	minimal
M	masculine
NEG	negative/negation
NOM.AG	nomen agentis

N	nasal
OBL	oblique
O	obstruent
PERF	perfective
PERS	person (of subject)
PL	plural
POSS'E	possessum
POSS'R	possessor
POSS	possessor (verbal enclitic)
POSTPRO	postposition
PRED	predicate marker
PROP	proprietive
PRO	pronoun/pronominal
PST	past
PURP	purposive
PV	preverb
QUANT	quantifier
REC.PST	recent past
RECIP	reciprocal
REDUP	reduplication
REFL	reflexive(/reciprocal)
REL	clausal relator
REM.PST	remote (or general) past
SEMBL	semblative
SEQ	sequential subordinator
SG	singular
SIMUL	simultaneous action
SP	species
SRCE	source
SUBORD	subordinator
T/A	tense/aspect
TAM	tense/aspect/mood marking
THEN	consecutive conjunction
THUS	causal connector
THUS	causal subordinator
TNS	tense
TOP	topic
TR	transitivity morpheme *n-* ∼ *a-*
VAL	valency
VERY	intensive
VOC	vocative
V	verb
WHILE	temporal subordination use of semblative case

Languages

Ba	Bardi
Jaw	Jawi
Jb	Jabirr-Jabirr
Kara	Karajarri
Ngum	Ngumbarl
Nim	Nimanburru
Nyik	Nyikina
Nyl	Nyulnyul
pEN	Proto-Eastern Nyulnyulan
pN	Proto-Nyulnyulan
pWN	Proto-Western Nyulnyulan
Walm	Walmajarri
Warr	Warrwa
Yaw	Yawuru

Note that * preceding a single word is used for reconstructions. Ungrammatical or expected but non-occurring forms are marked by ×. Full ungrammatical sentences in numbered examples are also marked with *, in an attempt to follow the (conflicting) conventions

of historical and synchronic linguistics.

In glossing, a hyphen - marks a morpheme boundary, while = marks a clitic boundary. A plus sign + marks a bound stem. The citation form of preverbs given without their accompanying light verb is *X+*. The plus sign is used to indicate that the form does not exist without the light verb and is non-existent on its own (e.g. *daag+* 'sleep'). Inalienably possessed nouns cited in stem form without their prefix are cited in the unlenited form, with a + to indicate the position of the prefix, e.g. *+ga* 'back, spine'. > is used to mark a sound change, while → is used to mark a morphological replacement.

Examples in the text which are not labeled for language are from Bardi. Examples without a reference are from the Bardi dictionary. Examples from unpublished texts are referenced by speaker's initials, a code for the text name, and the line number. Examples from fieldnotes are cited by the collector's initials, the book number and page number.

Nyulnyulan Orthographies

The Nyulnyulan languages have slightly different orthographies, although the phoneme inventories are overall rather similar.

The table below gives the phonemes and the orthographies for the main sources for data on Nyulnyulan languages. The left-most column is IPA (except for *y* instead of *j* for the palatal glide to avoid confusion with *j* which denotes the palatal stop). In the text, words are quoted in the community-approved orthography, where there is one. Forms which appear only in Nekes and Worms (1953) are underspecified for certain phonemes and are quoted in *this font*.

	PN	Bardi	Nyulnyul	N&W	Nyikina	Yawuru	Warrwa
Vowels							
a	a	a	a	*a*	a	a	a
a:	aa	aa	–	–	–	–	–
e	–			*e*	–	–	–
i	i	i	i	*i, e*	i	i	i
i:	ii	ii	–	–	–	–	ii
o	–	o	–	–	–	–	–
u	u	oo	u	*o, u*	oo	u	u
u:	uu	oo	–	–	–	–	uu
Stops							
p/b	b	b	b	*b, p*	b	b	b
t/d	d	d	d	*d, t*	d	d	d
ɖ	rd	rd	rd	*rd*	rd	rd	rd
k/g	k	g, k	g	*k*	k	k	k
c/j	j	j	j	*di, dj*	j	dy	j
Sonorants							
l	l	l	l	*l*	l	l	l
ɭ	rl	rl	rl	*l*	l	rl	rl
ly	ly	ly	ly	*li*	ly	ly	ly
m	m	m	m	*m*	m	m	m
n	n	n	n	*n*	n	n	n
ɳ	rn	rn	*n*	rn	rn	rn	rn
ɲ	ny	ny	ny	*ni*	ny	ny	ny
ŋ	ng	ng	ng	*n_, gn, ŋ*	ng	ng	ng
Rhotics							
ɽ	r	r	r, *r%, r*	r	r	r	r
r	rr	rr	rr	*r*	rr	rr	rr
Approximants							
w	w	w	w	*w*	w	w	w
y	y	y	y	*j*	y	y	y

Chapter 1

Introduction

1.1 Scope of topic

This dissertation is an investigation into the structure of verbal predicates in Bardi, a Nyulnyulan language from the North-Western Australian coast. I discuss the morphology and syntax of both simple and complex predicate structures and examine the historical changes which have led to the behavior of Bardi verbal structures in the modern language. In order to do this I compare verbs in Bardi with those in other Nyulnyulan languages and place them in the wider Australian context. My analysis is both synchronic and diachronic; I give an analysis of the structure of inflecting verbs and complex predicate and present reconstructions to show how the Nyulnyulan languages have changed over time.

There are issues in the synchronic analysis of predicate structure whose resolution depends on fundamental assumptions that we make about the nature of generative grammar, including lexical adicity and the role of morphology and syntax in the creation of the lexicon. More basically: what should be the analysis of a predicate with simple event structure but complex argument structure? Is there a single underlying structure or do Nyulnyulan languages show multiple types of complex predicates with diverse underlying structure?

Various analyses have been proposed for North Australian languages, ranging from 'compounds' to 'verb + auxiliary' to 'verb + classifier' to complex predicate.

Diachronically, too, there are many intriguing problems in the Nyulnyulan languages that warrant investigation. Although the two branches of the family are very close, the number and type of simple predicates in each branch is very different. Why, for example, should so few inflecting verb roots be cognate between Eastern and Western Nyulnyulan when the languages have a many cognates in other word classes? Why do Western Nyulnyulan languages have double the number of roots that the Eastern languages do? Are there syntactic differences between Nyulnyulan languages when it comes to light verb constructions? In order to answer such questions we need to examine the etymology of the inflecting roots themselves. In the modern Nyulnyulan languages the simple inflecting verb roots are mono-morphemic. Historically, however, many such roots appear to include an 'incorporated' element (either phrasal incorporation or argument incorporation, or perhaps compounding). It is striking that the verbal elements used in root formation of this type are the same light verbs that are used in complex predicates in the modern Nyulnyulan languages.

The complex predicates are also very interesting from the point of view of syntactic reconstruction, calquing and language contact. Closed class simple predicates and (Pre)Verb + Verb complex predicates are an areal feature of northern Australia, but they have been little more than noted in the literature on complex verbal constructions. In the Nyulnyulan languages we have a laboratory to test some of the predictions of theories of complex predicate structure. Bardi's complex predicates do not behave homogeneously; we have numerous subsystems of regularity in compositionality and some productive derivational patterns, but the overall system is not by any means uniform.

To a lesser extent I wish also to highlight the relative roles of calquing, lexical borrowing and internal change that have played a role in the diversification of the Nyulnyulan languages, especially in the current context of debates on the place of genetic linguistics in Australia. The way in which complex morphological systems undergo restructuring is of great interest, since there has been little detailed diachronic work on this issue, especially in Australia. What paradigms, for example, form the bases of analogical extension? How should we go about reconstructing complex verbal systems? What role does sound change play in the restructuring of complex paradigms, and what is the relative role of categorial replacement?[1] Dixon (2002:667) writes of this family that 'there is need for a full reconstruction of [Proto-Nyulnyulan], with statement of the various assimilations and truncations which have taken place in the development of the modern languages and dialects.' I have cast this study in terms of traditional historical linguistics; for better or worse, it is not a listing of 'assimilations and truncations', but an analysis of the regularity of sound change, of the identification of borrowing and calquing, and of types of morphosyntactic change.

Finally, I raise the issue of the synchronic status of phonological rules that are probably the result of historical change. We are accustomed to thinking of synchronic alternations as the (fairly direct) result of phonological change. In Bardi, however, the most parsimonious synchronic analysis of verbal prefix alternations is quite different from the sound changes and morphological analogies which created them.

The remainder of this chapter is concerned with background information to the languages, their speakers and their history. Chapter 2 gives an outline of non-verbal information important to the understanding of Bardi clause structure. An understanding of the development of verbal suffixation, for example, requires knowledge of the prominent patterns of clitic placement. An understanding of the problems of the interaction between

[1] See, for example, Rice (2001).

valency, transitivity and case assignment requires a knowledge of the cases found in Bardi and the other Nyulnyulan languages.

In Chapter 3 I give an overview of the major points of the phonological system which Nyulnyulan languages share, and discuss the sound changes which the various languages (and Bardi in particular) have undergone. The main content of this chapter is the synchronic analysis of Bardi verb prefix morphophonology. I also describe the sound changes which Bardi has undergone and provide the background to the historical changes in the verb system, which are discussed in detail in Chapters 4–8.

Chapters 4–8 deal with simple predicate root and affix morphology. I show the problems with previous descriptions of Nyulnyulan languages, and Bardi in particular, and suggest an analysis of Bardi morphology which takes into account all the affixes and clitics found. I discuss the etymology of verb roots and reconstruct noun incorporation for Proto-Nyulnyulan. I also examine the prefix bundles and show that they can be reconstructed to Proto-Nyulnyulan, despite the differing analyses of the modern languages.

Chapter 9 is a discussion of the syntax and reconstruction of Nyulnyulan complex predicates. I discuss the etymologies of preverbs and the syntactic behavior of the components of complex predicates (the light verbs and preverbs) in Bardi and show how this behavior differs between Nyulnyulan languages. I also propose an analysis of Bardi complex predicates which allows for the different constructions that are subsumed under the label 'preverb-inflecting verb'.

1.2 The Nyulnyulan family

1.2.1 The languages

Nyulnyulan is a small family of between six and ten closely related languages. The different numbers result from whether one takes mutual intelligibility as the primary criterion of 'languagehood' or whether one counts the number of language names recognized by Indigenous

speakers. See further §1.2.4 below for language and dialect groupings.

The Nyulnyulan languages fall clearly into two groups; the western group, to which Bardi belongs, along with Nyulnyul, Jawi, Nimanburru and Jabirr-Jabirr, and the eastern group, which contains Nyikina, Warrwa, Yawuru and Jukun. Ngumbarl is too poorly attested to be classified for certain but it probably also belonged to the western group (McGregor and Stokes 2004). A family tree is given in Figure 1.1.[2]

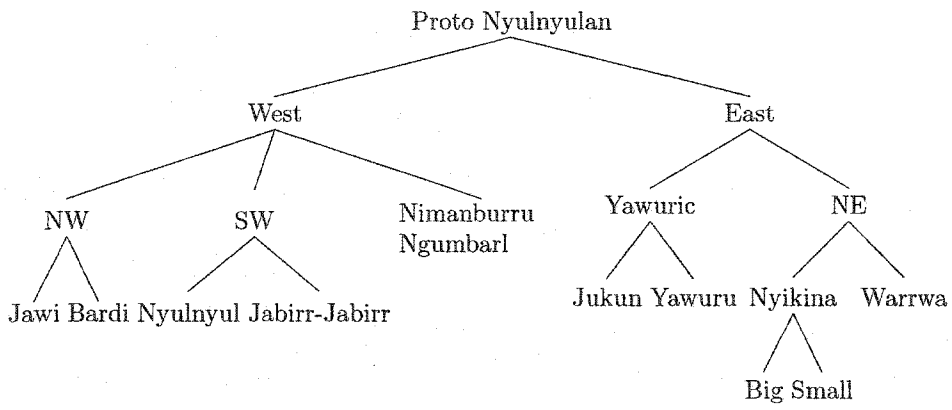


Figure 1.1: Nyulnyulan family tree, after McGregor and Stokes (1989)

Most of the Nyulnyulan languages are now extinct; Bardi has the most speakers of any Nyulnyulan language, but even Bardi has only about 35 full speakers. Nyikina and Yawuru are also still spoken by small numbers of people (my estimate based on my knowledge of the area is fewer than 10 speakers each). The last fluent speaker of Nyulnyul died in 1999. The other languages became extinct over the period 1965–1995. There are, however, several thousand people who claim descent from one or other of the Nyulnyulan groups, and many of these people have some knowledge of a Nyulnyulan language, either some words or as

[2]While McGregor and Stokes (2004) treat Nimanburru and Jabirr-Jabirr as dialects of Nyulnyul, Nimanburru has several features which imply that it is a primary branch of Western Nyulnyulan. For example, it has no intervocalic lenition of *b* (unlike Bardi) and it retains vowel length (unlike Nyulnyul). Almost nothing is known about Ngumbarl. The name 'Marangan' is also used occasionally as another dialect belonging to the same group as Yawuru and Jukun. 'Big' and 'Small' are translations of the indigenous names of varieties of the Nyikina language.

passive speakers.

The Nyulnyulan languages are not closely related to any other groups in Australia. The closest families geographically are Bunuban (an isolated family comprising Bunuba and Gooniyandi), Worrorran and the Marrngu and Ngumpin-Yapa subgroups of Pama-Nyungan. There have been, however, periods of extensive contact between Nyulnyulan languages and different non-Nyulnyulan languages; Yawuru and Karajarri (Marrngu, Pama-Nyungan) in the South, Nyikina and Walmajarri (Ngumpin-Yapa, Pama-Nyungan) in the East, and Bardi/Jawi and Yawijibaya (Worrorran) in the North. These languages all belong not only to different families but are also rather different typologically.

1.2.2 History of classification

Membership of the Nyulnyulan family seems to be stable across classifications, although the language names change along with what is classed as a dialect and a separate language. The names change but the composition of the family does not.[3] All the classifications are based on synchronic typological characteristics rather than on historical reconstruction.

1.2.2.1 Schmidt (1919)

The Nyulnyulan family was identified by Schmidt (1919) as the 'King's Sound group', which he classes as a member of the Western Subgroup (his term is *Untergruppe*), comprising:

I. Ruby Creek Language[4]
II. King's Sound Group [= Nyulnyulan]
III. Ord River Group [= Jarrakan]

---

[3]Compare this to Karnic (Bowern 2001d), where every author argues for a different classification and every version of 'Karnic' has a different membership. See also Evans (2004a) for a history of Non-Pama-Nyungan classification and the changes in family classifications.

[4]I cannot identify this language at present. Schmidt (1919) says his data are from Mathew (1899). Mathew credits Joseph Bradshaw (Melbourne) as the supplier of language information from the Napier Range, Kimberley (i.e., Ruby Creek) and Sunday Island. The 'Ruby Creek' language is probably either a Worrorran language or Bunuba.

The Ord River Group is Jarrakan (also occasionally called Djerag). It appears that in the sample data quoted by Schmidt (1919:163) for these groups, the Ord River and the King Sound data are reversed. The forms given as 'Ord River' are clearly Nyulnyulan, although not definitely any particular Nyulnyulan language. They are probably probably Nyikina, but they do not have to be. The King Sound words are probably Kija. Some examples of as 'Ord River' are (along with their Nyulnyulan cognates and the words given for 'King Sound'). (See page xiv and Chapter 3 for a summary of orthographic practices.)

(1.1) a. Knochen ('bone') *gand'e* (c.f. Bardi *gaanyji*); King Sound *gud'i(l)* (Kija *kujim*[5])
b. Wasser ('water') *wula* (Bardi *uula*, Nyulnyul *wula*); King Sound *koloë* (Kija *kurlum*)
c. Sonne ('sun') *walga* (probably Nyikina, c.f. Bardi *aalga* and Nyulnyul *walg*); KS *banda(l)* (Kija *parntel*)

Schmidt (1919) made classifications primarily based on pronominal data and some vocabulary items that he considered to be diagnostic of relationship. His works suffers heavily from lack of data and relies on superficial similarities while ignoring more widely used indicators of genetic relationship. For further information on Schmidt's methods, see Koch (2004).

1.2.2.2 Capell (1940)

Capell (1940), in his classification of Kimberley languages, also has a Dampierland group defined typologically as prefixing languages without noun classification. Capell's is primarily a typological classification, although he also took lexical data (and perhaps even kinship and other non-linguistic factors) into account.

1.2.2.3 O'Grady *et al.* (1966)

O'Grady *et al.* (1966:35-36) state that there are four languages in the group: Nyulnyul, Yawuru, Nyikina and Warrwa. Their survey was Australia-wide and was based on a wordlist

[5]The final *-m* is the gender suffix.

of about 200 items. It was a lexicostatistical classification with control for obvious loans. O'Grady *et al.* (1966) class Nyulnyulan as a family-level member of the Australian phylum.

1.2.2.4 McGregor and Stokes (2004)

McGregor and Stokes (2004) include ten distinct languages in their classification, although they acknowledge that Bardi and Jawi, and some other pairs, are mutually intelligible. They also give information on the internal classification of Nyulnyulan. My classification differs in a few ways from theirs, particularly in the internal structure of Western Nyulnyulan. The main difference is the placement of Nimanburru, in the basis of data which was not available to Stokes and McGregor when the paper was written (for which see further §1.2.3). McGregor and Stokes' criteria for subgrouping include shared vocabulary and shared morphology. They also used lexicostatistical data.

1.2.2.5 Dixon (2002)

Dixon (2001, 2002) describes Nyulnyulan as containing just two languages, Bardi and Nyikina, possibly following Hudson and McConvell (1984). This classification, however, ignores both linguistic and socio-cultural facts. Socio-culturally, it is incorrect to say that Yawuru is a dialect of Nyikina, since this implies that one term is superordinate to the other. It is equivalent to saying that Swedish is a dialect of Norwegian. It is linguistically incorrect to say that Nyikina and Yawuru are mutually intelligible, since they are clearly immediately identifiable as distinct languages with several profound morphosyntactic and lexical differences. The influence of Karajarri on Yawuru, for example, makes it quite different lexically from other Nyulnyulan languages. Dixon (2002) also says that Nyulnyulan is possibly a dialect continuum of a single language, but he provides no evidence for this assumption.

1.2.2.6 This classification

I largely follow McGregor and Stokes (2004) in their classification, although I differ on the internal placement of the Western Nyulnyulan languages. I treat Nimanburru as a third branch, and not a dialect of Nyulnyul, based on its lack of shared innovations with Nyulnyul. I avoid taking one dialect term as superordinate for others, although given the great variation in the amounts of data available for each speech variety I rely on certain dialects much more than others (for example, Yawuru over Jukun). A family tree which shows the relations between the languages as I take them was given in Figure 1.1 on page 5 above.

1.2.3 Internal classification of Nyulnyulan languages

McGregor and Stokes (2004) divide Nyulnyulan into an Eastern group and a Western one, and I follow this division here. I suspect that such a division is also implicit in Dixon (2002), with his Bardi and Nyikina 'languages' (one language from each group).[6]

The 'Eastern' and 'Western' groups may be partly an artifact of the lack of data available for the languages dividing eastern and western. The languages for which the least data are available, Ngumbarl and Nimanburru, were spoken on the border between the eastern and western division, and we do not have enough of the diagnostic forms (such as present versus past distinction, number of inflecting verb roots in the lexicon, third person future allomorphs, presence of a future irrealis) to inform us of which group they should belong to, or if these languages show a mixture of features which would invalidate the 'eastern' and

[6]Note that the designation 'Eastern' and 'Western' follows Kimberley Aboriginal terminology rather than literal compass direction, since all the 'Western' languages are to the North of the 'Eastern' ones. However, the terminology is used because the 'Western' languages are associated with the sea cultures, while the 'Eastern' languages (Nyikina and Yawuru) have cultural ties to the interior desert cultures. Since the sea is to the West of the Desert, Bardi and Nyulnyul have come to be known as 'Westerners'. Note also, incidentally, that Nyulnyulan compass terminology is not directly equivalent to English; and what it usually translated as 'North' is really much closer to 'North-East', since it is based on the direction of the prevailing winds.

'western' subgroup labels as bundles of shared innovations.

There are some features that can be described as *purely* 'Eastern' or 'Western'. Lexical data are useful, since many words can be reconstructed only to one group or the other. Some examples are given in (1.2) and (1.3):[7]

(1.2) Reconstructed to Western Nyulnyulan only:
  a. **bardangka* 'tree'
  b. **kajanunga* 'for a while'
  c. **muunga* 'sugarbag'

(1.3) Reconstructed to Eastern Nyulnyulan only:
  a. **kurrbuk* 'vomit'
  b. **makarra* 'tail'
  c. **ngurrun* 'smoke'
  d. **kulir* 'shoulder blade'

Another major difference between the Eastern and the Western languages is the organization of the verb system. The Western languages are characterized by a four-way contrast in tense/mood in the verbal prefixes, as in (1.4) below (abstracting somewhat from allomorphic differences):

(1.4) a. present: *-ø-*
  b. past: *-ng(a)-*
  c. future: *-ngga-*
  d. irrealis: *-la-*

This system is shared, with few differences, by Bardi, Nyulnyul and Jabirr-Jabirr. Another morphological peculiarity in only the Western languages (shared in the intransitive future) is the use of *u-* for the third person subject marker rather than *i-*. Compare Bardi *inanggamana* 'he put it' (past) with *oonkama* 'he will put it' (future).

[7]Unless otherwise noted, reconstructions are my own.

The Eastern languages, however, have a much more heterogenous system, although they are united by a collapse of the present *-ø-* and past *-nga-* categories, the minimal numbers reflecting forms of the past and the augmented numbers the forms of the present. The Eastern languages have a distinct prefixal category of irrealis future (*-ya-*), which the western languages lack.[8]

1.2.4 Languages and language names

In this section I give information about the different languages which make up the Nyulnyulan family. I give attested language names (and alternative spellings found in the literature) and a summary of the materials available for each language and variety.

1.2.4.1 Bardi and related dialects

Bardi is spoken at the tip of the Dampier peninsula, as far south as Pender Bay (*Goorrbalgoon, Goorrwalgoon*) on the Western side of the Dampier Peninsula, and to Cunningham Point (*Garramal*) on the Eastern side. Other names are **Bard**, **Baardi**, **Bad** or **Bād**.[9]

It is very difficult to gauge precisely how many full and partial speakers of Bardi there are (for discussion of the reasons behind this problem, see Evans (2001)). The numbers are, however, very small. Metcalfe (1975:1) estimated there to be approximately 350 full speakers of Bardi in 1975. I have been able to find no more than 40, although my survey methods were hardly exhaustive. Bardi people shifted completely to English in the 1950s, when the Sunday Island mission was closed and people were moved to Derby. However, the language had probably been in decline for some time. Whatever the exact numbers of fluent speakers today, they are all 60s or older. Only the oldest Bardi people use the language

[8]For example, an irrealis future is marked in Bardi by the irrealis prefix *-l-* and the future suffix *-a*.

[9]Nowadays people living at Lombardina call their language Bard, while those living at One Arm Point call it Bardi. I use the name 'Bardi' throughout, as almost all my data are from speakers from the Eastern part of Bardi territory and Sunday Island, who call their language 'Bardi'.

daily. Many younger people, however, can understand the language and some can speak it a little.

Bardi is the best described Nyulnyulan language (indeed, one of the best described languages of the region), although almost all the material is unpublished or in the form of field notes. Materials date back to 1910, with Bird's *Notes on the Chowie Islanders* (Bird 1910, 1915). Other publications followed. Gerhardt Laves collected very extensive notes on Bardi in the late 1920s, including about 100 texts in Bardi, and several in Jawi (Laves n.d.). Hermann Nekes and Ernst Worms published detailed notes on the Nyulnyulan languages in Nekes and Worms (1953) (totaling more than 1000 pages). Howard Coate worked on Bardi and neighbouring Worrorran languages in the 1950s and 1960s;[10] Toby (C.D.) Metcalfe published a study of Bardi verb morphology in 1975, and compiled a dictionary of over 3000 items (Metcalfe 1975, n.d.). The dictionary is unpublished, although many of the words appear in Bowern (2003). Most recently, Gedda Aklif collected texts and lexical items; an 1800-word dictionary was published as Aklif (1999), although other lexical items not included appear on the 50-odd tapes recorded as part of the dictionary elicitation project. Aklif's texts were compiled, edited and put in book form for the One Arm Point school in 1999 (Bowern 1999). Aklif's field notes are also extensive. The earliest sound recordings of Bardi are from 1911 (recorded on wax cylinders by Yngve Laurell; see Boström 2002 and Bowern (2001/2003b)). In addition to using previously collected materials, I made three field trips to One Arm Point to work with Bardi speakers, totaling about 9 months in the area, primarily recording oral history and eliciting grammar. Bowern (2003) contains many of the words elicited through old recordings or which were produced spontaneously. About half the texts I recorded appear in Bowern (2002).

Others who have collected Bardi materials are listed below.

[10] I learnt from Bill McGregor in 2002 that Coate burnt all his Bardi materials, although I have had access to a tape made of Tygan (the father of Aubrey Tygan) speaking Jawi.

- A short wordlist of dubious quality from Sunday Island was collected by Joseph Bradshaw and published in Mathew (1899).
- Arthur Capell made a set of several hundred vocabulary slips, including notes in shorthand. The cards from the second half of the alphabet (I-Y) is in the collection of language materials of Geoff O'Grady. The rest of the cards are missing. Capell also published materials on language classification and general surveys from the North-West, including Capell (1940) and Capell and Elkin (1941).
- Anthony Peile made recordings of George Warrb discussing place names and bush medicine (Peile n.d.a).
- Alice Moyle spent some time at Lombardina in June and July, 1968 and made extensive recordings of Bardi songs of all genres.
- Geoff O'Grady recorded a tape of an old man describing the pictures of a UN publication, in Broome, 1959.
- Wilf Douglas, a missionary on Sunday Island in the 1940s, made some Bible translations (now lost?) and wrote and illustrated Douglas (1992) 'Word gems from Iwany' (revised and updated by Gedda Aklif).
- Moya Smith, an archaeologist and anthropologist working on Bardi plant and site use, has recorded lexical items (see, for example, Smith and Kalotas 1985) and some stories (for example, Paddy and Paddy 1988).
- Edith Nicolas completed a PhD in 1997 on comparing Bardi and Bunuba verb morphology; she spent about 6 months on fieldwork in 1996-97. I have not made use of her materials, since Aklif's, Metcalfe's and my own are of much better quality.
- Nekes and Worms (1953) mention other sources of missionary wordlists from Beagle Bay recorded between 1895 and 1910, by Droste and Emo.

Jawi or **Jaawi** is the traditional language of Sunday Island and the Buccaneer Archipelago. Other names and spellings in the literature include *Chowie* (= Jawi) and various forms of *Iwanyoon*, which means 'from Sunday Island (*Iwany*)'.[11]

There are a few people at One Arm Point who claim Jawi descent rather than Bardi, including the Tygans, Coomerang and some members of the Wiggan family. Most Jawi people died of disease when Sidney Hadley set up a pearling base and mission on Sunday Island around the turn of the 20th century. These days people see 'Jawi' as a family badge rather than a language. Apart from a few words labeled 'island' rather than 'mainland' (e.g. *jigil* 'spear type', *banyinbooroo* 'carpet snake') there are today no clear features that distinguish the languages from each other. Laves, however, records them as separate dialects, and the Jawi of the Laves corpus is rather different from the Jawi used today. People describe traditional Jawi as being a bit 'lighter' than Bardi, and having a slightly different phrasing and use of deictic markers.[12] Jawi data are seldom included here, except for where Jawi forms are known to differ from Bardi forms (see, for example, §4.4.1).

1.2.4.2 Nyulnyul

The language is also spelt Niolniol or Nyoolnyool. There are no longer any full speakers. The last speaker, Mary Carmel Charles, died in 1999. There are, however, a number of part-speakers and a language revitalization effort is in progress.

Data for Nyulnyul comes from Nekes and Worms (1953), Kerr (n.d.), and the large corpus of published work and fieldnotes collected and analyzed by William McGregor (for example, McGregor 1994, McGregor 1996b, McGregor 1999, McGregor 2001, McGregor 2002, McGregor n.d. a, McGregor n.d. c, McGregor 2000). There are also unpublished missionary grammars from the 19th Century, in French (*Premières elements du langue*

[11] Nekes and Worms (1953:19) spell this name as *Iwanjdjun*, which is the unlenited form.

[12] Based on conversation and elicitation with Nancy Isaac, September 2001.

njolnjol: Bischofs 1905-1914; see also Bischofs n.d. and Tachon 1890-1900) and German, mostly the notes of Hermann Nekes and Ernst Worms, on which Nekes and Worms (1953) is based.

There also exists a tape recorded by Leon Barwell before 1982, which contains a word list and a few short sentences spoken by Albert Kelly.

Nekes and Worms (1953) and Peile (n.d.b) are our only sources of any reliability for **Jabirr-Jabirr**, and from these sources it appears that Jabirr-Jabirr was almost identical to Nyulnyul.

1.2.4.3 Nimanburru and Ngumbarl

Nimanburru was the language spoken immediately to the north of Jukun and Yawuru, on the Western side of the Dampier Peninsula.

Peile (n.d.b) recorded about 20 minutes of Nimanburru elicitation with a man called 'Christopher', from Beagle Bay, in about 1971. There is also some Nimanburru data in Nekes and Worms (1953). Today some of the Ah Choo family claim descent from this area but the language is no longer known (Bessie Ejai, pers. comm. 2001, 2003).

I treat Nimanburru as a separate branch of the Western Nyulnyulan subgroup, rather than as a dialect of Nyulnyul, since it preserves vowel length (unlike modern Nyulnyul, apparently) and final vowels. It thus does not share two of the main innovations which distinguish Bardi from Nyulnyul. Unlike Bardi, Nimanburru has not undergone lenition of intervocalic obstruents.

A few words of Ngumbarl can be found in McGregor (1988b), from Nekes and Worms (1953) and Kerr (n.d.). There are no diagnostic words to tell whether it is Eastern or Western. I assume that it belongs with Nimanburru or Jabirr-Jabirr but the only basis for this assumption is the region in which it was spoken.

1.2.4.4 Yawuru, Jukun and Marangan

Yawuru was traditionally the language of Roebuck Plains to the East of Broome. Nowadays there are perhaps a dozen full speakers of Yawuru, many of whom also speak and have affiliations with various dialects of Karajarri. Lexical information for Yawuru comes from Hosokawa (n.d.), and grammatical information is from Hosokawa (1991, 1996). Hosokawa (1991) contains an exhaustive description of the known dialect differences between Yawuru, Jukun (formerly spoken to the North and West) and Marangan (spoken inland). Nekes and Worms (1953) contains extensive Yawuru grammatical forms. Additional phonological information came from the audio CD accompanying *Yawuru Ngan-ga* (Yawuru Language Team 1998).

1.2.4.5 Nyikina

Nyikina is still spoken by a few families in Derby and the surrounding communities (Jarlmadangah, Looma, and further east Noonkanbah), and by a few people around Fitzroy Crossing. The language has two dialects, 'big' Nyikina and 'small' Nyikina. Stokes (n.d. a) contains about 3000 items, but there is no information on which preverbs select which light verbs, and no examples. Stokes (1982) is the main source for grammatical data. Additional phonological and phonetic information came from the tapes accompanying the guide *Learn Nyikina* (Stokes 1999). Capell (1952), a sketch of Nyikina and Warrwa, also provides some grammatical information.

1.2.4.6 Warrwa

Data for Warrwa come from Capell (1952), Nekes and Worms (1953), and from the extensive field notes of William McGregor, collected from the last two speakers (McGregor 1994-95, 1995-96).

1.2.5 Sources for other Kimberley languages

My sources for languages of the Kimberley region other than Nyulnyulan languages are all secondary.

The Worrorran languages are also called the 'Northern Kimberley' family by Capell and Coate (1984). They form a spread-out family covering most of the Northern Kimberley, from the Western shore of King Sound almost as far as the Northern Territory border. Some comparative work was published in Capell and Coate (1984), although they did no reconstruction. Alan Rumsey (pers. comm.) has done lexical and morphological reconstruction but since the report was for a land claim the contents cannot be published.[13] Any Worrorran reconstructions presented here are my own, based on cited data or Capell and Coate (1984). Ngarinyin has a dictionary (published as Coate 1974) containing about 7000 items. Rumsey (1982) is an 'intra-sentence' grammar of Ungarinyin.

The Worrorran languages spoken closest to Nyulnyulan languages were Yawijibaya and Unggarranggu (for which fieldnotes from William McGregor (McGregor 1986-87, 1987, 1988a, 1990a) and the brief sketch in Coate n.d. are the only sources). Bardi people were also in contact with speakers of Worrorra, from the Kunmunya area, because of forced relocation from Sunday Island to the Port George IV (later Kunmunya) Mission during the 1930s, and briefly to Watjolum during the Second World War. Contact probably also goes back longer, however, and is attested from oral history narratives in the Laves corpus (Laves n.d.). There are many loans between Worrorra and Bardi and a close study is timely.

Bunuban is a family of two closely-related languages, Bunuba and Gooniyandi, spoken to the East of Warrwa and Nyikina country. Data for Bunuba come from Rumsey (1996), and for Gooniyandi from McGregor (1990b).

[13] Materials (including primary field notes) collected and analysed in relation to a land claim are considered to be confidential submissions to the Court and cannot be released until the Court reaches a decision.

To the south of Yawuru there are the three members of the Marrngu subgroup of Pama-Nyungan, Karajarri, Mangala and Nyangumarta. There has been extensive borrowing between Karajarri and Yawuru. Materials for these languages are Capell (1949-1950) and the unpublished work of Father Kevin McKelson and Janet Sharpe.

1.3 Historical linguistics in the Kimberley

Very little historical work has been done on the Nyulnyulan languages. William McGregor and Bronwyn Stokes are the only linguists who have done reconstruction in this family. Stokes (1996) examines the ten most common verb roots in Nyulnyulan languages and finds that most of them can be reconstructed to Proto-Nyulnyulan. Stokes (n.d. b) is a draft manuscript that takes this work further, by examining whole verbs rather than just the verb roots.[14] A classification of Nyulnyulan is given in McGregor and Stokes (1989) and McGregor and Stokes (2004), however McGregor and Stokes (1989) is a one-page hand-out with no evidence for the classification given. Some major features of the Nyulnyulan family are reconstructed in McGregor and Stokes (2004), including approximately 400 vocabulary items, however it contains almost no information on the reconstruction of verbal morphology. I also disagree with a number of the reconstructions and I would interpret some data differently.[15] William McGregor has also written a number of articles which compare Nyulnyulan languages, but he has concentrated on typological comparison rather

[14]Stokes (n.d. b) itself is a compilation of paradigms sorted by transitivity—transitive, intransitive and alternative prefixing (i.e., ambitransitive). There is no reconstruction.

[15]For example, McGregor's **makirr* 'path, road' cannot be the immediate ancestor of Bardi *morr* 'road' because *o* in Bardi is not a reflex of **-aki-*, but of **-aku-*. The form with *u* is found in Yawuru, Nyikina and as a loan into Karajarri. Only Nyulnyul and Jawi provide evidence for **makirr* rather than **makurr*; Nyulnyul has *makirr* and Jawi shows *mayirri*. Moreover, since Nyulnyul has regressive vowel harmony, the language cannot be taken as a witness for any archaic vowels in final syllables, and the Jawi form could be a loan. McGregor sometimes reconstructs a word to Proto-Nyulnyulan ending in a consonant where Nyikina and/or Yawuru have a reflex where a final vowel is present. Since Nyulnyul can be clearly shown to have dropped final vowels (see §3.5.3), Yawuru and Nyikina must be treated as archaic in this respect.

than reconstruction and etymology in the publications. These include McGregor (1996a, 1998, n.d. b), McGregor (1994) and McGregor (2001).[16] McGregor (n.d. d) reconstructs the instrumental suffix *-ngany*.

Some historical comments are also made in the introductions to the synchronic descriptions of several of the languages. Hosokawa (1991:§1.2.1), for example, claims on the basis of lexicostatistics that Jawi and Yawuru share sufficiently many lexical items that Jawi could be an Eastern language. Moreover, he says that Nimanburru could belong to Yawuric (that is, the dialect complex that includes Yawuru, Jukun and Marangan). It is highly unlikely, however, that Hosokawa is correct, since Bardi and Jawi are mutually intelligible dialects and Jawi shares (as far as sparse data allow us to tell) all its morphology and almost all its lexicon with Bardi. Morphologically it is a Western language.

Nekes and Worms (1953) make some historical speculations, including some remarks on sound change in Bardi. The only points on which they are totally reliable are obvious lenitions and cluster reductions (§3.3.3), and some of those are mishearings. They also make some bizarre claims. For example, they claim that Bardi/Nyulnyul *-gala-* 'follow' and Yawuru *-ndira-* 'go' are cognate *because* [sic] the form in Yawuru goes back to *-gandira-*.

Capell and Elkin (1941) make some historical claims but their data are so flawed that much of the work is useless. For example, they claim that *rin* 'to be sick' shows two Bardi sound changes (Capell and Elkin 1941:88): "after the *n* of the past tense it becomes *j*. When intervocal [sic] it becomes *nd*" and they give a paradigm, reproduced in Table 1.1 below:

There is no verb root *rin* 'to be sick'.[17] Intervocalic formaerly initial *r* does not become *nd*. After *n*, *r* does not become *j*; the context never arises as there is always epenthesis

[16]This should not be taken to be a criticism of these works.

[17]I suspect that the forms in Table 1.1 have been extracted from the complex predicate *alig -joo-* 'be sick'. As it is, these forms are parts of the paradigm *-joo-* 'do/say'.

Person	Present	Past
1 (sg)	*ŋāndān*	*nanjin*
2	*minden*	*minjin*
3	*indan*	*injin*
1 (pl)	*ar(r)in*	*aŋarin*
2	*kur(r)in*	*kuŋarin*
3	*ir(r)in*	*iŋër(r)in*

Table 1.1: Paradigm of *rin* 'to be sick', from Capell and Elkin (1941:88)

between *n* and *r* across a verb prefix boundary (e.g. *inaralbagal* 'she winnowed it' from *i-n-ralba-gal*; see further §3.3). Fourthly, the paradigm illustrated in Table 1.1 is the verb *-joo-* 'do/say'.[18] Their next rule suffers from the same problems: "An *n* is lost after *ŋ*. They cite as examples *na-ŋganaŋk* 'I will talk', but *miŋaŋk* 'you will talk' and *iŋ-aŋk* he talked. The problem arises through misidentification of the verb root. The root is *-nganka-*, not ×*-nangka-*. The second and third person forms given are present tense, not future (*i-ngank* and *mi-ngank*) while the first person form has two mistranscribed nasals; it should be *nganggangank*, or *ŋaŋkaŋank* in Capell and Elkin's orthography. As Capell and Elkin (1941:90) note, their work is "merely notes on languages which await skilled investigation, and would repay it."

The situation is similar for the surrounding languages. Capell and Coate (1984), *Comparative Studies in Northern Kimberley Languages* is a description of the Worrorran languages and offers may comparisons, but very little in the way of historical reconstructions. No serious reconstruction has been published on the Bunuban family (which comprises Bunuba and Gooniyandi). The Pama-Nyungan languages to the South are members of the Ngumpin-Yapa and Marrngu subgroups of Pama-Nyungan; Ngumpin-Yapa is the subject of on-going (but largely unpublished) comparative work by Patrick McConvell and Mary

[18]With an odd 3MIN past form, which should be *injoon*; maybe the form given was confused for *injij*, the middle perfect. The root does alternate between *-di-*, *-ji-* and *-joo-*, but this is not describable in terms of a regular sound change.

Laughren (McConvell and Laughren 2004). The lack of reconstructions on the language families surrounding Nyulnyulan is a problem for my study, since I am often not certain about the status of words shared between Nyulnyulan and surrounding languages, and whether they can be reconstructed for the non-Nyulnyulan languages.

Chapter 2

Bardi Grammar Sketch

2.1 Introduction

Although verb morphology is the core of Bardi grammar, and many clauses contain only verbs, there are a number of other aspects of Bardi grammar which are relevant to the reconstruction of verb morphology and the discussion of complex predicates. The case system and verbal system interact, for example. Preverbs are derived from other word classes, including nouns, adjectives and adverbs. The verb acts as a host for the cliticization of various sentence particles. Some constituents may be expressed as free words or as bound morphemes on the verb. Many verbal suffixes have free forms as their origin.

In this chapter, therefore, I present an outline of the Bardi morphology and the parts of grammar which will not be covered elsewhere. Phonology (synchronic and diachronic) is covered in Chapter 3. Preverbs are presented in detail in Chapter 9 and verbal inflection forms a large part of the rest of the work, so these topics are not discussed in any detail here.

2.2 Typology of Nyulnyulan languages

In this section I briefly describe how Nyulnyulan languages differ from the other languages in the region.

Ken Hale was the first to divide Australian languages into Pama-Nyungan and non-Pama-Nyungan (Hale 1961). The Pama-Nyungan languages he considered a genetic family, while the non-Pama-Nyungan languages are more a set of languages that share typological rather than immediately inherited characteristics.[1] The Non-Pama-Nyungan languages are all prefixing and head marking, while the Pama-Nyungan languages are almost entirely suffixing and dependent marking. The non-Pama-Nyungan languages share a few recurrent features, such as a pronominal plural marker *-rr-* and some independent pronominal forms, such as the first person singular *ngay(oo)* and second person plural *kurr* (for which see Blake 1988), but very little else. The evidence provided by certain recurring monosyllabic verb roots is unconvincing. The Pama-Nyungan languages, however, do seem to be a genetic family (pace Dixon 1997), as they show recurrent pronominal systems, verb morphology and case markers, as well as some core vocabulary (Alpher 1990, Blake 1990a,b, Koch 1997). I consider the status of the Pama-Nyungan family to have been demonstrated by Alpher (2004).

The Nyulnyulan languages are non-Pama-Nyungan languages. Nyulnyulan languages have some typical superficial non-Pama-Nyungan features. They are prefixing, and mark both subject and object on the verb. However, there are some interesting difference that place them apart from both the Pama-Nyungan languages to the south and other non-Pama-Nyungan languages to the north and east.

Nyulnyulan languages have no noun classes or adjective-noun concord; they are one of the very few non-Pama-Nyungan languages with this feature.[2] The Worrorran languages, for example, have four noun classes (broadly: male, female, celestial and terrestrial) which

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[1]Although this is disputed by various people, including Jeffrey Heath (e.g. Heath (1987)). Evans (2004a) gives a summary of the various positions.

[2]Others are Tangkic, in the Gulf Country and Mornington Island, and Bunaban, a small family comprising Bunuba and Gooniyandi, which is adjacent to Nyulnyulan.

are marked on nouns, adjectives, possessives and third person singular verbal agreement (for full details see Capell and Coate 1984). It is difficult to find any trace of these classes in Nyulnyulan languages.[3]

Nyulnyulan verbal prefix morphology is also quite different from the 'typical' non-Pama-Nyungan system. Nyulnyulan languages mark the subject (ergative or absolutive) as a prefix. When the subject is plural, tense appears between the subject prefix and the number marker. Direct and indirect object agreement is by suffix. In Worrorran, however, and also in Gooniyandi and Bunuba, most agreement is by a combined subject/object complex in transitive verbs, much like an inverse system. There is a great deal of suppletion in the forms and subject and object are fused together in the prefix chunk. This surely suggests parallel innovation of heading marking and prefixation rather than common genetic inheritance.

The final major difference between the Nyulnyulan languages and the other non-Pama-Nyungan languages of the area is the number of cases; Nyulnyulan languages have around 10 cases, expressing both core grammatical functions such as ergative and dative, locations and other relational meanings (privative and comitative, for example). Worrorran languages, in contrast, have a very limited set of cases; Love (2000:28-29) described Worrorra as having only four postpositions,[4] and McGregor (1993) finds seven in Gwini.

The Nyulnyulan languages are also typologically different from the Pama-Nyungan languages to the south. The Ngumpin-Yapa subgroup, to which Walmajarri, Jaru and Warlpiri belong, is suffixing with 'catalysts' — second position clitics (perhaps IP heads) which mark tense, aspect and mood and act as hosts for agreement clitics.

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[3]We would not necessarily expect to find any classes; it is quite possible that the non-Pama-Nyungan languages developed them separately, or renewed them several times. This is likely, in fact, as while the semantic classes and the etymologies of the forms are quite similar across languages, the forms vary (based on my consultation of works such as Heath (1986, 1987), McConvell (2001)).

[4]A general locational case *-nanje*, an instrumental *-ŋjiniŋge*, an ablative *-ạlp* and an allative *-ŋuru*.

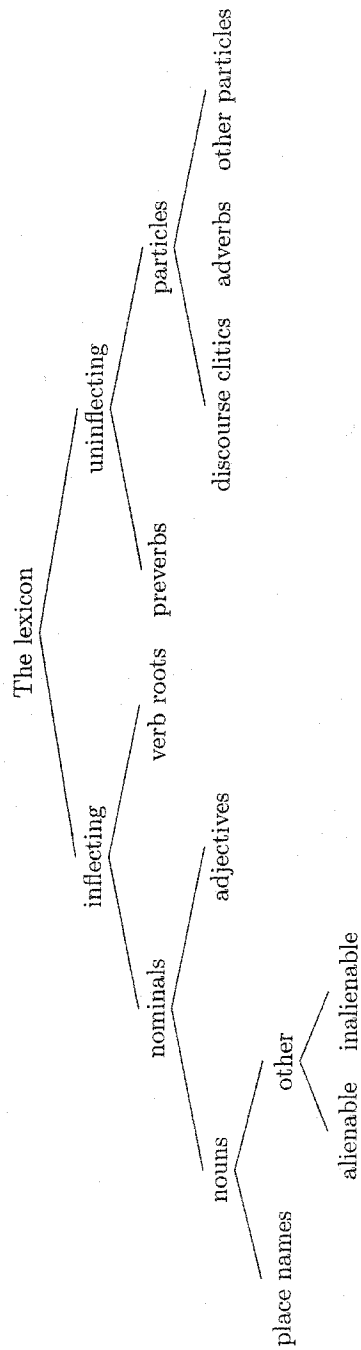

Figure 2.1: Bardi word classes

2.3 Word Classes

I analyze Bardi (and the other Nyulnyulan languages) as having four major word classes, each with a number of subclasses. The four major classes are nominals, verb roots, preverbs and particles. They are defined on partly distributional and partly morphological criteria (elaborated in the following subsections). Verb roots and particles form closed classes, while nouns and preverbs are open. Figure 2.1 gives a summary of the word classes and sub-classes. The classes are defined on the basis of inflectional possibilities and constituency.

2.3.1 Nominals

Nominals are subdivided into nouns and adjectives, and nouns into two classes: inalienably and alienably possessed. Inalienably possessed nouns are defined by their obligatory co-occurrence with a prefix denoting the noun's possessor.[5]

There is a distinction between nouns and adjectives in the language, although it is not very robust. While both nouns and adjectives may modify other nouns, only nouns can head phrases. That is, unlike in some languages, one cannot use an 'adjective' without a head out of context. One can omit the noun in context, but the context must be established. Thus (2.1b) is an acceptable paraphrase for (2.1a) in context, although (2.1b) is ungrammatical without a previously established referent of *moorrooloo*.

(2.1) a. *moorrooloo baawa* 'little child'
b. *moorrooloo* 'little <one>'

Another difference in the syntax of nouns and adjectives is also to be found in noun phrases. In a NP which contains an adjective, the nominal head can be elided and the modifier used alone to refer to the whole phrase. This is only grammatical if the modifier is an adjective. (2.2) is the parallel of (2.1) above and shows the situation with the adjective;

[5] I therefore analyze pairs such as *jambal* 'turtle flipper' and *niimbal* 'foot' < **ni-jambal* as separate lexical items.

moorrooloo 'little' may stand in context for *moorrooloo baawa* 'little child'; the same is not true for (2.3). In (2.3) the modifier of *baawa* 'child' is the noun *aamba* 'man, male'. The phrase as a whole means '(the) male child'. Unlike in (2.2), however, one cannot elide the head of the NP and use the modifier alone.

(2.2) *moorrooloo baawa* 'little child' > *moorooloo* 'the little one'

but

(2.3) *aamba baawa* 'male child' *> *aamba* (intended) 'the male one'

The order of elements is usually modifier + head, although the alternative order is found in texts.

Nouns may be divided into alienably and inalienably possessed categories on the basis of their co-occurrence with a possessive prefix. Approximately 30 nouns (mostly body parts) take this prefix. Table 2.1 shows the nouns and their glosses. Note that almost all of these nouns can be reconstructed to Proto-Nyulnyulan with possessive prefixation.

In the modern language, inalienably possessed nouns cannot appear without a prefix. There are some frozen doublets,[6] however, which may indicate that the prefixing used to be optional, or perhaps that these nouns are the relics of a wider system in which prefixed and non-prefixed items alternated (somewhat like the Worrorran languages to the north).

Location nouns are different from other inalienable nouns in that they take no locative marker. These are fairly common, and include place names historically comprising the locative *-goon* and several other location nouns including *morr* 'road', *boordan* 'thick scrub', and *biindan* 'open scrub'. (Note that placenames which do not historically include the locative tend to take locative inflection.)

In (2.4) we see that *ginyingg morr* 'this road' denotes the location where the action of

[6]For example *n-alma* 'head', *almalma* 'knowledge'; *ni-yambala* 'leg', *jambal(a)* 'dugong flipper'

Third minimal	Stem	Gloss
nalma	*+alma*	head
nankarr	*+ankarr(a)*	forehead
nanmoorroo	*+anmoorr(oo)*	thigh, lap
niimal	*+imal*	nose
niimar	*+imar*	chest
niimarl	*+marl(a)*	hand, lower arm
niimbal	*+jambal*	foot
niimi	*+mi*	eye
niimid	*+imid(i)*	knee
niimoonggool	*+imoonggool*	lower back
niinbal	*+janbal*	appearance, color
nilamarr	*+lamarr*	ear
nilar	*+lar*	lower leg
nilirr	*+lirr*	mouth, lip
nimany	*+many(i)*	throat
nimarryi	*+marryi*	gill
niminggarr	*+minggarr*	shadow, spirit of dead person
nimoonggoon	*+moonggoon*	knowledge
nimoonoorr	*+moonoorr*	smell
ninga	*+nga*	name
ningarrarda	*+ngarrarda*	spirit
ninganyboo	*+nganyboo*	armpit
niya	*+ga*	back, spine
niyalanggoon	*+jalanggoon*	elbow
niyangal	*+jangal(a)*	tongue
niyarda	*+garda*	body, size
niyorda	*+jorda*	chin
noonggan	*+nggan/+nggoon*	nape
noongoo	*+ngoo*	stomach
noongoong	*+ngoong*	like
nooroo	*+ooroo*	anus
nooroonggooroongg	*+roonggooroongg*	navel

Table 2.1: Bardi inalienably possessed nouns

the clause takes place, although it is not marked with the locative case. In (2.5) we see a similar example with a place name.

(2.4) *Wayibalajininim* *jagoord ingirrini* *biila* *ginyingg* *morr*.
white people-GROUP-ERG return 3-PST-AUG-[TR]-do/say-REM.PST also that road.
'The group of white people returned on that path.' (Metcalfe 1975:83: ex 71, fn 2)

(2.5) *Niimana jarda* *aarli* *Ardiyooloon*. *Gorna aarli marlinngan.*
many 1AUG.poss'r fish One Arm Point. good fish GER-eat-CONT-ALL.
'We have many fish at One Arm Point. They are good fish for eating.

2.3.2 Preverbs

As seen from §2.2 above (see also §4.2 on page 100 below), the Nyulnyulan languages have complex predicates, formed with an uninflecting preverb and an inflecting matrix verb. The syntax of preverbs and the identification of complex predicates are discussed in detail in Chapter 9, so only brief comments will be made here.

Preverbs are the only element which can appear between the negative marker *arra* and the inflecting verb. They take no inflectional morphology, and reduplication of preverbs gives an iterative or pluractional reading to the predicate.

Preverbs are an open word class. English verbs, for example, are borrowed into Bardi as preverbs:

(2.6) a. *warrkam -joo-* 'work'
b. *gadigad -(i)nya-* 'cut'

Preverbs themselves have several different sources in Nyulnyulan languages. (2.7) contains a list of the sources of preverbs.

(2.7)
- nouns (*girringg* 'a cough'; *girringg -ar-* 'to cough')
- adjectives (*ngaada* 'short'; *ngaada -joogooloo-* 'to break in half')

- adverbs (*angan* 'closeby'; *angan -ganyi-* 'to come up close')
- loans from other languages (*boojoom* 'push 'im' (Kriol); *boojoom -ma-* 'to push off (a boat)')
- no cognates in other word classes (*marl -joo-* 'to stop')

In Bardi, preverbs cannot be used without an inflecting verb. This is different from some other North Australian languages (e.g., Yawuru, (Hosokawa 1991), or Wagiman (Wilson 1999)).

2.3.3 Verb roots

Verb roots in Bardi are inflected for prefixes and suffixes. There are about 230 verb roots in Bardi. Verb roots form a closed class (although a somewhat large one). For details, see §4.2.

Other Nyulnyulan languages are similar in having closed classes of inflecting verbs. Nyulnyul has approximately the same number of verbs as Bardi, while the Eastern languages have much smaller inventories.

2.3.4 Particles and adverbs

The remaining word class comprises the detritus of Bardi grammar: adverbs and the various 'discourse particles' that are a prominent feature of Bardi texts. They include the sentence connectives *=min*, *=gid* and *=(j)amba* and the ubiquitous and untranslatable completive particle *(=)gala*. Bardi has temporal, degree and manner adverbs. Temporal adverbs tend to appear clause peripherally, although they do not have to. Manner adverbs tend to form complex predicates.

2.4 Morphology

Nyulnyulan languages have rich morphology. They are both head-marking and dependent-marking (to use the terminology of Nichols 1986). There is subject-verb agreement and object and indirect object clitic doubling. The languages also have an extensive case system

with both core (ergative, absolutive and dative) and non-core (e.g. locational, privative, comitative, semblative) functions marked. Alienable possession is marked by a possessive pronoun, which inflects not only for the person and number of the possessor, but also that of the possessum. Alienable possession (on certain body parts and related items) is marked by a prefix denoting the person and number of the possessor. Compare the following Bardi ways of marking possession:

(2.8) Inalienable possession by prefix
  a. *niimbal* ~ (in careful speech) *niyambal(a)* 'his foot'
  b. *irrjambala* 'their foot/feet'
     root: *-jambala* 'foot', prefixes: *ni-* 3MIN; *irr-* 3AUG.

(2.9) Alienable possession
  a. *jina jawal* 'his story'
  b. *jirra jawal* 'their story'
  c. *jirrirr jawal* 'their stories'

Case marking is ergative/absolutive but verb agreement[7] is 'nominative' (i.e., with the 'subject'). While the precise forms differ from language to language, most of the categories in Nyulnyulan languages are the same. Case is marked once in the phrase, on the first word. There is no optional concord. This highly unusual pattern is shared by the other Nyulnyulan languages, and by Bunuba and (optionally) Karajarri, but is not found, to my knowledge, in other parts of Australia. It is not mentioned, for example, in Dench and Evan's survey of case marking strategies (Dench and Evans 1988).

2.4.1 Nominal morphology

Bardi nominal morphology is mostly suffixal. The only synchronically active prefixes in the nominal system are the possessor prefixes which occur on some body parts and other

[7]There are some exceptions involving animacy and agent conflicts; these also appear in other Nyulnyulan languages are discussed in Hosokawa (1996).

inalienably possessed nouns. For these, see further §2.4.2.2. Bardi has both inflectional and derivational morphology, although the derivational system is not very productive.

2.4.1.1 Derivational morphology

Bardi derivational morphology shows several highly idiosyncratic patterns and unexpected meaning changes. The derivational morphemes which can appear on Bardi nominals are given in Table 2.2.[8]

Form	Gloss	Example
-iidi	agent nominal	*ilmiidi* 'a singer of *ilma* songs'
-arda	privative	*iilarda* 'without dogs' (*iila*)
-goordoo	proprietive	*galoorrgoordoo* 'beer' (*galoorr* = 'froth')
-al	indefinite/adjectival	*oolal* 'watery stuff, icemelt' (*oola* = 'water')

Table 2.2: Bardi nominal derivational morphemes

2.4.1.2 Number marking

Unlike the Eastern Nyulnyulan languages , Bardi has no dual or plural affixal marking on nominals. Number is cross-referenced on the verb or the predicate. If plurality is marked in the noun phrase, it is by the third person augmented pronoun *irr* 'they'. In (2.10b) below, number is marked both on the verb (*irlinirr* 'they eat them') and in the object phrase (*loonggoord* ... *irr aarli* 'blue tongue lizards' meat'). In (2.10a) number is marked on the fronted predicate *gornagijarr* and with the pronoun irr.[9]

(2.10) a. *Gornagijarr* *irr* *baawa.*
good-VERY-3AUG (PRED) 3AUG child
'Those children are very good.' (Text: NI: CB/20 9:22)

[8]Omitted here are several suffixes given in Metcalfe (n.d.) whose use could not be confirmed during fieldwork. Discussion of these suffixes is to be found in Bowern (in prep.).

[9]Note that this use of *irr* is much more like a demonstrative than a simple number marker. Phrases with *irr*, for example, are always definite. *Gornagijarr irr baawa* cannot mean 'children [in general] are good'.

b. *Loonggoord* *biil* *irr* *aarli* *gardo* *amboorinynim*
blue tongue lizard-ABS also 3AUG meat still people-ERG
irlinirr.
3[A]-eat-CONT=3AUG.DO
'(Mainland) people still eat the meat of blue tongue lizards (*Tiliqua scincoides*).'
(Aklif 1999:*loongoord*)

The only other marking of plurality outside of verbal marking is the 'group' marker *-jin* ~ *-in*. It has a similar function to Yawuru *-garang*.[10] Group marking is not productive in Bardi, and seems to be restricted to human terms. The following words are those that can occur with the group marker *-jin*:

(2.11) *nyoongoorl* 'old person', *nyoongoorljin* 'group of old people';
wangalang(in) 'young man/men'
majoongooloo/(in) 'young women'
waybalin 'white people' (Metcalfe 1975)
gayarjin 'white people' (DW: POA)

Note that notional agreement for number has changed between the recording of the Laves texts and my fieldwork. Numerals take plural agreement now; they regularly take singular agreement in the Laves corpus:

(2.12) *Guyarra* *agal* *guyarra* *agal* *guyarra* *agal* *guyarra* *galgarriny*
2 and 2 and 2 and 2 swim breast stroke
inyjalgun.
3min-pst-fall-cont.
'Eight of them jumped swimming into the water. (Laves n.d.:103/13)

Note also that a few nouns, such as *gaalwa* 'mangrove raft', regularly take plural agreement in the Laves texts. Now they take singular agreement:

[10]See, for example, *wubardu-garang* 'small children', from *wubardu* 'small' (Bardi *oowa* 'young of animals') (Hosokawa 1991:§6.12.4).

(2.13) *Ginyinggon gaalwa ingarrjagoolinajinirr gaalwa.*
then raft 3-PST-AUG-break-REM.PST=3MIN.IO=3AUG.DO raft
'Then their raft broke up.'

2.4.1.3 Case inflection

The Nyulnyulan languages have many cases.[11] Table 2.3 gives the forms of Bardi cases.

Cases		Etymology
Ergative	*-nim*	**-ni-ma*
Instrumental	*-nga* ~ *-ng*	**-ngany*
Abs/Dative	*-ø*	**-ji* ~ **-yi?*
Comitative	*-nyarr*	**-nyarri*
Locative	*-goon* ~ *-oon* ~ *-on*	**-guna*
Ablative	*-go* ~ *-o*	**-gabu*
Source	*-joon* ~ *-yoon*	**-junu*
Allative	*-ngan*	**-ngan V*
Lative	*-gony* ~ *-ony*	—
Privative	*-garda* ~ *-arda*	—
Semblative	*-marr*	**-marra*
Perlative	*-mardany*	—

Table 2.3: Bardi cases

Bardi also has several morphemes that derive stems from nouns and adjectives. They can change the subclass of the word but not its major class (that is, there does not appear to be any productive synchronic nominal-verbal derivation).

Case marking is phrasal, and the case appears after the first element of the clause. See, for example, the sentences in (2.14) below, where successive more complex ergative-marked noun phrases all have the ergative case marker *-nim* on their first constituent:

(2.14) a. *aamba-nim aarli inamboona*
man-ERG fish 3-TR-PST-poke-REM.PST
'The man speared a fish.'

[11] McGregor (1990b) and McGregor and Stokes (2004) argue that the languages of the Kimberley region do not have case inflection; they call these markers 'postpositions'. In Bowern (2001c) I give reasons for considering the forms case markers rather than postpositions.

b. *ginyinggi-nim aamba aarli inamboona*
this-ERG man fish 3-TR-PST-poke-REM.PST
'This man speared a fish.'

c. *boordiji-nim niiwandi aamba inamboona aarli*
fat-ERG tall man 3-TR-PST-poke-REM.PST fish.
'The tall fat man speared a fish.'

2.4.2 Syntax of nominals

2.4.2.1 Possession

Just as Hosokawa (1991:§6.2.2) noted for Yawuru, in Bardi the term 'possession' covers a wide range of semantic relationships between two lexical items, including true possession (ownership), both alienable and inalienable, copyright of cultural material, kinship relations, and a topic of a story. Examples are given in (2.15).

(2.15) a. *Barda ingirriloonganana maanka aambooriny jirr*
away 3-PST-AUG-pick up-CONT-REM.PST black people 3AUG.POSS'R
baawa.
child.
'They used to take away black people's children.' (Aklif 1994b:12)

b. *ngarri jina laya.*
much 3MIN.POSS fat
'It's got a lot of fat.'

c. *gorna niyarra.*
good 3MIN.POS'R-taste
'It tastes good.'

d. *alboorroo jardarr iila.*
many 1AUG.POSS'R-AUG.POSS'M dog.
'We have a lot of dogs.' (Aklif 1993b:2)

e. *arra jarda iniini Ardiyooloon.*
NEG 1AUG.POSS'R emu One Arm Point
'We don't have any emus at One Arm Point.

f. *Jarr inyjalan ngarroongg jina riiwa.*
there 3-PST-see-REM.PST crab 3MIN.POSS'R hole.
'There she saw the crab's hole.' (Aklif 1994a:12)

Note, incidentally, that case marking appears on the first constituent of the NP, including the possessor phrase. In (2.16), the head of the subject NP is *iila* 'dog'. Ergative case marking, however, appears on the first constituent of the phrase, on *nyoongoorl* 'old'.

(2.16) *Inarlij [nyoongoorlnim aamba [jina iila]].*
3-TR-bite-MID.PERF old-ERG man 3MIN.POSS'R dog.
'The old man's dog bit it.' (Aklif 1994a:12)

Throughout this work, possessive pronouns will be glossed with the possessor (abbreviated POSS'R) and possessum (the thing possessed, abbreviated POSS'M). The possessum is only marked if it is not third person minimal.

Possessive pronouns may also cliticize to the noun denoting the possessum, in which case the *j-* of the stem shows lenition:

(2.17) *boyin* < *bo-jin* 'woman's child =3MIN.POSS'R

2.4.2.2 Possessive Prefixation

Recall from Table 2.1 (on page 28) and associated discussion above that Bardi has a set of nouns which obligatorily inflect for the person and number of their possessor. The Nyulnyulan languages do not all have possessive prefixing or suffixing; the western languages have fully working prefixation on alienably possessed nouns (some body parts and those nouns that have some sort of inalienable connection to the body, like Bardi *nimoonggoon* 'knowledge' and *ninga* 'name'). The system is breaking down in Warrwa, where prefixes are infrequently used. In Nyikina and Yawuru the relevant nouns all begin with *ni-* but do not alternate (c.f. Koch (1995:37) for discussion). Warrwa has both prefixes and suffixes to

mark possession, using obligatory encliticization with some words of possessive pronouns (Bardi shows the same cliticization, but it is optional).

The forms of the possessive prefixes are given in Table 2.4

person	*form*
1min	*nga-*
1+2min	*a-*
2min	*nyi-*
3min	*ni-*
1aug	*arr-*
2aug	*goorr-*
3aug	*irr-*

Table 2.4: Bardi possessive prefixes

2.4.2.3 Discontinuity

Discontinuous noun phrases are disfavored in isolation and in elicited sentences. They do appear, however, particularly with a quantifier and a noun, as illustrated in (2.19). (2.18) was rejected as an elicited sentence, although equivalent sentences do appear in narratives.

(2.18) * *Aambanim boordij inambij aarli.*
man-ERG bid 3-TR-PST-poke-MID.PERF fish.
'The man speared a big fish.' (Aklif 1990-1994:BE: E0/1)

(2.19) *Gooyarra*$_i$ *nganamboona aarli*$_i$
two 1-TR-PST-poke-PST fish
'I speared two fish.'

2.4.2.4 Nominal predication

Predicate nominals take a suffix *-a*. In (2.20) we see (in (a)) that the citation form is *boorrboorriidi* 'dancer'. In the (b) sentence, however, the final vowel of the stem is replaced by *-a*. The same is true in (c), where the subject and predicate are in the opposite order. In the (d) sentence the intensive marker *-gij* is added to the predicate, which still takes *-a*.

(2.20) a. *boorrboorriidi* 'a dancer'

b. *Jarr aamba boorrboorriida.*
this man dance-EXPERT-PRED
'This man's a dancer.' (Aklif 1990-1994:E0/11)

c. *Boorrboorriida jarr aamba.*
dancer this man.
'This man's a dancer.'

d. *Boorrboorriidigija jarr aamba.*
dance-EXPERT-VERY-PRED this man.
'This man's a really good dancer.'

No similar suffix is noted for other Nyulnyulan languages.

2.5 Pronouns and demonstratives

2.5.1 Personal pronouns

The following are the places where pronominal items appear in Bardi:

(2.21)
- free nominative pronouns;
- free oblique pronouns;
- indirect object agreement on verbs;
- possessive suffixing on nouns;
- subject agreement on verbs;
- object/predicate agreement on nouns, verbs and adjectives;
- possessive prefixing on nouns.

The Nyulnyulan languages vary in their pronominal systems and in what categories are marked.

The Nyulnyulan languages and many other non-Pama-Nyungan languages of the Kimberley region are described as having a four-person minimal/augment system, an analysis due to McGregor (1989). McGregor (1989) and Rumsey (1996) noticed several unusual facts about the pronominal systems of languages like Nyulnyul and Gooniyandi. First is

that such languages have (in familiar terminology) a first person dual inclusive pronoun, but no first person dual exclusive. The first person dual exclusive is marked by the first person plural. In many of the relevant languages there is no second or third person dual. Secondly, the first person dual inclusive seems to pattern more with the 'singular' pronouns than with non-singular ones. In Bardi, for example, the first person dual inclusive verb agreement is marked by *a-*, with no further number marking (c.f. first person 'singular' *nga-*, second person singular *mi-*, third person singular *i-*); the 'plural' persons all have an *rr-* prefix.

Another piece of evidence that the non-Pama-Nyungan Kimberley languages do not have the more familiar singular/dual/plural system is the behavior of Nyikina 'dual' and 'plural' marking. Nyikina has a suffix, *-mirri*, which is added to the 'augment/plural' pronouns to mark something like a 'dual'. For example, *dyuwa* is 'you (singular)', *gurrgamirri* is 'you two'. When *-mirri* is added to the first person dual inclusive, however, the result is a trial pronoun ('you and me and him'), not a dual. This is known as a unit augment system.

person	minimal	unit augment	augment
1	*ngayu*	*yarrga-mirri*	*yarrga*
2	*dyuwa*	*gurrga-mirri*	*gurrga*
3	*ginya*	*yirrga-mirri*	*yirrga*
1+2	*yayu*	*yarrdyu-mirri*	*yarrdyu*

Table 2.5: Nyikina augment system (Stokes 1982:152)

Pronominal number is glossed in terms of MINiminal and AUGment throughout this work, although the reader should bear in mind that these terms are roughly the equivalent of *singular* and *plural* for most categories.

A further comment is warranted on the behavior of the first person augmented ('us all') forms. In the inflectional morphology of Bardi, the categories of 1AUG and 1+2AUG are collapsed, and marked by a single form (a derivative of *arr*). This system is known as an Assiniboine system (after Greenberg's (1988) typology of first person dual marking). The Assiniboine system is schematized in (2.22)

(2.22) Assiniboine system

1min	1aug
1+2min	
2min	2aug
3min	3aug

The alternative system, where all pronominal forms in the minimal/augment system are marked differently, is known as the Ilocano system. This is in evidence in Bardi only in the free pronouns. The Ilocano system is illustrated in (2.23).

(2.23) Ilocano system

1min	1aug
1+2min	1+2aug
2min	2aug
3min	3aug

The forms of Bardi marking are given in Table 2.6. The free pronouns on the left illustrate the Ilocano system of pronominal distinctions, while the verbal subject prefixes on the right are illustrative of the Assiniboine system.

Person	Free Pronoun Ilocano	Verb Prefix Assiniboine
1min	*ŋayu*	*ŋa-*
1+2min	*ayu*	*a-*
2min	*ju*	*mi- /an-*
3min	*ginyingg*	*i-/ u-*
1aug	*arrudu*	*a- rr-*
1+2aug	*arridil*	
2aug	*gurr*	*gu- rr-/arr-*
3aug	*irr*	*i- rr- / u- rr-*

Table 2.6: Bardi free pronouns

The Eastern languages make wider use of Ilocano prefixing than the Western languages do. In both Nyikina and Warrwa the system makes three distinctions: minimal, unit augmented and augment. The unit augment forms include an additional third person participant. The unit augmented suffixes are the same as the augmented forms with the

	Proto-Nyulnyulan	Bardi	Nyulnyul	Jabirr-Jabirr	Yawuru	Nyikina	Warrwa
1MIN	*ngayu	ngay(u)	ngay	ngay	ngayu	ngayu	ngayu
2MIN	*ju(y)a	joo	juy	djoe juy	juyu	juwa	juwa
3MIN		ginyingg(i)	kinyingk	ginyingg	ginyangka	ginya	kinya
1+2MIN	*yayu	ayoo	yay	yai yay	yayu	yayu	yawu
1AUG	*yarra	arroodoo	yarrad	yarad	yarryirr	yarrga	yaarra, yarrin (C)
1+2AUG	*yadirr(V)	arridil	yadiR	yader yadirr	yadiri	yarrju	yadirr, yarru (C)
2AUG	*kurr	goorr	kurr	gor	kurryirr	gurrga	kurra
3AUG	*yirr	irr	(y)irr	yer yirr	kangajun(u)	yirrga	yirra
1+3					yarrgarda	yarrgamirri	yaarra-wili, yarrin-bili (C)
2+3					gurrgarda	gurrgamirri	kurrawili, burrawawili (C)
3+3					yirrgarda	yirrgamirri	yirrawili
1+2+3					yadiri ~ yadigurdiri	yarrjumirri	

Table 2.7: Nyulnyulan free pronouns

addition of *-mirri* in Nyikina and *-bili* ~ *-wili* in Warrwa. The distinction is maintained in Nyikina throughout the paradigm. In Warrwa, like Nyulnyul and Bardi, there is no distinction between 1+2aug and 1aug in the prefixes (nominal and verbal), although unlike the Western languages, the distinction is maintained in the verbal suffixes.

Table 2.7 illustrates the free pronouns in Nyulnyulan languages. Note that free pronouns are not very common in spontaneous speech. They appear for emphasis and focus marking, not for anaphora. The source of the 1AUG and 1+2AUG distinction in Bardi is not known. Both forms are built on the Proto-Nyulnyulan **yarr-*; the 1AUG **yarradu* is reconstructible to Proto-Western Nyulnyulan but not further. The root increments have no etymology.

2.5.2 Demonstratives and deixis

Demonstrative pronouns such as *jiiba* and *jarri* mark old information; *jiiba* 'this' also contains information on proximal deixis. The deixis markers can be divided into those that contain an element of motion and those that do not. The deixis markers may also be used adverbially. The relevant forms are given in Table 2.8. I have not been able to reconstruct these forms at this stage, apart from **jarri*.

Demonstratives		
jiiba	'this'	old information + proximal deixis
jarri	'this'	previous information (reintroduced topic)
Pure deixis markers		
static:		
biiji	'this'	close to speaker
nyoonoo	'that'	further away from speaker
boonoo	that	
dynamic:		
balab	'here'	this way, towards speaker/hearer
nyalab	'here'	towards hearer/speaker
barda	'away'	away from speaker
goona	back	

Table 2.8: Bardi demonstratives and deictics

2.5.3 Interrogative pronouns

Bardi has several interrogative pronouns, all of which can be reconstructed to Proto-Nyulnyulan. We can reconstruct **yanggi* 'what, who', **jana (buru)* 'where, which' and **baana-* 'when'. The polysemy between *jana* 'which' and *jana* 'where' appears to be due to the use of *jana* in the phrase *jana buru* '(at) which place', reflected both in the Nyulnyul, Jabirr-Jabirr and Yawuru forms, which show a locative marker, and in the Bardi form *jana(m)booroo*, which is a fossilization of the phrase.[12]

	who	what	when	where	which
pN	**yanggi*	**yanggi*	**baana*	**jana*	**jana (buru)*
Bardi	*anggaba*	*anggi*	*baanigarr*	*jana*	*jana((m)booroo)*
Nyulnyul	*angg*	*angg*	*bananggarr*	*an-og*	
Jabirr-Jabirr	*angg*	*angg*		*an-og*	
Yawuru	*yanggarru*	*yanggi*		*jana(gun)*	
Nyikina	*yanggi* ~ *yangi*	*yanggi*	*bana*	*jana*	
Warrwa	*(y)ang(g)i*	*yanggi*	*bana*	*jana*	*jana*

Table 2.9: Nyulnyulan interrogatives

Bardi has innovated a distinction between *anggi* 'what' and *anggaba* 'who'. *-ba* in this form is probably etymologically the cleft marker. The development would thus parallel French *qu'est-ce que ... ?*, literally 'what is it that ...?'. Further support for this analysis comes from the fact that the ergative marker is optional on *anggaba* (presumably depending on whether *anggaba* is treated as a true cleft or has been reanalyzed as part of the same clause).

In Bardi, as in all Nyulnyulan languages and many Australian languages, interrogative

[12] I have no explanation for the optional *m* in *janambooroo*. It could be a relic of a locative case marker (although I would expect ×*jononbooroo* in that case); it could also be hypercorrection. Coda nasals are usually deleted following a nasal in the previous syllable, but there are many alternations where coda nasals are restored in some parts of the paradigm.

pronouns serve dual function as interrogatives and indefinites, although in Bardi the indefinite reading tends to occur with the indefinite suffix *-al*. Thus *anggal* can mean either 'what-all' or 'something'.

2.6 Predicate formation

Nyulnyulan languages have both simple and complex verbal predicates. The simple predicates consist of a single inflecting verb, which exhibits agreement for (ergative or nominative) subject, object and indirect object (if present). Examples are all from Bardi but the other Nyulnyulan languages work the same way.

(2.24) a. *nganamboogal* 'I hit (him).' (Root: *-boo-* 'hit')
nga- na- m- boo -gal
1 tr pst hit pst
b. *imarra* 'it's cooking.' (Root: *-marra-* 'cook')
i- marra -ø
3 cook -pres

In addition to the simple predicates with an inflecting root, the Nyulnyulan languages have a very common type of complex predicate. They are formed by using an uninflected lexeme immediately before the inflecting verb (and often cliticized to it). This uninflected root is called the 'preverb'. Preverbs appear directly before the verb; they constitute with the inflecting verb a single semantic, intonational and grammatical unit.[13]

2.6.1 Simple Predicates

The simple predicates consist of a single inflecting verb, which exhibits agreement for (ergative or nominative) subject, object and indirect object (if present). Subject agreement is prefixal; direct and indirect object agreement is by clitics which appear after the tense

[13]Hosokawa (1991) claims they can move around the clause; I found in Bardi that only those derived from nominals could do this — preverbs with no nominal equivalent could not move (thus *girringg* 'cough' could, with *roowil* 'walk' could not). Detailed discussion of these facts can be found in §9.5.

agreement.[14] The subject agreement morpheme is part of a complex that also marks tense, mood and transitivity. The suffixes to an inflecting verb mark tense, aspect and valency. Following the suffixes one finds agreement clitics for the direct and indirect objects (if present). The schema for simple predicate inflection is given below in (2.25).[15]

(2.25) SUBJ/TENSE/TR —**Root**— T/A =IO =DO

Some examples which illustrate simple inflecting verbs are given in (2.26). The root is underlined. Underlying forms are also given; note the opaque relationship between the underlying forms and surface forms in some cases.

(2.26) a. *nganam<u>boo</u>gal* 'I hit (him).' (Root: *-boo-* 'hit')
nga- na- m- boo -gal
1 tr pst hit pst

b. *<u>imarra</u>* 'it's cooking.' (Root: *-marra-* 'cook')
i- marra -ø
3 cook -pres

c. *mina<u>marra</u>nanirr* 'You cooked them' (Root: *-marra-* 'cook')
mi- na- (ng-) marra -n -na =irr
2 tr (pst) cook cont pst =3pl.DO

The roots that can be inflected in this way are a closed class. There are approximately 250 roots of this type. They cover all semantic spheres and range from the very broad *-joo-* 'say, do', *-ma-* 'put' to the very specific *-iyarra-* 'cut sugarbag from a tree'. Although it is a large class, one cannot create new verb roots, and there are fewer than 100 roots used in everyday conversation.

Throughout the discussion that follows these are the type of constituents called 'inflecting verb roots'.

[14] Their clitic status is inferred from the fact that they do not show the same lenition patterns that suffixes do, and that clausal clitics such as *=(j)amba* 'that's why' and *=gid* 'then' intervene between the agreement markers and the rest of the verb.

[15] Note that the template in (2.25) is a slightly simplified version of the ones given in (4.2) and (4.3) on page 101.

2.6.2 Complex Predicates

Complex predicates in Bardi and other Nyulnyulan languages comprise an uninflecting *preverb* which immediately precedes an inflecting verb root. The inflecting verb hosts agreement and tense/aspect morphology, as seen in the previous section. In Bardi the preverb does not inflect for any morphological category, although many (but not all) preverbs can be reduplicated. The examples in (2.27) below give some examples. In (2.27a), the preverb *garr* combines with the inflecting verb *-boo-* to form a complex predicate meaning 'rub'. The predicate is transitive. Example (2.27b) shows another example, this time intransitive. The preverb *roowil* combines with the inflecting verb *-inya-* to form a predicate meaning 'walk'. Note that although glosses have been given for *roowil* and *garr*, neither item exists independently of the complex predicate construction.

(2.27) a. *garr nganamboogal* 'I rubbed him.'
Preverb: *garr* 'rub'
Inflecting verb: *-boo-* 'hit'
Entire predicate means: 'to rub [something] to stop the pain'.

b. *roowil innyagal* 'He was walking.'
Preverb: *roowil* 'walk'
Inflecting verb: *-nya-* 'pick up, catch'
Entire predicate means: 'to walk'

The preverb and the inflecting verb form a single intonational unit and are fused in some cases: for example

(2.28) *darnana* < *darr inarna* 'He came.'

Preverbs are an open word class. Loan verbs, for example, are borrowed as preverbs and assigned an inflecting verb based on the semantics of the action denoted by the preverb. The Kriol verb *boojoom* 'push',[16] for example, is borrowed as a preverb into Bardi and takes

[16]The *-oom* element is the transitivity marker.

the inflecting verb *-ma-* 'put', along with many other verbs that imply an action involving 'transfer'.

Note that simple and complex predicates fill the same functional slot; for example, they can be conjoined, as the example in (2.29) shows. In this example *nyirramorryi* 'on what way, how' goes with both verbs, the first a simple predicate with *-ø-* 'give' and the second a complex predicate *barn -joo-* 'tell (someone to do something)'.

(2.29) *Arralanba booroo arralan. Alandanba baali arramoogoon, arralanjardirr*
1PL-look at camp 1PL-see. 1DL-sit down camp 1PL-make, 1PL-see-OUR
jamoo gamarda, nyirramorryi ingarrananamoordoo
maternal grandmother maternal grandfather, on what road 3PL-give-PAST-1PL
agal barni ingirrinanajard.
and TELL 3PL-SAY-PST-1PLIO.
'We look for a place, we look for it. We sit down in camp which we made, and we see our grandparents, what way of life they put us on and told us [about]'. (D.W. 'Life on Sunday Island', ln 43.)

A preverb will generally be associated with a particular inflecting verb root. There are some preverbs that can appear with several different verb roots, but these are in the minority. In (2.30) below, for example, the preverb *baad* can appear either with the inflecting root *-ø-* (glossed as 'give'; it was historically **-w(u)-* but in Bardi the root material never surfaces), where the whole predicate means 'grab', or with *-banji-* (which on its own means 'share, exchange') where the complex predicate means 'wrestle'. (2.31) shows that one light verb cannot be substituted for another. The preverb *roowil* is grammatical only with the light verb *-(i)nya-*.

(2.30) a. *baad -ø-* 'grab'
b. *baad -banji-* 'wrestle'

(2.31) a. *roowil* 'walk' + *-(i)nya-* 'catch'.
b. **roowil inamboogal* (using *roowil* with *-ø-* 'give').

There are preverbs, however, which are attested with several different light verbs. In (2.32) we see an example of how the meaning of a complex predicate can change when a different

light verb is used. *Dirray* is rather unusual, however, in appearing with so many different light verbs.

(2.32) *dirray* 'turn'
a. + *-banji-* = 'turn around'
b. + *-ar-* = 'rotate something'
c. + *-boo-* = 'turn into something'
d. + *-jiidi-* = 'swing about'
e. + *-ø-* = 'swing about, turn back'

2.6.3 Non-verbal predicates

Bardi has nominal and adjectival predicates in addition to verbal predicates. The copula in Bardi is null, even in clauses without present tense. The preferred order for constituents is subject – predicate, but other orders are also frequent. (2.33), for example, shows the preferred order, but *niiwandi ginyingg aamba* is also grammatical.

(2.33) *Ginyinggi aamba niiwandi.*
3MIN man tall
'this man is tall.'

(2.34) *Gorna niyarra.*
good 3MIN.POSS'R-taste
'It tastes/tasted good.' (lit: 'its taste is good.')

Predicates can also comprise an adverb and case-marked nominal. (2.35) provides two examples.

(2.35) a. *Aranga barda nganyjinngan.*
other off tree-coffin-ALL
'The others went to the tree coffin.'[17] (Text: NI: Jimijanyji 43)

[17]Bardi funeral practices traditionally involved exposing the body for a period by placing it upright in a 'cradle' mounted on a platform in the fork of a tree. This is the 'tree coffin'. The bones are later placed in a pillow made of paperbark.

b. *Balab jiya!*
here 2MIN-IO
'Come here!' (more lit, 'here with you!')

Non-verbal predicates may take the direct object clitics, as illustrated in (2.36). (For the form of the clitics, and the distribution of *ngay* and *jarrngay*, see further §6.3.2.)

(2.36) a. *Ngay moorrooloo-marr=ngay.*
1MIN little-SEMB=1MIN.PRED
'It happened when I was little.' (Text: NI:NGJ/1)

b. *Ngay majoonggooloo=jarrngay.*
1MIN young girl=1MIN.PRED
'It's me that's the young (=unmarried) girl.' (NI: CB/FN 12/17)

2.7 Clausal syntax

2.7.1 Word order and nonconfigurationality

Bardi and other Nyulnyulan languages have highly free word order, even at the constituent level, free ellipsis and pragmatically determined argument structure. They thus fulfill all the criteria for nonconfigurationality (Baker 2000, Hale 1983, Speas 1990).

Word order at the clausal level in Bardi is largely determined by discourse and principles of pragmatics, grounding and focus. Gross word order in Bardi follows Mithun's principle (Mithun 1987) of new information first. The topic position is final, where topics are contrastive, although topics are more frequently omitted entirely.[18] No purely syntactic information is encoded in the word order of clausal constituents. For further information, see Bowern (2004). As seen from (2.37), all permutations are possible.[19]

[18] Although as Pensalfini (2004:371) notes for Jingulu, purely functional and pragmatic considerations cannot be used to determine word order entirely, as pragmatic discourse categories such as topic are also morphologically marked and do not have to coincide with the regular placement of topics in the constituent order.

[19] These sentences were elicited by Gedda Aklif. The sentences without ticks against them were

(2.37) ✓ *baawanim inanggagaljin mayi aamba.*
child-ERG 3-TR-PST-bring-REC.PST=3MIN.IO tucker man.
'The child brought food for the man.' (Aklif 1990-1994:BE: E0/2)

✓ Baawanim inanggagaljin aamba mayi.
✓ Mayi inanggagaljin baawanim aamba.
✓ Mayi inanggagaljin aamba baawanim.
✓ Aamba inanggagaljin baawanim mayi.
✓ Aamba inanggagaljin mayi baawanim.
✓ Baawanim mayi inanggagaljin aamba.
✓ Mayi baawanim inanggagaljin aamba.
✓ Mayi aamba inanggagaljin baawanim.
✓ Aamba mayi inanggagaljin baawanim.
✓ Baawanim aamba inanggagaljin mayi.
✓ Aamba baawanim inanggagaljin mayi.
Inanggagaljin aamba baawanim mayi.
Inanggagaljin baawanim aamba mayi.
Inanggagaljin mayi baawanim aamba.

Bardi appears to show no effects of binding, weak crossover or VP ellipsis which would lead us to posit a VP in the structure, or which would provide evidence for a configurational structure. In (2.38a), for example, we see that the R-expression appears to be bound within the binding domain. (2.38b) was the translation given for the English prompt sentence; (2.38c) has the same meaning and uses an overt pronoun for the possessor.

(2.38) a. *Mary$_i$nim jina$_i$ birrii injalagal.*
M-ERG 3MIN.POSS'R mother 3-TR-see-REC.PST=3MDO$_i$.
'Mary's mother sees her.' / 'Mary sees her mother.'

b. *Birriinimin$_i$ injalagaljin$_i$ Mary.*
mother-ERG-3MIN.POSS'R$_i$ 3-TR-see-REC.PST=3MIN.IO$_i$ Mary.
'Her$_i$ mother sees Mary$_i$.'

---

generated by me on the basis of patterns attested in texts.

c. *Ginyingginimjin*$_i$ *birrii injalagal Mary*$_i$.
3MIN-ERG-3MIN.POSS mother 3-TR-see-REC.PST M.
'Her$_i$ mother sees Mary$_i$.' (NI: CB/FN 12/21)

We also see apparent violations of weak crossover:

(2.39) *Anggabanim injalanajin birrii?*
who-ERG 3-TR-see-REC.PST=3MIN.IO mother
'Who$_i$ saw her$_i$ mother?' (NI: CB/FN 12/22)

Multiple interrogatives are allowed, and there are few restrictions on the order, as the grammaticality of both sentences in (2.40) shows:[20]

(2.40) a. *Anggabanim anggi inarligal?*
who-ERG what 3-TR-eat-REC.PST
'Who ate what?'

b. *Anggi anggabanim inarligal?*
what who-ERG 3-TR-eat-REC.PST

2.7.2 Subordination

Subordination in Nyulnyulan languages, and Bardi in particular, was the subject of Bowern (2001b,e). Briefly, I propose that almost all the Wackernagel subordination clitics in Nyulnyulan languages can be traced to case markers, in one language or another, and that these subordinate clauses began as a type of secondary predication (that is, they are treated as an adjunct NP and case-marked accordingly).

It is very difficult to determine whether 'subordinate' clauses in Bardi represent true subordination, or are rather adjoined to the main clause, as Hale (1976) claimed for Warlpiri. The sentences in (2.41)–(2.43) would appear to point to an adjoined analysis. In (2.41),

[20] My elicitation of sentences containing interrogatives did produce ungrammatical sentences, and some in which the interrogative pronoun was obligatorily interpreted as indefinite. In particular, there appears to be weak evidence for an argument-adjunct distinction. See Bowern (in prep.) for more details.

for example, the antecedent of the 'relative' clause *boogoonb inin* is *ginyinggi ngaarri*; we might want to analyze this as a case of switch reference, or translate more loosely along the lines of 'the *ngaarri* devil saw me, the one which lives in the mangroves'. However, note that *ginyinggi ngaarri* is not marked for ergative case. If this were an instance of clause chaining we would not expect the ergative to be omitted. However, we do regularly find the ergative dropped from the antecedents of relative clauses (see further Bowern (to appear c) for the relevant data).

(2.41) *Ginyinggi ngaarri injalijjarrngayoo boogoon=b inin.*
3MIN devil 3-TR-(PST)-see-MID.PERF-1MIN.IO inside-REL 3-be at-CONT.
'The spirit, which lives inside [the mangroves], saw me.' (Metcalfe 1975:37)

(2.42) *Garrma jagoord anja mayalgarran booroo=b*
later return 2.FUT-TR-do/say-FUT afternoon time-REL
anjalajan nyoonoomb nganggan boogoon.
2.FUT-TRsee-FUT=1min.IO here 1-FUT-be-CONT inside
'When you come back in the afternoon, you'll see me there inside.'

(2.43) *Booroo nganjalagal=joogarra, boogoon-jamb goorrinkal.*
look 1-TR-see-REC.PST=2AUG.IO inside=GLOSS? 2-AUG-sit-REC.PST
'When I looked around for you, I saw you inside.'

Another problem with the 'adjoined' relative clause analysis is that there some examples of sentences which appear to have intertwined 'subordinate' clauses. Consider (2.44) from the Laves corpus:

(2.44) *Guyarra arra irrmunggun ingarrjimbina nyunu ingarramarnirr aambanim*
2 NEG know die here put man-ERG
malgin nyini irr.
in secret here 3AUG
'They didn't know that two [men] had died and a man had been put there hidden.'
(Laves n.d.:103/72)

The phrase *guyarra* 'two' is the subject of *ingarrjimbina*, but *arra irrmunggun* is the main

clause. Therefore either *guyarra* has raised out of the subordinate clause, or it is the object of *irrmunggun*, and the sentence should more literally be translated 'they didn't know the two, [that] they had died', although this is rather unlikely, as *irrmunggun* does not usually take a nominal complement.

Questions as to the proper representation of subordination or coordination in Nyulnyulan languages, and Bardi in particular, remain a question for further research.

2.7.3 Overt marking of clause chaining

I use 'clause chaining' as a neutral term, meaning either subordination or coordination. When there is an overt marker of clause chaining, there are two possibilities. The first is a sentential or clausal clitic. The second is an independent word.

2.7.3.1 Sentential clitics

There are two main landing sites for clausal clitics. One is Wackernagel's position (after the first phonological word of the clause). The other is on the verb itself. Note that the verb is itself often in first position, which led Metcalfe (1975) to describe many phrasal clitics as verbal.

An example is given in (2.45). Clauses are bracketed, and =*min* attaches to the end of the first word of the clause.

(2.45) *[Yaaga iningalj]* *[garanygarany=min*
hole 3-sit-CONT-REC.PST-SIMULT footsteps=MIN
ingalamankagaljan] *[nganjalagal=min* *inyjoordoogal*
1-PST-hear-REC.PST=1MIN.IO 1-TR-see-REC.PST=MIN 3-PST-get dry-REC.PST
nalma.]
3-head.
'He was in a hole when he heard my footsteps and I saw him raise his head.'

A list of sentential clitics is given in Table 2.10. They are very difficult to gloss. Broadly, =*(j)amb* is used to denote a causal relation between one sentence and the next, =*b* is used

when there is a co-referential argument (which is why in Aklif (1993a) it is called a relative clause marker), and *=min* and *=gid* signal advance of the action in a story. It is possible that *=min* carries the sense of change of topic, while *=gid* does not, but this is tentative. When transcribing stories speakers will frequently replace one clitic for the other.

Clitic	Gloss
=min	then
=gid	then
=b(a)	relator
=(j)amb	'that's why', thus

Table 2.10: Bardi Wackernagel clitics

2.7.3.2 Other clause chainers

In addition to the sentential clitics, speakers of Bardi also make use of full words to signal the relations between clauses. In the modern language, the most common is *ginyinggon* 'then' (the locative of the third person minimal pronoun, so more literally 'at that') or *ginyinggarra*. In the Laves corpus besides *ginyinggon* we frequently find *ranan* or *raana* 'straightaway'.[21]

2.7.4 Serialization

In textual data one frequently finds series of clauses which are clearly closely related but which show no overt markers for conjunction or subordination. In (2.46), for example, there are three verbs. The first two, *nganjarrga* 'I ask' (uninflected for tense) and *nganjoogaljirri* 'I said to you' are probably appositive, i.e. 'I ask(ed), I said to you ...'. The 'subordinate' clause, 'if you would give me money', also has no overt marking of subordination and could be appositive.

[21]The alternation in vowel length is unexpected.

(2.46) *Nganjangarrga nganjoogal=jirri goolboo nganyji*
1-TR-ask 1-TR-say-REC.PST=2MIN.TOP.DO money INTERROG
anangay.
2-TR-give-FUT=1MIN.DO
'I was going to ask if you would give me money.'

Frequently, the same subject is retained across clauses. In (2.47), for example, there are no intonation breaks between the verbs and they form a single large prosodic unit.

(2.47) *Ginyinggon roowil innyana Ngarrigoonbooroo baalingan darr*
then walk 3-TR-catch-REM.PST Ng. shade-ALL come
inarnajirri niimana aamba agal ambooriny Ngoolbirndi.
3-TR-spear-REM.PST=3AUG.IO many men and people Ng.
'Then Ngarrigoonbooroo walked to her camp and came across many people at Ngoolbirndi.' (Laves n.d.:129/19)

2.7.5 Negation

2.7.5.1 Verbal/clausal negation

Clauses are negated in Bardi by a particle, *arra*, which appears before the verb root. *Arra* is also used for constituent negation, although this is rather rare when there is also a verb in the clause. In Bardi, as well as in all Nyulnyulan languages but Yawuru, negated verbs are obligatorily marked for irrealis. This is an areal feature — negative verbs in Walmajarri also have this feature (Hudson 1978), for example.

(2.48a)–(2.48d) provide examples of negative clauses. In (2.48a) there is an example of a negated verb. (2.48b) shows an adverb. (2.48c) provides an example of a negated possessive phrase, while (2.48d) is a negative existential.

(2.48) a. *Arra ngalalana.*
NEG 1MIN-IRR-see-REM.PST
'I didn't see it.'

b. *Arra barda jard.*
NEG off 1AUG-IO
'We're not going.'

c. *Arra jard baali*
NEG 1AUG-POSS shelter
'It's not our shelter.'

d. *Arra iindoo ginyinggi.*
NEG curlew 3min
'It [was]n't a curlew.'

Negatives are occasionally double-marked. In (2.49), for example, *arra* appears twice. The first is an instance of constituent negation, modifying *ngay* 'I'. The second is the clausal negator.

(2.49) *Arra ngay arra ngalarla!*
NEG 1min NEG 1-IRR-eat-FUT
'It wasn't me eating it!

2.7.5.2 *arrang(a)* 'without'

Another frequent form of negation is *arranga* 'without', which is a way of negating individual nouns in the clause. Historically it is the negative marker *arra* 'not, nothing' in the instrumental case. Now the word behaves like an adverb or preposition meaning 'without':

(2.50) *Wiliwilingan arr nganjoogal arrang baawa.*
fishing-ALL go 1-TR-do/say-REC.PST WITHOUT child
'I went fishing without the kids.'

(2.51) *Aarlingan arr nganjij bardi. Barni nganimbidi*
fish-ALL go 1-TR-do/say-MID.PERF yesterday. when 1-TR-PST-throw in
wiliwili namarda=amba ingarrin-janirr
fishing line just=CAUSAL REL 3-PST-AUG-sit=1MIN.POSS-3AUG.POSS'EE
wiliwili, ingirrjimbin arranga marlinjan aarlinim.
fishing line 3-PST-AUG-die-CONT without GER-bite-CONT=1MIN.IO fish-ERG.
'I went fishing yesterday. I threw in my lines but they just lay there, they were dead without the fish biting.'

The position of *arranga* is fixed before the noun, unlike most other words that one could call adpositions in Bardi, which have variable ordering preceding or following the noun.

Compare *bangalon boogoon* ~ *boogoon bangalon* 'inside reef crevices' (*boogoon* means 'inside', which acts as an adverb or adposition, and *bangalon* is a locative-marked noun 'in reef crevices').

A cognate of *arrang* also found in Nyulnyul. An illustrative sentence is given in (2.52). Note that *arriyangkang* in Nyulnyul is historically a compound of the negative *arra*, *yangki* 'what, something', and the instrumental case marker.

(2.52) Nyulnyul
Arri milijid arriyangk-ang jii marlburl.
NEG 2-IRR-go NOTHING-'INST' 2min.poss things
'Don't go without your things.' (McGregor 1997a:2)

2.7.5.3 *arrajina*

Arrajina is historically the negator *arra* 'not' and the possessive third person pronoun *jina* 'his'. It is used for negating possessives.

(2.53) *Arrajina goolboo.*
not rocks/money
'I've got no money.'

(2.54) *Aarlingan arr nganjinj bardi. Langar arrajana, arra*
fish-ALL go 1-TR-do/say-CONT-? yesterday. bait NEG-1MIN.POSS, NEG
ngalinyan aarli.
1-IRR-catch-CONT fish.
'I went fishing yesterday. I didn't have any bait [there weren't any shellfish to be found], [so] I didn't catch any fish.'

2.7.6 Questions

2.7.6.1 Polar interrogatives

There are two ways to form polar questions in Bardi. The first is by using the particle *nganyji*, which usually appears first in the clause, although see (2.46) on page 54 above for an example in second position.

(2.55) *Nganyji minjalagal jiyirr ooldoobal?*
NGANYJI 2-TR-see-REC.PST 2MIN.POSS'R-3AUG.POSS'E things?
'Did you see your things?'

(2.56) *Nyaa, jiiba anjala, nganyji liyan minman?*
hey this 2.IMP-TR-see-FUT NGANYJI heart 2-TR-put-CONT
'Hey, look at this, do you want it?'

The second way to form a polar question is to use the clitic *=(g)arda*. This clitic interacts with focus and is used to question particular constituents:

(2.57) *Gooyarrarda aarli minnyagal?*
two=INT fish 2-TR-[PST]-catch-REC.PST
'Was it <u>two</u> fish you caught?

2.7.6.2 Content questions

Content questions are asked with one of a number of interrogative pronouns, which were given in Table 2.9 above. Content questions usually appear clause-initially.

(2.58) *Anggaba nyinga joo?*
who 2MIN-name 2MIN
'What's your name?'

(2.59) *Janamboorroongan arr mindin? Jamala arr ngandan.*
where-ALL go 2-TR-do/say-CONT walk around go 1-TR-do/say-CONT
'Where are you going?' 'I'm going for a walk.'

Chapter 3

Historical and Synchronic (Morpho-)Phonology

In this chapter I summarize the major synchronic processes and diachronic developments of Bardi phonology. I reconstruct the sound changes which have taken place between Proto-Nyulnyulan and Bardi and describe the most salient differences between Bardi and the other Western Nyulnyulan languages. While the focus of my arguments is on morphosyntax rather than phonology, it is important to understand the sound changes which I have proposed to evaluate the reconstructions I present. Other arguments rely on clitic- and affix-hood, evidence for which comes from stress and phonological processes. Finally, other arguments for grammaticalization rely on the relative chronology of sound changes and the morphologization of phonological changes (that is, extending changes out of their conditioned environment to become a marker of a particular morphological class).

Bardi is, in terms of phonology, the least conservative Nyulnyulan language. Although contrastive vowel length is retained from Proto-Nyulnyulan, additional long vowels have been created through the lenition of intervocalic stops and deletion of intervocalic glides. Nasal dissimilation and cluster reduction have created a new series of intervocalic obstruents and vowel elision has created new consonant clusters. Other sound changes condition vowel harmony and the loss of final vowels. The Eastern Nyulnyulan languages are also much more phonologically conservative than the Western languages; indeed, the only major sound

change in the Eastern languages is the lost of distinctive vowel length.

This chapter has three main sections. The first is general synchronic phonology and phonotactics (§§3.1 ff). The second section is an analysis of morphophonology, the interaction of affixes and the resulting alternations. There are regular processes which occur throughout Bardi, although in addition there are some morphologized alternations (not strictly phonologically "regular") and a few rules which apply only to verbal prefixes. These are discussed in §3.3. The third part is historical phonology (§3.5). Bardi historical phonology is described in some detail here as the sound changes are relevant to the reconstruction of verb paradigms and the prefix chunks. In particular, it is instructive to compare the reconstructions of sound change to the most parsimonious analysis of morpho-phonological alternations, since the two differ in several important respects. Particularly different is the treatment of verb-root-initial obstruents, which were lost historically through intervocalic lenition, but synchronically are best analyzed as being deleted in clusters of falling sonority. Finally, in §3.6 I have included some information on the adaptation of loan words.

3.1 Phonemes

3.1.1 Consonants

3.1.1.1 Inventory

As previously described in Aklif (1999) and Metcalfe (1971), Bardi has seventeen consonants and six vowels. Bardi is typical for Australian languages in making a contrast between five places of articulation: there is a distinction in stops, nasals and laterals between apico-dental, apico-palatal/domal (retroflex) and lamino-palatal places of articulation. Stops and nasals (but not laterals) are also contrastive at velar and labial positions. There are two rhotics, a tap/trill and a retroflex glide. There are two other glides, *y* and *w*. There are no fricatives and voicing is not contrastive. Table 3.1 gives the consonant phonemes in

practical orthography, with IPA symbols in brackets where they differ from those used in the orthography.[1]

	labial	alveolar	apico-palatal (retroflex)	lamino-palatal	velar
stops	b	d	rd (ɖ)	j (c)	g
nasals	m	n	rn (ɳ)	ny (ɲ)	ng (ŋ)
laterals		l	rl (ɭ)	ly (ʎ)	
rhotics		rr (r)	r(ɻ)		
glides				y (j)	w

Table 3.1: Bardi consonant phonemes

The consonant system is typical for the languages of the area.[2] None of the Nyulnyulan languages makes a distinction between lamino-dental and lamino-palatal articulations, although these are contrasted in many Australian languages.

Minimal, near minimal and somewhat less than minimal pairs illustrating phonemic contrasts are given in Table 3.2.

3.1.1.2 Allophonic variation

There is substantial allophonic variation in the Bardi system. Here is not the place for a detailed discussion (which may be found in Bowern in prep.) but some of the most common variations are mentioned here.

Voicing in obstruents is variable. Stops are usually voiceless initially and finally, and

[1] I have used the established orthography throughout rather than IPA or a modified orthography to ensure consistency between the chapters. There are a few phonemic distinctions made in the language which are not reflected in the orthography. Where these are crucial (for example, /u/ vs /uu/, /ɲ/ vs /ny/), I have also included a broad IPA transcription. Examples from other Nyulnyulan languages are given in the established orthography for those languages (a conversion table is given on page xiv. Note also that while many of the phonetic statements in this section are impressionistic, most of them have been backed up with acoustic analysis and spectrogram examination. The relevant data will be published in Bowern (in prep.).

[2] Bunuba has a palatal approximant, written *yh*, and a set of lamino-dental articulations, and there is some evidence that the Worrorran languages once had a contrast between the lamino-dental TH and the lamino-palatal TY, which has now collapsed (Alan Rumsey pers. comm.), based on the alternations in Worrorran morphophonemics where y sometimes > j and sometimes > d).

	initial	intervocalic	in clusters	final
b	*barnkard* 'enough'	*babili* 'brother'	*dalboon* 'dry place'	*yardab* 'crawl'
d	—	*-badi-* 'be satisfied' *biding* 'shrub (*Tephrosia aff. rosea*)'	*ooldoobal* 'things'	*baad* 'wrestle'
rd	*danggard* 'face paint'	*bardi* 'yesterday'	*marndal* 'take aim'	*bard* 'away
j	*jankarr* 'stingray (*Raja sp*)'	*bajibaj -joo-* 'rub together'	*booljarr* 'suddenly'	*girrgij* 'goshawk sp.'
g	*gandarr* 'tiger shark'	*-bagi-* 'make a mistake'	*aalga* 'day'	*bardag* 'tree, stick'
l	*linymidi* 'black wattle' *laanybi* 'thief'	*jaala* 'spear'	*dalboon* 'dry'	*arragool* 'whaler shark'
rl	—	*jaarla* 'beach'		*loonkoorl* 'blue-tail mullet'
ly	—	*malyamalya* 'emu feathers'	*alymin* 'windward'	*boogooly* 'feather-stick'
m	*marrga* 'shield'	*gamarda* 'grandmother' (MM)	*garrma* 'later'	*jirrm* 'sing'
n	*narrga* 'yam-like roots' *nalma* 'his head'	*Ganirriny* 'Place on Sunday Island'	*gankarl* 'clam sp.' *ganjooloo* 'successfully'	*liyan* 'heart'
rn		*garnabin* 'magic murderer'	*garnka* 'raw'	*goowarn* 'pearshell'
ny	*nyalma* 'your head'	*-ganyi-* 'to climb'	*gaanyga* 'mainland' *ganyji* 'bone'	*goowidany* 'moonlight turtling'
ng	*ngalma* 'my head'	*gangayi* 'good looking'	*anggi* 'what'	*bardagang* 'with a stick'
r	*raya* 'spirit child'	*-mooroong(oo)-* 'give something to someone'	*ngoorboo* 'soft'	
rr	—	*nalarrad* 'turtle egg'	*rarrjin -ma-* 'feel shame'	*lagoorr* 'egg'
y	*yawiny* 'grey stingray'	*raya* 'spirit child'	*marrya* 'smoke signal'	(*ngirray* 'humpy')
w	*warbili* 'toe next to big toe'	*yawiny* 'grey stingray '	*goorrwal* 'sky'	*jadijaw* 'clothes'

Table 3.2: Bardi minimal pairs: consonants

voiced elsewhere. There is seldom aspiration (although see below for the one exception). All segments are regularly devoiced word-finally in citation forms and prepausally, whether consonantal or vocalic. Trills, laterals and nasals are regularly devoiced in this position.[3]

Intervocalic stops are often weakly lenited; that is, there is no clear closure in the spectrogram. Since there are no fricatives in the languages, however, this does not result in any loss of phonemic contrasts.

The phoneme /g/ is sometimes a voiceless and aspirated [kʰ]. It appears to be a feature of men's speech in particular (that is, recordings of men feature this much more frequently than recordings of women do), although most speakers are recorded with this feature at some time. It is most common in the Coate recording of Jawi. The aspiration is confined to initial and absolute word-final position. Aklif did not find this allophone in her recordings Aklif (1993a):

> Metcalfe (1971:88) posited a voiceless aspirated allophone for the velar stop phoneme before short and long low vowels, for example /gɑrɑ/ (i.e. *gaarra*, [C.B.]) 'mother's brother' is realized as [kʰɑrɑ] . This was not borne out by my informants.

I have also recorded this allophone in words such as *gooloo* [kʰʊːlʊ] 'father', as well as [kʰaːra].

In the same Jawi recordings, the palatal stop *j* /c/ is occasionally lamino-dental rather than lamino-palatal. Early recordings of place names provide evidence that this variation may be long-standing and may even represent a phoneme merger. On survey maps, the islands called *Jayirri* and *Jalan* are written 'Tyra' and 'Tallon' respectively. Moreover, a few words in Metcalfe (n.d.) are recorded with initial *d*, but were rejected and given with

[3] Aklif, in her description of Bardi consonant variation, gives *s* as an allomorph of the trill word finally; I have heard only heavily devoiced trills.

initial *j* instead by my consultants:

(3.1) *dool+* ~ *jool+* 'kneel'

The [ʈ] ~ [c] variation of /j/ is solidly attested. There are several pieces of evidence which point to a sound change of *ɖ* or *d* > *j* (of which these alternations are the remnants) but there is not enough for us to reconstruct such a change. A Bardi-internal change of **d* > *j* is not borne out by the comparative data.

In Bardi the sequence *rrj* alternates with *rry* in some words, particularly following a stressed syllable:[4]

(3.2) a. *garrja* ~ *garrya* 'sharp'

b. *barrja* ~ *barrya* 'saliva'

The forms with stops are the citation form. This is a partial merger (and a subphonemic change) since there are many forms without this alternation, including *rarrjin+* 'shame'.

Before nasals a trill is optionally realized as an apical stop *d* or as a tap. This is particularly common in fast speech. The trill /rr/ is often realized as a tap intervocalically.

(3.3) a. /irr/ [ɪr] 'they (3aug)-ABSOLUTIVE'

b. /irrnim/ [ɪdn̪im] ~ [ɪrn̪im] 'they-ERGATIVE'

(3.4) *angarramarra* [aŋaɾamara] 'we cooked it'

Palatalization of /rr/ occurs in palatal clusters; *Yarrjarn* (name of a spirit devil), for example, is pronounced [jærʲɟɐɳ].

Note that apart from /ŋ/ (for which see §3.3.5), nasals do not assimilate to the place of articulation of the following stop. For example, clusters of *nyj* (homorganic) and *nj* (heterorganic) contrast. Compare, for example

[4]Compare also the sound change reconstructed in §6.3.2 to derive the direct object second person minimal *-rri* from the sequence **jarr-ji*.

(3.5) a. *inyjoogoolij* 'it broke'
b. *injoogoolij* 'he broke it'

Vowel-initial words occasionally begin with a glottal stop.[5] More frequently, however, the word begins with a voiceless vowel. Thus *aamba* 'man' in close transcription is pronounced something like [ʔ͡ʔmbɐ̥̞], with considerable initial and final devoicing.

3.1.1.3 Comparison with other Nyulnyulan languages

The other Nyulnyulan languages have the same consonant inventory, although Yawuru is claimed by Hosokawa (1991) to make a distinction in velars between 'alternating', 'ever-voiced' and 'ever-voiceless' *k* and *g*. Hosokawa also claims that Yawuru has a uvular stop /q/. In my audition of samples of Yawuru speech (the CD version of Yawuru Language Team (1998) and excerpts of Hosokawa's own field tapes), I heard no uvulars, and I did not note any differences in voicing patterns from those found in Bardi.

From the transcriptions in McGregor's field notes for Warrwa it would seem that a tap realization of the trill is very common — more so than in Bardi.

3.1.2 Vowels

3.1.2.1 Inventory

Bardi has seven vowel phonemes, and in this it is quite different from the other Nyulnyulan languages. Major differences include systematic distinctions in vowel length for *i*, *u* and *a* and phonemic mid vowels *e* and *o* (although *e* is marginal and its status as a distinct phoneme is undetermined). The inventory is given in Table 3.3 below.

Note that orthographic <oo> covers two phonemes, /u/ and /uu/ (short and long *u*). This was used in order to allow Bardi to be written with the same orthography used for

[5]Most tokens of this type were recorded from a single speaker.

i ii	oo (u, uu)
e	o
	a aa

Table 3.3: Bardi vowel phonemes

other Nyulnyulan languages and other languages of the Southern Kimberley. The other vowels are similar to their IPA equivalents.

3.1.2.2 Minimal pairs

Table 3.4 gives some minimal and near-minimal pairs for Bardi vowels. In order to make clearer the phonemic distinction between /u/ and /uu/ (both written as <oo> in the community-approved orthography). I have used *u* and *uu* in the transcriptions instead of *oo*. For *e*, I quote words that Aklif phonemicizes this way.

	short		long	
a	*aman*	'a little'	*aaman*	'as soon as'
	ngarri	'white cockatoo'	*ngaarri*	'type of spirit'
	bardi	'yesterday'	*Baardi*	'Bardi language'
	barnkada	'enough'	*baarnka*	'outside'
e			*ela*	'dog'
			nemi	'eye'
i	*bidiny*	'type of plant'	*biidin*	'waterhole'
	idul	'type of shell'	*iidul*	'pandanus palm'
	wirr(ja)+	'jump'	*wiirri*	'kind of fish trap'
o ~ u	*bola*	'little (neap) tide'	*bula*	'head of turtle'
	mowali	'kind of turtle'	*muwarn*	'head of hair'
	morrga	'brackish water'	*murrgard+*	'feel satiated'
u	*gulin*	'sleep'	*uulin*	place name
	mulu	'nerite shell (*Nerita balteata*)'	*muulu*	'louse'
	jurdun	'dust'	*juurdu*	'dugong kidney'

Table 3.4: Bardi vowel minimal pairs

3.1.2.3 Status of mid-vowels *e* and *o*

The vowel *o* is an independent phoneme in Bardi, although in the other Nyulnyulan languages it is an allophone of *u* (c.f. the minimal pairs in Table 3.4).

The status of the phoneme *e*, however, is more difficult to determine. It is found in the word *iigem*, a type of plant, but this is a loan from Worrorra (where *e* is phonemic). Allophonically, it appears as the surface manifestation of a number of different underlying forms. It is the result of fronting of *a* before *y*; I have transcribed this often as [æ] but it is also realized as [ɛ]. Some speakers realize */iya/* as a long close front vowel (it is recorded as such both by me and occasionally in Nekes and Worms). Also, *ii* is lowered to [eː] or [ɛː] before trills and retroflex consonants.

Aklif gives three near-minimal pairs involving *e* (the forms are quoted as she transcribed them):

(3.6)	phonemic	close transcription	community orthography	gloss
	/biːla/	[biːlɐ]	biila	'again'
	/ela/	[elɐ]	iila	'dog'
(3.7)	phonemic	close transcription	community orthography	gloss
	/nemi/	[neːmɨ]	niimi	'his eye'
	/biːni/	[biːnɨ]	biini	'rotten'
(3.8)	phonemic	close transcription	community orthography	gloss
	/liramar/	[lirɐmar]	Lirramarr	'place name'
	/leramaɻ/	[lerɐmaɻ]	liirramar	'black cockatoo'

I was unable to elicit these pairs, however. The *e* sound in the first vowel of *liirramar* 'black cockatoo' is expected if the underlying first vowel is *ii*, as it would be lowered before the trill. The other words were not, in my recordings, produced with consistently different vowels; I could not reproduce the minimal pairs. I am satisfied that *e* can be regarded as an allophone of *ii*.[6]

[6] According to McGregor (1996b), Nekes and Worms (1953) claim that both *e* and *o* are phonemes, but Nekes and Worms (1953:49-50) state that *o* and *u* and *e* and *i* are in free variation, and they used *e* and *o* because it was what they heard, although if their sources used *u* and *i* they kept that spelling (e.g. Capell's wordlists, which were one of Nekes and Worms' sources).

3.1.2.4 Allophonic variation

The placement of vowels varies considerably over the vowel space, as is expected for a language with a fairly small inventory. Figure 3.1 shows the variation in realizations of vowels.

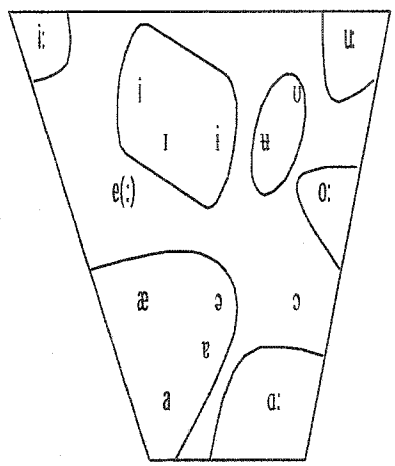

Figure 3.1: Vowel realizations and variation: Bardi

Bardi shows several other processes of allophony which are familiar from other languages. Short vowels are slightly lengthened under stress. Short vowels in initial syllables have an average length of 125ms (n=26) while short vowels in second syllables have an average length of 95ms (n=32).[7]

In unstressed syllables, vowels are centralized. The vowels *i* and *a* are neutralized to ə or ɜ. Round vowels are also lowered and centralized (and somewhat less rounded).

[7]Both final and non-final second syllables were included, although final vowels, if articulated at all, tend to be longer than unstressed word-internal vowels.

(3.9) a. *bangalon* ~ *bangolon* 'in reef crevices' [paŋɜlɔn] ~ [paŋəlɔn]
b. *gamarda* 'mother's mother' [kamɜɖə]
c. *ongorrona* 'they speared him' [oŋərɔnə]

Before retroflex consonants and trills, high vowels are regularly lowered. The effect is particularly clear when the consonant closes the syllable, although it can also be observed in words such as *moorrooloo* 'small', where the vowel and trill are not tautosyllabic. Some examples with close transcription are given in (3.10).

(3.10) a. *moorrooloo* 'small' ['morəlʊ]
b. *moorrgool* 'work' ['morkʊl]
c. *wiirri* 'rib of human' ['weːrɪ]

The vowel *a* is fronted considerably in the region of palatals.

(3.11) a. *oorany* 'woman' [oːræɲ]
b. *mayi* 'tucker (vegetable food)' [mæjɪ]
c. *Gayginy* 'Island near Sunday Island' [kægɪɲ]

Finally, *a* is rounded and backed a little after *w*, although it does not fall together with *o* or *u*.[8]

(3.12) a. *wanggay* 'wattle sp.' [wɒŋgæj]
b. *wanggid* 'crow' [wɒŋgɪt]

3.1.2.5 Other Nyulnyulan languages

The other Nyulnyulan languages have a three-vowel system. High vowels are lowered before retroflex consonants (especially trills). For the status of vowel length as a phonemic category in Nyulnyulan languages other than Bardi, see §3.1.2.6.

[8]Note that all such words are loans, since **wa-* > *a-*.

i ii	u (uu)
	a aa

Table 3.5: Nyulnyulan (+ Proto-Nyulnyulan) vowel phonemes

3.1.2.6 Vowel length

Bardi has a length distinction for all vowels except *o* (that is, there is no phonemic 'long *o*' to match *a:aa* and the other pairs).[9]

Long vowels are very rare outside initial syllables, although they do sporadically occur.

(3.13) a. *birrii* 'mother'
b. *nalaarrad* 'turtle eggs'

Birrii 'mother' is from Proto-Western Nyulnyulan **birray* or **birrayi*, so although the word is phonetically realized as [bɪrriː] we may want to phonologize it as */birriyi/*. Such a solution is not available for words like *nalaarrad*, however, so I analyze all such words as containing long vowels.

3.1.2.7 Vowel length in other Nyulnyulan languages

Vowel length is noted sporadically for some other Nyulnyulan languages, most commonly for *aa*, in Yawuru for example. Hosokawa (1991) says that *aa* is the most common and notes some other words that have long vowels. I have not heard a vowel length distinction in Nyikina for diagnostic words and Stokes does not mention one.[10] McGregor (1996b) claims that vowel length in Nyulnyul is contrastive for all three vowels *i*, *u* and *a* (*e* and *o* are not contrastive phonemes in Nyulnyulan languages apart from Bardi), but very few of his words are transcribed with long vowels and many of those that do do not have long

[9]There are phonetic realizations of [oː] or [ɔ], however these all appear to come either from sequences of *owu* or *ow*, or from lowering of *uu*.

[10]Bronwyn Stokes (pers. comm., September 2003) does not believe that Nyikina has a length distinction.

vowels in Bardi. For example:

(3.14) Matching length:

a. Nyulnyul: *baab* 'child', Bardi *baawa* (< **baaba*, showing expected reflexes in both languages, although the Nyulnyul word is also recorded as *bab*)

b. Nyulnyul: *gaari* 'grog, salt' (Bardi *gaara* 'salt water'[11])

(3.15) Exceptions:

a. Nyulnyul: *kaad* 'kill' (from English 'cut': Bardi *gad* 'cut')

b. Nyulnyul: *wamb* 'man' (Bardi *aamba*) **waamba*

c. Nyulnyul: *wul* 'water' (Bardi *oola* /uula/)

d. Nyulnyul: *yanggkarramiimii* 'we will look for it' (Bardi *anggarramiya*, stem *-mi-* has short vowel)

e. Nyulnyul: *gaad* 'still' (Bardi *gardo*)

f. Nyulnyul: *baanyjud* 'fish poison' (Bardi *banyjoord*)

The tape of the late Albert Kelly is in Nyulnyul, and he appears to be making vowel length distinctions which are consistent with those recorded for Bardi. It is possible, however, that he was influenced by Bardi.

In Warrwa McGregor finds contrastive vowel length but there seem to be few regular length correspondences between Warrwa and Bardi. There is contrastive vowel length in Nimanburru (Peile 1970-1971) and it is consistent with Bardi's length distinctions (that is, the same words have long vowels in Bardi and Nimanburru).[12] The correspondences between Bardi and the other languages are so sporadic that I do not want to take the correspondences at face value without further investigation and possible spectrographic measurements. Nekes and Worms (1953:49) do mention a distinction in vowel length for

[11] Bardi *gaari* 'grog' is probably a borrowing from Nyulnyul if the word is actually the same as 'salt water' and the etymology is correct (the semantic connection is through 'bitter' water), since final *i* is unexplained in Bardi. In Nyulnyul many of the few words which end in vowels at all end in unetymological final vowels, a result of vowel harmony from suffixes and reanalysis of the initial vowels of suffixes. Alternatively, Bardi *gaari* could be a borrowing from languages further south, such as Walmajarri or Karajarri.

[12] This assertion is based on my transcription of Peile (1970-1971), and by measuring the length of certain vowel tokens from Peile's tape.

the languages, but they note that it is mostly the result of contraction over an elided consonant in Bardi; Nekes and Worms also do not always notate vowel length consistently. They do, however, mark a long vowel in Nyulnyul sometimes when McGregor does not, and when the word is expected to have a long vowel on the evidence of Bardi:

(3.16) a. *wāmb waamb* 'man' (Bardi *aamba*)
b. *bāb baab* 'child' (Bardi *baawa*)

Unfortunately, Nekes and Worms (1953) are known to be somewhat unreliable on other grounds, and in vowels they note vowel length for Nyikina (even though this language does not have phonemic vowel length distinctions). I suspect that they are etymologizing length for Nyikina on the basis of Bardi (and perhaps Warrwa).

The agreement of Nimanburru and Bardi for vowel length strongly suggests that a length distinction should be reconstructed at least as far back as Proto-Western Nyulnyulan, and since vowel length is not predictable in these languages, I see no reason not to reconstruct a length distinction back to Proto-Nyulnyulan.

3.2 Phonotactics

In this section I give an overview of phoneme distribution, consonant clusters and vowel+glide interactions by way of background information for §3.3.

3.2.1 Distribution of phonemes

Any consonant or vowel can appear word-finally.

Several consonants cannot appear word-initially. No words begin with the trill *rr* or the palatal lateral *ly*. This is a fairly common restriction for Australian languages. The restriction also holds for other Nyulnyulan languages. Unlike most other languages of the region, however, words in Western Nyulnyulan languages may begin with vowels.

There is almost complete neutralization of apical-dental and apical-alveolar consonant series word-initially (that is, there is no distinction between *d* and *rd*, *n* and *rn*, etc). The

neutralization is in favor of the retroflex (apico-alveolar) series; thus words like *daag+* 'sleep' are phonetically [ʈɑːk]. The retroflection is particularly salient when the word is reduplicated (to <*daagadaag*>) and the *d* appears intervocalically.[13] There seems to be more variability with initial apical nasals. Realizations of both *n* and *rn* have been recorded. The situation is even more complicated with initial laterals; both *l* and *rl* have been recorded, and there is a small amount of evidence for a phonemic distinction. See further Bowern (in prep.).

Only vowels can be syllable nuclei. Long vowels are rarely attested apart from in stressed positions. There are no word-internal vowels in hiatus in any Nyulnyulan languages. When these arise through affixation, either a glide is inserted or one vowel deletes (see further below).

3.2.2 Clusters

Bardi allows an array of different consonant clusters. There are no underlying word-initial clusters. There are a few surface clusters, such as the regular pronunciation of *birarr* 'behind (adv)', which is often pronounced [pɪar̥]. In careful speech, however, a vowel appears and the word is pronounced ['pɪiar̥]. There is a place name *Blog*, however this is in *Mayala* country and is almost certainly not a Bardi word in origin.[14]

With a number of interesting exceptions, the possibilities for word-internal clusters in Bardi can be described using the sonority hierarchy of Clements (1988, 1990). The same discussion applies to word-final clusters as well, since all surface word-final clusters are the result of final vowel dropping and conform to the same considerations as word-internal clusters. Clusters across morpheme boundaries strictly follow the sonority hierarchy

[13]In the orthography apical stops are written without the 'initial' *r*; thus the orthographic representation of phonological */rdaagardaag/* is <*daagadaag*>, with an unretroflexed stop.

[14]No other Nyulnyulan language, with the possible exception of Warrwa, allows initial clusters. The same is largely true for neighbouring languages, although the one cluster typically allowed in Worrorran languages is *br* or *bl* (Clendon 2000).

(with only one morphological exception). Clusters within roots show the same tendencies, although more clusters are allowed.

3.2.2.1 Permissable clusters

There are several possible types of consonant clusters within words, and word finally (through final vowel dropping). Sonority must decrease between the coda of the syllable and the following onset. Figure 3.2 shows the sonority scale applicable to Bardi. For the placement of the trill, and its different behavior from the other rhotic, see McGregor (1988c). L stands for the class of laterals, N for nasals and O for obstruents (stops).

← more sonorous *less sonorous →*

w, y *r , L* *rr* *N* *O*

Figure 3.2: Bardi sonority hierarchy

The sonority determines just about all permissible consonant clusters in Bardi. The possibilities are presented in Table 3.6. A line — indicates that the cluster is not found, while a ✓ indicates a permissable cluster. Ticks in parentheses are clusters which only occur across morpheme boundaries.

		—Second member—					
		glide	r	lateral	rr	nasal	obstruent
First member	glide (w, y)	—	—	—	—	—	—
	r	—	—	✓	—	✓	✓
	lateral	(✓)	—	—	✓	✓	✓
	rr	✓	—	—	—	✓	✓
	nasal	(✓)	—	—	—	✓	✓
	obstruent	—	—	—	—	—	(✓)

Table 3.6: Permissible consonant clusters by manner of articulation

Clusters can be heterorganic, although there are restrictions on which places of articulation may combine, particularly with labials. Table 3.7 illustrates the possibilities.

	labial	alveolar	retroflex	palatal	velar
labial	✓	—	—	—	—
alveolar	✓	✓	—	✓	✓
retroflex	✓	✓	✓	✓	✓
palatal	✓	✓	—	✓	✓
velar	—	✓	—	✓	✓

Table 3.7: Permissible consonant clusters by place of articulation

3.2.2.2 Exceptions

There are some gaps in possible consonant clusters and some exceptions to the sonority hierarchy. The cluster *rld* or *rlrd* is not attested in any words. Cognates with *rl.d* have *rr.d* in Bardi.

There are several tri-consonantal clusters, such as in *almban* '(south)-west wind, *lalin*-time wind'. All are lateral + peripheral nasal + homorganic stop (that is, *lmb* or *lngg*). All such recorded words are listed in (3.17) below:

(3.17) *almb* 'prickly heat', *almban* '(south)-west wind', *Galmbarra* 'place near Jalan', *Jalmbarn* 'place near Ngamoogoon', *jilmbonggoorr+* 'sneeze', *milmba* 'mother dugong' *nilngga* 'red snapper', *-joodoolnggar-* 'blow away', *jalnggoon* 'rock oyster', *jalnggoogoorroo*, 'witch-doctor' (Kimberley Wanderwort), *jalnggard* 'fringe-lipped snake-eel (*Cirrhimuraena calamus*)', *ilnggirr* 'fish scale'.

Other apparent exceptions to the sonority hierarchy, such as *Ardnoogoon* 'Skeleton Point' and *biidnimany* 'moon snake (*Furina ornata*)' have unstressed elided vowels. Metcalfe records the first word, for example, as *aḍinugun*.

The other class of exceptions involves a trill or lateral followed by *y* or *w*, such as *gaalwa* 'raft', *goorrwal* 'sky' and *jirrwany* 'laurel vine (*Cassytha filiformis*)'. Such words are rare, and some are alternative pronunciations of clusters with an obstruent (e.g. *garrja* ~ *garrya* 'sharp').

3.2.2.3 Word-final clusters

Clusters in word final position arise historically through the loss of final-vowels. No final clusters can be reconstructed to Proto-Nyulnyulan. Almost all words in Bardi with final clusters also have allomorphs or variant forms with final vowels:[15]

(3.18) *moolinj(i)* '*Glycosmis trifoliata* (a type of shrub)'

See further under §3.5.3.

3.2.3 Diphthongs or vowel+glide sequences

It is an open question whether Bardi has sequences of vowel+glide or whether such "clusters" are in fact disyllabic. There are a few tests we can used but the results are not clear. Most discussion involves sequences of *ay(i)* and *uy(i)*; possibly ambiguous sequences of *aw* and *iw* do not occur.

Words ending in *ay(i)* and *uy(i)* appear to take the case allomorphs appropriate to vowel-final stems.[16]

(3.19) a. *mayi* 'tucker', source 'from tucker' *mayoon* < *mayi-joon*; *not* ×*mayjoon*
b. *mooy(i)* 'darkness', locative 'in the morning' *mooyoon* < *mooyi-goon*; not ×*mooygoon*

This is in contrast to Nyikina, where there are glide-final words (e.g. *larrgidiy* 'boab tree') which do take consonant-final stem allomorphs of case morphemes.

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[15]This is not only true of words which end in clusters; it is also true of words with single final consonants, such as *bardag(a)* 'tree'.

[16]On the other hand, *-jay(i)bi-* 'ask' reduplicates to *-jaybaybi-*, where *ay* is treated as a single syllable, although this is the only piece of evidence in favor of treating these sequences as part of a complex nucleus.

3.3 Morphophonology — affixal interaction

In Bardi verbs, the relationship between a surface form and an underlying form is not straightforward. Many of the prefixes are monosegmental and consonantal (compare the plural transitive stems that contain underlyingly *-rr-n-C-*, or the singular future transitive forms which contain *-n-ngg-C*). Underlying clusters of up to four consonants result from the concatenation of prefixes in underlying forms. Thus there is a great deal of allomorphy in verb paradigms.

The following sections provide examples of synchronic morphophonemic rules in Bardi morphology. Most of the illustrations are provided by verbs, although the same rules apply to other parts of speech as well (they simply occur more often in verbs, which are rich in morphology). Note, however, that the rules provided below do not always reflect sound changes. For example, I do not regard epenthesis as a historical rule in Bardi, merely the most parsimonious analysis of the synchronic state of the modern language. Sound changes are provided in §3.5.

3.3.1 Geminate simplification: $C_\alpha C_\alpha \rightarrow C_\alpha$

Clusters of identical consonants are simplified to a single consonant across a morpheme boundary. They are pronounced without lengthening. (Note that clusters of identical consonants never appear within roots.)

(3.20) a. *Ingalgan.* 'He cried.'
i- ng- ngalga -n
3- pst- CRY -pst

b. *aalin -nim*
sea eagle -ERG

c. *Gaaranim inambardij=jarrngay.* 'The sand covered me.'
Gaara -nim i- n- [a]m- bard(i) -ij =jarrngay.
sand -ERG 3- TR- cover -MID.PERF =1MIN.DO

Note that as a result of the change illustrated in example (3.20a), the present and past

tenses of *-ngalga-* are homophonous. One is derived from *i-ng-ngalga-* and the other from *i-ngalga-*.[17]

3.3.2 Lenition

Obstruent-glide alternation is very common in Bardi. The singular present tense of verbs and the singular number of inalienably possessed nouns show intervocalic lenition as a synchronic process.

(3.21) a. *niyambala* 'his foot', c.f. *irrjambala* 'their foot/feet'

b. *iyama* 'he is laughing', c.f. *irrgama* 'they are laughing'

c. *iwanyi* 'it's finishing', c.f. *irrbanyi* 'they are finishing'

Lenition is also seen in case endings. The locative *-goon* has allomorphs *-oon* and *-on*, reflecting vowel harmony and the loss of the initial consonant of the suffix when it is intervocalic.

(3.22) *bangalon*, underlyingly *bangala-goon* 'in the reef crevices'

The same process is also seen in the ablative *-go* and the 'source' case *-joon*.

The lenition of obstruents is also a historical process in Bardi (for which see further §3.5.1.3). The synchronic rules for obstruents are the same as the historical change in this case; obstruents in post-tonic syllables are lenited to glides, while later in the word they are deleted.

A comment is warranted here on root lenition in the other Nyulnyulan languages. Many Nyulnyulan languages show some form of lenition in obstruent-initial roots. In Bardi the rules are complex but regular, and involve both glide creation and complete deletion of the

[17]There is no consensus on whether to show both consonants in the orthography. I write both consonants across clitic boundaries (as in (3.20c)) and where the suffix does not otherwise alternate (e.g. (3.20b)), where *-nim* is the usual surface form, but not elsewhere.

segment. Most of these rules can be taken back historically to glide creation and deletion elsewhere in the lexicon; that is, the rules, to a large extent, fall out from the sound changes which we would expect from other lexical items.

In Bardi, root lenition is partly morphological and partly phonological. That is, lenition to a glide or deletion occurs largely as we expect from the reconstructions of sound changes identified from other parts of the lexicon. However, there are places where the outcome is not entirely expected, but rather appears to have been morphologized (that is, all obstruent-initial roots have a particular lenition grade in a particular part of the paradigm).

The lenition rules for Bardi are give in (3.23). In the minimal intransitive forms, stops lenite to glides. The obstruents are deleted completely in the irrealis minimal, the future minimal (and future transitive augmented) and other transitive augmented paradigms. In other parts of the paradigm the obstruent does not change.

(3.23) a. Present minimal intransitive: $g, j > y$, $b > w$.

b. Past transitive augment, future transitive augmented, future minimal, irrealis minimal, $g, j, b > \emptyset$.

c. Other parts of the paradigm: no change.

In Nyulnyul, Jabirr-Jabirr and Yawuru, there appears to be no root lenition. The form of the root is constant throughout the paradigm, except for the few roots which are idiosyncratic in all Nyulnyulan languages (a different matter entirely from obstruent lenition).

The two dialects of Nyikina (Big Nyikina and Small Nyikina) vary in the extent to which root lenition takes place. Many *dy*-initial roots in Big Nyikina alternate between *dy* and *y*, as illustrated, for example, in (3.24). The same alternation is not found in Small Nyikina, where there is no root lenition (although note in passing that the third person singular object marker *dyina/yina* in (3.25) *does* undergo lenition).

(3.24) Big Nyikina: *-dyuba-* 'ask' (Stokes 1982:198)

a. *ngan-duba-n-dyu* 'he asked you'

b. *marlu wa-la-yuba-na-yarr* 'he didn't ask us'

(3.25) Small Nyikina: *Ngan-a-dyuba-yina wang-a-ma-dyin* 'I'm going to ask him if he's intending to go'

In Warrwa too we find evidence for root lenition. The process in Warrwa is more extensive than in Big Nyikina. The pattern is similar to Bardi's. Obstruents are lenited to glides following a stressed syllable and deleted when further away from the primary stress. Unlike in Bardi, however, the resulting hiatus is not contracted (c.f. (3.26a)). In the irrealis we appear to find lenition even in clusters. An example is given in (3.26b).

(3.26) a. *nganaama* < *nganagama* 'I mocked him'

b. *ngalyalan* < *ngaljalan* 'I saw him'

Evidence for lenition in Warrwa *l+Obst* clusters comes from words such as *walya* 'bream', which if cognate with Bardi *alga* 'bream' (PN **walga*) implies **lg* > *ly* in Warrwa at least in this position.

3.3.3 Nasal-stop dissimilation

There is an alternation between a nasal-stop cluster and a plain stop in some verb paradigms. We see in the forms in (3.27), for example, that the verb root appears as both *-jimbi-* and *-jibi-*.

(3.27) a. *inyjibina* 'he died'

b. *ingirrjimbinana* 'they died'

There are also roots where dissimilation seems to have created morphological doublets, and some where the two roots are in free variation.

(3.28) a. *-bardi-* 'be covered'

b. *-barndi-* 'cover'

(3.29) *nimoonggoon* ~ *nimoogoon* 'he knows' (lit. 'his knowledge')

Some speakers of Bardi denasalize these clusters in English too; Nancy Isaac, for example, has been recorded as saying [sɪk] for *sink*.

The origin of this alternation is probably a historical change, although the conditioning is difficult to state. The change is most regular when the nasal appears in the coda of the second syllable, although there are exceptions. Two examples of the rule are given in (3.30), and an exception in (3.31). I suspect that dialect mixing has obscured the proper restricted environment conditioning the change.

(3.30) a. **bardangka* 'tree' > *bardaga*
b. **karrambal* 'bird' > *garrabal*

(3.31) **nundurr* 'sweat' > *nundurr*

3.3.4 Other unsyllabifiable consonant clusters

Two types of unsyllabifiable clusters are created regularly across morpheme boundaries. The first is those of two members where the second member of the cluster is more sonorous than the first. The second is those clusters of three or more members.

The analysis of underlying clusters depends a great deal on how we analyze the form of the transitivity marker. Aklif (1993a) analyzes the transitivity marker as an invariant *n*-, which appears in two positions. Etymologically, the transitivity marker is *n*- in the minimal forms and *a*- in the augment forms, and appears after the augment marker. In the modern language, however, there is no way to tell that the augment transitivity marker is *a*-; it could just as well be *n*-, or any other segment which will trigger deletion of the initial consonant of the root. It is not clear what the best synchronic solution is — we can either assume a variant of the overt morpheme *n*-, which will always be deleted, or a vowel a-, which is the historically 'correct' morpheme but which is also always deleted. If we assume that the modern underlying form of the augment transitivity marker is a-, root obstruent deletion proceeds according to the historical rules given in §3.5.1.3 below. The solution with *n*- is

presented below.

Some examples with underlyingly unsyllabifiable clusters are given in (3.32).

(3.32) a. *miliba*
mi- n- l- ibi -a
2- TR- IRR- drink -FUT
'Might be you'll drink it./ It's possible that you'll drink it.'

b. *irrama*
i- ø- arr- n- gama -ø =ø
3- PRES- AUG- TR- laugh -PRES -3MIN.DO
'They are mocking him.'

c. *arroongoorribinirr*
a- arr- n- ngoorribi -n =irr
1+2- AUG- TR- chase -CONT =3AUG.IO
'We chase them [the fish].'

We can go a long way to describing the alternations in Bardi verb paradigms by proposing a rule that in disharmonic clusters the consonant of *least sonority* deletes. In the case of *miliba* (from underlying *mi-n-l-ibi-a*), the sequence *n+l* violates the syllable contact law (which states that sonority must decrease between a coda and following onset), and *n* is less sonorant than the *l* (recall the diagram in Figure 3.2).

Now, consider cases where the cluster members have the same sonority (two nasals is by far the most common case). In these cases we find not deletion but epenthesis. A rule which says "delete the segment of least sonority" fails in this case, as the sonority of the segments are equal. An example of this behavior was also given above in (3.32c).

(3.33) *i-n-ng-barra-na* 'he dreamt it.' > *inambarrana*

The common light verb *innyagal* 'he caught it' is an exception to the epenthesis rule. It is, however, the only exception, as epenthesis is found in roots such as *-marra-* 'cook' (other nasal-initial roots follow the pattern of *-marra-* in triggering epenthesis):

(3.34) *i-n-marra-n* 'he's cooking it' > *inamarran*

We now come to forms where there are triple clusters, as in (3.32b) and (3.32c) above. We can apply the same rules that were developed for less complicated clusters. Deletion and epenthesis will account for the forms.

(3.35) *i-arr-n-gama-n* 'He was mocking him.'

a. cluster reduction: *i-arr-n-~~g~~ama-n*

b. cluster reduction: *i-arr-~~n~~ama-n*

c. vowel deletion: *i-~~a~~rr-ama-n*

There are two residual cases which do not fit the rules described above.

In the singular forms of verbs marked for irrealis mood, the distinction between transitive and intransitive is neutralized. The initial stop of the root deletes in both the transitive and intransitive forms. Deletion is regular in the transitive, but there is no phonological motivation for the deletion in the intransitive. Examples are given in (3.36a) and (3.36b) below.[18]

(3.36) a. oolama

oo- *n-* *l-* *gama* *-a*
3.FUT/IRR- TR- IRR- laugh -FUT
'He might mock him.'

b. *ulama* ul<u>ama</u>
oo- *l-* <u>*gama*</u> *-a*
3.FUT/IRR- IRR- laugh -FUT
'He might laugh.'

In (3.36a), the triple cluster is simplified by the deletion of the least sonorant member (*g*), but the remaining cluster is still unsyllabifiable and *n+l* is reduced to *l*. In (3.36b), however, *lg* is an acceptable cluster. The fact that deletion of *g* still occurs (despite no phonological motivation) must be by analogy to the transitive forms.

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[18]We could reconstruct **la-* for the intransitive irrealis forms, which would make the obstruent of the root intervocalic (c.f. **u-la-gama* 'he might laugh') which would regularly produce *oolama* in Bardi; this contradicts the forms in Warrwa, however, which point to a reconstruction **l-* rather than **la-*.

Note, however, that the distinction is not neutralized in the augmented forms, where there is a difference in epenthesis (compare the tables given in Appendix A).

As a final example, consider the verbs in (3.37):

(3.37) a. *inanggaman*

i- n- ng- gama -n
3- TR- PST- mock -PST
'He mocked him.'

b. *oonkama*

oo- n- ngg- gama
3.FUT/IRR- TR- FUT- mock -FUT
'He will mock him.'

We seem here to have two treatments of the same sequence *n-ng-g* — one morphemically *n-ng-g-* and the other *n-ngg-g-*. I see of no way to capture the different behavior of these two sequences without stipulating allomorphy *ngg* ~ *g* in the future morpheme. On the other hand, there is some comparative evidence for allophony in the future (see further §7.2.2).

3.3.5 Nasal assimilation

Velar nasals assimilate to the place of articulation of the following stop. Nasals at other places of articulation do not assimilate. This rule only applies to the past tense morpheme *ng(a)-* in minimal verb forms.

(3.38) a. *i-n-ng-gama-gal* 'he was mocking him' > *ina<u>ng</u>gamagal*
b. *i-n-ng-barra-gal* 'he was dreaming it' > *ina<u>m</u>barragal*
c. *i-ng-jarrala-gal* 'he was running' > *in<u>y</u>jarralagal*

3.3.6 Vowels in hiatus

Vowels can also occur in hiatus in the underlying form, but not in the surface form. In the situations where hiatus arises in prefixes, one vowel is always stressed and the unstressed

vowel is deleted (which results in all cases in deletion of the right-most vowel). The plural marker is *arr-*; in the present tense the vowel of the plural marker comes into hiatus with the vowel of the person marker.

(3.39) a. *irrgama*

i- ø- arr- gama
3- PRES- AUG- laugh

'They laugh.'

b. *boorrboorriida*

boorrboorr -iidi -a
dance -NOM.AG -PRED

'dancer' (predicate form)

3.3.7 Vowel harmony

3.3.7.1 Bardi

Bardi shows regressive vowel harmony. High vowels and *o* are spread leftward over *a*. We see harmony in case alternations and in verb paradigms. *u* (orthographic *oo*) is also lowered to *o* in the locative *-goon* when following low vowels. In these cases harmony is controlled by the suffix.[19]

(3.40) a. *alang* 'south'; *olonggon* 'in the south' (south-LOC).

alang-goon	
alang-gon	lowering
olong-gon	harmony

b. *balab(oo)* 'here, towards speaker' *bolobo* 'from here' (here-ABL)

balaboo-go	
balabo	regular case/stem reduction
bolobo	harmony

[19] I assume that the formation of vowel height harmony is the historical result of the treatment of sequences of **agu* and **abu*, which > *o*. Thus roots which ended in *a* received the *o*-variant of the suffix. I assume that this has been extended to consonant-final stems which have *a* as the vowel closest to the suffix.

While *o* spreads as far to the left as it can, the high vowels seem to spread only one syllable to the left.

Some words do not undergo harmony:

(3.41) a. *nalma* '(his) hand'; *nalmanon* 'in his hand' (×*nolmonon*)

b. *inamboogal* 'he poked it' (×*inoomboogal*)

Vowel harmony also occurs in verb morphology. Epenthetic vowels are affected by harmony. Again, spreading is leftward and affixes can change root vowels in a.

In verb morphology, harmony is controlled by the root or the suffix. (3.42a) shows harmony across the augment prefix. (3.42b) illustrates harmony spreading from a suffix (although harmony in this root is optional). In (3.42c) we see an example of the spreading of *o* affecting the person prefix, and (3.42d) provides an instance of the of non-spreading of */u/* to the person marker.

(3.42) a. *i-ng-arr-ngoorribi-na* 'they chased him' > *ingoorrngoorribina*

b. *i-ng-arr-(n)-(ga)-ij* 'they carried it' > *ingarrij* ~ *ingirrij*

c. *a-ng-arr-o-na-n=irr* 'we speared them' > *ongorronananirr*

d. *a-n-jool-ang-a* 'collect it! (imperative) *> ×*oonjoolanga*

3.3.7.2 Nyulnyul

Nyulnyul also shows vowel harmony historically, according to my analysis. The crucial data are the case suffixes in Nyulnyul which are described by McGregor (1996b) as having undergone consonant-vowel metathesis. Compare, for example, the Nyulnyul ergative *-in* with the Nyikina and Yawuru ergatives *-ni*, or the causal *-ij*, which is cognate with the dative *-ji* in Nyikina and Yawuru, (and the marginal Bardi causative in *-yi* ~*-ji*).

McGregor (1996b) (see also McGregor 2000:91) argues that the cases have undergone metathesis, however I think a solution more consistent with the other data of the language

is that the penultimate vowel assimilated to the final vowel, and the final vowel was subsequently lost. Final vowel loss is a regular sound change in Nyulnyul (see further §3.5.3). McGregor (2000:91) is overgeneralizing in stating that all Western Nyulnyulan languages have undergone this change. Bardi has not.

(3.43) **waamba-ni* 'man-ERG > **waambi-ni* (harmony) > *waambin* (final vowel loss); c.f. **waamba* 'man-ABS > *waamb* (final vowel loss).

3.4 Stress

Stress is usually on the initial vowel of the word. Stress is manifested as a combination of intensity (loudness), raised pitch and slight lengthening of the vowel. It is also characterized by shortening and neutralization of the following vowel, particularly when the following vowel is in an open syllable. Laves (n.d.:vol 10), for example, writes the bird name *goorroodood(oo)* as *'gurrdudu'*, with a cluster; c.f. also Laves' *arrdil* for *arridil*; c.f. also *irrgil(i)* 'boomerang, yellow hakea (*hakea arborescens*)', cognate with Jukun *yirragulu* 'wattle (*Acacia sp.*)'. When the second vowel of the word is *o*, however, vowel harmony results and the vowel does not reduce as much.

A comment is warranted on word stress in song poetry. In many lines, word stress is subordinated to the rhythm of the accompaniment. Worms (1957:222) also marks stress on the second syllable. An example is given in (3.44).

(3.44) a. (Spoken language word stress)

Bóoroo ngánkalan ngay járrgandany bílbil innya(n)
ground I-visit I tree coffin flash it does

'I'm treading on the ground, tree coffin, [lightning is] flashing.'[20]

[20]The 'tree-coffin' is a metaphor for the canoe which the protagonist is paddling. Bardi *ilma* poetry often involves a series of images expressed by a few words, in some ways rather like haiku.

b. (Song stress)

Booroo ngánkàlan ngáy jarrgándany bilbíl innyái
ground I-visit I tree coffin flash it does

Stress shift off the initial syllable is also found occasionally in storytelling[21] (e.g. D.W. 'life on Sunday Island', noted also by Aklif). Its use in narratives may mark a boundary in episodes in the story, since it mostly occurs on the last few words before a pause and shift in the action of the story.

3.5 Historical phonology

The Nyulnyulan languages languages are sufficiently close that many words in the languages are almost exactly the same across the languages which have reflexes. Bardi has the most aberrant system, in retaining contrastive vowel length, losing intervocalic obstruents and glides, and forming a phonemically contrastive mid-vowel /o/.

The reconstructed sound inventory for Proto-Nyulnyulan is given in Table 3.8 below. In consonantal system is identical to the synchronic Bardi system, and that reflected in other Nyulnyulan languages. I reconstruct three vowels, *i*, *u* and *a*, with a length distinction.

	labial	alveolar	apico-palatal (retroflex)	lamino-palatal	velar
stops	b	d	rd	j	g
nasals	m	n	rn	ny	ng
laterals		l	rl	ly	
rhotics		rr	r		
glides	w			y	

i ii	u uu
a aa	

Table 3.8: Proto-Nyulnyulan reconstructed phoneme inventory

In this section I will give a list of sound changes that have occurred in Bardi (along with examples), and will discuss those that warrant it in more detail.

[21] I have only noted this shift of stress in stories told by men.

3.5.1 Changes in consonants

The most far-reaching sound changes in Bardi are obstruent lenition and glide loss. Lenition feeds glide gloss (that is, lenition preceded glide loss chronologically). The following subsections give details.

3.5.1.1 Glide loss

Bardi has lost the glides *y* and *w* initially and between identical vowels (e.g. **awa* > *aa*). New intervocalic glides have been created from the lenition of intervocalic stops following stressed vowels. Intervocalic stops later in the word are deleted. The difference can be summarized in the treatment of obstruent-initial roots: in the present intransitive paradigm, the obstruent falls immediately following a stressed syllable, and lenites to a glide, thus **ígama* > *íyama* 'he laughs'.

In the augmented transitive, however, the obstruent occurs away from the main stress of the root, and the glide is deleted:

(3.45) **íngarragama* > *íngarrama* 'they are mocking him'

Table 3.9 gives details of the outcomes of vowel + glide and vowel + stop sequences. $\acute{\sigma}$ denotes a stressed syllable, σ a non-stressed one.

3.5.1.2 Exceptions to initial glide loss

There are some apparent exceptions to the statement that Bardi has lost all initial glides, since there are quite a few words in the lexicon which begin with *y* or *w*.

Firstly, there are some doublets which point to dialect borrowing. For example, *wiirri* means 'rib of human', while *iirri* is 'rib of dugong'. I assume that the doublets are indications of borrowing from a neighboring language, probably Nyulnyul. Some seem to have entered the language since the 1930s, since they are not mentioned in the earliest sources. The word for 'crow' is given in Nekes and Worms (1953) with the expected *anggidi*, but in Aklif

sequence	result	environment	example
*#yV	V	initially	*yarr > arr 'us'
*#wV	V	initially	*warang > arang 'other'
*aba	awa	ó	*baaba > baawa 'child'
	aa	exception	*-lababa > laaba 'ear > ear-wax'
*aga	aa	ó	*jagal > jaal 'spear/bauhinia sp.'
	a	else	*ingarragamana > ingarramana 'they laughed'
*aja	aya	ó	*majalgarra > mayalgarran 'afternoon'
	aya	else	*warangaja > arangayi 'nose peg'
*ubu	uu	ó	*gubulu > guulu 'father'
*ibi	i	σ	*gurlibil > goorlil 'turtle'
*abu	awu	ó	*baburr > bawoorr 'cicatrice'
	o	else	*-gapu > -go 'ABLATIVE'
*aju	aju		*gajurdu > gajoord(oo) 'ashes'
	ayu		*-jun > -joon ~-yoon 'SOURCE case'
*agu	o		*magurri > morr 'road'
*i(i)ba	iwa	ó	*jiiba > jiiwa 'k.o. boomerang'
			*galiba > galiwa 'firestick'
*ika	iya		*warrikana > arriyana 'eaglehawk'
*uja	uya		*gujarra > guyarra 'two'
*uji	uwi		*gujil > guwil 'baler shell'
*uji	uyi	Jawi?	*muji > muyi 'morning'
*awa	a	σ	*inawana > inana 'he gave it'
*aya	a	σ	*gaalbaya > gaalwa 'raft'
*awu	o		*na(a)wula/u > nola 'nulla, club'
*ayi	ii	σ	*birrayi > birrii 'mother'
*iwa	iwa	ó	*jiwarri > jiwarra 'corpse'
	a	else	*irrjiwar > irrjar 'three'
*iya	a	σ	*galiya > gala 'that's it'
*iyu	uyu		*jumiyun > joomiyoon 'axe'
*uy	iy > i		*jarr-juy > jirri '2MIN.FOC'

Table 3.9: Glide loss outcomes: Bardi

(1999) (and confirmed by me in 2001), the word is *wanggid(i)* — neither directly Nyulnyul (because it has a final vowel) nor properly Bardi (because it has the initial *w*). The final vowel is probably anaptyctic, added so that *wanggidi* will conform to the large number of trisyllabic words which alternate between present and absent final vowel.

Most can be traced to borrowings from other languages:

(3.46) a. *waadi* 'waddy' (type of club), from an Aboriginal language from Eastern Australia, via English;

b. *walbiri* 'loin-cloth', from Worrorra *warlbirri (inja)* 'pubic covering of woven hair or kangaroo fur, worn by women;[22]

c. *wajim* 'wash' : from Kriol *wajim* ('wash' + the Kriol transitivity marker)

d. *wangalang* 'young man' from Worrorra *wangalang (inja)* 'young man' (c.f. also *wangalangunya nyina* 'girl child'; *-ng* is a gender marker in Worrorra, which points to the direction of the loan.)

e. *wawirriwirri* 'quickly', probably related in some way to Worrorra *+wirri/+mirri* 'quickly';

f. *wayil* 'wild' from English;

g. *waybala* 'white person', from English 'whitefellow';

h. *yaawarda* 'horse' from Nhanda (Blevins 2001), via Kriol (c.f. Walsh (1992));

i. *yarnkal* 'spear-thrower', from Jawi, from Worrorra *yarnkalja nyina* 'spear-thrower';

j. *yarr -ga-* 'pull in, drag in', from Worrorra *yarr* 'hang something down';

k. *yagoo* 'brother-in-law' : a loan from a Pama-Nyungan language, where *yaku* is widespread and well integrated into the kinship system

[22]The mismatch in rhotic is unexplained.

There are three forms that show correspondences of wa : o (that is, *o* in Bardi, *wa* in Nyulnyul or another language:

(3.47) a. (Nyulnyul) *wadabarr : odorr* 'dugong'
b. (Nyulnyul) *walabarrgaj : olorrgi* 'seagull'
c. (Warrwa) *wariny : orany* 'woman'

Correspondences of *wa : a*, however, are much more numerous. The first two forms could be explained by vowel harmony; if we reconstruct **wadaburr* and *walaburrgVj* they will give us the correct forms in Bardi and Nyulnyul.

We have one cognate which provides evidence for the outcome of lateral+glide clusters in Bardi.

(3.48) *galara -joo-* 'make visible': Nyulnyul *kalwar -n-* 'be exposed': Yawuru *kalwara* 'exposed'

3.5.1.3 Obstruent lenition

In Bardi **j* lenites to *y* in suffixes and in verb roots intervocalically, producing alternations. Note that vowels can syncopate after causing lenition, producing clusters of, for example, *n+y*.

(3.49) a. *gaari* 'alcohol', *gaariyoon* 'drunkard'; c.f. *boogoon* 'inside', *boogoonjoon* 'pregnant';
b. *-jarrala-* 'run', *iyarralan* 'he's running' (c.f. *inyjarralana* 'he ran' with non-intervocalic root consonant).

Some other Bardi words appear to show evidence for a sound change where obstruents were lenited to glides following a stressed syllable (c.f. Bardi *gaalwa* 'raft', Nyikina *kalbaya*). However, there are many words that do not show this correspondence, e.g. *gaanyji* 'bone' (Yawuru, Warrwa *ganyji*); *laalbu* 'earth oven', *maalbul* 'possessions' (Nyikina

malbulu 'coolamon'[23]) Perhaps the environment that triggered the change has been generalized where there is an alternation (note that no other Nyulnyulan languages shows this alternation in verbs synchronically, although Nyikina and Yawuru both seem to preserve irregular verbs where the initial consonant is lost, e.g. *-ngara-* 'become').

3.5.1.4 Final consonant deletion

Final **-ny* was lost in Proto-Western Nyulnyulan. The change is reflected in all Western Nyulnyulan languages.

(3.50) a. **niiminy* > *niimi* '(his) eye'

b. **-ngany* > *-nga* 'INSTRUMENTAL case'

3.5.2 Changes in vowels

3.5.2.1 Mid-vowel formation

The mid vowels were created by the change whereby **abu, agu* > *awu* > *o*. Compare Table 3.9 and §3.5.1.1 above.

3.5.2.2 Long vowels

A distinction in length in *i(:)*, *a(:)* and *u(:)* is reconstructible back to Proto-Nyulnyulan on the evidence of Bardi, Nimanburru and to a certain extent Warrwa and Yawuru. Nyikina has lost vowel length completely.

(3.51) a. **wuula* 'water', Ba *uula*, Nim *wuul*

b. **waarli* 'fish, meat', Ba *aarli*, Nim *waarl*

Some words are transcribed with long vowels in Yawuru but they are not always words that have long vowels in Bardi. Stress tends to lengthen vowels in these languages (or rather,

[23]A coolamon is a wooden dish for winnowing seed and carrying awkward things like babies.

unstressed vowels tend to shorten significantly) so it is not clear whether the sporadic length marking just reflects stress or whether there is a phonemic difference.

Glide and stop lenition has created new long vowels in Bardi. The sequence **ubu* in Bardi lenites to *u:* under stress, for example, giving a further source of long *u*.

(3.52) **gubulu* 'father'; Bardi *guulu*, Nimanburru *gubuḷu*.

3.5.3 Final vowel deletion

Many of the Western Nyulnyulan languages show final vowel deletion. In Nyulnyul the final vowel of words has been regularly lost:

(3.53)

	Reconstruction	Bardi	Nyulnyul	Gloss
PN	**waamba*	*aamba*	*wamb*	'man'
PWN	**barndidi*	*barndidi*	*barndid*	'boil'
PWN	**babagun*	*baboogoonoo*	*babagon*	'yellow ochre'

In Bardi, however, the situation is much more complex. The status of final vowel deletion in Bardi involves a maze of dialectal, personal, stylistic and transcription variation. Aklif (1990-1994:E0/9a) notes that final vowels are especially likely to be deleted on trisyllabic (and longer) words, and only surface when a case marker follows. Disyllabic words typically retain their vowels unless they are preverbs.

Historically, the Mainland Eastern and Sunday Island dialects of Bardi retained final vowels, while the Goolarrgoon (the north-eastern part of the Dampier Peninsula) and Pender Bay dialects (closest to Nyulnyul) deleted them. This is generally the case in the Laves texts, for example. However, in the last half-century there has been a great deal of movement of people between dialect areas (as well as speakers of different dialects being moved together outside Bardi country) and this has resulted in many of the current speakers having a hybrid system. For example, Jessie Sampi, who married a man from Lombardina (in a final-vowel-dropping area) gives the citation form of words with no final vowel much more frequently

than her sister, who spent more time with Sunday Island speakers and married a man from Sunday Island. Bessie Ejai, whose primary Bardi affiliation is with the Sunday Island area, also tends to use final vowels in citation forms. All the speakers, however, also devoice final vowels when they are present.[24]

Whether a word ends in a vowel or not is also tied to syntax. There are a few morphemes of the shape -V, such as the predicative marker *-a* and the place location *-i*. These vowels are never subject to stylistic deletion.

(3.54) a. *Jarr aamba boorrboorriida.*
this man dance-EXPERT-PRED
'This man's a dancer.'; c.f. *boorrboorriidi* 'a dancer' (Aklif 1990-1994:E0/11)

b. *Boorrboorriidigija jarr aamba.*
dance-EXPERT-VERY-PRED this man.
'This man's a really good dancer.'

(3.55) *Jalan-i*
J.-LOC
'at Jalan'

Another tendency we see in the Bardi data is the regularizing of final vowels to an unetymological final vowel. The final vowel which is deleted is often the same as the penultimate vowel; c.f. *gajoord(oo)* 'ashes', *goonkoord(oo)* 'smoke', *bardag(a)* 'tree', for example. However there are many words where the deleted vowel is not predictable, such as *ilngam(oo)* 'fish poison (*Tephrosia sp*)',[25] *ganban(i)* 'short oar' and *gambaj(oo)* 'woman whose child has died'. Regularizing is probably found in *anangarr(a)* 'pumpkin-headed fish', which is cognate with Yawuru, Nyikina and Warrwa *wanangarri* 'money, pebbles, stones'.

[24]The presence or absence of final vowels varies greatly with the speaker. Those speakers whose speech contains word final vowels are consistent in which vowel appears. Thus the above discussion involved individual speaker variation, while the discussion below applies across the speakers who use final vowels.

[25]The form *ilngama* is also recorded in Metcalfe (n.d.).

3.6 Loan phonology

A note is warranted on loan adaptations between English, Kriol and Bardi (although much of this section applies to the rest of the Nyulnyulan and many Northern Australian languages too).

Speakers of Bardi have traditionally grown up in areas where English, rather than Kriol, was the major contact language (unlike, for example, Nyikina or the East Kimberley, where Kriol is dominant). However, it is impossible to tell in many cases whether the loan has come into Bardi directly from Standard English, or whether it is from Kriol (which has a lexicon predominantly with English source), or whether it is from an intermediate contact language, such as Aboriginal English. For most words the outcome in phonology would be identical.[26]

English loans into Bardi have initial stress, whatever their stress in English. This is a feature of many words in Aboriginal English as well; c.f. for example ['bijain] for 'behind' (CB/FN).

Nasal-Stop clusters are frequently simplified; thus ['wɪnmal] for 'windmill'. Such clusters can also be denasalised; c.f. [sɪk] for 'sink'.

Some phrases have been reanalyzed as simple words and given initial stress. Thus

(3.56) a. *oolooman* ['ʊləmən] 'old woman'

b. *garrjindin* ['karɟɪndɪn] 'kerosine tin'

c. *boolawayi* ['pʊləwaj] 'pull away' (single stress, no secondary stress)

---

[26]Some words are identified as coming from Kriol because of their semantics or morphology; for example, it is likely that *boojoom* 'push' and *loojim* 'pass away' (< 'lose 'im') are from Kriol because of the presence of the characteristic Kriol transitivity marker *'im* (for which see Koch (2000)). However, using *'im* is also a feature of broader Aboriginal English, including many of the older people at One Arm Point. Other words are more common in Kriol than in Standard English nowadays, such as *pannikin*, although they are likely to be fairly early loans and so may have entered from English.

Fricatives are usually realized as the corresponding stop:

(3.57) a. *bij* [pɪc] 'fish'

b. *jaada* [caːdə] 'shirt'

English /s/, /ʃ/ and optionally /ti/ are realized as [c] or [ɟ], as in *bij* 'fish' above. Initial *s* in clusters is dropped in older loans (e.g. *boon* 'spoon') or may be retained with an epenthetic schwa, as in *jagool [jəg'ul]* 'school'. The schwa does not take primary stress and such words are exceptions to the otherwise robust 'initial stress only' rule.[27]

English /t/ is sometimes phonologized as a trill, e.g. *jarridi* 'jaɾɪdɪ 'Saturday'. I assume this is because the /t/ is flapped in this position, and one of the allophones of the trill in Bardi is a tap or flap.

I do not have enough data on loans between Bardi and other Aboriginal languages to make any detailed comments here. I do no know, for example, how the extra vowel phonemes in Worrorra are borrowed into Bardi. There are some differences in forms between loans and the donor language, such as Worrorra *warlbirri inja* 'public covering for women' (Clendon 2001b:warlbirri) and Bardi *walbiri*, where the rhotics do not match. Another case is Worrorra *warli inja*, the generic term for sea turtle (c.f. also *warli anja*, the generic term for all turtles and dugongs), a borrowing from Nyulnyulan, where **waarli* is the generic term for 'meat'.[28] Other widespread loans with length mismatches include *juurru* 'snake, biting critter' and *gaara/gaari* 'sea, salt water'.

[27] Note, incidentally, that school also appears as *gool*, showing the other loan treatment of initial *s* in clusters.

[28] *Warli* is confined to the Southern Worrorran languages, a likely indication of the direction of borrowing.

Chapter 4

Overview of Predicate Structure

The previous chapters have provided the relevant background necessary to 'unpack' Bardi verb morpho-phonology and syntax. In the following several chapters I provide a description of the verbal system of Bardi, some notes on the differences between Bardi and the other Nyulnyulan languages, and a reconstruction of the Proto-Nyulnyulan verbal system. There are many interdependent systems where a knowledge of one part of the system relies on a knowledge of morphology from other parts, so in this chapter I give an overview of the verb system, the categories for which verbs inflect, and an outline of other analyses of Bardi (Aklif 1999, Metcalfe 1975, Nicolas 2000) along with the crucial points on which they differ from what is presented here, with cross-references to the detailed reconstruction in Chapter 5. I present an analysis of simplex roots in Bardi and describe a proposal which models the diversity found between Nyulnyulan languages. The purpose is to introduce the reader to the forms and the categories marked on the verb.

Chapter 5 provides materials for the synchronic and diachronic analysis of inflecting verb roots. The actual verbal affixal morphology of Bardi is discussed elsewhere. Chapter 6 contains information on the agreement marking system, including the forms, their usage and distribution, and their reconstruction. In Chapter 7 I present reconstructions of tense, aspect and mood marking. Chapter 8 is a discussion of morphologically-derived

valence-changing devices. In Chapter 9 I discuss complex predicate formation and light verb semantics.

4.1 Introduction: Nyulnyulan verbs

Some of the greatest differences between individual Nyulnyulan languages are to be found in their verbal systems. Synchronically Nyulnyulan verbs are a hodge-podge of complex and simple predicates, of syntactically and lexically formed light verb structures with idiosyncratic syntax and semantics, with common family resemblances but also very clear differences between the individual languages. We are also presented with challenges in historical analysis; since all Nyulnyulan languages have regularized and innovated paradigms and forms within the verb system, how likely is it that any reconstructions bear more than a passing resemblance to the actual Proto-Nyulnyulan situation? or are such reconstructions simply a summary of the lowest common denominator of the modern languages?

There are a number of salient structural features common to most or all Nyulnyulan languages (many of which are also shared, in some form, by other languages in the region). Surface similarity, however, belies underlying differences. All the Nyulnyulan languages have simple and complex predicates. The number of simple predicates which each language shows, however, is rather different, and ranges from about 82 roots for Yawuru to just over 250 for Nyulnyul. Once we examine the etymologies of roots in the different branches there are clues to an explanation for the different sizes of the set of roots in the two branches of the Nyulnyulan family (see further §5.6).

Another area where there is broad similarity in type but difference in the details is the agreement system and the number of arguments that have agreement slots in the verb. Although all Nyulnyulan languages have agreement for subject, object and indirect object, the only language where all slots can be filled at once is Bardi. In the other Nyulnyulan

languages only one of direct or oblique object marking can appear at once. Prefix combinations also differ between languages. All Nyulnyulan languages have prefixes which swap order when various other prefixes are present. However, the loss of certain tense distinctions in some Nyulnyulan languages has led to the reanalysis of prefix chunks, so that cognate morphemes between Western and Eastern Nyulnyulan languages can have very different functions.

Some areas where the Nyulnyulan languages share common properties, however, are an applicative suffix based on the instrumental case; tense and aspect marked as both prefixes and suffixes; the obligatory use of the irrealis mood in clausal negation; and a reflexive circumfix of the form *m(a)- -nyj(i)*. The material strings are largely cognate, however, despite the differences in synchronic analysis.

4.2 Overview of the Bardi system

In order to show how the Bardi system differs from its neighbours and for that reconstructed to Proto-Nyulnyulan, I give the synchronic system and allomorphy patterns.

4.2.1 Bardi verbal morphemes

All verbal predicates comprise a verb which is inflected for prefixes, suffixes and clitics. Complex predicates also have an uninflecting preverb.

(4.1) (Preverb) Prefixes-ROOT-Suffixes=Clitics

All inflecting verbs in Bardi show a person prefix, and a tense prefix; there are an additional ten optional prefix and suffix slots which mark transitivity, tense, aspect, applicatives and reflexive/reciprocal derivation. An expanded template is given in (4.2) below. I make no attempt to show co-occurrence restrictions in (4.2), although I do include the Tr(ansitivity) morpheme *n-* ~ *a-* twice (when the subject is minimal, it occurs before tense; when the subject is augmented, it occurs following the augment marker). See page xii above for

abbreviations.

(4.2)

$$\overbrace{\text{Pers (Tr) Tense (Aug (Tr)) (Refl}_1\text{)}}^{\text{PREFIXES}}\ \text{ROOT}\ \overbrace{\text{(Refl}_2\text{) (Appl}_1\text{) (T/A}_1\text{) (T/A}_2\text{) (Appl}_2\text{) (T/A}_3\text{) (Simul)}}^{\text{SUFFIXES}}$$

$$\overbrace{\text{(Sentential) (IO) (Poss) (Quant) (DO)}}^{\text{CLITICS}}$$

A diagram of the maximal verb is given in (4.3) below, along with the shape of the morphemes that can occupy each affix slot. Because of the size of the diagram, prefixes, suffixes and clitics are each given on separate lines.

(4.3)

PREFIXES

Person		Tense					
nga-	1						
mi-	2.nfut		*ng-*	past			
a-	2.fut/imp	(tr / *n-*)	*ø-*	pres	(aug / *arr-*) (tr / *a-*)	(refl$_1$ / *m-*)	ROOT
i-	3.nfut		*ngg-*	fut			
oo-	3.fut/irr		*l-*	irr			
a-	1+2						

SUFFIXES

ROOT	(refl$_2$ / *-inyji*)	(Appl$_1$ / *-ng*)	(T/A$_1$ / *-n* cont)	(T/A$_2$ / *-na* dist.pst)	(Appl$_2$ / *-ng(a)*)	(T/A$_3$ / *-gal* rec.pst / *-ij* perf / *-a* fut)	(*-j* / simul)

CLITICS

Sentential Clitics	oblique		Possessive		Direct Object		Quant
=min	*=jan*	1min	*-(j)an*	1min	*=ngay*	1min	*=nid*
=gid	*=jiy*	2min	*-(j)iy*	2min	*=rri*	2min	*=(b)al*
=b	*=jin*	3min	*-(j)in*	3min	*ø*	3min	
=(j)amba	*=jow*	1+2min	*-(j)ow*	1+2min	*=yow*	1+2min	
	=jard	1aug	*-(j)ard*	1aug	*=moordoo*	1aug	
	=joogarra	2aug	*-(j)oogarra*	2aug	*=goorr*	2aug	
	=jirr	3aug	*-(j)irr*	3aug	*=irr*	3aug	

Some examples showing more and less complicated verbs are given in (4.4) below.

(4.4) *Inamboonangay.* 'He hit me.'

Prefixes			Root	Suffix	Clitics
i-	**n-**	**[a]m-**	**boo**	**-na**	**=ngay**
3-	tr-	past	hit	rem.pst	1min.DO

(4.5) *Nganggiidarda?* 'Shall I go?'

Prefixes		Root	Suffix	Clitics
nga-	**ngg-**	**[j]iid[i]**	**-a**	**=[g]arda**
1-	fut	go	-fut	interrog

4.2.2 Discontinuities and dependencies

There are several points to note from the template. Firstly, person and number prefixes are discontinuous. Tense marking intervenes between the person marker (in (4.6), *a-*) and the augment marker *arr-*:

(4.6) *a- ng- arr-* past
a- ngg- arr- future
1- tense augment

Next, the second and third person markers vary for tense; in the future and irrealis the third person marker is *oo-* /u-/, whereas in the present and past it is *i-*. The future and imperative (but not irrealis) of the second person is *a-* or *nga-*, it is *mi-* in the other tenses/moods. The second person future/imperative also shows variation for root valency — it is *nga-* on monovalent verbs and *a-* on bivalent verbs. (4.7) illustrates this with the root *-jiidi-* 'go', which forms a transitive stem *-jiidi-ng-* 'touch'. Note the different forms of the imperative markers.

(4.7) a. *ngayiida!* 'go!' (monovalent root *-jiidi-* 'go')
b. *anjiidang!* 'touch it!' (transitive stem *-jiidi-ng-* 'touch')

Another dependency involves transitivity. The placement of the transitivity marker (which has the form *n-* ∼ *a-*) is dependent on the number of the subject; it appears between the person and tense marking in the minimal forms, but after number marking in the augment. This is illustrated in (4.8).

(4.8) a. *inanggana*

i-	*n-*	*[a]ng-*	*ga*	*-na*
3-	TR-	PST-	take	-REM.PST
person	transitivity	tense	root	tense suffix

'He took it.'

b. *ingarrana*

i-	*ng-*	*arr-*	*a-*	*[ga]*	*-na*
3-	PST	AUG-	TR-	take	-REM.PST
person	tense	number	transitivity	root	tense suffix

'They took it.'

4.2.3 Roots

The form of the root also varies according to the type of prefix. Obstruent-initial roots lose their initial consonant in some tenses, and lenite it to *w* (< *b*) or *y* (< *j* or *g*) in others. Sonorant-initial roots trigger epenthesis in many cases. These changes are morphologized artefacts of historical sound changes; for detailed description see §3.5.1.1. The *j*-initial

roots have a further irregularity in that in the transitive the past tense morpheme does not appear:[1]

(4.9) a. *injalana*: as though from *i- n- jala -na* with the -ø present tense marker
b. ×*inanyjalana*: as though from *i- n- N- jala -na*, expected by analogy with other transitive verbs.

Glide-vowel interaction produces other quirks; thus the verb *-boo-* 'hit' has third person minimal *inamboona* but augmented *ingorrona*, from an underlying *i-ng-arr-a-boo-na*, where **abu* > *o*. This pattern has been extended to other roots beginning with *ba-* and *ga-*, whereas it is proper etymologically only to those beginning with *boo-* and *goo-* (for the sound changes involved see §3.5.1.1).

The interactions between various prefixes and verb roots are given for Bardi in Appendix A on pages 346 and 347. Underlying and surface forms are given for third person minimal and augment in all tenses, for intransitive and transitive verbs with different initial consonants. It is a summary of the information presented schematically in (4.3) and provides further examples of the morphophonology discussed in §3.3.

4.2.4 Suffixes and clitics

Suffix forms are less complex phonologically, although the semantics are intricate. Further information about TAM marking is to be found in Chapter 7. A point to note is that unlike other analyses (e.g. Metcalfe 1975) I recognize two slots for the applicative marker, whereas others only have one. Forms such as (4.10) show that a stem can be doubly inflected:

[1]Thus past tense and present tense are homophonous in the j-initial roots. This is also the case for roots beginning with nasals (e.g. *-nya-* 'catch') and laterals. Only the b- and g- initial roots make the distinction, although they are the most common roots, together accounting for about a third of all roots in Aklif (1999).

(4.10) *Ingirrmiidinginyjinggal*

i-	*ng-*	*[a]rr-*	*m-*	*[j]iidi*	*-ng*	*-inyi*	*-ng*	*-gal*
3-	PST-	AUG	-REFL$_1$	go	-APPL$_1$	-REFL$_2$	-APPL$_2$	-REC.PST

'They were touching each other with it [a feather] recently.'[2]

There are three types of clitics in Bardi. Sentential clitics, such as the linker *=b(a)*, the relator *=(j)amb* and contrastive and resumptive topic markers *=min* and *=gid* appear immediately following the verb root. Agreement clitics follow sentential clitics; the order is oblique object before direct object.

Direct and oblique[3] objects are marked by suffixal clitics which follow any sentential clitics. Moreover, these clitics have topic forms (usually beginning with *jarr-*). In previous analyses these forms have either been omitted from discussion or have been assumed to be phonologically conditioned (if the stem ends in a consonant, it takes a *jarr-* form; otherwise it takes a 'plain' form). I show in §6.3.2, however, that this conditioning is incidental to the actual factors dictating the use of *jarr-* forms, whose use is governed by considerations of topic continuity.

Another previously undescribed phenomenon in Bardi verb morphology is possessor raising. There is a separate marker for "possessor" (or "ethic dative") which may co-occur with other agreement slots, including oblique marking.[4] Previous analyses (including, incidentally, mine in previous works) have treated possessor raising as a type of 'oblique'

[2]Note: *-jiidi-* + the applicative$_1$ means 'touch' and forms a transitive stem. For discussion of applicatives, see §8.2, and for applicative$_1$, §8.2.1.

[3]Also called 'Indirect' by, for example, Metcalfe (1975) and Aklif (1993a).

[4]Note that I have not called this slot an 'agreement' slot *per se* because it does not function the way the other two true 'agreement' slots behave. That is, the possessor marking does not cross-reference an external argument in the clause. For example, you cannot say **Ngajana birrii Broomengan inyjiidinajan.* 'My mother went to Broome', with both *ngajana* and *=jan* marking possession (without dislocation; the sentence is grammatical with the meaning 'my mother, she went to Broome'). This is in contrast to the oblique clitics, which are true agreement clitics and surface even when another reference appears overtly in the clause.

agreement. The analysis of possessor marking is complicated by the fact that although possessor morphemes are placed with the clitics, they show phonological behavior more typical of suffixes.

No combination of all three of oblique object, raised possessor and direct object has been attested, although in principle there seems no reason why such a combination could not occur. 'My mother brought those fish for me', *birrii inangganajananirr aarli* would be an example, if it exists.

What I have called verb phrase clitics, that is, quantifiers such as *=nid* 'many' and *=(b)al* 'indefinite', appear last. These quantifiers can refer either to the subject or the direct object of the verb, although in usage they tend to refer to the object if there is one, and subject otherwise.

4.2.5 Co-occurrence restrictions

There are some obvious co-occurrence restrictions in the Bardi verb. The transitivity marker *n-* ~ *a-* and the reflexive/reciprocal prefix may not co-occur; thus, for example, all reflexive/reciprocal-marked verbs take intransitive imperative prefixes.

Secondly, certain tense prefixes and tense/aspect suffixes have co-occurrence restrictions. The future suffix *-a* may only occur with the future, imperative or irrealis prefixes, but it is unacceptable with the past prefix:

(4.11) a. *Anarla* *jiiba may!*
IMP-TR-eat-FUT this food.
'Eat this food!'

b. **Nganarla.*
1MIN-TR-[PST]-eat-FUT
[intended gloss: 'I will have eaten it.']

There are other tense/mood and aspect co-occurrence restrictions. The irrealis prefix *l-*, for example, blocks the appearance of *-gal* 'recent past' or *-ij* 'middle perfect'; the only

suffixes that it can occur with are the future *-a*, the continuative *-n* and the remote/general past *-na*.

The future prefix *ngg-* may occur with the perfective suffix *-ij*, although it is rare:

(4.12) *Ngayiidingij!*
2.IMP-go-APPL$_2$-PERF
'Go with it!' (CB/FN:11, 28 (NI))

Finally, T/A$_2$ and T/A$_3$ suffixes cannot co-occur. That is, a verb cannot be simultaneously marked for remote (or general) past and a more specific tense/aspect suffix.

Another potential co-occurrence restriction is the presence of both an oblique object and a direct object in some verbs. Although many verbs take both, and there appear to be no restrictions on the use of oblique adjuncts, there seem to be no truly ditransitive verbs in Bardi, and verbs that we would expect on the basis of other languages to be candidates for ditransitives, such as 'give' and 'show', take only two arguments in Bardi.

(4.13) a. *Injoolngoogaljarran*
I- n- joolngoo -gal =jarran
3- TR-[PST-] tell -REC.PST =1MIN.IO.TOP
'He/she told me [about them].'

b. **Injoolngoolgaljarranirr* (CB/FN: 11. 29)
I- n- joolngoo -gal =jarran =irr
3- TR-[PST-] tell -REC.PST =1MIN.IO.TOP =3AUG.DO
(intended:) 'He/she told me about them.'

Finally, it does not seem to be possible to have all three of oblique and direct objects and possessives marked on a single verb in Bardi. For example, example (4.14a) was corrected to (4.14b) in the meaning 'your children are frightened of my children':

(4.14) a. *??Joonim jiyarr bo irrjarginjirr ngajanarr bo.* 'Your children are frightened of my children.'
?? Joo- nim jiya -rr bo i- rr- jargi -n
2MIN -ERG 2POSS -3AUG.POSS'E woman's child 3- AUG- fear -CONT
=jirr ngajana -rr bo.
=3AUG.IO 1MIN.POSS -3AUG.POSS'E woman's child

b. *Joonim jiyarr bo irrjarginjinan bo.*
Joonim jiyarr bo irrjarginjinan
2min-erg 2poss-3aug.poss'e woman's child 3-aug-fear-cont-3min.IO-1min.poss
bo.
woman's child

4.3 Previous analyses of Bardi verb morphology

The template in (4.3) is my analysis of the forms and placement of morphemes in the Bardi verb. Others have drawn somewhat different conclusions as to the composition of Bardi verb roots (as well as the templates needed for other Nyulnyulan languages). In this section I give the main published analyses of Bardi (Aklif 1999, Metcalfe 1975, Nicolas 1998) and the other Nyulnyulan languages (Hosokawa 1991, McGregor 1994, Stokes 1982, etc).

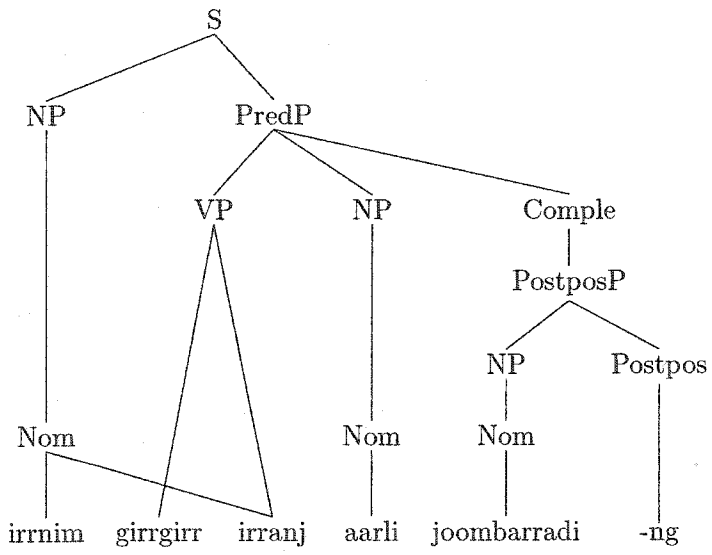
4.3.1 Metcalfe (1975)

Metcalfe (1975) is the published version of Metcalfe (1974), a dissertation on Bardi verb morphology (and the first formal analysis of the morphology of any Nyulnyulan language). It is cast within a transformational framework; the aim of Metcalfe's thesis was to show that languages like Bardi, with complex quasi-agglutinative morphology, can be treated within a generative framework, and to bring into focus some of the difficulties that arise in such an analysis where the languages exhibit complex agreement strategies. Metcalfe (1975) is an early version of the pronominal argument hypothesis (usually attributed to Jelinek 1984), in treating Bardi verbs as 'clauses in miniature' and analyzing the bound 'agreement' markers as the actual subcategorized arguments, and as implied by notations such as the following:[5]

(4.15) [NP,S] VP [NP,PredP]
iŋara- *ma-nana-* *r*
they- put-used to -them
'They used to put them (in the tree-coffin).' (Metcalfe 1975:15)

[5] I use Metcalfe's orthography and glossing here; in the practical orthography the word would be written *angarramananarr*.

Metcalfe's phrase structure trees also imply that he analyzes the bound 'agreement' markers as arguments. In the following figure (a tree of the sentence 'They are cutting the fish with a knife'), Metcalfe treats the pronominal argument as a Nominal element. It is particularly clear in trees such as those in Metcalfe (1975:166), where the verb agreement markers are taken to be terminal nodes of NPs, realized as pronominal affixes on the verb through a transformation.[6]



Irrnim girrgirr irranj aarli joombarrading.

Irr -nim girr- girr i- rr- a -n -j aarli -ø joombarradi -ng.
3AUG -ERG REDUP- cut 3- AUG- give -CONT -SIMUL fish -ABS knife INST.

'They are cutting up the fish with a knife.' (Metcalfe 1975:36)

Metcalfe's analysis characterizes Bardi as having a series of slots within the verb. That is, his is not a strictly derivational analysis, but one more in the spirit of 'templatic morphology'. Metcalfe (1975) analyzes Bardi as having four preverbal slots and twenty-one further bound morpheme slots on the inflecting verb (in addition to the inflecting root

[6]Note that Metcalfe (1975) analyzes the root 'give' as -*a*-, whereas I follow Aklif (1999) in analysing it as an empty morpheme -*ø*-.

itself). His slots are given in Figure 4.1 below, repeated from Metcalfe (1975:4). Since Metcalfe's analysis is very different from other descriptions of Bardi verb morphology, I have provided a key to the figure below, including the label Metcalfe gives, the form and corresponding label used here, and a reference to the section where it is discussed. Where no form is given, there is a whole paradigm.

(Free morphemes)

Negative	Neg.Emph	Question	PreStem
1	2	3	4

(Bound morphemes)

Subject	ActionType	Potential	Tense	Number
5	6	7	8	9

RetroActionI	ClassMarker	InfinitiveI	Intensity
10	11	12	13

STEM	InfinitiveII	RetroActionII	Aspect	Tense
14	15	16	17	18

Emphatic	AssocSuffix	QuestionMarker	SequConj	ObjectPronoun
19	20	21	22	23

Referential Pronoun	DiTransitivity	Pronoun Relator
24	25	26

Figure 4.1: Metcalfe's (1975) analysis of Bardi verb morphology

No.	Slot Name	Form	Corresponding to	Reference
1	Negative	*arra*	Negative	§2.7.5.1
2	Neg.Emph	*arranga*	'without'	§2.7.5.2
3	Question	*nganyji*	polar question particle	§2.7.6
4	PreStem		Preverb	§9
5	Subject		Subject Agreement	§6.2
6	ActionType	*n-*	Transitivity marker	§5.2
7	Potential	*l-*	Irrealis (Tense/Mood)	§7.2
8	Tense		Tense/Mood	§7.2
9	Number	*arr-*	Augment marker	§6.2
10	RetroActionI	*m-*	Reflexive/Reciprocal	§8.1
11	ClassMarker	*b, j, d, g, ø*	initial consonant of root (not treated separately from rest of root here)	

No.	Slot Name	Form	Corresponding to	Reference
12	InfinitiveI	*ma-*	Nonfinite verb/gerund	§6.5
13	Intensity		root reduplicant	§5.4
14	STEM		root	
15	InfinitiveII	*-n*	continative	§7.3
16	RetroActionII	*-inyji*	Reflexive/Reciprocal Circumfix	§8.1
17	Aspect	*-n*	Aspect suffix	§7.3
18	Tense		Tense/Aspect suffix	§7.3
19	Emphatic	*=(j)angarr*	emphatic clitic	§6.3.4, §2.7.3.1
20	AssociativeSuffix	*-ng*	applicative	§8.2
21	QuestionMarker	*-(g)arda*	Interrogative Particle (discussed under clitics)	§2.7.3.1, §2.7.6
22	SequentialConj	*=jamba*	(Wackernagel clitic)	§2.7.3.1
23	ObjectPronoun		Object Agreement/Predicate Markers	§6.3
24	ReferentialPronoun		Indirect Object Agreement	§6.4
25	DiTransPronoun		Indirect and Direct Object Agreement	§6.3, §6.4
26	Relator	*-b(a)*		§2.7.3.1

There are seven main areas where Metcalfe's analysis differs from later ones:

(4.16)
1. He appears to make no distinction between affixes and clitics.
2. He treats as part of the VP elements which others treat as clausal phenomena.
3. He treats as belonging to different slots affixes which never co-occur, and which in later analyses are treated as belonging to the same category (for example, tense and mood prefixation).
4. He treats the initial consonant of the inflecting root as a separate morpheme showing inflectional class.
5. His ordering of the later verb suffix slots (particularly 17-21) differs from both Aklif's and my analysis, and he has fewer tense morphemes.
6. Metcalfe's slot 25 is a compound form of what in Bowern's and Aklif's analyses

are 23 and 24 filled (and 23 and 24 would be in the opposite order).

7. Metcalfe assumes that root reduplication is prefixal.

Metcalfe's slots make no indication of co-occurrence restrictions (although he does discuss these extensively in the text of the book). It is not clear, however, why tense and mood (slots 7 'potential' and 8 'tense') could not be combined.

Of the authors who discuss the question at all, Metcalfe is the only linguist to have worked on Bardi morphology to treat clausal clitics as part of the VP. One example is the polar question particle *nganyji*, which tends to occur clause initially, although it is moveable. Thus Metcalfe's ordering is only correct when the verb is second in the clause, and there are frequent examples where other orders appear. (4.17) shows Metcalfe's ordering, while (4.18) shows other permissible orders.

(4.17) *Nganyji* *minjalagaljiyirr* *ooldoobal?*
INTERROG 2-TR-see-REC.PST=2IO-3AUG.DO things
Did you find your things?' (Aklif 1999)

(4.18) a. *Bardi* *minjooloongirr* *nganyji* *gooyarra aarli?*
yesterday 2-TR-collect=3AUG.DO INTERROG two fish
'Yesterday did you [really] catch two fish?' (CB/FN11: 34)

b. *Nganjangarrga nganjoogal=jirri* *goolboo* *nganyji*
1-TR-ask 1-TR-do/say-REC.PST=2MIN.DO.TOP money INTERROG
anangay.
2.IMP-TR-give=1MIN.DO
'I was going to ask you to give me money.'

(4.18a) is grammatical but somewhat forced due to the fact that polar questions when one part of the clause is focused are usually marked by *-(g)ard(a)* rather than *nganyji*. Other acceptable orders of (4.18a) are *Nganyji bardi minjooloongirr gooyarra aarli?* and *Bardi nganyji minjooloongirr gooyarra aarli?*. There is a strong preference for verb second (following *nganyji*) in these clauses, which probably follows from the function of *nganyji*

as a clausal polar interrogative (rather than a constituent interrogative). In such cases the action of the clause is the (new) focused information. Alternative orders would create a pragmatic mismatch between the sense of *nganyji* and the effects of placing non-verbal constituents in initial position.

Incidentally, the relative ordering of the question particle and negation in Metcalfe's template is wrong; they should be reversed. *Arra* cannot precede *nganyji*.[7] The inclusion of a separate 'negative emphasis' category is also odd. The 'negative emphasis' category is the word *arranga* 'without'; historically a case-marked quantifier in the instrumental, now used as a preposition:[8]

(4.19) *arranga aarli*
without meat/fish
'without meat/fish'

Historically this should be analyzed as

(4.20) * *arra* *-nga* *aarli*
nothing -COMIT/INST meat/fish

literally 'with no fish'. *Arranga* may also occur with a gerund:

(4.21) *Arranga maalanirr* *irr.*
without GER-see-CONT=3AUG.DO 3aug
'Without seeing them [because a Bardi doctorman had made their eyes bad]'

The two uses are parallel and there is no need for the verb template to contain a separate 'emphatic' negative.

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[7]Note that sequences of the form *arra nganyji* do appear, but in all cases *arra* here is the interjection 'hey!', not the negation marker.

[8]The instrumental case *-ng(a)* is reconstructible to **-ngany*, which has shifted in meaning from comitative to instrumental in the Western Nyulnyulan languages. *Arranga* preserves the old meaning. For discussion of *arranga* (and negation more generally), see §2.7.5.2.

Metcalfe's treatment of the initial consonant of the inflecting root as a separate morpheme is somewhat counterintuitive. True, the initial consonant of the root is one of the determinants of the form of the prefix chunk; it does interact with the prefix bundles and it does sometimes disappear entirely. We should not be led by this, however, to treat the initial consonant as a distinct morpheme. Metcalfe also treats the final vowel of the verb root as 'transitional' (Metcalfe 1975:55) and says that almost all verb stems end in a consonant. I treat most (if not all) roots as ending in a vowel, which is deleted when a vowel initial suffix follows, and which can harmonize. I do this because not all final vowels are predictable.

It is possible that Metcalfe's analysis of various clausal components as 'verbal' (such as the question particle) is the result of his analysis of the verb as reflecting most of the structure of the clause. That is, he seems to regard various argument positions (for example, the subject) as having multiple exponence, as free words and as prefixes to the verb. Thus his diagrams show splitting nodes and crossing branches, etc. If this is the case, I am being unfair to Metcalfe in criticizing his inclusion of some grammatical particles as 'verbal', since he is not working with the same distinctions.

4.3.2 Aklif (1993a) and Aklif (1999)

Aklif's thesis analysis (Aklif 1993a) is very similar to that adopted here. The main differences are terminological. The other difference is the treatment of plural transitive paradigms. While Aklif treats forms such as *angarra-* 'first person augment past transitive' as involving a deleted *n-* transitivity marker historically, I treat that analysis as synchronic only, a convenient trigger for cluster reduction (see Bowern 2001a), and retain **a-* as the historically reconstructed morpheme. Aklif's analysis is reproduced in (4.22).

In Aklif (1999) the analysis presented is a little different. Aklif presents the prefix chunks as unanalyzable wholes, without further morpheme boundaries. This is designed to make

the morphology seem less frightening to a learner approaching the language for the first time.

(4.22)

Ppfx	TR-	T-	IRR-	AUG-	TR-	REFp-	EP-	ROOT
1-	2-	3-	4-	5-	6-	7-	8-	9
	-REFs	-PerT	-ASP	-MetT	-?	-ASS	-IO	-O
	-10	-11	-12	-13	-14	-15	-16	-17

Abbreviations:

Ppfx	pronominal prefix	ROOT	verb root
TR	transitive marker	PerT	peripheral tense marker
T	tense prefix	ASP	aspect marker
IRR	irrealis mode marker	MetT	metrical tense marker
AUG	augmented marker	?	other morphemes
REFp	reflexive prefix	ASS	associative suffix
REFs	reflexive suffix	IO	indirect object suffix
EP	epenthetic vowel	O	direct object suffix

The other two differences between Aklif's analysis and that presented here are that possessor raising is treated by Aklif as oblique agreement, and some suffixes are not discussed, although the presence of slot 14, 'other suffixes', implies that Aklif recognized other morphemes within the verb stem.

4.3.3 Nicolas (1998, 2000)

Edith Nicolas' analysis is very similar to the others, although less detailed and less accurate. The template she gives in Nicolas (2000:158) is repeated below, in (4.23):[9]

(4.23)

Prefixes	// Root //	Suffixes
PersSubj-(Tr)-T/M-(Num)-(reflx$_1$)	Root	(reflx$_2$)-(T)-(Asp)-(Val) // (persObj/Benef)

[9]To illustrate the template she gives as an example *ingarrmarranan* 'they used to eat turtle' (Nicolas 2000:158). Unfortunately for Nicolas, *ingarrmarranan* does not mean this; it means 'turtles used to cook' (intransitive); it is the monovalent form of the verb. The Bardi corresponding to the English gloss is *ingarr<u>a</u>marranan*. Also, *ingarrmarranan* does not contain a sequence *-na* 'past' + *-n* 'continuative' (illustrating Nicolas' claimed morpheme order of Tense + Aspect); the underlying form is in fact *-na-na* 'continuative+ remote past', with metrical vowel dropping (c.f. *ingarrmarranana* with no change of meaning).

There are multiple inaccuracies in this diagram. Her tense and aspect morphemes are in the wrong order, as forms such as *i-n-a-marra-n-gal* '(s)he was cooking it' show (*-n* = continuous aspect, *-gal* = 'tense'). She misses the dual placement of the transitivity morpheme. I also disagree with the characterization of certain morphemes as purely 'temporal' and others as only 'aspectual'; see further §7 on the relationship between tense, aspect, Aktionsart and mood in Bardi. Her persObj (personal object) and Benef(active) morphemes are not mutually exclusive, and the 'benefactive' (my 'oblique') precedes the direct object (assuming that the / is not meant to imply that the morphemes are mutually exclusive, which is also incorrect). Nicolas simply does not have enough slots in her template to describe the morphology of Bardi verbs accurately. Finally, Nicolas does not formally distinguish suffixes from clitics in her analysis.

4.4 Other Nyulnyulan languages

4.4.1 Jawi

From the small amount of Jawi data recorded it appears that verbs in Jawi are very similar to Bardi, with one exception. In Jawi several forms are recorded which do not show agreement for person, number and tense, although they always refer to the third person augmented. Instead they begin with *nyarr-*. Some elicited examples are shown in (4.24):

(4.24) Jawi
a. *nyarrunujin* = Bardi *ingirrinijin* 'they spoke to him'
b. *nyarramarrana* = Bardi *ingarramarrana* 'they cooked it'
c. *nyarrjiidina* = Bardi *ingirrjiidina* 'they went'

Example (4.24c) shows *nyarr-* with a monovalent verb, showing that *nyarr-* does not vary for transitivity and the forms are subject to epenthesis in the same way that Bardi forms are.

Such forms are sporadically recorded in H.H.J Coate's recordings of Jawi, and more frequently in the two Jawi texts in the Laves collection. In the Laves texts there are one or

two examples of a third person minimal form as well, where the 3rd minimal prefix is *nyin-*.

Example (4.25) gives an example of the use of *nyarr-*, with the Bardi forms (where different) included underneath. Glossing is schematic only.

(4.25) Jawi

Inoorrinybin	*Marligoo*	*layoordoo*	*Marligoo*	*nyarringoorrinybinjin*		*arinyji*
Inoongoorribin				ingoorroongoorribinjin		
he-chased	M.	spirit	M.	they-chased-refl?		one
goolba	*bornko*	*innyanina*	*goolba*	*goolarr*	*goolboo*	*inambirdin*
goolboo		innyanana	goolboo	goolarrgoolarr	—	inimbirdin
rock	around	he-grabbed	rock	little	rock	he-threw
inoorriny	*ginyinggi*	*goolbo.*				
inoongoorribin						
he-chased	this	rock-ABL				

'Marligoo chased the *layoord* spirit; they chased each other around a rock; he threw a little rock and he ran away from the rock.' (Laves 128/7)

The etymology of the third person prefix *nyarr-* is unknown. It has no parallels in other Nyulnyulan languages.

Another minor difference between Jawi and Bardi verb forms is the sporadic intervocalic loss of *ng* in Jawi, producing, for example, *inoorrinybin* for Bardi *inoongoorribin*[10] 'he chased him'. The conditioning of this sound change is not possible to state from the available data.[11]

No other differences are recorded between Jawi and Bardi verb morphology.

4.4.2 Nyulnyul

McGregor (1996b) is a sketch grammar of Nyulnyul. Apart from Nekes and Worms (1953) and Bischofs (1905-1914) it is the only available analysis of Nyulnyul morphology. There are, however, a number of obvious typographical errors in the work.

[10]The loss of *ny* in this root in Bardi is not regular, but not unexpected, given the frequent simplification of NC clusters to C. It is regular, however, only in syllables with a tautosyllabic nasal.

[11]It occurs, apparently optionally, for example, in the allative; compare Jawi *biilan* '[he's going] for fighting' with Bardi *biilingan*. Examples with *ng* unelided in Jawi could be register or dialect shift.

(4.26) below gives the structure of Nyulnyul inflecting verbs.[12]

(4.26)

$$\text{nom pro} \begin{pmatrix} \text{tense} \\ \text{mood} \\ \text{tr} \end{pmatrix} \text{(number) (refl}_p\text{) (EN) root (refl}_s\text{) (aspect) (postpos)} \begin{pmatrix} \text{acc pro} \\ \text{obl pro} \end{pmatrix}$$

As in Bardi, in Nyulnyul the subject prefixes come first in the verb complex and vary for tense, although for second person future intransitive Nyulnyul has *mi-* where Bardi has the more archaic *nga-*.

McGregor (1996b) analyzes Nyulnyul as having four slots between the subject agreement marker and the root: a tense/mood/transitivity slot, a number marker (*rr*), a reflexive prefix and an epenthetic nasal, which occurs on singular transitive verbs. The reflexive and the epenthetic nasal never co-occur.

The (postpos) slot is a case marker (McGregor 1996b analyzes Nyulnyul and other Nyulnyulan languages as having postpositions, not case markers; see Bowern 2001c). In Nyulnyul case is used extensively for subordination. Such uses are rare in Bardi but do exist. An example is given in (6.20).

McGregor analyzes Nyulnyul as having transitivity marked in only one place: in the same slot as tense and mood. (4.27) illustrates this. Tense and mood do not co-occur in McGregor's analysis of Nyulnyul.

(4.27)

person	tense/mood/tr	root
i-	*la-*	*w*
3	IRREALIS	give
i-	*ni-*	*jibal*
3	TR	ask

It is likely, however, that Nyulnyul does (or did until recently) show the same variation

[12] In McGregor (1996b:38) the relative ordering of the postposition and the accusative/oblique pronouns are reversed. I have corrected this.

in the placement of the transitivity morpheme which Bardi does.[13] Transitive augmented verbs seem to vary in the presence or absence of an 'epenthetic' vowel, which would make forms identical to transitive Bardi verbs. Such variation is not found in intransitive verbs, which consistently have no epenthetic vowel. Nyulnyul as recorded by McGregor (1996b), however, seems to have neutralized the distinction in transitive and intransitive past stems. (4.28) shows two sentences with the same verb (the root is *-ma-* 'put'); the first shows an epenthetic vowel *a-* (in the same place as the transitive vowel would go), while it is absent in the second.

(4.28) Nyulnyul (McGregor 1996b:64)

a. *Balybaly ingarr<u>a</u>man.*
flat 3AUG.PST-put-CONT
'They flattened it.'

b. *Ngarlin balabal ingarrman, ingirrman jungkuk.*
hot sand heat 3AUG.PST-put-CONT, 3AUG.PST-put-CONT fire-LOC
'They cooked it in hot sand; they put it in the fire.

While this analysis is consistent with the data presented in McGregor (1996b), it does not entirely accord with the other data available for Nyulnyul. Stokes (n.d. b), for example, records final *a-* in the prefix chunk in transitive forms, making her analysis very similar to that which I propose for Bardi. Looking ahead to discussion of Nekes and Worms (1953) and their description of Jabirr-Jabirr and Nimanburru in §4.4.3, we find a similar variation in sources for these languages. Transitive verbs appear with and without the 'epenthetic' vowel, while intransitive verbs consistently appear without it.

A feature of Nyulnyulan languages other than Bardi is the mysterious 'epenthetic nasal' which appears in certain prefixal categories without a readily assignable meaning. McGregor (1996b:42,44) states that the 'epenthetic nasal' occurs in Nyulnyul before obstruents in the

[13]Transitivity morpheme placement is also reflected in the Eastern language Nyikina.

present or past tenses. McGregor gives no examples of the epenthetic nasal in the present, although several of his examples show the epenthetic nasal as the only marker of past tense. I would argue that we can straightforwardly analyze the epenthetic nasal as a tense marker, as in Bardi. Compare the following Nyulnyul verbs with their Bardi counterparts.

(4.29)

Nyulnyul		Bardi		
mi-ny-jid	2-EN-go	mi-ny-jiidi	2-PST-go	'you went'
mi-jid	2-go	mi-yiidi	2-go	'you're going'
i-n-karrmar	3-TR-break	i-n-garrma	3-TR-break	'he's breaking it'
i-n-ang-karrmar	3-TR-EN-break	i-n-ang-garrma	3-TR-PST-break	'he broke it'

(4.29) shows that the presence of Nyulnyul's epenthetic nasal is correlated very strongly with the presence of Bardi's past tense marker. I argue here that Nyulnyul has present and past tense marking in the same way that Bardi does. That is, the tenses are neutralized in many contexts but the presence of *ng-* in the prefix chunk in this slot denotes past tense marking.

4.4.3 Other Western Nyulnyulan: Jabirr-Jabirr and Nimanburru

Nekes and Worms' *Australian Languages* (Nekes and Worms 1953) contains a lengthy section on the verbs of the 'prefixing languages' (by which they primarily mean Nyulnyulan languages). Their description generalizes across languages from both branches of the Nyulnyulan family. Despite rampant inconsistencies in the analysis Nekes and Worms do present a broadly correct picture of Nyulnyulan inflection. Unfortunately their glossing of forms seems very inaccurate, especially for tense, and this is a problem when trying to decide whether languages such as Jabirr-Jabirr make consistent present and past tense distinctions; it also hampers analysis of little-attested languages like Nimanburru — when a form *ŋange-laŋg* 'I knew' is given, should we just assume that since the form would be future in Bardi, it should be likewise analyzed as future in Nimanburru, and Nekes and Worms have made a mistake (either in the gloss or in the transcription of *ŋaŋe-laŋg*)? Or should we

investigate possible semantic shifts? Unfortunately, Nekes and Worms' work contains our only detailed data for Jabirr-Jabirr and Nimanburru verbs.

Nekes and Worms (1953) do not segment the prefixes into individual morphemes. Rather, they list the prefixes (including allomorphs conditioned by the initial consonant of the root) as unanalyzable chunks, which are characterized in certain tenses by certain 'signs' (Nekes and Worms 1953:113), such as the *g* of the future tense. Elsewhere (for example, at page 54) they refer to the prefix bundles as absolutive pronouns, e.g. *yangarr* 'absolute pronoun 1st person plural past tense'. They recognize the interaction of the prefix chunk and the initial consonant of the root in many Nyulnyulan languages, saying that it causes many 'phonetical modifications' (p. 112).

Table 4.1 gives the verb paradigms for the root *-bad-* 'catch' as given in Nekes and Worms (1953:115-116) for Jabirr-Jabirr and Nimanburru, with Nyulnyul provided for comparison. They are given in Nekes and Worms' orthography (see the table on page xiv for the conversion). Note that Nekes and Worms give 'negative' forms to illustrate the irrealis.[14] Nekes and Worms (1953) claim that Nimanburru paradigms are almost identical to those in Nyulnyul and Jabirr-Jabirr, except in the loss of initial *y-*. This loss of the initial *y* in Nimanburru is not a regular sound change in this language. It is also contradicted by the Nimanburru data in Peile (n.d.b), where, for example, we find *[layib yarriny]* 'we are happy' (not *layib arrin(y)*) [my transcriptions]. Other words on the Peile recording are pronounced with the expected initial glides (e.g. *waamba* 'man', *waalg* 'sun', *walinkun* 'rainbow').

Moreover, at p. 117 Nekes and Worms (1953) quote Nimanburru forms with initial *y*,

[14]Tables 6.3 and 6.4 on pages 184–185 also give forms from these languages in standardized orthography, although without the interaction of the root consonants. Note that Nekes and Worms (1953:115-117) give several parts of the paradigms of Nyulnyul and Nimanburru as 'like Jabirr-Jabirr' without giving specific forms of the paradigm, and by this I assume that the forms are the same, apart from the small notes that they make (for example, that Nimanburru loses the initial *y* of the prefix). I have generated the Jabirr-Jabirr paradigms from these notes, but they also concur with the forms given by Stokes (1996), from Stokes' field work in the 1980s.

tense	person	Jabirr-Jabirr	Nimanburru	Nyulnyul
present	1min	*ŋanbaden*	*ŋanbaden*	*ŋanbaden*
	2min	*minbaden*	*minbaden*	*minbaden*
	3min	*inbaden*	*inbaden*	*inbaden*
	1+2min	*yanbaden*	*anbaden*	*yanbaden*
	1aug, 1+2aug	*yarbaden*	*arbaden*	*yarbaden*
	2aug	*gorbaden*	*gorbaden*	*gorbaden*
	3aug	*yerbaden*	*yerbaden*	*yerbaden*
past	1min	*ŋanembad*	*ŋanembad*	*ŋanembad*
	2min	*minembad*	*minembad*	*minembad*
	3min	*inembad*	*inembad*	*inembad*
	1+2min	*yanembad*	*anembad*	*yanembad*
	1aug, 1+2aug	*yaŋarbad*	*aŋarbad*	*yaŋarbad*
	2aug	*goŋorbad*	*goŋorbad*	*goŋorbad*
	3aug	*eŋerbad*	*eŋerbad*	*eŋerbad*
future	1min	*ganebad*	*ŋanebad*	*nganebad*
	2min	*wanbad*	*wanbad*	*wanbad*
	3min	*gonebad*	*onebad* (*onge-*)	*yonebad*
	1+2min	*yanebad*	*anebad* (*ange-*, *yange-*)	*yanebad*
	1aug, 1+2aug	*yaŋgarbad*	*aŋgarbad*	*yaŋgarbad*
	2aug	*warbad*	*warbad*	*warbad*
	3aug	*yoŋgorbad*	*oŋgorbad*	*yoŋgorbad*
negative	1min	*are ŋalebad*	*are ŋalebad*	*are ŋalebad*
	2min	*are milebad*	*are milebad*	*are milebad*
	3min	*are ilebad*	*are ilebad*	*are ilebad*
	1+2min	*are yalebad*	*are alebad*	*are yalebad*
	1aug, 1+2aug	*are yalarbad*	*are alarbad*	*are yalarbad*
	2aug	*are golorbad*	*are golorbad*	*are golorbad*
	3aug	*are elerbad*	*are elerbad*	*are elerbad*

Table 4.1: Jabirr-Jabirr, Nimanburru and Nyulnyul Paradigms, root *-bad-* 'catch' (bivalent) (Nekes and Worms 1953)

such as *yaŋga-baṇdj* 'you and I will surrender (my gloss)'. Thus I am not convinced by their Nimanburru data; it is possible that their source also spoke Bardi, or that the forms are simply errors, or that there was more than one dialect of Nimanburru (although given the very small numbers of people who would have spoken this language I do not think this is likely, and interference from Bardi is more probable).

Note that Nekes and Worms do not discuss verbal suffixes anywhere for Nyulnyulan. They appear to treat the agreement clitics as independent words:

(4.30) Jabirr-Jabirr

ginjiŋg-gong	*ine-wan*	*yer*	*djuŋg*
ginyingk-unk	inawan	yirr	jungk
then	he-gave	them	fire

'Then he gave them fire.' (Nekes and Worms 1953:c 986)

Examples of tense suffixes in Jabirr-Jabirr and Nimanburru are very infrequent in their data and are largely confined to the continuative (=imperfective) *-(a)n* and the remote or general past (in these languages, also *-n* or *-an* because of final vowel loss).

Some of the forms are not what we would expect, particularly in the future. Nimanburru *ŋanebad*, for example, appears to be a present transitive form, not a 'future'. It may be that there has been some contamination from present paradigms in Nekes and Worms' analysis, since the present is used in some cases for the future. Alternatively, it may be that the future morpheme *-ngg-* is proper only to the augmented forms of the verb, and that the variation in person prefixes (*wa-* ∼ *mi-*, etc) was historically the only marking of future tense. The question cannot be resolved at present.

The issue which arose for Nyulnyul in §4.4.2 regarding transitivity marking also arises when we consider Nekes and Worms' description of Nimanburru and Jabirr-Jabirr. It is unclear whether the augment transitive marker *a-* (recall Bardi *angarr-* 'we past intransitive' versus *angarra-* 'we past transitive') is also found in these languages. From Table 4.1 we

would say that it is not; the supposedly transitive forms do not show the expected vowel, for instance in *eŋerbad* — we would expect *eŋerabad* or *eŋerebad*. In the paradigms in Nekes and Worms (1953:119ff), however, we do find sporadic examples of the expected forms:

(4.31) *yaŋaredjal /yangarrajal/* 'we saw it' vs. *yaŋardjalg /yangarrjalg/* 'we fell down' (forms are for Jabirr-Jabirr, Nimanburru, Nyulnyul)

The 'epenthetic' vowel is sporadically present in the transitive verbs. Importantly, however, it is consistently absent in the intransitive verbs, implying that the languages did in fact make the distinction, and Nekes and Worms are inconsistently notating it.

Nekes and Worms (1953) do not draw a template for Nyulnyulan verb morphology, so the template in (4.32) below is generalized by me from their paradigms such as those in Table 4.1.

(4.32) $\overbrace{\text{pers tr tns num tr refl}_1}^{\text{prefixes}}$ root $\overbrace{\text{refl}_2\ \text{T/A}}^{\text{suffixes}}$

Note that I have corrected Nekes and Worms' analysis of the placement of the reflexive/reciprocal suffix component; they place it after the aspect suffix, as in their analysis of Jabirr-Jabirr *ma-madjalen-djen* 'to look at each other' (their morpheme boundaries); The correct morpheme division is *ma-ma-jala-nyji-n*.

The irregularity that Bardi shows in the j-initial subsets is not present in the Nyulnyul and Jabirr-Jabirr data given in Nekes and Worms (1953:115ff). They do record the Bardi forms correctly, which leads me to believe that the j-subsets were regular in the other Western Nyulnyulan languages.

4.4.4 Eastern Nyulnyulan

Because the Eastern Nyulnyulan languages do not differentiate between present and past in prefix paradigms, the segmentation of prefixes is rather more difficult than it is for the

Western Nyulnyulan languages. The biggest problem is the 'epenthetic nasal', historically cognate in most forms with the past tense marker, which appears obligatorily in some parts of the paradigms.[15] It carries no synchronic function, and from Hosokawa's description it appears that the use of the epenthetic nasal in contexts where it is optional is a dialect marker.[16] Moreover, its use appears to have been extended from where one would expect the past tense marker to occur; thus in Yawuru the epenthetic nasal can be used in forms such as (4.33), where its placement is unetymological:

(4.33) Yawuru (Hosokawa 1991:§4.2.3.3, ex 26)

Yaga-rr-a-m-bika-rn.
1+2-AUG-TR-EN-hit-IMPF
'We hit him.'

We do not expect the *m-* here if it is a tense marker because in the augment prefix forms, tense occurs *before* the augment marker (where the /g/ is in this Yawuru form, if Yawuru marked past tense).

I assume that this is a case of what Lass (1990) has called 'exaptation'. That is, a morpheme that has been bleached of its former meaning is 'recruited' to serve another purpose. In this case, the 'purpose' is unclear. Whereas for Nyulnyul we could dispose of McGregor's epenthetic nasal by equating it with the past tense, we cannot do this for the Eastern languages. There is no correlation between the historical placement of the past *ng-/N-* and the epenthetic nasal this time. It is important to note, however, that if we take the nasal as marking tense here, it does preserve the transitivity-tense ordering that we find

[15]Yawuru also has an alternation in the future morpheme between *ga-* and *ngga-* and Hosokawa ascribes this to the epenthetic nasal as well (although I would argue that this *ng-* is not cognate with the past tense marker).

[16]That is, one of the things that distinguishes one dialect of Yawuru from another is the extent of use of the epenthetic nasal.

in minimal verb forms. This may be a driving force for the placement of the epenthetic nasal in this position. I do not have sufficient data to determine whether this is the case.

Another difference between the Eastern and Western Nyulnyulan languages is the presence in the Eastern languages only of a tense/mood prefix labeled in the grammars as 'irrealis future'. It is usually translated as 'might' (e.g. by McGregor 1994:41-42 for Warrwa).

4.4.5 Yawuru: Hosokawa (1991)

Hosokawa's description of Yawuru verb morphology uses a templatic formula which is quite similar to that given for Bardi above. Note that because of the merger of present and past conjugations in the Eastern Nyulnyulan languages, it is much more difficult to divide the prefixes into meaningful elements.

Example (4.34) below gives the template for Yawuru. I have retained the terminology of Hosokawa (1991:§4.1.2). The subscript Greek characters show co-occurrence restrictions.

(4.34)	finite verb:	prefixes+root+(suffixes)+(enclitics)
	prefixes:	Pro_1 ($_\alpha$EN) Mood/Tense (+Number) (+Conj) (+Refl_1) ($_\beta$EN)
	root:	(+Redup) ($_\gamma$EN) + Root
	suffixes:	(+Refl_2) Aspect
	enclitics:	(+Com) (±Imp-Subord) (+Pro_2) (+Voc)

EN, the epenthetic nasal, occurs only once in one of three possible positions. The epenthetic nasal is historically related to the past tense morpheme *N* (a nasal homorganic with the following stop) but does not carry that meaning in modern Yawuru. MOOD/TENSE is the irrealis or future. (+CONJ) stands for the 'conjugation' marker (my 'transitivity' marker, *n*-). REFL is the reflexive/reciprocal circumfix components. COM is the 'comitative' marker, cognate with the Bardi instrumental and used with the same function, that is, as an applicative. Imp-subord is the dative-imperative marker[17] and subord is the slot for subordinating clitics. PRO_2 is the direct or indirect object agreement marker (which in

[17]The dative is used on imperative-marked verbs.

Yawuru, unlike in Bardi, may not co-occur). 'VOC' marks the vocative form of the verb.

As in Bardi, subject markers in Yawuru vary for tense. In the future, the second person minimal prefix is *wal-* or *nga-* (cognate with Bardi *a-* and *nga-*), while the third person forms are *i-* (= Bardi *i-*) in the non-future and *wa-* (≠ Bardi *oo-*) in the future and irrealis.

Yawuru has several tense/aspect suffixes, although apparently not as many as Bardi. As in Bardi, their occurrence is licensed by a prefix, and similar categories of perfective versus imperfective are marked. Also as in Bardi, the continuative and general past (= perfective) suffixes are the most common.

4.4.6 Nyikina: Stokes (1982)

Nyikina is an interesting language for verb morphology as it seems to have many more irregularities than the other Eastern Nyulnyulan languages. Some of these are shared with Bardi, making it unclear whether the changes are parallel innovations or shared retentions. Stokes (1982:237) describes six order classes of prefixes to the verb root, as listed in Table 4.2.

Order class	gloss	form	explanation
1	PRO_P/GEN	*ma(na)-*	personal pronominal prefix, general prefix
2	fut	*a-*, *ya-*	future tense marker
3	IRR	*la-*	irrealis mode marker
4	nmin	*rra-*	non-minimal person grouping marker
5	SET	*n-* ∼ *a-*	prefixing set I marker (i.e. the transitivity marker)
6	INT_P	*ma-*	'introspective' marker (i.e. the reflexive/reciprocal prefix)

Table 4.2: Nyikina Prefix slots, after Stokes (1982:237)

Just as in the other Nyulnyulan languages, there are prefix co-occurrence restrictions. (4.35) provides some examples of the maximum number of prefixes in the Nyikina verb:

(4.35) Nyikina (Stokes 1982:238)

a. *marlu ku- ya- rr- ma- marra -nyji*
NEG 2- FUT/IRR- AUG- REFL burn REFL
'don't burn yourselves'

b. *ya- la- rr- a- ba -na -da*
1 IRR- AUG- TR- see -PST -HABIT
'We never saw [it]'.

Stoke's ordering makes sense, although it is not clear to me why the future and the irrealis are not grouped together. Also, Stokes argues that the subject agreement prefixes are modified for tense, which saves her a slot. That is, she groups the variation between *nga-* and *ngan-* together with the variation between third person *yin* and *wan-*.

Not only does Nyikina show root deletion in some contexts, it also shows root assimilation. In *l*-initial roots, for example, the trill of the augment marker assimilates to the *l* of the root. Stokes (1982:228) writes this as a geminate, although it is not clear to me whether it is actually pronounced as a geminate or whether this is an orthographic convention. We also find the same treatment of *rr+l* clusters in Bardi, although not in Nyulnyul, according to Nekes and Worms (1953). Example (4.36) gives the Nyikina forms.[18]

(4.36) *l*-initial root:
a. (Nyikina) *yarr-luka* 'we two are crying/cried' > *yalluka*
b. (Bardi) *irr-linyji-n* 'they are waiting' > *ilinyjin*

but:

c. (Nyulnyul — Nekes and Worms (1953)) *er-legaran* /irrlikarran/ 'they hear'

Nyikina also shows interesting behavior for *n*-initial transitive roots. Where we expect *rra+n* we get *d*,[19] and where we expect *l+n* we get *ll*.[20] This again parallels Bardi in some respects, although Bardi has no transitive *n*-initial roots, so we cannot compare domains

[18]Unfortunately there appears to be a language labeling mistake in the relevant part of Nekes and Worms (1953), and Nimanburru forms are given as Nyikina, without the rrl > l assimilation. Compare also Bardi *ingoorrooloooloorroonoo* which shows both epenthesis (between the augment *rr* and the root) and deletion (in the reduplication, from **-loorrloorr-*).

[19]Presumably this is the result of a sound change **rran* > **rrn* > **dn* > **d*.

[20]I do not know whether this geminate is orthographic only, or whether it actually contrasts with a single *l*.

exactly. Bardi does have one *n*-initial intransitive root, *-ni-* 'sit, be located somewhere', and it does not show this treatment of *rrn* clusters. In Bardi, *rrn* > *rr* in verb prefixes, and *dn* elsewhere. Thus *goorrinkal* 'you are sitting', < *goorr-ni-n-kal.* For an example from outside the verb domain which shows the other treatment of the cluster, compare the ergative of the third person augment *irr*, which is *idnim.* [21]

(4.37) *n*-initial root (Nyikina):

a. *yarra-nika* 'we are following someone' > *yadika*;

b. *ngala-nika* 'I might follow someone' > *ngallika*;

c. *yalarra-nika* 'we might follow someone' > *ngaladika*.

4.4.7 Warrwa: McGregor (1994)

Warrwa verbs stand out as rather different from their Nyulnyulan cognates. Warrwa is rather close to Nyikina but its verb morphology is analyzed by McGregor quite differently and there have been a number of changes which make the forms look distinct. The categories of the Warrwa verb are given in (4.38) below. The information is taken from McGregor (1994:41).

(4.38)

prefixes

nom pro (mood) (number) (voice) (tense) (EN) root

suffixes

root (tense) (aspect) (subord) (acc/obl pro) (dl)

This template shows some difference from those of the other Nyulnyulan languages, mainly in the relative ordering of the prefixes.

The 'voice' prefixes McGregor refers to are the transitivity prefix (in Warrwa, *na-*; c.f. Bardi *n-* in minimal verb forms). McGregor analyzes this transitivity marker and the

[21] Although this root is irregular so it is not a good comparison, although it is Bardi's only *n*-initial root so it is the best we can do.

reflexive/reciprocal marker *ma-* as occurring in the same slot, although no examples are given and it may be that the relevant examples did not arise. The combination of tense and augment is the only clue that they are in different slots, and this is confused in Nyikina and Warrwa by the way tense marking works.

According to McGregor (1994:41-42), the future irrealis occurs only in the augmented class II (transitive) verbs. In the minimal forms of these verbs, the transitivity marker *na-* appears instead of the predicted *ya-*. The same forms occur in Nyikina, where *na-* is analyzed by Stokes as being part of the pronominal prefix. Incidentally, it is unclear that the morpheme *na-* is to be identified with the transitivity marker.

Warrwa is the only Nyulnyulan language to allow forms showing zero prefixation. Third person forms have no overt prefix in some forms. Third person augments have the form *ngarr-*, obviously etymologically the past tense and augment marker (from < *ingarr-*).

(4.39) (Warrwa) *jalany* 'he saw it'

I assume this to be the result of a morphological change rather than a general sound change, since it only affects third person verb forms, not words beginning with *(y)i-* in general.

Warrwa's epenthetic nasal also occurs in unetymological places:

(4.40) Warrwa

Ngayu	*nga-*	*ma-*	*ng-*	*ka*	*-nyji*	*-ny*
1MIN.ABS	1MIN-	REFL-	EN	carry	REFL/RECIP$_2$	-PST

'I hit myself.' (McGregor 2000:89)

This example recalls the example of the placement of the Yawuru's epenthetic in (4.33) on page 125.

4.5 Summary

There are several quirky features of morphology which all Nyulnyulan languages share. There are also features common only to the Western Nyulnyulan languages and the Eastern Nyulnyulan languages.

All Nyulnyulan languages share the splitting of person and number marking, with person marking appearing as the initial morpheme of the prefix chunk, and number marking appearing after tense marking. All the languages also share the variation in placement and form of the transitivity marker *n-* ~ a-. We can reconstruct the following variation in order in the prefixes (given in (4.41)):

(4.41)	minimal:	person	transitivity	tense	
	augment:	person	tense	augment	transitivity

There are further generalizations regarding simple verb structure which can be made, although supporting comparative evidence is given in the following chapters rather than here. For example, all Nyulnyulan languages have a reflexive/reciprocal circumfix, which appears next to the root.

Morphological innovations which characterize Eastern Nyulnyulan are the loss of present and past tense marking and the use of an unetymological 'epenthetic nasal', originally related to the past tense marker but used in the 'wrong' place in the template. The differences among the Western Nyulnyulan languages are largely confined to artefacts of analysis, although Nyulnyul and Jabirr-Jabirr may have lost productive marking of transitive versus intransitive in the augment forms.

Chapter 5

Inflecting Root Structure and Etymology

5.1 Introduction

This chapter is a discussion of simple predicates in Bardi; it is an examination of their structural properties and etymological sources. Inflecting verb roots in all Nyulnyulan languages are a rather heterogeneous category, and Bardi is no exception. There are several different properties and possibilities for categorization. They also show rather different etymological sources. The structure of inflecting roots is important background for properly analyzing complex predicates Chapter 9, especially regarding issues of mismatches between phrasal transitivity and predicate/root valency.

Bardi's approximately 250 verb roots form a closed class. There are no productive modern derivational patterns and no ways of forming new roots in the grammar. Loan verbs, for example, are borrowed as uninflecting preverbs and assigned an appropriate light verb. The presence of apparent cognates between inflecting roots and other word classes, therefore, is a historical problem to be investigated. This is the topic of §5.6. Synchronically, however, such roots are not analyzable, and so discussion focuses instead on the categorization of verb roots in a synchronic grammar. Following previous descriptions of Nyulnyulan languages (Hosokawa 1991, Stokes 1982) I recognize three classes of verb

roots on the basis of root valency. The class of verb root affects the form of the imperative prefix and the presence or absence of the valency prefix *n-* ~ *a-*.

Note that Nyulnyulan roots have been historically described in terms of 'transitivity' (that is, intransitive, transitive or ambitransitive); however, I wish to draw a distinction (following Van Valin and LaPolla 1997:147ff., Margetts 1999 and others) between root valency and predicate/clausal transitivity. Valency is a lexical property and refers to the number of arguments which appear with a particular verb. Transitivity is a property of the clause and refers to the interaction between argument structure, case marking and agreement. This distinction is necessary in Bardi for two reasons; firstly because the number of arguments that a verb may take does not entirely determine case marking and agreement forms, and secondly because there are differences between simple and complex predicates, where the valency of the inflecting root is different from the transitivity of the predicate.

This chapter is laid out as follows. In §5.2 I describe the classes of roots which are found in Nyulnyulan languages (concentrating on Bardi). §5.3 gives some information on suppletive verb roots in Bardi. In §5.4 I describe the form, function and origin of reduplication of inflecting verb roots and show that Bardi's apparently infixal pattern of root reduplication is a regular outcome of a sound change. The remainder of the chapter (§5.6) is historical and discusses the etymology of Bardi verb roots. I account for differences between Western Nyulnyulan and Eastern Nyulnyulan languages and argue for the loss of noun incorporation between Proto-Nyulnyulan and Proto-Western Nyulnyulan.

5.2 Types of roots

All inflecting verb roots can be grouped into one of three classes based on the valency of the root. Valency is defined as the number of arguments a verb root takes. This is testable in Bardi by counting the number of arguments which have agreement exponence in the verb. It is also testable by noting the presence or absence of the valency prefix *n-* ~ *a-*. Note

that we need to enforce a distinction between valency and transitivity in the Nyulnyulan languages, since the formal marking of agreement may be different from the number of arguments that appear in the clause (since argument omission is very common) and case marking of core arguments (ergative and absolutive) is not a reliable guide to root valency. That is, not all bivalent roots have two arguments, marked for ergative and absolutive, and not all constituents marked for ergative case are the subject of a bivalent verb.

The three verb classes in Bardi are monovalent, bivalent and ambitransitive.[1] These are summarized in (5.1) below:[2]

(5.1) a. Monovalent roots subcategorize for a single ('subject') argument, marked with absolutive case. They have no prefix *n-* ~ *a-*. They have no direct object marking.

b. Bivalent roots subcategorize for two arguments and take the prefix *n-* ~ *a-*

c. Ambitransitive roots may be either mono- or bivalent. They appear with or without the prefix *n-* ~ *a-*. They exhibit direct object marking.

Recall from §4.2.1 that the valency marker *n-* ~ *a-* occurs in two places in the prefix sequence. *n-* occurs with singular subjects and *a-* with augmented (non-singular) subjects.[3] Recall also that *n-* appears before the tense marker, while *a-* occurs after the augment marker

[1]A systematic distinction between root valency and predicate transitivity has not been made in previous studies of Nyulnyulan languages, and the term 'transitivity' has been used for both, or for root valency. Previous work, such as Hosokawa (1991) and Stokes (1982), discusses only the 'transitivity' of roots, and either does not discuss other properties of clausal transitivity (such as case mismatches) at all or does not treat such issues as a problem of 'transitivity'. I am therefore caught between using terminology which is different from all other published sources on Nyulnyulan languages or redefining existing terms. I have continued to use the label 'ambitransitive' for roots which can be either monovalent or bivalent but I recognize that this is not a felicitous solution. Thus the prefix *n-* ~ *a-* is glossed as TRANS for 'transitivity' even though I label it a valency prefix to allow consistent glossing between other Nyulnyulan sources, my earlier work, and the current work.

[2]I do not analyze Bardi as having a distinct class of trivalent roots; roots such as 'give' and 'put' behave as bivalent roots.

[3]Recall furthermore that Aklif (1993a) analyzes the marker as having a single form *n-*, but variable placement.

and triggers deletion of the initial obstruent of the root. For details of the morphophonology in the examples, see §3.3.

(5.2) a. *inanggarnboogal*
i- n- ang- garnboo -gal
3- TR- PAST- 'growl' -REC.PST
'He growled [was angry at] him.'

b. *ingarrarnboogal*
i- ng- arr- a- (g)arnboo -gal
3- PAST- AUG- TR-
'They growled [were angry at] him.'

Valency is also reflected in agreement. Monovalent roots show subject agreement only, while bivalent roots show agreement for both subject and one of direct object or oblique object.[4] This is illustrated in (5.3) below, where (a) shows a monovalent root *-jiidi-* 'go' and (b) illustrates a bivalent root *-jala-* 'see'.

(5.3) a. *nganyjiidigal*
nga- ny- jiidi -gal
1- PST- go -REC.PST
'I went.'

b. *nganjalagalirr*[5]
nga- n- jala -gal =irr
1- TR- [past]- see -REC.PST =3MIN.DO
'I saw them.'

Valency also determines the form that the second person imperative prefix takes. Bivalent roots take *an(a)-*, while for monovalent roots the form is *nga-*. Compare *ngayiida* 'go!' with *anjala* 'look at it!'.

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[4]Note that while there are many verbs in Bardi that can take both oblique and direct object agreement, there are no verbs for which such marking is compulsory. Note also that there is a very small group of monovalent roots which take an oblique argument.

[5]Note that in this type of root the past tense marker does not appear, and present and past are indistinguishable.

It is important to note that root valency is correlated with but is determined independently of case marking in Nyulnyulan languages. For example, there are bivalent roots which take dative arguments (rather than absolutive arguments) and monovalent roots which take subjects marked by ergative case (where we would expect the absolutive). Such roots are listed and discussed in §5.2.2. Therefore case marking is not used as a diagnostic of valency.

The same three-way distinction in valency (monovalent, bivalent and ambitransitive) holds for other Nyulnyulan languages. Stokes (1982), for example, divides Nyikina's roots into Set I, Set II and alternative-prefixing or ambitransitive. Hosokawa (1991) makes the same distinction.[6]

McGregor (2002) argues that Nyulnyulan languages also have 'avalent' roots, that is, roots that do not have an inherent valency but can take either one or two arguments, according to necessity. The category is different from the ambitransitive roots; the members of the supposed avalent class are light verbs which are sometimes transitive and sometimes intransitive (see further §9.7 for examples and further discussion). In McGregor's framework verbs such as *-joo-* 'do, say' do not discharge θ-roles (which McGregor argues are assigned by the preverb). The verb is simply there as a host for morphology. I treat these roots as inherently bivalent and have a different solution for dealing with apparently intransitive complex predicates, which are the source of McGregor's need for the category. Thus I do not recognize a class of avalent roots in Nyulnyulan languages.

[6]Hosokawa also has a fourth class, a subset of monovalent verbs which take the bivalent prefix in the future. That is, in Yawuru a small set of monovalent roots are marked in the future with the prefix *wal-* (related to Bardi's *a-*), rather than the monovalent *nga-* (= Bardi *nga-*). I have not found this class in other Nyulnyulan languages.

5.2.1 Monovalent roots

5.2.1.1 The normal pattern

Monovalent roots are those which take a single (subject) argument. They show subject agreement and cannot take Direct Object agreement. They can also appear with the 'intransitive' imperative *nga-*. A few intransitive verbs subcategorize for oblique 'objects' (c.f. (5.7) below). Furthermore, these verbs cannot appear with the transitivity prefix *n-*. Some examples of regular monovalent roots are given in (5.4) below (verb roots are underlined).

(5.4) a. *Imboonkoonkoomana jiirlanboo.*
I- [ng]- boonkoonkooma -na jiirlanboo.
3- PST- swell up -REM.PST porcupine fish
'The porcupine fish swelled up.'

b. *Nganyjiidigal arangan booroo.*
Nga- [ng]- jiidi -gal ara -ngan booroo
1- PST- go -REC.PST another -ALL camp
'I went to another camp.'

c. *Ingarrjalgij gaalwo.*
I- ng- arr- jalg(oo) -ij gaalw(a) -(g)o.
3- PST- AUG- fall -MID.PERF raft -ABL
'They fell off the raft.'

5.2.1.2 Exceptional case marking

There are a few exceptions to the regular pattern. Some verb roots are formally intransitive (that is, they take no *n-* prefix) but take two absolutive arguments. The root *-golo-* 'wear something', for example, can take an absolutive object. *-banji-* is another root that can appear with this frame. These are illustrated in (5.5) and (5.6).[7]

[7] I assume for *-golo-* that the 'object' is either an adjunct or a type of 'cognate object'.

(5.5) *Bardi ngonggolij jiiba anmarr.*

Bardi ng[a]- ng- gol(o) -ij jiiba anmarr.
yesterday 1- PST- wear -PERF those clothes.

'I wore these clothes yesterday.'

(5.6) *Milon ambooriny ingarrbanjanjinan aarlimay.*

Milon ambooriny -ø i- ng- arr- banjanji -n -an
long time ago people -ABS 3- PST- AUG- share.REDUP -CONT -REM.PST
aarlimay -ø.
food -ABS

'In the old days people used to share food.'

Another small set of verb roots take oblique object agreement. In (5.7), for example, the verb shows oblique agreement; a direct object would show a different suffix.

(5.7) *Imbalanin.* (Metcalfe n.d.:*-bala-*)

I- m- bala -n(a) =(j)in.
3- PST- believe -REM.PST =3MIN.IO

'He believed him.'

Finally, among the monovalent verbs which take oblique agreement, a few also appear with an ergative subject. In (5.8), for example, there are two arguments — *baawa* 'child', which shows ergative marking, and *ngaarri* 'devil', in the absolutive — even though the verb is 'monovalent' in that it does not show the transitive prefix *n-/a-*. (5.8b) shows that the ergative is required to differentiate subject from oblique; it is not omissible even when the semantic roles are clear from context.

(5.8) a. *Baawanim inyjargijin ngaarri.*
Baawa -nim i- ny- jargi =jin ngaarri -ø.
child -ERG 3- PST- fear =3MIN.IO devil -ABS
'The child was afraid of the devil.'

b. *Inyjargijin ngaarri.*

I- ny- jargi =jin ngaarri -ø.
3- PST- fear =3MIN.IO devil -ABS

'He was afraid of the devil.'
*'The devil was afraid of him.'

A few other verbs in Bardi also take this pattern or ergative/oblique case marking with a formally monovalent verb. They are listed in (5.9) below.[8] Other Nyulnyulan languages also have verbs which take this pattern, although the inventory of the class varies from language to language.

(5.9)

-lirrmi-	call out to someone
-mi-	look for someone
yalji -ma-	crave something

5.2.2 Bivalent roots

5.2.2.1 The regular pattern

Bivalent roots regularly agree for two arguments, the subject and the (direct) object. They take the 'transitive' imperative *a-* rather than the intransitive *nga-*. The usual case marking pattern is ergative subject and absolutive object. Some examples are given below. In (5.10) the subject is *aalin* 'sea eagle(s)', marked for ergative case; subject agreement is shown by *i-* for third person and *(a)rr-* for an augmented (non-singular) subject. *Maalbarnd* 'nest(s)' is the object; generic third person objects are not overtly marked in the verb.

[8]There are possibly significantly more verbs which take this pattern, but are attested with no overt subjects, so it cannot be determined whether they take absolutive or ergative subjects.

(5.10) *Aalinnim irroomoogarn maalbarnd garndi goolboon.*

Aalin -nim i- (a)rr- (a)- moogar -n maalbarnd -ø garndi goolboo
sea eagle -ERG 3- AUG- TR- make -CONT nest -ABS high rock
-(goo)n.
-LOC

'Eagles make their nests on top of rocks.'

(5.11) *Ginyingginim injooloonggal ajawirr irrol.*

Ginyinggi -nim i- n- (ny-) jooloong -gal a(yu)- jaw
3MIN -ERG 3- TR- PST- pick up -REC.PST 1+2MIN- 1+2MIN.POSS
-irr irrol -ø.
-3AUG.POSS'E spear -ABS

'He picked up our spears.'

An example showing overt object agreement is given below. The form of the first person singular object marker is *=jarrngay*.

(5.12) *Ginyingginim aamba injangarrgagaljarrngay goolboongan.*

Ginyinggi -nim aamba -ø i- n- (ny-) jangarrga -gal =jarrngay
This -ERG man (-ERG) 3- TR- [PAST] ask -REC.PST =1MIN.DO
goolboo -ngan.
'stones' -ALL

'This man asked me for money.'

5.2.2.2 Exceptions

Some bivalent verbs take ergative subject marking and oblique object marking. The root *-marniny-* 'wave at', for example, takes the prefix *n-* ~ *a-* (and is bivalent), and takes ergative subject marking and oblique object marking:

(5.13) *Ingarramarninyjin boonyjanim baawa gala arr injin joodinygo.*

I- ng- arr- a- marniny =jin boonyja -nim baawa gala arr i- n-
3- PST- AUG- TR- wave =3MIN.IO all -ERG child already go 3- tr-
ji -n joodinygo.
[past-] say/do -CONT for good.

'All the kids waved at him, he was going away for good.' (Aklif 1999:*-marniny-*)

5.2.2.3 Ditransitive roots

Roots which in English are ditransitive/trivalent, such as 'show', 'tell' and 'give' are probably bivalent in Bardi, although it is very difficult to tell for certain. The phonologically null root 'give' (-ø-) agrees for two arguments; the giver and the recipient (which is encoded as a direct object, for example *anangay* 'give it to me', not ×*anajan* (with oblique marking). I suspect the easiest analysis is to treat -ø- as bivalent and to analyze the theme as an adjunct, the same analysis (*mutatis mutandis*) as for *-golo-* 'wear' in (5.5) above.

Another potential ditransitive verb, *-jilngi-* ∼ *-joolngoo-* 'tell', shows exceptional case marking in that it takes an ergative subject and oblique agreement (but no direct object), like *-marnany-* above.

It is difficult to test for adjunct or argument status in the absence of agreement, since arguments may be freely omitted without deterioration of grammaticality.

5.2.3 Ambitransitive/alternative prefixing roots

Most roots in Nyulnyulan languages take either transitive or intransitive agreement prefix bundles, but not both. That is, they appear either with or without the valency marker *n-* ∼ *a-*. However, all the Nyulnyulan languages have a small set of verb roots which can take either transitive or intransitive subject prefixes. They are called 'alternative prefixing' or 'ambitransitive' verbs in the other grammars of Nyulnyulan languages (e.g. Hosokawa 1991, Stokes 1982, and in some detail Stokes n.d. b). Roots which show valency alternations without overt derivation are seldom found in Australian languages; Dixon (2002), for example, states that they do not exist, and every root in every Australian language is strictly transitive or intransitive. Valency alternations, he states, are accomplished only by overt derivation.

The examples in (5.14) and (5.15) below show two ambitransitive roots, *-gama-* 'laugh/mock' and *-banyi-* 'finish/kill'. In (5.14), the root in sentence (a) is monovalent and

appears in the meaning 'laugh', while in (b) it is bivalent, showing the prefix *n-*.[9]

(5.14) a. *Nomordon iyaman, loogalbard indan nalma.*

Nomordon i- [g]ama -n, loogal =b =ard i- n- [joo] -n
just 3- laugh -CONT, bad =REL =PROB 3- TR- do/say -CONT
n- alma.
3MIN.POSS'R head

'He's just laughing, he's sick in the head.'

b. *Jinininganan inkajanjirri ginyinggi aamba inanggamagalj.*

Jinininganan i- n- kaja -n =jirri ginyinggi aamba i- n- [a]ng-
make fun of 3- TR- put -CONT =2MIN.DO that man 3- TR- PST
gama -gal -j.
laugh -REC.PST -SIMUL.

'That man's making fun of you, he's been mocking you.'

In (5.15) the bivalent verb means to 'finish' or 'kill' something, while the monovalent root is the unaccusative counterpart, 'finish' or by metaphorical extension 'die'.[10] The (a) sentence shows the bivalent pattern, with ergative subject (*liinyja* 'policemen'), augmented TR prefix *a-*, and direct object agreement *=(i)rr*. The (b) sentence is monovalent.

(5.15) a. *Liinyjanim ingorronyinarr jirrirr iila.*

Liinyja -nim i- ng(a)- rr- a- (ba)nyi -na =(i)rr
policeman -ERG 3- PST- AUG- TR- finish/kill -REM.PST =3AUG.DO
jirr -irr iila -ø.
3AUG.POSS'R -3AUG.POSS'E dog -ABS

'The policemen killed all their dogs.'

[9]The agreement marker *=(ji)rri* is not repeated from the first part of the clause in example (b), but co-reference is understood from the simultaneity marker *-j*.

[10]The more usual verb 'to die' is *-jimbi-*.

b. *Nyoongool aamba jiiba bardi gorna inginin ngoorramb imbanyij.*

Nyoongool -ø aamba jiiba bardi gorna i- ng[i]- ni -n ngoorr(a)
old -ABS man this yesterday good 3- PST- be/sit -CONT last night
=amb i- m- bany(i) -ij.
=REL 3- PST- finish/die -MID.PERF

'The old man was alright yesterday but last night he died.'

Table 5.1 gives the alternative prefixing verbs which occur in Bardi, along with their monovalent and bivalent glosses and Proto-Nyulnyulan (PN) reconstructions, where possible. Reconstructible glosses are also given; where only one gloss is given for the reconstruction, it is not reconstructible as an ambitransitive root.

Note that there is a good deal of overlap between the class of Bardi ambitransitives and English 'middle' verbs (those which have two readings, one transitive one intransitive and unaccusative).[11]

5.2.4 Light verbs

Verb roots in Nyulnyulan languages can also be classified according to their ability to function as light verbs in complex predicate constructions. The verbs in question are known as 'light verbs' because in some contexts they do not have the usual full meaning of the normal verb. The verb is bleached of most of its meaning and contributes a more abstract notion to the clause. In Bardi light verbs are used in preverb + inflecting verb constructions (as briefly described above in §2.6.2 and analyzed in detail in Chapter 9). The inflecting verb hosts agreement and tense/aspect morphology. The examples in (5.16) below show two light verbs in use. In (5.16a), the preverb *garr* combines with the light verb *-boo-* to form a complex predicate meaning 'rub'. Example (5.16b) shows another example, this

[11] McGregor (2002:230) lists the ambitransitive verbs found for Nyulnyul. Some points of difference are *-bamarr-*, 'shiver' which is only monovalent in Bardi, also has a bivalent counterpart 'make shiver' in Nyulnyul. There are a few more unergative ambitransitive verbs as well, including *-wid-* 'eat', which does not exist in Bardi.

Root	Bivalent gloss	Monovalent gloss	Reconstruction
-banyi-	finish something	die, finish	PN **-banyi-* 'extinguish/be extinguished'
-bar(n)di-	cover (esp. with sand), bury	be covered	PN **-barndi-* 'cover/be covered'
-bindi-	put something forward	get better	
-booloo-	have one's wife give birth	to come	PN **-bulu-* 'come'
-galgalgama-	shake (s.th)	shake	—
-gama-	mock	laugh	PN **-gama-* 'laugh/mock'
-gardi-	grow someone up	enter (+ loc)	PN **-gardi-* 'enter'
-garn-	lodge something	lodge	
-golo-	dress someone	wear something	PN **-gulu-* 'tie/get dressed'
-goodala-	lose something, spin hair	get lost, disappear	PN **-gudalV-* 'lose/get lost'
-jalgi-	hide something	conceal oneself, hide from something	
-joogooloo-	break something	break	PN **-jangguli-* 'break something/break'
-loorroo-	burn/light something	be lit	PN **-lurru-* 'burn/be burned'
-mala-	burn something	be burned	
-marra-	cook something	cook, be burned	PN **-marra-* 'cook'
-mooroo-	waste, neglect something	spill	
-ngoorrma-	soak (s.th.)	soak	

Table 5.1: Bardi alternative prefixing verbs

time intransitive. The preverb *roowil* combines with the inflecting verb *-inya-* to form a predicate meaning 'walk'. Note that although glosses have been given for *roowil* and *garr*, neither item exists independently of the complex predicate construction.

(5.16) a. *garr nganamboogal* 'I rubbed him.'
Preverb: *garr* 'rub'
Inflecting verb: *-boo-* 'spear, poke'
Entire predicate: 'to rub (something) to stop the pain'.

b. *roowil innyagal* 'He was walking.'
Preverb: *roowil* 'walk'
Inflecting verb: *-nya-* 'pick up, catch'
Entire predicate: 'to walk'

A list of Bardi light verbs is given in Table 5.2 and Table 5.3 below. First appear the light verbs which commonly appear with preverbs; following appear the inflecting verbs which only occur in collocation with a few preverbs.

Root	Valency	Gloss	No.	Example	gloss
-ar-	v.tr	kill/spear (lice)	34	*darr -ar-*	come (v.it)
-banji-	v.it	share/exchange	5	*dirray -banji-*	turn around
-bi-	v.tr	hit w. hand	9	*garr -bi-*	rub to stop pain
-boo-	v.tr	spear, poke	15	*milimili -boo-*	write
-ga-	v.tr	bring s.th	27	*abarrabarr -ga-*	lead astray
-gal(a)-	v.it	walk, visit	20	*jarrman -gala-*	wade across
-(i)nya-	v.tr	pick up	68	*yal -(i)nya-*	spread out
-jiidi-	v.it	go	27	*galgooriny -jiidi-*	swim breaststroke
-joo- ~ *-(d)i-*	v.tr	do/say	208	*yardab -joo-*	crawl
-ma-	v.tr	put s.th s.w.	130	*wajim -ma-*	wash something
-ni-	v.it	sit	16	*wiliwilon -ni-*	be fishing
-ø-	v.tr	give	58	*wanilirr -ø-*	curse

Table 5.2: Bardi common light verbs

Light verbs themselves are either monovalent or bivalent; none of the common light verbs are ambitransitive.

Root		Gloss	No.	Example	'Translation'
-(a)rli-	v.tr	eat	1	*ararr -(a)rli-*	'ache (v.it)'
-arndi-	v.tr	catch	1	*joomoonoonoo -arndi-*	'gamble (v.it)'
-balama	v.tr	entwine	1	*garga -balama-*	'betrothe'
-banyi-	v.it	finish	1	*nilirr -banyi-*	'slacken (of tide)'
-boolmoo-	v.it	smell	1	*gooroogooroo -boolmoo-*	'give off a nice smell'
-booloo-	v.it	come	1	*darral -booloo-*	'come out'
-galala-	v.tr	follow	2	*gorna -galala-*	'become physically well-developed'
-gama-	v.at	laugh	1	*goolgarr -gama-*	'laugh (v.it)'
-ganyi-	v.it	climb	5	*binbirr -ganyi-*	'drift somewhere'
-gardi-	v.at	go inside	6	*lool -gardi-*	'enter'
-garnboo-	v.tr	growl s.o.	1	*balygarr(a) -garnboo-*	'swear at someone'
-gonboo-	v.tr	send	1	*ngaanka -gonboo-*	'send a message'
-jala-	v.tr	see	2	*garrgooy -jala-*	'stare hard at someone'
-jalgoo-	v.it	fall	1	*doolii -jalgoo-*	'be prematurely born'
-janboo-	v.tr	tread	1	*gooljoo -janboo-*	'pull out grass'
-jarrala-	v.it	run	1	*joornk -jarrala-*	'take off with speed'
-jarrmi-	v.it	rise	1	*wirr -jarrmi-*	'jump into the air'
-joogooloo-	v.at	break	2	*ngaada -joogooloo-*	'break in half'
-jooloo-ng-	v.tr	collect	1	*boorrma -jooloong-*	'gut something'
-joo-ng-	v.tr	do/say (+ appl)	3	*birarr -joong-*	'leave behind'
-malanda-	v.it	go against tide	1	*arrinarr -malanda-*	'go against the tide'
-minyji-	v.tr	receive from	1	*rirran -minyji-*	'snatch'
-moondoo-	v.tr	wet s.th	1	*oola -moondoo-*	'wash oneself'
-mooroo-	v.tr	waste s.th	3	*barrja -mooroo-*	'spit something out'
-nganka-	v.it	speak	1	*balygarr -nganka-*	'swear'
-ngooloo-	v.tr	throw	4	*niimi -ngooloo-*	'keep watch (v.it)'
-ngooloo-ng-	v.tr	throw at	1	*anyja -ngooloo-ng-*	'give away'

Table 5.3: Other Bardi light verbs

5.3 Irregular roots

On the whole there are few truly 'irregular' verbs in Bardi; that is, verbs with suppletive morphology. More often, irregularity in the paradigm arises when aspectual combinations have unpredictable meaning, or when one tense serves for another. The root *-gal-* 'visit, come and see', for example, can be used in the present with future meaning, and the root *-ni-* combines present prefixes with past tense suffixes.[12] A few verbs do not trigger vowel harmony; for example, the past tense of *-boo-* 'hit' is *inamboona*, not the expected ×*inoomboona*.[13]

The only irregular root that can be reconstructed to Proto-Nyulnyulan is **-ju-* ∼ *-di-* 'do/say'. The root has present and future tense forms in *d* and past forms in *j* (compare Bardi *indan* 'he says' but *injoona* 'he said'). The forms for the various Nyulnyulan languages are given below.

(5.17) **-ju-* ∼ **-di-* 'do' 'say'

Western Nyulnyulan: Ba.(A) *-ju-* ∼ *-da-* ∼ *-i-*; Nyl.(Bis) *-j-* [*madi̯an, madi̯en*] (accept, ask, say); Nim.(N&W) *-j-* [*nan-idj*]; Jb.(?) *-ji-* ∼ *-di-*; Jb.(N&W) *-ju-* [*ma-djon, ma-djen*];

Eastern Nyulnyulan: Yaw.(Hos) *-dyu-* (II); Nyik.(N&W) *-ju-* ∼ *-di-* [*man-den*]; Nyik.(S) *-i-* ∼ *-di-* ∼ ø; Warr.(McG) *-ji-*; Warr.(S) *-yi-* ∼ *-di-*.

A few monosyllabic roots have an extra syllable in some tense forms in Bardi. The present of *-ga-* 'carry', for example is inkajan, not the expected ×*inkan*. This is not found in other Nyulnyulan languages and the source in Bardi is unknown. There is a further irregularity in that one verb, *-arli-* 'eat', has a mixed monovalent and bivalent paradigm.

[12] Also c.f. *irrinkal*, 'they were there', not ×*ingirrinkal*.

[13] Some of these irregularities could be the result of dialect borrowing between Bardi and Jawi. Jawi is known to have had a more restricted environment for harmony than Bardi has; compare, for example, Jawi *-jagooli-* with Bardi *-joogooli-* (PN **-jangguli-*).

Again, this occurs only in Bardi, and not in the other Nyulnyulan languages as far as I know.[14]

(5.18) a. *irlin* 'he/she is eating' (as though from monovalent stem)
b. *inarli* 'he/she ate' (as though from bivalent stem)

There are also some irregular and suppletive roots in the Eastern Nyulnyulan languages. In most cases they appear to be of the *go* ~ *went* variety, where originally different roots behave as different forms of the same lexical item. An example is given in (5.19) below. In Yawuru, for example, the reflex of the verb **-ni-* 'sit' alternates with a form *-nga-*, which is historically the root 'become'.

(5.19) **-ni-* 'sit, be'
Ba. *-ni-* Nyl. *-n-* Jb. *-n-*
Yaw. *-ni-* ~ *-nga-* ~ *-ji-* Nyik. *-ni-* ~ *-nga-* Warr. *-wani-* ~ *-nga-*

5.4 Reduplication

Another important characteristic of verb roots in Nyulnyulan languages is that they may be reduplicated. Reduplication is not completely productive and some verb roots which might be expected to take reduplication are ungrammatical with it. In this section I survey the reduplication patterns found in Bardi and show that what appears to be infixal reduplication can be shown to be the result of a historical sound change.

5.4.1 Function

The function of reduplication in Australian languages was the subject of Fabricius (1998); she determined that the primary functions of verbal reduplication in these languages are iterative and distributive. Bardi conforms to this pattern, although as Metcalfe (1975:30)

[14]It is possible that the root is not in fact irregular in terms of valency. If the form of the root is analyzed in the present as *-rli-* rather than *-arli-*, the sequence *nrl* (n + retroflex l) will regularly give *rl*. In that case, however, the root would still irregularly lost its initial vowel in the present.

points out, reduplicating the verb root can produce different semantic results with different verbs. Reduplication is, however, primarily iterative or distributive.

(5.20) illustrates the iterative use of reduplication. The unreduplicated root *-gardi-* means 'enter', while *-gardardi-* means 'to enter over and over again, to keep on going in and out'.

(5.20) *ingarrardardanana* (root: *-gardi-* 'enter')

i- ng- arr- (g)ard- arda -na -na
3- PST- AUG- (TR)- REDUP- go in -CONT -REM.PST

'They kept going in and out.' (Metcalfe 1975:33)

Reduplication in roots occasionally results in giving an intensive meaning to the root, such as in (5.21). Speakers translating such sentences usually add 'vigorously', 'very much', and the like.

(5.21) *inggalgalgamanana* (root: *-galgama-* 'move around')

I- ng- galg- algama -na -na
3 PST- REDUP- move about -CONT -REM.PST

'It kept moving about vigorously.' (Metcalfe 1975:30 (ex. 18))

(5.22) shows another function of reduplication, that is, pluractionality. Metcalfe (1975) describes this use of reduplication as specifying further information about the subject of the clause; however it can also be seen as illustrating pluractionality, where multiple subjects engage in the same action, rather than the same group of people doing the action multiple times (see also Conathan and Wood 2003).

(5.22) *Daagadaag ingirrini.*
REDUP-sleep 3-PST-AUG-do/say-PST
'They <u>all</u> slept.' (Metcalfe's gloss) (Metcalfe 1975:32: ex 21)

Another function of reduplication described by Metcalfe is where the reduplication specifies further information about the object. Again, however, this is probably a case of pluractionality. Note that such examples all seem to appear with plural subjects, which we might expect if we are to distinguish pluractionality from iteration.

(5.23) *Ingoorrooloooloorroonoo* *noorroo*
3PST-(TR)-REDUP-light-DIST.PST fire
'They lit a large fire.' (Metcalfe 1975:32: ex 22)

In Nyikina (Stokes 1982:231) reduplication is also apparently used with inchoative meanings, as in (5.24) below, although this function has not been recorded for Bardi, and the equivalent form would mean 'I'll keep on burning the meat'.

(5.24) *Nganamarramarra warli.* Nyikina
ngan- a- marra- marra warli -ø
1MIN- FUT- REDUP cook/burn meat -ABS
'I'm going to start cooking the meat.' (Stokes 1982:231)

5.4.2 Morphology of reduplication

In the following sections I describe the patterns of reduplication attested in the data.

5.4.2.1 Monosyllabic words and roots

There are three patterns to monosyllabic reduplication. They are illustrated in (5.25) below.[15]

(5.25)

base	reduplicant	gloss of reduplicant
garr	*garrgarr/garragarr*	rub (pv)
daab	*daabidaab*	climb (pv)
doob	*dooboodooboo*	flash (pv)
rarr	*rararr*	noise of something creeping through the bush

[15]Note that occasionally words other than inflecting verb roots have been used to illustrate patterns, where the patterns are the same. No monosyllabic inflecting verb roots admit reduplication in Bardi, although they do in some other Nyulnyulan languages, such as Nyikina (c.f. Stokes 1982:231).

The first pattern instantiates straightforward 'doubling' of the word, such as *garr* > *garrgarr* 'rub/keep on rubbing'. The second pattern results in trisyllabic outputs, illustrated by the words which have a link vowel between the base and the reduplicant. These words were probably historically disyllabic and the 'link vowel' (which is unpredictable) is just V_2. Recall from §3.5.3 that final vowel loss is regular in several dialects of Bardi. We would therefore reconstruct the following stages for *daab* 'climb' and its reduplicated form:

(5.26)

	unreduplicated	reduplicated
I	*daabi	*daabidaabi
II	daab	daabidaab

Some words have two patterns, either identity reduplication $\sigma > \sigma\ \sigma$, where the output is disyllabic, or a trisyllabic output with an epenthetic vowel between the base and the reduplicant. *Garr* 'rub', for example, can be reduplicated as *garrgarr* or as *garragarr*. Note, however, that the attested pattern does not conform to the sound changes that were described in Chapter 3. For example, we would expect lenition to apply in the case of the trisyllabic output *garragarr*; *garrarr* would be the phonologically regular outcome. In these cases the reduplicated form may have been remodeled to preserve transparency between base and reduplicant; alternatively, the trisyllabic alternant may post-date the intervocalic obstruent lenition rule.

There are some reduplicants, however, that do show the expected sound changes. The form *rararr*, from *rarr*, for example, shows the expected outcome from **rarr-rarr*.

5.4.2.2 Disyllabic roots

Disyllabic roots reduplicate fully if the first consonant of the word is not an obstruent, or if the word is of the shape CVCVC. The root *-marra-* 'cook', for example, reduplicates to *-marramarra-*, where it has the meaning 'tempt', and *bawin* 'cut' reduplicates to *bawinbawin*. These are illustrated below.

(5.27)

base	reduplicant	gloss of reduplicant
amboon	*amboonamboon*	together
bawin	*bawinbawin*	cut (pv)
birrjarr	*birrjarrbirrjarr*	flash of disturbed water (pv)
-linyji-	*-linyjilinyji-*	wait for
-marra-	*-marramarra-*	cook/tempt

Vowel-initial roots such as *+alma* 'head'[16] undergo vowel coalescence, as expected. Thus *alma-⟨alma⟩* regularly becomes *almalma* 'attentiveness'.

The final set of patterns is illustrated below:

(5.28)

base	reduplicant	gloss of reduplicant
-bardi-	*-bardardi-*	be covered
-gardi-	*-gardardi-*	enter/go in and out
-jarrboo-	*-jarrbarrboo-*	go back/send off
-janboo-	*-janbanboo-*	tread/straighten spears
-garnboo-	*-garnbarnboo-*	growl/imitate
-galga-	*-galgalga-*	move
-jala-	*-jalala-*	look/watch
-barnji-	*-barnjarnji-*	share/divide amongst a group
-jinbi-	*-jinbinbi-*	count/ think about someone
-loorroo-	*-looloorroo-*	burn/light fires

Where the initial consonant of the root is an obstruent other than *d*, the pattern appears to be infixal:

(5.29) a. *-bardi-* 'be covered'; reduplicant *-bardardi-* (as though *b-⟨ard⟩-ardi*)
b. *-janboo-* 'step on something'; reduplicant *-janbanboo-* (as though *j-⟨anb⟩-anboo*)

This pattern results from the sound change which lenited intervocalic **g*, **j* and **b* (see §3.5.1.3 above). That is, we can reconstruct the reduplicants as **bardi-bardi* and **janboo-janboo*. In the case of **bardi-bardi-*, lenition will regularly result in *bardardi*, the

[16]The unreduplicated form only appears with the inalienable possessive prefix, as in *nalma* 'head, his head'.

attested form. The same is true for **janboojanboo* > *janbanboo* and many of the other cases listed in (5.27) above.

In some cases, however, the result is not as expected. The reconstructed **gardigardi*, for example, should give *×gardiyardi*, not the attested *gardardi*. We have two possible solutions here. One is vowel lowering; **gardigardi* > **gardagardi*, in which case *gardardi* is predicted. There are not enough tokens to establish or rule out such a sound change.[17] The other (and not necessarily incompatible) solution is that a model for reduplication was established on the basis of the regular examples (with deletion of the obstruent), and that model extended analogically to other roots in which deletion of the obstruent would not normally have occurred.

5.4.2.3 Trisyllabic roots

Trisyllabic roots follow the same patterns in general, although the target of reduplication may be complicated by historical morpheme boundaries. This has produced a number of sub-patterns and which pattern a given root takes is not predictable from the modern grammar. The etymology of roots is discussed in §5.5 below, and reduplication patterns lend further support to the etymological claims made there. The table in (5.30) below gives illustrative forms.

[17]Such a change is implied by *gamarda* 'maternal grandmother', which in the Eastern Nyulnyulan languages is *gamirda*.

(5.30)

base	reduplicant	gloss of reduplicant
	2-syll base	
-goondoorra-	*-goondoondoorra-*	cross over
-joogooloo-	*-joogoogooloo-*	break
-ngoorribi-	*-ngoorringoorribi-*	chase
-jarrada-	*-jarrarrada-inyji-*	stretch one's legs
-jalgama-	*-jalgalgama-*	cut up *aarli* (dugong, fish or turtle meat)
-gorndorrma-	*-gorndorndorrma-*	hold something
-garndarra-	*-gandarndarra-*	sweep/roll (of waves)
-boondarra-	*-boondoondarra-*	chew
-bamarra-	*-bamamarra-*	shiver
-balama-	*-balalama-*	gather together
	historically 3-syll base	
-bilirri-	*-bilirrilirri-*	rock to and fro

For all the roots illustrated except *-bilirri-* 'rock to and fro', the reduplicant is disyllabic, the first two syllables of the root. The sound changes delineated above for disyllabic roots have also occurred here, and they have obscured the reduplicant in some cases. That is, obstruent deletion has occurred, producing a pattern which appears infixal when the initial consonant of the root is an obstruent. Compare the behavior of *-ngoorribi-* 'chase' and *-bamarra-* 'shiver'.

(5.31) a. *-ngoorribi-* > *-ngoorri-⟨ngoorri⟩-bi*

b. *-bamarra-* > *b-⟨ama⟩-ma-rra*, historically from **bama–⟨bama⟩-rra* (**aba* > **aa* > *a*)

Returning now to *-bilirri-* 'rock to and fro', on the basis of the reduplication pattern established above we would expect ×*-bililirri-*, not the attested *-bilirrilirri-*. I have no explanation for the difference in pattern, and why this root should have a trisyllabic base while the other roots show disyllabic reduplication. No other examples of root trisyllabic reduplication are attested in the corpus, although trisyllabic reduplication is attested in a few nominals.

5.5 Inflecting verb roots in the lexicon

The remainder of this chapter is devoted to a discussion of the number of inflecting verb roots and their etymology. In this section I discuss the number of roots in the lexicon and compare this to other Nyulnyulan languages, which also have closed classes of roots. §5.6 is a discussion of the etymology of verb roots; in §5.6 I propose that a syntactic change is largely responsible for the differing numbers of inflecting roots between Eastern and Western Nyulnyulan languages.

Bardi has approximately 250 verb roots in a lexicon of about 4000 recorded items.[18] The roots are not concentrated in any one semantic sphere. While there are simple, monosyllabic roots with broad semantics and which are in common use, there are also many roots that are recorded only in the old sources or which appear only rarely in the speech of the most fluent speakers. Many of these roots refer to traditional activities which are no longer carried out. Some have been replaced by loan words. For example, *-jalgalgama-* 'cut up *goorlil* (dugong or turtle meat)' is seldom used by speakers, who mostly prefer to say *gadigad injoona*, using English (or Kriol) 'cut'. Nyulnyul, the other well-described Western Nyulnyulan language, has about the same number of roots, perhaps more than have been recorded for Bardi. In both languages there are about 100 frequently used inflecting roots.

Among the Eastern languages, Nyikina has approximately 140 roots, and Yawuru has just 82.[19] That is, Nyikina has about two-thirds the number of Bardi's roots, and Yawuru has about one third. Note that this is not due to descriptive inadequacy, since both Nyikina and Yawuru are quite well recorded by Australian standards. The Yawuru dictionary, for

[18]This is probably a slight overestimate as some of these roots probably only occurred in Jawi, and not Bardi proper. It is difficult to get accurate information for most roots as to whether they are only in Jawi, borrowings from Jawi into Bardi, or common inheritance in both languages.

[19]This is the number reported in Hosokawa (1991); two or three additional roots appear in the Yawuru data recorded in Nekes and Worms (1953).

	number of roots	number of preverbs	recorded lexical items
Western Nyulnyulan			
Bardi	250	650	4000
Nyulnyul	250	c. 500	c. 3500
Eastern Nyulnyulan			
Yawuru	82	670	4500
Nyikina	140	c. 500	2000

Table 5.4: Verb root counts in Nyulnyulan languages

example, contains 4500 items. The overall number of verbal predicates in the dictionaries is roughly the same for each language. Table 5.4 gives the approximate numbers.[20]

This difference is quite striking, as the Nyulnyulan languages on the whole are rather similar grammatically. How can we explain this discrepancy in verb root numbers?

We have five possibilities when it comes to accounting for the different numbers of verb roots in Nyulnyulan languages. The first is chance — the single predicates are clearly losing out to complex predicate structures in all languages, and the discrepancy in the number of verb roots simply reflects the different rates at which the languages have changed. The Western Nyulnyulan languages would be considered conservative in this respect as having retained more roots. Indeed, (Pre-)Proto-Nyulnyulan may have had an open class of verb roots. One would then argue that the preverb-inflecting verb construction has largely replaced the simplex construction, and the replacement has gone further in Nyikina and Yawuru than in Bardi and Nyulnyul. This would be a plausible scenario.

The second possibility, which is related to the first, is that the number of roots could have been reduced due to language contact. The story would be that all the Nyulnyulan languages used to have the number of roots that Bardi and Nyulnyul have, and that speakers of the Eastern Nyulnyulan languages have reduced their inventory of inflecting verb roots

[20]It is difficult to obtain accurate counts for Nyulnyul because most of the data is in a combined file of Nekes and Worms (1953) and Bischofs (n.d.), where there are many items recorded twice and many items from other languages as headwords. Note that the total number of recorded lexical items is a gross underestimate of the total vocabularies of the languages concerned.

(in favor of complex predicates) under areal pressure. This is the solution favored by Dixon (2001, 2002) as a general means by which root inventories are decreased in favor of complex predicates. One might further make the observation that the languages surrounding the Eastern Nyulnyulan languages have very small inventories of verb roots, and favor the preverb-inflecting verb construction.

A further possibility is that the number of verb roots in Nyulnyulan languages is actually expanding, and Western Nyulnyulan languages have expanded their set of inflecting verbs faster than the Eastern Nyulnyulan languages have. This is, however, rather unlikely, as there are no productive ways of forming new roots synchronically in any of the languages, and indeed there is evidence that a number of roots have fallen out of use even in the last 25 years.[21]

A fourth possibility is that we are dealing with a language death phenomenon. All the languages are severely endangered, and it is possible that the lexicon of verb roots reflects the knowledge of the final speakers. We know from languages such as Tiwi (Lee 1987) that one outcome of severe language pressure is the reduction of complex verb inventories in favor of an analytical construction. This is somewhat unlikely in the case of Nyulnyulan, however, as almost all the languages have been recorded by several different people over at least forty years, and the sources do not show a large difference in the number of roots attested. Although all the languages are severely endangered (or already extinct) the last speakers are fully fluent.

The final possibility is that there was a productive method of root formation (such as compounding, incorporation, derivation or the like) which is no longer productive in either branch but which became unproductive at different times in different branches.

In order to try to tell which of these scenarios is correct, in the following sections I

[21] For example, there are inflecting roots recorded in Metcalfe (n.d.) that are no longer recognized by Bardi speakers.

examine the etymology of inflecting verb roots in Bardi (with reference as always to the other Nyulnyulan languages). The method is a combination of internal reconstruction of Bardi (in this case, the extrapolation of non-productive or fossilized possible patterns to reconstruct syntactic rules) and comparative reconstruction with other Nyulnyulan languages. In §5.6 I categorize Bardi inflecting verb roots by historical origin. We find that there are six types of roots, and the discrepancy between Eastern and Western Nyulnyulan languages is located predominantly in one type.

5.6 Composition of verb roots

The etymology of verb roots in Nyulnyulan languages may allow us to trace the origins of the root number anomalies.

We can divide the lexicon of Bardi roots into six classes, based on their etymology. The classes are given in (5.32) below.

(5.32) Types of Roots:

a. light verbs;
b. other simplex (underived) roots;
c. derived simplex roots (i.e. through reduplication, phonological change or through reflexive/reciprocal derivation);
d. historically complex roots: from incorporated nominal + light verb;
e. historically incorporated roots with ø-derivation;
f. the remainder; roots for which there is no etymology.

The basic division made here is between roots which are historically simplex (that is, are historically unanalyzable, types a-c) and those which are historically complex (that is, they historically contain more than a single morpheme, types d and e). Remember that this is a historical division, not a synchronic one. Synchronically, all roots are unanalyzably simplex.

5.6.1 Type a: Light verbs

The first subset of roots which are common to all Nyulnyulan languages and reconstructible to Proto-Nyulnyulan are the light verbs. They are mostly monosyllabic, all -CV- roots with broad semantics. Stokes (1996) reconstructs the light verb construction to Proto-Nyulnyulan. Table 5.5 below gives the light verbs reconstructed by me for Proto-Nyulnyulan (following Stokes 1996) with their Bardi cognates.[22]

Bardi form	gloss	reconstruction	'gloss'
-boo-	'spear, poke, pierce'	**-bu-*	'hit'
-ga-	'bring something, take'	**-ga-*	'take'
-(i)nya-	'catch, get, pick up'	**-nya-*	'pick up'
—		**-ngara-*	'become'
-joo- ~ *-di-*	'do, say'	**-ju-* ~ *-di-*	'do, say'
-ma-	'put'	**-ma-*	'put'
-ni-	'sit, be located'	**-ni- (~ -nga-)*	'be, sit, become'
-ar-	'spear lice'	**-ra-*	'spear'
-ø-	'give'	**-w(u)-*	'give'
-gal-	'walk, visit, move'	**-gal(a)-*	'move'
-jiidi-	'go'	PWN **-jiidi-*	'go'

Table 5.5: Proto-Nyulnyulan light verbs with Bardi reflexes

Note that all but two of the common light verbs in Bardi are also reconstructible back to Proto-Nyulnyulan (compare Table 5.5 with Table 5.2 on page 145 above). Bardi also has reflexes of all light verbs reconstructible *qua* light verbs with the exception of **-ngara-* 'become', which is only reconstructible to Proto-Eastern Nyulnyulan.

5.6.2 Type b: other simplex roots

The second category of roots are those simplex roots reconstructible to Proto-Nyulnyulan or to one of the intermediate proto-languages (Proto-Eastern Nyulnyulan or Proto-Western Nyulnyulan). With a few exceptions (e.g. PN **-jangguli-*) the roots are disyllabic. The full

[22]Full details of cognates are given in Appendix B.

forms are given in Appendix C.

Examples include *-jala-* 'see' (PN **-jala-*), *-joordoo-* 'dry up, tide ebbs' (PN **-jurdu-*) *-gama-* 'laugh' (PN **-gama-*), and *-laga-* 'understand, recognize' (PN **-langga-*).

None of the roots in this class seem to have cognate material in other word classes, except perhaps *-jarrmi-* 'stand up', where there is a preverb *jarr*, also meaning 'stand' (it takes *-ju-* 'do/say' as its light verb). On the whole this class of roots is unremarkable and needs little discussion.

Fifty-three roots of this type can be reconstructed to Proto-Nyulnyulan. Another fifteen can be reconstructed to Proto-Eastern Nyulnyulan only. This is the largest category of roots in Eastern Nyulnyulan languages.

5.6.3 Type c: Derived Simplex Roots

The type c roots, however, are more interesting from a diachronic point of view. They are historically simplex roots (i.e. type b roots above) but show fossilized derivational morphology. That is, the simplex form no longer exists in the language, but the derived form does. Approximately another 40 roots fall into this category.

There are three ways that roots can be derived from other roots in Nyulnyulan; with the applicative, with a reflexive prefix or reciprocal suffix (or circumfix) or by reduplication. Each of these will be discussed in turn.

5.6.3.1 Reduplication

Recall from §5.4 that many inflecting roots in Bardi can be reduplicated to give an intensive, iterative or distributive meaning. We find in Bardi several inflecting roots that contain reduplication, but where no unreduplicated form of the root exists.

(5.33) a. *-galalarrboo-* 'shake, winnow seed' ($^{\times}$*-galarrboo-*)
b. *-galgalgama-* 'move about' ($^{\times}$*-galgama-*)
c. *-jirrirray-* 'tease each other' ($^{\times}$*-jirray-*)

d. *-jooloolma-* 'turn over' (×*-joolma-*)

5.6.3.2 Reflexives/Reciprocals

Reflexive/reciprocal marking in Bardi is achieved by means of a circumfix *m- -inyji*, and is fairly productive. The prefix causes deletion of the initial consonant of obstruent-initial roots, as in (5.27) and (5.30) above (see also §3.5.1.3). Occasionally, we appear to find the suffix only.[23]

Some verbs appear to show a frozen portion of the prefix or suffixal component of the reflexive; see, for example, the Proto-Western Nyulnyulan **-burrkV-*, 'search for', reflected in Nyulnyul as *-burrk- [ma-borgan]*. Bardi has no verb root *-boorrgV-*, although the root is found in the Bardi verb *-morrginyji-* 'live together' (literally, 'people who look(ed) for each other').

A further example from Bardi is *-milbira-* 'echo', which is not felt to be related to the somewhat archaic verb *-jilbira-* 'sing a love song at someone', although the two roots clearly go back to the same root historically.

5.6.3.3 Applicatives

The other main type of derived roots are those that contain the applicative suffix *-ng*. Such pairs include *-jiidi-* 'go' and *-jiidi-ng-* 'touch', *-joo-* 'do/say' and *-joo-ng-* 'do with', and *-jooloo-* and *-jooloo-ng-* both 'collect'. There are several roots which appear vacuously with applicative marking (there is no alternation in meaning or argument structure); these include *-jooloo(-ng)-* 'collect' and *ngooloo(-ng)-* 'throw'. No roots to my knowledge appear only with applicative marking.

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[23]See McGregor (2001) for comments on the differences in meaning between the uses of the circumfix versus the suffix only. In Bardi the main difference is that the use of the suffix without the prefixal component forces a reciprocal reading (e.g. *-ngoorrib-inyji-* 'chase each other') while the circumflex admits either a reflexive or a reciprocal reading.

5.6.3.4 Other

There are a few cases where there are doublets produced by the sound change CVNCV > CVCV in Bardi.[24]. One good case is *-bar(n)di-*, where *-bardi-* is stative/intransitive 'be covered' (e.g., 'The child is covered in sores') and *-barndi-* is the transitive 'cover something'.[25]

I suspect that there are one or two forms that also involve dialect borrowing, such as the variable *-rrika* ~ *rrka* between Nyikina and Yawuru. Such forms could also be mistranscriptions, as vowels in that environment tend to be reduced and rrC clusters tend to have an epenthetic schwa.

Another case where dialect borrowing is responsible for multiple forms is the root meaning 'kill by hitting', variously *-ngajim-*, *-ngayidima-* and *-(nga)rrjadama-*. The latter is the Jawi form; the expected Bardi form is *ngajidima* (although intervocalic *d* is so rare its lenition treatments are not known, so perhaps *-ngajima-* is also expected).

The same explanation is probably responsible for other doublets, such as *-jurrali-* 'run away' and *-jarrala-* 'run'.

5.6.4 Type d: Complex roots

It is when we come to roots that I have labeled 'type d' that we find the Eastern and Western Nyulnyulan languages differentiated. Quite a large number of roots, particularly in Western Nyulnyulan languages, appear to be comprised historically of a verb (particularly light verbs including *-ga-* 'carry', *-ma-* 'put', and *-(i)nya-* 'catch') and an 'incorporated' nominal element. In this section I give a summary of the roots that can be demonstrated to show this structure (by the fact that both components can be identified and the semantics are plausible or are attested from complex predicate constructions in the modern languages)

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[24]For example, *-laga-* 'recognize' from **-langka-*, *-jibi-* 'die' from **-jimbi-* and so on. See further §3.3.3

[25]Note that most ambitransitive verbs do not behave this way; this is an isolated example.

or can be adduced to show this structure with some degree of probability. The schema is given in (5.34) below.[26]

(5.34) Type d Verbal Root = Nominal + Monosyllabic Root (light verb)

The light verbs that are attested as part of complex roots are given in (5.35) below.

(5.35)

*-*ga*-	'carry'
*-*bu*-	'spear, poke'
*-*ma*-	'put'
*-*ra*-	'spear'
*-*nya*-	'catch'
*-*ni*-	'sit'

The following examples give some example forms. Full cognate sets appear in Appendix D. This is a selection of examples: over 80 roots in Bardi fit this pattern. The vast majority of these roots are in Western Nyulnyulan only (i.e., Bardi and Nyulnyul). There are also cases where the root structure appears similar (that is, identifiable verb and incorporated element), but the element cannot be identified. Given the size of recorded lexica for Nyulnyulan languages (compared to, for example, the average dictionary of an ancient Indo-European language) it is not surprising that potential elements are hard to identify.

In the following tables, some representative forms are given. I show some doubtful forms as well as the best cases, and I give examples from as many languages as possible (bearing in mind that the most copious examples come from the Western Nyulnyulan languages Bardi and Nyulnyul.) The tables are set up as follows: The modern form is given in the left-hand

[26] A note is needed on my conventions for glossing monosyllabic roots. While these roots can be glossed, in many cases, with an English word or phrase, this is somewhat misleading. When used as verb classifiers (I don't like the term but there's a sub-system of classification in the languages) they tend to have very abstract meanings. The root *-ar-*, for example, on its own means 'to spear lice' in Bardi, but when used as an inflecting verb it is used for actions that occur around a point, such as sewing, turning round, and drilling holes. The mismatch is because the semantics of the verb have become more specific when it is not used in the preverb+inflecting verb construction. However, this mismatch creates problems when trying to gloss the roots, as there are often a large number of quite specific, fairly different meanings that are all related in a very general way.

column, along with its gloss. I then give the element I propose forms part of the compound. For example, for Bardi *-ganyboo-* 'vomit', I propose a connection between the element *gany* in *-ganyboo-* and the reconstructed noun *gany* mucus. In this case there are no other Bardi cognates of this word, but it does appear in other languages, including Yawuru, where the word means 'eye discharge'. The remaining tables are set up in the same way.

Compounds of **-boo-* 'poke, spear'

root	gloss	Incorp Element	additional comment
Bardi			
-galalarrboo-	shake	c.f. *galal* 'restless'	
-ganyboo-	vomit	**gany* 'mucus'	c.f. Yawuru *gany* 'eye discharge'.
-garnboo-	growl someone		c.f. Yaw. *karn* 'awn' (*karn* an initial element in many 'spikey' compounds).
-jarrbarrboo-	send off	*jarrbard* 'aloft'	
-jirirrboo-	spear lightly		
Nyulnyul			
-juRub-	fart		c.f. Bardi *jurur* 'wind' + many more roots ending in +b which are yet to be analyzed.
Nyikina			
-judubu-	throw in		c.f. -judu- 'enter' + -bu- 'throw'
Yawuru			
-mirdibi-	run away	PN **mirdi* 'knee'	
-dyidibu-	block a fight		

Table 5.6: Compounds of **-boo-* 'poke, spear'

Compounds of *-ma- 'put'			
root	gloss	Incorp Element	additional comment
Bardi			
-balama-	mix up	NN *balbal* 'flapping'	
-gordom(a)-	change s.th.	≅ *-gorndarra-* 'cross over'	related by sound change (c.f. §3.3.3)
-lirrmi-	call out	PN *-lirr*	*lirr* also used as preverb in Nyikina for tell someone.
-loonggooma-	chew		for *loonggoo* c.f. Yawuru *loonggooloonggoo* 'presentiment' (such feelings are often associated with body parts)
-bandarrma-	stop s.o. (*ostanovit'*)		no etymology of the first part, but c.f. the other 'stop' root.
-gondorrma-	stop s.o. (*perestat'*)		*goondoorr* 'get sick and die'
-bandarndama-	stagger		may reflect the Nyulnyul root *-dam-* which is otherwise unattested in Bardi.
-ngankama-	farewell s.o.	*nganka* 'speech'	
Nyulnyul			
-karrjama-	sew	*karrja*	sharp
Nyikina			
-balunaluma-	blame		
Yawuru			
-kundyama- (I)	miscarry	Nyikina *kunyju* 'secret'	
Proto-EN			
**-wunduma-*	gather something		
Proto-WN			
**-bunkuma-*	swell up		
**-ngulmV-*	frighten		
**-boolmV-*	smell		c.f. Ba. *boolbool* blister, swelling; c.f. also *boolman* rotten
Proto-NN			
**-barma-*	insult		
**-bilima-*	steal, take away		Bardi *biili* angry

Table 5.7: Compounds of *-ma- 'put'

Compounds of *-ga- 'carry'			
root	gloss	Incorp Element	additional comment
Bardi			
-nganka-	speak	*ngan*	reduplicated in complex predicate *nganngan -ma-* 'have a conversation'. (or c.f. *-ngankama-* above; could be incorporation of *-nganka-* with -ø- root.
-lamanka-	listen		
Nyulnyul			
-barralnk- [mabaralnkan]	hiccough		
-burink- [maburingan]	be sad		
Nyikina			
-jarrka- (II)	stand over	(Ba.) *jarr*	stand
-jarrngka- (I)	lead		
Proto-WN			
-barnka-	finish		c.f. Bardi *gala barnkarda* 'it's finished'
-juluka-	wash		
-ngalka-	cry		
Proto-NN			
-minyga-	choke		
-jarikV-	fear		
-buduka-	sulky (be)		

Table 5.8: Compounds of *-ga- 'carry'

Compounds of *-(i)nya- 'catch, pick up'			
root	gloss	Incorp Element	additional comment
Bardi			
-barrinya-	fall	NN *barr -ju-* pull	(in NN in unredp form, in Bardi only as *barrbarr*)
-jarnbalinyi-	knead dough	**janbal*	Bardi *janbal* 'round up'
-bardanyi-	be difficult		
Nyikina			
-balubalunya-	belong in trees	*balu*	incorporates reduplicated - *balu* 'tree'
Proto-NN			
-gardinya-	obstruct	**gard-*	c.f. *gardin* 'cave'

Table 5.9: Compounds of *-(i)nya- 'catch, pick up'

Compounds of other roots			
root	gloss	Incorp Element	additional comment
-joo- ∼ **-ji-** ∼ **-di-** 'do, say'			
Bardi			
-barrjadi-	distrust	*barrja* 'spit'	
-ngorridi-	rub something on		
-boolbooljі-	get blisters	*bulbul*	blisters
-muru- 'pour'	(∼ *-miri-*)		
Bardi			
-ganmir-	urinate on		
-marra- 'cook'			
Bardi			
-ngoyimarra-	cook in bush oven		
-ra- 'spear'			
Bardi			
-moorrar-	smell something	*moorroo*	'flower'
-jilbira-	sing s.o.	*jilba*	
Proto-EN			
-kunbira-	urinate	**kuunbi*	c.f. *guunbi* 'cold sick' in Bardi; word reconstructible in meaning of urine or other bodily fluid.
Proto-NN?			
-galbira-	sing s.o.		Bardi *-galbV-*
-ni- 'sit, be'			
Nyulnyul			
-juljulna-	be insatiable		
-jala- 'see'			
Proto-NN			
-minyjala-	wait for		
-ø-?			
Bardi			
-ngoolarra-	make mistake	*ngoolarr*	c.f. *ngoolarr -ma-* cheat s.o. out of s.th., fail to give s.o. s.th.

Table 5.10: Compounds of other roots

In a few cases we can argue for the same root structure although we cannot trace the incorporated element. In Bardi there are two roots, *-jangalma-* 'choose' and *-jangalga-* 'plead with', both of which appear to contain *jangal* and a light verb.

5.6.5 Type e

These roots bear similarities to words in other classes, but they do not conform to the root structure outlined in (5.5.6.4) above.

root	gloss	related noun	gloss	comment
		Bardi		
-boolngarra-	trail/drag s.th. behind	*boolngoorroo*	in the middle	
-bidi-	throw one's line	*bidiny*	mainland fish poison	Proto-Western Nyulnyulan **-bidi-* fall in
-(ga)landa-	sit down	*galandan*	settled person	
-galboo-	dig something out	*galbajoon*	witchetty grub	**-joon* is a suffix that means 'appropriate for, belonging to', e.g. *gaarrayoon joorroo* 'shark' (literally "sea-belonging-to 'dangerous critter'")
-goodala-	spin	*goodil*	turn	
-jalgi-	hide	*jalgin*	wait concealed for game	
-jinbinbi-	think of s.th/s.o	*jinbin*	PN	c.f. *jinbinjin* 'Clever, wise' c.f. also PN **-jinbi-* 'to count'
-jimbi-	die	*jiwarra*	corpse	
-linygar- ~ *-linygi-*	taste	*linygorr*	bitter	
-rinyirinyi-	show, reveal s.th.	*rinyi*	good idea, wisdom	
		Proto-Eastern Nyulnyulan		
-bukarri-	dream	*bukarri*	the dreamtime	Western Kimb. Wanderwort.

Table 5.11: Roots of type e

There are some other reconstructions where one proto-language seems to have a root increment on the reconstruction of the other one.

Language	form	gloss	comment
Proto-NN	*-*bang(-)gi-*	claim	Bardi, -*banggi*-, c.f. Yawuru *bang-ngara* go hunting.
Proto-NN	*-*bardi-(X)*	full (become full)	Bardi -*bardi*-, cover; Proto-E *-*bardika*-
Proto-NN	*-*guda-X*	get lost/lose something	Bardi -*gudala*-, Nyikina -*kuda*-, obscure tracks
Proto-W	*-*ngaj-X*	kill by hitting	Bardi -*ngajim*-, Nyulnyul -*ngaj*-, to importune
Proto-W	*-*bangar-inyji*	praise (self); boast	

Table 5.12: Reconstructions with root increments

5.6.6 Remainder

The remaining roots are attested only in Bardi and have no plausible etymology. There are also a large number of roots in Nyulnyul with the structure X + light verb which have cognate material in Bardi but are not inflecting roots in the other Western Nyulnyulan languages. They are omitted here for space reasons.

5.7 Reconstructing morphosyntax

So, having surveyed the etymologies of verb roots in the previous section, we are left with some interesting discrepancies between Eastern and Western Nyulnyulan. The clearest of these is the fact that the majority of historically complex roots appear in Western Nyulnyulan. The number of such roots in Eastern Nyulnyulan languages is rather small, although they are by no means absent. This type of root accounts for most of the difference in root numbers in the two branches. Thus this section focuses on the historically complex roots (type d).

There are a few general tendencies to note. Firstly, note that in many cases the 'incorporated' element is a body part or product, such as *barrja* 'spit' in -*barrjadi*- 'distrust'. Secondly, note that the function of the incorporated element is an instrument or object or some kind, as in Yawuru -*mirdibi*- 'run' (plausibly 'hit with leg') or Nyikina -*balubalunya*-

'live in trees', with *balubalu* 'tree-REDUP' as an adverb.

How can we account for the discrepancy? In order to do this, we need to consider the formation of the complex roots themselves to see if that provides us with a clue. There are three plausible paths to the formation of these complex roots. Firstly, they could be old lexical compounds, such as English *babysit*. Secondly, they could be fused complex predicates. Thirdly, they could reflect noun incorporation. Each of these analyses will be considered in turn.

5.7.1 Lexical compounding

Type d roots could be historically fused lexical compounds of the structure nominal (that is, noun or adjective) + verb. If that were the case, however, we would have difficulty explaining why so many of the forms are comprised of a body part/product + light verb. We would not on a priori grounds expect compounding to target this word class.

A further problem is the discrepancy between Eastern Nyulnyulan and Western Nyulnyulan roots. Given the number of such compounds in Western Nyulnyulan, and the diversity between Nyulnyul and Bardi in inflecting roots, we would need to argue that the process was still at least semi-productive in Proto-Western Nyulnyulan. That is compound formation must post-date the breakup of the Nyulnyulan family. If that is the case, however, why are there so few in Eastern Nyulnyulan languages? We would have to assume that speakers decided to stop using only the verb roots that were historically compounds if the compounding solution is right.

5.7.2 Fused complex predicates

The univerbation of complex predicates is proposed by Dixon (2001) as a general mechanism (apart from language contact) in which languages with closed verb root inventories increase or decrease their number of verb roots. It is used by him to account for Warlpiri (Nash 1986),

Gooniyandi (McGregor 1990b), and several other Australian languages.[27] The scenario utilizes the fact that preverbs and inflecting verbs are closely bound, both phonologically and syntactically. The assumption is that over time the preverb and inflecting verb are univerbated and cease to be analyzed by speakers as having component parts.

In favor of this view for Nyulnyulan is that the percentages of fossilized incorporated roots reconstructed with particular inflecting roots follows a similar distribution to the percentages of light verbs that occur with preverbs in the modern languages, apart from roots with **-ju-* ~ *-di-*. That is, there are many fossilized incorporated roots reconstructed with *-ma-* 'put' and *-ka-* 'carry', then *-nya-* 'catch', *-ra-* 'spear' and *-bu-* 'poke', and bringing up the rear *-ni-* 'be'.[28]

There are also several pieces of indirect evidence against this, however. The first is that the most common light verb, **-ju-* 'do, say', is hardly represented in the reconstructions. That is odd if type d verb roots are fossilized complex predicates, since reflexes of **-ju-* are used as the most common light verb in all Nyulnyulan languages and verbs meaning 'do' are very common as light verbs cross-linguistically (compare, for example, Japanese *suru* and Turkish *etmek*). Secondly, there are verb roots which can also be reconstructed with incorporated nominals which do not normally form complex predicates, such as **-jala-* 'see' and **-minyjala-* 'wait for'.[29] Another indirect piece of evidence against the fused complex predicate argument is the semantics of preverb + light verb constructions; in the modern Nyulnyulan languages the relationships between preverbs and their light verbs

[27]Note that David Nash (pers. comm., 2002) doubts that the Warlpiri data fit this pattern for a number of reasons. The Gooniyandi data are thoroughly examined in McGregor (2002) and do fit the proposed pattern.

[28]Note that **-wu-* is not reconstructed with any incorporated nouns, but it would be lost by sound change in most cases, so we would not be able to recover the phonological material in many languages.

[29]*-jala-* does act as a light verb in Bardi *boor -jala-* and *garrgooy -jala-* 'stare' but it is not a light verb in other Nyulnyulan languages and these are the only preverbs *-jala-* appears with.

are very complex; in contrast, almost all the reconstructed complex roots are of the form object/instrument + verb.

More importantly, however, it is difficult to argue for a fused complex predicate analysis because for all times that we can reconstruct, inflectional prefix material intervenes between the preverb and the light verb root. Recall the template for Bardi predicate structure given in (5.1) above, repeated below as (5.36):

(5.36) (Preverb) Prefixes-ROOT-Suffixes=Clitics

Other Nyulnyulan languages have the same template. There are no null prefix morphemes which could serve as the basis of analogy. Imperatives have the most reduced prefixation but even they have overt exponence; the forms are *an(a)-* (< **wa-na-*) for bivalent roots and *nga-* for monovalent ones, in all Nyulnyulan languages. Third person prefixes are also overt (*i-*, *u-* and *wa-*).

A possible alternative to avoid this problem is that in the pre-Proto-Nyulnyulan period the prefix bundle was not prefixed to the verb root but behaved more as the Wackernagel agreement complex in languages like Warlpiri and Walmajarri. Many Kimberley Pama-Nyungan languages do not have verbal agreement morphology. Rather, they have a clitic complex which attaches to the end of the first word of the clause and fulfills the role of agreement in marking subject, object and indirect object relations. An example from Warlpiri is given below in (5.37):[30]

(5.37) Warlpiri

Kuja =rnalu =jana yapa purda -nyangu nyurnu ...
COMP =1PL.S =3PL.O person:ABS hear -pst dead:ABS

'When we heard (that) the people (were) dead ...'

[30]Note that I am using the term 'agreement' loosely; I make no claim here about whether the affixes are agreement or are actually the arguments of the verb (compare Jelinek 1984).

In this example *=jana* is the third person plural object clitic and agrees with *yapa* 'person/people'. The verb itself (*purdanyangu* 'heard') does not carry agreement inflection.

If we argued that Proto-Nyulnyulan 'prefixes' were a Wackernagel clitic complex in Pre-Proto-Nyulnyulan, we would be able to create situations where the preverb and the inflecting verb were directly adjacent. For example, if we had a sentence with the order

Subject = Clitic.Complex Preverb Light.Verb

the light verb and inflecting verb would be directly adjacent, without intervening inflectional material.

However, in adopting this solution we also confront the same problem as we had in the compounding solution, that is, a problem with relative chronology or with etymologization. We would have to assume one of two possibilities. Either the preverb + light verb were univerbated in Western Nyulnyulan only, and the prefix chunk was affixed to the inflecting verb separately in Western Nyulnyulan and Eastern Nyulnyulan, or that the changes happened in Proto-Nyulnyulan or earlier and Eastern Nyulnyulan languages lost most of their historically complex roots. Both solutions are undesirable.

5.7.3 Noun incorporation

The only other plausible solution is the fossilization of noun incorporation. An immediate point in favor of this solution is that the reconstructed incorporated element + verb conform to Mithun's Types I and II noun incorporation — that is, objects or instruments. This is also the most common type of noun incorporation (Mithun 1984:848,859). The incorporated elements are also mostly body parts and products, which are also very common candidates for incorporation. Moreover, a number of other North Australian non-Pama-Nyungan languages show noun incorporation, for example Mayali (Evans 1997) and Nunggubuyu (Heath

1984), so a proposal for noun incorporation does not come in an area where noun incorporation is otherwise unknown.

We might also note that valency values support an analysis of noun incorporation. For example, the Bardi root *-ganyboo-* 'vomit' is monovalent (c.f. *ngangganyboogal* 'I just vomited', not ×*nganangganyboogal*). The verb *-boo-* 'poke, spear', however, is normally bivalent. However, if *gany* is an incorporated object, we would expect the overall predicate to be monovalent (compare the behavior of other languages with productive noun incorporation, in for example Gerdts and Hukari 2003). The same argument applies to many other hypothesized roots, such as Yawuru *-mirdibi-* 'run' (leg-throw) and Bardi *-boolboolji-* 'get blisters (blister-do). However, we would not necessarily expect the resulting incorporated structure to be monovalent where an instrument has been incorporated, and again the prediction is largely supported, by, for example, Bardi *-garnboo-* 'growl someone' (spike-poke) and Nyulnyul *-karrjama-* 'sew' (sharp-put).

Furthermore, if we treat noun incorporation as a syntactic derivation we can capture the differences between Eastern Nyulnyulan and Western Nyulnyulan languages. The assumption would be that Proto-Nyulnyulan allowed productive or semi-productive incorporation (at least of body parts and products). After the split of Eastern Nyulnyulan and Western Nyulnyulan the languages independently lost noun incorporation as a syntactic construction. Eastern Nyulnyulan languages lost noun incorporation by stopping the syntactic process — that is, they stopped incorporating and no longer used that syntactic rule. When Western Nyulnyulan languages lost noun incorporation, however, many formerly incorporated nouns were fossilized. Perhaps noun incorporation was already only partially productive and these roots were not felt to contain incorporated nouns. This sequence is schematized in (5.38) below:

(5.38) Hypothesized stages of NI loss:

Stage I	Proto-Nyulnyulan	(semi?)-productive incorporation X Prefix-Verb-Suffix ~ Prefix-X-Verb-Suffix
Stage II	Proto-Eastern Nyulnyulan	X Prefix-Verb-Suffix, *Prefix-X-Verb-Suffix
	Proto-Western Nyulnyulan	X Prefix-Verb-Suffix ~ Prefix-X-Verb-Suffix
Stage III	Western Nyulnyulan	X Prefix-Verb-Suffix, Prefix-Yverb-Suffix
	Eastern Nyulnyulan	X Prefix-Verb-Suffix

We have several parallels for the loss of noun incorporation in other languages. In Cherokee, (Andrew Garrett, Marianne Mithun, pers. comm.; King 1978) formerly incorporated nouns have been reanalyzed as classifiers, where the form of the classifier is cognate with incorporable elements in Northern Iroquoian languages. In Chukchi (Mithun 1984:880) it is reported that younger people no longer use incorporation, especially in translations from Russian. Although incorporation is still present in the speech of older Chukchi, younger people's speech no longer contains it. The younger speakers have simply stopped using that grammatical construction. Finally, in Chocktaw (Mithun 1984:878) there are some opaque verb roots which show relics of incorporated nouns. For example, the root *noktaka:li* 'to have something stuck in the throat' is historically a compound of *nok-* 'throat' and *taka:li* 'to hang, stick').

In my scenario for Nyulnyulan, then, Eastern Nyulnyulan would parallel the situation we see for Chukchi, where the possibility for incorporation is largely lost from the language. The parallel for Western Nyulnyulan is Chocktaw, where incorporation survives as a relic in opaque verb roots but not as a productive process.

5.8 Summary and conclusions

This chapter surveyed root structure in Bardi, both historically and synchronically. We saw that synchronically verb roots can be classified by their valency, and this determines

prefixal forms and largely determines agreement patterns. Reduplication of verb roots appears infixal; however we saw that this is a consequence of a regular sound change where intervocalic obstruents were deleted. Finally, we reviewed etymological sources for verb roots and hypothesized the loss of productive noun incorporation between Proto-Nyulnyulan and the modern languages. The loss of noun incorporation is the most plausible way to account for the differing numbers of verb roots between Eastern Nyulnyulan and Western Nyulnyulan languages.

Chapter 6

Agreement Morphology

6.1 Introduction

In this chapter I describe the agreement categories marked on Bardi simple predicates and attempt to reconstruct the situation for Proto-Nyulnyulan. I am interested in both categories and actual forms, since both differ between the branches of Nyulnyulan languages. Despite considerable surface disparities between the Eastern and Western branches of Nyulnyulan, there is a core of similar affix material which can be used to reconstruct the situation of Proto-Nyulnyulan. An important finding to note is that sometimes agreement material in one Nyulnyulan language is cognate with other types of prefix morphology in the other languages; for example in Warrwa, the exponent of third person singular present agreement is, historically, the tense inflection. The segmentation and resegmentation of complex paradigms over time is thus of interest in this research.

In all Nyulnyulan languages there are three agreement slots. Inflecting verbs in Nyulnyulan languages agree for subject of the verb, whether intransitive or transitive. Transitive verbs also agree for the direct object. 'Oblique' agreement, the third type, covers a variety of functions and ranges from indirect objects to (optionally) possessors and recipients. Subject agreement is prefixal and is bound with tense marking, while oblique and direct object

agreement is cliticized to the end of the verb stem. Quantificational suffixes may refer to the number of the subject. In Eastern Nyulnyulan this is especially common with the unit augment marker. A curious (and unique) feature of Bardi object agreement is its marking of personal objects for their status as 'topic'. Such marking is not found with this meaning in other Nyulnyulan languages, although it has its origins in pronominal cliticization and relative clause marking.

In §6.2–§6.4 I provide a discussion of forms and reconstructions of subject, direct object and oblique agreement. Discussion is cast primarily in terms of forms; thus we examine the Bardi agreement markers, their proto-Nyulnyulan predecessors and the changes that have taken place in the daughter languages. In §6.5 I discuss gerund formation.

6.2 Subject agreement

Recall from §4.2 that all Nyulnyulan inflecting verbs have a prefix chunk, which gives information about the subject person and number, as well as marking tense, mood and transitivity.

It is important to note for Nyulnyulan that subject agreement is agreement for the *subject* of the clause. Even though case marking is ergative/absolutive, agreement follows the more familiar pattern of 'subject' versus 'object'.

(6.1) a. *Ngayoo ngalirrmin.* (Intransitive)

Ngayoo nga- lirrmi -n
1MIN 1- call out CONT

'I'm calling out.'

b. *Ngayoonim nganamboonirr.* (Transitive)

Ngayoo -nim nga- na- m- boo -n =irr
1MIN -ERG 1- TR- PST- spear -REM.PST =3AUG.DO

'I was spearing them.'

We see from (6.1) that the case split does not mirror the usual agreement split. Case

marking is ergative/absolutive (and marks transitive and intransitive subjects differently), agreement is for the subject of the clause and treats transitive and intransitive subjects the same. From this we might conclude that Bardi is morphologically ergative, but not syntactically ergative (following, for example, Dixon 1972 and Manning 1996).

There are other reasons for viewing agreement and case marking as linked but governed by slightly different factors. One reason is that there are cases where the ergative case-marked nominal is not cross-referenced by the subject:

(6.2) *Aalganim ngangamarrana.*
Aalga -nim nga- nga- marra -na
sun -ERG 1- PST- cook -REM.PST
'I got sun-burnt.'

The relationship between case marking and agreement is not the focus of this study, and while some passing references will be made (particularly in §8.2 and §9.5, which deals with the syntax of preverbs), the topic will not be discussed in detail.

This pattern of marking contrasts with some other languages with ergative case marking and agreement, such as Abkhaz and other Caucasian languages, where verbal agreement is with the absolutive argument. Nyulnyulan languages are also different from some other non-Pama-Nyungan languages, including Worrorra, where agreement patterns like ergative/absolutive marking and there is no case marking.

6.2.1 Bardi

The person marking system was outlined for free pronouns in §2.5.1 above. The agreement system works on similar principles.

Just as in the free pronouns, the forms are organized according a system of 'minimal' and 'augment' numbers. The minimal numbers are first, second and third person singular and speaker-hearer dyad. The augment numbers mark more than one other participant.

Table 6.1 gives the abbreviations, their expansion and the English equivalent.

Abbreviation		ENGLISH EQUIVALENT
1MIN	first person minimal	I
1+2MIN	first and second person minimal	YOU (SG) AND I
2MIN	second person minimal	YOU (SG)
3MIN	third person minimal	HE/SHE/IT
1AUG	first person augment	WE (BUT NOT YOU)
1+2AUG	first and second person augment	US AND YOU
2AUG	second person augment	YOU (PL)
3AUG	third person augment	THEM

Table 6.1: Bardi pronominal system

The forms of the Bardi subject agreement prefixes are given in Table 6.2 below.

	Form		tense	gloss
Minimal	*nga-*		all	1min
	mi-		present, past	2min
	a-/nga-		future, irrealis, imperative	
	i-		present, past	3min
	oo-		future, irrealis	
	a-		all	1+2min
Augment	*a-*	*arr-*	all	1aug
	goo-	*arr-*	all	2aug
	i-	*arr-*	present, past	3aug
	oo-	*arr-*	future, irrealis	

Table 6.2: Bardi agreement prefixes

In the augmented forms, the tense/mood prefix intervenes between the person marking and the augment marker. Some examples are given below (using the third person augmented *i/oo- -[a]rr*). The tense/mood marker is underlined. The person and augment markers are in bold.

(6.3) ***i-[a]rr***-*marra-n* present they are cooking
i-<u>*ng*</u>-***arr***-*a-marra-na* past they were cooking
oo-<u>*ngg*</u>-***arr***-*a-marr[a]-a* future they will be cooking
oo-<u>*l*</u>-***arr***-*a-marr[a]-a* irrealis they might be cooking

Second minimal and third person subject agreement prefixes vary for tense and mood.

In the future and irrealis the third person marker is *oo-* /u-/, whereas in the present and past it is *i-*. The future and imperative (but not irrealis) of the second person is *a-* or *nga-*, whereas we find *mi-* in the other tenses/moods. The second person future/imperative also shows variation for root valency — it is *nga-* on monovalent verbs and *a-* on bivalent verbs.

In Bardi there are also quantificational suffixal clitics (mostly *=nid* or *=nidi*) which refer to the number of the subject. (6.4) and (6.5) provide examples. Both verbs are monovalent, so *=nid*, although apparently in the direct object position, cannot be marking a direct object.

(6.4) *Angalandnid* *mayoon.*
1-PST-[AUG]-sit down-QUANT food-SOURCE
'We sat down to eat.' (Text: Aklif's notes to DW:IWA/p. 117)

(6.5) *Barnanggarra=gij irralgalnidi* *bigibigi ngoorrngoolondarr.*
now=VERY 3-AUG-be-REC.PST-QUANT pigs mangrove-LOC$_2$
'Just now all the pigs were in the mangroves.' (Metcalfe 1975:4: ex 24)

I suggest that the source of this marking is the tendency to split quantifiers and their head nouns, and to place the quantifier immediately following the verb, as in (6.6):

(6.6) *Aarli* *nganjooloongij* *niimana.*
fish-ABS 1MIN-TR-[PST]-collect-MID.PERF many
'I collected many fish.'

It is probable that *=nid(i)* originated in this type of construction and was cliticized to the verb. This is probably also the source of equivalent subject number-marking structures in Warrwa, Nyikina and Yawuru (for which see further below).

Finally, a note is warranted on number agreement. In modern Bardi, all notionally plural subjects must exhibit plural agreement. So, a sentence such as 'many people saw a crocodile' will have plural agreement, as in (6.7); singular agreement is ungrammatical, as illustrated in (6.8):

(6.7) *Niimananim ambooriny linygoorr ingarralana.*
niimana-niin *i-ng-arr-a-[j]ala-na*
many-ERG people crocodile 3-PST-AUG-TR-see-REM.PST
'Many people saw a/the crocodile.'

(6.8) **Niimananim ambooriny linygoorr injalana.*
3[MIN]-TR-see-REM.PST

In older Bardi (as attested in the Laves texts, for example), it seems that singular agreement was possible with enumerated subjects, and occasionally with those marked by *niimana* 'many'. An example is given in (6.9) below:

(6.9) *Guyarra agal guyarra agal guyarra agal guyarra galgarriny*
2 and 2 and 2 and 2 swim breast stroke
inyjalgun.
3min-pst-fall-cont.
'Eight of them jumped swimming into the water.' (Laves n.d.:103/13)

This is also the case in Yawuru, where subjects marked with *manydya* 'many' can take singular agreement, and in Nyikina:

(6.10) Yawuru
Manydya imbulanda.
many 3(min)-EN-come-PERF
'Many people came.' (Hosokawa 1991:§4.2.1.5, ex 15)

(6.11) Nyikina
Kudyarra-ni niyambalu ngadyanu-ni *yin-ka-ny-ngayu.*
two-ERG foot 1MIN.POSS'R-ERG 3MIN-carry-PST-1MIN.DO
'My two feet took me.' (Stokes 1982:285)

6.2.2 Reconstruction

Tables 6.3 and 6.4 on pages 184–185 give the full forms of the prefix chunks, including mono/bi-valent forms, for all tenses and all languages. Table 6.3 gives forms for monovalent

verbs, and Table 6.4 for bivalent verbs. Root lenition is not shown here.[1] Reconstructions are summarized in the right-most column. Note that irrealis future reconstructions apply only to Eastern Nyulnyulan, while present/past reconstructions apply to both subgroups. The *N* in the past forms represents an underlying velar nasal which assimilates to the following stop.

6.2.3 General comments on the data

Discussion will focus on the changes in Bardi (and Western Nyulnyulan), although data from all languages are given and comments on other languages are warranted. It is also important to note that despite the complexity of Tables 6.3 and 6.4 they still abstract away from some irregularities. For example, in Bardi the *j*-subset transitive prefixes (that is, used on stems beginning with *j*) are not of the form *inaN*-, but rather *in*- (so, *injalan* 'he saw it', not ×*inanyjalan*, which would be expected on the model of the other obstruent-initial paradigms (c.f. *inimbidin* 'he threw it').

6.2.4 Second person forms

Some second person prefix forms in Nyikina stand out as different from the other Nyulnyulan languages. Nyikina second person minimal forms in *nyi*- appear in intransitive paradigms. Some example paradigms are given in (6.12). The corresponding transitive forms are regular.

(6.12)

Tense	Transitive	Intransitive
Non-future realis	*minkama*	*nyingkama*
Future realis	*walakama*	*nyingakama*
Non-future irrealis	*milakama*	*nyilakama*
Future irrealis	*minarrakama*	*nyiraakama*

The forms in *nyi*- are probably from the nominal possessive paradigms, where this is the

[1]The historical details of root lenition in Bardi are given in §3.5.1.1 beginning on page 89. The other language to show systematic lenition in verb roots is Warrwa. Jabirr-Jabirr data are from Stokes (n.d. b) and Nekes and Worms (1953:115ff). The Nimanburru data is phonemicized from Nekes and Worms. See §4.4.3 beginning on page 120 for discussion regarding the presence or absence of the initial *y* in the Nimanburru forms.

		Bardi	Nyulnyul	Jabirr-Jabirr	Nimanburru	Yawuru	Nyikina	Warrwa	Proto-Nyulnyulan
Past	1MIN	*ngaN-*	*nganga-*	*ngaN-*	*ngaN-*	*ngaN-*	*ngang-*	*ngang-*	**nga-ng-*
	2MIN	*miN-*	*minga-*	*miN-*	*miN-*	*miN-*	*nying-*	*ming-*	**mi-ng-*
	3MIN	*inga-*	*inga-*	*yiN-*	*in-*	*iN-*	*ying-*	*ying-*	**yi-ng-*
	1+2MIN	*anga-*	*yanga-*	*yaN-*	*yaN-*	*yaN-*	*yang-*	*yang-*	**ya-ng-*
	1AUG	*angarr-*	*yangarra-*	*yangarr-*	*angarr-*	*yangarr-*	*yarr-*	*ngarr-*	**ya-ng-arr-*
	1+2AUG					*yagarr-*	*yanarr-*	*yarr-*	
	2AUG	*gungarr-*	*gungarra-*	*gungurr-*	*gungurr-*	*gurr-*	*gurr-*	*gurr-*	**ku-ng-arr-*
	3AUG	*ingarr-*	*ingarra-*	*ingirr-*	*ingirr-*	*ingarr-*	*yirr-*	*ngirr-*	**yi-ng-arr-*
Present	1MIN	*nga-*	*nga-*	*nga-*	*nga-*	*= past*	*= past*	*= past*	**nga-*
	2MIN	*mi-*	*mi-*	*mi-*	*mi-*				**mi-*
	3MIN	*i-*	*i-*	*yi-*	*i-*				**yi-*
	1+2MIN	*a-*		*ya-*	*(y)a-*				**ya-*
	1AUG	*arr-*	*yarr-*	*yarr-*	*(y)arr-*				**ya- arr-*
	1+2AUG								*(*ya- arr-)*
	2AUG	*gurr-*	*gurr-*	*gurr-*	*gurr-*				**ku- rr-*
	3AUG	*irr-*	*irr-*	*yirr-*	*irr-*				**yi- rr-*
Future	1MIN	*ngangga-*	*ngangga- ~ ganka- ~ ga-*	*ga- ~ ganki-*	*ngangga-*	*ngangga-*	*nganga-*	*ga-*	**ngangka-*
	2MIN	*nga-*	*mi-*	*mi-*	*mi-*	*nga-*	*nying/ng-a*	*nga-*	**nga-*
	3MIN	*ungga-*	*ungga-*	*gu-*	*(y)ungga-*	*wangga-*	*wanga-*	*gu-*	**yu/wa-ngkarr-*
	1+2MIN	*angga-*	*yangga-*	*yangga-*	*(y)angga-*	*yangga-*	*yanga-*	*yangga-*	**ya-ngka-*
	1AUG	*anggarr-*	*yanggarra-*	*yanggarr-*	*(y)anggarr-*	*yanggarr-*	*yangarr-*	*garr-*	**ya-ngka-arr-*
	1+2AUG					*yagarr-*	*yanarr-*	*yarr-*	
	2AUG	*arr-*	*warra-*	*warr-*	*warr-*	*warr-*	*warr-*	*warr-*	**warr-*
	3AUG	*unggarr-*	*unggarra-*	*yunggurr-*	*(y)unggurr-*	*wanggarr-*	*wangarr-*	*gurr-*	**yu/wa-ngk-urr-*
Irrealis	1MIN	*ngala-*	*ngala-*	*ngala-*	*ngala-*	*ngala-*	*ngala-*	*ngala-*	**ngala-*
	2MIN	*mila-*	*mila-*	*mila-*	*mila-*	*mila-*	*nyila-*	*mila-*	**mila-*
	3MIN	*oola-*	*ila-*	*yili-*	*ila-*	*wala-*	*wala-*	*wila-*	**wVla-*
	1+2MIN	*ala-*		*yala-*	*yala-*	*yala-*	*yala-*	*yala-*	**yala-*
	1AUG/1+2AUG	*alarra-*		*yalirri-*	*yalarr-*	*yalarr-*	*yalarr-*	*yalarr-*	**yalarr-*
	2AUG	*gularr-*		*gulirri-*	*gulurr-*		*gularr-*	*gularr-*	**gularr-*
	3AUG	*oolarra-*	*ilarra-*	*yilirr-*	*ilirr-*		*walarr-*	*wilarr-*	**wVlarr-*
Irrealis Future	1MIN	no category				*ngaya-*	*ngarra-*	*ngaya-*	*EN: *ngaya-*
	2MIN					*miya-*	*nyirra-*	*miya-*	*EN: *miya-*
	3MIN					*waya-*	*warra-*	*wiya-*	*EN: *wVya-*
	1+2MIN					*yaya-*	*yarra-*	*yaya-*	*EN: *yaya-*
	1AUG/1+2AUG					*yayarr-*	*yayarr-*	*yayarr-*	*EN: *yayarr-*
	2AUG						*guyarr-*	*guyarr-*	*EN: *guyarr-*
	3AUG						*wayarr-*	*wiyarr-*	*EN: *wVyarr-*

Table 6.3: Nyulnyulan Prefix forms: Intransitive

		Bardi	Nyulnyul	Jabirr-Jabirr	Nimanburru	Yawuru	Nyikina	Warrwa	Proto-Nyulnyulan
Past	1MIN	*nganaN-*	*nganaN-*	*nganaN-*	*nganaN-*	*nganaN-*	*ngana-*	*ngana-*	**nga-na-ng-*
	2MIN	*minaN-*	*minaN-*	*minaN-*	*minaN-*	*minaN-*	*mina-*	*mina-*	**mi-na-ng-*
	3MIN	*inaN-*	*inaN-*	*yinaN-*	*inaN-*	*inaN-*	*yina-*	*ø∼ na(n)-*	**i-na-ng-*
	1+2MIN	*anaN-*	*yanaN-*	*yanaN-*	*(y)anaN-*	*yanaN-*	*yana-*	*yana-*	**ya-na-ng-*
	1AUG	*angarra-*	*yangarra-*	*yangarr-*	*(y)angarr-*	*yangarra-*	*ya-rra-*	*ngarra-*	**ya-rr-*
	1+2AUG					*yagarra-*	*yana-rra*	*yarra-*	
	2AUG	*gungarra-*	*gungarra-*	*gungurr-*	*gungurr-*	*gurra-*	*gu-rra-*	*gurra-*	**ku-rr-*
	3AUG	*ingarra-*	*ingarra-*	*yingirra-*	*ingirr-*	*ingarra-*	*yi-rra-*	*ngirra-*	**yi-rr-*
Present	1MIN	*ngan-*	*ngana-*	*ngana-*	*ngan-*	*= Past*	*= Past*	*= Past*	**nga-na-*
	2MIN	*min-*	*mina-*	*mina-*	*min-*				**mi-na-*
	3MIN	*in-*	*ina-*	*yina-*	*in-*				**i-na-*
	1+2MIN	*an-*	*yana-*	*yana-*	*(y)an-*				**ya-na-*
	1AUG	*arra-*	*yarra-*	*yarri-*	*(y)arr-*				**ya-rr-a*
	1+2AUG								
	2AUG	*gurra-*	*gurra-*	*gurr-*	*gurr-*				**ku-rr-a*
	3AUG	*irra-*	*irra-*	*yirri-*	*irr-*				**yi-rr-a*
Future	1MIN	*nganka-*	*nganka-*	*gani- ∼ ganka-*	*ngane-*	*ngangga-*	*ngana-*	*gananngga-*	**nga-na-ngka-?*
	2MIN	*ana-*	*wana-*	*wan(i)-*	*wan-*	*wala-*	*wala-*	*wala-*	**wa-na-*
	3MIN	*unka-*	*guna-*	*guni-*	*un(k)e-*	*wanangga-*	*wana-*	*nungga-*	**u/wa-na-ngka-?*
	1+2MIN	*anka-*	*yana-*	*yani-*	*(y)an-*	*yanangga-*	*yana-*	*yanangga-*	**ya-na-ngka-?*
	1AUG	*anggarra-*	*yanggarra-*	*yanggarr-*	*(y)anggarr-*	*yanggarra-*	*yanga-rra*	*garra-*	**-ya-ngka-rra-*
	1+2AUG					*yagarra-*	*yana-rra*	*yarra-*	
	2AUG	*arra-*	*warra-*	*warra-*	*warr-*	*warra-*	*wa-rra-*	*warra-*	**wa-rra-*
	3AUG	*unggarra-*	*unggarra-*	*yunggurr*	*unggurr-*	*wanggarra-*	*wanga-rra*	*gurra-*	**u/wa-ngka-rra-*
Irrealis	1MIN	*ngala-*	*ngala-*	*ngala-*	*ngala-*	*ngala-*	*ngala-*	*ngala-*	**nga-la-*
	2MIN	*mila-*	*mila-*	*mili-*	*mila-*		*mila-*	*mila-*	**mi-la-*
	3MIN	*ula-*	*ila-*	*yili-*	*ila-*		*wa-la-*	*wila-*	**yu/wa-la-*
	1+2MIN	*ala-*		*yala-*	*(y)ala-*		*ya-la-*	*yala-*	**ya-la-*
	1AUG	*alarra-*		*yalirri-*	*(Y)alarr-*		*ya-la-rra-*	*yalarra-*	**ya-la-rra-*
	2AUG	*gularra-*		*gulirri-*	*gulurr-*		*gu-la-rra-*	*gularra-*	**ku-la-rra-*
	3AUG	*ularra-*	*ilarra-*	*yilirri-*	*ilirr-*		*wa-la-rra-*	*wilarra-*	**yu/wa-la-rra-*
Irrealis Future	1MIN					*ngana-*	*nganarra-*	*ngana-*	*EN: *ngana-*
	2MIN					*mina-*	*minarra-*	*mina-*	*EN: *mina-*
	3MIN					*wana-*	*wanarra-*	*wina-*	*EN: *wana-*
	1+2MIN					*yana-*	*yanarra-*	*yana-*	*EN: *yana-*
	1AUG						*ya-ya-rra-*	*yayarra-*	*EN: *yayarra-*
	2AUG						*gu-ya-rra-*	*guyarra-*	*EN: *kuyarra-*
	3AUG						*wa-ya-rra-*	*wiyarra-*	*EN: *wayarra-*

Table 6.4: Nyulnyulan Prefix forms: Transitive

form for the second person minimal. Compare, for example, Bardi *nyimbala* 'your foot'. The Nyikina forms in *nyi-* have replaced the forms in *nga-*. Note that Nyikina has lost nominal prefixal possessive marking (see §2.4.2.2 and Table 2.4).

Enough languages preserve a distinction in second person future transitive and intransitive forms to allow us to reconstruct such a distinction to Proto-Nyulnyulan.

6.2.5 First person augment forms (1aug, 1+2aug)

Nyulnyulan languages mark the distinction in free pronouns; however in most cases the forms are obscure and morphological evidence points to fairly recent innovations (e.g. Bardi *arridil* 1AUG and *arroodoo* 1+2AUG, both transparently based on a stem *arrVd-* but otherwise without satisfactory etymology).

It is fairly clear that the Eastern Nyulnyulan languages have innovated the 1AUG/1+2AUG distinction in agreement. The 1AUG/1+2AUG distinction in the Eastern Nyulnyulan languages has been implemented differently in different languages. In Warrwa, the 1AUG forms are a reformation based on the 1MIN form (*nga-*) and the augment marker. I assume that this is by analogy with the 1+2MIN and 1+2AUG forms. This can be represented by a proportional analogy:

(6.13)

a	:	ARR	::	NGA-	:	X,	where X = NGARR-
1+2MIN		1+2AUG		1MIN		1AUG	

The 1+2AUG forms in Warrwa (as all the augment forms in Eastern Nyulnyulan) continue the Proto-Nyulnyulan present paradigm.

The 1+2AUG prefixes in Nyikina and Yawuru are much more difficult to disentangle. The 1aug forms have clear etymologies; in Yawuru *yangarr-* continues the Proto-Nyulnyulan past 1AUG **yangarr-*, while Nyikina's *yarr-* continues the present 1AUG. The 1+2AUG forms, (*yagarr-* in Yawuru, Nyikina *yanarr-*) have no clear etymology. The forms fit the general person + tense + augment template but they are not etymologically connected to forms

in other languages. I assume some analogical or hermit-crab solution (Heath 1997) is the right one.

6.2.6 More on tense and person interaction

The variation of 3min and 3aug prefix morphology according to tense is interesting, and the languages disagree on the forms. The fact of variation can be reconstructed, although the exact forms are difficult. In Bardi there is one form for the future/irrealis (*oo-*) and another (*i-*) for the present and past tenses. This is cognate with the third person augment prefix *yu-* in Nimanburru and Jabirr-Jabirr.

Jabirr-Jabirr and Warrwa have *gu-* for third person minimal. In Warrwa we could assume that this form is from the future tense prefix, if one assumes the deletion of the person prefix (by analogy with the third person forms in other tenses). Such a solution will not work easily for Jabirr-Jabirr, however. Borrowing could be assumed borrowing from Warrwa into Jabirr-Jabirr (which is possible, since there are known marriage contacts between people from these regions, but somewhat unlikely). The alternative is that *gu-* is archaic and the other languages have regularized the future paradigm and have adopted the third person (augment) form for the third person minimal. One would then argue that Warrwa has done the opposite: extended the third person minimal to the third person augment, while regularizing the third minimal form. The former solution seems more likely.

(6.14) Possibility 1: Warrwa: Past: **injalana* 'he saw' > *jalana*. Future: **yunggu-* 'he will X' > *gu-*.

(6.15) Possibility 2: PN 3MIN **ku-*, 3AUG **yu/wanggarr-*, in Warrwa ⇒ 3AUG *gunggarr-* (as though from **wanggarr-*), 3MIN backformed as though from **wanungga-*.

Finally, there is also a third person *wa-* or *wi-* in the Eastern Nyulnyulan future irrealis, and in the future and irrealis in Yawuru and Nyikina. These forms are not directly cognate with those in the Western languages (i.e. *yu-* or *u-*). The Warrwa *wi-* is probably secondary, and **wa-* is the Eastern Nyulnyulan form. Perhaps in Proto-Nyulnyulan one form was

proper to the minimal, the other to the augment, or perhaps one form was proper to the irrealis, and one to the future (or future irrealis), and the different branches have generalized different morphemes.

Warrwa seems to have reinterpreted the tense marking itself as the third person marker. Thus the third person present augment *ngirr-* continues **yingirr-*, the *ng-* is reconstructible as the tense marker and the *i-* has been lost. In the modern language, however, *ng-* has become the marker of person.

The future paradigms are regular in Bardi, apart from the second person forms (*a/nga-* in the minimal, *arr-* in the augment). The other parts of the paradigm are built in the same way as other tenses: person marker, transitivity marker, tense marker in the minimal, person marker, tense marker, augment marker in the augment. Jabirr-Jabirr and Nyulnyul have unpredictable forms in the first person minimal.

6.2.7 Subject suffixing

Recall from the summary of Bardi in §6.2.1 that there are cases where there is marking of quantification as a suffix to the verb, as well as in the prefix complex. (6.16) (= (6.5)) is an example.

(6.16) *Barnanggarra=gij irralgal<u>nidi</u> bigibigi ngoorrngoolondarr.*
now=VERY 3-AUG-be-REC.PST-QUANT pigs mangrove-LOC$_2$
'Just now all the pigs were in the mangroves.' (Metcalfe 1975:4: ex 24)

In the Eastern Nyulnyulan languages an augment prefix and a dual suffix is obligatory with dual subject marking:

(6.17) Yawuru
Ngi- rr- ma- yama -nyji -ny -<u>bili</u>.
3.IT- AUG- REFL- argue -REF -PST -DL

'They two argued together.' (McGregor 2000:89)

(6.18) Nyikina
Yi- rr- ma- bula -nyji -na -da -ngany -mirri mangarriy.
3- AUG- REFL- come -REFL -PST -HABIT -APPL -AUG tucker.

'They used to bring each other food.' (Stokes 1982)

The forms are =*wili* in Warrwa, -*bili* in Yawuru and -*mirri* in Nyikina.

6.3 Direct object agreement

All Nyulnyulan languages show agreement for the direct object of the verb, although the exact syntax varies a little from language to language. The agreement marker is a suffix or enclitic (depending on the author's description). In Bardi the forms are enclitic, so I will refer to them as such throughout.

6.3.1 Distribution

In Bardi, direct object markers are enclitics; they do not show the lenition patterns characteristic of suffixes. Sentential clitics also intervene between the verb stem and the direct object markers (see (6.19)), providing further evidence for their status. The clitic =*gid* is a clause connector.

(6.19) *Balnar biindoonoo nimoonggool -[g]oondarr a- rr- [n]- [j]oogool[oo]*
k.o. oyster *Rhizophora stylosa* tree root -LOC$_2$ 1- AUG- TR- break
-[a]n =irr, a- [a]rr- (a)- marra -n =kid =irr gardo bardaga
-CONT =3AUG.DO 1- AUG- TR- cook -CONT =THEN 3AUG.DO still tree
-nyarr noorroo -goon.
-COMIT fire -LOC
'Mangrove oysters are on the roots of mangrove trees, we break them and we cook them on the fire, still on the roots.'

These agreement clitics mark the direct object of transitive verbs. These forms are also used for predicative pronouns and attach to nominal predicates. In such cases, only the direct object clitics appear (that is, we do not find the same clitic chains on nominal predicates which are common on verbs). (6.20) is an example. (The semblative case is here

used clausally to situate the event in time. The clausal use of case is not discussed in this work; see further Bowern (in prep.).)

(6.20) *Ngay moorrooloo-marr=ngay.*
1MIN little-SEMB=1MIN.PRED
'It was when I was little.' [the story took place when I was a little child]
(Text: NI:NGJ/1)

Bardi has both object and indirect object agreement. In Nyikina, however, agreement is not obligatory and only one of the pronouns can appear. The issue of obligatory agreement is taken up in some detail in Bowern (to appear a) and will be addressed only briefly here. In Bowern (to appear a) I argue that agreement is related to definiteness, and augment agreement is related specifically to collectivity. That is, if an object DP is plural but indefinite, it will be treated as singular (and hence receive the 3MIN agreement clitic, which is null). Collectives also receive singular agreement.

(6.21) *Nganarlina niimana aarli.*
1-TR-eat-REM.PST many fish
'I ate many fish.'

Finally, note that some (intransitive) sentences appear to contain an 'extra' DO agreement suffix; an example is given in (6.25c) below. Such sentences are very rare, and I assume that they are cleft sentences (a better translation might be 'it was cold waking me up').

6.3.2 Forms

Bardi has two sets of direct object clitics which vary in all persons but the third (third minimal is unmarked, third augment is invariant). The forms are given in Table 6.5.

	Set I	Set II
1MIN	*-ngay*	*-jarrngay*
2MIN	*-rri*	*-jirri*
3MIN	*-ø*	*-ø*
1+2MIN	*-way*	*-jarrway*
1AUG	*-moord*	*-jarrmoord*
2AUG	*-goorr*	*-jarrgoorr*
3AUG	*-irr* ~ *-rr*	*-irr*

Table 6.5: Bardi direct object forms

6.3.3 Set II (*-jarr-*) object marking

6.3.3.1 Usage and analysis

Different authors give different distributional requirements for the use of Set I versus Set II. In one account (Aklif 1993a) the forms are conditioned by syllable structure: Set I forms are used following vowels, while Set II are used after consonants. This is illustrated in (6.22) and (6.23):

(6.22) a. *injalalagaljarrngay*
3-TR-see-REDUP-REC.PST=1MIN.DO
'He's staring at me.'

b. *inimbinangay*
3-TR-PST-poke-REM.PST=1MIN.DO
'He poked me.'

(6.23) a. *"Arra goolarrjargajanjarrngay nganga,"*
NEG 2-IRR-AUG-fear-CONT=1MIN.IO=1MIN.DO 1MIN-'name'
injoonoojirr.
3-TR-do/say-REM.PST=3AUG.IO
'"Don't be scared, it's me," he said to them.'

b. *Anyngarr minagaljarrngay goorlil.*
in vain 2-TR-give-REC.PST=1MIN.DO turtle
'You gave me turtle without getting anything in return.'

Metcalfe (1975) gives a different account. He argues that Set I forms are used on even-numbered syllabic stems, while Set II forms are used on odd-numbered stems.

The phonological explanations of distributions do not account for all the data, however. Firstly, neither of the previous phonological distributions works; there are exceptions to both. Some are given in (6.24) and (6.25).

(6.24) Stem has 'wrong' number of syllables:

a. *Baawanim abarrabarr inamagaljarrngay*
child-ERG confuse 3-TR-put-REC.PST=1MIN.DO
'The child led me in the wrong direction.'

b. *Ginyingginim garrgarr injijjarrngay ngaya gorn=amb*
3MIN-ERG rub 3-TR-do/say-MID.PERF=1MIN.DO me good=THUS
injoo.
3-TR-do/say
'He rubbed me and now I'm good.'

(6.25) Stem ends in 'wrong' segment:

a. *Ngoojilinim inamboojarrngay.*
blue-ringed octopus-ERG 3MIN-TR-PST-hit-1MIN.DO
'A blue-ringed octopus stung me.'

b. *Ngoorra inanggalajarrngay amboorinynim.*
last night 3MIN-TR-PST-visit-1MIN.DO person-ERG.
'Someone visited me last night.'

c. *Inkoorrnim ngangimilijarrngay.*
cold-ERG 1-PST-wake up=1MIN.DO
'Cold woke me up.'

Finally, compare the sentences in (6.26). Here we have the same verb root, but different object agreement clitics.

(6.26) a. *Anangay oola!*
2.IMP-TR-give-FUT=1MIN.DO water
'Give me [some] water!'

b. *Anajarrngay!*
2.IMP-TR-give-FUT=1MIN.DO
'Give it to me!'

This minimal pair points to a syntactic distribution of the two Sets. In (6.26a) the direct object is present. In (6.26b) the object is omitted or implied from context. In this command, using *-jarrngay* forms with the DO present leads to an ungrammatical (or at least pragmatically very odd) sentence:[2]

(6.27) ?? *Anajarrngay oola!*
2-give=1MIN.DO water
'Give me water!'

I suggest that this ungrammaticality is most easily explained by assuming the function of the Set II morphemes is to mark object prominence, and more specifically, topics. The *jarr* forms are used when the object is the topic of the clause, especially over several clauses, where it is easier to see the topic continuity. (For the related principle of 'empathy', which is probably also a factor in *jarr* marking, see Kuno 1987:203ff).

Some examples are given in (6.28) below. These examples illustrate the topical use of *jarr-* forms. (6.28b) shows contrastive topic marking.

(6.28) a. *Mangir inkalan=jarrngay iiganim alig ngandan.*
always 3-TR-visit-1MIN.DO, sickness-ERG pain 1-TR-do/say-CONT
'She's always visiting me when I'm sick.'

b. *Niiwandi-jarrngay, joo ngaada-jirri.*
tall-1MIN.DO 2MIN short-2MIN.DO
'I'm tall, [but] you're short.'

[2]Recall from §5.2.2.3 that verb 'give' in Bardi take the recipient as the object, and the theme is unmarked on the verb.

c. *Marbiddynim inanggalajarrngay bardi, gooyarr aalga*
M.-ERG 3MIN-TR-PST-visit=1MIN.DO yesterday 2 day
inggoodali-jarran arra darr oolarnajan.
3-PST-lost=1MIN.IO.TOP NEG come 3-IRR-spear-PST=1.IO.
'Marbiddy came to visit yesterday, for two days I didn't know where she was, she didn't come.'

In (6.29) we see examples of the non-topic marked object agreement clitics. In (6.29a) we can see that the object agreement cannot be the topic of the clause. The next question in the text is 'are you deaf?', implying that the speaker is questioning whether the hearer is 'listening', not whether she is listening *to the speaker.* Furthermore, *nganyji* marks polar questions where topic of the sentence is the action of the clause, not an individual consituent. *-(G)arda* marks the topic of polar questions when individual constituents are questioned.

(6.29) a. *Nganyji milamanka-ngay?*
INTERROG 2-listen-1MIN.DO
'Are you listening to me?'

b. *Aaman daaga ngandan, gala goorroomilginngay.*
as soon as sleep 1-TR-do/say-CONT all right 2PL-wake up-CONT=1MIN.DO
'Just as I was getting to sleep, you woke me up.'

c. *Angginimal inarlingay ngoorra malbarra jonon.*
what-ERG-INDEF 3-TR-bite-1MIN.DO last night buttock 1MIN.POSS'R-LOC
'Something bit me on my bottom last night.'

There are two questions remaining. Why do we not get these contrasts in third person forms, and why do we get them in elicited sentences, where we would not expect topic setting up to apply? That is, why did previous researchers assume that the use of Set I versus Set II is governed by phonology?

I suspect that topic marking is not marked on the verb for third person objects because third person topic marking is usually marked by omission. That is, third person forms are only overtly realised when they are either focused or reintroduced topics' (which could also

perhaps be analysed as a type of secondary focus). There are also other, rather complex, ways of marking topic-hood in third person forms, including the use of free pronouns and demonstratives such as *jarri* 'this' (for which see further below). See also Bowern (to appear a) for extensive discussion.

Set II (*jarr*) forms appear fairly frequently in elicited sentences, and I assume that this is what led Aklif and Metcalfe to seek a phonological (rather than syntactic) solution to the use of these forms. Elicitation creates its own discourse contexts, however, and the interaction between tense/aspect marking, empathy and topic marking probably led to the impression that the form of the stem governs the use of the *jarr* forms. For example, topic forms occur frequently with the recent past *-gal* and the middle perfect *-ij*, however the vowel-final (remote past) tense marker *-na* is rather rare with personal objects, although it is used often in narratives.

6.3.3.2 Etymology

In Bardi itself there is a demonstrative *jarri* 'this' which functions as a topic tracker and discourse marker. *Jarri* has some syntactic oddities. For example, almost all the exceptions to the case marking placement rules occur with it (*jarri aambanim*, not *jarrinim aamba*), although the second sentence is also grammatical. Some examples of the use of *jarri* as a free pronoun are given in (6.30) below. Note that in these sentences the noun phrases containing *jarri* are also topics.

(6.30) a. *Jalan nyoonoo milonjoon jarri baawa barda ingarranana*
J. here long ago this child across 1-PST-AUG-sit-CONT-REM.PST
balili.
balili.
'A long time ago, this balili[3] boy was living on Jalan island.'

[3]A *balili* boy is a boy who has been through the *arnkooy* initiation ceremony. Agreement is plural here; a better notional translation is 'this *balili* boy was off on Jalan with the others'. Although this is the first line of a text, the *balili* boy is already old information, as the storyteller had just been discussing him, and the story continues the conversation.

b. *Baawanim arra oolarralirr* *jarri aarli irrmalgoyarr.*
child NEG 3.FUT/IRR-IRR-AUG-eat=3AUG.DO this fish 3AUG-self
Alboorroo jirra *gaanyji.*
many 3AUG.POSS'R bone.
'Children don't eat these fish [the ones we've been talking about] by themselves. They're full of bones.'

c. *"Arra ngay ninga ngay arr ngandan.* *Jarri ngay arr*
look! 1MIN 'name' 1MIN come 1SG-TR-do/say-CONT this 1MIN come
ngandan!" *injoonoo jiib ginyingginim aamba.*
1SG-TR-do/say-CONT 3-TR-do/say this 3min-ERG man.
'"Hey, look! It's me coming back! It's me!" The man said to these people.'

In Warrwa there is a clitic =*jarri*, which occurs in second position or in the sentential clitic position. It is argued by Capell (1952:452) to be a relative pronoun, on the basis of examples such as (6.31). I have retained Capell's glosses, although a more literal gloss of the complex predicate would be *die* (*gurd*) *3min-pres/pst*-do/say-PST-*jarri*.

(6.31) Warrwa

gandirin ŋana wa:ra gud ŋindan-djari.
Garndirrin -ngana waarra gurd ngindanjarri.
platform -ALL take him-who-die.
'Take the man who died to the tree platform.'

Further examples from McGregor's fieldnotes show that =*jarri* in Warrwa also functions as a clausal connector. All the examples I have found (of which those in (6.32) are a sample) involve the conjunction of clauses which have the same subject.

(6.32) Warrwa

a. *nyinggan narndin -jarri -yirr narndin -yirr/ nanggana*
here he:grabbed -SEQ -3PL.OBL he:grabbed -3PL.OBL he:locked
-yirr jimbin/
-3PL.OBL inside
'When he had grabbed them, he locked them up.' (WM/FN: fm3;13)

b. *yalkarn ngandin kung ngandin -jarri wila*
burp I:did drink I:did -SEQ water
'I burped from drinking water.' (WM/FN: fm;9,166)

c. *mawu ngangariny liyan nganjalin -jarri*
happy I:got feel I:saw -SEQ
'I got happy when I saw him.' (WM/FN: fm;9,171)

Similar forms also exist in Yawuru, but with a slightly different function. In (6.33), for example, *-dyarri* is a causal marker. There is no requirement on subject coreference.

(6.33) Yawuru
Nga-dyali-dyarri-dyayrda, ya-ga-rr-garnda wirliwirli-ngarn.
2.FUT-return-SEQ-1+2AUG.IO 1+2-FUT-AUG-go fishing-ALL
'We (inc) will go fishing together when you come back to us.'
(Hosokawa 1991:240a, ex. 171)

Some of the examples in Warrwa are ambiguous between the type of sentence connective that Warrwa has and the Bardi-type examples with topic marking, and could be topic chaining. I assume that such examples are the source of the reanalysis in Bardi.

6.3.4 Quantitative agreement enclitics

In addition to the 'pronominal' agreement described in the previous sections, we also find a type of agreement which is sensitive to quantification. The two most common are *=nid* and *=(b)al*. *=nid* refers to a large group, while *=al* or *=bal* denotes an indefinite number.

Metcalfe (1975:40) says that *=nid* is a separate word that triggers deletion of the object agreement clitic. It can, however, appear *with* object agreement marking. In (6.34), for example, the verb *-ngoorribi-* chase' is inflected for both *=bal* and the object agreement *=irr*:

(6.34) *Inyjarralan bard ambooriny, bard iilanim*
3-PST-run-CONT off person, off dog-ERG
ingarralaninirr
1-PST-AUG-TR-see-CONT-REM.PST=3AUG.DO
ingoorroongoorribinanabalirr.
3-PST-AUG-TR-chase-CONT-REM.PST=INDEF=3AUG.DO
'The [group of] people ran off, and the dogs caught sight of them and chased them.'

Usually =*nid* refers to the number of the object.

(6.35) *Irrnim gilgil ingarrananid joongoorr*
3AUG-ERG chip off 3-PST-AUG-TR-give-CONT-REM.PST=QUANT small stick
milon.
long ago.
'Long ago they used to shave the little sticks.'[4] (Text: DW ABC/14)

Very occasionally (and only when the verb is intransitive) it can refer to the subject.

(6.36) *Nyoonoo Landandinyinngan arr angarrinannid.*
here L. go 1-PST-AUG-TR-do/say-CONT-REM.PST-QUANT
'We used to go to Landandinyin.' (Text: LS: Law/2)

(6.37) *Niyalboon goron irrbooloonnid.*
bush onions ground-LOC 3-AUG-come-CONT=QUANT
'Bush onions grow in the ground.'

The final clitic to consider is =*(j)angarr*. Metcalfe (1975) treats -*jangarr* or -*angarr* as a purely verbal suffix marking 'emphasis'. This clitic is very frequently found on other words, however. Nicolas (1998) glosses it *seulement*, and an English translation 'only' would fit most contexts. In other cases, the clitic seems to give an idea of 'whole' (as explained by Nancy Isaac, pers. comm. 2001). (6.38) provides some examples.

(6.38) a. *Arinyjangarr gardiliny irrondorndoman.*
one-JANGARR monkey fish 3-AUG-TR-cause to enter-REM.PST
'They got a single monkey fish into [the trap].'

[4]In order to sharpen the points so they can be driven into the mangrove logs to make a raft.

b. *Imbanyangarr* *gala.*
3-PST-finish=JANGARR thus.
'That's the end.' (Laves n.d.:155/34)

c. *Bardagid angarrananirr* *niimanangarr*
off=THEN 1-PST-AUG-carry-CONT-REM.PST=3AUG.DO many=JANGARR
aarli baalingan.
fish camp-ALL
'Then we went off and carried many fish to the camp.'

6.3.5 Etymology of forms

Table 6.6 gives the forms for direct object clitics in all Nyulnyulan languages. (C) in the Warrwa forms means that the source for the data is Capell (1952), which differs from McGregor's data.

Most of the Nyikina pronouns fit etymologically with the oblique suffixes, although they are not exactly cognate with that paradigm either. The 1MIN *ngayu* and 2MIN *juwa* are cognate with the direct object forms in the other languages' DO series; other forms reflect remodelings of the oblique paradigms. The same is true for Warrwa, where in addition lenition of the *j* has taken place. Capell analyzes *-na* as a DO form in this language, but I suspect that this either reflects *-jin* or is a misanalysis of the past tense marker.

Two forms are unique to Bardi and need explaining. The first person augment *=(jarr)moord* is not found in any other Nyulnyulan languages and I have no etymology for the form. It could be old, but since clusters of the type *rr+N* reduce, that is rather unlikely. The second person minimal form *=(ji)rri* is explicable as coming from **=jarr-ji* or **=jarr-juy*. A reduction of *rrj* > *rry* is attested is words such as *garrya* ~ *garrja* 'sharp', although we have no other examples of this cluster in this position to tell whether the sound change is regular or not.

	1MIN	2MIN	3MIN	1+2MIN	1AUG	1+2AUG	2AUG	3AUG
Bardi	*-ngay*	*-rri*	*-ø*	*-way*	*-murd*		*-gurr*	*-(i)rr*
	-jarrngay	*-jirri*	*-ø*	*-jarrway*	*-jarrmurd*		*-jarrgurr*	*-irr*
Nyulnyul	*-ngay*	*-juy* ~ *-ji*	*-ø*	*-yay*	*-yarrad*		*-kurr*	*-yirr*
Jabirr-Jabirr	*ŋai*	*djõe*	*ø*	*yai*	*yarad*		*gor*	*yer*
Yawuru	*-ngayu*	*-ju(y)u*	*-ginya(ngga)*	*-yayu*	*-yarrirr*	*-yadiri*	*-gurrirr*	*-ø*~ *-irr*
Nyikina	*-ngayu*	*-juwa* ~ *-yi*	*-jina*	*-jaw(u)*	*-jarr(ga)*	*-jarrju*	*-junggurr* *-nggurrga*	*-jirr(ga)* /*jirr*
Warrwa	*-ngay(u)*	*-ju(wa)* ~ *-yu*	*-ø*, *-na (C)*	*-yawu (C)*	*-yarr(a)*	*-yadirr*, *-irra (C)*	*-kurra (C)*	*-yirr(a)* ~ *-jirr*
PN	**ngay(u)*	**juya*	**-ø*	**yayu*	**-yarr-?*	—	**-kurr*	**-(y)irr*

Table 6.6: Nyulnyulan direct object clitics

6.4 Oblique pronouns and agreement

Nyulnyulan languages also have a set of oblique clitics. They fulfil a number of different functions, including indirect object marking, goal marking, and (more unusually) possessor raising. In Bardi, the oblique clitics fill an additional role, as the language does not have any dative case marking (which other languages do have). Etymologically, the oblique clitics are closely related to the free dative/possessive pronouns (for which see §2.5.1 above).

6.4.1 Distribution and function

What I have called 'oblique objects' in Bardi are characterized by an agreeing oblique pronominal clitic on the verb and zero marking on the free nominal (if present).

(6.39) *Baawanim inanggagaljin* *mayi* *aamba.*
child-ERG 3-TR-PST-bring-REC.PST=3MIN.IO tucker man.
'The child brought food for the man.' (Aklif 1990-1994:BE: E0/2)

The distribution of the oblique pronouns in Bardi is affected and differentiated from the other Nyulnyulan languages by the fact that dative marking is null. That is, in the Eastern languages, datives are marked by the suffix *-ji*; in Bardi (and the other Western Nyulnyulan languages) verbal cross-reference marking replaces the function of the case marker.

There are several functions of oblique marking. One is in the construction of intransitive verb with ergative subject marking:

(6.40) *Baawanim inyjargijin* *ngaarri.*
child-ERG 3-PST-fear=3MIN.IO devil.
'The child was afraid of the devil.'

Goals are also marked with oblique clitics:

(6.41) *Goolboong inoongooloogaljanan.*
rock-INST 3-TR-[PST]-throw-REC.PST=1MIN.IO
'He threw a rock at me.' (Aklif 1999:*-ngooloo-*)

(6.42) *Ngamijan barda gorror arr ngaliya.*
2MIN.IMP-look for=1M.IO off if come 1-IRR-do/say-FUT
'Look for me [before you go], maybe I'll go too.'

In a few examples, the cause of the action appears with an IO clitic. In (6.43), for example, the literal meaning is 'you were not breaking yourselves over me'.

(6.43) *Arra goo- loo- rroo- m- oogool -inyji -na =jan*
NEG 2- IRR- AUG- REFL break -REFL$_2$ -REM.PST =1MIN.IO
'You weren't worried about me.' (Metcalfe 1975:5)

The dative is also used for affected human arguments. The ablative, which is used for nonhuman arguments, is ungrammatical here.

(6.44) *Diird injoogaljin aamba.*
run away 3MIN-do/say-REC.PST=3MIN.IO man
'He ran away from the man.' (Aklif 1990-1994:S1/6f)

(6.45) * *Diird injoogal(jin) aambo.*
run away 3MIN-do/say-REC.PST=3MIN.IO man-ABL

IO agreement can mark benefactive roles. There are also forms which are ambiguous between possessives and benefactives. (For possessives see §6.4.3.)

(6.46) *Mooloo anarajan!*
lice 2.IMP-TR-spear-FUT=1MIN.IO
'Spear lice for me/spear my lice.'

Finally, the oblique clitics also mark ethic datives (that is, an affected argument, not necessarily one which benefits from an action).

(6.47) *Aarlingan arr nganjij bardi. Barni nganimbidi*
fish-ALL go 1-TR-do/say-MID.PERF yesterday. when 1-TR-PST-throw in
wiliwili namarda=amba ingarrin=janirr wiliwili,
fishing line just=THUS 3-PST-AUG-sit=1MIN.POSS-3AUG.POSS'E fishing line
ingirrjimbin arranga marlinjan aarlinim.
3-PST-AUG-die-CONT without GER-bite-CONT=1MIN.IO fish-ERG.
'I went fishing yesterday. I threw in my lines but they just lay there, they were dead without the fish biting.'

(6.48) *Aambanim boor inamboogaljin goorlil.*
man-ERG 'ground' 3-TR-PST-poke-REC.PST=3MIN.IO turtle.
'The man missed the turtle.'

(6.49) *Jarri goolboo laanybi innyagaljirr jiibanim baawa.*
this money steal 3-TR-catch-REC.PST=3AUG.IO this-ERG child.
'This is the kid who stole the money from them.'

6.4.2 Forms

The Bardi oblique paradigms are given in Table 6.7. Very few Set II forms have been recorded.

Person	Free possessive	Verbal suffix	
		Set I	Set II
1MIN	*jana*	*-jan*	*-jarran*
2MIN	*jiya*	*-jiy*	
3MIN	*jina*	*-jin*	*-jirrin*
1+2MIN	*jowa*	*-jow*	
1(+2)A	*jarda*	*-jard*	
2AUG	*jugarra*	*-jugarra*	
3AUG	*jirra*	*-jirr*	

Table 6.7: Bardi oblique pronominal paradigms

It seems that the same rules that govern the *-jarr-* forms for the predicate markers also govern the choice of oblique agreement. That is, the topic structures that discussed for the direct object clitics in §6.3.3 also apply to these oblique forms. The topic continuity forms are much rarer for the oblique pronouns than they are for direct object forms. The only attested forms are 1MIN and 3MIN.

(6.50) a. *Ingilirrmigaljarran*
3-PST-call out-REC.PST=1MIN.IO
'He sang out to me.' (Aklif 1994a:2)

b. *Nganjargigaljirrin*
1-TR-fear-REC.PST=3MIN.IO
'I was frightened by him.' (Metcalfe 1975:110, ex 105b)

c. *"Imanyinkaljarran,"* *injoonajirr.*
3-wave-CONT-REC.PST=1MIN.IO 3-TR-[PST]-do/say-REM.PST=3AUG.IO
'"He kept on waving at me," he told them.' (Metcalfe 1975:110: ex 103b)

d. *Girrgirr ana* *biijib goorlil! Oronggony* *anaya*
cut up 2MIN.IMP-give-FUT this turtle other side-LAT 2MIN.IMP-take-FUT
joo *barda oronggony=gid* *ngayoo anamajan.*
2MIN away, other side=THEN 1MIN 2MIN.IMP-put-FUT=1MIN.IO
'Cut the turtle! You take one side with you, and you leave the other for me!

(Aklif 1993b)

Note in (6.50d) that *=jan* on the first verb is co-referential with the absolutive *ngayoo*.

6.4.3 Possessor raising

Bardi has an interesting phenomenon, not attested to my knowledge in other Nyulnyulan languages, where possessive pronouns migrate from the DP to the verb. The forms are identical to the oblique pronouns, but the slot is different, since it is possible for oblique agreement and possessors to co-occur.

(6.51) a. *Ngajana* *bo* *inambijjan*
1MIN-1MIN.POSS'R woman's child 3-TR-PST-poke-MID.PERF=1MIN.IO
goorlil.
turtle.
'My son speared a turtle.' (Aklif 1990-1994:E0/9)

b. *Barn injoonajinan* *birrii* ...
tell 3-TR-do/say-REM.PST=3MIN.IO=1MIN.POSS'R mother
'He told my mother ...' (Aklif 1994b:19)

c. *Malarr inajinin* *aarli.*
wife 3-[PST]-TR-[give]-3MIN.IO=3MIN.POSS'R fish.
'He gave his wife fish.' (Aklif 1994a:5)

Possessor raising is possible with several different types of arguments, although it does not seem to be grammatical with adjuncts.

6.4.4 Etymology

Table 6.8 on page 206 gives the forms of oblique clitics in Nyulnyulan languages, along with reconstructions to Proto-Nyulnyulan. The Set II (topic) clitics are a Bardi-internal innovation and are not traceable to other Nyulnyulan languages, although, as we saw in §6.3.3 above, the morpheme *-jarri* does have cognates in clausal subordinators in other Nyulnyulan languages.

6.5 Gerunds

In addition to the inflection for tense and subject agreement, Nyulnyulan verbs may also be inflected with the prefix *m(a)-*, which replaces all other agreement, transitivity, and tense inflection. The *ma-* forms are gerunds or infinitives.

6.5.1 Function

The gerunds show different syntactic behavior in the different languages. The gerund in Bardi functions as an infinitive as well a gerund. Illustrations of the various contexts in which gerunds appear in Bardi are given in (6.52) below:

(6.52) a. ... *arranga maalanirr* *irr* ...
without GER-see=3AUG.DO 3AUG
'without seeing them' (Metcalfe 1975:103)

b. *Irrol-ong* *i-ng-oorroo-moonoo-ngoo=jin=irr* *arranga*
spear-INST 3-PST-AUG-throw-APPL$_2$=3MIN.IO=3AUG.DO without
m-onji-n
GER-spear-cont.
'They 'with-threw' spears at them without hitting them.' (Metcalfe 1975:103)

c. *ma-* *yirrirra* *-n* *-nyarr*
GER tease -CONT -COMIT
'with teasing'

In Nyulnyul gerunds are found inflected with the *nomen agentis -id*. There is a form *ma-damaned /ma-dam-an-id/* 'hitter' in Nekes and Worms (1953), for example, formed from

	Bardi	Nyulnyul	Yawuru	Nyikina	Warrwa	Proto-Nyulnyulan
1MIN	*-jan*	*-jan*	*-janu*	*-janu*	*-jana*	*=*janu*
2MIN	*-jiy*	*-ji*	*-jiya*	*-jiya*	*-jiya*	*=*jiya*
3MIN	*-jin*	*-jin*	*-jina*	*-jina*	*-jina* ~ *yina*	*=*jina*
1+2MIN	*-jow*	*-jay*	*-jaw*	*-jaw(u)*	*-jawu (C)*	*=*jawu*
1AUG	*-jard*	*-jarrad*	*-jarra*	*-jarra*	*-jarra*	*=*jarra-*
1+2AUG			*-jayrda*	*-jayida*	*-jadirr*	*=*jayirda ?*
2AUG	*-jugarra*	*-jungkarr*	*-junggarra*	*-junggarra/-junggurra*	*-jungkurr*	*=*jungkarra*
3AUG	*-jirr*	*-jirr*	*-jirra*	*-jirra*	*-jirra*	*=*jirra*

Table 6.8: Oblique pronominal suffixes: Nyulnyulan

the verb root *-dam-* 'hit'. This formation is not productive in Bardi, although a few forms do exist, with *-iid* and with other suffixes, such as the source case *-joon*, illustrated e.g. in (6.53).

(6.53) *ma- janggole -n -jono*
ma- janggula -n -junu
GER- break -CONT -SRCE
'a broken thing' (Nekes and Worms 1953:146)

6.5.2 Inflection

The gerunds are morphologically simpler than inflected forms. They have no tense prefixes, and only the continuative aspect suffix (which is obligatory). Gerunds are not inflected for the transitivity prefix. For example, *mamarran* means both 'to cook something' and 'to cook (intransitive)'. Bivalent roots omit the transitivity marker in the gerund.

(6.54) a. *Liyan nganman mamarranngan aarlimay.*
feeling 1-TR-put-CONT GER-cook-CONT-ALL fish.
'I want to cook fish.'

b. * *Liyan nganman manamarranngan aarlimay.*
feeling 1-TR-put-CONT GER-TR-cook-CONT-ALL fish.
'I want to cook fish.'

(Bowern 2001/2003a:3/89)

Direct object agreement can surface, however:

(6.55) *Arranga maalanirr irr.*
without GER-see-CONT=3AUG.DO 3AUG
'Without seeing them [because a Bardi witch-doctor had made their eyes bad]'

Reflexive marking can also occur on gerunds:

(6.56) *Ingarramandandinyjinan bardagamb*
3-PST-AUG-REFL-scratch-REFL-CONT-REM.PST tree=THUS
ingirrinyana mamandandinyjin bardagang
3-PST-AUG-TR-catch-REM.PST GER-REFL-scratch-REFL-CONT tree-INST

loogal=ninga gala ginyinggi boowa.
bad=EMPH thus 3MIN rubbish.
'They scratch themselves because they pick up that tree, getting itchy from that tree, it's bad, it's rubbish stuff.' (Text: NI: KUN)

The *ma-* prefix induces lenition in Bardi roots (e.g. *máwoon* 'hitting' < *ma-boo-n* 'hit'). Some verbs have two forms: compare *mawooloongan* ~ *moloongan* from *ma-bulu-nga-n* 'to enter', showing both lenition treatments of **abu*.

Vowel-initial roots appear to be inflected for the transitivity marker *n-* in Bardi.

(6.57) *-ibi-* 'drink'
a. *manibin* 'to drink, drinking' (Bardi)
b. *manaben* 'drink' (Yawuru, Nekes and Worms 1953:141)
c. *manibin* 'to drink' (Nyikina, Stokes 1982)

(6.58) *-ar-/-ra-*
a. *manaran* 'to spear' (Bardi)
b. *manaran* 'to spear' (Yawuru) (Nekes and Worms 1953:152)

(6.59) *-(w)argi-*
a. *manargin* 'to pick up' (Bardi)
b. *-warg- mawarkan* 'to fetch' (Nyulnyul)

We could argue that these roots start with *n* and are not in fact vowel-initial. We would not be able to tell in any other forms except perhaps the reflexive/reciprocal. The reflexive of *-ar-* in Bardi is *m-ar-inyji-*, nor *m-nar-inyji-* or *ma-n-arinyji-*, implying that the root *is* vowel-initial and the *n-* in the gerund is epenthetic. Nyikina has one or two variable forms of gerunds with *w*-initial roots: c.f. *ma-wunba-n* 'to deceive' and alternative form *mana-wunba-n* (Stokes 1982:229). Note that *-ibi-* 'drink' behaves differently in Nyikina from the *n*-initial roots like *-nika-* 'follow', so here we can tell that *n* is behaving epenthetically and not as part of the root.

(6.60) Nyikina
a. *manibin* 'to drink, drinking'

but

b. *yarribi*, not *yadibi* (by analogy with *-nika-* producing *yadika*).

c. *ngalibin*, not *ngallibin* (again by analogy with *-nika-*).

Bardi also provides indirect evidence that the *n-* is epenthetic. There are several roots in roots in Bardi which historically began with consonants, usually **w-*. The two most common are **-wa-* 'give' and **-warki-* 'pick up'. In Bardi these roots behave like the other historically vowel-initial roots (e.g. **-ibi-* 'drink'), implying that the 'epenthetic' rule has been generalized to roots that it would not have originally applied to.

Gerunds are also obligatorily inflected for the continuative suffix *-n*.[5]

6.5.3 Etymology

In all Nyulnyulan languages the gerund prefix replaces all prefix forms:

language	prefix	suffix
pN	*ma-	-n
Bardi	ma-	-n
Nyulnyul	ma-	-n
Jabirr-Jabirr	ma-	-n
Nimanburru	ma-	-n
Yawuru	ma-	-n
Nyikina	ma-	-n
Warrwa	ma-	-n

Table 6.9: Nyulnyulan gerund prefix forms

Several languages have unexpected forms; for example, the gerund of the root *-ju-* ~ *-di-* in Nyikina is not *mayin*, *mayoon* or *majin*, as it is in the other languages, but *mandin*, formed from the *-di-* allomorph of the root (Stokes 1982:219). In other Nyulnyulan languages it is formed from the *-ju-* or *-ji-* allomorph.

[5]Note that while Metcalfe (1975) and a few others take the gerund marker to be a circumfix *ma- -n*, I prefer to analyze it as a prefix which forces the continuative aspect suffix. That is, I treat these gerunds as describing inherently generalized, non-punctual events, which are marked as such.

Chapter 7

Tense, Aspect and Mood Marking

7.1 The tense marking system

Nyulnyulan verbs exhibit multiple affixes marking tense, aspect and mood, both prefixes and suffixes. There is a single prefix slot, but multiple possibilities for tense/aspect suffixes. The tense, aspect and mood of a verb also affects the form of some of the person agreement markers.

The tense, aspect and mood systems of Nyulnyulan languages are interrelated. In prefixation, tense and mood are mutually exclusive and are marked morphologically in the same places in the paradigm, while in the verbal suffixes tense and aspect are bound together. The system of tense marking in Bardi is based on a four-way temporal/modal split in the prefixes and a more nuanced tense/aspect system in the suffixes. There are co-occurrence restrictions between prefixes and suffixes. Contrastive marking of aspect, for example, is neutralized in the irrealis. The tense/mood prefixes mark past, present, future, or irrealis. They occur between the person marking and the number/augment marking prefixes.

7.2 Tense and mood prefixation

Tables 6.3 and 6.4 on pages 184–185 gave the relevant tense prefix forms and their interaction with other prefixes. Table 7.1 below is a summary of those tables, with just the TAM markers extracted.[1] Table 7.1 does not include information on the pronominal forms which vary for tense, as these were discussed in the previous chapter.

Language	Past	Present	Future	Irrealis	Irrealis future
Bardi	*ng(a)-*	*ø-*	*ngg-*	*l-*	–
Nyulnyul	*ng(a)-*	*ø-*	*ngga-*	*lV-*	–
Jabirr-Jabirr	*ng(a)-*	*ø-*	*ga-* ∼ *(ngga-)*	*la-*	–
Nimanburru	*ng(a)-*	*ø-*	*ga-* ∼ *(ngga-)*	*la-*	–
Yawuru	*nga-/ø-*		*ngg-*	*(la-)*	*ya-*
Nyikina	*nga-/ø-*		*ng-*	*la-*	*rra-/ya-*
Warrwa	*nga-/ø-*		*ø-*	*la-*	*ya-*
Proto-Nyulnyulan	**ng(a)-*	*ø-*	*ngga-*	*la-*	*(ya-)*

Table 7.1: Nyulnyulan prefix forms

7.2.1 Past and Present

The past tense prefix is *ng-* or *nga-* in all Western languages. In the minimal forms, the morpheme assimilates in place of articulation to a following stop. Examples are from Bardi but similar forms can be found in the other Western languages too (c.f. Table 4.1 on page 122 above).

(7.1) a. *inambarndinggal* 'He covered it with something.' (root: *-barndi-*)

b. *inyjarralana* 'He was running.' (root: *-jarrala-*)

In the Eastern languages, a distinction between present and past tense is not marked in the prefixes. Present versus past tense marking is marked in the suffixes only. Broadly, augment forms show relics of past tense marking, while minimal forms continue the Proto-Nyulnyulan present tense paradigm. In Bardi and the other Western Nyulnyulan languages

[1] Remember that the irrealis future category is only found in Eastern Nyulnyulan languages.

there are also places where present and past are neutralized. As noted above, the only forms where the present and past are distinct in transitive roots are the *g-* and *b-* initial subsets. In the *j*-initial and sonorant-initial transitive subsets the transitivity marker appears to cause deletion of the past tense marker.

Present and past are distinct in all intransitive roots apart from those beginning with *ng* (e.g. *-ngalga-* 'cry'), but *ng*-initial roots are very infrequent. In such roots the past tense marker coalesces with the initial consonant of the root:

(7.2) *ingalgan* 'he was crying/he is crying' (< *i-ng-ngalga-n* or *i-ngalga-n*)

For all languages which make a distinction between present and past prefixation, the present tense is marked by a null morpheme.

7.2.2 Future and imperative

The Nyulnyulan 'future' is also used for imperative marking, and probably also for deontic marking more generally.

Subjects may surface (and they receive ergative marking where appropriate). That is, imperative sentences behave just like regular future clauses syntactically:

(7.3) *Onondorrma* *joonim!* *Arra oolalamankangay.*
2IMP-TR-tell to stop-FUT 2MIN-ERG. NEG 3MIN.FUT-IRR-listen to-1MIN.DO
'[you] tell him to stop; he doesn't listen to me.' (Aklif 1993b:3)

Second person and third person forms vary for future marking. Second person forms also vary for transitivity. The prefix is *a-* for transitive verbs, and *nga-* for intransitive ones, as illustrated by the pair in (7.4)

(7.4) a. *anjala!* 'look at it!'

b. *ngayarrala!* 'run!'

Second person imperatives are the most common; first and third person forms (also identical to the future) were elicited, and usually translated with 'I gotta, he gotta'.

(7.5) *Naalaloon nganggalanda.*
shelter-LOC 1-FUT-sit down-FUT
'I'll sit down in the shelter.' / 'I gotta sit down in the shade.'

Negative imperatives follow regular negative marking and are treated as negative irrealis future clauses.

(7.6) a. *Arra joonbool mila gaarragoon!*
NEG dip 2-IRR-give-FUT water-LOC
'Don't dip it in the water!'

b. *Ngoojil arra miliidinga! Mangalanim Taeniura lymma* NEG 2-IRR-go-APPL$_1$ barb-ERG *oolowarri.*
3.FUT/IRR-IRR-poke-FUT=2MIN.DO
'Don't touch that stingray! The barb might poke you.'

Future marking is more complicated to reconstruct. In all languages future and imperative marking follow the same paradigm. Second person forms stand out in all languages as being irregular, perhaps implying a merger of earlier separate future and imperative paradigms (which would explain the irregularities in second person forms). In other languages, further forms show irregularities. While in Bardi we can identify a future prefix *ngg-* (intransitive) ~ *g-* (transitive), in Nyulnyul, Nimanburru and Jabirr-Jabirr we also find variant forms with *n-* only in transitive paradigms (intransitive paradigms show *ngg-* as expected). Thus while I reconstruct **ngg-* for most intransitive forms without hesitation, there are doubts for the transitive paradigm and it is possible that Bardi has remodeled the transitive paradigm from the intransitive (following the model of the other transitive + tense forms). Unfortunately, the irregular forms in Nimanburru and Jabirr-Jabirr are recorded in unreliable sources and cannot be verified.

The Eastern Nyulnyulan languages show even more diversity in future marking than the Western languages. The Warrwa future forms appear to be the future person forms with present prefixation, that is, a null prefix, and the person forms associated in other languages with future prefixes.

A final consideration is whether *ngg-* contains one morpheme or two. Metcalfe (1975:175) (followed by McGregor 2000:92) argues that the intransitive *ngg-* future forms contain two prefixes: the *ng-*, which he glosses as 'intransitive', and the actual future morpheme *g-*. This describes the alternation between *nk-* in the transitive paradigms and *ngg-* in the intransitive ones, and may relate the other forms in *g-* (for example in Jabirr-Jabirr). This solution is only plausible for the minimal numbers. We would expect ×*agarr-* in the future first person augment if Metcalfe's analysis is right (by analogy with the other augment forms, which show the morpheme sequence person-tense-augment); in fact the form is *anggarr-*. We would also be left with an 'intransitive' morpheme which only appears in the future tense.

7.2.3 Irrealis and future irrealis

Irrealis-marked verbs are rather common in Nyulnyulan languages. For example, all clausal negation forces the verb into the irrealis (see, for example, (7.3) above). The irrealis has a number of different functions, which are summarized briefly here, along with a few examples. Wagner (1997) provides a detailed discussion and analysis.

Apart from its use in negated clauses, the most common use of the irrealis is to describe possible worlds, that is, things that might happen, or unrealizable wishes (as illustrated in (7.7) below:

(7.7) *Anjala!* *Joorroonim oolarlarri.*
2.IMP-TR-look-FUT snake-ERG 3.FUT/IRR-IRR-eat/bite-2MIN.DO
'Look out! The snake might bite you.'

The irrealis is also used to express wishes.[2]

(7.8) *Gaadiliny ngalarlin laalbooyoon.*
monkey fish 1-IRR-eat-CONT earth oven-SOURCE
'I would like to eat monkey fish from an earth oven.'

Events that could have happened, but didn't (past counterfactuals) are also marked with the irrealis.

(7.9) *Janinmarr ngalalabanjirrin miinybal.*
bird sp.-SEMBL 1-IRR-have-CONT/PAST=3MIN.FOC.IO wing
'I wish I had wings like a *janin* bird's [because then I would fly to see my wife, but I don't].'

The most frequent use of the irrealis, however, is in negated clauses. All sentential negation forces irrealis marking on the verb:

(7.10) a. *Barn ingiminyjin, "Arra ngalalaliyarr, loogal jirr ambooriny."*
think 3-PST-REFL-say-REFL-CONT NEG 1-IRR-follow-FUT=3AUG.DO bad 3AUG.POSS'R person
'He told himself, "I won't follow them, they are bad people."'

b. *Biligij anjilngajan. Arra ngalalamankanarri.*
again 2IMP-TR-say-FUT=1MIN.IO. NEG 1-IRR-hear-PAST=2MIN.DO
'Tell me again. I didn't hear you.'

c. *Arra ngalalaba goolboo.*
NEG 1-IRR-have money.
'I don't have any money.'

All languages show a morpheme *l-* or *lV-* marking irrealis in some contexts. Hosokawa comments that the *la-* irrealis is hardly found in Yawuru, and the functions of *la-* in other

[2] I have no data on whether there is any difference in marking between attainable and unattainable wishes. I suspect there is no difference in morphology, at least in Bardi.

languages are covered by realis forms or the future irrealis in Yawuru.[3] Stokes, however, recorded some forms from Yawuru speakers with *la-*, and Hosokawa reports 'idiolectal' occasional uses of *la-* irrealis forms, such as:

(7.11) *Wi-la-ra-ngayu* *nga-mirdibi-nda-dyina.*
3-IRR-spear-1MIN.DO 1-run away-PERF-3MIN.IO
'He tried to spear me and I ran away from him. (He didn't actually spear me.)'

The Eastern Nyulnyulan languages have a distinction between the non-future and the future irrealis which is lacking in the Western languages. Unlike the reconstruction of the present/past distinction, there are no relics in the languages for a prefix **ya-* in Jabirr-Jabirr, Nyulnyul or Bardi, so we cannot reconstruct **ya-* to Proto-Nyulnyulan. There is also no evidence, however, pointing to the source of innovation in the Eastern languages.

7.3 Tense/aspect suffixation

In contrast to the homogeneity of the Nyulnyulan languages in their verbal prefixes, in the suffixes there is little that is directly cognate and be reconstructed as far back as Proto-Nyulnyulan. The categories marked are rather similar however, with an perfective/imperfective aspectual split and other secondary tense encoding.

The tense/aspect suffixes in Bardi (as in all Nyulnyulan languages) are portmanteau morphemes which signal a combination of tense and aspect. There are several slots for these affixes; applicative marking, for example, intervenes between them. Several tense/aspect suffixes can be stacked in Bardi, to produce finer distinctions.

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[3]For example:

Yawuru
i. *Marlu i-nga-nda.*
NEG 3(REAL)-sit-PAST
'He didn't sit.'

There is a reduction of tense/aspect suffixes in the future and irrealis. In the future, only -a or -ø appears. In the irrealis, suffixation is confined to remote past -*na*, the future -a, and the continuative -*n*. The forms for Bardi are given in Table 7.2.

Slot	Form	Meaning	Example	Gloss
1	-*n*	continuative	*iyaman*	he's laughing
2	-*na*	remote past	*inggamana*	he laughed
3	-*gal*	recent past	*inggamagal*	he laughed (recently)
3	-*ij*	middle perfect	*inarlij*	he bit it
3	-*a*	future	*oonkarla*	he'll eat it
4	-*j*	simultaneous	*inggamagalj*	he was laughing (while ...)

Table 7.2: Bardi tense/aspect suffixes

7.3.1 Usage of suffixes

Most of the data on Bardi tense/aspect marking comes from narratives and elicited sentences, thus we have extensive examples of various past tense markers and their relation to aspect marking, but only elicted data and the conversations reported in stories for other tense/aspect combinations.

There is some evidence for a relative tense system in Bardi, and certain subordinate clause types appear to show sequence of tense effects. Data are somewhat limited, however, since subordination is quite rare, and clause chaining is a much more frequent device for showing dependency relations between clauses.

7.3.1.1 Recent past -*gal*

The morpheme -*gal* is the grammaticalized form of the independent temporal particle *gala*. *Gala* is very difficult to gloss exactly; translation equivalents include 'well then' or 'done!' It is the common way to end narrative stories.[4]. The cognate of *gala* in the Eastern languages

[4]It is used especially by the older people when telling stories to non-fluent researchers, who might otherwise be unable to tell when the story has drawn to a close and they need to turn off the tape recorder

is *galiya*, with broadly the same functions as Bardi's *gala*. Similar forms are also found in surrounding, non-Nyulnyulan languages (e.g. Walmajarri).

(7.12) *Gala barnkarda!*
all right finished
'It's finished, that's the end.'

The grammaticalization of *-gal* as an aspectual morpheme probably arises from sentences such as (7.13a) below. (7.13) shows the grammaticalized and ungrammaticalized uses of *-gal/gala*. In (7.13a) there are two words, with a slight pause between them, and an intonational rise on the final syllable of *inamarran*, with a sharp fall on *gala*. In (7.13b), however, there is a single word with falling intonation across the word.

(7.13) a. *inamarran gala.*
3-TR-cook-CONT finished
'She was cooking, then she stopped.

b. *inamarrankal.*
3-TR-cook-CONT-REC.PST
'She was cooking for a while [but she isn't now].'

The morpheme *-gal* has both temporal and aspectual properties. *-gal* is always used of events that occurred within a day or two of the speech reference. Thus it is incompatible with remote temporal adverbs such as *milon* 'a long time ago', and is frequently used with adverbs such as *bardi* 'yesterday'.

(7.14) *Ngangganyjigaljarrran joombaradi wiliwilon nganinkal*
1PST-forget-REC.PST=1MIN.IO.TOP knife fishing 1-sit-CONT-REC.PST
bardi.
yesterday.
'I forgot my knife when I was fishing yesterday.'

Verbs marked with *-gal* are always completed. For example, in (7.15), which is a series of sentences from a text, the events have just taken place, but they *are* completed. (The

character in the story has just run up from seeing a crocodile.)

(7.15) a. *'Angan minyjarralagal joornk?'*
why 2-PST-run-REC.PST with speed
angirriijjin.
1-PST-AUG-do/say-MID.PERF=3MIN.IO
'"Why were you running so fast?" we asked him.'

b. *'Arra linygoorroo banimbin inggidinajard nganjalagal jiib.*
oh! crocodile close up still=1AUG.IO 1-TR-see-REC.PST this.
'Oh! I just saw this crocodile, he's close up.'

c. *Yaaga ininkalj garanygarany=min*
hole 3-sit-CONT-REC.PST-SIMUL footsteps=CONTEMP
ingalamankagaljan nganjalagalmin
1-PST-hear-REC.PST=1MIN.IO 1-TR-see-REC.PST=CONTEMP
inyjoordoogal nalma.'
3-PST-get dry-REC.PST 3-head.
'He was in a hole when he heard my footsteps and I saw him bring his head up [out of the water].'

In (7.15a), the person has just run up to his family, but he has stopped running when they are asking the question. In (7.15b), he says how he has just seen a crocodile, but he can't see it anymore. (The person has run up the hill from the shore where he was down fishing.) In (7.15c), he is describing the situation before he ran away.

The recent past *-gal* is used particularly often in enumerating events, for example, in listing what the speaker has just done, as in (7.16) below, where each step in the list is complete before the one following.

(7.16) *Ginyinggon wirr inyjarrmigal aalga, roowil=gidi ngannyagal*
then get up 3-PST-rise-REC.PST sun, walk=THEN 1-TR-catch-REC.PST
gaarrangan. Jagoordgidi nganjoogal booroonganjan.
sea-ALL. return=THEN 1-TR-do/say-REC.PST place-ALL=1MIN.POSS'R
Ooldoobal nganjooloonggaljanirr, roowilgid
things 1-TR-collect-APPL$_1$-REC.PST=1MIN.IO=3AUG.DO walk=THEN
ngannyagal moorrgalnganjan.
1-TR-catch-REC.PST work-ALL=1MIN.POSS
'Then, when it got light, I walked to the sea. Then I returned to my house. I got my things, then I walked to work.'

While verbs marked with *-gal* are always completed, and thus perfective in a sense, they are not marked for 'perfect' (that is, continuing relevance into the present). This seems to be one of the main differences between verbs marked with *-gal* and those marked by *-ij*, for the latter can be used, in certain circumstances, with a resultative meaning.

There is a further occasional use of *-gal* in contexts which imply present tense rather than past. All such examples are used in conjunction with the continuative *-n* in complex sentences.

(7.17) a. *Abarrabarr indankal boordan, arra nimoonggoon morr*
confused 3-TR-do/say-CONT-REM.PST scrub NEG 3-know road
booroongan.
place-ALL
'He lost the way in the thick scrub, he didn't know the way home.'

b. *Aaman inkanboonkal booroo, ginyinggamba*
as soon as 3-TR-sweep-CONT-REC.PST place, then-THUS
ngangimiligal.
1-PST-wake up-REC.PST
'As soon as he swept the place, I woke up.'

c. *Nyalab arr ngandankal nganoomoorrargaljamb*
this way come 1-TR-do/say-CONT-REC.PST 1-TR-smell-REC.PST=CONJ
iwoolmankal aanggal.
3-stink-CONT-REC.PST what-INDEF
'As I was coming along I could smell something, something was stinking.'

In (7.17a) the second clause (*arra nimoonggoon morr booroongan*) contains no overt indication of tense; there is no verb (*nimoonggoon* is an inalienably possessed noun meaning 'knowledge'). There is no overt past tense copula, however. In (7.17b) we see present morphology in the first clause, and past in the second (*ngangimiligal*). Almost all the examples of *-n-kal* sequences are part of complex sentences and I assume that this represents a sequence of tense effect.

7.3.1.2 Continuative -*n*

The continuative marker, -*n*, is used for prolonged actions and states. When the Aktionsart of the verb is inherently punctual (e.g. -*bi*- 'strike with hand'), using the continuative forces an iterative reading. Some examples are given in (7.18).

(7.18) a. *iyaman*
3-laugh-CONT
'he's laughing'

b. *Nimalnga liyan innyananana.*
nose-INST breathe 3-TR-catch-CONT-PST
'He was breathing through his nose.' (Text: NI: BOY/11)

c. *Biila innyana jina marrga, inkana*
again 3-TR-catch-REM.PST 3MIN.POSS'R shield tiger snake
inamboonana gala.
3-TR-PST-hit-CONT-REM.PST finish.
'He picked up his shield again and kept on hitting Inkana [with it].'
(Laves n.d.:128/9)

The continuative marker is obligatory on the gerund (see §6.5 above), leading Metcalfe (1975) to argue that the gerund is a circumfix. I would prefer to equate the -*n* suffixal portion of the gerund with the continuative aspect marker, however.

The continuative cannot be used in the future and is confined to co-occurrence with the present, past and gerundial prefixes. It can combine with -*na* and -*gal*, and there is a form -*inj* which is probably the continuative plus the simultaneous action suffix.

(7.19) *Aarlingan arr nganjinj bardi. Langar arrajana, arra*
fish-ALL go 1-TR-do/say-CONT-SIMUL yesterday. bait NEG-1MIN.POSS, NEG
ngalinyan aarli.
1-IRR-catch-CONT fish.
'I went fishing yesterday. I didn't have any bait [there weren't any shellfish to be found], [so] I didn't catch any fish.'

When *-gal* is used with the continuative, it implies that the event lasted a while but is now over:[5]

(7.20) *Inamarrankal.*
3-TR-cook-CONT-REC.PST
'He was cooking for a while, but now he's stopped [e.g. because the fish is done.]'

The continuative does not co-occur with the future. The combination of the continuative *-n* with the remote past *-na* results in *-nana* or *-nan*, with both apocope and epenthesis. This is used for events that had a duration but finished in the remote past. It is very common in mythological stories.

(7.21) *Gard inanana* *bardag jarr injalanan*
still 3-be-CONT-REM.PST tree that 3-TR-see-CONT-REM.PST
inyjalgoonan *garndo* *bordogo ginyingg laarda.*
3-PST-fall-CONT-REM.PST high-ABL tree-ABL 3MIN downward
'He saw something fall from the tree to the bottom.' (Text: NI: BOY/4)

(7.22) *Nimalnga liyan* *innyanana.* *Inganana* *garda, rarrb*
nose-INST breathe 3-TR-catch-CONT-REM.PST 3-be-CONT-REM.PST still dawn
injoonoo *booroo, inamanan* *injalanana*
3-TR-do/say-REM.PST place 3-TR-put-CONT-REM.PST 3-TR-see-CONT-REM.PST
aalga gardimbin injoonoo.
sun ?? 3-TR-do/say-REM.PST
'He was breathing through his nose. He stayed there until the sun came up, he watched the sun rise.' (Text: NI: BOY/11-12)

7.3.1.3 Remote past *-na*

The remote past is also the default past. It is a purely temporal suffix and appears to provide no aspectual information. While it is especially common in Dreamtime narratives, *-na* is also the unmarked past tense suffix. It may co-occur with the continuative *-n*, as seen from (7.21)–(7.22) above.

[5]Compare with the use of -nkal in the present tense, in §17b above.

(7.23) *Bard roowil innyana* *aarlimayingan.*
off walk 3-TR-catch-REM.PST meat-tucker-ALL
'He walked off for food.'[6]

The remote past suffix is the only tense suffix attested in Nyulnyul, Jabirr-Jabirr and Nimanburru. I cannot determine whether this is a gap in the data or whether these languages made little use of tense/aspect suffixation.

7.3.1.4 Middle perfect *-ij*

In Aklif (1999) and Metcalfe (1975) this suffix is glossed as a 'middle perfect', implying that the action of the verb is complete and happened earlier than the day of the speech act, but not long enough ago to use the remote past *-na*. (I retain this terminology.) Events marked with *-ij* have a flavor of 'relevance', like many perfects.

The middle perfect is used with many emotion verbs to denote continuing resultative states:

(7.24) *Loogal injij,* *anjalala* *joonim.*
bad 3-TR-do/say-MID.PERF, 2.IMP-TR-look after-FUT 2MIN-ERG
'She is sick, you look after her.'

This usage of the perfect is reminiscent of some emotion verbs in Russian, where past morphology refers to present results. Compare (7.25).

(7.25) Я устала.
I tired(FEM.PST)
'I've got tired.'

I would analyze the Bardi cases in the same way.

7.3.1.5 Future *-a*

The future tense suffix *-a* may be used with the future or irrealis prefixes. It also appears when the future is used as an imperative.

[6] *Aarlimayi* is a compound of *aarli* 'meat-food' and *mayi* 'vegetable food'.

(7.26) a. Imperative

Marl arriya!
stop 2-AUG-do/say-FUT

'You mob stop it!'

b. Irrealis (potential)

Boowanim oolarrarlagoorr.
ant-ERG 3-IRR-AUG-bite/eat-FUT=2AUG.DO

'The ants might bite you.'

c. Future

Ngayoo inngoorr oonggarrayangay, joogid garrma
1MIN in front 3-FUT-AUG-TR-take-FUT=1MIN.DO 2MIN=THEN later
oonggarrargij.
3-FUT-AUG-TR-pick up-SIMUL

They'll take me first, and they'll come and pick you up later.

The future gives a purely temporal interpretation to irrealis clauses (that is, it appears to be unmarked for aspect). In the irrealis it alternates with the past tense *-na*. In the future clauses, it sometimes alternates with *-ij*, where *-ij* has something of the flavor of a perfect.

No other Nyulnyulan language has a future tense suffix (although Nyikina does have a future habitual *-ngani*); I have no etymology for Bardi *-a*.

7.3.1.6 Simultaneous action *-j*

There is a further suffix which I have termed 'simultaneous action'. It never occurs without another tense/aspect marker; it is fused with the continuative *-n* or the recent past *-gal* in all my examples. This suffix is used to mark actions that occur during (or overlapping with) the action of another related clause.

The description of the distribution of the simultaneous action suffix may imply that it is a subordinator, and indeed, it is frequently used on verbs which are dependent on another

clause (for example, (7.27)). It is, however, also frequently used in main clauses without subordinating function. (7.28) provides an example of this type of use.

(7.27) *Jaminybarr inarligalj may, iniminggigaljamb.*
quickly 3-TR/PST-eat-REC.PST-SIMUL tucker 3-TR-choke-REC.PST=CAUS
'He ate the food too quickly which made him choke.'

(7.28) *"Irrjarnan nganjalagalj gala," injoonoojin,*
thrice 1-TR-see-REC.PST-SIMUL thus 3-TR-do/say-REM.PST=3MIN.IO
biligidmin roowil innyana boonoogij biligij
again=THEN=CONJ walk 3-TR-catch-REM.PST that way-INTENS again-INTENS
injalana inyjarrnganana ginyinggi bardag.
3-TR-see-REM.PST 3-PST-stand-CONT-REM.PST 3MIN tree.
'"I've seen it three times," he said. He kept on walking further, and saw the same tree standing there.'

This suffix is frequently used in elicited sentences, particularly by the oldest speakers, but is rare in texts.

The etymology of *-j* is unclear. It may be related to the dative suffix (**-ji*), which is used on verbs in several different functions, as has been described in detail for Yawuru. The two suffixes show the correct phonological correspondences, although using a dative to mark simultaneous action (rather than purposive) would be very unusual. It is quite possible that *-j* continues another morpheme.

7.3.2 Null ending

The final possibility for suffixation is no suffixation at all. It is possible with both present and past tense prefixes; it has not been recorded for the future or irrealis.

(7.29) *Angan minjalngay?*
why 2-TR-look at=1MIN.DO
'Why are you looking at me?'

The absence of tense/aspect suffixes is much more common in Nyulnyul than in Bardi. Most of McGregor's examples have no tense/aspect suffix, and the same is true for the

forms in Nekes and Worms (1953), who do not even mention that Nyulnyulan languages have tense suffixes.

Interestingly, tense/affix suffixation is almost non-existent in Bardi song texts. One occasionally finds *-n* or *-na* used, as in (7.30a), but most verbs are unsuffixed (for an example see (7.30b)).[7]

(7.30) a. *Booroo nganjanboon ngayoo /*
ground 1-TR-tread-CONT 1MIN
'I'm stepping on the ground.' (Text: BA's Ilma: 1/1)

b. *Ngalaj inngooloon ngayoo birdbag innya_ /*
lightning 3-TR-throw-CONT – sheet lightning 3-TR-catch-ø
'Lightning's flashing, lightning's flashing.' (Text: BA's Ilma: 2/2)

7.3.3 Reconstruction

All the languages with detailed data and final vowels oppose a continuative/present tense suffix *-n* with a general past suffix *-na*; we can reconstruct these suffixes back to Proto-Nyulnyulan.

Further reconstructions, however, are more difficult. Only Bardi has a distinct future tense suffix (although note that Nyikina has a non-cognate habitual future *-ngani*). A perfective suffix *-da* can be reconstructed to Proto-Eastern Nyulnyulan, but does not seem to appear in the Western languages.

A few suffixes have transparent etymologies and have been grammaticalized in individual languages from temporal/aspectual adverbs. Bardi *-gal* (from a probably borrowed completive particle *gala*) and Nyikina/Warrwa *-garda* (c.f. Bardi *gard(i)* 'still') fall into this category.

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[7]Many songs are in the present tense, which accounts for some of the lack of suffixation, although the lack of any suffixes is still striking. *Ngay(oo)* in song language is a filler word, like 'la' in English songs, although sometimes (e.g. in (7.30a)) it is also used as a pronoun.

A summary of forms is given in Table 7.3 below:

Language	Past	Cont.	Rec. Past	Perf.	Expect-ation	Other	Gloss
Bardi	*-na*	*-n*	*-ij*			*-gal*	recent past
						-a	future
Nyulnyul	*-an*	*-in*					
Jabirr-Jabirr							
Nimanburru							
Yawuru	*-na*		*-rn* ∼*-ny*	*-nda*	*-ji*		
Nyikina	*-na*	*-n*	*-ny*	*-da*	*-dji*	*-garda*	hab. present
						-ngani	hab. future
						-ngany	hab. future(Bny)
Warrwa	*-na*	*-n*	*-ny*	*-rda*		*-garda*	hab. present
						-(ng)gay(a)	continuative
pEN			**-ny*	**-(n)da*	**-ji*		
pN	**-na*	**-n*					

Table 7.3: Nyulnyulan TAM suffixes

The Eastern Nyulnyulan languages have a suffix reconstructible as **-da* or **-rda*. I assume that the Yawuru form *-nda* is a fusion of the perfective and the continuative *-n* or the (remote) past tense marker *-na*. Note that in Warrwa the equivalent form obligatorily co-occurs with the past tense marker *-na* (where it means that the situation occurred habitually in the past, but no longer occurs). This suffix is variously glossed as 'habitual' past or 'perfective'.

The habitual present is a category found (to my knowledge) only in Warrwa and Nyikina, where it is marked by *-garda*. McGregor describes the function of the habitual present as indicating a habitual action which is still habitual at the moment of speaking. I assume that this is cognate with Bardi's adverb *gardo* or *gardi* 'still, already', where it has a similar function:

(7.31) *Gardo arrngankan jard ngaanka.*
still 1-AUG-speak-CONT 1AUG.POSS'R language
'We keep on speaking our language.'

We have parallels for the grammaticalization of adverbs as tense/aspect markers in

Nyulnyulan languages in Bardi's *gala* > *-gal* (c.f. (7.13) above).

Most of the Nyulnyulan languages have a remote or general past tense suffix *-na* (the Nyulnyul form *-an* shows regular vowel harmony and subsequent final vowel deletion). In Bardi *-na* is the remote past, narrative past and used in other circumstances when one is not specific about the aspect used.

The Eastern Nyulnyulan languages also have a suffix *-ny*. This is not found in the Western languages. The meaning of *-ny* in Eastern Nyulnyulan is somewhat unclear. Some grammars treat it as a recent past suffix (contrasting with *-da* and *-na*) while others treat is being a variant of *-na*.

In both Nyikina and Warrwa it is possible to use the dative case on verbs. In Yawuru Hosokawa claims it is used in imperatives, while Stokes' description is that the suffix conveys an 'expectation' of some kind. Bardi and the other Western Nyulnyulan languages, as noted above, have lost the dative case in the meaning of 'dative', and mark most of those functions with oblique pronominal cross-reference and absolutive marking on the argument.

Chapter 8

Valency and Transitivity

Nyulnyulan languages do not show common valency-changing derivations, such as passives and antipassives, although they do have several different morphological and syntactic means of changing the transitivity of a verb stem and the argument structure of a predicate. Reflexive/reciprocal marking is morphologically marked on the verb, and there is an applicative suffix, etymologically from the instrumental case.

The analysis of valency and transitivity in Nyulnyulan languages is problematic. The problems of analysis are compounded by several different factors. The free omission of arguments (especially topics) makes it difficult to determine whether a verb such as *inarlij* means 'he ate [it]' (transitive with omitted object) or 'he ate' (semitransitive). The presence of multiple case frame possibilities for both superficially transitive and intransitive verbs means that it is impossible to use case marking as a simple diagnostic for transitivity. Finally, there are mismatches between the morphology of the predicate (in complex predicates) and the number of arguments which appear to be licensed in the clause.

§8.1 contains a discussion of the different ways of marking reflexive and reciprocal forms in Bardi and Nyulnyulan, while §8.2 gives details of the syntax and functions of the several applicatives in Bardi.

8.1 Reflexives and reciprocals

8.1.1 *m(a)- -inyji*

The primary reflexive/reciprocal marker in Bardi is a circumfix of the form *m(a)- -inyj(i)*. The morphemes are immediately adjacent to the verb root. Verbs marked for the reflexive/reciprocal are formally intransitive — they take the intransitive second person imperative *nga-*, for example. The prefix component *m-* interacts with the initial consonant of the root. Initial obstruents are deleted, while epenthesis occurs between *m-* and initial sonorants. Thus the reflexive stem of the root *-jala-* 'see, look at' is *-m-al-inyji-* (< **ma-jala-inyji-*) (see, for example, (8.1b)), while the reflexive form of *-marra-* 'cook, burn' is *-ma-marr-inyji-*. Some examples are given in (8.1).

(8.1) a. *Nyoongool oorany gardi imalalinyjin nimarlgoyarr.*
old woman still 3-REFL$_1$look after-REFL$_2$-CONT self
'The old woman is (still) looking after herself.'

b. *Nyoonangarr anggarrmalinyja Ardiyooloon.*
here-JUST 1-FUT-AUG-REFL$_1$see-REFL$_2$-FUT One Arm Point-LOC
'We'll see each other over there at One Arm Point.'

c. *Bardag ingoomoogoolinyjigal nimorlgoyarr.*
tree 3-PST-REFL$_1$-break-REFL$_2$-REC.PST self
'The tree broke on its own.'

Nekes and Worms (1953:150) describe the reflexive/reciprocal as *ma-/me-* and *-djen*. They have misanalyzed forms such as *ma-madjalen-djen* 'to look at each other' (Jabirr-Jabirr) (their morpheme boundaries); they place the reflexive suffix portion following the tense marker. The correct morpheme division is *ma-ma-jala-nyji-n* GER-REFL$_1$-see-REFL$_2$-CONT. Perhaps Nekes and Worms were confused by the use of the third minimal oblique *=jin* as reflexive with the verb *-joo-* 'do/say'.

Many verbs are ambiguous between reflexive and reciprocal interpretations when plural. When the subject is minimal, of course, there is no ambiguity, as interpretation can only be reflexive.

(8.2) *ingoorroomooloologinyjigal*

i- ngoo- rroo- m- [j]oolooloog -inyji -gal
3- PST- AUG- REFL$_1$- break -REFL$_2$ -REC.PST

a. 'They were washing themselves.'

b. 'They were washing each other.'

See further McGregor (2000) for detailed discussion of the semantics and argument structure of reflexive/reciprocal constructions.

8.1.2 Suffixal reflexive marking

In all the well-attested Nyulnyulan languages, the reflexive suffix can appear without the prefixal component. Some examples for Bardi are given in (8.3), and for other Nyulnyulan languages in (8.4):

(8.3) a. *Mingamarrinyjigalj*

mi- nga- marr[a] -inyji -gal -j
2- PST- cook/burn -REFL$_2$ -REC.PST -SIMUL

'You burnt yourself.' (Metcalfe 1975:94)

b. *Anggoorrngoorroobinyja*

a- ngg- (a)rr- ngoorroob[i] -inyj[i] -a
1- FUT- AUG- chase REFL$_2$ -FUT

'We'll chase each other.' (Metcalfe 1975:95)

c. *Miinimb irrmoondoomoondinyjinj.*
whale 3-AUG-REDUP-wet-REFL$_2$-CONT-SIMUL

'The whales are wetting themselves.' (Aklif 1999:-moondoo-)

(8.4) Nyikina

ngunydyin-nil ma-ra-nydyi-n
inclined-many GER-spear-REFL$_2$-CONT

'They're inclined to spear each other.' (Stokes 1982:291)

Hosokawa (1991:§4.8.3) argues for Yawuru that suffix-only examples are obligatorily analyzed as reciprocals, and do not admit the reflexive interpretation. He points to pairs such as the ones illustrated in (8.5) below. In (8.5a), Hosokawa claims, only the reciprocal reading is allowed, while (8.5b) is ambiguous.

(8.5) a. *Ingarraburanjin kambarri.*

Inga- rr- a- bura -nji -n kamba -rri.
3- AUG- TR- see -REFL -IMPERF that -DL

'They two see each other.' (Hosokawa 1991:§4.6.6.1)

b. *Ingarrmaburanjin kambarri.*

Inga- rr- ma- bura -nji -n kamba -rri.
3- AUG- REFL- see -REFL -IMPERF that -DL

'They two see themselves/each other.' (Hosokawa 1991:§4.6.6.1)

My data for Bardi confirm this interpretation to a certain extent, although the judgments are not entirely clear. In (8.3c) above, for example, the translation given was reflexive, not reciprocal[1] but the reduplication of the root also implies pluractionality — in this example it is clearly not the case that each whale is splashing itself, taking care not to get any water on its companions; the action is not directed reciprocally either, however, for the whales are presumably not deliberately having a water fight.

Bardi also has a few pairs of verbs that differ only in the presence or absence of the initial or final component of the reflexive:

[1]Although even this is not conclusive — the example is from the Bardi dictionary, and it is possible that the translation was given in Aboriginal English, where 'himself' can be used in either reflexive or reciprocal meaning.

(8.6) a. *-jilbira-* 'sing'

b. *-milbira-* 'echo'[2]

(8.7) a. *Imandandina.* 'He's scratching himself.' (root: *-mandanda-*[3])

b. *Imandandinyjin.* 'He's scratching himself.'

In the case of (8.6) it is likely that the form with the reflexive prefixal component *m-* is fossilized, since *-milbira-* is not felt by speakers to be derived from *-jilbira-*.

8.1.3 Monovalent roots and reflexive marking

Some monovalent stems can take reflexive/reciprocal derivations, especially in conjunction with applicative morphemes. A sentence from Nyikina is given in (8.8):

(8.8) Nyikina (Stokes 1982:288)

Yi-ma-bula-nydyi-na-ngany *yibirirr* ... *inydya yin-ba-na.*
3-REFL$_1$-come-REFL2-PST-APPL king brown going 3-TR-see-PAST

'He came across a King Brown snake (*Pseudechis Australis*) ... he saw it moving.'

Stokes (1982:287ff) describes this use of the reflexive as denoting 'self-contained' events; that is, actions that only significantly involve action between the subject and object. The only data I have on equivalent uses of the reflexive/reciprocal with monovalent roots in Bardi is the verb in (8.9), which could be a mistranscription (that is, missing an ungrammaticality marker), and that in (8.10).

(8.9) *Lol* *ingirrmiidinyjigal.*
burn 3-PST-AUG-REFL$_1$-go-REFL$_2$-REC.PST
'They set each other on fire.' (CB/FN: 12/26)

[2]Metcalfe (1975:96) has this verb as obligatorily suffixed, and records an example *ingimilbirinyjij* 'it echoed', although I recorded *ingimilbirigal*, with no reflexive/reciprocal suffixation.

[3]The cognate in Nyulnyul, quoated in (8.11) below, is *-kandakand-*, implying that the reflexive prefix has been fossilized in Bardi.

(8.10) *Joodarrarr* *ingarrmalalinyjigal.*
go with the tide 3-PST-AUG-REFL$_1$wander-REFL$_2$-REC.PST
'They went with each other, floating along with the tide.' (CB/FN: 12/26)

Although the complex predicate in (8.10) is intransitive, and takes a single subject argument, the light verb it is derived from, *-galala-* 'follow', is bivalent. Thus this is not an unambiguous example of intransitive reflexive/reciprocal marking in Bardi.

8.1.4 Etymology

All Nyulnyulan languages show a reflexive/reciprocal marker consisting of the prefix *ma-* or *m-*, which appears directly before the verb root, and a suffix *-(i)nyji*.

Language	prefix	suffix
Bardi	*m(a)-*	*-inyji*
Nyulnyul	*ma-*	*-inyj(i)*
Jabirr-Jabirr	*ma-*	*-inyj*
Yawuru	*ma-*	*-inyji*
Nyikina	*ma-*	*-nyji*
Warrwa	*ma-*	*-inyji*
pN	**ma-*	*-inyji*

Table 8.1: Nyulnyulan reflexive/reciprocal markers

The reconstruction of forms is straightforward. There are differences in syntax between the Nyulnyulan languages, however. In Bardi, reflexive/reciprocal verbs are always intransitive, and the ergative marker does not appear on the subject of a Bardi marked with the reflexive/reciprocal. In other Nyulnyulan languages, however, ergative marking on the subjects of reflexive/reciprocal verbs is possible. Examples are given in (8.11) for Nyulnyul and Yawuru:

(8.11) a. Nyulnyul (McGregor 2000:100)
Yilin *i-ma-kandakand-inyj.*
dog-ERG 3-REFL$_1$scratch-REFL$_2$
'The dog is scratching itself.'

b. Yawuru (McGregor 2000:100)
I-na-nya-n *banikin, bibi-ni* *i-ma-bilka-nyji-n* *baba-yi*
3-TR-catch-IMP billycan mother-ERG 3-REFL$_1$-hit-REFL$_2$-IMP child-DAT
jina.
3MIN.POSS'R

'The mother picked up a billycan[4] and hit herself with it for her daughter [in mourning].'

8.1.5 Other reflexive marking

In addition to the circumfix *m- -inyji*, there are two other ways in which reflexive/reciprocal marking can be accomplished in Bardi. One is the use of a light verb, the other is through oblique object marking.

8.1.5.1 *-banji-* 'share'

Reflexive/reciprocal morphology on an inflecting verb is generally used only in simple predicates. In complex predicates, the light verb *-banji-* 'share' provides the reflexive or reciprocal meaning. This is also found in other Nyulnyulan languages (an example is given from Nyikina in (8.14)[5]). In (8.12) and (8.13), the first member of the pair is the regular verb, while the (b) form is the reflexive. In (8.13), we see an example with *both* the reflexive verb *-banji-* 'share' and the reflexive prefix *m-*.

(8.12) a. *Maanka inamana.*
black 3-TR-put-REM.PST
'He made it black.'

b. *Maanka imbanjij.*
black 3-PST-share-REM.PST
'He made/painted himself black.

(8.13) a. *loorrbooloorrboo inanggana* 'he was talking past him, not listening'

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[4]A billycan is a metal container (these days often a golden syrup tin) used for cooking and making tea over an open fire.

[5]Stokes (1982:291) gives the verb root as *-barnji-* rather than *-banji-*. I do not know if this is a transcription error of if the root has a retroflex nasal in Nyikina.

b. *loorrbloorrb ingarrbanjij* 'they were arguing with each other'

c. *loorrbloorrb ingorrmonjij* 'they were arguing with each other'

(8.14) Nyikina
Dyub ngam-barnji-ny.
cut 1(IT)-share-PST
'I cut myself.' (Stokes 1982:291)

A few complex predicates do admit reflexive/reciprocal marking, however. A few examples are given below. In (8.15) the complex predicate *barn -joo-* is reflexivized with reflexive/reciprocal marking on the verb. In (8.16) the reflexive/reciprocal prefix is used on the verb *-banji-*. (8.17) provides a few examples of other complex predicates from other Nyulnyulan languages.

(8.15) *Barn ingiminyjin, "Arra ngalalaliyarr, loogal*
think 3-PST-REFL$_1$-say-REFL$_2$-CONT NEG 1-IRR-follow-FUT=3AUG.DO bad
jirr ambooriny."
3AUG.POSS'R person
'He told himself, "I won't follow them, they are bad people."'

(8.16) *loorrbooloorrboo ingorrmonjij.*
REDUP-argue 3-PST-AUG-REFL$_1$-share-MID.PERF
'they are arguing with each other.'

(8.17) a. Warrwa (McGregor 2000:97)
Ngayu kanyjirr nga-ma-yala-nyji-ny.
1MIN look 1MIN-REFL$_1$-see-REFL$_2$-PST
'I looked at myself.'

b. Yawuru (McGregor 2000:98)
Dukub inga-rr-ma-ka-nyji-n kamba-yirr jarndi-yirr wamba.
punish 3-AUG-REFL$_1$-carry-REFL$_2$-IMP that-DL woman-AND man
'The couple [who had eloped] let the people punish them [so that they could belong to the community].'

8.1.5.2 =*jin* '3mIO' as reflexive

There are some examples of the third person oblique clitic =*jin* being used with a reflexive meaning. Examples appear to be confined to *-joo-* 'say' and complex predicate derivatives which are also speech verbs (such as *barn -joo-* 'think, tell oneself something').

(8.18) *'Jan injoogal?'* *angirrijin.*
where 3-TR-do/say-REC.PST 1-PST-A-do/say-3MIN.IO
'"Where did he go?" we asked (ourselves).' (Text: DW:CT/26)

As shown by (8.18), *=jin* used in this way does not agree in person and number with its antecedent when used in this way. If it were agreeing with the subject, the verb form would be *angirrijarda* instead. There are a few examples which imply that *=jin* is used to mark reflexives of verbs which have dative objects. An example is given in (8.19).

(8.19) *Mayalanim inanggalbijin* *irdi.*
goanna-ERG 3-TR-PST-dig=3MIN.IO burrow
'The goanna dug himself a hole.'

I have no examples of possible oblique reflexives with non-third person subjects, nor do I have data for verbs which take oblique objects and whether they also admit reflexive circumfixal marking, other than for *-joo-* 'do/say'. This is a topic for future research.

8.2 Applicatives

The other valency-changing process in Nyulnyulan languages is applicative marking. Its basic function is to promote an oblique argument or an adjunct to the direct object position.

The form of the applicative marker is *-ng* or *-nga*. There is a further (possibly compound) suffix *-nginj* or *-nginyj*, to be discussed further below. Some examples are given in (8.20) and (8.21).

(8.20) *Roowil ingirrinyanang* *barda Iilonko barda Jawanan daab*
walk 3-PST-AUG-catch-REM.PST-APPL away I.-ABL away J.-LOC climb
ingirrinyan *jarri.*
3-PST-AUG-catch-REM.PST this.
'They walked off with [him] from Iilon and climbed up at Jawanan (a hill on Sunday Island).'

(8.21) *"Bilamb anggoorromoogara biil ara noorroo,*
AGAIN-LINK 1-FUT-AUG-TR-make-FUT again other fire
anggoorroloorroonginj noorroo."
1-FUT-AUG-TR-kindle-APPL fire.
"We'll make another fire, we'll kindle another fire with it."

Bardi has two slots for the applicative marker. The two applicatives exhibit different syntactic behavior, although the form of the morpheme is identical. The first applicative transitivizes the verb and affects prefix morphology. Thus a verb stem inflected with applicative$_1$ will take transitive imperative marking. This does not happen when the verb takes applicative$_2$ marking. Some verbs can take both applicatives. Compare the difference in imperatives for the two applicatives of *-jiidi-* 'go'. The verb in (a) shows the transitive imperative prefix, while the (b) verb shows the intransitive one.

(8.22) a. *an-jiidi-ng!* 'touch it!'[6] (Applicative$_1$)

b. *nga-yiidi-ng!* 'go with him!' (Applicative$_2$)

Neither applicative appears to be very productive, although this may be a feature of language loss. For example, speakers varied in which applicative verbs they would accept. Furthermore, grammaticality judgments were not consistent; speakers disagreed over which verbs were grammatical with the applicative$_2$ and speakers' own judgement changed over time.

8.2.1 Applicative$_1$

The first applicative is attested with only a few roots. It occurs immediately adjacent to the verb root, before the reflexive/reciprocal suffix. All attested roots are given with examples in (8.23):

[6]The applicative$_1$ suffix often changes the meaning of the verb root.

(8.23) a. i. *inyjiidina* 'he went [somewhere]' (root: *-jiidi-* 'go')
ii. *injiidingana* 'he touched it' (root: *-jiidi-nga-*)
b. i. *inanggalana* 'he lived a long time ago' (root: *-gala-* 'visit, live')
ii. *inanggalangana* 'he helped him' (root: *-gala-nga-*)
c. i. *imbooloona* 'he came' (root: *-booloo-* 'come')
ii. *imboolongan* 'it came in (of tide); he came out at [a place]' (root: *-booloo-ng-*)
d. i. *injooloona* 'he collected it' (root: *-jooloo-* 'collect')
ii. *injooloongana* 'he collected it' (root: *-jooloo-ng-*)
e. i. *injoona* 'he said it' (root: *-joo-* 'do/say')
ii. *birarr injoongana* 'he left him behind' (root: *-joo-ng-*)

The semantics of the applicative$_1$ suffix are difficult to describe. There are too few examples, with too many irregularities, to allow us to develop a cohesive description. One point on which the use of applicative$_1$ differs between verb roots is the argument structure. The applicative$_1$ seems not to affect the valency of every root it attaches to. For example, *-jooloo-* and *-jooloong-* are described as homophonous by Bardi speakers, and both verbs have the same argument structure (2 arguments, ERG and ABS case frame). Likewise, the monovalent *-booloo-* 'come' does not appear to increase its valency with the addition of the applicative$_1$ in one meaning, although it does have the additional meaning 'come out at a place', which is bivalent.

Nyulnyul attests the stem *-jiidi-ng-* 'touch'; I have no data on the other roots with this applicative in Nyulnyulan languages. I also have no data on variable applicative placement in the other languages; it is not mentioned in the other grammars.

8.2.2 Applicative$_2$

The second applicative marker is much more common. This applicative occurs towards the end of the suffix chain, between the continuative suffix and the recent past *-gal*.

Applicative$_2$-marked verbs show intransitive morphology. The applicative can, however, affect the case marking structure of the clause. For example, the complex predicate *roowil*

-(i)nya- 'walk' normally takes a single argument in the absolutive. When combined with applicative$_2$, however, the subject is ergative:

(8.24) *Aarlimarr injoolana roowilgid innyanang gala*
fish-WHILE 3-TR-collect-REM.PST walk-THEN 3-TR-catch-REM.PST-APPL$_2$ thus
layoordoonim.
ghost-ERG
'While she was collecting food, a *layoordoo* spirit was walking with her.'

(8.25) *Nyoongoolnim aamba arra jagoord oolinigirr*
old-ERG man NEG return 3-IRR-do/say-REM.PST-APPL$_2$=3AUG.DO
aalamalarr.
man's child-sister
'The old man didn't come back with his children and sister [he stayed with his son in Derby instead].' (GA/FN: S2/30)

There are three basic uses of this suffix. The first is to promote oblique-marked goals to direct objects. Compare (8.26) below, where the sentence in (a) shows oblique agreement, while the sentence in (b) shows the applicative and direct object agreement. In (8.27), the applicative acts as a transitivizer and turns the intransitive predicate 'jump [on]' into a predicate where the goal is marked.

(8.26) a. *Inangganajarda.*
3-TR-PST-bring-REM.PST=1AUG.IO
'He brought it to us.'

b. *Inangganangamoord.*
3-TR-PST-bring-REM.PST-APPL$_2$=1AUG.DO
'He brought us it.'

(8.27) *Wirr inyjarrmining iilanim.*
rise 3-PST-rise-REM.PST-APPL$_2$ dog-ERG
'The dog jumped on him.' (Text: TE: DR/16)

The second use of applicatives is their use in promoting an adjunct (in an accompaniment role) to direct object position. This is illustrated in (8.28), for example. In the (a) sentence, the adjunct *birrii* 'mother' is marked with the comitative case. In the equivalent (b) sentence, however, the verb is marked with the applicative *-ng*, the former adjunct is

now marked in the absolutive, and the subject pronoun, *ngayoo*, is marked with ergative case. Further illustration from texts is given in (8.29) and (8.30).

(8.28) a. *(Ngayoo) bard roowil ngannyana birriinyarr.*
1MIN off walk 1-TR-catch-REM.PST mother-COMIT
'I walked with my mother.'

b. *(Ngayoonim) bard roowil ngannyanang birrii.*
1MIN-ERG off walk 1-TR-catch-REM.PST-APPL$_2$ mother-ABS
'I walked with my mother.'

(8.29) *Sacrament bard ingarranang irrmorlon. Arrab*
s. off 3-PST-AUG-carry-REM.PST-APPL$_2$ 3AUG-hand-LOC. NEG-REL
birarr oolirrining.
leave behind 3-IRR-AUG-do/say-REM.PST-APPL
'They carried the Sacrament with them in their hands. They didn't leave it behind.'

(Text: JS HH/24)

(8.30) *Ingananamarr baaloon, barnimarr inganana malygin*
3-PST-sit-REM.PST=WHILE shade-LOC there-WHILE 3-PST-sit-REM.PST secretly
inyjiminanang nyalaboo joorroonim.
3-PST-sneak up onCONT-REM.PST-APPL$_2$ this way snake-ERG.
'While he was sitting there in the shade, while he was there a snake was sneaking up on him.' (Text: NI: JIMI/5)

Finally, applicatives can be used to promote an instrument from adjunct to object status:

(8.31) *i- nu- mundu -na -na -ng =jarrngayu*
3- TR- wet -CONT -PST -APPL$_2$ =1MIN.DO
'He kept on wetting me with it.' (Metcalfe 1975:107)

Example (8.31) raises an interesting property of Bardi applicatives. The presence of *-ng* and the promotion of the instrument to direct object does not appear to affect the underlying direct object. When the applicative is added to a transitive verb, the underlying object remains, and is cross-referenced by agreement.

A further interesting property of instrumental applicatives (but not comitative applicatives) is that the instrument can surface with instrumental marking (that is, still marked as an adjunct), even though applicative marking appears on the verb. Two examples are given in (8.32). (8.32a) shows an example with instrumental marking and applicative marking, while (8.32b) shows an example with absolutive marking.

(8.32) a. *Baalnga ingorrondiningirr.*
bark-INST 3-PST-AUG-TR-cover-REM.PST-APPL=3AUG.DO
'They covered them with bark.' (Aklif 1994a:6)

b. *Ginyinggamba ginyinggi gaarranimbi inambarndining*
that's how 3MIN sea-ERG-REL 3-TR-PST-cover-REM.PST-APPL
ginyingg boonyja booroo ginyingg gaarra.
3MIN all land 3MIN sea
'That's where the sea covered the whole country with water.' (Text: NI: FL/12)

8.2.3 Applicative$_3$? *-nginj*

Finally, some comments are warranted on the form variously recorded as *-nginj* or *-nginyj*.[7] It appears to be a variant of the regular applicative$_2$, *nga-*. It is only used by one speaker consistently, and other speakers use it sporadically. An example was given in (8.30) above. (8.33) gives a few more examples:

(8.33) a. *Arra jarrmin milinginj, jagoord anja!*
NEG rise 2-IRR-do/say-NGINJ return 2.IMP-TR-do/say-FUT
Don't go with him, come back!

b. *Oogool anarr ngarranggoo langar aarli*
scatter 2.IMP-TR-give-3AUG.DO crab bait fish
ankinyinginj.
1+2-TR-FUT-catch-NGINJ
Scatter the crab bait, so that we can get fish.

[7] I suspect the correct form is *-nginj*, and *-nginyj* is a transcription error. However, examples from both Aklif's field notes and my own show enough variant transcriptions to make this uncertain.

There are several possible analyses for *nginj/nginyj*. Firstly, it could simply be a direct reflex of the Proto-Nyulnyulan comitative/instrumental, *-ngany*, plus the simultaneous action marker *-j*. Final **-ny* is regularly lost in Western Nyulnyulan, but perhaps *-ny* was preserved in this context. This is rather unlikely, however, as there are other contexts where **-ngany* was not in final position and the *-ny* was still lost (presumably through analogy). Also, we expect sequences of *NVNO* (that is, nasal-stop clusters preceded by a nasal) to be reduced to *NVO* through nasal dissimilation (thus we would expect ×*-ngij* if *nginj* were a direct reflex of **ngany-j*), and this points to an etymology with multiple morphemes.

The second possibility is that *-nginj* is the applicative$_2$ *-ng* plus a variant of the simultaneous marker *j*. This solution will fit semantically with almost all the examples. This solution is probably incorrect, however. Consider (8.34):

(8.34) *Baybirr birarr nganjoonggalnginj.*
behind leave behind 1-TR-do/say-APPL$_1$-REC.PST-NGINJ
'I left him behind.'

The verb in (8.34) contains both the recent past *-gal* and *-nginj*, and *-nginj* appears after the tense marker (c.f. (8.26)) — recall that applicative$_1$ and applicative$_2$ both appear before the marker. It is possible that the applicative has three positions (APPL$_1$ before the remote past *-na*, APPL$_2$ before the recent past *-gal*, and APPL$_3$ before the simultaneity suffix *-j*.

Some elicited examples of *-nginj* are said by speakers to have identical marking to corresponding sentences with applicative$_2$ marking.

(8.35) a. *Roowil innyagalnginyji.*
walk 3-TR-catch-REC.PST-NGINJ
'He was walking with someone.'

b. *Roowil innyanggal.*
walk 3-TR-catch-APPL$_2$-REC.PST

(CB/FN: suppl)

On the other hand, there is evidence that *-nginj* introduces a human (=comitative) participant, and not an instrument (whereas APPL$_2$ can do both). As seen from (8.36), the verb *inamboonginj* can only admit a comitative reading; the instrumental reading is ungrammatical.

(8.36) *Inamboonginj.*
3-TR-PST-poke-NGINJ
a. 'He poked it with someone else.'
b. * 'He poked it with something.'
(CB/FN: suppl)

The example in (8.37) would appear to refute this, however. Here the applicative is promoting *dinggi*, 'dinghy', which is not an accompanying noun.

(8.37) *Ginyingginim aamba imboorrngoogalnginj dinggi.*
this-ERG man 3-PST-cross-REC.PST-NGINJ dinghy
'The man crossed the river with a dinghy.' (CB/FN: suppl)

In the absence of further information, I treat *-nginj* as an unanalyzable variant of the applicative$_2$ *-ng(a)*. We have no parallels for multiple positioning of the applicative suffix in other Nyulnyulan languages and there are no parallels for the form *-nginj* in Western Nyulnyulan languages.

8.2.4 Applicatives in other Nyulnyulan languages

Other Nyulnyulan languages also have applicatives, but the descriptions of the other languages make it appear that their applicative marking is simpler than that found in Bardi. Only *appl*$_2$ is attested in the other languages, apart from the mention in Nyulnyul of a pair of verbs *-jid-* 'go' and *-jiding-* 'touch', which illustrates APPL$_1$ suffixation.

The functions of the applicatives in other Nyulnyulan languages are similar to those attested for applicative$_2$ in Bardi. Some examples are given for Warrwa in (8.38) and for Nyikina in (8.39):

(8.38) Warrwa

a. *Linykurra -ni jawu jan -ngany yila nilirr -kany jina.*
crocodile -ERG swim it:did -APPL dog mouth -LOC his
'The croc was swimming along with a dog in its mouth.'

b. *kinya -na waijbal bulany -ngany -janu*
this -ERG white person he:came -APPL -1SG.OBL
'That white man brought money to me.'

(8.39) Nyikina

a. *mabu yim-barndyi-na ... lagaba gurrag yi(n)-ø-na-ngany.*
good 3MIN-share-PST fat go away 3MIN-do-PST-APPL
'He got himself better ... he took some fat away with him' (i.e., he healed the wound by rubbing fat on it) Stokes (1982:306, SN/561)

b. *yi- rr- banji -ny -ngany =jirr nganka warany -nil -ji*
3- PL- share -PST -APPL -3PL.DO talk other -many -DAT
'They were gossiping about them (other people). (Stokes 1982:73, 4.5.1.2)

In each language except Yawuru, the applicative is homophonous with the instrumental case.[8]

8.2.5 Etymology

The forms of the applicative are given in Table 8.2 below. The instrumental and the two comitative case markers are given for comparison, as reconstruction involves all three.

I reconstruct both the instrumental and the applicative as **-ngany*. I am agnostic on whether the Proto-Nyulnyulan suffix **ngany* was also used as a comitative; it probably was. I also reconstruct a second comitative **-nyarri*. The Eastern Nyulnyulan languages have two comitative suffixes and this could be a retention from an earlier stage of the language. Final loss of **-ny* in Western Nyulnyulan is regular (see §3.5.1.4 above). Karajarri and other Pama-Nyungan languages further south (e.g. Yingkarta) have a comitative suffix *-parri*; I assume that this is the source for the suffix in Eastern Nyulnyulan.

[8] Yawuru's *-barri* is a borrowing from the neighbouring language Karajarri. Some Nyulnyulan languages have two comitative markers. They differ slightly in semantics.

Language	Applicative	Instrumental	COMITATIVE$_1$	Comitative$_2$
Bardi	*-ng(a)*	*-ng(a)*		*-nyarr*
Nyulnyul	*-ang*	*-ang*		*-nyirr*
Jabirr-Jabirr	*-ang*	*-ang*		*-(i)nyirr*
Nimanburru	*-ang*	*-ang*		*-nyirr*
Yawuru	*-ngany*	*-barri*		*-ngany*
Nyikina	*-ngany*	*-ngany*	*-barri*	*-ngany*
Warrwa	*-ngany*	*-ngany*	*-barri*	*-nyarri*
pN	**-ngany*	**-ngany*		**-nyarri*
Karajarri			*-parri*	

Table 8.2: Nyulnyulan applicative suffixes and relevant case markers

William McGregor reconstructs **-ngany* as the Proto-Nyulnyulan combined comitative/instrumental case suffix, clitic, or postposition in McGregor (1998, n.d. b,n). Note that McGregor reconstructs *-(i)nyarr* in Bardi as a loan from Warrwa. I assume his reasoning is that the other Western Nyulnyulan languages show *-nyirr*. There is no need to assume a loan, however, since Bardi does not have the regressive vowel harmony for *i* that the other Western Nyulnyulan languages exhibit. *-nyarr* in Bardi is the regular reflex of **-nyarri*; we do not need to assume borrowing.

Chapter 9

Preverbs and Complex Predicates

9.1 Introduction

Complex predicate constructions are one of the most important components in the grammar of Bardi. Complex predicates appear in many sentences and outnumber simple predicates in absolute numbers by more than 3:1. They are even more numerous in texts. When verbs are borrowed, they are borrowed as preverbs in complex predicate constructions, not as inflecting verbs. Complex predicates are also productively formed from adjectives.

Complex predicates do not, however, form a homogeneous set. There are several different types, with different semantics, and with a light verb fulfilling different functional roles. Bardi seems to show idiomatic complex predicates, event classification, and a type of pseudo-incorporation of direct objects; each type of complex predicate involves different verbs and possibly different syntax. The complex predicate system should also be examined in the context of other types of verbal predicates in Bardi. After all, although complex predicates form a very important component of predicate formation in Nyulnyulan languages, they are not the only way to form predicates and they should be treated as part of the syntax of predicates as a whole, both verbal and non-verbal.

Once again, in this chapter I have both diachronic and synchronic analytical aims. A

large part of the chapter, of course, is showing that the relevant constructions in Bardi are, in fact, complex predicates, and not something else. In order to do this, I review the theoretical literature on complex predicates and give a working definition (in §9.2). I give detailed tests and evidence to support the analysis of Bardi preverb-inflecting verb constructions as complex predicates (in §9.4). I have largely developed my own tests, since none of the previous studies of Northern Australian complex predicate structures are explicit in their reasons for regarding the relevant forms as complex predicates (or light verbs) rather than something else (for example, an auxiliary). In §9.3 I discuss those analyses of Northern Australian that do have formal analyses and make explicit claims.

In §9.5 I examine the composition of complex predicates in more detail. Specifically, I examine the semantics of light verbs and the contribution of the light verb to the predicate as a whole. I follow McGregor (2002) in considering the light verb to make a contribution to the classification of the preverb, although there are aspects of his analysis which I cannot sustain for Bardi, and I would not argue that all preverb-light verb constructions involve classification.

In Nyulnyulan languages we have an interesting problem which does not seem often to arise in analysis of other languages with complex predicates. In some languages we have examples of monovalent light verbs which end up as part of transitive complex predicates (found, for example, in Wagiman motion verbs and in Ngan'gityemerri). In all the Nyulnyulan languages, however, we find bivalent light verbs in intransitive complex predicates. This poses problems for analysis, as we would expect such structures to violate completeness constraints or the theta-criterion; the verb seems to project an argument which cannot surface. In §9.6 I discuss this problem and various solutions.

Finally, we need to consider what contribution the light verb makes to the argument and event structures of the predicate. In §9.8 I propose that Nyulnyulan complex predicate

constructions fit into a larger set of classificatory preverb-light verb complex predicates. Indeed, they fit a larger cross-linguistic pattern of the use of light verbs to mark one of four categories of what can be broadly called 'event structure'. That is, I argue ultimately that one of the main functions of light verbs is to add an event variable to the structure of the predicate. In summary, in (9.1) I provide some questions which are the framework for this chapter. (a)-(c) are from Butt and Geuder (2001:337); I have added the questions in (d).

(9.1) a. What is the interpretation of the light verb construction as a whole?

b. What is the semantic contribution of the light verb itself, and what is the mode of composition between light verb and full verb?

c. How is the interpretation of the light verb connected to the lexical meaning of the corresponding full verb use?

d. What is the underlying structure of the complex predicate? Do all preverb-light verb complex predicates have the same underlying structure?

9.2 Theoretical analysis

Within generative grammar, there are many interpretations of the formal structure of complex predicates. The label 'complex predicate' has been applied to many different structures. This has had the result that many different constructions which on the surface appear rather different are all given the same general label, ranging from N+V complex predicates with *suru* 'do' in Japanese, to Romance causatives, such as French *faire*, and restructuring verbs.[1]

Light verbs and complex predicates have been noted for many languages in many parts

[1]In this chapter I am particularly concerned with Bardi preverb-inflecting verb complex predicates, and not with applicative, causatives, or other predicate constructions in evidence in Bardi which have been labeled 'complex predicates' in the literature. Applicatives were discussed in §8.2 above; it would be an interesting topic for further research to investigate the interaction between applicative marking and preverb-light verb complex predication, for as seen in §9.5.5 beginning on page 290 below, the interaction between the two is not straightforward.

of the world, including South Asia (Butt 1995, Hook 1974, Mohanan 1997), East Asia (Grimshaw and Mester 1988, Lin 2001), Indigenous America (among many others, Garrett 2004), Africa (Leslau 1995) and Europe (amongst many, Samek-Lodovici 2003) as well as the papers in Alsina *et al.* (1997). Languages such as Kurdish, many Turkic languages, Amharic, as well as, of course, a swathe of languages from Northern Australia, show complex verbal structures where an uninflecting preverbal element combines with a restricted set of inflecting verbs. We have seen many examples from Bardi and other Nyulnyulan languages in the previous chapters. Many other languages have similar structures. Thus in Modern Persian, complex verbs can be formed with a nominal or adjectival component and the light verbs *kardan* 'make, do' or *dâdan* 'give'. Many also exist alongside a cognate simplex verb:

(9.2)

Simplex verb	gloss	compound	nominal derivative	
geristan	cry	*gerye kardan*	*gerye*	'tears'
âzordan	annoy	*âzâr dâdan*	*âzâr*	nuisance

Although surface patterns are surprisingly similar across languages, there are multiple different underlying analyses in all the major formal and functional syntactic frameworks. I aim to cover the main analyses of X+light verb complex predicates here, although the summary is by no means exhaustive. I have surveyed analyses under several different frameworks, and rather than discuss the particular details and implications of each theory and configuration. I assume familiarity with the detail and underlying assumptions in the major frameworks.

9.2.1 Definitions of complex predicates

I follow Butt and Geuder (2001:325) in considering light verb constructions as a type of complex predicate which consists of a main lexical verb in combination with a lexically defective verb (of course not all complex predicates are V V constructions, and not all V V constructions are complex predicates). I assume Butt's features of complex predicates (extracted from Butt and Geuder 2001:323-327; see also Butt 1995:2). The definition provided

by Alsina *et al.* (1997:1) is similar: each component of the complex predicate contributes to the predicate information normally associated with a head.

The definition which Butt (1995:2) provides for complex predicates is given below in:

(9.3) a. complex predicates are multi-headed; argument structure is complex;

b. they are composed of more than one grammatical element, each of which contributes part of the information normally associated with a head;

c. their grammatical functional structure, however is that of a simple predicate;

d. light verb structures can be formed lexically or syntactically.

Thus complex predicates are 'complex' because they consist of two (or more) constituents which do the work of a single verb; the functions of the predicate are spread across multiple constituents.

9.2.2 Light verbs

Formal definitions of this type of complex predicate (the X+V type), especially in the Government and Binding literature, revolve around the definition of a light verb. Grimshaw and Mester (1988) describe the Japanese light verb *suru* 'do' as comprising an empty argument structure which assigns accusative case but no θ-roles:[2]

(9.4) *suru*, V; ( ) <acc>

As a result, Grimshaw and Mester (1988) define two typical properties for light verbs: they are semantically deficient or 'light', in that they contribute semantics to the clause which are not very specific, and they are frequently either phonologically null or (if they are overt)

[2]Although note that the light verb use of *suru* contrasts with a full verb use, where θ-roles *are* assigned. Here the < > denote case assignment; elsewhere in this chapter angled brackets are used for suppressed arguments.

as act merely as a host for agreement and tense morphology. Similar definitions are followed by many other researchers (e.g. Lin 2001).

9.2.3 The preverb

While light verbs are rather homogeneous across languages, coming from similar lexical sources and displaying similar properties,[3] the class of preverbs is considerably more diverse. In Bardi, for example, members of any word class apart from an inflecting verb may be a preverb. Examples are given in (9.5).

(9.5) a. Preverbs without cognates in other word classes:
roowil -(i)nya- 'walk';
marl -joo- 'stop'

b. Nouns
girringg 'a cough'; *girringg -ar-* 'to cough';
anggoorr 'tears'; *anggoorr -ma-* 'to mourn for someone'

c. Adjectives
ngaada 'short'; *ngaada -joogooloo-* 'to break in half';
rambin 'heavy'; *rambin -joo-* 'feel heavy'

d. Adverbs
angan 'closeby'; *angan -ganyi-* 'to come up close';
bard 'away'; *bard -ga-* 'take across'

e. Loans from other languages
boojoom 'push 'im' (Kriol); *boojoom -ma-* 'to push off (a boat)';
warrgam 'work 'im' (Kriol); *warrgam -joo-* 'to work';

In some other, more familiar languages, however, lexical verbs may also be used as preverbs. In almost all Turkic languages,[4] for example, a gerund or participle combines with one of a limited set of inflecting verbs to form a complex predicate. An example from Turkmen is given in (9.6):

[3]For example, the same verbs are commonly implicated in light verb constructions cross-linguistically. Translation equivalents of 'give', 'take', 'do', 'put', 'sit' and 'fall' are some of the most frequent.

[4]The only Turkic language I know of which lacks the *-ib* morpheme (and this construction) is Yakuts.

(9.6) *Ali kitabi okuyup turdu.*
A. book-ACC read-GER 'stand'-PST.
'Ali kept on reading a book.'

Here the finite verb is *tur-* 'stand', which takes tense inflection. The main θ-role assigning verb, however, is *oku-* 'read'; this verb subcategorizes for *kitabi* 'book-ACC', for example. In such cases, the primary lexical meaning of the predicate comes from the gerund, and tense/aspect information and agreement is marked on the finite verb. The best functional description of this type of light verb construction involves verb classification. The light verb acts as a classifier of the gerund/participle and provides further information about its event structure. In Turkish, such constructions are productively formed in syntax with *durmak* 'stand, stop'. Uzbek's syntax is similar, although the number of regularly used light verbs is much greater (more than 20) and the possible constructions seem more idiosyncratic and lexicalized.[5] Some examples are given in (9.7) below (all from Gulnora Aminova, pers. comm.).

(9.7) a. *Qush uchip ketib qoldi.*
bird fly-IB come-IB remain-3.PST
'The bird flew away [unexpectedly].'

b. * *Qush uchip qolib ketdi.*
bird fly-IB remain-IB come-3.PST

(9.8) *Bu kitobni o'qib borar ekanman, khayolim boshqa joyda edi.*
this book-ACC read-IB go-PART sow-1SG mind-1SG.POSS'R other place-LOC be-3PST
'I was reading this book, but my mind was somewhere else.'

[5]These constructions are not usually described as complex predicates in the literature, although as shown in Bowern (to appear b) the relevant tests clearly show their status. Other descriptions of Turkic light verbs, *Hilfsverben* or 'auxiliaries' include von Gabain (1945), Schönig (1984) and Schamiloglu (1996).

Complex predicates of this type are a feature of a broad area covering South and Central Asia; Persian (Ghomeshi 1996), Hindi/Urdu (Butt 1995) and Bengali, for example, also have this type of complex predicate, formed with a gerund or participle and a limited set of inflecting verbs.

Another productive and very common type of complex predicate construction involving light verbs occurs with a noun or nominalized verb as preverb. The light verb is usually a general verb which translates as 'do'. The gerund (=preverb) controls θ-role assignment; there is no contribution in this case from the light verb. Examples are given below from Turkish, Persian and Japanese:

(9.9) **Turkish**: *redd etmek* 'to give advice'; *telefon etmek* 'to phone' (*etmek* = 'do')
Japanese: *benkyō suru* 'to study'; *shuppatsu suru* 'to depart' (*suru* = 'do')
Persian: *gerye kardan* 'to cry'; *fotokopi kardan* 'to photocopy' (*kardan* = 'make')

In this type of construction, θ-roles and argument structure seem to be determined by the 'object' of the finite verb, rather than the finite verb itself. We see in Japanese, for example, that complex predicates with *suru* 'do' may be mono-, bi- or tri-valent:

(9.10) a. *John-wa Mary-ni <u>hanashi</u>-o shita.*
John-TOP Mary-DAT talk-ACC *suru.*
'John talked to Mary.'

b. *John-wa Tōkyō-kara <u>shuppatsu</u>-o shita.*
Hohn-TOP Tokyo-FROM departure-ACC *suru.*
'John departed from Tokyo.'

c. *John-wa murabito-ni [ōkami-ga kuru-to] <u>keikoku</u>-o shita.*
John-TOP villager-DAT wolf-NOM come-COMP warn-ACC *suru*
'John warned the villagers that the wolf was coming.' (Grimshaw and Mester 1988:207)

9.2.4 Complex predication as pseudo-incorporation

We must also consider complex predicates in relation to the considerable literature on incorporation and pseudo-incorporation. The use of a noun and light verb to form a complex

predicate is very similar to what Dianne Massam has described as 'pseudo-incorporation' (Massam 2001). The relevant constructions were described for Niuean but apply also some other Austronesian languages, and also to Persian (Ghomeshi 1996, Ghomeshi and Massam 1994).

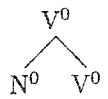
The term 'pseudo-incorporation' is used by Massam to refer to a construction where an object Noun Phrase (crucially *not* a bare noun) and a verb form a close-knit constituent (although not a single word). It is terms 'pseudo-incorporation' rather than 'true' incorporation because the 'incorporated' category is phrasal, and it is not physically incorporated into the verb. (9.11) below illustrates the alternation:

(9.11) a. *[Takafaga] tūmau nī e ia e tau ika.*
hunt always EMPH ERG he ABS PL fish.
'He is always fishing.'

b. *[Takafaga ika] tūmau nī a ia.*
hunt fish always EMPH ABS he.
'He is always fishing.' (Massam 2001:157)

In (9.11a) we see V-S-O word order and ergative case assigned to the subject (this is the usual constituent order and case marking pattern). In (9.11b), however, the object *ika* 'fish' intervenes between the verb and the subject, and is not case-marked. The 'incorporated' nouns may appear with modifiers, including conjoined constituents. (9.12) illustrates the structure usually assumed for noun incorporation (e.g. Baker (1996)).

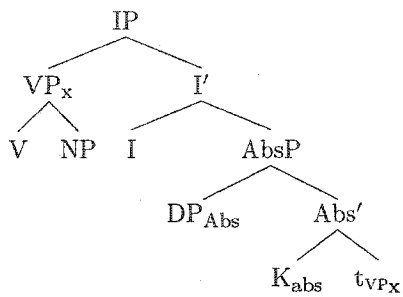
(9.12)



Since Niuean N-components of complex predicates can be phrasal, we cannot use the structure in (9.12), as the 'incorporated' element is not an N^0, and X' constituents are not permitted beneath an X^0 node. For this reason, Massam claims that the appropriate characterization of the Niuean construction is a base-generated bare NP object, which is then

fronted along with the rest of the VP to IP-initial position (resulting in V-initial order). Massam (2001:165) draws the following tree:

(9.13)



Such structures show some similarities to the complex predicates in Bardi and other languages. For example, Öztürk (2003) claims that Turkish complex predicates of the *telefon etmek* type are pseudo-incorporated structures.

There are, however, several differences between the pseudo-incorporations of Niuean on the one hand, and Nyulnyulan complex predicates on the other (I make no comment on the Turkish data). The main difference is in the productivity of the construction; from Massam's description (e.g. p. 172) pseudo-incorporation is productive in Niuean. It occurs with an open class of verbs and any restrictions on its application are the result of the structural properties of the pseudo-incorporating noun phrase rather than the properties of the verbal head. There are no examples (that I have been able to find) of argument transfer or sharing between the object and the verb. Niuean pseudo-incorporation does not involve light verbs.

Another difference between pseudo-incorporation and Nyulnyulan complex predicates is that pseudo-incorporation obligatorily produces intransitive clauses from transitive ones (that is, internal arguments are incorporated[6]). As we will see below (e.g. (9.40), (9.42)), this is not the case with Nyulnyulan complex predicates. Nyulnyulan preverbs are not

[6]There is another type of pseudo-incorporation in Niuean, where an instrument is incorporated, leaving the phrase transitive.

necessarily objects (or indeed arguments at all) of their light verb.

Thus in summary, Bardi's complex predicates cannot be explained by pseudo-incorporation alone. The majority of the complex predicate structures do not behave in the same way that pseudo-incorporated verbs do in Niuean.

9.2.5 Predicate unification

A further issues in the syntax of complex predication is how each component of the complex predicate unifies with the other components of the clause. There are several competing analyses as to the proper relationship between the preverb and the inflecting verb and the way that each contributes to the assignment of arguments within the clause. The main arguments involve argument *unification* versus argument *transfer*. That is, does the preverb merge with the light verb, each contributing components of their a[rgument]-structure specification to the resulting complex predicate, or does the light verb have no a-structure of its own, and the a-structure of the preverb is transferred over to the light verb? The third analysis (mostly within LFG and conceptual semantics) is that the formation of complex predicates involves not specifically a-structure unification, but LCS (lexical conceptual structure) unification/merger as well. Samek-Lodovici (2003) combines the two, in that his theory involves both transfer and unification. Finally, we have the theory of Hale and Keyser (2002), which involves a different approach. Under the Hale and Keyser analysis, *all* verbal predicates are underlyingly 'complex', in that they involve a root and a verbal head, which undergo 'conflation'.

Under the unification analysis (e.g. Butt 1995; see also Wilson 1999) the deficient argument structure of the light verb is merged with the full a-structure of the preverb (via the

same mechanisms in LFG by which other elements of f-structures are merged).[7] The resulting predicate has a complex argument structure (from multiple sources), but behaves as a single constituent. Conflicting specifications crash. Butt (1995:147ff) (working on Urdu) is able to rule out ungrammatical combinations between preverbs and the light verb *paṛ* 'fall' automatically. The verb *paṛ* is negatively specified for 'conscious choice' on the action tier (represented as $\text{AFF}_{\text{-cc}}$). If *paṛ* is combined with preverbs positively specified for 'conscious choice', however, the derivation will crash. Further illustration is provided in §9.3.3 below.

The argument transfer analysis was first formalized, to my knowledge, in Grimshaw and Mester (1988). They argue specifically against a unification of *suru* and its object, favoring instead an analysis whereby some of the θ-role assigning properties of the object are *transferred* to the verb. As Grimshaw and Mester (1988:205) describe it, the noun of the complex predicate "lends" its θ-roles to the verb *suru*, which leaves the noun an impoverished θ-marker. There is no unification or merger, only licensing transfer. The motivation for θ-transfer stems from the strict locality of θ-role assignment. That is, NPs are assumed to be opaque to θ-marking; a θ-role can be assumed to a NP, but it cannot be assigned *into* or *out of* a NP.

In a different framework, Samek-Lodovici (2003) argues for an analysis which amounts to *both* transfer and unification. Samek-Lodovici's analysis of light verbs is an extension of a line of work that treats light verbs within a framework of the interrelationship of argument structure and Lexical Conceptual Structure (LCS) (based on Jackendoff 1990). Under this proposal, argument variables (as specified by the verb) are linked to variables within the LCS (the links are represented by subscribe indices); it is the combination of LCS variables and argument-variables (hereafter a-variables) which leads to the interpretation of

[7]Both Butt (1995) and Wilson (1999) are working within a modified LFG, where 'pred' features are replaced by a LCS (lexical conceptual structure), based on the primitives defined in Jackendoff (1990). For unification in LFG more generally, see Bresnan (2001:56 ff).

the arguments in the clause — a-variables determine argument status, the links to LCS (and the LCS matrix itself) determine interpretation. This analysis decomposes the notion of θ-role assignment into three sub-components — 1) the number of arguments (or a-variables) the verb subcategorizes for, and their configuration; 2) the variables contained in the LCS, and their relations to event structure; and 3) the linking indices between the verb's a-variables and the variables contained in the LCS.

(9.14) below illustrates the model for the English simple transitive predicate 'freeze', as in 'the wind froze my hair':

(9.14) a. a-structure: *freeze* (x_j (y_k))

b. LCS: [CAUSE (W_j, (BECOME (Z_k, ICE)))]

c. 'The wind$_j$ froze my hair$_k$.'

Samek-Lodovici (2003:838) argues (building on claims in Ritter and Rosen (1993) and others) that the difference between a light verb and its non-light counterpart is that thematic indices have been erased. Thus light verbs come with an argument structure but without a set of links between the a-variables and the LCS. Thus adicity is preserved in light verb derivation, but the semantics of thematic assignment are not. Index erasure is illustrated for the Bardi verb *-boo-* 'hit, poke' in (9.15):

(9.15) Before index erasure: After index erasure

-boo$_{non\text{-}light}$- (u_j (v_k)) → *-boo*$_{light}$- (u(v))

Index erasure allows us to posit then that indices from the a-variables of the other component of the complex predicate (in Bardi terms, the 'preverb') are transferred onto the light verb. That is, the light verb can pick up the indices of the a-variables of the preverb.

Indices are transferred from other components of the complex predicate to the a-structure of the light verb. Samek-Lodovici (2003:850) gives the following derivation for

the Italian complex predicate *dare una strizzata* 'wring out' (<x> in the a-structure indicates a suppressed argument):

(9.16) a. *I ragazzi hanno dato una strizzata ai panni.*
the boys have given a wringing to the clothes.
'The boys wrung out the clothes.'

b. $dare_{non\text{-}light}$ $(u_i\ (v_j\ (w_k)))$ *–index erasure* → $dare_{light}$ $(u\ (v\ (w)))$

c. Variable transfer:

Before: $dare_{light}\ (u\ (v\ (w)))$ + strizzata $(z_{ev}\ (<x>_i\ (y_k)))$

After: $dare_{light}\ (u_i\ (v_k\ (w_{ev})))$ + strizzata $(z_{ev}\ (<x>_i\ (y_k)))$

Samek-Lodovici (2003:854, 859) states that one of the advantages of this analysis is the preservation of the original adicity of the light verb. This is necessary in Italian to account for the combination of different nominalizations with different light verbs, where the selection criterion is adicity (*fare* selects intransitive nominalizations, such as *camminata* 'walking', *remata* 'rowing' and *caduta* 'falling', which *dare* occurs with transitive nominalizations, including *strizzata* 'wringing' and *accordata* 'tuning').

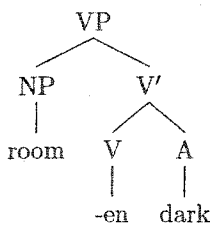
The operations that trigger index erasure and argument suppression are not clear from Samek-Lodovici's (2003) discussion, however. At one point it is given as a point on which languages vary (their ability to suppress arguments or the extent of index transferral between non-light and light verbs). This is an advantage for us when describing Bardi, as unification analyses will be subject to adicity problems (see further §9.7). A further weakness of this approach is that the order in which indices are reassigned to a-variables is very unclear. It could be stipulated or perhaps it is meant to fall out from universal thematic hierarchies. I suspect the latter.

9.2.6 Hale and Keyser (2002)

While in the previous section we saw theoretical models of complex predicates where two structures were merged or fused, the Hale and Keyser (2002) approach is rather different. Hale and Keyser (2002) is a theory of argument structure which seeks to capture all alternations in argument structure in the syntax rather than in the lexicon. For example, denominal intransitive verbs such as 'work' or 'fish' are derived by conflating a nominal element with an abstract verbal head (for out purposes 'conflation' can be viewed as a restricted instance of the operation MERGE, or a type of abstract incorporation).[8] Thus the difference between simple and complex predicates is not in the underlying representation, but in the surface conflation or the realization as S-syntax.

A number of different constructions and a-structure alternations can be neatly captured within this theory. Firstly, consider English deadjectival verbs, such as 'redden', 'darken' or 'clear'. In Hale and Keyser's framework these verbs are formed from an adjectival complement to an abstract verbalizing head. The adjective then conflates into the verb, resulting in a deverbalized adjective. (9.17) gives an example of the tree for the unaccusative verb 'darken', as in 'the room darkened'.

(9.17)

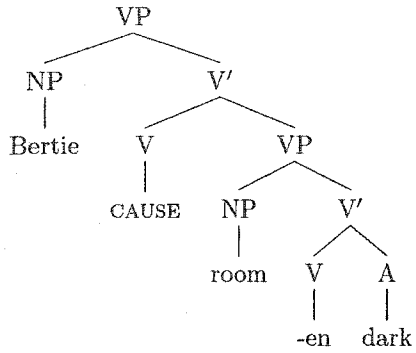


Consider now the transitive deadjectival verbs (as in 'Bertie darkened the room (by closing the curtains)'). In the Hale and Keyser framework, these verbs are built on the complex structure given in (9.17) above. Another abstract causative head (or 'light verb')

[8]There are summaries of the main ideas of the Hale and Keyser (2002) framework in Folli *et al.* (2003), Hale and Salamanca (2001) and Lin (2001:Ch. 2).

takes the monadic structure of (9.17) as its complement. The adjective-verb complex then conflates into the higher verb.

(9.18)

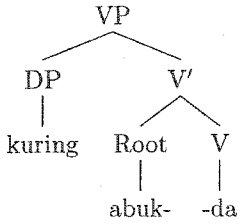


Hale and Keyser (2002:Ch. 4) compare English verbs of this type (e.g. deadjectivals) with overt transitivization in Athabaskan and Uto-Aztecan languages, as well as complex predicate structures in Ulwa and the other Misumalpan languages. They argue for Ulwa (pp. 119-129), for example, that the 'theme' morphemes (which signal whether the stem is intransitive or transitive) fill the verbal head. An example is given in (9.19) with the morpheme *-da*, which forms unaccusatives.

(9.19) Ulwa

Kuring abuk-d-ida.
canoe capsize-DA-PST

'The canoe turned over.' (Hale and Keyser 2002:120)



A very similar analysis can be applied to Bardi complex predicates. Under this analysis, the V head is realized overtly as the light verb, while the Root slot is filled by the preverb.

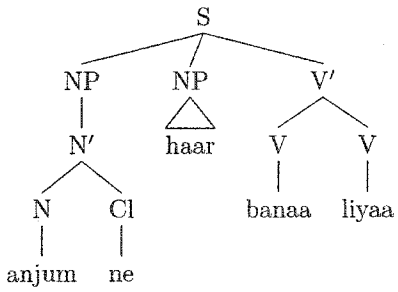
Folli *et al.* (2003) have a similar analysis for complex predicates in Persian. This line of analysis will be pursued in the rest of the chapter.

9.2.7 Phrase structure

Finally, we should consider the structural configuration of the preverb and light verb.

In the LFG literature, configurational structure does not play a large role in the determination of syntactic interpretation, which is instead handled by the F(eature) Structure, represented by attribute-value matrices. The illustration below is from Butt's analysis of Urdu. The matrix below represents the result of fusion of the a-structures of the two verbs *banaa* 'make' and *liyaa* 'take-PERF.M.SG'. Constituent structure, especially between the two verbs, is represented as flat; a-structure is represented through the Conceptual structure matrix.[9]

(9.20) *Anjum=ne haar banaa li-yaa.*
Anjum.F=ERG necklace.M=NOM make take-PERF.M.SG
'Anjum made the necklace completely, on purpose.' (Butt 1995:188)

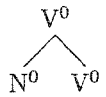


$$\left[\begin{array}{l} \text{banaa liyaa 'made complete'} \\ \left[\begin{array}{l} CS([\alpha], BE[\,]) \\ AFF_{+cc}([\,]^{\alpha},) \\ ASP(__1) \end{array}\right] \text{E} \end{array}\right]$$

[9] I have omitted the node annotations from the tree. See further Butt (1995:188) for the meaning of the abbreviations in the f-structure.

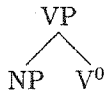
Within GB and related theories, opinions differ as to the correct tree structure on which to represent X+V complex predicates. On the one hand, we have authors whose complex predicate trees are identical to incorporation trees:

(9.21)



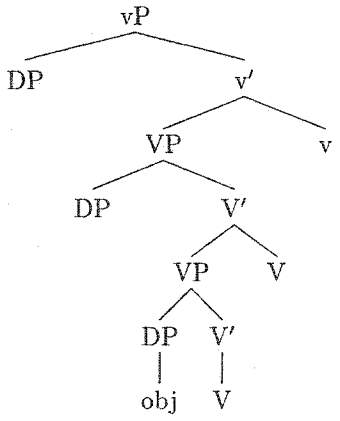
There is the variation on this, seen above for Niuean (Massam 2001) and Turkish, where the 'N' category is phrasal (the tree is otherwise the same):

(9.22)



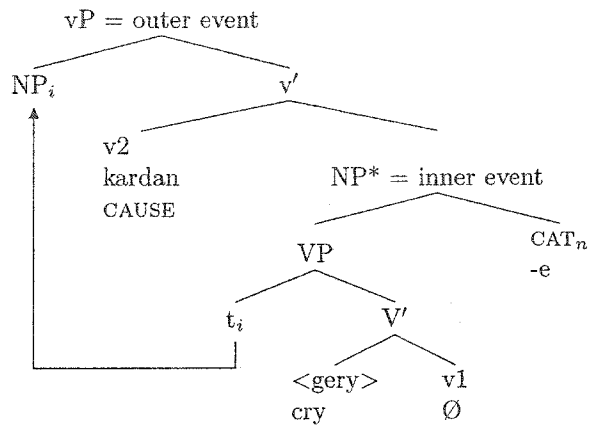
Then, there are those who treat the light verb as a 'little-v' (or a 'big-V') projection above VP.

(9.23)



This representation is intuitive for the languages where preverbs are productively derived from verbs. Megerdoomian (2001:116-119), for example, argues for a similar structure underlying the Persian complex predicates with *kardan* 'make'. An illustration (from Megerdoomian (2001:117)) is given in (9.24), using the complex predicate *gerye kardan* 'cry'. The 'inner event' is the nominalized verb, while the 'outer event' is the inner event combined with the light verb (the terms are Megerdoomian's).

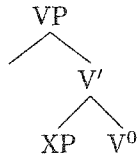
(9.24)



Here the nominal root *gery-* 'tear/crying' combines with a V-head to produce an unaccusative verb. This is then nominalized with the suffix *-e*. This is the 'inner event' represented by the preverb, which then combines with the light verb *kardan* 'make'.

I do not use this structure (with vP above the preverb) for Bardi, although such a tree could probably be justified.[10] Throughout this work I am assuming that complex predicates in Bardi have the structure in (9.25):

(9.25)



That is, I assume that in Bardi the light verb in the Hale and Keyser (2002) framework is filled with overt phonological material.

[10]The main reason is that in Bardi θ-role assignment is a process determined jointly by the preverb and the light verb. In languages like Turkish and Uzbek (and probably also Japanese), the preverb determines the θ-roles of the clause, even though agreement is realized on the higher verb. Since θ-assignment is strictly local, making the object of the predicate a sister to the preverb makes it impossible for the light verb to assign a θ-role; the θ-role must be assigned only by the preverb. This is the right solution for Turkish *-ib durmak* constructions, but it is the wrong one for Bardi.

9.3 Previous treatments of Australian languages

Constructions such as those illustrated from Bardi in the examples above are quite common in Australian languages, particularly in the north of the country, extending from the Kimberley region in the North-West of Western Australia, through the Northern Territory to Daly River and Elliott. The constructions are known by various terms, including auxiliary + verb constructions, 'double-unit' verbs, preverb/coverb-inflecting verb constructions, 'adverbial' constructions and lexical compounds. Many authors, however, are not very specific about the structure they assume for the predicate, what assigns θ-roles, what is the 'verb-word', and so on.

There have been a few treatments of complex predicates in formal terms in individual Australian languages; Wilson (1999) in LFG for Wagiman, Simpson (1991) for Warlpiri, and Schultze-Berndt (2000) for Jaminjung in Construction Grammar. In the following sections I present a brief survey of the Australian languages for which complex predicate studies have been completed, a summary of the phenomena in the language and the main theoretical points arising. I make no attempt to provide a comprehensive survey. See also McGregor (2002) for a list and brief description of the languages of Northern Australia which show the relevant properties.

9.3.1 McGregor (2002)

By far the most thorough treatment of these items is McGregor (2002) on verb classification in Australian languages. By the term 'verb classification', McGregor is referring to the property of some complex predicate constructions where the inflecting verb works to categorize the type of event referred to in the preverb.[11]

[11]Thus not the more familiar type of 'verbal classifier', known from some Native American languages (such as Chocktaw), where an affix to the verb provides classification information about one of the verb's arguments (usually the object). Nyulnyulan languages do not exhibit this type of classification.

McGregor surveys most of the languages which have these constructions (or similar ones). However, he does not believe that these constructions are complex predicates, and gives a number of reasons for this view (McGregor 2002:262ff). The main ones are given in (9.26):

(9.26) a. either one part or the other (or neither) is identified as the head, not both, according to different tests;

b. the definition of a head is problematic anyway; see for example Zwicky (1985), Hudson (1987);

c. if complex predicates are defined over 'semantically predicative units' (e.g. Mohanan 1997), and any word class can function as a preverb, we would be led to defining everything as complex predicates;

d. the units of the complex predicate do not jointly determine clause structure (c.f. Mohanan 1997), since there are mismatches between transitivity as marked on the inflecting verb and the overall valency of the clause.

McGregor argues instead for an analysis of these constructions not as light verbs or complex predicates, but as verb classifier constructions where the inflecting verb is not 'light' in any meaningful sense. Impressionistically, the complex predicate analysis and the classifier analysis do not seem to be mutually exclusive, contrary to the implication of McGregor's line of argument. As argued in Bowern (to appear b), following Butt (1995), Wilson (1999) and others, light verbs can function as event classifiers, providing more information about the structure of the event denoted by the other part of the predicate.

McGregor's arguments regarding head properties are bound up with the problem in Nyulnyulan languages of transitivity marking in complex predicate constructions. Since the structure of the complex predicate does not always correspond to the morphological transitivity of the inflecting verb, there is a problem in saying that the two predicative

units (the preverb and the inflecting verb) jointly determine clause structure, since the relationship is clearly not additive.

McGregor's solution (p. 277) is that the 'transitive' light verbs (those that may be used in either transitive or intransitive predicates) are unmarked for transitivity, and the differences in the number of transitive and intransitive predicates with each inflecting verb are accounted for by their vectoral configuration (for example, the base semantics some inflecting verbs contain an idea of action directed outwards from the agent, or impact, and this correlates closely with a transitive reading of the predicate as a whole).

I am, however, unconvinced. If these verbs are unspecified for transitivity, why are they only ever transitive when they are not used in preverb-inflecting verb constructions? Why do they all contain a prefix *n-* ∼ *a-* which correlates almost absolutely[12] with a transitive argument structure in verbs which do not co-occur with preverbs? Why should intransitive verbs be specified for valency, but not 'transitive' verbs? Recall that McGregor does not draw a distinction between light verbs and full semantic verbs, so that any analysis of inflecting verbs in complex verb constructions must also be compatible with other verbal predicates.

I argue here that the preverb-inflecting verb constructions *are* complex predicates, but there are several different light and non-light structures, and these account for the different structures which McGregor notes make Nyulnyulan complex predicates difficult to describe. Pace McGregor, I argue that transitive light verbs are underlyingly transitive, but their argument structure is modified in the complex predicate construction, following other theoretical work by Grimshaw and Mester (1988), Wilson (1999), Butt (1995) and others. Thus I treat complex predication as a syntactic phenomenon, with oddities which have a

[12]There is one verb, *-gala-*, which consistently takes a transitivity prefix but appears with either ergative-absolutive or absolutive case frames, depending on whether the verb means 'live' or 'visit someone'. Note that *-gala-* is also irregular in other ways. In all other cases, verbs in simple predicates which take the prefix *n-* ∼ *a-* take two arguments.

syntactic explanation. It should be noted, however, that this analysis is compatible with McGregor's description of vectoral configuration.

9.3.2 Worrorran languages: Clendon (2000, 2001a,b), Rumsey (1982)

Although the affixal morphology of Worrorran languages works rather differently from Nyulnyulan languages, complex predicate formation follows the same general lines. There is a preverb which inflects for aspect, and an inflecting verb which contains tense, aspect and agreement affixes. Like the Eastern Nyulnyulan languages , preverbs in Worrorran languages may be used without an accompanying light verb.

There have been several treatments of Worrorran complex predicates of various length, concentrating on various different aspects. Saunders (1997) discusses the semantics of the light verbs in construction, while Rumsey (1982) and Clendon (2000) provide analysis within a larger reference grammar for Ungarinyin and Worrorra respectively.

Clendon (2000:375ff) provides a description of Worrorra complex predicates within the framework of role and reference grammar. Unlike in Bardi, in Worrorra preverbs can occur without an inflecting verb, in the role of imperatives[13] and verbal nouns. Preverbs may also be stacked. They may also be inflected for aspect (e.g. *-mirri* 'quickly', *-biji* 'repeatedly', *-^{b}wa* 'continuous'). Preverbs may also be reduplicated to denote progressive aspect or plural actors.

Clendon (2000:402) follows Silverstein (1986:e.g. 497) in analysing Worrorra light verbs (or 'finals' as Clendon calls them) as classifiers. The inflecting roots used as light verbs in Worrorra are given in Table 9.1 below:

Preverbs (Clendon (2000:e.g. 413) calls them 'infinitives') in Worrorra seem to have quite a different structural behavior from those found in Bardi. For example, in Worrorra it is possible to omit the preverb and have it understood from context, as in the following

[13] Although note that a fully inflected infinitive is also possible.

Valency	Verb	gloss
1/2	kuN[]=yi	do
	=rnaarna	wait for
	$=^{k}$wana	hold
	=yora	seek, hate
	=mra	gather, collect
	=yoolee	go, travel
1	=nu	be
	$=^{b}$wa	fall (telic)
	=ya	go (atelic)
2	$=^{b}$wu	hit
	=ma	pick up
	=ee	put down
	=murrka	go to (telic)
	=yabu	throw (atelic)
	$=^{k}$wangurru	carry

Table 9.1: Worrorra light verbs (=finals)

sentence (for clarity I omit the morpheme boundaries and the underlying forms; light verb roots are underlined). I have not seen any discussion of preverb ellipsis in other Australian languages.

(9.27) *Wurrkunu angujakunya mara kumbunaara malyaama?*
trouble what for see 3-3=hit-PST-1DAT needlessly
Kubarrwunaara ngayunyinoo.
3-3P=hit-PST-1DAT 1-until-EMPH
'What did he have to go and make trouble for me for? They made trouble for me too, you know. (Clendon 2000:413)

What does this say about the status of the preverb in Worrorra? The argument status of preverbs in Worrorra is clearly different from that in Bardi. For example, preverbs can be syntactic objects and take cross-reference marking on the verb, although they do not always do so. Preverbs are also involved in antipassivization. In fact, Worrorran complex predicates look rather more similar to Pensalfini's (2004) analysis of Jingulu than to my analysis of Bardi.

9.3.3 Wagiman: Wilson (1999)

Wilson (1999) is an examination of the syntax of coverbs (=preverbs) and complex predicates in Wagiman, another Non-Pama-Nyungan language.

Wilson deals with the complex predicates by incorporating a lexical conceptual structure into the F-structure of complex predicates (Wilson is working in LFG). He replaces the PRED attribute with an LCS attribute, making use of Jackendoff's (1990) conceptual semantics. For example, (9.28a) gives the PRED structure for the English verb 'put' in classical LFG; Wilson's replacement is given in (9.28b).

(9.28) a. $(\uparrow \text{PRED}) = \text{'put}< (\uparrow \text{SUBJ})(\uparrow \text{OBJ})(\uparrow \text{OBL}_{\text{loc}})>\text{'}$

b. $(\uparrow \text{LCS}) = [_{\text{Event}}\ \text{CAUSE}([_{\text{Thing}}\ ]_A,[_{\text{Event}}\ \text{GO}([_{\text{Thing}}\ ]_A,[_{\text{Path}}\ \text{TO}([_{\text{Place}}\ ]_A)])])]$

In (9.28b) the $_A$ annotations mean that the material corresponds to an argument in the a-structure representation of the verb. The a-structures and the arguments in the LCS are linked together by a mapping of arguments to functions (e.g. CAUSE, GO, etc). We have already seen a very similar theory in my discussion of the work of Samek-Lodovici (2003), in §9.2.5 above.

The complex predicate is composed by unifying the LCS of the light verb with the LCS of the preverb by a process of 'predicate fusion' (Wilson 1999:136ff). The LCS of the preverb merges the LCS of the light verb wherever it can do so without violating semantic wellformedness.[14]

[14]There are multiple issues in the merger or fusion of LCSs within LFG, as in classical LFG PRED features are the only features which do not unify. These issues are not relevant for our purposes.

(9.29)

guk 'sleep'			$[\mathrm{BE}_{\mathrm{Id}}\ ([_{\mathrm{Th}}\ ]_A,[\mathrm{AT}_{\mathrm{Id}}\ (\textit{asleep})])\ ]$	
			$\downarrow$	$\downarrow$
-ge- 'put$_{\mathrm{LT}}$'	$[\mathrm{CAUSE}([_{\mathrm{Th}}\ ]_A,[\mathrm{BECOME}($		$[\mathrm{BE}_{\mathrm{Id}}\ ([_{\mathrm{Th}}\ ]_A,[_{\mathrm{Pl}}\ \ \ \

represented as layers which are fused.

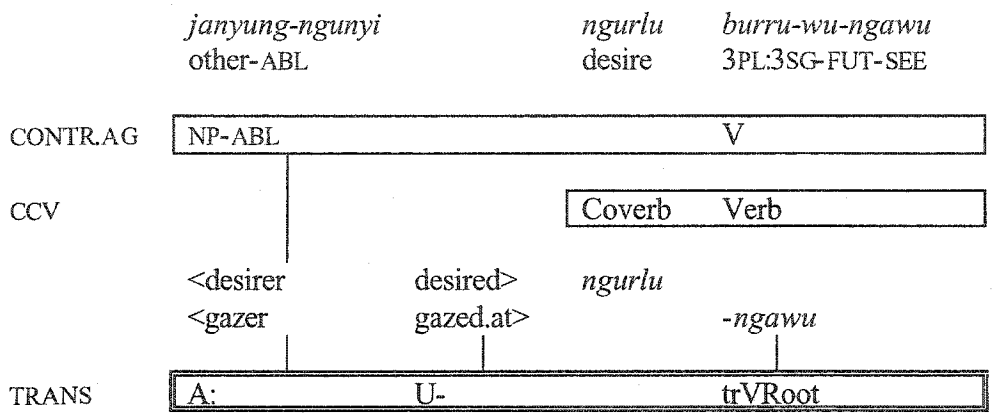


Figure 9.1: Contrastive ablative-marking of agents. Schultze-Berndt (2000:169)

Under Schultz-Berndt's analysis, complex predicates in Jaminjung are a construction type and receive their own tier in the representation. Argument sharing between the preverb (=coverb) and the inflecting verb is achieved by assigning two thematic roles to the arguments — in construction grammar arguments can receive thematic information from both the preverb (= coverb) and the inflecting verb.

Schultze-Berndt's description of the semantics is also based on the construction grammar approach, with the extension, metaphor or bleaching of the meaning of the simple predicate. Thus there is no syntactic distinction between light verbs and full verbs in her analysis, rather Schultze-Berndt defines a lexical network of related meanings, some more abstract, some less so. Figure 9.2 gives an example of the lexical network for the Jaminjung verb root *-ijga* 'go'.

I will not be using the tools of construction grammar further in this thesis.

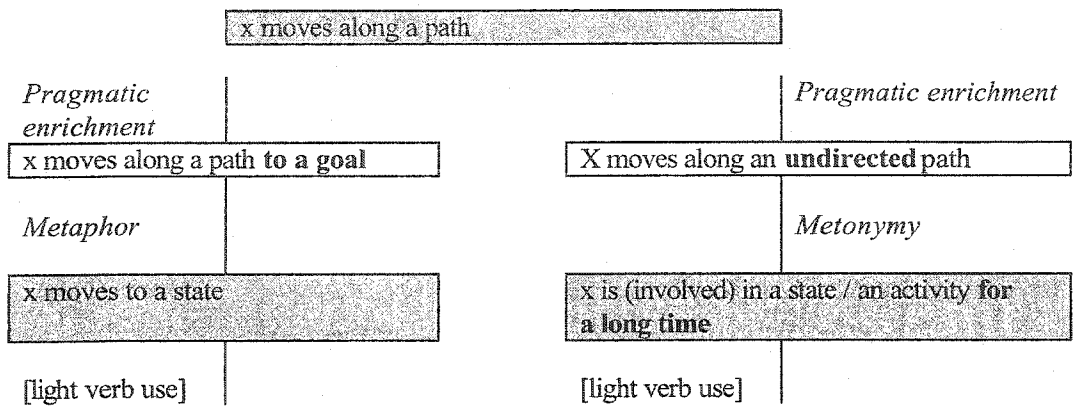


Figure 9.2: Lexical network for Jaminjung *-ijga* 'go' (Schultze-Berndt 2000:266)

9.4 Formal tests for complex predicate status in Bardi

In this section I examine the evidence for proposing that Bardi has X+V complex predicates. Tests involving constituent order are difficult to administer in Bardi, because constituent order is very free. There are, however, a few constituency tests we can apply, in order to disambiguate preverbal constituents (for example, the object in sentences with surface order OV) from preverbs forming complex predicates. In order to test for complex predicates in Bardi I present a series of 'syntactic minimal pairs' to show what part of the predicate is contributing to the meaning of the clause, on the assumption that any difference between the structures AXB and AXC should be caused by the substitution of B for C, *ceteris paribus*.

To test for predicatehood and predicate status we need tests that are associated with the functions of predicates. It is uncontroversial that θ-role assignment, clausal transitivity and clausal aspect are determined by the head of the predicate, and furthermore that Aktionsart is also a property of predicate heads. So, if we can isolate what determines aspect, transitivity and θ-role assignment, we have a test for what the predicate head is.

The following sections provide evidence for complex predicate status, and the tests are specific to Bardi.[15]

Tests for determining the preverb word class were given in §2.3.2 above. A list of verbs which may be light verbs in complex predicates was given in Table 5.2 and Table 5.3 on pages 145–146 above. Discussion here will focus on the most common light verbs, repeated for convenience in Table 9.2 below.

-Root-	Gloss	%age of preverbs
-ju-	do, say	40
-ma-	put	17
-ø-	give	12
-(i)nya-	catch	9
-ar-	spear lice	7.5
-gal-	move	4
-boo-	hit	3.5
-jiidi-	go	3
-ga-	take, carry	2.5
-ni-	be located	2

Table 9.2: Bardi most frequent light verbs

9.4.1 Word status

Preverbs in Nyulnyulan languages are usually independent phonological words. They have their own primary stress (as does the light verb). However, monosyllabic preverbs tend to cliticize to their inflecting verb. In (9.30) the preverbs *darr* 'come, arrive' and *arr* 'come, go' cliticize to their light verbs, *-ar-* and *-joo-* ~ *-di-* respectively.

(9.30) a. *da(r)narna* < *darr inarn* 'he came'
b. *andan* < *arr indan* 'he's coming/going'

[15]For example, Wilson (1999) and Clendon (2000) use nominalization tests to make generalizations about the syntactic behavior of preverbs in Wagiman and Worrorra respectively. Such tests are very difficult to implement in Bardi, however, simply because nominalization is not an option for more preverbs, and for those that do seem to allow nominalization, the preverb almost always has cross-categorial membership in another word class.

This is evidence that the relationship is a close one. The only other words which regularly cliticize to a host are particles and possessive pronouns.

Further indirect evidence for the word status of preverbs, particularly longer preverbs (where we cannot use cliticization evidence effectively) comes from native speaker intuitions. Speakers say of preverbs that they are a word on their own, but the word doesn't "sound complete" without the accompanying inflecting verb. Speakers are also very reluctant to assign glosses to preverbs without an accompanying light verb.

9.4.2 Sentential clitic placement

Further evidence that the preverb and light verb form a close unit comes from the placement of clausal clitics. These clitics, just as *=gid* 'then' and *=(j)amba* 'that's why' are strictly placed after the first constituent in the clause. For example, if the first phrase in the clause is a complex noun phrase, the clitic occurs obligatorily after the first noun. This is illustrated in (9.31) (see also the discussion in §2.7.3.1):

(9.31) a. *[Ginyinggi=gid oorany] bard ingarrayi booroo jinangan.*
3MIN=THEN woman off 3-PST-AUG-take place 3MIN-ALL
'They took this woman home.' (Text: DW: CTSI/116)

b. * *[Ginyinggi oorany]=gid bard ingarrayi booroo jinangan.*
3MIN woman=THEN off 3-PST-AUG-take place 3MIN-ALL

When a complex predicate is first in the clause, however, the clitic may appear attached either to the preverb or to the light verb. Speakers say that either order is possible and there is no meaning difference. Illustration is provided in (9.32). In these examples, the phrasal clitic is the allative case *-ngan*. It is used in nominalizations and purposive clauses.

(9.32) a. *[Roowil]ngan manyan gornamb.*
walk-ALL GER-catch-CONT good=THUS
'Walking is good/it's good to walk.' (CB/FN: NI 11/26)

b. *[Roowil manyan]ngan gornamb.*
walk-ALL GER-catch-CONT good=THUS

Thus the individual constituents of a complex predicate may be treated as a single constituent for the purposes of clitic placement.

9.4.3 Lack of decompositional semantics

The semantics of many preverb-light verb pairs can be decomposed into a preverbial component and the light verb. For example, it is easy to analyze those adjectives which combine with *-ni-* 'sit, be, exist':

(9.33) *maanka -ni-* 'be black' (cf *maanka* 'black (adj)', *-ni-* 'sit, be, exist')

Many other preverb-light verb pairs, however, have highly idiomatic readings which must be listed phrasally in the lexicon. Two examples are given below.

(9.34) a. *girringg -ar-* *'cough'*
cough 'spear'
b. *girringgirringg -ar-* 'cough up phlegm, expectorate'

(9.35) a. *liyan -(i)nya-* *'breathe'*
heart 'catch'
b. *liyan -ga-* *'carry a grudge'*
heart 'carry'
c. *liyan -ma-* *'want something'*
heart 'put'

Reduplication of the preverb in a complex predicate usually causes a pluractional or iterative reading. In (9.34), however, it is more idiomatic and refers to the productivity of the cough. In (9.35) changing the light verb associated with *liyan* (which as a noun means 'heart, feelings' or 'breath') provides a radically different meaning. This implies that such collocations are stored in the lexicon as whole phrases.

9.4.4 Reduplication

Some adjectives can't be reduplicated when they have a nominal complement, but reduplication is possible when they are functioning as preverbs, as shown in the following sentences.

garrja 'sharp' cannot be reduplicated when used attributively to a noun, but reduplication as a preverb is acceptable.

(9.36) * *garrjagarrja jamooyoon*
sharp-REDUP knife
'a sharp knife' (NI: CB/20.6:54)

(9.37) *Garrjagarrja anama!*
sharpen 2.IMP-TR-put-FUT
'Sharpen it!' (NI: CB/20.6:54)

This is also true for many other adjectives and provides further evidence for a distinct class of preverbs.

9.4.5 Negation

Normally negation directly precedes the inflecting verb, as in example (9.38) below. Importantly, the only item which may intervene between the negator *arra* and the inflecting verb is the preverb. This is illustrated in (9.39). Any other order is ungrammatical, as is the placement of arguments or adjuncts between the negator and the inflecting verb.[16]

(9.38) *Arra oolalana.*
Arra oo- l[a]- (j)ala -na
NEG 3.F/I- IRR- see -REM.PST
'He didn't see it.'

(9.39) a. *Arra jiidara ngalamanajiy irrola.*
NEG bewitch 1-IRR-put-REM.PST=2MIN.IO spear.
'I didn't bewitch your spear.' (Text: CB/BE: 11/57)

b. * *Jiidara arra ngalamanajiy irrola.*
bewitch NEG 1-IRR-put-REM.PST=2MIN.IO spear.

This fact about negation placement provides us with a constituency test — an item is acting as a preverb if it appears between the negator *arra* and the inflecting verb. This

[16]Sentential negation forces irrealis marking on the inflecting verb. See further §2.7.5.

allows us to disambiguate uses of adverbs and direct objects which can appear outside negation. In (9.40), for example, all orders with the order NEG + verb are acceptable, although the first is preferred.

(9.40) a. *Arra joodarrarr oolalana.*
NEG with the tide 3-IRR-visit-REM.PST
'He didn't go with the tide.' (CB/FN 12/26)

b. *Joodarrarr arra oolalana.*
with the tide NEG 3-IRR-visit-REM.PST

c. *Arra oolalana joodarrarr.*
NEG 3-IRR-visit-REM.PST with the tide

9.4.6 Object status

In some preverb-light verb collocations, it could be argued that the preverb is the object of the light verb. Two examples include *ngoondoo -ma-* 'urinate' (literally 'urine' + 'put') and *milimil(i) -boo-* 'write something down' (lit. 'paper' + 'poke'). These complex predicates could be argued to comprise a verb and its object. This analysis can be shown to be untenable for other such predicates, however, both on syntactic and discourse grounds. In (9.41) below, if *jaala* 'spear' were referential it would be in violation of Bardi discourse principles of repeated information, because it repeats *irrol* 'spear (type)'. Referential noun phrases are only overt in Bardi discourse if they are in focus position, a resumptive topic or introduced for the first time. *Jaala* is none of these.

(9.41) *Irrol anangay balab, aarli jaala ngankamarr.*
spear 2.IMP-give-1MIN.DO here, fish spear 1-TR-FUT-put-FUT-3AUG.DO
'Give me that spear, I want to do fish-stringing.'

(9.42) *Aambanim boor inamboogaljin goorlil.*
man-ERG 'ground' 3-TR-PST-poke-REC.PST=3MIN.IO turtle.
'The man missed the turtle.'

In (9.42) we would have a θ-role assignment violation if the preverb *boor* 'ground' were functioning as the direct object of the verb and were getting a θ-role from it — if it were true, *goorlil* 'turtle' would also be competing for the same θ-role.

9.4.7 θ-role assignment

We saw from §9.4.6 that the verb is not alone in assigning θ-roles, and preverbs do not receive a θ-role from that verb. Hence we need to investigate which part(s) of the predicate assign θ-roles. We find that θ-role assignment is determined by a combination of the verb morphology (transitivity, applicative suffix), the light verb and the preverb. There appear to be complex predicates which differ in the θ-roles assigned to arguments, where in each case a different part of the complex predicate is responsible for the change in θ-role assignment.

First, inflectional verb morphology may change θ-role assignment. The addition of *-nginj*, for example, adds a θ-role to those assigned within the complex predicate (instead of being licensed from another part of the structure), as shown in (9.43) below:

(9.43) a. *Yoorr* *anama!*
come down 2.IMP-TR-put-FUT
'Come down!' (1 θ-role; agent)

b. *Yoorr* *anaminginji!*
come down 2.IMP-TR-put-APPL
'Come down with him!' (2 θ-roles; agent, accompanier)

In (9.44), we see that the use of a different light verb changes the θ-role assigned to the subject of the clause. The preverb is *abarrabarr*, which as an noun means 'confusion'. When combined with the light verb *-ma-* 'put', it means 'to be careless', and the single θ-role is a theme. When the light verb is *-ga-* 'carry', however, two θ-roles are assigned, an agent and a patient.

(9.44) a. *abarrabarr -ma-* 'to be careless'

b. *abarrabarr -ga-* 'to lead someone astray'

Finally, the choice of preverb also alters the θ-roles licensed by the predicate. In (9.45) we keep the same light verb, *-(i)nya-* 'catch', and change the preverb. Reduplicating the preverb can also change the θ-structure of the predicate, as shown in (9.46).

(9.45) a. *niyarra -(i)nya-* 'taste something' (experiencer)

b. *roowil -(i)nya-* 'walk' (agent)

(9.46) a. *anggoorr -ma-* 'mourn for someone' (experiencer)

b. *anggoorranggoorr -ma-* 'comfort someone' (agent)

The pairs given in the previous few examples highlight the fact that θ-role assignment can be determined by several parts of the predicate. No single part of the predicate assigns θ-roles.

9.4.8 Aspect/Aktionsart

When we examine aspect and Aktionsart we find too that no single part of the predicate is responsible, and that distinctions can be marked by the choice of light verb, the preverb, or the inflecting verb morphology.

In (9.47), we see that the continuative *-n* or the middle perfect *-ij* determine aspect for the whole predicate. The (a) sentence shows a general, unmarked non-punctual event (the sentence could also be translated 'as soon as I'm walking...), while the (b) sentence shows one that is completed.

(9.47) a. *Aaman roowil ngannyan, gala inngoorroobinngay iilanim.*
as soon as walk 1MIN-catch-CONT, right then 3MIN-chase-1MIN dog-ERG
'As soon as I go for a walk, the dog chases me.'

b. *Moonboorran roowil innyij.*
towards speaker walk 3-TR-catch-MID.PERF
'He came towards me.'

In (9.48), however, we see that the light verb can also be responsible for contributing aspectual information. The use of *-jarrala-* 'run' with the preverb *joornk* 'run' contributes a specifically inceptive reading to the complex predicate, whereas *-(i)nya-* 'catch' does not.

(9.48) a. *Joornk innyana.*
run 3MIN-'put'-REM.PST
'He ran away (quickly).'

b. *Joornk inyjarralana.*
run 3MIN-run-REM.PST
'He took off with speed.'

Finally, we see from (9.49) the the reduplication of the preverb also changes aspect. Reduplicated preverbs often signal iterative, repetitive or pluractional actions. The example in (9.49) is iterative.

(9.49) a. *Bany inamana boorroo.*
shoot 3MIN-put-PST kangaroo
'He shot the kangaroo.'

b. *Banybany inamana.*
shoot-REDUP 3MIN-put-PST
'He kept on shooting [it].'

In (9.47), the tense/aspect suffix changes the aspect of the clause. In (9.48), the choice of light verb determines whether the reading is completive or inceptive. In (9.49), it is the reduplication of the preverb which provides the iterative reading.[17]

9.4.9 Valency and transitivity

When we examine how many arguments a predicate may take, we find again that this can be altered by the appropriate choice of verb morphology (the applicative suffix *-ng*, for example, promotes an oblique argument to a direct object), light verb or preverb. Remember

[17]Inflecting roots can also be reduplicated to mark iterativity/durativity, although this is rather rare in complex predicates; one of the few examples is *boor -jala-* 'stare' with *boor -jalala-* 'keep on staring'.

from Chapter 8 that valency-changing verbal morphology is limited in Bardi to the reflexive/reciprocal circumfix *m- -inyja*, which makes inflecting verbs structurally monovalent, and the applicative *-ng*, which can be added to transitive or intransitive stems to derive a new transitive verb by promoting an oblique adjunct to a direct object.[18]

In (9.50) and (9.51) we see some of the results of adding valency-changing morphology to a verb stem. In (9.50) the preverb is *barn*; using the active form of the verb *-joo-* results in a complex predicate meaning 'tell someone to do something'. In (9.50b), however, we see that adding the reflexive circumfix removes an argument from the entire predicate. In (9.51) we see an example of argument addition, by means of the applicative suffix *-ng(a)*.

(9.50) a. *Barn injoogaljarrngay.*
tell 3-PST-do/say-IMPERF-1MIN.DO
'He told me to do something.'

b. *Barn ingim.inyjigal.*
tell 3-PST-REFL$_1$-'do/say'-REFL$_2$-IMPERF
'He thought about it.'

(9.51) a. *Diird injoogal*
go/run away 3-PST-do/say-IMPF
'He went away.'

b. *Diird injoonggal*
go/run away 3-PST-do/say-APPL$_2$-IMPF
'He went with someone.'

In (9.52) and (9.53) we see that the light verb also affects the transitivity of the predicate. The examples in the (a) sentences are intransitive and show a single argument, while the (b) sentences have two arguments and are transitive.

(9.52) a. *Boorroolboorrool oonkara oola.*
boil-redup 3MIN.FUT-spear-FUT water
'The water will boil.'

[18]In example (9.50b) the verb root has been deleted through regular morphophonological processes. The underlying form is *-m-joo-inyji-* (REFL$_1$-'say'-REFL$_2$).

b. *Boorroolboorrool oonkama* *oola.*
boil-redup 3MIN.FUT-put-FUT water
'He/She'll boil the water.

(9.53) a. *goojaj -joo-* 'to feel weak' (one argument)
b. *goojaj -ma-* 'to make someone weak' (two arguments)

Finally, we see from (9.54) and (9.55) that the preverb also controls aspects of the transitivity of the predicate. The examples provide two light verbs whose non-light counterparts are bivalent. The resulting complex predicates, however, may be either transitive or intransitive, depending on the preverb:

(9.54) *-ma-* 'to put' (2 obligatory arguments)
a. *jiibard -ma-* 'to sneak up' (1 argument)
b. *niya -ma-* 'to rest' (1 argument)
c. *oona -ma-* 'to defecate' (1 argument)
d. *wajim -ma-* 'to wash something' (2 arguments)

(9.55) *-(i)nya-* 'to catch, to pick up' (2 obligatory arguments)
a. *ngalar -(i)nya-* 'to have one's eyes open' (1 argument)
b. *marrmarr -(i)nya-* 'to flash' (1 argument)
c. *galgooriny -(i)nya-* 'to swim breaststroke' (1 argument)
d. *roowil -(i)nya-* 'to walk' (1 argument)
e. *joony -(i)nya-* 'suck something' (2 arguments)
f. *bawinbawin -(i)nya-* 'cut up something' (2 arguments)

It would be possible to argue that the preverb saturates an argument slot of the inflecting verb for some of the above, but it is a very forced interpretation in many cases. It also leaves us with the problem of what to do with the formally intransitive verbs that take preverbs in addition to their external argument, such as *-ni-* 'sit' and *-jiidi-* 'go'. There are also transitive light verbs that take two arguments (e.g. *garboo -ma-* 'to dig around something');[19] if the preverb is saturating the patient θ-role, the following examples should be ungrammatical, but they are good.

[19] I do not analyze Bardi as having ditransitive verbs.

(9.56) *Garboogarboo anggarraman ginyinggi bardag.*
dig around-REDUP 1-FUT-AUG-TR-'put'-CONT that tree.
'We would keep digging around that tree.' (Metcalfe n.d.:*garboo*)

(9.57) *Aambanim boor inamboogaljin goorlil.*
man-ERG 'ground' 3-TR-PST-poke-REC.PST=3M.IO turtle.
'The man missed the turtle.'

In §9.7 below I return to this question and provide an analysis.

9.4.10 Light verb derivation

A further argument in favor of a complex predicate analysis is that some light verbs change their behavior in preverb-inflection verb constructions. For example, the non-light verb *-banji-* 'to share' can be reduplicated. The same verb is ungrammatical reduplicated in a light verb construction:

(9.58) a. *ingarrbanjanji* 'they (all) shared it'
i- ng- arr- banjanji
3- PST- AUG REDUP-share
b. **maanka ingarrbanjanji*
[intended:'they kept on making each other black']

9.5 Syntax of Bardi complex predicates

We have already seen a great deal of the behavior of Bardi complex predicates in the previous section. In this section I discuss in detail additional topics which do not fall under the heading of demonstrating that the construction in question is a complex predicate. The following points also serve as the basis for comparison between Bardi and other Nyulnyulan languages.

9.5.1 Constituent order

There is considerable variation in the extent to which preverbs and their light verb may be separated among Nyulnyulan languages. The order of preverb and light verb is much

more rigidly fixed in Bardi than might be supposed from descriptions of other Nyulnyulan languages. We also find statements, however, that the 'normal order' in all Nyulnyulan languages for preverb and light verb is preverb — light verb, and deviations are seldom found.

In Bardi it appears that the only time a preverb may be moved around the clause is when it is an 'adverbial' preverb and the meaning of the complex predicate is strictly compositional. (9.40) is repeated below as (9.59), which shows varying order for the preverb and the rest of the complex predicate:

(9.59) a. *Arra joodarrarr oolalana.*
NEG with the tide 3-IRR-visit-REM.PST
'He didn't go with the tide.'

b. *Joodarrarr arra oolalana.*
with the tide NEG 3-IRR-visit-REM.PST

c. *Arra oolalana joodarrarr.*
NEG 3-IRR-visit-REM.PST with the tide

Thus given this strong restriction on constituency, the cases illustrated in (9.59b) and (9.59c) are probably not really complex predicates, and *joodarrarr* is acting as a staightforward adverb in such cases.

9.5.2 Preverb conjunction

In contrast with the conjunction of noun phrases, whole verb phrases and clauses, preverb conjunction never occurs in spontaneous speech. The conjunction of preverbs with *agal* 'and' is very rarely accepted. A few examples were considered grammatical; these are given in (9.60). Much more often, however, they were rephrased, with either two complex predicates joined by *agal* or by two verb phrases with no overt conjunction. The examples in (9.61) show the preferred pattern of conjunction.

(9.60) a. *Bilirl agal girringg nganarij* *bardi.*
yawn and cough 1-TR-spear-MID.PERF yesterday
'I yawned and coughed all day yesterday.' (CB/FN: NI.3/47)

b. *Jooyiboon wiinya injij* *agal rambin.*
pot full 3-TR-do/say-MID.PERF and heavy.
'The pot got full and heavy.'

(9.61) a. *Bilirl nganarij* *bardi* *agal girringgirring*
yawn 1-TR-spear-MID.PERF yesterday and cough
nganarij.
1-TR-spear-MID.PERF
'I yawned and coughed all day yesterday.' (= (9.60a))

b. *Liyan alig injijinin* *agal diirdamb* *inin.*
heart sore 3-TR-do/say-MID.PERF=3.IO and leave=THUS 3-be-CONT
'He got angry and left.'

(9.60a) shows a genuine conjunction of preverbs before the verb. The bracketting would be:

(9.62) [[[Bilirl agal girringg]$_{PV}$ nganarij]$_{V}$ bardi]$_{IP}$.

In (9.60b), however, we would appear to have a gapped second verb, or movement of part of the phrase, stranding the second preverb (I prefer an analysis, if this is a complex predicate, where the second verb *injij* is understood).

Note, incidentally, that in (9.61b) the preverb *diird* 'leave' can take either *-joo-* 'do/say' or *-ni-* 'be' as its light verb. If true preverbs can be freely conjoined in Bardi, there should be no reason why *liyan alig agal diird injijin* should be ungrammatical. The fact that the only possible conjoined preverbs are also members of other word classes, and even then that the unconjoined phrase is preferred, should be a clue that the 'preverbs' in such cases are probably not functioning as preverbs.

9.5.3 Multiple preverbs

There are a few instances in Bardi of constructions where the preverb appears to be a multi-word phrase. Representative complex predicates are given in (9.63). The phrases in (9.63) have been identified as complex predicates on the basis of intonation.

(9.63) a. *bard arr -joo-*
off go do/say
'go off'

b. *bard roowil -nya-*
off walk catch
'walk off'

c. *liyan layib -ma-*
heart well put
'make someone happy'

d. *liyan loogal -joo-*
heart bad do/say
'be upset'

e. *liyan loogal -ma-*
heart bad put
'make someone [IO] angry'

Such preverbs fall into two types. In the first, the first preverb is an adverb, usually *bard* 'away, off'. Unfortunately I have no examples with *bard arr -joo-* in the negative, so it is not possible to tell whether this is a fully fledged complex predicate or a case where the monosyllabic *bard* has cliticized to the following word and forms part of the same intonational phrase. The same is true of the complex predicates involving *liyan* 'heart'.

9.5.4 Independent usage

There is little independent usage of preverbs without their inflecting verb in Bardi. In the modern language, the only preverbs which may be used without a light verb are those which have cognates in other word classes, and again, we have the issue of whether, in that case, the 'preverb' is actually a preverb. In (9.64), for example, the sentence could probably be

equally well translated 'he walked away with a song'. In (9.65), the phrase is *bangalonngan oogool* 'for scattering in the crevices', where *oogool* is the preverb. The only inflecting verb in the sentence, *irrjimbin* 'they die', is in a different clause.

(9.64) *Roowil innyij* *jirrma-nyarr.*
walk 3-TR-catch-MID.PERF singing-COMIT.
'He walked away singing.' (Aklif 1990-1994:E0/11)

(9.65) *Banyjoord gorna [bangalonngan* *oogool] irrjimbinjamb aarli.*
B good reef holes-ALL/PURP scatter die fish.
Gaanygayoonamb *banyjoord.*
mainland-SOURCE-thus b.
'Banyjoord poison root is used for scattering in crevices of reefs so that the fish die. It's from the mainland.' (Aklif 1999:banyjoord)

(9.66) *Jooboolngan* *jirra.*
swimming-ALL/PURP 3AUG.POSS
'They are going swimming.' (CB/FN 12/26)

When the preverb exists only as a preverb, in conjunction with an inflecting verb, the inflecting verb may not be omitted and must be nominalized.[20]

(9.67) a. *Roowil-ngan manyan* *gorn=amb.*
walk-ALL GER-catch-CONT good=THUS
'It's good to walk.' (CB/FN: NI. 11/26)

b. * *Roowil-ngan gorn=amb.*
walk-ALL good=THUS

There are some hints from the Laves data that the use of preverbs without light verbs used to be a little freer in Bardi. There are a few examples of the preverb *roowil* 'walk' without a light verb, and with other preverbs (e.g. as illustrated in (9.68)):

(9.68) *Jama, gala jawa* *barda gaalwa galgoorriny.*
well thus 1+2MIN.IO off raft swimming
"Well, let's us two swim together, floating on the catamaran." (Laves n.d.:129/15)

[20]The only exception I have found to this is *roowil* 'walk'. A good test for nominal status is presence in the phrase *gorna jina X*, meaning 'his/her X is good'. Only independent nominals can appear in this frame, preverbs, verbs, particles and adjectives cannot. Although *roowil* fails all the other nominal tests, it passes this one: *gorna jina roowil* 'his walk is good' is acceptable.

McGregor also reports the use of preverbs without light verbs in Nyulnyul (for an example see (9.146)). In the Eastern languages, the situation is rather different. There are several constructions where the preverb may be used independently. As seen from the Nyikina example in (9.69) the preverb still assigns a θ-role to *mangarriy* 'food'.

(9.69) *Gurd ngarrama* *gab-dyunu* *mangarriydyunu.*
die 1MIN-IRR-go eat-INAN.SOURCE food-INAN.SOURCE
'I might die from eating the food.' (Stokes 1982:144)

Finally, it is worth noting that the oldest Bardi speakers who regularly codeswitch between English and Bardi occasionally use Bardi preverbs within an English or Kriol frame. In (9.70), for example, the preverb *garr* 'rub' has been used as a Kriol verb root would, complete with past tense marker *bin* and transitivity marker *'im*.

(9.70) They bin *garr*ing'im. (They were rubbing it.) (NI)

Compare also the discussion in Schultze-Berndt (2000:143) for similar examples from Jaminjung speakers. I do not have a large enough set of examples to draw any conclusions for Bardi.

9.5.5 Applicatives and complex predicates

An interesting feature of complex predicates in Bardi is that the applicative$_2$ is not productively used with them, even in cases where, all else being equal (from the use of applicatives with simple predicates), we might expect them to be grammatical. Consider the sentences in (9.71). The (a) sentence shows a verb without the applicative, the (b) sentence is with the applicative.

(9.71) a. *Maanka inamana.*
black 3-TR-put-REM.PST
'He made it black.'

b. *Maanka inamanang.*
black 3-TR-put-REM.PST-APPL$_2$
'He bin leave that *maanka* longa them.' (He left a black thing with them.)
*'He made it black with something/someone.'

The translation in (9.71b) was given by the speaker, Nancy Isaac. Using the applicative with this complex predicate forces a reading where *maanka* 'black' is not a preverb, but rather an adjective modifying an assumed noun (recall from §2.3.1 and (9.1) that adjectives may be used without an accompanying noun if the discourse referent is already established). The root *-ma-* is also interpreted in its non-light meaning 'put', rather than its light verb meaning, where it often acts as a causative.

Some light verbs can combine with the applicative, however:

(9.72) *Roowil innyanang.*
walk 3-TR-catch-REM.PST-APPL$_2$
'He walked with someone.'

In other cases the applicative of a complex predicate produces a non-compositional meaning (c.f. (9.71) above). In (9.73) the non-applicative (intransitive) version means, innocuously, 'they are living in the same camp'. When the same complex predicate is used with the applicative, however, the phrase means 'they are indulging in group orgies':

(9.73) a. *gir irral* 'they're living in a place [together]' (group of people sharing a camp)

b. *gir(gir) ingarralanggal* 'they're having a group orgy'

9.5.6 Inflection of preverbs

9.5.6.1 Aspect marking

In the other Nyulnyulan languages, and indeed in many of the languages of Northern Australia, preverbs inflect for aspect. In Yawuru, for example, they may take *-kadya*, which is

an intensive marker. In Nyulnyul the equivalent morpheme is *-garra*.[21] In the Daly River area of the Northern Territory, *-ma* is commonly used (see further Wilson 1999) to mark completive aspect.

In Bardi, however, the inflection which preverbs may take is highly limited. The only even remotely productive derivation which some preverbs may undergo is reduplication.[22]

Preverbs cannot usually take the adjectival intensive marker *-gij*; instead an adverb *ngarrigij* is used. The few preverbs that seem to contain *-gij* may be fossilized (e.g. *abarrabarrgij* 'difficult', where *abarrabarr* is a noun meaning 'confusion', not an adjective).

(9.74) *Ngarrigij boorrooboorr inyjiid nyimarl.*
very-VERY swell 3-PST-go 2M-POSS'R-hand.
'Your arm got too/very swollen.' (Bowern 2001/2003a:3/67)

(9.75) * *boorrooboorrgij inyjiid nyimarl.*
swell-VERY 3-PST-go 2M-POSS'R-hand.

Although it seems that there is no active derivation which targets the preverb position, this does not mean that no inflected items can be preverbs. In fact, two forms of inflection are found on preverbs. The first is inalienable possession markers; the second is case marking.

9.5.6.2 Inalienable possession

Recall from §2.3.1 and Table 2.1 (on page 28) that Bardi has a set of inalienably possessed nouns which take prefixes for the person and number of the possessor (c.f. *ngalma* 'my head', *nyalma* 'your head', etc). Several of these inalienably possessed nouns can be used as preverbs in complex predicate constructions. A representative sample is given in the following examples:

[21] The cognate *-kaj* is also found sporadically.

[22] Recall from §9.4.4 on page 277 above, and especially (9.37), that some adjectives may undergo reduplication when they are functioning as preverbs, but not otherwise.

(9.76) a. *+ga* 'back':
Ngaya *ngankama* *wiira.*
1MIN-back 1-FUT-TR-put-FUT little while
'I am going to rest for a little while.'

b. *+moonggoon* 'knowledge':
Ooranynim *ngamoonggoon* *ingarramij* *ngaanka.*
woman-ERG 1MIN.POSS'R-knowledge 3-PST-AUG-TR-put-MID.PERF language.
'The women taught me language.'

c. *+ngarrarda* 'spirit' (= 'believe'):
Ningarrarda *anamajin* *gala*
3MIN.POSS-spirit 2.FUT-TR-put-FUT=3MIN.IO COMPLETE
injilnganjirri *jawal.*
3-TR-tell-CONT=2MIN.FOC.DO story.
'You can believe the story he tells you.'

d. *+jarra* 'taste':
Niyarra *ngankinya* *jiy* *may?*
3MIN.POSSR-taste 1-TR-FUT-catch-FUT 2MIN.POSS'R tucker.
'May I taste your food?'

(9.77) *+lamarr* 'ear' (= 'promise')

a. *Ilamarr* *ngannyagal* *bard ngankaya*
3AUG.POSS'R-ear 1-TR-catch-REC.PST off 1-TR-FUT-carry-FUT
Broomengan.
B-ALL
'I promised [them] yesterday that I'd take him across to Broome.'

b. *Ngalamarr* *innyagal.*
1MIN.POSS'R-ear 3-TR-catch-REC.PST
'He told me [e.g. I gotta go fishing tomorrow with him].'

c. *Arra ngalamarr* *oolinyanangay.*
NEG 1MIN.POSS'R-ear 3-IRR-catch-REM.PST=1MIN.DO
'He didn't promise me.'

(9.78) *+nga* 'name'
Angan irrnga *innyan* *aloorrninga*
why 3AUG-name 3-TR-catched-CONT in-laws=EMPH
jinarr? *Arrajina* *wiini.*
3MIN.POSS'R-3AUG.POSS'E? WITHOUT respect.
'Why does he call his *aloorr* (in-law) by name? He's not showing any respect.'
(NI: AK/FN E3/41)

The use of agreeing possession prefixes on the preverbs seems to be optional; in (9.76c) and (9.76d), for example, the preverb takes default, third person minimal agreement (*ni-*) rather than agreeing with any particular participant.

The case of *+moonggoon* is an interesting one. The verb appears to be impersonal, and the 'learner' is the possessor of the preverb, as shown in (9.79):

(9.79) *Gala ngamoonggoon indan gorna. Alboorr ngaanka*
right 1MIN.POSS'R-knowledge 3-TR-do/say-CONT well. many word
*nganganka*n.
1-speak-CONT.
'I am learning [Bardi] well. I can say lots of words.'

In other cases, the possessor is the logical object of the light verb (and sometimes, as in the case of *+moonggoon -ma-* 'teach someone', it may alternate with object marking on the verb). Examples of this were given in (9.77) above.

9.5.6.3 Case and other marking

Another type of inflection found on preverbs is case marking.[23] This is not productive, and almost all examples are instances of the locative case on an identifiable noun, and the light verb *-ni-* 'sit, be at a place' or *-gal(a)-* 'move'. An example of each is given in (9.80)–(9.81).

(9.80) a. *goron -gal-* 'play' (lit. 'at game' + 'move')
b. *aarlon -gal-* 'go fishing' (lit. 'at fish' + 'move')
c. *moorrgoolon -gal-* 'work' (lit. 'at work' + 'move')

(9.81) a. *wiliwilon -ni-* 'be fishing' (lit. 'at fishing line' + 'sit')
b. *aarlon -ni-* 'be fishing' (lit. 'at fish' + 'sit')
c. *anggoorrgoon -ni-* 'be in tears' (lit. 'at crying, tears' + 'sit')

There is also some evidence for there having been other inflected preverbs at a previous stage in the language, although they are not treated as such in the modern language. One

[23]Note that I am not talking here about the productive use to case in marking subordination; rather here I mean preverbs which are formed from a noun and a case marker.

striking example is *liyan -ma-* 'like, want', which in the Laves corpus often appears with the instrumental *-ng(a)*. This is the precise cognate of the same construction in Warrwa, where the form of the preverb is *liyan-ngany* (the cognate of the instrumental in Bardi) and the same light verb *-ma-* 'put':

(9.82) Warrwa:

Ngayi-na marlu liyan-ngany ngalama manyjayinu.
1MIN-ERG NEG like-INST 1M-IRR-put many.

'I don't like them all.' (McGregor n.d. b:29)

For another example of a possibly historically inflected preverb, compare also Bardi *jooboorrjooboorr+* 'pluck feathers', which is probably cognate with the Nyulnyul preverb *jubjub*, which has the same meaning.

Finally, a few preverbs appear to contain a suffix *-j* or *-ja*, or have variants with or without a final consonant:

(9.83) a. *booljarrja -jalgoo-*. 'to faint'. c.f. *booljarr* (adv) 'suddenly'
b. *rarrjin -ma-* ~ *rarrjinja+* 'feel shame'

(9.84) *jiinba -(i)nya-* ~ *jiinbany -(i)nya-* 'avoid a weapon'

Inflection with *-ja* is not productive. It could be related either to the simultaneity marker *-j* or to the *-j* that occasionally appears on predicate adjectives.

9.5.7 Loans

Many preverbs are in origin loan words from other languages, including other Nyulnyulan languages and English or Kriol. Some examples from English/Kriol are given in (9.85). The English translation also contains the source of the loan.

(9.85) a. *dayid -joo-* 'be/get tired'
b. *diil -joo-* 'deal (cards)'
c. *wajim -ma-* 'wash something'

d. *gadigad -(i)nya-* 'cut up something'

Loan preverbs are fully integrated into the preverb system (including the classification system), and they do not appear to behave differently from the rest of the Bardi preverb lexicon. The loans do, however, appear to be concentrated towards a particular configuration of complex predicate, where the preverb assigns the θ-roles and the verb appears to be there to support agreement morphology. That is, we do not tend to find loans in pseudo-incorporated complex predicates. This is probably to be expected, since the largest source of loan preverbs is English or Kriol verbs.

9.6 Analysis and typology of complex predicates

So far I have presented the syntax of Bardi complex predicates without making many overt statements as to the type of underlying structure which I am assuming. A definitive statement is problematic. Nyulnyulan languages have not been analyzed within a formal theory of generative grammar since Metcalfe (1975) (which is the only formalist study of a Nyulnyulan language that I know of), and the radical non-configurationality which Bardi exhibits makes it very difficult to make use of the usual tests for determining structure.

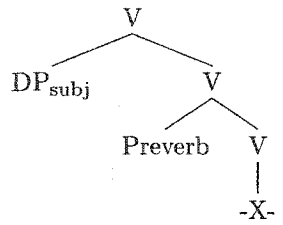
However, we also need to consider whether all complex predicates in Bardi have the same underlying structure. In the following section I describe a typology of interactions between preverbs and light verbs, as a preliminary description towards a more formal analysis.

Finally, a note is warranted about my assumptions and about the validity of the model I use in the following section. Bardi has many properties that are associated with non-configurationality, as seen above in §2.7.1. I am wary of making concrete statements about underlying structure for clauses as a whole, due to the paucity of evidence for any given structure at a level higher than a nuclear verb phrase (that is, a verb and its preverb). Therefore I am explicit about the structures I am assuming only for the configurational aspect of Bardi structure. The trees in this section are not intended to be a strong statement

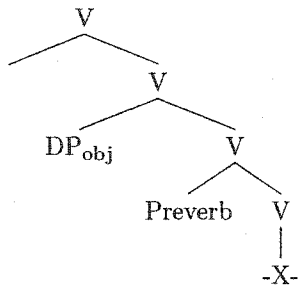
on how I believe Bardi verb morphology should be analyzed, but more an impressionistic model of how such an analysis might proceed in a particular framework.

As mentioned above, I follow Hale and Keyser (2002) and adopt their configurational representation for complex predicates. (Linear order is not important.)

(9.86)



(9.87)



I will make use of these structures in the following sections. I have also informally pursued an analysis along the line of Samek-Lodovici (2003) (with index erasure) and LCS fusion (Wilson 1999) where formal explication will aid clarity. I have not, however, followed a full formal analysis in a particular framework, which would take us well beyond the scope of this work.

In the following subsections I present the types of complex predicate structures found in Bardi. Although complex predicates in Nyulnyulan have been characterized as a 'classificatory' type of construction, not all complex predicates behave in this way. Four relationships between the preverb and the 'light verb' can be identified. These are given in §§9.6.1–9.6.4.

9.6.1 Preverb = inflecting verb

One type of complex predicate involves the preverb reinforcing, or giving a subset of meaning, of the inflecting verb. In such cases, the verb is never one of the light verbs also used in

classification (although the preverb may be used with other inflecting verbs as well). The preverb is frequently an adverb, or it may have the same or very similar meaning to the inflecting verb. (9.88)–(9.91) give some common examples of the verbs used with this type of preverb construction:

(9.88) verbs of speech:

a. *balygarr -nganka-* 'swear'; c.f. *balygarr* 'swearing', *-nganka-* 'speak'

b. *balygarr -garnboo-* 'swear at someone'; c.f. *balygarr* 'swearing', *-garnboo-* 'growl someone (vituperate)'

(9.89) verbs of motion:

a. *darr(al)* ~ *dorrol -booloo-* 'come out'; c.f. *-booloo-* 'come'

b. *joodarrarr -galala-* 'go with the tide' (c.f. *joodarrarr* 'in the direction of tidal motion', *-galala-* 'move' (reduplicated form of *-gala-* 'move, visit, live'))

c. *joornk -jarrala-* 'run' (c.f. *joornk* 'run (n, adv)', *-jarrala-* 'run')

d. *wirr -jarrmi-* 'rise, get up' (c.f. *-jarrmi-* 'get up')

(9.90) other:

a. *gooroogooroo -boolmoo-* 'smell nice' (c.f. *gooroogooroo* 'smell (n)' *-boolmoo-* 'smell (v)')

b. *lagal -ganyi-* 'climb'

(9.91) 'adverbial':

a. *goolgarr -gama-* 'laugh' (c.f. *-gama-* 'laugh')

b. *ngaada -joogooloo-* 'break in half' (c.f. *ngaada* 'short', *-joogooloo-* 'break')

c. *jondol -moolgoo-* 'sleep doubled up' (c.f. *jondol* 'doubled up', *-moolgoo-* 'lie asleep')

d. *anyja -mooroo-* 'give away' (c.f. *anyja* 'away, off' (also a noun meaning 'gift', as well as an adverb), *-mooroo-* 'waste, throw away')

Where the preverb is a 'dynamic' noun (more 'verblike', e.g. *goolgarr* 'laughing') there is never mismatch in valency between the preverb and the light verb. Also, although the preverbs with adverbial readings do satisfy the tests for complex predicate status (appearance inside negation, for example, see §2.7.5 above), it is not clear that they are transferring θ-roles to the verb.

Thus I have two representations for this type of preverb. Where the preverb seems to do nothing to the argument structure of the light verb, I assume vacuous transfer of the preverb's arguments to the light verb (that is, the preverb still transfers its arguments, but because we get the same result that we would have obtained had there been no argument transfer; the semantics and argument structure of the resulting predicate is the same as that of the components).

(9.92) a. Preverb: *wirr* 'rise, get up': a-structure (x_j)

b. Root: *-jarrmi-* 'rise, get up': a-structure (x_j), (after index erasure, $\rightarrow$ (x)).

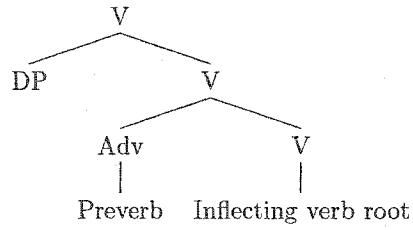
c. result: *wirr -jarrmi-*, (x_j)

The LCSs of the two components of the predicate are identical, and we can assume fusion of the two (using the ideas of Wilson 1999 vel sim).

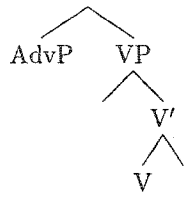
For the cases where the preverb is adverbial, I assume something like the 'instrument' incorporation of Niuean. We have already noted the close relationship between pseudo-incorporation and complex predicate (with light verb) formation, and although the pseudo-incorporation analysis was rejected for the bulk of complex predicates in Bardi, it would seem to be appropriate here. Note that these adverb incorporations (such as *joodarrarr -gala-* 'go with the tide' are the only complex predicates where the preverb can appear separated from the light verb. This implies that they are a different type of underlying structure.

For these types of 'adverbial' complex predicate I assume two structures. When the adverb is acting as a preverb I assume it conforms to the general structure for complex predicates defined elsewhere (see (9.93a)); when it is separated from the verb I assume that it is functioning as a regular adjunct (see (9.93b)).

(9.93) a.



b.



Note further that complex predicates with adverbial preverbs do not seem to involve argument transfer; the reading is strictly compositional. This would be expected, as adverbs (e.g. the manner adverbs which are the bulk of the adverbs used in complex predicates in Bardi) do not subcategorize for arguments, so there *are* no thematic indices to transfer.

9.6.2 Pseudo-incorporation

The second type of complex predicate which can be isolated is where the preverb appears to be functioning as a pseudo-incorporated object (or occasionally instrument). The predicate as a whole is intransitive.

(9.94) a. *ngaanka -gonboo-* 'send a message' (*ngaanka* = 'word, language', *-gonboo-* = 'send')

b. *ngaanka -ma-* 'make a plan' (*-ma-* = 'put')

(9.95) *gooljoo -janboo-* 'pull out grass' (*gooljoo* = 'grass', *-janboo-* = 'tread on')

Unlike §9.6.1, however, these verbs do not appear to form a cohesive class with distinct syntactic properties, and it is not clear that these should be analyzed as cases of non-productive pseudo-incorporation. Perhaps the cases where the 'light verb' is not usually a light verb could be analyzed this way.

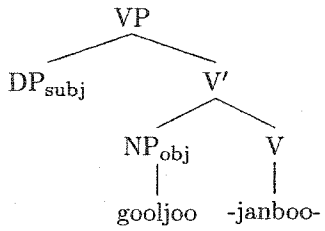
There are a few recorded cases of alternations between a pseudo-incorporated preverb and a 'real' object. Compare the following:

(9.96) a. *Gooljoo angarranboojirr* *mayala.*
grass 1-PST-AUG-TR-step on=3AUG.IO spinifex
'We pulled out the spinifex grass' [after loosening up the ground with a rock].

b. *Angarranboogaljirr* *mayala gooljoo.*
1-PST-AUG-TR-step on=3AUG.IO spinifex grass
(Aklif 1999:-janboo-)

In sentence (a) the generic noun *gooljoo* 'grass' is functioning as a preverb. In the (b) sentence it appears as part of the object *mayala gooljoo* 'spinifex grass'.[24] If we assume that these are pseudo-incorporated objects, we will have the tree in (9.97) below:

(9.97)



For the non-incorporated cases, we would just assume regular case assignment and movement out of the VP, as for other objects. This is a nice result — the pseudo-incorporated preverbs have the same configurational structure as the other types of complex predicates, but from a different source.

We cannot, however, use the pseudo-incorporation analysis in general. There are complex predicates which look very similar to the ones just described in (9.94), except that they have the wrong valency; they are transitive rather than intransitive; thus the preverb, which would analyze as a pseudo-incorporated 'object', is not the only 'object' of the clause.

[24] As in many Australian languages, in Bardi generic nouns are often used with more specific nouns in a type of noun classifier construction. For further details see Wilkins (2000).

Remember from §9.4.6 above that we saw instances of complex predicates where the preverb, etymologically at least, appeared to be acting as the logical direct object of the light verb, but if we analyzed it synchronically as such we would have had two direct objects, in violation of the theta-criterion. One illustration was given in (9.42), which is repeated below as (9.98):

(9.98) *Aambanim boor inamboogaljin goorlil.*
man-ERG 'ground' 3-TR-PST-poke-REC.PST=3M.IO turtle.
'The man missed the turtle.'

Here the predicate as a whole is licensing θ-roles. Also, this type of pseudo-pseudo-incorporation usually occurs with the light verb classifiers, so it is treated under classification in §9.8 below. If we assume a pseudo-incorporation analysis for the structures in (9.94) and (9.96), however, we have a source for the creation of clauses like those in (9.98). We would simply have to assume that a pseudo-incorporated structure was reanalyzed as projecting an argument.

The process I assume is something like this. In the first place we would have a transitive sentence with a full (not 'light') verb alternating with a pseudo-incorporated sentence. Perhaps the pseudo-incorporated sentence was idiomatic for 'he missed' (e.g. he speared the ground instead of a kangaroo).

(9.99) a. *Aambanim inamboogal boor.*
man-ERG 3-TR-PST-spear-REC.PST ground
'The man speared the ground.'

b. *Aamba [boor inamboogal].*
man-ERG ground 3-TR-PST-spear-REC.PST
'The man ground-speared.' i.e. 'he missed' (intrans)

The pseudo-incorporated sentence would have the same structure as that in (9.97). Now, suppose that (9.99b) were reanalysed as comprising the light verb *-boo-* rather than the

full verb. It would have the same structure as an unergative complex predicate and could participate in the same transitive/intransitive alternations that other verbs (such as 'eat') do.

9.6.3 Classification

The third type of complex predicate is the most common in Bardi. Here the light verb functions as an event classifier and/or a licenser of various arguments. These are the topic of §9.8, and are summarized in Table 9.4 on page 331.

I assume that these structures add elemental semantics to the complex predicate, such as the trajectory of the event, telicity, stativity, and causativity. That is, they add either an event variable (in Jackendoff's (1990) terms), such as INCHO or STATE, or a more concrete portion of the LCS, such as [(GO TO [α])], to the predicate.

9.6.4 Idioms

Finally, there are the idioms which do not fit these patterns. Many could probably be subsumed under other categories, or we could treat them as another instance of the construction, different from the classification or pseudo-incorporation cases.

(9.100) *joowara -jardi-* 'sneak way together' (*-jardi-* 'ask permission')

9.7 The adicity problem

Bardi complex predicates present a problem that does not seem to occur in analyses of complex predicates in other Northern Australian languages (apart from possibly Jaminjung, for which see below). This problem involves the use of a bivalent light verb in an intransitive predicate. The verb is inflected for the 'transitive' prefix *n-* ~ *a-*. An example is given in (9.101).

(9.101) *Majoonggooloo roowil i- n- nya -gal barda.*
young girl walk 3- TR- 'catch' -REC.PST away.
'The young girl walked off.'

Here the light verb is *-(i)nya-* 'catch', a bivalent light verb which shows the transitive minimal prefix *n-*. The predicate is intransitive, however. There is a single argument (*majoonggooloo* 'girl'), and it appears in absolutive case.

Why is this a problem? We could simply say that the prefix *n-* ∼ *a-* is required for morphological completeness; we would argue that the verb *-(i)nya-* belongs to the class of verbs which requires this prefix, and the stem would not be well-formed without it (just as, for example, first conjugation verbs in Latin require a thematic vowel *-a*, while second conjugation verbs take *-e*).

A second reason why the presence of *n-* ∼ *a-* might not be a problem is that we notice from other languages that adicity in the root is not necessarily preserved in complex predicate constructions. In Japanese, for example, the number of arguments to surface depends on the preverbal noun, *not* the light verb *suru*.

The reason the presence of *n-* ∼ *a-* in light verb constructions poses a problem is that under now standard analyses of non-configurational languages in generative grammar (e.g. Baker (1996, 2000), pace Austin (1999), Austin and Bresnan (1996)), since Jelinek's (1984) pronominal argument hypothesis and subsequent variations), in nonconfigurational languages with complex agreement, it is the agreement marking on the verb which is assumed to saturate θ-roles. In Bardi, the presence of object agreement clitics is licensed by the presence of the transitivity prefix *n-* ∼ *a-*. Now, if in a complex predicate, the predicate is intransitive while the verb shows transitive morphology, if some version of the pronominal argument hypothesis holds, the verb is projecting an argument and a θ-role which is not filled, in violation of the θ-criterion (in LFG, it is a completeness/coherence violation).

The next solution would be to say that the argument-projecting properties of the verb are being ignored. They are "over-ridden" by the preverb (and the pronominal argument hypothesis holds only at the level of configurational structure within the VP, that is, the preverb and the inflecting verb). If this were the case, however, and the argument-projecting properties of the verb don't 'count' for argument structure, we would expect transitive predicates with monovalent light verbs. We don't find them in Bardi, although we do in Yawuru. In Bardi, monovalent light verbs systematically form unaccusative complex predicates.

McGregor's (2002) solution to the presence of the transitivity marker is that such verbs are avalent; that is, there is no specification of valency by the *n-* ∼ *a-* morpheme (licensed by the root). We are left, however, with the problem of why avalency should only show up in complex predicates; otherwise there is an almost absolute correlation between the presence of *n-* ∼ *a-* and transitive simple predicates.[25] Remember also that McGregor does not treat 'light verbs' differently from full lexical verbs; his explanation does not capture the different behavior in the two cases.

Schultze-Berndt (2000:180-183) discusses a similar problem for Jaminjung. She analyzes 'dummy-undergoers' of some transitive verbs, where an extra argument does not appear although it is cross-referenced in the agreement morphology. Her solution is dummy agreement in terms of the EPP (or 'it's raining', etc).

(9.102) Jaminjung

Ngayin=malang *bul* *gani-ma* *bunyag.*
meat.animal=GIVEN emerge 3sg:3sg-HIT.PST 3dl.OBL

'The animal came out to/for the two.' (Schultze-Berndt 2000:181)

[25]The only exception is the root *-gal(a)-*, which is ambitransitive but always takes the *n-* ∼ *a-* transitivity morpheme.

In this sentence the prefix chunk is transitive, marking a third person singular subject acting on a third person singular object. The preverb *bul* 'emerge', however, licenses only one argument. (The oblique pronoun *bunyag* is not cross-referenced by the verb.)

This is represented in Schultze-Berndt's framework as dummy agreement, unlinked to other parts of the structure:[26]

	ngayin	*bul*	*gani-ma*
	meat.animal	emerge	3sg:3sg-HIT-PST
ABS	NP(ABS)		V
CCV		Coverb	Verb
	<emerging.entity>	*bul*	
	<emerging.entity>		*-ma* (iii)
TRANS	A:	*U:*	trVRoot

Figure 9.3: Argument structure of complex verbs with 'dummy' U prefix. Schultze-Berndt (2000:182)

I have assumed a similar solution for Bardi — it is the only solution that I can see — a morphological, ultimately lexical requirement that that particular affix be present, even though it does not have a representation in the syntax.

[26] I do not know how Schultze-Berndt is able to rule out other cases where an unlinked object agreement affix would be ungrammatical.

9.8 Bardi complex predicates: semantics of event classification

Since I have claimed that Bardi light verbs make a contribution to the semantics of the clause and are not semantically empty, in this section I will discuss the meanings of the light verbs within a classification system. I follow work of McGregor (2002) and Schultze-Berndt (2000) explicitly in making this claim, and many other writers of grammars of North Australian languages implicitly. The first analysis of Nyulnyulan languages as having a verb classification system is due, to my knowledge, to an unpublished paper by McGregor (McGregor 1997b). Nicolas' PhD thesis from 1998 analyzes Bardi in this way (without discussion of other Nyulnyulan languages). Under this analysis, the inflecting verb acts as a classifier of the preverb, indicating the type of event the preverb refers to. Nicolas (2000) proposes that Bardi's preverbs are classified by lexical valency, aspect and trajectory. This gives us an idea of the type of meaning that the inflecting verb brings to the complex predicate; for example *-ar-* 'spear lice' is used with actions which occur around a point and have a defined trajectory:

(9.103) a. *dirray -ar-* 'rotate something'
b. *jiin -ar-* 'point at something'
c. *jibiny -ar-* 'thrust a spear'
d. *joorr -ar-* 'drip'
e. *janngal -ar-* 'cut across the tide'

Many of the statements in Nicolas (2000) are incorrect. For example, she states (p. 160) that *-jiidi-* is only used to mark anti-causative constructions. This is not true; it is the primary function, but *-jiidi-* also forms complex predicates with a motion component.

Nicolas is unclear on the syntactic status of preverb-inflecting verb construction, calling them 'compounds' or *verbes complexes* without further elaboration as to the structure she assumes.[27] Although I disagree with many of the details of Nicolas' description of Bardi, I do

[27] "Le verbe complexe est composé de la même base verbale *accompagnée* d'un préverbe." (Nicolas

agree that the inflecting verb in Bardi's complex predicate construction fills the functional role of a classifier and serves to mark event classification. The source of my disagreement with Nicolas' analysis arises from the very small corpus (around 400 preverbs) which she used.

Unlike Nicolas (1998, 2000), McGregor (2002) argues for a particular structure underlying complex predicates in Northern Australian languages, and Nyulnyulan languages in particular. He argues that the classifier constructions do not fulfill the requirements of complex predicates. One of the reasons is because either one part or the other (or neither) is identified as the head, not both, according to different tests (c.f. (9.26) above). The criterion of inflectional locus identifies the head as the inflecting verb; however, θ-role assignment (McGregor argues) usually identifies the preverb as the head. McGregor's other argument is based on transitivity alternations; since the structure of the complex predicate does not always correspond to the morphological transitivity of the inflecting verb, there is a problem in saying that the two predicative units (the preverb and the inflecting verb) jointly determine clause structure, since the relationship is clearly not additive.

It is difficult, however, to use these points to argue for a classifier analysis *instead of* a complex predicate analysis. If we take McGregor's line on tests for headedness, how are we to account for the data which I presented in §9.4? We would be led into arguing that an adjunct is determining subject θ roles! McGregor's argument about valency mismatch invalidating the complex predicate analysis is true if one takes a strict view that syntax cannot modify argument structure, however it is unclear to me that calling the inflecting verb a 'classifier' removes this problem; if the verb is a full lexical verb in such constructions we run into problems of completeness and coherence, and the theta criterion.

My results here are based on a survey of all preverbs in Bardi from the following sources:

1998:73).

(9.104) a. Aklif (1999);
b. Metcalfe (1975), Metcalfe (n.d.);
c. Nekes and Worms (1953), as checked by me with Nancy Isaac, Bessie Ejai and Jessie Sampi in 2001;
d. My field notes and transcriptions of stories recorded in 1999, 2001 and 2003 from various speakers of Bardi.

I have approximately 750 preverbs in my sample. Although this is a much large corpus than Nicolas (1998, 2000) used for her research, it still probably represents a small percentage of the total number of vocabulary items which exist in Bardi and I do not claim these results as being definitive, but only reflective of some general patterns in the grammar.

9.8.1 Monovalent light verbs

The following sections discuss the main monovalent light verbs in Bardi. I omit from discussion those light verbs which combine with only one or two preverbs; they are given in a summary section in §9.8.4 below.

For each verb I identify the types of preverbs it may combine with, characteristics of the argument structure of the predicate, and the semantics (read, 'type of event variable') which the preverb contributed to the predicate as a whole.

9.8.1.1 *-ni-* 'sit'

The preverbs which take *-ni-* are listed in (9.105). The light verb *-ni-* introduces a stative reading to the predicate (with adjectives). This reading also arises with locative preverbs (see §9.5.6 above), such as *anggoorrgoon -ni-* 'be in tears'.

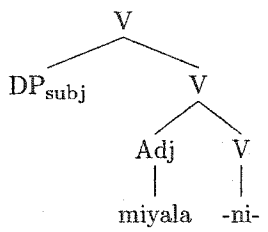
(9.105) a. **with a locative preverb**: *aarlon -ni-* 'be fishing'; *gooron -ni-* 'be playing'; *wiliwilon -ni-* vcit 'fishing'; *rangoon -ni-* vcit 'he lay on his stomach'; *anggoorrgoon -ni-* 'be in tears'; *gooron -ni-* 'play';
b. **denoting position**: *ilogo -ni-* vcit 'lie on one's side'; *arlarr -ni-* 'lie on one's back';

c. **other states**: *iilan -ni-* 'be sick'; *miyala -ni-* vcit 'be awake'; *gorna -ni-* 'feel alright'; *jambarra -ni-* 'listen'; *wiinya -ni-* 'be full' (+ other adjectives, productively); *wilwil -ni-* 'breathe'; *jarnin -ni-* 'was drifting, and came ashore on land'; *woorr -ni-* 'sleep'

The preverbs in (9.105) have been divided into three categories on the basis of etymology and semantics. Those in (a) denote that the subject is in a location, those in (b) describe position, while those in (c) describe other states.

In terms of the framework described in Hale and Keyser (2002), we can draw the following tree:

(9.106)



Hale and Keyser (2002:9-10,16) argue that this is the underlying structure for English adjectives such as 'redden', as well as phrasal predicates such as 'turn red'. The same structure is given by Ghomeshi (1996) for the equivalent complex predicate structures in Persian.

If we want to describe this in terms of conceptual semantics, we would say that the light verb *-ni-* introduces a stative event variable to the predicate. This reading also arises with locative preverbs, such as *anggoorrgoon -ni-* 'be in tears'.

(9.107) a. *-ni$_{light}$-* [$_{State}$ BE$_{Ident}$ (X)], a-structure (w$_{state}$ (x$_j$)) (after index erasure and transfer)

b. *maanka* [$_{Property}$ BLACK]

c. *maanka -ni-* [$_{State}$ BE$_{Ident}$ ([W$_j$], [AT$_{Ident}$ ([$_{Property}$ BLACK])])]

Note that adjectives with *-ni-* form a syntactic minimal pair with adjectives taking *-joo-* (c.f. §9.8.3 below). The underlying structure is the same; only the event variable is diferrent. Instead of a [$_{State}$] event type, *-joo-* introduces an INCHO[ative] variable.

9.8.1.2 *-jiidi-* 'go'

The root *-jiidi-* 'go' has two main uses in the light verb system.

The first use of *-jiidi-* is as a marker of anticausatives (that is, the intransitive predicate derived from an underlyingly 'causative', transitive predicate). Preverbs which take *-(i)nya-* 'catch' as their transitive light verb have an intransitive anticausative (unaccusative) counterpart formed with *-jiidi-*, as in (9.108):

(9.108) a. *lolor -jiidi-* v.it 'peel off';
b. *lolor -(i)nya-* v.tr 'peel off'

Other anticausatives in *-jiidi-* have transitive counterparts in *-ø-* or *-ma-*.

The second use is related to the non-light meaning of *-jiidi-*, that is, 'go'. Some complex predicates involving *-jiidi-* retain this meaning of motion, e.g. in (9.109).

(9.109) *galgooriny -jiidi-* 'swim'

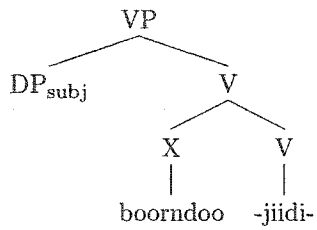
(9.110) gives the forms with unaccusative resultatives, while (9.111) lists the light verbs with a motion meaning.

(9.110) **Unaccusative anticausatives**: *boorndoo -jiidi-* 'close'; *doolool -jiidi-* 'pour, roll down (of water)'; *doomal -jiidi-* 'light up and flash around'; *lolor -jiidi-* 'peel off'; *gagal -jiidi-* 'split in two'; *lalala -jiidi-* 'be split'; *irribirrib -jiidi-* 'collapse'; *roogood -jiidi-* 'come off'; *lambard -jiidi-* 'be open'; *roogooroog -jiidi-* 'get worn out'; *daldal -jiidi-* 'develop dry, cracked skin'; *diyil -jiidi-* 'burst'; *lol -jiidi-* 'catch fire'; *doolool -jiidi-* 'come out quickly, be poured out'; *dirldirl -jiidi-* 'break out in spots'; *dooboo -jiidi-* 'make a smoke signal, rise from a kindled fire (of smoke)'; *boorndoo -jiidi-* 'close'; *manmarr -jiidi-* 'get a fright'; *marrmarr -jiidi-* 'be afraid'; *boorrooboorr -jiidi-* 'swell up'

(9.111) **Motion verbs**: *joorroorr -jiidi-* 'come in (of tide)'; *dooly -jiidi-* 'dump (of waves)'; *galgooriny -jiidi-* 'swim'

We can draw the same structure as we drew for preverbs with *-ni-*. I use 'PV' for the preverb category, since it can be filled by words from multiple word classes.[28]

(9.112)



Complex predicates with *-jiidi-* are associated with a particular structure and a particular event variable:

(9.113) a. *-jiidi-*$_{\text{non-light}}$ $((x_j)) \rightarrow$ *-jiidi-*$_{\text{light}}$ $((x))$;
b. PV: *boorndoo* $(<y_k>(x_j))$.

Straight unification will take care of this, although we can also use Samek-Lodovici's (2003) analysis of index erasure. The two argument structures are directly compatible, and the variable operation would look like this:

(9.114) Before: *-jiidi-*$_{\text{light}}$ $(w_{ev}\ (x))$ + *boorndoo* $((x_j))$
After: *-jiidi-*$_{\text{light}}$ $(w_{ev}\ (x_j))$ + *boorndoo* $((x_j))$

9.8.1.3 *-banji-* 'share, exchange'

Another example of a light verb with fairly clear semantics is *-banji-* 'exchange', which is used with reciprocal actions. (9.115) gives an illustration of three such preverbs, although the use of *-banji-* is productive (as was noted in §8.1.5.1 above) and many examples can be found in the Bardi dictionary.

(9.115) a. *baad -banji-* 'wrestle'
b. *banggili -banji-* 'paint one another'
c. *loorrbloorrb -banji-* 'argue with each other'

[28]Note, incidentally, that *-jiidi-* does not seem to combine with adjectives. It is not clear whether this fact should be incorporated into a future analysis.

I assume that inherently reflexive/reciprocal verbs have an index structure of the following:

(9.116) *-banji-* $(x_j(x_k))$

That is, the root subcategorizes for two identical arguments which are linked to different parts of the conceptual structure. The notation is equivalent to saying that the verb has two participants, but they are the same entity. They fulfil different roles in the structure. Such a structure is, I believe, ambiguous between a reflexive and reciprocal, but that does not present a difficulty for this analysis, since reflexive/reciprocal clauses in Bardi *are* ambiguous.

(9.117) below gives the a-structure derivations for the reflexive/reciprocal complex predicate *wajim -banji-* 'wash self/each other'. The (a) sentence shows the index erasure à la Samek-Lodovici (2003). In (b) we see the a-structure for the preverb *wajim*. In (c) we see the result of index transfer — the indices are transfered from the preverb to the light verb. The a-structure of the light verb remains, forcing an obligatory reflexive/reciprocal interpretation.

(9.117) a. *-banji-* $(x_j(x_k)) > $ *-banji-* $(x(x))$
b. *wajim* 'wash' $(x_j(y_k))$
c. *wajim -banji-* $(x_j(x_k))$

9.8.1.4 *-ganyi-* 'climb'

The light verb *-ganyi-* has a non-light counterpart of 'climb' in other Nyulnyulan languages, although in modern Bardi it is used only with preverbs.[29] Five preverbs can be used with *-ganyi-*:

[29]This is not the case in earlier stages of the language; the Laves corpus has instances of *-ganyi-* without a preverb and Metcalfe (n.d.) lists *-ganyi-* alone in the meaning 'climb'.

(9.118) *angan -ganyi-* 'come closer'; *binbirr -ganyi-* 'drift to a place'; *birrbard -ganyi-* 'ricochet, bounce back'; *boorrooboorr -ganyi-* 'swell up'; *lagal -ganyi-* 'climb'

Of these, only the last, *lagal+*, is common, and several appear only in the Metcalfe dictionary and are not known to current speakers. *Boorrooboorr+* 'swell up' is also recorded with *-jiidi-* in the same meaning.

9.8.1.5 *-gardi-* 'enter, go inside'

The four preverbs which combine with *-gardi-* 'enter' all involve meanings associated with 'entering' something (if 'dive' is taken as decomposing into 'entering' water[30]). Note that unlike English 'enter', Bardi *-gardi-* is monovalent.

(9.119) *gardin -gardi-* 'enter'; *oorlil -gardi-* 'dive'; *lool -gardi-* 'enter'; *joomboor -gardi-* 'pull in, go in'

It is not entirely clear whether *-gardi-* should be treated as a true 'light verb' in the sense of Grimshaw and Mester (1988) and Jespersen (1954/1909), even though phrases such as *lool -gardi-* 'enter' behave as complex predicates. Alternatively, we could see *-gardi-* as a light verb which introduces an event variable involving trajectory, which would give us the same result, given the small number of preverbs which combine with this verb.

9.8.1.6 *-gala-* 'visit, move, live'

The verb *-gala-* 'visit, move, live' is the only morphologically bivalent root to enter only into intransitive complex predicates, so it is discussed here at the end of the monovalent roots (which by definition produce intransitive complex predicates) rather than with the bivalent light verbs, which otherwise produce either only transitive predicates or both transitive and intransitive ones. The non-light counterpart *-gal(a)-* is unusual amongst Bardi verbs in that it is the only apparently ambitransitive verb which does not reflect its two frames by a change in morphology.

[30] If *oorlil* is mistranscribed it could be related to *oola* /uula/ 'water'.

(9.120) a. Transitive:

Marbiddynim inanggalajarrngay bardi.
M-ERG 3-TR-PST-gala=1MIN.FOC.DO yesterday.

'Marbiddy visited me yesterday.'

b. Intransitive:

Layoord boordan irralj.
L scrub 3-AUG-gala-SIMUL

'Layoord spirits live in the scrub.'

c. *Nyirroogoordoo minkal?*
how-PROP 2-TR-gala

'How are you?'

The morphology of *-gal(a)-* is also highly irregular.[31]

(9.121) gives the preverbs which have been recorded with *-gala-* or its reduplicated form *-galala-*. Note from this that *-gala-* is also an exception to the rule that most light verbs no longer admit a light verb reading when they are reduplicated (c.f. *-banji-* in §9.4.10 above).

(9.121) a. **Motion:** *arrgaly -gala-* 'slip, fall over'; *darda -gala-* 'drip'; *jarrmarn -gal-* 'wade, cut across, interrupt'; *woo -gala-* 'dive down'; *diwirrdiwirr -gala-* 'stagger'; *yoor -gala-* 'slip'; *joodarrarr -galala-* 'go with the tide';

b. **'Flashing':** *bilybily -gal-* 'skip across the water'; *jidily -gala-* 'jump (of sparks from exploding coals)'; *dilydily -gala-* 'sparkling, flashing of waves, fire-light';

c. **Other:** *galgal -gal-* 'be tired and aching'; *gir -gal-* 'live, reside, stay for some time 'be settled down'; *moorrgoolon -gal-* 'work'; *aarlon -gal-* 'fish, go fishing'; *gorna -gal-* 'be well'; *irrgidid -galagal-* 'be giddy'; *irrgididi -gal-* 'be giddy'; *gooron -gal-* 'play'; *goondoorr -gal-* 'get giddy and die'; *lidi -gala-* 'become dry'; *wiily -gala-* 'scream'; *gorna -galala-* 'become physically well developed'

In Nyulnyul, complex predicates taking *-kal-* (the cognate of Bardi *-gala-*) are non-volitional (or uncontrolled) or have a lack of defined trajectory. Some preverbs in Bardi

[31] Aklif has two roots, *-gali-* and *-gal-* or *-gala-*. I only found evidence for one root, and I treat the variation in final vowel ($a \sim \emptyset \sim i$) as conditioned by the following suffix. In case I am wrong, however, I have not standardized the citation forms in the dictionary or in (9.121) below.

which take *-gal(a)-* show this too, such as *irrgidid+* '(be) giddy'[32] and *diwirrdiwirr+* 'stagger'. Others, such as *goron+* 'play' and *joodarrarr+* 'in the direction of the tide', would appear to be evidence for undirected motion. It is difficult to see, however, how *wiily+* or *gorna+* fit into this pattern.

9.8.2 Bivalent light verbs

Bivalent light verbs are more common in Bardi than monovalent ones. Bivalent light verbs (apart from *-gal(a)-*, discussed above) form both transitive and intransitive complex predicates. Many of the resulting intransitive complex predicates are unergative, although not all are.

I assume that the intransitive complex predicates are derived by the non-transfer of thematic indices from the preverb to the light verb. When thematic indices are transfered, non-linked arguments in the light verb are suppressed in the output.

(9.122) a. *banggil -ma-* 'daub on paint'
b. *banggil* (y_i) *-ma*$_{light}$- (y(x))
c. Resulting predicate: *banggil -ma-* (y_i(<x>))

9.8.2.1 *-ma-* 'put'

The root *-ma-* 'put' has many uses in Bardi. It is used productively with adjectives to form causatives, in the frame 'make X *adj*'. An illustration is given in (9.123).

(9.123) *joorrong inamana* 'he straightened it' *joorroong(g)* 'straight', *-ma-* 'put'

In a closely related use of *-ma-*, the preverb is a process and the whole predicate indicates a causative result.

(9.124) a. *wajim -ma-* 'to clean'
b. *liyan alig -ma-* 'to make someone angry'

[32]Despite appearances, this word does not appear to be a loan from English.

Almost all transitive complex predicates with *-ma-* are resultative. The only possible exception is *nganngan -ma-* 'have a conversation', which do not seem to be resultative (although this may be an artifact of translation and perhaps this verb does have a resultative meaning too).

(9.125) a. *Anggi arra nganngan milamana=ngay?*
what NEG talk 2-IRR-put-REM.PST=1MIN.DO
'Why didn't you talk to me?'

b. *Nganngan anamangay!* *Nyirra nganngan*
talk 2.IMP-TR-put-FUT=1MDO how talk
nganmanij *anyngarr?*
1-TR-put-CONT=2MIN.IO in vain
'Talk to me! How come I am talking to you without you answering me?'

Many verbs with *-ma-* involve a sense of impact, although the effect is indirect (that is, the impact is mediated through a source). Another common theme of the transitive *-ma-* predicates is the idea of collection, and metaphorically putting objects in a particular place. *jaala+* 'string fish on a spear' is one example.

(9.126) and following give the complex predicates involving *-ma-*.

(9.126) **Transitive:**

a. **Change of position, collection:** *boorroonggoo -ma-* 'turn (over)'; *doolool -ma-* 'pour, drop off'; *garndi -ma-* 'hand'; *goondoo -ma-* 'carry'; *jaala -ma-* 'string fish on spear'; *jaalajal -ma-* 'string fish on a spear'; *jalijal -ma-* 'put in a heap, in a pile, store up'; *jarrbard -ma-* 'lift up'; *joorroobil -ma-* 'go with a group of people'; *moonmoorroo -ma-* 'carry on one's stomach'; *moorool -ma-* 'heap up'

b. **Location and change of location:** *jiidag -ma-* 'carry'; *jimbin -ma-* 'put it underneath'; *jirbi -ma-* 'erect, stand up'; *jirrjirr -ma-* 'stand up'; *larda -ma-* 'lower'; *malbooloo -ma-* v.tr?, store up, save'; *waawi -ma-* 'cut across'; *jarrgany -ma-* 'cut across, move across'

c. **Emotion:** *anggoorr -ma-* 'mourn'; *anggoorranggoorr -ma-* 'comfort'; *banban -ma-* 'confuse'; *garoolgarool -ma-* 'stroke an animal to make it feel better'; *jagara -ma-* 'amuse'; *marlajal -ma-* 'get sick and tired of something'; *moolaj -ma-* 'make someone get sick of something'; *ngoolarr -ma-* 'fail to give, cheat

someone out of something'; *ngoorlara -ma-* 'cheat'; *ongorr -ma-* 'cheer up'; *oolbooroo -ma-* 'upset, unsettle'; *yalji -ma-* 'crave '

d. **Phrasal emotion verbs:** *liyan alig -ma-* 'make someone angry'; *liyan loogal -ma-* 'make someone angry'

e. **Impact:** *alig -ma-* 'beat someone in a fight, rape'; *bany -ma-* 'shoot'; *birrjarr -ma-* 'splash'; *boo -ma-* 'blow something away, blow on something'; *boorr -ma-* 'condemn to punishment, punish'; *dajarr -ma-* 'clear away the top layer of sand'; *dardal -ma-* 'break, make noise of snapping twig'; *dooboo -ma-* 'kindle'; *dool -ma-* 'remove fish (from spear)'; *garboo -ma-* 'dig around'; *garralygarraly -ma-* 'smash up'; *ilnggirr -ma-* 'scale fish'; *irriny -ma-* 'scatter, spread out'; *lord -ma-* 'block off'; *nararr -ma-* 'stick together'; *noonyjoo -ma-* 'rescue'; *oodool -ma-* 'turn over, put upright'; *way -ma-* 'prepare'; *wiinyj -ma-* 'fill up'

f. **Speech acts:** *boor -ma-* 'invite'; *jarrman -ma-* 'interrupt'; *joondi -ma-* 'dip voice to low volume'; *moondoo -ma-* 'sing'; *nganngan -ma-* 'talk'

g. **Other resultatives:** *boorroolboorrool -ma-* 'boil'; *jilarli -ma-* 'bring to point of death'; *jililjilil -ma-* 'rock'; *joorrbara -ma-* 'stretch out firmly, especially limbs'; *lanybal -ma-* 'make level, smooth'; *-moonggoon ma-* 'teach'; *wajim -ma-* 'wash'; *waloong -ma-* 'take care'

h. **Other:** *arnkoorr -ma-* 'gather'; *balirn -ma-* 'take care, keep'; *barnbi -ma-* 'shift something'; *biidi -ma-* 'bury something'; *boojoom -ma-* 'push off'; *goombil -ma-* 'paint'; *jalyimbidi -ma-* 'twist'; *janin -ma-* 'land'; *liyan -ma-* 'want'; *maramar -ma-* 'put legs apart'; *mirrnan -ma-* 'save up'; *ngarrarda -ma-* 'show'; *ninil -ma-* 'not to be touched, leave it alone'; *ooly -ma-* 'rain'

(9.127) **Causatives, with deadjectival preverbs:** *abarrabarr -ma-* 'be careless with, hold someone up'; *boondoo -ma-* 'shut, close'; *boordaboorda -ma-* 'get things ready, repair, adjust'; *born(k)ony -ma-* 'turn over'; *bornkony -ma-* 'turn something over'; *diidid -ma-* 'make it curly'; *diimba -ma-* 'join, tie something together'; *diiwa -ma-* 'make hard'; *diyildiyil -ma-* 'perforate'; *garrja -ma-* 'sharpen'; *garrjagarrja -ma-* 'sharpen'; *garrya -ma-* 'sharpen'; *giiny(i) -ma-* 'shut something'; *giinyji -ma-* 'obstruct, block'; *goojaji -ma-* 'make someone weak, wear someone out'; *gorna -ma-* 'clean'; *gorngorn -ma-* 'build something, make it good'; *ilil -ma-* 'flatten'; *jaardoo -ma-* 'curve, bend'; *jardoo -ma-* 'bend'; *joorroong -ma-* 'straighten'; *jorndorndola -ma-* 'coil'; *layib -ma-* 'relieve, make better'; *loogal -ma-* 'lose a person'

The intransitive predicates, however, are much more difficult to categorize. The most notable feature they share is that they are all unergative.

(9.128) **Intransitive:** *+ga* (ia poss) *-ma-* 'rest'; *banggil -ma-* 'daub on paint for a ceremonial purpose'; *barn -ma-* 'do something'; *boondi -ma-* 'cloud over'; *dirdoorrdirdoorr*

-ma- 'dance'; *gaana -ma-* 'drift in with the tide'; *jagaljagal -ma-* 'cut steps into a tree'; *jibad -ma-* 'sneak up'; *jondol -ma-* 'double up one's legs'; *loorrb -ma-* 'argue, quarrel, growl'; *loorrbaloorrba -ma-* 'speak heatedly together'; *malbarn -ma-* 'busy'; *marrbal -ma-* 'signal'; *ngoondoo -ma-* 'urinate'; *ningarrarda -ma*--IO 'believe'; *niya -ma-* 'rest'; *oona -ma-* 'defecate'; *oondoog -ma-* 'go moonlight fishing'; *oorroorr -ma-* 'sit down'; *rarrjin -ma*--IO 'shame';[33] *rawin -ma-* 'go as a group'; *rayi -ma-* 'come around'; *war -ma-* 'bark'; *yoorr -ma-* 'coming down'

9.8.2.2 *-bi-* 'hit with implement'

The verb *-bi-* is found only in Bardi, to my knowledge, and other Nyulnyulan languages do not seem to make a distinction between 'hit with hand' and 'hit with an instrument'. The fact that the verb roots in Bardi are *-bi-* and *-boo-* may make one suspicious that either the distinction is not a real one, or that the category is a recent innovation (or there may be dialect borrowing involved). The distinction *is* a real one; *inimbigal* (< *-bi-*) and *inamboogal* (< *-boo-*) are different words ('he/she hit it'). The lack of vowel harmony in *inamboogal* points to this vowel being a loan from Jawi; if it were true Bardi we would expect ×*inoomboogal*. *Inimbigal*, however, can only come from a root *-bi-*.

The preverbs which take *-bi-* are given in (9.129a) and (9.129b). Many of the predicates would seem to contain some idea of impact, or could be contrived in such a way metaphorically.

(9.129) a. **Transitive:** *dool -bi-* 'smash open'; *doodool -bi-* 'smash' *dida -bi-* 'make a noise'; *jooroorr -bi-* 'poke something into a hole'; *roong -bi-* 'swallow, suck back in'; *garr -bi-* 'rub to stop pain'; *roorrb -bi-* 'overtake someone while walking, beat someone at doing something'

b. **Intransitive:** *gird -bi-* 'boil up on someone'; *nod -bi-* 'make the sound of water'

[33]For example, *rarrjin inamanajan* (3-TR-put-REM.PST-1MIN.IO) 'I got shame'

9.8.2.3 *-boo-* 'hit, poke, kill'

In non-light use, *-boo-* means 'hit, poke, or kill' something. Most of the transitive uses of *-boo-* in light verb constructions involve impact. The preverbs which take *-boo-* are given in (9.130):

(9.130) a. **Transitive:** *boor -boo-* 'miss'; *gorr -boo-* 'receive, collect, especially in gambling games'; *jamool -boo-* 'wound an animal and let it get away'; *joodoo -boo-* 'hit with a spear'; *joongoorr -boo-* 'poke'; *larrara -boo-* 'wound'; *milimili -boo-* 'write down'; *nyinyingan -boo-* 'dodge';

b. **Intransitive:** *marr -boo-* 'bloom'; *moorroomoondool -boo-* 'bloom'; *ngamarna -boo-* 'breast-feed'; *rinyi -boo-* 'think'; *wii -boo-* 'spurt out'

9.8.2.4 *-ga-*

The place of *-ga-* 'carry' within the system of light verbs in Bardi is odd. On the one hand, *-ga-* is clearly reconstructible to Proto-Nyulnyulan as a light verb and we can reconstruct a number of preverbs which take it. On the other hand, *-ga-* is considerably less important in the Bardi light verb system than it is in many other Nyulnyulan languages, where it is much more common. One of the differences between Nyulnyul and Bardi, for example, is the relative importance of *-ga-* (Nyulnyul *-k-*) in the two languages. In many Nyulnyulan languages, *-ma-* and *-ga-* have approximately the same frequency. In Bardi, however, *-ma-* is much more common, and many verbs which take *-k-* in Nyulnyul take *-ma-* in Bardi.

(9.131) **Transitive**:

a. **Preverbs involving 'carrying'**: *abarrabarr -ga-* 'to lead astray'; *bard(a) -ga-* 'take across'; *boor -ga-* 'take someone around'; *jarrbad -ga-* 'lift'; *joorroorl -ga-* 'carry around'; *moondoo -ga-* 'carry'; *waj -ga-* 'take away'; *yawoorr -ga-* 'pull'

b. **Motion**: *gaana -ga-* 'drift in with the tide'; *goodilgoodil -ga-* 'going this way and that'; *noolgoo -ga-* 'drift away'; *rirr -ga-* 'go behind'; *rooj -ga-* 'pass'

c. **Speech acts**: *jarrman -ga-* 'interrupt'; *jiido -ga-* 'bother someone'; *jinininingan -ga-* 'mock: he mocked us'; *loorrb -ga-* 'argue, quarrel, growl'; *loorrbaloorrba -ga-* 'speak heatedly together, taking no notice of those'; *madaly -ga-* 'make a loud noise'

d. **Other**: *liyan -ga-* 'carry a grudge'; *loob -ga-* 'complete'; *mangalinyan -ga-* 'help'; *yarr -ga-* 'pull in, drag, stretch out

(9.132) **Intransitive**: *ngalgan -ga-* 'wag (tail)'; *ngalganngalgan -ga-* 'keep on wagging'; *oongooloo -ga-* 'be with child'

9.8.2.5 *-ar-* 'spear (lice)'

Proto-Nyulnyulan **-ra-* probably meant 'spear', in a fairly general sense. This is the meaning, for example, in Nyikina and the other Eastern Nyulnyulan languages. In Bardi, however, the cognate root *-ar-* has been narrowed in meaning, and now means 'spear lice'.[34] In Nyulnyul, as well as in the earlier sources for Bardi, the word seems also to have meant 'sew'.

The complex predicates given in the following examples:

(9.133) **Transitive:** *boorroolboorrool -ar-* 'boil'; *dirray -ar-* 'turn something around'; *gilygily -ar-* 'tickle'; *goodil -ar-* 'turn'; *goonoogoon -ar-* 'push something right in'; *jardinkool -ar-* 'block'; *jarr -ar-* 'flow, leak, drip through a hole'; *jibiny -ar-* 'thrust a spear'; *jiin -ar-* 'point at'; *joodoog -ar-* 'kick, stumble'; *joorr -ar-* 'drip, flow'; *mibad -ar-* 'tie up'; *niimi -ar-* 'string beads or shells'; *noondin -ar-* 'walk across'; *oorr -ar-* 'put into'

(9.134) **Intransitive:**

a. **bodily functions:** *bilirl -ar-* 'yawn'; *girringg -ar-* 'cough'; *girringgirringgi -ar-* 'cough up phlegm, expectorate'; *jilmboonggoorr -ar-* 'sneeze'; *nyoonyi -ar-* 'blow nose'

b. **motion:** *darr -ar-* 'come'; *dirrb -ar-* 'dive into the water'; *janngal -ar-* 'cut across the tide'

c. **other:** *jilyjily -ar-* 'dripping of water'; *jirrijirr -ar-* 'little bit of rain; it's sprinkling a bit'; *jinbarr -ar-* 'be split'; *dooly* or *jool -ar-* 'kneel'; *milimili -ar-* 'write' *ooly -ar-* 'rain'

Most of the preverbs contain an idea of defined trajectory, piercing, or action around a designated point. Body functions involving expectoration also take *-ar-*.

[34] One uses a lousing stick, which has the approximate dimensions of a pencil, to pierce the lice and remove them.

9.8.2.6 -ø- 'give'

The verb 'give' in Bardi has two characteristics which make it seem exotic. First is that it obligatorily encodes only two arguments, not three. Like other verbs which are usually ditransitive, in Bardi they appear to be transitive. -ø- 'give' does not obligatorily encode both the theme and the recipient, and when both do appear, agreement is only with the recipient, which is marked as a direct object.

The second oddity about this verb is that the root is phonologically null. It can be reconstructed to Proto-Nyulnyulan as *-wa-, and still appears as such in the other Western Nyulnyulan languages. Compare, for example, Jabirr-Jabirr *inawan* 'he gave', and Nyulnyul *mawan* 'to give'. Proto-Nyulnyulan *w regularly > ø intervocalically in Bardi.

In Nyulnyul, the cognate verb -*w*- primarily marks actions which involve physical contact via an intermediary (something noted above for the Bardi verb -*ma*-).

All complex predicates with -ø- 'give' are accomplishments or telic activities.

(9.135)
a. **Water**: *joonbool* -ø- 'soak, dip'; *ngoorrngoorr* -ø- 'drown, immerse in water'
b. **Spreading out**: *oogool* -ø- 'scatter bait'; *yalyal -joo-?* 'spread out'
c. **Cutting or chopping**: *baad(i)* -ø- 'grab, cut, shave *dooly* -ø- 'squeeze, open a boil or sore'; *gadi* -ø- 'cut'; *gil* -ø- 'cut out a boomerang for someone'; *gilgil -ar-/-ø-* 'cut out a boomerang for someone'; *girrgirr* -ø- 'cut, chop'; *goorr* -ø- 'poke'; *goorrb* -ø- 'pinch, pluck out, remove a splinter or thorn'; *jooboorrjoo-boorr* -ø- 'pluck feathers'; *jooroorr* -ø- 'poke something into a hole'; *lol* -ø- 'burn'
d. **Eating**: *girringg* -ø- 'cough'; *goojoog* -ø- 'swallow'; *goojooggoojoog* -ø- 'eat greedily, quickly'
e. **Involving grabbing**: *baad* -ø- 'grab'; *loor* -ø- 'snatch'; *roogood* -ø- 'take off, peel off'; *roogooroogood* -ø- 'take out'
f. **Location**: *diimbi* -ø- 'get married, join together; bundle up, mix together'; *janbal* -ø- 'round up'; *jardajard* -ø- 'keep in one place'; *jirbi* -ø- 'erect, stand up'; *noondin* -ø- 'turn to, cut across to'
g. **Involving pinching/squeezing**: *boorrboo* -ø- 'pinch'; *giiny* -ø- 'strangle'; *gooly* -ø- 'squeeze'

h. **Speech acts**: *giliya -ø-* 'clear, settle a score, square an account'; *miila -ø-* 'deceive'; *ngonngon -ø-* 'beg'; *rinyi -ø-* 'cross-examine'

i. **Other**: *bar -ø-* 'hit with boomerang'; *barbar -ø-* 'sting, cause pain'; *dirray (diird) -ø-*, 'turn'; *diyildiyil -ø-* 'make holes in something'; *doogoorr -ø-* 'mix food with hot sand'; *doorr -ø-* 'bump into someone'; *garool -ø-* 'caress, smooth hair, massage (of a doctor-man)'; *gid -ø-* 'block way out, block someone off, force a woman sexually'; *goodoogoodoo -ø-* 'roll'; *jabing -ø-* 'swoop'; *jalgin -ø-* 'wait'; *jard -ø-* 'place one's hands somewhere for support'; *jard -ø-* 'weigh down'; *jigan -ø-* 'court'

(9.136) **Intransitive**: *dibirr -ø-* 'swing, roll eyes'; *doomal -ø-* 'light up'; *joordoog -ø-* 'stumble'; *joorrgajoorrga -ø-* 'skip'; *wolonggawolongga -ø-* 'blow wind'; *woow -ø-* 'blow (of wind)'

9.8.2.7 *-(i)nya-* 'catch, pick up'

Many verbs involving cutting and scooping take *-(i)nya-* as their inflecting verb. Complex predicates with *-(i)nya-* are mostly (in Vendler's terms) accomplishments. Nicolas (2000:165-67) argues that *-(i)nya-* classifies according to an 'outward/upward' feature; that is, actions which involve actual or metaphoric motion upward, non-straight motion (e.g. *roowil -(i)nya-* 'walk') or a process which extends over an area. I have included a category of metaphorical 'outward' action.

An interesting complex predicate is *laanybi -(i)nya-* 'steal'. The independent word *laanybi* means something like 'thieving'; it is not recorded as a separate lexical item, only with the *-iid* nominal derivational suffixes which attaches to nouns and translates as 'expert at'. Thus a *laanybiid* is a 'thief', or someone expert at thieving. *laanybi* is thus not an incorporated object in this complex predicate.

(9.137) **Transitive:**

a. **Cutting:** *ararr -(i)nya-* 'hurt'; *bawaninbawin -(i)nya-* 'cut up'; *bawin -(i)nya-* 'cut up'; *boorrm -(i)nya-* 'gut'; *galgal -(i)nya-* 'split'; *lalala -(i)nya-* 'split'; *lalba -(i)nya-* 'split'; *lalool -(i)nya-* 'chip off'; *larrara -(i)nya-* 'tear'; *lor -(i)nya-* 'peel'; *ooyooy -(i)nya-* 'hurt'; *ranyi -(i)nya-* 'clear away, clean up'; *rarrboo -(i)nya-* 'clear up'; *yaarl -(i)nya-* 'cut (x cuts me)';

b. **Scooping:** *boorl -(i)nya-* 'draw water, scoop up flour, sugar, etc.'; *gara -(i)nya-* 'dip up, especially water'; *gor -(i)nya-* 'scoop up'; *roongoo -(i)nya-* 'suck in, draw off'; *yarr -(i)nya-* 'draw water, using a container with a rope attached'

c. **Causatives paired with *-jiidi-* 'go'**: *lambard -(i)nya-* 'open something'; *doolool -(i)nya-* 'pour out'; *loor -(i)nya-* 'snatch away'; *galgal -(i)nya-* 'split'; *marrmarr -(i)nya-* 'flash'

d. **Other:** *arndala -(i)nya-* 'adopt, foster'; *bool -(i)nya-* 'paddle'; *doog(oo) -(i)nya-* 'wipe dry'; *doombool -(i)nya-*'slap'; *goonkoordoo -(i)nya-* 'kindle'; *inkoorr -(i)nya-* 'make cool'; *jinyba -(i)nya-* 'avoid weapon'; *moonmoorroo -(i)nya-* 'carry on one's stomach'; *nararr -(i)nya-* 'stick to something'; *ngararra -(i)nya-* 'cling to'; *ngarlamarr -(i)nya-* 'promise'; *noongoo -(i)nya-* 'admire'; *noowarn -(i)nya-* 'paint'; *randing -(i)nya-* 'swung around';

Metaphorical 'outward' action: *joony -(i)nya-* 'suck'; *joowinyjoowiny -(i)nya-* 'suck'; *laanybi -(i)nya-* 'steal'; *niimidiman -(i)nya-* 'share'; *niyarra -(i)nya-* 'taste'; *oolgoodoodoo -(i)nya-* 'snore'; *oorl -(i)nya-* 'pull out, root up'; *yal -(i)nya-* 'spread out'

(9.138) **Intransitive:** *moolgany -(i)nya-* 'wink'; *bilbil -(i)nya-* 'flashing, twinkling'; *birdbag -(i)nya-* 'flash'; *boolbool -(i)nya-* 'fan'; *daab(a) -(i)nya-* 'go ashore, climb up'; *galgooriny -(i)nya-* 'swim with breast stroke'; *ilamarr -(i)nya-* 'promise'; *jimbin -(i)nya-* 'go into deep water'; *jirrjirr -(i)nya-* 'stand'; *joornk(o) -(i)nya-* 'run away'; *lanarr -(i)nya-* 'swear'; *liyan -(i)nya-* 'breathe'; *loonboo -(i)nya-* 'produce a loud noise'; *marndal -(i)nya-* 'take aim (IO object)'; *maroolmarool -(i)nya-* 'go away from'; *marr -(i)nya-* 'flash'; *ngalar -(i)nya-* 'open eyes, glow'; *ninga -(i)nya-* 'call by name'; *niya -(i)nya-* 'grounded'; *roowil -(i)nya-* 'walk'; *way -(i)nya-* 'come up'; *yarn -(i)nya-* 'make a noise on the surface of water with a spear'

9.8.3 *-joo-* 'do, say'

The verb root *-joo-* ~-di- 'do/say' is the default light verb. It is the most common verb, accounting for about 40% of all complex predicates. There are more than 200 hundred preverbs recorded with *-joo-* (in addition to those productively formed from adjectives), and in the interests of completeness I have listed them here. As with the other light verbs, I have divided them into categories according to the relationship between the preverb and the light verb, and the semantic classes that seem to fall out from the data.

A note is warranted about the glossing of *-joo-*. I have used the gloss 'do/say' throughout this work, following Aklif (1999) and others who have worked on Nyulnyulan languages. However, the primary meaning of *-joo-* when not in a light verb is 'say', rather than 'do'. I have only one good example of a case where a form of *-joo-* clearly means 'do' or 'happen' rather than 'say'. The relevant portion of the text is given below in (9.139); the verb is in (9.139c). The context of the story is that a group of people have been traveling in a small boat, and the engine has failed in the middle of a strong tidal current. The boat is being tossed in the current and is in danger of being swamped.

(9.139) a. *Barayi ingirrinijin* *Garndibinin.*
pray 3-PST-AUG-TR-do/say-REM.PST=3M.IO God.
'They prayed to God.

b. *Ingarranarran* *"Gorn anamajard* *yandilybar*
3-PST-AUG-TR-ask-REM.PST good 2.IMP-TR-make-FUT=1A.IO boat
Oolarda, niiman baawa *ambooriny arralabanjirr,"*
O. many children people 1-AUG-have-CONT=3A.IO
angirrinijirr.
1-PST-AUG-TR-do/say-REM.PST=3A.IO
"Make our Oolarda [a boat] come good; we've got lots of children and people on board," we said to ourselves.

c. *Injoonoojirr.*
3-TR-do/say-REM.PST=3A.IO
It happened./He did it for them.

d. *Ginyinggon goona roowil innyan* *ar* *injinirr*
then back walk 3-TR-catch-CONT other engineer
angarralabanamb *gornagorn inamanjard*
1-PST-AUG-TR-have-REM.PST=REL well 3-TR-put-REM.PST=1A.IO
injin *ralirali, gorn injoonoojard* *injin*
engine quickly, good 3–TR-do/say-REM.PST=1A.IO engine
ingarrajarralanga *barda anyjimadan.*
3-PST-AUG-run-REM.PST-APPL back returning
Then one of the engineers which we had walked to the back [of the boat] and made the engine work for us really straight away, and the engine ran us back the way we came. (Text: BE: BOAT 8-11)

There are many preverbs which take *-joo-*, however the contribution of *-joo-* seems

relatively clear, compared to some of the other bivalent light verbs discussed above.

The root *-joo-* is used by younger speakers (that is, those in their early 60s) in place of some of the other classificatory light verbs.

(9.140) gives the intransitive predicates. The most common intransitive predicates are resultatives formed with adjectives, as listed in (9.140a).

(9.140) **Intransitive:**

a. **Resultative:** *aab -joo-* 'be excited'; *abarr -joo-* 'wonder about something'; *joowaljoowal -joo-* 'get wet'; *malajal -joo-* 'be exhausted'; *bili -joo-* 'get angry'; *binyj -joo-* 'get cold'; *biid -joo-* 'be deep'; *biili -joo-* 'get angry at someone'; *biindali -joo-* 'get bad luck'; *binyja -joo-* 'become refreshed'; *booljoo -joo-* 'become tired, weak'; *boolyja -joo-* 'become exhausted'; *boordaboorda -joo-* 'prepare something, get prepared, get ready'; *dayid -joo-* 'be tired'; *diiwa -joo-* 'hard'; *diiwadiiwa -joo-* 'get hard'; *door -joo-* 'got used to'; *doorrba -joo-* 'have good luck, get lucky'; *garraygarray -joo-* 'feel crook'; *goojaj -joo-* 'feel weak'; *goolarl -joo-* 'feel weak for no reason: she felt weak'; *goonngoo -joo-* 'exhausted'; *gorna -joo-* 'well'; *inkoorr -joo-* 'cold: he is cold'; *jalijali -joo-* 'remain, left over'; *jardoo -joo-* 'bent'; *joorroong -joo-* 'made up mind'; *loogal -joo-* 'be bad'; *loogal -joo-* 'feel unwell'; *maanka -joo-* 'get dark'; *malajal -joo-* 'exhausted'; *malimal -joo-* 'sad'; *mangarra -joo-* 'numb'; *mardanggarrarn -joo-* 'scared stiff'; *marl -joo-* 'stop, stay in one place for a time'; *marlajal -joo-* 'fed up'; *marrarr -joo-* 'be unfair'; *miiji -joo-* 'hoarse'; *mool -joo-* 'get hot: it got hot'; *moolaj -joo-* 'get sick of'; *moorrgard -joo-* 'feel full/feel sated'; *ngoorb -joo-* 'become soft'; *ngoordinko -joo-* 'go in opposite directions, be divorced'; *noonggooboo -joo-* 'to be annoyed, fed up'; *noonyji -joo-* 'alive'; *rambin -joo-* 'feel heavy'; *wiinyja -joo-* 'get full'; *wiinyma -joo-* 'wrinkled, shriveled'

b. **Phrasal preverbs:** *gorna liyan -joo-* 'be glad'; *liyan alig -joo-* 'be upset'; *liyan loogal -joo-* 'upset'; *niimana -joo-* 'everywhere'

c. **Motion:** *angananga -joo-* 'come closer'; *anggoorriny -joo-* 'ease off'; *arr -joo-* 'go'; *banban -joo-* 'hurry'; *doombarr -joo-* 'fly, take off'; *baybirrony -joo-* 'walk behind'; *birarr -joo-* 'go away'; *didada -joo-* 'run away'

d. **Speech verbs:** *barn -joo-* 'tell someone to do something'; *miila -joo-* 'tell lies'; *ngoonngoon -joo-* 'grumble'; *bararrga -joo-* 'feel sorry'; *bayilygarr -joo-* 'swear'; *boorboor -joo-* 'yelp'; *jiiboorroodij -joo-* 'chattering of birds in the early morning'

In (9.141) we see the other major use of *-joo-*, that is, in frame 'do X', where X is the

preverb. These are the intransitive preverbs; transitive preverbs are to be found in (9.142) below:

(9.141) 'do <preverb>': *daag(a) -joo-* 'sleep'; *doodool -joo-* 'break up the ground'; *doombooldoombool -joo-* 'hit the water with slapping sounds'; *garr* ~ *garrgarr -joo-* 'rub to stop the pain'; *joobil -joo-* 'spit out' *abarrabarr -joo-* 'wander around feeling lost: he wandered around feeling lost'; *alaboor -joo-* 'walk ahead'; *alig -joo-* 'feel unwell, feel tired'; *arrarr -joo-* 'stand around'; *birralabirrala -joo-* 'shake head'; *barr -joo-* 'stand'; *barranybarrany -joo-* 'shake head'; *didididi -joo-* 'have a racing heart (caused by sickness)'; *boolayi -joo-* 'play'; *boolway -joo-* 'row'; *boorrboorr -joo-* 'dance'; *daag -joo-* 'sleep'; *daarl -joo-* 'snap fingers'; *dalarr -joo-* 'crashing noise'; *dambaldambal -joo-* 'splash in shallow water, making a noise'; *darr -joo-* 'refuse; say no to'; *diil -joo-* 'deal (in a card game)'; *diilar -joo-* 'short and light sound'; *diird -joo-* 'run away, leave'; *dirraway -joo-* 'steer away'; *doobirl -joo-* 'expectorate'; *doodoodoo -joo-* 'noise of thunder, distant explosion'; *doombooldoombool -joo-* 'hit the water with slapping sounds'; *doowan -joo-* 'hatch out, shoot up'; *galara -joo-* 'make visible, come into the open, reveal'; *galaway -joo-* 'skull away'; *gardgard -joo-* 'shake, tremble'; *gawoo -joo-* 'call out'; *goodgood -joo-* 'crouch, creep'; *goora -joo-* 'play about'; *goord -joo-* 'bend down'; *goorl -joo-* 'rumbling of the stomach'; *imoor -joo-* 'sneak away'; *jagoord -joo-* 'return'; *jamala arr -joo-* 'walk around without any particular purpose'; *jamaramar -joo-* 'whisper'; *jaroo -joo-* 'disappear'; *jarr -joo-* 'stand'; *jarrjarr -joo-* 'come back'; *jigir -joo-* 'peep'; *jiibor -joo-* 'make noise'; *jilil -joo-* 'go behind'; *jindin -joo-* 'squat down'; *jirlirlg -joo-* 'lean over'; *jirrjirr -joo-* 'stand up, stand around.'; *jirrm -joo-* 'sing'; *jiyil -joo-* 'deal cards'; *jondol -joo-* 'double up'; *joobool -joo-* 'splash and swim in the water, have a shower'; *jooboolljoobool -joo-* 'splash'; *joonboo -joo-* 'jump'; *joorrboo -joo-* 'jump'; *joorrboojoorrb -joo-* 'skip; jump around'; *joowaljoowal -joo-* 'get wet'; *jorndola -joo-* 'coil, shrink'; *lalal -joo-* 'flow'; *larda -joo-* 'go down'; *larrayil -joo-* 'make a light rattling or rustling noise'; *lilili -joo-* 'protrude'; *miila -joo-* 'he told lies'; *milmil -joo-* 'roar, echo'; *moolgany -joo-* 'blink, close eyes'; *moonboonarr -joo-* 'go against the tide'; *ngaa -joo-* 'open mouth'; *ngarangara -joo-* 'pant'; *ngarlngarl -joo-* 'bark'; *ngonkon -joo-* 'complain'; *ngooloogoo -joo-* 'walk, jump'; *ngoongoo -joo-* 'hum'; *ngoonngoon -joo-* 'grumble, mumble'; *niimarla -joo-* 'clap one's hands'; *niramoo -joo-* 'look forward, be glad'; *nirirr -joo-* 'go along the edge'; *nyoogoo -joo-* 'nod'; *oolal -joo-* 'dissolve, melt'; *oorr -joo* 'sound of wild bees around a hive'; *riiwa -joo-* 'leak'; *roodoo -joo-* 'dance'; *warrgam -joo-* 'work'; *wilywilyi -joo-* 'squeal'; *yar -joo-* 'paddle'; *yardab -joo-* 'crawl'; *yoyo -joo-* 'voices babbling'

There are also transitive predicates with *-joo-*. All transitive predicates involving *-joo-*

fit the 'do X' frame. They are listed in (9.142):

(9.142) Transitive meanings, 'do <preverb>': *bajibaj -joo-* 'rub together'; *bar -joo-* 'pull, jerk'; *bornkobornko -joo-* 'encircle'; *da -joo-* 'hammer, ram'; *daab -joo-* 'climb'; *dadal -joo-* 'shoot at someone'; *dadoorr -joo-* 'bite it'; *dawoodawoo -joo-* 'chop. hack'; *didirr -joo-* 'twist (necks)'; *diidid -joo-* 'twist'; *doodool -joo-* 'break up the ground, make a knocking noise'; *doodoorroo -joo-* 'twist'; *dool -joo-* 'hit the water with a big splashing sound, hammer'; *gaal -joo-* 'humbug'; *garoorrgaroorr -joo-* 'chomp on crisp food, e.g. apple, onion'; *garr -joo-* 'rub to stop pain'; *gooly -joo-* 'squeeze'; *gorgor -joo-* 'chomp on something crunchy'; *gorr -joo-* 'collect for oneself'; *gorrgorr -joo-* 'gather together'; *jaboorrjaboorr -joo-* 'pluck'; *jarbijarbi -joo-* 'poke, thrusting with spear'; *jiinb -joo-* 'avoid something'; *jirrirjirrir -joo-* 'run down'; *joobil -joo-* 'spit out'; *joolool -joo-* 'come for a fight'; *joondi -joo-* 'treat harshly'; *joorrb -joo-* 'jump, go down, step down into, embark'; *joorrbara -joo-* 'stand straight'; *lara -joo-* 'tear'; *libi -joo-* 'hear'; *liilal -joo-* 'echo'; *lilirl -joo-* 'make a splattering noise, especially of burning fat'; *loodayi -joo-* 'swing'; *ngangganmarda -joo-* 'want to leave'; *nimoonggoon -joo-* 'learn'; *noongoo -joo-* 'marry (a woman)'; *nyoonyi -joo-* 'sniff'; *oorroogay -joo-* 'shake'; *ranyiranyi -joo-* 'clean up'; *rararr -joo-* 'rustling'; *rarrb -joo-* 'dawn, moonlight, sunlight, it dawned'; *roongoo -joo-* 'sniff, sip'; *roongooroongoo -joo-* 'suckle'; *way -joo-* 'call to, beckon'; *wiidi -joo-* 'extinguish'; *wiij -joo-* 'whip'; *win -joo-* 'coax'; *wini -joo-* 'respect'; *wirr -joo-* 'scrape'; *woorr -joo-* 'scrub'

The inchoative meaning of *-joo-* can be captured in conceptual semantics with a function $[_{\text{Event}}$ INCH $([_{\text{State}} \quad])]$. That is, the light verb introduces an inchoative event variable. The a-structure of the light verb *-joo-* in this function is given in (9.143). Note that the *y* argument is suppressed, as all inchoative preverbs with *-joo-* are unaccusative.

(9.143) $\textit{-joo-}_{\textit{light}}$ $(w_{ev}$ $(<y>(x)))$

The representation of other function of *-joo-* (that is, in the frame 'do X') is straightforward. The light verb appears to take its arguments from the preverb and the number of arguments which appear (and whether the intransitive verb is unaccusative or unergative) is also determined by the preverb. An example of the formulation is given in (9.144):

(9.144) a. *yardab -joo-* 'crawl'

b. *yardab* (y_j)
c. *-joo-*$_{light}$ (y(x)) → index transfer+argument suppression – (y_j(<x>))

9.8.4 Other complex predicates

There are multiple inflecting verbs attested with a single preverb. For example, here is one instance of a complex predicate with *-arndi-* 'catch', namely *joomoonoonoo -arndi-*, an intransitive predicate meaning 'to gamble'. The non-productive complex predicates were given in §5.2.4 and Table 5.3 above, and that table is repeated here as Table 9.3. These non-productive light verbs can be subsumed under other analyses, either pseudo-incorporation, idioms or adverbial incorporation. *Goolgarr -gama-* was discussed in §9.6.1 above, for example, where it was shown that the a-structure of the preverb could be vacuously transfered to the 'light' verb. *Doolii -jalgoo-* 'be born prematurely' is literally 'fall early' and is probably a case of adverb incorporation. Finally, *niimi -ngooloo-* 'keep watch' is literally 'throw [one's] eye', recalling the English idiom 'cast one's eye about', and could be analyzed either as a case of pseudo-incorporation or as a frozen idiom.

9.8.5 Summary

We have seen from the previous sections that verbal classification is one of the main parts of the Bardi complex predicate system. Under this analysis, the inflecting verb acts as a classifier of the preverb, indicating the type of event the preverb refers to. Nicolas (2000) proposes that Bardi's preverbs are classified by lexical valency, aspect and trajectory, although Nicolas' own summary (Nicolas 2000:173) involves considerably more variables, including the use of an implement, *déplacement* and the extent of effect the subject has on the object.

I have not attempted to give an exhaustive account of the functions of the different verbal classifiers; rather I have highlighted some of the more salient patterns in the data. Table 9.4 gives a summary of these findings. I believe that an account such as Nicolas', where she tries to capture every nuance of the event, is unhelpful; it is probably based

Root		Gloss	No.	Example	'Translation'
-(a)rli-	v.tr	eat	1	*ararr -(a)rli-*	'ache (v.it)'
-arndi-	v.tr	catch	1	*joomoonoonoo -arndi-*	'gamble (v.it)'
-balama	v.tr	entwine	1	*garga -balama-*	'betrothe'
-banyi-	v.it	finish	1	*nilirr -banyi-*	'slacken (of tide)'
-boolmoo-	v.it	smell	1	*gooroogooroo -boolmoo-*	'give off a nice smell'
-booloo-	v.it	come	1	*darral -booloo-*	'come out'
-galala-	v.tr	follow	2	*gorna -galala-*	'become physically well-developed'
-gama-	v.at	laugh	1	*goolgarr -gama-*	'laugh (v.it)'
-garnboo-	v.tr	growl s.o.	1	*balygarr(a) -garnboo-*	'swear at someone'
-gonboo-	v.tr	send	1	*ngaanka -gonboo-*	'send a message'
-jala-	v.tr	see	2	*garrgooy -jala-*	'stare hard at someone'
-jalgoo-	v.it	fall	1	*doolii -jalgoo-*	'be prematurely born'
-janboo-	v.tr	tread	1	*gooljoo -janboo-*	'pull out grass'
-jarrala-	v.it	run	1	*joornk -jarrala-*	'take off with speed'
-jarrmi-	v.it	rise	1	*wirr -jarrmi-*	'jump into the air'
-joogooloo-	v.at	break	2	*ngaada -joogooloo-*	'break in half'
-jooloo-ng-	v.tr	collect	1	*boorrma -jooloong-*	'gut something'
-joo-ng-	v.tr	do/say (+ appl)	3	*birarr -joong-*	'leave behind'
-malanda-	v.it	go against tide	1	*arrinarr -malanda-*	'go against the tide'
-minyji-	v.tr	receive from	1	*rirran -minyji-*	'snatch'
-moondoo-	v.tr	wet s.th	1	*oola -moondoo-*	'wash oneself'
-mooroo-	v.tr	waste s.th	3	*barrja -mooroo-*	'spit something out'
-nganka-	v.it	speak	1	*balygarr -nganka-*	'swear'
-ngooloo-	v.tr	throw	4	*niimi -ngooloo-*	'keep watch (v.it)'
-ngooloo-ng	v.tr	throw at	1	*anyja -ngooloo-ng-*	'give away'

Table 9.3: Other Bardi light verbs

more on the English glosses than on the connotations in the Bardi complex predicates. Furthermore, the Bardi complex predicate system shows signs of being based around prototypical models and analogical extensions, rather than a rigid categorial system where each event is classified as belonging to a particular type.

A summary of the major functions of Bardi light verbs are given in Table 9.4. It is a preliminary summary and no doubt further analysis can be made.

light verb	gloss	primary use	secondary use
		Monovalent light verbs	
Unaccusative:			
-ni-	sit	statives	—
-jiidi-	go	anticausatives	defined trajectory
-gal(a)-	uncontrolled action	undefined trajectory	
Reflexive:			
-banji-	share	refl/recip	—
Other:			
-ganyi-	climb	trajectory up	result (1 only)
-gardi-	enter	trajectory into a space	—
		Bivalent light verbs	
unergative:			
-ma-	put	causatives (+ adj) result (+ other) telic, unergative (intransitive)	collection indirect impact change of location
Usually unergative			
-bi-	hit w. hand	impact, smashing	
-boo-	poke	impact, spear	change of state
-ga-	carry	carrying, change of location atelic activities	speech acts
-ar-	spear (lice)	action around a point activities with defined trajectory	bodily functions
-ø-	give	accomplishments, telic activities	cutting or chopping
-(i)nya-	catch	accomplishments	scooping, cutting
-joo-	do/say	results (+ adj), inchoative generic light verb (do X)	

Table 9.4: Summary of Bardi light verb uses

9.9 Comparison with other Nyulnyulan languages

We have good information on the syntax of three Nyulnyulan languages besides Bardi: Nyulnyul, Nyikina and Yawuru. Comparison is thus confined to these languages and comments are brief.

In all Nyulnyulan languages, preverbs form an open word class with members from multiple sources. Loan verbs are borrowed as preverbs, and frequently the loans are given the same light verb across languages. *Bany* 'shoot', for example, consistently appears with the light verb *-ma-*, and *gad* 'cut' is used with *-(i)nya-* in the Western languages and *-andi-* in Nyikina (there are many pairs of preverbs which appear with *-(i)nya-* in the Western languages and *-andi-* in the Eastern languages).

One point which will emerge from the following discussion of other Nyulnyulan languages is that the Bardi system works rather differently from Nyulnyul and Yawuru, as well as the other languages in the area with complex predicates. Gooniyandi and Bunuba, for example, have systems organized around a telic/atelic distinction (that is, whether the action has a well-defined end point or not; see Rumsey 2000). For Nyulnyul, McGregor defines a set of eight opposing pairs, but these do not work for Bardi.

Even between these two fairly similar languages, however, there are some differences. Firstly, Bardi preverbs cannot appear without an inflecting verb. Those instances which look like the use of a preverb alone are always cases where the 'preverb' can also be used as a noun or adjective; thus such cases can always be analyzed as involving nominal predication. In contrast, in Yawuru and many other North Australian languages, the preverb is often used without an accompanying light verb, especially in subordinate clauses.

Another point of difference is in inflection. The only inflection which Bardi preverbs may take is reduplication to mark iterativity or pluractionality (and even then this is not productive). In Yawuru, however, preverbs may take an aspectual marker *-gadya* (some

examples are given in (4)). Reduplication is also possible for Yawuru preverbs. Other Northern languages have further possibilities (see for example Wilson 1999:50-59).

Finally, we should consider the role of the light verb in the semantics of the predicate. As seen from (3), Bardi and Yawuru have an almost identical list of light verbs. Their use, however, is rather different. For example, while both languages use the root *-ka-* 'carry' in complex predicates which involve the notion of 'carrying', Yawuru uses *-ka-* much more frequently than Bardi does; most of the preverbs which take *-ka-* as a light verb in Yawuru take *-ma-* 'put' in Bardi. Another difference is Bardi's fairly productive use of *-jiidi-* 'go' to mark anticausatives. This is unparalleled in other Nyulnyulan languages.

9.9.1 Nyulnyul

McGregor (2002:107-117, 171ff) contains an extensive section on Nyulnyul and the differences between Nyulnyul and Gooniyandi. He presents an extensive analysis of Nyulnyul light verbs. A brief summary also appears in McGregor (1996a:47-50).

McGregor's primary interest is the semantics of light verbs in complex predicate constructions, and so I have little data on the syntax of preverbs. Some preverbs appear to show a morpheme *-kaj* (cognate with Yawuru *-gadya*), although there do not appear to be any alternating pairs and the morpheme is fossilized.

The most common light verbs used in Nyulnyul are presented Table 9.5. They all have Bardi cognates (Nyulnyul verb roots, as all other roots in the language, have lost their final vowel, and since verb suffixes are rarely used, the historical vowel has not been preserved). Nyulnyul has fewer productive light verbs than Bardi does (for example, the 'hit' roots *-boo-* and *-bi-* play only a peripheral role in the Nyulnyul system). As in Bardi, *-j-* (Bardi's *-joo-*) is by far the most common light verb.

McGregor (2002:115) also notes that the Nyulnyul inflecting verbs tend to pair off along a certain parameter. The eight most common light verbs, for example, form opposites.

-kal	wander	meandering or uncontrolled notion
-barnj	exchange	reflexive/reciprocal activities
-k	carry	transitive motion
		intransitive motion involving exit from a medium
		change of state
-r	poke	motion in a straight line
		violent actions
		piercing sounds or experiences
-jid	go	manners of motion
		change of state
		bodily conditions
-w	give	violent activities involving physical contact via an intermediary
		grasping and grabbing actions
-n	be, sit	states, continuous activities
-ny	get, catch	acquisition and retention of an entity
		initiation of motion
		change of state
		violent actions
-m	put	change of position, motion
		perceptual, emotional and communicative activities
-j	do, say	vocalizations
		emission of light or heat
		motion
		social activities
		inchoatives

Table 9.5: Summary of Nyulnyul light verbs, after McGregor (2002)

These are summarized in (9.145) below.

(9.145)

n-	*j-*	static versus dynamic events
jid-	*kal-*	directed versus undirected motion
m-	*w-*	action extending out versus action drawing in
k-	*m-*	source of energy moves with trajector, versus not

This behavior of preverbs in Nyulnyul does not transfer to an analysis of Bardi, however, on several points.

In Nyulnyul, *-jid-* is primarily a motion light verb; it marks trajectory. In Bardi, however, most of the uses of the cognate *-jiidi-* do not involve motion; they are unaccusatives paired with the transitive verb *-(i)nya-*.

Secondly, Nyulnyul *-barnj-* is described as having a minor role in the classification system. In Bardi it is productively used to form reflexive/reciprocal complex predicates. (I do not know how productive this use is in Nyulnyul.)

Thirdly, Bardi *-gal(a)-* as a light verb is not primarily a marker of trajectory or (metaphorical) undirected motion. Many preverbs which take *-gal-* do involve a component of *uncontrolled* action, however it is not clear to me that this parameter is at the core of this classifier class (there are many other preverbs whose actions are uncontrolled which do not take *-gal-*).

Preverbs which take Nyulnyul *-w-* involve physical contact through an intermediary, but in Bardi these preverbs take *-ma-* instead.

In Nyulnyul it seems to be more common than in Bardi for preverbs to occur without an inflecting verb:

(9.146) *Kinyingk jarrbard-ung bindany malbul.*
this lift-ALL big thing.
'This is for lifting big things.' (McGregor 2002:273)

I have no information on the extent to which Nyulnyul uses gerunds/infinitives in preverb nominalizations.

9.9.2 Yawuru

Hosokawa (1991:ch 5) contains a detailed discussion of the syntax and semantics of Yawuru preverbs. Yawuru preverbs apparently attract stress from the light verb, thus the complex predicate is treated as a single phonological unit (unlike in Bardi, where the complex predicate is a single prosodic unit, although with two primary stresses).

This section summarizes a few of the main differences between Yawuru and Bardi.

9.9.2.1 Inflection

Preverbs in Yawuru can receive case marking, unlike in Bardi, where the only 'case' preverbs receive is clausal subordination marking (for example with the allative *-ngan*, marking purposives). Yawuru preverbs, however, can receive several different case markers, as well as other inflection, as summarized in Table 9.6.

Function	Form	Gloss
with light verb:		
aspectual	*-bardu*	'still Xing'
limitative	*-manydyan*	'only'
resolutive	*-da*	'surely, no doubt'
dual	*-milidyarri*	by two, reciprocal
intensive	*-gadya*	really
without light verb:		
dative	*-dyi* ~*-yi*	'so that ...' (consequence)
locative	*-gun*	'so that ...' (purpose)
ablative	*-gap*	'from Xing'
causal	*-nyurdany*	'because of'
instrumental	*-barri*	'while Xing'

Table 9.6: Yawuru preverb inflections, after Hosokawa (1991:§5.4.1)

Some examples are given below. (9.147) shows *-bardu* 'still' (cognate with the independent adverb *bardo* 'still, already' in Bardi) with a preverb accompanied by a light verb, while (9.148) shows case marking on a preverb used independently. (9.149) illustrates the inchoative use of dative case.

(9.147) *Nunydya-bardu ya-nga-rn.*
alive-STILL 1+2-be-IMPF
'It doesn't matter' [lit, 'we'll still live'] (Hosokawa 1991:§8.2.1.2)

(9.148) *Burd inydyun midyala-gap.*
rise 3-EN-AUX(say)-IMPF sitting-ABL
'He stood up from sitting.' (Hosokawa 1991:§5.4.1.1)

(9.149) a. *Dyirrmu i-ny-dyu-n.*
sing 3-EN-say-IMPF
'(S)he sings, is singing.'

b. *Dyirrmu-yi i-ny-dyu-n.*
sing-DAT 3-EN-say-IMPF
'(S)he starts to sing.' (Hosokawa 1991:§5.4.1.2, ex 11)

9.9.2.2 Preverb ordering

Hosokawa (1991:§5.1.6) contains a short but very interesting discussion of Yawuru preverb ordering. As in Bardi, the regular word order is preverb – verb, and there are few deviations from this. His example of a preverb-inflecting verb combination is *dyunku -mirdibi-* 'run', where all orders are grammatical. A pause usually appears when the preverb follows the light verb.[35] Hosokawa also notes that intransitive preverbs exhibit variable ordering, but transitive preverbs are more fixed. (I do not know if this is actually the case or is a relic of the types of preverbs which Hosokawa tested.)

9.9.2.3 Transitivity

Another interesting difference between Bardi and Yawuru is that in Yawuru monovalent light verbs can combine to form transitive and semi-transitive predicates, whereas in Bardi this is never the case. Compare the following examples with monovalent light verbs *-ni-* 'be' and *-ngara-* 'become':

(9.150) a. *bidyara +ni* ERG listen to ABS

b. *maldyan +ni* ERG support DAT

(9.151) *lani +ngara* ERG approach DAT

[35]In Bardi the cognate *joornk(oo)* is an adverb and a noun, and its appearance in orders other than immediately preverbal would not be surprising (for a comparable example see *joodarrarr gala* 'go with the tide' in (9.40) above). Hosokawa does give another example, with *wankurrgadya* 'in tears', so it would seem that the phenomenon is more widespread in Yawuru than it is in Bardi.

9.9.2.4 Semantics of classification

Hosokawa (1991:§5.5) discusses the semantics of preverb-inflecting verb pairings in Yawuru from several different angles. The first is a four-way distinction between, according to the primary lexical head:

(9.152)
a. Preverb carries the mean lexical meaning
b. Preverb carries most of the lexical meaning, and the light verb is 'semantically diluted'
c. Preverb and inflecting verb jointly determine lexical meaning
d. Preverb and inflecting verb semantically overlap

It is not entirely clear how useful this characterization is, however, and Hosokawa does not pursue it.

Hosokawa (1991:§5.5.3) does not gives a general summary of the preverb-inflecting verb system as a whole, and the following comments have been extracted from the text. I do not know how accurate a summary of the overall behavior of Yawuru light verbs this is, and how many exceptions there are.

Some Yawuru light verbs mark aspect. Complex predicates with *-dyu-* are telic or punctual, while those with *-ni-* are stative (the latter as in Bardi). Yawuru has a verb *-ngara-* 'become' which is used for inchoatives; this verb is absent from the Western Nyulnyulan languages.

Transitivity alternations are also marked by light verbs (recall the *-jiidi-/-(i)nya* pairs in Bardi discussed above). Hosokawa's examples are reproduced below:

(9.153)

	preverb	intransitive	gloss	transitive	gloss
a.	*bany*	*-dyu-*	explode, bang	*-ma-*	shoot
b.	*rdii*	*-dyu-*	break	*-ra-*	break
c.	*darlp*	*-dyalku-*	die suddenly	*-dyu-*	jump over

Yawuru also exhibits the same causative/inchoative alternation between the roots *-ma-* and *-dyu-* that Bardi does.

9.9.3 Nyikina

Stokes (1982:Ch. 11) calls preverbs in Nyikina 'verbal nominals' or 'prestems'. As in Yawuru, intransitive preverbs in Nyikina show more flexibility of movement than transitive preverbs do. In Nyikina, it is also only intransitive preverbs which can take inflection which refers to their subject, such as *-dyarra* 'two' (the equivalent of Yawuru's *-milidyarri* and *-nil* 'many'. An illustration is given in (9.154) below:

(9.154) *Inydya-dyarra yi-rr-ma-ny-mirri gudyarra.*
go-DUAL 3-AUG-put-PAST-AUG two.
'The two of them went.' (Stokes 1982:337)

Nyikina also shows elements which intervene between the preverb and the inflecting verb, some cognate with those Hosokawa lists for Yawuru, although Stokes (1982:336) writes them as separate words (because of their stress patterns and distribution in the clause; see further Stokes 1982:372):

(9.155) *Muli bardu ngana baybarra.*
stalk though 1.(FUT)-carry behind.
'I, though, will stalk behind.' (Stokes 1982:336)

When preverbs are found in the same clause as an inflecting verb, but non-adjacent, the preverb appears to have the function of a participle. There are also examples of secondary predication, as in the following:

(9.156) *Yi-rr-a-ba-na-yirr banugu inydya-nil.*
3-AUG-TR-see-PAST-3AUG.DO from East travel-MANY
'They saw that mob traveling from the east.' (Stokes 1982:339)

We also find case marking on Nyikina preverbs, as in Yawuru. (9.157) provides an example.

(9.157) *Inydya-yunu gurd yi-ma-na.*
going-SOURCE dead 3-go-PST
'He died as a result of the trip.' [more lit. 'he died from going.']
(Stokes 1982:342)

9.10 Reconstruction of the system

There is little doubt that the preverb-inflecting verb construction should be reconstructed to Proto-Nyulnyulan. It is robust in all the languages, and there are many words which function only as preverbs in all languages. There are, however, three main problems in the reconstruction of the preverb-light verb system.

The first problem is that even among very closely related languages, such as Bardi and Nyulnyul, the basis for classification is quite different. Thus the preverb material is often cognate, but the preverbs take a different light verb.

(9.158) a. **kurndu -ka-* 'carry on shoulders' (Nyul *kurnd -k-*, Nyik. *kundu -ka-*, but c.f. Ba. *goondoo -ma-*.
b. (PWN) **ningarr- +* 'believe'; Ba.(A) *ningarrarda -ma-*; Ba.(A) *ningarrarda -joo-*; Nyl.(McG) *ningarr -m-*, Nyl.(McG) *ningarr -j-*.

(9.159) **buu* 'blow'; Ba. *boo [buu] -ma-*; Nyul *buu -j-*, Yaw. *bu +*; Nyik *buw +*

The Nyulnyul – Bardi differences in preverb-light verb organization is notable, however, since the languages are otherwise very close and otherwise share a great deal of common vocabulary and syntax. Unfortunately I have little data on the Yawuru and Nyikina systems; preverbs in the Nyikina dictionary are never listed with their light verb(s), and those in Yawuru seldom are. It is notable, however, just how few of the preverbs in the lists in Appendix E can be reconstructed with a specific light verb. The lack of reconstructibility may imply that the complex predicate system is a recent intrusion into the grammar of Nyulnyulan languages, although I think that this is unlikely, for several reasons.

It is possible that the reason behind this lack of reconstructibility is not the age of the complex predicate system, but the fluidity of the system. Such systems are highly

susceptible to variation between speakers and that it would not take much of a shift in the archetype of a category to shift a bunch of preverbs from one light verb to another. Compare, for example, Bardi *-(i)nya-* with Nyikina *-andi-*, or the meanings of *-jiidi-/-jid-* in Bardi and Nyulnyul. In Nyulnyul the category primarily denotes motion, whereas in Bardi complex predicates with *-jiidi-* as a motion verb are present, but they are a minority. A parallel example of category shift can be found in the reconstruction of Bantu noun classes (Maho 1999). For example, many in languages Class 9 takes plurals in Class 10 (using the Bleek-Meinhof numbering system), but there is a sizable contingent of languages whose Class 9 singulars form plurals in Class 6. Some allow both (Maho 1999:175). We find a similar array of variation in pairing of other noun classes.[36]

The lack of consistency in light verb use between languages may also be an artifact of recording. Many preverbs can appear with more than one light verb, and most of the Nyulnyulan languages are not very extensively documented. It is quite possible that a given preverb could appear in several languages with several verbs but has only be recorded with one (a different one in each language).

The light verb inventories of each language are similar but do not overlap completely. The verb **-jiidi-*, for example, can only be reconstructed to Proto-Western Nyulnyulan, not to Proto-Nyulnyulan. Another example is *-boo-*, which is a fairly common light verb in Bardi but is rare in Nyikina. I do not think this in itself is a severe problem for the reconstruction of complex predicates to Proto-Nyulnyulan.

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[36] We have a parallel for dialects of a single language favoring different light verbs, i.e. English. Compare the use of different light verbs in the following English phrases from UK/Australian and American English:

UK/Australia	US	
have a shower	take a shower	
have a haircut	get a haircut	take a haircut
turn right	make a right	take a right

The third problem is the syntax of complex predicates in the various Nyulnyulan languages. Yawuru and Nyikina are almost identical, as far as the descriptions go. They share many features and where data are available, the light verbs used with particular preverbs show a high degree of congruence. I have much less information regarding Warrwa, but what I do have accords with Nyikina, as we would expect.

Nyulnyul and Bardi are quite different from each other, however. Some of the differences could be due to the conditions under which the syntax of Nyulnyul was recorded (by sentence-by-sentence elicitation from the last speaker). This does not explain the rather different underlying patterns in classification, however.

One of the main differences between Bardi and the other Nyulnyulan languages, that is, the ability of preverbs to occur without an inflecting verb, seems to have been a change in progress in the period before the Laves texts were written down. Laves' corpus shows examples of preverbs which are used without an accompanying light verb, in constructions which current speakers find ungrammatical. This reanalysis was probably rather recent (and may be a function of declining language use).[37] The prohibition on bare preverbs in certain contexts would cause considerable changes in the underlying system, one would imagine. Furthermore, if Bardi's second locative case (implying motion) *-goondarr* is a fusion of *-goon* (the regular locative) and the monosyllabic preverb *darr* 'come', this reanalysis would be further evidence that there used to be fewer prohibitions on the independent use of preverbs.

Despite the problems in reconstructing the system, there are over 150 reconstructions of preverbs to Proto-Nyulnyulan, and about 80 preverbs which can be reconstructed to Proto-Western Nyulnyulan only (and perhaps another 30 which are found only in Eastern Nyulnyulan languages).[38]

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[37]For another example of a radical reanalysis of complex predicates within a few generations, see Reid (2004).

[38]The smaller number of Proto-Eastern Nyulnyulan reconstructions is probably an artefact of my

Some words are reconstructed and are preverbs in all the modern languages:

(9.160) a. ***dumbul+** 'clap' Ba.(A) *dumbul -(i)nya-/-joo-/-ma-*; Nyl.(McG) *dumburl(dumburl) -ju-*; Yaw.(Hos) *dumbul +*;

b. ***janngal+** 'cut across the tide': Ba.(A) *janngal -ar-*[39] Yaw.(Hos) *dyangal*; intercept;

c. ***kujuk +** 'swallow': pWN ***kujuk -w-**: Ba.(A) *gujug - ø-*; Nyl.(McG) *kujuk -w-*; Yaw.(Hos) *kudyuk*; Nyik.(S) *gujug*; Warr.(K) *gujug*;

d. ***mijala (-ni-)** 'sit (be sitting)': Jaw.(K) *miyala*; Ba.(M) *miyal, -land-*; Ba.(A) *miyala -ni-*; be awake; Nyl.(McG) *mijal -n-*; Nyl.(McG) *mijal -ng-*; Nyl.(McG) *mijal -nyu-*; Ngum. *mijala*; Jb.(K) *mijal* Yaw.(K) *mijala* Yaw.(Hos) *midyala +ni*; Jk.(HKL) *mijal*; Nyik. *mijala; -ni-, -nga-*; Walm.(L) *mijala nga:ngarn*;

In others, we find that one language attests the word only as a preverb, and others attest it as a noun, adjective, or adverb.

(9.161) a. ***iilyi(+)** 'flowing, running' Ba.(A) *iilyi* decorative wood shavings (N); Nyik.(S) *ily*

b. ***jalan-** 'walk around without any particular purpose': Ba.(A) *jamala arr -joo-*; Ba.(Bow) *jalanda* 'companion'; Yaw.(Hos) *dyalan(dyalan) +* take a walk;

c. ***jarrbard -?-** 'lift up'; pWN ***jarrbard -ka-**; Ba.(N&W) *jarrbard -ma-*; Ba.(M) *jarrbad -ga-* (also adverb) Nyl.(McG) *jarrbard -k-*; Nyik.(S) *jarrbard -ka-*; Warr.(McG) *jarrbard nganany*;

d. ***karrkuji (+)** 'completely': Ba.(A) *garrgooy*, Nyik.(S) *karrkooji+*; kill with single accurate shot

e. ***kirrij(+)** 'look under, uncover, reveal': Ba.(A) *girrij* n. screen for dancers; Nyik.(S) *kirrij*

These reconstructions are marked with (+) in Appendix E, to imply that we cannot necessarily reconstruct the word *qua* preverb to Proto-Nyulnyulan.

There are also many cases where the preverb would seem to be reconstructible to Proto-Nyulnyulan, but the daughter languages attest the preverb with very different meanings. A few examples of cognate sets are given in (9.162)

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not knowing these languages as well, not an indication that there are fewer cognates among their preverbs.

[39]This is a poetic word used in *ilma* song poetry.

(9.162) a. pWN ***bar+** 'hit': Ba.(Bow) *bar -ø-* hit with boomerang; Ba.(Bow) *barbar -ø-* knock about, cut, sting, cause sharp shooting pain; Ba.(Bow) *bar -ju-* pull or jerk; Nyl.(McG) *barbar -banyj-*; Jb.(K) *barbar kangaw* glossed as 'cut?';

b. ***kuly+** 'birth, giving Ba.(A) *gooly -ø-*; squeeze Yaw.(Hos) *kuly +*; Nyik.(S) *kooly* excrete: impregnate, give birth,

There are a few cases where the form of the preverb would seem to be reconstructible to Proto-Nyulnyulan, but the preverb has different meanings in the two branches of the family:

(9.163) ***kurd +** 'bend down (WN), die (EN)': Ba.(A) *goord -joo-* bend down; Ba.(M) *gudgud -ju-* crouch; Ba.(A) *gurd -ju-*; Nyl.(McG) *kud -ju-* (also) hide; Nyl.(McG) *kudkud -ju-* Nyik.(S) *gurd +*; Warr. *gurd +*

Finally, there are some preverbs which fairly clearly should be reconstructed to Proto-Nyulnyulan in some form, but the two branches of Nyulnyulan show disagreement.

(9.164) ***laga-rr /l** 'climb up'; pWN ***lagal**: Jaw.(B) *lugal*; Ba.(A) *lagal -ganyi-*; Nyl.(McG) *lakal -nyu-/-ju-*; Nyl.(McG) *lakalkaj -n-*; Jb.(K) *lagal mijid* pEN ***lagarr, kalbu**: Yaw.(Hos) *galbu +* Yaw.(Hos) *lagarr +* climb, get on; Yaw.(K) *galbu irndirarn*; Jk.(Hos) *kalbu*; Nyik.(S) *lakarr* climb, rise, ride a horse; Warr.(K) *lagarr*

Thus despite the problems in reconstructing preverb + light verb pairs to Proto-Nyulnyulan, there is probably enough evidence to attribute the construction to the proto-language.

Appendix A

Prefix Tables

The following tables give the underlying and surface forms for all tenses and numbers of Bardi verbs. Third person minimal and augment are given; other persons can be derived by substituting the appropriate person marker. A representative verb is given for each stem class. Thus all monovalent roots beginning with *j* inflect the same way as *-jarrala-* 'run'. Sonorant-initial roots inflect the same way as *-marra-* 'cook' (that is, they trigger epenthesis in the same places. Where possible I used ambitransitive roots, to keep the forms as constant as possible. In the tables, the prefix chunks are separated from the root by a hyphen. For details of the morphophonology exhibited by the interaction of different prefixes, see §3.3 beginning on page 77. The roots used to illustrate the paradigms are:

Intransitive/monovalent		Transitive/bivalent	
-banyi-	finish	*-banyi-*	kill
-jarrala-	run	*-jala-*	see
-gama-	laugh	*-gama-*	mock
-marra-	cook	*-marra-*	cook something

		3MIN				3AUG					
	set	pers	tr	tense	surface	pers	tense	aug	tr	surface	gloss
past	b	*i*	ø	*ng*	*im-banyi*	*i*	*ng*	*rr*	ø	*ingarr-banyi*	he/they finished
	j	*i*	ø	*ng*	*iny-jarrala*	*i*	*ng*	*rr*	ø	*ingarr-jarrala*	he/they ran
	g	*i*	ø	*ng*	*ing-gama*	*i*	*ng*	*rr*	ø	*ingarr-gama*	he/they laughed
	son	*i*	ø	*ng*	*inga-marra*	*i*	*ng*	*rr*	ø	*ingarr-marra*	it/they cooked
present	b	*i*	ø	ø	*i-wanyi*	*i*	ø	*rr*	ø	*irr-banyi*	he's they're finishing
	j	*i*	ø	ø	*i-yarrala*	*i*	ø	*rr*	ø	*irr-jarrala*	he/they run
	g	*i*	ø	ø	*i-yama*	*i*	ø	*rr*	ø	*irr-gama*	he/they laugh
	son	*i*	ø	ø	*i-marra*	*i*	ø	*rr*	ø	*irr-marra*	it/they cook
future	b	*oo*	ø	*ngg*	*oongg-onyi*	*oo*	*ngg*	*rr*	ø	*oonggarr-banyi*	he/they'll finish
	j	*oo*	ø	*ngg*	*oongg-arrala*	*oo*	*ngg*	*rr*	ø	*oonggarr-jarrala*	he/they'll run
	g	*oo*	ø	*ngg*	*oongg-ama*	*oo*	*ngg*	*rr*	ø	*oonggarr-gama*	he/they'll laugh
	son	*oo*	ø	*ngg*	*oongga-marra*	*oo*	*ngg*	*rr*	ø	*oonggarr-marra*	it/they'll cook
irrealis	b	*oo*	ø	*l*	*ool-onyi*	*oo*	*l*	*rr*	ø	*oolarr-banyi*	he/they might finish
	j	*oo*	ø	*l*	*ool-arrala*	*oo*	*l*	*rr*	ø	*oolarr-jarrala*	he/they might run
	g	*oo*	ø	*l*	*ool-ama*	*oo*	*l*	*rr*	ø	*oolarr-gama*	he/they might laugh
	son	*oo*	ø	*l*	*oola-marra*	*oo*	*l*	*rr*	ø	*oolarr-marra*	it/they might cook

Table A.1: Bardi prefix tables: Intransitive

		3MIN				3AUG					
	set	pers	tr	tense	surface	pers	tense	aug	tr	surface	gloss
past	b	*i*	*n*	*ng*	*inam-banyi*	*i*	*ng*	*rr*	*(n)*	*ingorr-onyi*	he/they killed it
	j	*i*	*n*	*ng*	*in-jala*	*i*	*ng*	*rr*	*(n)*	*ingarr-ala*	he/they saw it
	g	*i*	*n*	*ng*	*inang-gama*	*i*	*ng*	*rr*	*(n)*	*ingarr-ama*	he/they mocked him
	son	*i*	*n*	*ng*	*ina-marra*	*i*	*ng*	*rr*	*(n)*	*ingarra-marra*	he/they cooked it
present	b	*i*	*n*	*ø*	*in-banyi*	*i*	*ø*	*rr*	*(n)*	*irr-onyi*	he's/they're killing it
	j	*i*	*n*	*ø*	*in-jala*	*i*	*ø*	*rr*	*(n)*	*irr-ala*	he/they sees it
	g	*i*	*n*	*ø*	*in-kama*	*i*	*ø*	*rr*	*(n)*	*irr-ama*	he's/they're mocking him
	son	*i*	*n*	*ø*	*ina-marra*	*i*	*ø*	*rr*	*(n)*	*irra-marra*	he's/they're cooking it
future	b	*oo*	*n*	*g*	*oonk-onyi*	*oo*	*ngg*	*rr*	*(n)*	*oonggorr-onyi*	he/they'll kill it
	j	*oo*	*n*	*g*	*oonk-ala*	*oo*	*ngg*	*rr*	*(n)*	*oonggarr-ala*	he/they'll see it
	g	*oo*	*n*	*g*	*oonk-ama*	*oo*	*ngg*	*rr*	*(n)*	*oonggarr-ama*	he/they'll mock it
	son	*oo*	*n*	*g*	*oonka-marra*	*oo*	*ngg*	*rr*	*(n)*	*oonggarra-marra*	he/they'll cook it
irrealis	b	*oo*	*n*	*l*	*ool-onyi*	*oo*	*l*	*rr*	*(n)*	*oolorr-onyi*	he/they might kill it
	j	*oo*	*n*	*l*	*ool-ala*	*oo*	*l*	*rr*	*(n)*	*oolarr-ala*	he/they might see it
	g	*oo*	*n*	*l*	*ool-ama*	*oo*	*l*	*rr*	*(n)*	*oolarr-ama*	he/they might mock it
	son	*oo*	*n*	*l*	*oola-marra*	*oo*	*l*	*rr*	*(n)*	*oolarra-marra*	he/they might cook it

Table A.2: Bardi prefix tables: Transitive

Appendix B

Light Verbs

***-arndi-** 'catch';
Ba.(A) *-arndi-*; Nyik.(S) *-andi-* (I) (pick up); Warr.(McG) *-(a)ndi-*.

***-(a)w(u)-** 'give'; Jaw.(B)-ø- *[anangi]* ('give me it'); Ba.(A) *-ø-*; Nyl.(?) *-w(u)-*; Nyl.(Bis) *-w-* [*mawan*]; Jb.(?) *-w-* ~ *-aw-*Jb.(HKL) nganawijin ('I gave it to him'); Yaw.(Hos)-ø-; Warr.(McG) *-wa-* ~ *-ø-*

***-banji-** 'exchange, share'; Ba.(A) *-banji-* ~ *-onji-* (share); Nyl.(N&W) *-barnji-* [*maban%djen*]; Nim.(N&W) *-banji-* [*mabandjen*]; Jb.(N&W) *-banji-* [*mabandjen*]; Yaw.(Hos)-bandyi (II)-; Yaw.(Hos) *-bandyibandyi-* (I/II?) (exchange collectively); Nyik.(S) *-barnji-* (II); Warr.(McG) *-banyji-* ~ *-wanyji-*

***-bu-** 'hit, kill';
Ba.(N&W) *-b-* [*maben*] (hit); Ba.(A) *-bu-* ~ *-o-*; Nim.(N&W) *-bunyj-* [*ma-bondjen*][1]; Jb.(N&W) *-bu-* [*ma-bon*];
Nyik.(S) *-bu-*;

***-bula-** 'come';
pWN ***-bulu-***; Ba.(A) *-bulu-*; Nyl.(N&W) *-bul-* [*mabolan*] (grow); Jb.(N&W) *-bul-* [*mabolan*] (grow);
pEN ***-bula-***; Yaw.(Hos) *-bula-*; Nyik.(S) *-bula-* (II); Nyik.(S) *-mulumulu-* (haunt, visit frequently.); Warr.(McG) *-bula-* ~ *-wula-*; Warr.(McG) *-bulawula-* (come (of many people)).

***-(i)nya-** 'get, pick up, catch';
Ba.(A)-(i)-*nya-*; Nyl.(Bis) *-ny-* [*manyan*] (to get, grasp, hold); Nyl.(Bis) *-ny-* [*manjan manjan*] (to buy);
Yaw.(Hos) *-nya-*.

***-jala-** 'see';
pWN ***-jala-***; Jaw.(B) *-jala- nungalal, nunjal*; Jaw.(K) *-jala-*; Ba.(A) *-jala-*;
Ba.(N&W) *-jala-* [*m-alen*]; Ba.(A) *-jalala-* (stare at); Ba.(N&W) *-jalala-* [*m-alalan*]

[1]goes with Bardi *-monyji-* (and c.f. in Worms), unless morpheme breaks should be *ma-bu-n=jin*.

(to guard, to watch); Nyl.(Bis) ma-djaledjalan (superintend); Nyl.(Bis) *-jal-* [*madjalan*] (see, be faithful); Nyl.(Bis) *-jalajal-* [*madjaledjalen*]; Nim.(N&W) *-jal-* [*mad-djalen*]; Jb.(N&W) *-jal-* [*mad-djalen*]; Jb.(K) *-jal-*; Jb.(K) *-jil- nganjil* (I see); Jb.(N&W) *-jalajal-* [*madjaledjalen*] (see, watch, look out for, take care of); pEN **-jala(jala)-**; Yaw.(Hos) *-jala-* ('look after'); Yaw.(Hos) *-dyaldyala-* (take good care of, look after); S.Nyik. *-jalajala-*[2]; Nyik.(N&W) *-jala-* [*mad-djalen*][3]; Warr.(McG) *-jala-*;

***-ka-** 'carry; take';
Ba.(A) *-ga-* ~ *-gaja-*; Ba.(N&W) *-gaja-* [*m-andjan*]; Nyl.(McG) *-g-*; Nyl.(N&W) *-ga-*ng- [*ma-gan-ang*]; Nim.(N&W) *-g-* [*ma-gan*]; Jb.(N&W) *-ga-*; Yaw.(Hos) *-ga-*; Nyik.(S) *-ga-*; Warr.(McG) *-ga-*

***-ju-** ~ *-di-* 'do' 'say';
Ba.(A) *-ju-* ~ *-da-* ~ *-i-*; Nyl.(N&W)-j(i)- [*madjendjon*]; Nyl.(N&W) *-ju-* [*ma-djon, ma-djen*]; Jb.(N&W) *-ju-* [*ma-djon, ma-djen*];
Yaw.(Hos) *-dyu-* (II); Nyik.(N&W) *-ju-* ~ *-di-* [*man-den*]; Nyik.(S) *-i-* ~ *-di-* ~ ø; Warr.(McG) *-ji-*; Warr.(S) *-yi-* ~ *-di-*.

***-ma-** 'put';
Ba.(A) *-ma-*; Nyl.(Bis) *-m-* [*maman*]; Jb.(?) *-m-*;
Yaw.(Hos) *-ma-* (~ *-ngama-*); Nyik.(S) *-ma-*; Warr.(McG) *-ma-*

***-ni-** 'sit, be located';
Ba.(A) *-ni-*; Nyl.(N) *-ni-*; Nyl.(Bis) *-ni-* [*manen*]; Jb.(?) *-n-*;
pEN ***-ni-, -nga-* (suppletive root)**; Yaw.(Hos) *-ni-* ~ *-nga-* ~ *-ji-*; Nyik.(S) *-ni-* ~ *-nga-*; Warr.(McG) *-ni-* ~ *-wani-* ~ *-nga-*.

***-ra-** 'spear';
Ba.(A) *-ar-* ('spear lice', 'sew'); Nyl.(McG) *-r-* (*-ra-*); Nyl.(N&W) *-ar-* [*m-aran*], [*manaran*]; Nim.(N&W) *-ar-* [*m-anan*]; Jb.(N&W) *-ar-* [*m-aran*];
Yaw.(N&W) *-ar-* [*m-aran*]; Yaw.(Hos) *-ra-* (~ *-ri-*) (I); Nyik.(S) *-ra-*[4]; Warr.(McG) *-ra-*;

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[2]The root is used in specialised meanings, such as 'stare at'.

[3]Stokes says specifically that this root is *not* in Nyikina except in the specialized *-jalajala-* 'stare at'.

[4]This root is phonologically irregular.

Appendix C

Simplex Roots Reconstructible to Proto-Nyulnyulan

***-(a)rli-** 'eat'[1];
Jaw.(B) *nunalee nganarli* 'I'm eating it' Jaw.(K) ngankarla [*-arlV-*] I will eat; Ba.(A)-(a)rli-; Ba.(N&W) *-arli-* [*m-alen*]; Yaw.(N&W) *-narli-* [*ma-nalen*] Yaw.(Hos) *-rli-* (I); Nyik.(N&W) *-arli-* [*m-alen*]; Warr.(McG)-rli; Walm.(L) *-narli-*;

***-bali-** 'cut' 'wash away';
Ba.(M) *-bali-* (chip at); Nim.(N&W) *-bali-* [*ma-balen*] (to cut, to carve); Jb.(N&W) *-bali-* [*ma-balen*] (to cut, to carve);
Yaw.(Hos) *-bali-* (I);

***-banyju-** 'smell'; pWN ***-banyjV-; -bulm-**; Ba.(A) *-boolmoo-* (c.f. *bulman* 'rotten'); Nyl.(N&W) *-banyj-* [*ma-bandjen*]; Nyl.(N&W) *-bulm-* [*mabolman*] (to steep, soak, lie in water); Jb.(N&W) *-banyj-* [*ma-bandjen*]; Jb.(N&W) *-bulm-* [*mabolman*];
pEN ***-banyju-***; Yaw.(Hos) *-bandyu-* (I/II) (both 'smell something' and 'smell (bad)');
Nyik.(S) *-banyju-* (A/P); Walm.(L) *-mbanjun-*.

***-bardi-** 'grab';
Ba.(A) *-bardi-* (~ *-barndi-*) (cover with sand, bury); Nyl.(N&W) *-bardi-* [*ma-baden*]; Nim.(N&W) *-bardi-* [*ma-baden*]; Jb.(N&W) *-bardi-* [*ma-baden*];
Yaw.(N&W) *-bardi-* [*ma-baden*]; Nyik.(S) *-bardi-* (I) (hold something for someone);

***-barma-** 'insult';
Nyl.(Bis) *-barma-* [*mabarman*] (to rally);
Nyik.(S) *-barma-* (II)[2]; Nyik.(S) *-barima-* (II);

***-bar(n)di-** 'bury (tr)' 'cover (tr)' 'be buried (intr); extinguish/be extinguished (eg a fire)';
Ba.(A) *-barndi-*; Nyl.(Bis) *-barndi-* [*maban(%)dan*] (to grumble, blame, dispute, put out a fire); Nyl.(Bis) *-bandaming-* [*mabandamingan*] 'to cover onself'; Nim.(N&W) *-barndi-* [*ma-ban%den*]; Jb.(N&W) *-barndi-* [*maban%dan*];

[1]compare the noun **waarli* 'meat'

[2]possibly the Yawuru reflex of the root; c.f. ngarr(i)ka.

Yaw.(Hos) *-ba(r)nda-* (II) Yaw.(Hos) *-barda-* (II) (stay underground); Nyik.(S) *-banda-* (A/P) (cover up, put out);

***-barri-** 'think about';
Ba.(N&W) *-barrarra-* [*m-araren*] (think of, remember)Ba.(A) *-barra-* ~ *-warra-* (dream); Nyl.(N&W) *-barribarri-* [*ma-barebaren*]; Nim.(N&W) *-barribarri-* [*ma-barebaren*]; Jb.(N&W) *-barribarri-* [*ma-barebaren*];
Yaw.(N&W) *-barribarri-* [*ma-barebaren*]; Nyik.(S) *-barribarri-* (I); Warr.(McG) *-warri-*.

***-bang(-)gi-** 'claim';
Ba.(A) *-banggi*-Nyl.(Bis) *-bangg-* [*mabangan*] (to fulfill); Nim.(N&W) *-banggi-* [*mabaŋan*] (to praise); Jb.(N&W) *-bangg-* [*ma-baŋgan*] (to discover, find out, meet with);
Yaw.(N&W) *-bangg-* [*ma-baŋgan*]; Yaw.(Hos) *-bangngara-* 'go hunting' Nyik.(S) *-bangki-* (I) (save for later use).

***-binga-** ? 'arrange, order, prepare';
Ba.(A) *-bungarr*-inyji- (shake)Nim.(N&W) *-bing-* [*ma-biŋan*]; Jb.(N&W) *-bing-* [*ma-biŋan*];
Yaw.(N&W) *-bing-* [*ma-biŋan*]

***-bula-** Appl 'come out at';
Ba.(A) *-booloo*-ng-; Jb.(N&W) *-bilng-* [*ma-belŋan*] (it)Yaw.(Hos) *-bula*-ngany- (take s.o. here).

***-buli-** 'wash away';
Nyl.(N&W) *-bulibul-* [*mabolebolan*]; Nyl.(Bis) *-bulubul-* [*mabobobolan*][3] (take a shower, bath); Jb.(N&W) *-bul-* [*ma-bolan*]; Jb.(N&W) *-bulibul-* [*mabolebolan*];
Yaw.(Hos) *-buli-* (water sth, make wet, moisten); Yaw.(Hos) *-bulibuli-* (bathe); Nyik.(S) *-bulu-* (fill and bring); Nyik.(S) *-bulungka-* (I) (wash away); Nyik.(N&W) *-bulibul-* [*mabolebolan*].

***-bura-** ? 'cure someone';
Nyl.(Bis) *-bura-* [*maburan*] (to hope); Nyl.(Bis) *-buring-* [*maburingan*] (to be sorry);
Yaw.(Hos) *-baru-* (I); Yaw.(Hos) *-mba-* (I).

***-burra-** 'cover';
Ba.(A) *-burru-* 'cover with sand'; Ba.(A) *-burr-nga-*; Nyl.(Bis) *-burr-* [*maboran; maburan*] (to plant, to deflour [*sic*]. to paint, to bury); Nyl.(N&W) *-burr-* [*ma-boran*]; Nim.(N&W) *-burr-* [*ma-boran*] (to bury, to paint); Jb.(N&W) *-burraburr-* [*ma-boreboran*] (to bury, to paint); Jb.(N&W) *-burr-* [*ma-boran*];
Yaw.(N&W) *-burr-* [*ma-boran*] (to bury, to paint); Nyik.(S) *-burra-* (A/P) (dry up, cover up); Nyik.(S) *-barrabu-* (A/P) 'cover up'

[3] I suspect a typo for *bulubul*.

***-(i)bi-** 'drink';
Ba.(A) *-ibi-*; Nyl.(McG) *-bi-*; Yaw.(Hos) *-bi-* (I); Nyik.(S) *-ibi-* (I).

***-jali-** 'return';
Nyl.(Bis) *-jal-* [*midiala*];
pEN ***-jali-***; Yaw.(Hos) *-dyaladi-*; Yaw.(Hos) *-dyali-* (II); Nyik. *-jali-*.

***-jangguli-** 'break';
Jaw. *-jaguli-*; Ba.(A) *-jugulu-*; Ba.(M) *-juguli-*; Ba.(N&W) *-jaguli-* [*m-agolen*]; Yaw.(N&W) *-jangguli-* [*ma-djaŋgolen*]; Nyik.(S) *-jangguli-* (A/P); Nyik.(N&W) *-jangguli-* [*ma-djaŋgolen*]; Warr.(McG) *-jangguli-*

***-jardi-** ? 'undress';
Jb.(N&W) *-jadi-* [*ma-djaden*];
Yaw.(Hos) *-dyardi-* (II) (= take off, take out); Nyik.(N&W) *-jadi-* [*ma-djaden*].

***-jarrku-** 'cut or shave hair';
Ba.(A) *-jarrgoo-*; Nyl.(Bis) *-jarrk-* [*madjarkan*]; Jb.(N&W) *-jurrk-* [*ma-djorgen*]; Yaw.(Hos) *-dyurrku-*.

***-jayiba-?/** **-jiba-* 'ask (a question)';
Ba.(N&W) *-jiba-* [*ma-eban*]; Ba.(A) *-jaybi-*; Ba.(N&W) *-jaybi-* [*m-aiben*]; Nyl.(Bis) *-jiba-* [*madjebalan*] (to pray, to ask); Nyl.(N&W) *-jaba-* [*ma-djaban*][4]; Nyl.(N&W) *-jib-* [*ma-djeban*]; Nyl.(Bis) *-jib-* [*madi̯epan*]; Nim.(N&W) *-jab-* [*ma-djaban*]; Nim.(N&W) *-jib-* [*ma-djeban*]; Jb.(N&W) *-jab-* [*ma-djaban*]; Jb.(N&W) *-jib-* [*ma-djeban*];
Yaw.(Hos) *-dyiba-* (II);

***-jimb-** 'die'[5];
pWN ***-jimbi-***; Jaw.(B) *injibee*; Ba.(A) *-ji(m)bi-*; Nyl.(Bis) *-jimb-* [*madjemban*] (to expire); Nyl.(Bis) *-jimb-* [*madi̯omban*] (to extinguish)Nyl.(N&W) *-jimb-* [*ma-djimben*] (go down, die, set); Nim.(N&W) *-jimb-* [*ma-djimben*] (go down, die, set); Jb.(N&W) *-jimb-* [*ma-djimben*] (go down, die, set);
Yaw.(Hos) darlb+; jiwarri+; Yaw.(K) jiwarri ngararn;

***-jurda-** 'trip over';
Ba.(M) *-joodoo-* (turn over);
pEN ***-jurd(r)a-** (trip over); Yaw.(Hos) *-jurdra-* 'bump into s.th.'; Nyik.(S) *-juda-*

***-jurdu-** 'dry up, tide ebbs'; Ba.(A) *-jurdu-* (ebb tide going out; dry up); Ba.(N&W) *-jurdu-* [*ma-iodon*]; Nyl.(N&W) *-jurd-* [*madjodan*]; Nim.(N&W) *-jurd-* [*madjodan*]; Jb.(N&W)

[4]not sure if from Nyulnyul, under "compare" in Bardi entry

[5]This root can be reconstructed as a root to Western Nyulnyulan, but only as a free form to the Eastern languages (and it might be a borrowing in the Eastern languages, *jiwarra* is Bardi, *jibarra* or *jimbarra* is expected in the Eastern languages.)

-jurd- [*madjodan*];
Yaw.(N&W) *-jurd-* [*madjodan*]; Nyik.(N&W) *-jurd-* [*madjodan*]; Nyik.(S) *-judu-* (A/P)

***-jurgu-** 'shave';
Ba.(N&W) *-jarg-* [*ma-djargan, m-argon*]; Nyl.(N&W) *-jarg-* [*ma-djargan*]; Jb.(N&W) *-jurg-* [*ma-djorgen*];
Yaw.(N&W) *-jurgu-* [*ŋa-djorgon*];

***-jurra-** ? 'poke'; Jb.(N&W) *-jurra-* [*ma-djoren*];
Yaw.(N&W) *-jurra-* [*ma-jo.ran*]; Nyik.(S) *-jurra-* (I).

***-jurrali-** 'run (away)';
Ba.(A) *-jarrala-*; Nyl.(Bis) *-jarral-* [*midierala*] (fall in a hole); Nim.(N&W) *-jarral-* [*ma-djaralan*] (slide, slip); Jb.(N&W) *-jarral-* [*ma-djaralan*] (slide, slip);
Nyik.(S) *-jurrali-* (II) (come down);

***-jurrali-** 'descend' 'run';
pWN ***-jarrala-***; Ba.(A) *-jarrala-* (run (away)); Nyl.(Bis) *-jirrala-* [*madieralan*] (to descend); Nyl.(N&W) *-jarral-* [*madjaralan*] (slip, slide, get bogged); Nim.(N&W) *-jarral-* [*madjaralan*] (slip, slide, get bogged); Jb.(N&W) *-jarral-* [*madjaralan*] (slip, slide, get bogged);
Nyik.(S) *-jurrali-* (II) come down;

***-jurrba-** 'rest';
Ba.(A) *-jurrbu-* (vit) 'country come into view (ie, approaching home)';
Nyik.(S) *-jurrba-* *-ngany-*.

***-kama-** 'laugh'; Nyang. if McGregor's reconstruction right, this could be another type 3 root, but I have no evidence for the nasal except that Kerr form.;
Jaw.(K) *ngankaman* Ba.(N&W) *-gama-* [*ma-iaman*] (laugh, to laugh at, deride); Ba.(A) *-gama-* (A/P); Nyl.(K) *-nggarnm-* [*-ganm-*]; Nyl.(Bis) *-gam-* [*makaman*] Nyl.(Bis) *-ganm-* [*makan[a?]*m]; Nim.(N&W) *-gam-* [*ma-gaman*];
Yaw.(Hos) *-gami-*; Nyik.(S) *-gama-*;

***-kanbV-** 'get fat';
Ba.(N&W) *-ganb-* [*ma-enben/ma-anben*]; Nyl.(N&W) *-ganb-* [*ma-ganben*]; Nim.(N&W) *-ganb-* [*ma-ganben*]; Jb.(N&W) *-ganb-* [*ma-ganben*];
Yaw.(N&W) *-ganb-* [*ma-ganben*]; Nyik.(N&W) *-ganb-* [*ma-ganben*].

***-kardi-** 'enter (+ disappear)';
Ba.(A) *-gardi-* (enter, drown); Nyl.(Bis) *-gard-* [*magetan maiak*] (to enter the house.); Nyl.(N&W) *-gard-* [*ma-gaden*]; Nim.(N&W) *-gardi-* [*ma-gaden*]; Jb.(N&W) *-gardi-* [*ma-gaden/ ma-gadan*]; Yaw.(N&W) *-gardi-* [*ma-gaden*]; Yaw.(Hos) *-gardi-* (II); Nyik.(S) *-kadi-* (II) 'go in, disappear'; Warr.(McG) *-gardi-*.

***-kula-** ; 'tie' Ba.(A) *-gola-* 'wear sth'; Warr.(McG) *-wula-*; Yaw.(Hos) *-kurla-* (tie up; as intrans 'put on cloth' (see under get dressed)); Nyik.(S) *-gula-*;

***-lamba-** 'touch, embrace' 'kiss';
Ba.(A) *-laba-* (have (normal possessive verb)); Ba.(A)-(r)labar- (kiss); Nyl.(Bis) *-lamb-* [*malamban*] (to embrace, kiss); Nyl.(Bis) *-lanb-* [*malanban*] (kiss, embrace); Nyik.(S) *-lamba-* 'touch gently (I)'.

***-langka-** 'know, understand'; Jaw.(B) *mallangarie* 'hear'; Ba.(A) *-laga-*;
Yaw.(Hos)-la(ng)ka- (I) (know, understand, also means 'hear' as (II)); Nyik.(S) *-langka-* (I).

***-likarra-** 'hear';
pWN ***-likarra-***; Jaw.(B) nungalamongen; Ba.(K) nilamarra (this is 'ear'); Jaw.(K) ngarlamankanju (I hear you); Ba.(A) *-lamanka-*; Nyul.(HKL) *-lagarr-*; Nyl.(Bis) *-likarr-* [*malegaran*]; Jb.(K) ngangarlikarra (I hear it);
pEN ***-likarra-***; Yaw.(Hos) *-likarra-*; Yaw.(Hos) *-langka-* (II) (intrans of *-langka-* (I) 'understand'); Yaw.(Hos) *-laka-* (= *langka*); Yaw.(K) bijara ingarn; Nyik.(S) *-likarra-* (II) (listen, feel); Warr.(McG) *-larra-*[6]; Walm.(L) *-larra-*;

***-lurru-** 'burn, light';
Ba.(A) *-lurru-*; Ba.(M) *-looloorroo-*; Nyl.(K) inggamarran; ilurrin;Nyl.(Bis) *-lurr-* [*maloran*] (to burn, to light.); Nyul.(HKL)-lurr; Yaw.(Hos) *-lurra-* (burn, cook);

***-mandu-** 'wet sth';
Ba.(A) *-mundu-*; Nyl.(Bis) *-mundumund-* [*mamondomondan*] (to water);
Nyik.(S) *-manda-* (A/P); Warr.(McG) *-munda-* (extinguish).

***-marda-** 'cover';
Ba.(A) *-marda-* 'build a shelter';
Nyik.(S) *-marda-* (cover)

***-marra-** 'burn' 'cook'[7];
Ba.(A) *-marra-*; Ba.(A) *-marramarra-* (tempt); Nyl.(K) inggamarran; ilurrin (it is burning); Nyul.(HKL)-marr; Nyl.(Bis) *-marr-* [*mamaran*]; Nyik.(S) *-marra-* (A/P)Warr.(McG) *-marrarn-* ~ *-marra-*;

***-midurdu-** 'turn round and look';
Ba.(A) *-midoordoo-*;
Yaw.(Hos) *-mirdurdu-* (II).

***-mungka-** 'carry';
Ba.(A) *-munggaar-*;
Yaw.(Hos) *-mungka-* (get back, recover s.thiŋ); Nyik.(S) *-mungga-* take person, escort;

[6]This root doesn't take the transitivity marker

[7]compare **-lurru-*

***-mindi-** ? 'tap on';
Ba.(M) *-mindimindi-*;
Yaw.(N&W) *-mindi-* [*wana-mindi*] (press down on).

***-mulu-**? 'throw down';
Ba.(M) *-mooloo-*; Nyl.(Bis) *-mulu-* [*mamolan*]; Nyl.(Bis) *-mulurr-* [*mamoloran*] (incline);
Nyik.(S) *-mulumulu-* (II) (visit frequently)

***-mVrr-** 'smell';
pWN ***-murrarr-***; Ba.(A) *-murrarr-*; Nyl.(Bis) *-murr-* [*mamuran*] ('scent');
Warr.(McG) *-marrir-*.

***-ngari-**? 'leave sth';
pEN ***-ngari-***;
Jb.(K) *-ngarri-*;
Yaw.(Hos) *-ngari-* (I) leave someone/something, forget them.Nyik.(S) *-ngari-*Warr.(K) *-ngari-*; Warr.(McG) *-ngari-* (escape).

***-ngarrka-** 'float';
Ba.(A) *-ngarrga-*; Nyl.(Bis) *-ngarrk-* [*manarkan*] (swim);
Yaw.(Hos) *-ngarrka-* trouble, disturb;

***-ngula-** 'throw';
pWN ***-ngulu-***; Jaw.(B) nunagoola; Jaw.(K) nganimbidingkaliji; Ba.(A) *-ngulu-*; Nyul.(HKL) *-ngurl-*; Jb.(K) *-ngulu-*; Jb.(HKL) warnungulu;
Yaw.(Hos) *-ngula-* (I); Yaw.(K) inanguran; *-ngura-*; Walm.(L) *-wula-*;

***-ngurridi-** 'paint (with ochre)';
Ba.(A) *-ngoorridi-*inyji-;
Nyik.(S) *-ngurridi-* (I).

***-wa(r)di-** 'accustomed (to get)';
pWN ***-wardi-***; Ba.(N&W) *-ardi-* [*ma-aden*] (cf also *ma-waden*);
Nyik.(S) *-wadiwadi-* (I) (to copy);

***-wargi-** 'pick up';
Ba.(A) *-argi-*; Nyl.(Bis) *-warg-* [*mawarkan*] (fetch);
Yaw.(Hos) *-warka-* (I) (also 'muster').

***-wunda-**X- 'cross';
Ba.(A) *-urndurru-*
Nyik.(S) *-wundama-* (I) (gather together);

***-wunduma-** 'gather something';
Nyl.(Bis) *-wundum-* [*mawondoman*] (keep back);
pEN ****-wunduma-***; Yaw.(Hos) *-wunduma-*; Nyik.(S) *-wundama-*Nyik.(S) marurr; ngid; il.

***-wirrika-** 'try, test out sth.';
Nyl.(Bis) *-wirrik-* [*mawerekan*];
pEN ****-wirrika-***; Yaw.(Hos) *-wirrika-* (I); Nyik.(S) *-wirrika-* (I)

Appendix D

Complex Root Etymologies

D.1 *-ga- 'carry'

***-badikV-** 'fill (be filled)';

Ba.(M) *-badi-* (be satisfied)[1]. Nyl.(N&W) *-badik-* [*mabadegan*] (be full); Jb.(N&W) *-badik-* [*mabadegan*] (be full);
Yaw.(Hos) *-bardika-* (I/II) (fill up/be full); Nyik.(S) *-badiki-* (II) (become full).

***-bilkV-** 'blow (wind)';

Ba.(A)-bilgV-; Ba.(N&W) *-bilg-* [*ma-belgan*]; Jb.(N&W) *-bilg-* [*ma-belgan*];
Yaw.(Hos) *-bilka-* 'hit'; Nyik.(S) *-bilgi-* 'impersonal'.

***-buduga-** ? 'neglect someone, be sulky';

Ba.(M) *-boodoogoo-* (stamp off (in anger)); Nyl.(N&W) *-budug-* [*mabodokan*] (be sulky); Jb.(N&W) *-buduga-* [*ma-bodogan*]
Yaw.(N&W) *-buduga-* [*ma-bodogan*] (tr); Nyik.(S) *-buduka-* (I) 'take no action, not intervene'

***-jarikV-** 'fear, intimidate'; Ba.(A) *-jargi-*; Ba.(N&W) *-jargu-* [*ma-iergon*]; Nyl.(Bis) *-jirik-* [*madjerekan*] (also means to escape, to flee); Nyl.(Bis) *-jirunkarr-* [*madi͡erongoran*] (to flee); Nyl.(Bis) *-jarg-* [*midierek*]; Nyl.(N&W) *-jirijirik-* [*ma-djeredjeregan*] (to insult, call names, rebuke, scold); Nyl.(N&W) *-jarik-* [*madjaregan*] (fear); Nyl.(Bis) modieronkor (flee (2sg)); Nim.(N&W) *-jarik-* [*madjaregan*]; Nim.(N&W) *-jirijirik-* [*ma-djeredjeregan*] (to insult, call names, rebuke, scold); Nim.(N&W) *-jarg-* [*ma-djeregan*]; Jb.(N&W) *-jarik-* [*madjaregan*]; Jb.(N&W) *-jirijirik-* [*ma-djeredjeregan*] (to insult, call names, rebuke, scold) (compare ma-djorŋgoren, ma-djorŋgon);
Yaw.(N&W) *-jarik-* [*madjaregan*]; Nyik.(S) *-jarrka-* (stand over, wait for).

***-julnggi-** 'tell';

pWN ***-julngi-***; Ba.(N&W)-julngV- [*ma-iolŋan*]; Ba.(A) *-jilngi-* ~ *-julngu-*; Nyl.(N&W) *-julng-* [*ma-djolŋan*]; Nyl.(Bis) *-julung-* [*madjolongan*]; Nyl.(Bis) *-julung-* [*madi͡olongan (ti͡awol)*]; Nim.(N&W) *-julng-* [*ma-djolŋan*]; Jb.(N&W) *-julng-* [*ma-djolŋan*]

[1]impersonal verb; *inambadijjarrngayoo* 'I'm satisfied'

pEN ***-julka-***; Yaw.(N&W) *-julku-* [*ma-djolgan*]; Yaw.(Hos) *-dyulka-* (I) (order, remind); Yaw.(Hos) *-dyulka-* (II) (teach (s.one); tell a story); Nyik.(S) *-julka-* (I); Nyik.(N&W) *-julku-* [*ma-djolgan*].

***-milka-** 'wake up';
Ba.(A) *-mili-*; Ba.(A) *-milgi-* (wake s.o. else up); Nyl.(Bis) *-milg-* [*ma'milkan*]; Nyik.(S) *-milka-* (I).

***-minyga-** 'choke';
Ba.(A) *-minggi-*;
Nyik.(S) *-minyka-* (I).

***-nganka-** 'speak';
Jaw.(K) ngankan; Jaw.(B) unjan; Ba.(A) *-nganka-*; Nyl.(K) nanggang; warliwarl; Nyl.(Bis) *-ngank-* [*manangan, minanga, minangara*] (evidence here for the -rra suffix in Nyulnyul too.); Jb.(K) naangank jabirrjabirr ('I speak JJ' (maybe typo for ngangank)); Warr.(K) nangga; Warr.(McG) nganka (pv);
Yaw.(K) nganka ingarn; Jk.(Hos) nganka; Nyik.(K) *-di-*; Nyik.(S) *-nganka-* (II);
Bun. *-ma-* (c.f. use of *-ma-* in Nyikina.).

D.2 *-bu- 'hit'

***-janbu-** 'step on sth';
Ba.(A) *-janbu-* (also means 'pull out grass'); Ba.(A) *-janbanboo-* (to straighten a spear); Ba.(A) janbal *-ø-* (round up); Ba.(N&W) *-janbu-* [*m-anbon*] (kick, trample); Nyl.(N&W) *-janb-* [*madjanban*] (trample, kick); Nim.(N&W) *-janb-* [*madjanban*] (trample, kick); Jb.(N&W) *-janb-* [*madjanban*] (trample, kick);
pEN ***-janba-***; Yaw.(N&W) *-janb-* [*madjanban*] (trample, kick); Yaw.(Hos)-dyanba(dyanba)- (kick;) (*-dyanba-* is (II)); Jk.(HKL) nanjanba (kick); Nyik.(S) *-janba-* (I) (tread, set foot on (esp. dry land)); Nyik.(N&W) *-janb-* [*madjanban*] (trample, kick); Warr.(McG) *-janba-*.

***-kunba-** 'send';
Ba.(A) *-gunbu-* / *-gonbu-*; Nyl.(Bis) *-gunb-* [*magonban*] (to dismiss);
Yaw.(Hos) *-kunba-*;

D.3 *-ma- 'put'

***-barrima-**? 'distrust, not to believe';
Jb.(N&W) *-barrima-* [*ma-bareman*] (vit);
Nyik.(N&W) *-barrima-* [*ma-bareman*] (vit) (compare m-oreman (prob Bardi cognate));
Nyik.(N&W) *-barrgu-* [*ma-bargon*] (vtr) (distrust, doubt).

***-bilima-** 'steal, take away';
Ba.(A) biili (angry); Nyl.(N) *-bilima-*; Nyl.(Bis) *-bilim-* [*mabeleman*] (steal);
Nyik.(S) *-bilima-* (I) (take from someone); Warr.(McG) *-bulama-*

***-jarrma-** 'rise';

Ba.(N&W)-jarrmV- [*m-armen*] (stand up, to get up, to fly up, to rise, to start); Ba.(A) *-jarrmi-*;
Nyik.(S) *-jarrma-* (enter water).

D.4 *-ra- 'spear'

***-bangar-** (?) 'praise, praise self, boast'[2]; pWN ***-bangar-inyji**;

pWN ***-bangir-**; Ba.(M) *-bangir-* (c.f. *-banarinyji-* 'seduce'); Ba.(M) *-bangarinyji-* (to flirt with someone); Nyl.(N&W) *-bangar-* [*ma-baŋaran*]; Nyl.(N&W)-(ba)bangar- [*ma-babaŋarendjen, ma-baŋarendjen*] (praise oneself, to boast); Nyl.(Bis) *-banar-* [*mabanaran God*]; Nyl.(Bis) *-banar-* [*mamabanarendi̯e*] (praise oneself); Nim.(N&W) *-bang-* [*ma-baŋan*]; Nim.(N&W) *-(ba)bangar-* [*ma-babaŋarendjen, ma-baŋarendjen*]; Jb.(N&W) *-bangar-* [*ma-baŋaran*] (compare m-o::ŋjen); Jb.(N&W) *-(ba)bangar-* [*ma-babaŋarendjen, ma-baŋarendjen*];
Yaw.(N&W) *-bangar-* [*ma-baŋaren*]; Yaw.(N&W) *-banda-* [*ma-bendan*]; Nyik.(N&W) *-bana-* [*ma-benan*].

***-kalbira-** ? 'sing someone';

pWN ***-galbira-?**; Nyang. not sure that it's really present in this banch, might be loan.; Ba.(M) *-jilbir-* (may be mistake - c.f. *-jibarr-* 'singe'); Ba.(N&W) *-galba-* [*ma-i̯elben*] (sing, hum incantations, (e.g. love songs, spells)); Nyl.(N&W) *-galbir-* [*ma-gal%beran*] (sing, to hum incantations); Jb.(N&W) *-galbir-* [*ma-gal%beran*] (sing, to hum incantations);
pEN ***-kalbira-**; Yaw.(Hos) *-kilbira-* (sing someone, insult, sing a love song, call names, bewitch); Yaw.(Hos) *-kilbikilbira-* (sing someone, seek a woman's affections); Yaw.(Hos) kilp + (talk sideways); Nyik.(S) *-kalbira-* (I); Nyik.(N&W) *-galbir-* [*ma-gal%beran*] (sing, to hum incantations).

***-makura-** 'make';

Ba.(A) *-mugar-*(inyji); Ba.(M) *-moonga-*; Nyl.(Bis) *-mugur-* [*mamogoran*] (to make, build, load); Nyl.(Bis) *-mugur-* [*mamorgoran*];
Yaw.(Hos) *-makura-* (make s.thing, lay eggs); Yaw.(Hos) *-makumakura-* (produce in quantity); Warr.(K)-wulal(m)-.

D.5 *-nya- 'catch'

***-kardinya-** 'obstruct';

Ba.(A) *-gardinyi-* (block someone's way);
Nyik.(S) *-kardanya-* (II).

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[2]compare *-banggi-*

D.6 Other

***-bangganda-** 'grow up' (compare finish);
Ba.(N&W) *-banggand-* [*ma-baŋgan-da*]; Jb.(N&W) *-banggand-* [*ma-baŋgan-da*]; Yaw.(N&W) *-bangganda-* [*ma-baŋgan-da*].

***-bukarri-** 'dream';
Nyl.(Bis) *-bukarr-* [*mabugaran*] (to compose a song); Nyl.(N&W) *-bukarri-* [*ma-bu:.garen*] (tr); Nyl.(N&W) *-bukarri-* bukarr [*mabugaran boger*] (to rave); Nim.(N&W) *-bukarri-* [*ma-bu:.garen*] (tr); Jb.(N&W) *-bukarri-* [*ma-bu:.garen*] (tr);
pEN ***-bukarri-**; Nyang. for *-barri-* cognates in EN see under 'think about'; Yaw.(N&W) *-bukarri-* [*ma-bu:.garen*] (tr); Yaw.(Hos) *-bugarri-*; Yaw.(Hos) *-bukabukarri-* (dream about, think about); Nyik.(N&W) *-bukarri-* [*ma-bu:.garen*] (tr); Nyik.(S) *-bugarri-* (I)

***-bunda(rra)-** 'bite';
pWN ***-bundarra-**; Jaw.(B) innamundarra; Ba.(M) *-undarr-*; Ba.(A) *-bundarra-* ~ *-ondarra-*; Ba.(A) *-bundundarra-* (chew); Nyl.(N&W) *-bundarra-* [*ma-bondaren*]; Nim.(N&W) *-bundarra-* [*ma-bondaren*];
pEN ***-bunda-**; Yaw.(N&W) *-bunda-* [*ma-bondan*]; Yaw.(Hos) *-burnda-*; *-burna-* (bite, attack, tease, taste); Jk.(Hos) *-burnda-*; inaburndan; Walm.(L) *-mungga-* ~ *-muga-*.

***-jabala-** 'ask (for something)' (compare jabal 'story');
pWN ***-julu-ng-; *-jabala-**; Ba.(A) *-jangarrga-*; Ba.(N&W) *-jangarrga-* [*m-aŋargan*]; Ba.(A) *-julu-ng-* (collect.); Nyl.(Bis) *-ju-* [*ma'djan*] (present nan'deo (this is probably just '*-ju-*' say)); Nyl.(Bis) *-jabala-* [*madjebalan*]; Nyl.(Bis) *-julung-* [*madjolongan*] (to answer, recite, relate a story.); Nyl.(Bis) *-julung-* [*madi̯olongan*]; Nyl.(N&W) *-jangarrg-* [*ma-djaŋargan*] (lang guessed - under 'compare'); Nyl.(N&W) *-jibal-* [*ma-djebalan*]; Nim.(N&W) *-jibal-* [*ma-djebalan*]; Jb.(N&W) *-jibal-* [*ma-djebalan*];
Yaw.(Hos) *-dyabalu-* (ask); Yaw.(N&W) *-jubala-* [*ma-djobalan*]; Yaw.(N&W) *-jabala-* [*ma-djabalon*]; Nyik.(S) *-juba-* (I); Nyik.(N&W) *-jub-* [*na-djoban*]; Nyik.(S) ngajag; Warr.(McG) ngayak;
Kara. japirrmanpa- (ask for something).

***-jalku-** 'fall';
Jaw.(B) nunjalgoo; Jaw.(K) injalkunkal [*-jalgu-*]; Ba.(A) *-jalgu-*; Ba.(N&W) *-jalku-* [*m-algon*]; Nyl.(Bis) *-jalk-* [*madjalkan*]; Nyl.(N&W)-jalgV- [*ma-djalgen*]; Nim.(N&W) *-jalgi-* [*ma-djalgen*]; Jb.(K) injalg (he fell); Jb.(N&W)-jalgV- [*ma-djalgen*];
Yaw.(Hos) *-jalku-* (I) (know s.one down); Yaw.(Hos) *-jalkujalku-* (fall down repeatedly); Yaw.(N&W) *-jalgu-* [*ma-djalgon*]; Jk.(Hos) *-jalgu-*; Nyik.(S) *-jalki-* (II); Nyik.(N&W)-jalgV- [*ma-djalgen*]; Warr.(McG) *-jalu-*; Warr.(K) jalwiny; *-jalu-* (note that pv = root here.).

***-jarrada-** 'stretch';
Ba.(A)-jarrad(a)- (stretch one's legs); Ba.(A) *-jarrarrada-inyji-*; Nyl.(Bis) *-jarrad-* [*midierada*] (you lift);
Yaw.(N&W) *-jarrada-* [*ma-djaradan*] (to stretch, to rack); Yaw.(Hos) *-mijarrada-*; Nyik.(N&W) *-jarrada-* [*ma-djaradan*] (to stretch, to rack).

***-jinbin-** 'count, talk about someone';
pWN ***-jinbin-**; Ba.(A) *-jinbinbin-* (think of something/someone); Nyl.(Bis) *-jimbjimb-* [*madjemdjemban*] (odd.); Nyl.(Bis) *-jumbar-* [*madjombaran*];
pEN ***-jinbi-**; Yaw.(Hos) *-jinbi-* (confer, discuss); Nyik.(S) *-jinbi-* (I) (talk about someone, count).

***-jununggu-** ? 'slough skin';
Ba.(N&W) *-jununggu-* [*ma-ionoŋgon*]; Nyl.(N&W) *-bunung-* [*mabonoŋan*] (typo?); Nim.(N&W) *-jununggu-* [*ma-djonoŋgon*]; Jb.(N&W) *-junung-* [*ma-djonoŋgan*];
Yaw.(N&W) *-jununggu-* [*ma-djonoŋgon*]; Nyik.(N&W) *-judu-* [*ma-djoden*] (compare ma-djaden); Nyik.(N&W) *-jununggu-* [*ma-djonoŋgon*].

***-kalada-** 'get bogged, to sink';
Ba.(M) *-galarda-*; Nim.(N&W) *-galad-* [*ma-galadan*]; Nim.(N&W) *-gadal-* [*ma-gadalan*] (probably metathesis typing mistake in original db.);
Nyik.(N&W) *-gadala-* [*ma-gadalan*] (probably metathesis typing mistake in original db.).

***-kalb-**(arr-)? 'drop';
Nyl.(Bis) *-galab-* [*magalaban*] (be born (commonly = 'drop' in NN langs, c.f. Bardi *-jalgu-*)); Nyl.(Bis) *-galbarr-* [*magalbaran*];
pEN ***-galb-X**; Yaw.(Hos) *-kalbanya-* (I) (drop, lose, as intrans means 'get lost'); Nyik.(S) *-galbarri-* (II).

***-kalida-** ? 'break';
Nyl.(N&W) *-gagul-* [*ma-gagolen*] (trans and intrans); Nyl.(Bis) *-galid-* [*magaletan karam*] (to break easily); Jb.(N&W) *-galid-* [*ma-galedan*];
Yaw.(N&W) *-galada-* [*ma-galaden*].

***-kalwala-** ? 'restless, to sleep restlessly, badly';
Nyl.(N&W) *-galwal-* ng [*ma-galwalan-aŋ*]; Nyl.(Bis) *-galwal-* [*magalwala*] (se retourner, sans dormir [*to toss and turn without sleeping*]);
Yaw.(N&W) *-galwala-* [*ma-galwalen*].

***-kuda-**X 'lose something/get lost';
Ba.(A) *-goodala-* ~ *-odolo-* (get lost, spin hair); Nyl.(Bis) *-gudu-* [*migodowidian*] (you lose your way); Nyl.(Bis) *-gudal-* [*migodel*] (disparaitre, etre insensible [*to disappear, to be insensitive*]); Nyl.(Bis) *-guduwij-* [*magodowidi̯an*] (to mislead, to be mistaken);
Nyik.(S) *-kuda-* (I) (obscure tracks); Nyik.(S) *-kudali-* (grind).

***-kurd-X** 'change something';
Ba.(A) *-gordom-*;
Yaw.(Hos) *-kurdidyi-* (I); Yaw.(Hos) *-kurdinyji-* (change direction);
Nyang. looks like the preservation of different final verbs.

***-malki-** 'hide';
Ba.(A) malygin (secretly); Nyl.(Bis) *-malg-* [*mamalkan*] (hide, conceal); Nyl.(Bis) *-malg-* [*ma'malkan le'en dja'na*] (something like 'hide my heart'?) (be absent; also 'the last'); Nyl.(Bis) *-gad-* [*magetan*] (hide oneself) (should probably go under 'bury'); Yaw.(Hos) *-barnda-*; Nyik.(S) ngugu (hide in mouth); Nyik.(S) *-madali-* (I); Nyik.(S) jidu (hide behind); Nyik.(S) *-malki-* (II) (secrete oneself, keep a secret); Nyik.(S) *-maramara-* (II) (shelter behind one another); Walm.(L) *-ga-*;

***(-)midyala(-)** 'get up';
Ba.(A) miyala *-ni-* (be awake); Ba.(M) *-miyala-* (check on);
pEN ***-mijala-***; Yaw.(Hos) *-midyala-* (also means 'hatch'; also as preverb); Nyik.(S) *-mijala-* (I) (shake, winnow).

-minyjala-** 'wait for'; pEN ***-minyjala-, *-ngulika-;
Ba.(A) *-minjala-*; Ba.(M) *-linyj-*;
pEN ***-ngulika-***; Yaw.(Hos) *-ngurlika-*; Yaw.(Hos) bil +; Nyik.(S) *-ngulika-*; Warr.(McG) *-minyjala-* (probably occurs with preverbs); Walm.(L) *-minjala-* ~ *-minyjala-*;
Ngar. minjala.

***-mul-X** 'lend';
Ba.(A) *-moolboo-*;
Nyik.(S) *-mularra-* (I).

***-mungka-X** 'wait for someone';
Ba.(A) *-moonggala-*;
Nyik.(S) *-mungka-* (take person, escort).

Appendix E

Reconstructions of Preverbs

E.1 Reconstructed as Proto-Nyulnyulan preverbs

***badabada** '?'
Ba.(A) *badabada -ar-*; flutter
Nyik.(S) *badabada*; drunkenly

***baj +** 'cut out (bark), hew, plane timber'
Nyl.(N&W) *bady +*; hewing, planing timber; Nim.(N&W) *bady +*; Jb.(N&W) *bady +*
Yaw.(Hos) *bady +*; Kara.(N&W) *bady +*

***balybaly+** 'flatten'
Ba.(A) *ilil -ma-*; Nyl.(McG) *balybaly -m-*
Yaw.(Hos) *balybaly +*

***barrbarr+** 'shine, reflect'
Ba.(A) *barrbarr*; shaking
Nyik.(S) *barr barr*

***barr+ (?)** 'hang up, open eyes'
Ba.(A) *barr -joo-*; stand
Nyik.(S) *barr*

***biili** 'angry'
Ba.(A) *bili -ju-*; Nyl.(Bis) *bel*; Jb.(N&W) *beledj; bële-ëd*;
Yaw.(Hos) *bili* Nyik.(N&W) *beli*

***bilbil+** 'flashing'
Ba.(M) *bilbil -(i)nya-*; Ba.(M) *bilbil -jala-*
Nyik.(S) *bil bil*; shiver, convulse

***boorrb+** 'dance'
Ba.(A) *boorrboorr -joo-*
Nyik.(S) *boorrb*

***boorrm+** 'slit open guts of animal'
Ba.(A) *boorrm -(i)nya- /-jooloo(ng)-*
Nyik.(S) *boorrma -andi-*

***budbud** 'twitch'
Nyl.(McG) *budbud -ju-*
Yaw.(Hos) *burdburdkadya +*

***burrb** 'dance'
Ba.(A) *boorrboorr -joo-*; Nyl.(McG) *burrb(burrb) -ju-*; Nyl.(McG) *burrbuk -kal-*;
Yaw.(Hos) *burrp, ?bulp*; Nyik.(S) *boorrb+*

***burrulburrul+** 'boil'
Ba.(A) *boorroolboorrool -ar-*; Ba.(A) *boorroolboorrool -ma-*
Nyik.(S) *boorrool boorrool*

***buu +** 'blow'
Ba.(A) *boo -ma-*; Ba.(A) *woow - ø- v*;
Nyl.(McG) *buu -ju-*
Yaw.(Hos) *buu +*; Nyik. *buw*

***daab ?** 'catch'
Ba.(A) *daab -inya-*; go ashore
Yaw.(Hos) *dap +*; Nyik.(S) *dab -andi-*

***daarl+ (?)** 'blow up'
Ba. *daarl -joo-*; snap fingers
Yaw.(Hos) *rdaarl +*

***dajirr+** 'kick'
Ba.(A) *dajarr -ma-*; clear away the top layer of sand

Nyik.(S) *dajirr*; Walm.(L) *dajirr*

***dily+** 'sparkling, flashing of waves, fire-light.'
Ba.(M) *dilydily -gala-*
Nyik.(S) *dily*

***doog+** 'peel of (skin), exfoliate'
Ba.(A) *doog -(i)nya-*
Nyik.(S) *dook*

***dool** '?'
Ba.(A) *dool*
Nyik.(S) *dooldool+*; split

***doorrb(a)+ (?)** 'smoke out something'
Ba.(A) *doorrba -joo-*; have good luck
Nyik.(S) *doorrb*

***duk +** 'wipe dry'
Ba.(A) *doog -(i)nya-*
Nyik.(S) *duk -andi-*; cut off bark

***dumbarr** 'fly'
Ba.(M) *dumbarr -ju-*; Ba.(M) *dumbarr -(i)nya-*; Nyl.(McG) *dumbar -ju-*
Yaw.(Hos) *dumbarr +*; flap (wings); fly away

***dumbul+** 'clap'
Ba.(A) *dumbul -(i)nya-*; make a slapping sound on thighs; Ba.(A) *dumbuldumbul -ju-*; hit water with slapping sounds; Ba.(A) *dumbuldumbul -ma-*; make sound of turtles hitting the water in love play; Nyl.(McG) *dumburl(dumburl) -ju-*
Yaw.(Hos) *dumbul +*; clap (hands)

***gar(a)+** 'erode deeply'
Ba.(A) *gara -(i)nya- /gor+*; dig up (esp. water)
Nyik.(S) *kar -ka-*

***iiga+** 'sick (be)'
Jaw.(B) *eeger*; Ba.(A) *iiga*; noun 'sickness'; Nyl.(K) *iig; yubu(v)l*
Nyik.(S) *ika*

***iilyi(+)** 'flowing, running'
Ba.(A) *ilyi*; mangrove stick; Ba.(A) *iilyi*; decorative wood shavings
Nyik.(S) *ily*

***jad +** 'cut (up)'
Ba.(M) *jardajard - ø-*; to keep in one place; Nyl.(McG) *jad -w-*; cut
Yaw.(Hos) *dyad +*; cut down a tree

***jakurd +** 'return'
pWN **jagurd -ju-*
Ba.(A) *jagurd -ju-*; Nyl.(McG) *jakud -ju-*
pEN ***nguy**
Yaw.(Hos) *dyakurd +*; drive animals; Nyik.(S) *nguy*; Warr.(McG) *ngoi, nguwi*; Warr.(McG) *nguy*

***jalan-** 'walk around without any particular purpose'
Ba.(A) *jamala arr -joo-*; Ba.(Bow) *jalanda*; companion
Yaw.(Hos) *dyalan(dyalan) +*; take a walk

***jalka(+)** 'bent'
Ba.(A) *jalgoordan*; concealed
Yaw.(Hos) *dyalka+*

***jalngka +** 'cure'
Ba.(A) *jalngk*; medicine
Yaw.(Hos) *dyanka + baru /+mba*; Nyik.(S) *jalngka*

***jama (?)** 'bring large quantity'
Ba.(A) *jama*; particle 'also'
Nyik.(S) *jama jama*

***jamakal (+)** 'lie in wait for'
Ba.(A) *jamal*; walk around
Nyik.(S) *jamakal*

***janngal+** 'cut across the tide'
Ba.(A) *janngal -ar-*; (ilma word)
Yaw.(Hos) *dyangal*; intercept;

***jarrbard -??-** 'lift up'
pWN **jarrbard -ka-*
Ba.(N&W) *jarrbard -ma-*; Ba.(M) *jarrbad -ga-*; also adverb; Nyl.(McG) *jarrbard -k-*

Nyik.(S) *jarrbard -ka-*; lift; Warr.(McG) *jarrbard nganany*; lift 'i gave'

***jid+** 'stop
Nyl.(McG) *jid -ju-*; come to a stand
Nyik.(S) *jid*

***jiidangga +** 'carry on head'
Ba.(A) *jiidag -ma- (tr)*; carry on hig;
Nyik.(S) *jidangka +*

***jiin** 'point at'
Ba.(Bow) *jiin -ar-*
Yaw.(Hos) *dyiin +*; point at, pout at;
Nyik.(N&W) *ji(n) -wa- [djë ma-wan]*

***jikan+** 'shake hand'
Ba.(A) *jigan - ø-*; take in courtship
Yaw.(Hos) *dyiikan*

***jikir+** 'peep, look'
Ba.(A) *jigir -joo-*; Nyl.(McG) *jikir -ju-*
Nyik.(S) *jikir*

***jil+** 'drip'
Ba.(M) *jilyjily -ar-*; dripping of water
Nyik.(S) *jil*; dripping; Nyik.(S) *jili*; pour, spill; cf 'lick'

***jingkiR-** 'mock'
Ba.(A) *jinggariidi*; funny person
Nyik.(S) *jingkirr +*; Nyik.(S) *jingkidi*

***jirrmu** 'sing'
Ba.(A) *jirrm -ju-*; Nyl.(McG) *jirrm -ju-*;
Nyl.(McG) *jirrmjirrm -ju-*
Yaw.(Hos) *jirrmu +*; Nyik.(S) *jirrim jirrim*; click boomerangs

***jirr+** 'stand'
Ba.(A) *jirrjirr -joo-*; Ba.(M) *jirrjirr -(i)nya-*;
Ba.(M) *jirrjirr -ma-*; stand up
Yaw.(Hos) *dyirr +*; stretch body

***juburr /l+** 'splash (of fish)
Ba.(M) *joobool -joo-*; Ba.(M) *joobooljoobool -joo-*
Nyik.(S) *jooboorr jooboorr*

***jub(u)+** 'cut'
Ba. *jooboo -(i)nya-*
Nyik.(S) *jub -andi-*; cut off Warr.(McG) *jub -andi-*; intrans. (see Warrwa grammar p 32)

***juny+** 'suck breast (baby)'
Ba.(M) *joony -(i)nya-*
Yaw.(Hos) *dyunydyuny +*

***jurnk +** 'run'
pWN **jurnk -nya-*
Ba.(A) *jurnk -jarrala-*; take off with speed;
Ba.(A) *joornk -inya-*; run away; Nyl.(McG) *junk -jid-*; Nyl.(McG) *junk -nyi-*; run;
Nyl.(McG) *junk -ju-*; Nyl.(K) *jurng*; Jb.(K) *jurnk; jurnk wany*
Jk.(Hos) *jun.gu*; Yaw.(Hos) *dyunku -dyu-*
Yaw.(Hos) *dyunku +mirdibi*; Yaw.(N&W) *-jurnk- [ma-j.orng.gan]*; c.f. *ma-djor ŋgoren, djurubu ŋan*; especially 'to run away'

***jurr +** 'drip (of water)'
Ba.(A) *joorr -ar-*
Yaw.(Hos) *dyurrkadya*;

***jurrb -ju-** 'jump'
Ba.(A) *jurrb -ju-*; Ba.(A) *jurrbujurrb -ju-*; skip, jump around; Nyl.(McG) *jurrb -ju-*; to rise, to jump
Yaw.(Hos) *dyurrdyurr +*
Yaw.(Hos) *jurrp +*; Nyik.(S) *joorrb -i-*; jump down, wade through; Warr.(K) *jurrb*

***jurr+** 'express, squeeze'
Ba.(A) *joorr -ar-*; drip
Nyik.(S) *joorr*

***kadkad+** 'tremble'
Nyl.(McG) *kadkad -ju-*
Yaw.(Hos) *katkat(kat) +*

***kaliny?** 'dodge'
Nyl.(McG) *kaliny -ju-*
Yaw.(Hos) *kaliny +*; Nyik.(S) *galiny +*

***kalwara** 'exposed (become)'
Ba.(M) *galara -joo-*; make visible;
Nyl.(McG) *kalwar -ju-*; Nyl.(McG) *kalwar*

-m-; Nyl.(McG) *kalwar -n-*; Yaw.(Hos) *kalwara +*; appear

***karrja** 'swear at'
Nyl.(McG) *karrj -ju-*; Nyl.(McG) *karrjikarrji -w-*; c.f. karrji 'sharp'
Yaw.(Hos) *karrdya +*; accuse

***karrkuji (+)** 'completely'
Ba.(A) *garrgooy*
Nyik.(S) *karrkooji+*; kill with single accurate shot

***kawoo +** 'call out'
Ba.(Bow) *gawoo -joo-*; Nyl.(McG) *kawu -ju-*; Nyl.(McG) *kawukawu -ju-*
Yaw.(Hos) *kaw +*; call out
Yaw.(Hos) *qaw -ma-*; assemble people

***kiiny+** 'choke s.o.'
McGregor's reconstruction:**kiny*;
McGregor's reconstruction:*choke, strangle*; Bd & Nn (also 'shut'), JJ, Nm; Yw, Nk, Ww'
Ba.(M) *giiny - ø- /-boo-*; strangle; Ba.(A) *giiny -ma-*; shut
Yaw.(Hos) *kinykiny +*; Nyik.(S) *kiny+*

***kil +** 'cut, shave'
Ba.(M) *gil - ø-*; Ba.(L) *gilgil -ar- /- ø-?*
Yaw.(Hos) *kiil+; kil+ -dyu-*
Yaw.(Hos) *kilkil +*; Nyik.(S) *gil +*

***kinyj+** 'clenched (become)'
Nyl.(McG) *kinyj -ju-*; Nyl.(McG) *kinyj -w-*; clench, close briefly
Yaw.(Hos) *kinykiny +*; choke it

***kirdi+** 'tie up
Nyl.(McG) *kirdkird -w-*; also 'attach';
Nyl.(McG) *kirdkird -nyu-*; strangle
Yaw.(Hos) *kirdirdi +*; Nyik.(S) *kid kid*;
Walm.(L) *kirdkird*

***kirrij(+)** 'look under, uncover, reveal'
Ba.(A) *girrij*; n. screen for dancers
Nyik.(S) *kirrij*

***kirrkirr** 'go around (to avoid jikal)
Ba.(M) *girrgirr*; first three nights of the arnkooy ceremony
Nyik.(S) *kirr kirr*

***kujuk +** 'swallow'
pWN **kujuk -w-*
Ba.(A) *gujug - ø-*; Nyl.(McG) *kujuk -w-*
Yaw.(Hos) *kudyuk*; Nyik.(S) *gujug*
Warr.(K) *gujug*; Walm.(L) *kujuk*

***kularl+** 'weak'
Ba.(A) *goolarl -joo-*
Yaw.(Hos) *kurlal +*; slack

***kulin (+)** 'sleep'
Ba.(A) *goolin*
Yaw.(Hos) *kulin +ni*; Nyik.(S) *koolin*;
Walm.(L) *kulin ingan*; lie down.

***kuly+** 'birth, giving
Ba.(A) *gooly -ø-*; squeeze
Yaw.(Hos) *kuly +*; Nyik.(S) *kooly*; excrete: impregnate, give birth,

***kur +** 'embrace'
Ba.(A) *gor -(i)nya-*; scoop up. May not be cognate; Nyl.(McG) *kur -w-*; Nyl.(McG) *kur -m-*; Nyl.(McG) *kurkur -m-*; console;
Nyl.(McG) *kur -banyj-*; embrace one another
Yaw.(Hos) *ku(u)r +*; also noun 'embracing'

***kurd +** 'bend down, die?'
Ba.(A) *goord -joo-*; bend down; Ba.(M) *gudgud -ju-*; crouch; Ba.(A) *gurd -ju-*;
Nyl.(McG) *kud -ju-*; (also) hide; Nyl.(McG) *kudkud -ju-*
pEN ***kurd+**; Nyik.(S) *gurd +*; Warr. *gurd +*;

***kurndu -ka-** 'carry on shoulders';
Ba.(M) *goondoo -ma-*; Nyl.(McG) *kurnd -k-*
Yaw.(Hos) *kundu +ka*

***kurrb+** 'clap and sing, make music'
Ba.(A) *goorrb - ø-*; pinch
Yaw.(Hos) *kurrp +*; clap with cupped palms; Nyik.(S) *koorrb2*

***kurr+ (?)** 'gather together'
Ba.(M) *gorr -joo-*; Ba.(M) *gorrgorr -joo-*; Ba.(M) *gorr -boo-*
Yaw.(Hos) *kurr +*; gather it up

***laga-rr /l** 'climb up'
pWN **lagal*
Jaw.(B) *lugal*; Ba.(A) *lagal -ganyi-*; Nyl.(McG) *lakal -nyu-*; Nyl.(McG) *lakal -ju-*; Nyl.(McG) *lakalkaj -n-*; Jb.(K) *lagal mijid*
pEN ***lagarr, kalbu**
Yaw.(Hos) *galbu +*
Yaw.(Hos) *lagarr +*; climb, get on; Yaw.(K) *galbu irndirarn*; Jk.(Hos) *kalbu*; c.f. 'sky' (kalbu, n); Nyik.(S) *lakarr*; climb, rise, ride a horse; Warr.(K) *lagarr*;

***lar(a)+** 'tear'
Ba.(M) *lara -joo-*
Nyik.(S) *lar*; take off skin

***larrak(+)** 'dodge'
Ba.(M) *larrag*; sideways
Nyik.(S) *larra (also larra larra)1*; Nyik.(S) *larra*

***liibi+** 'remember'
Ba.(A) *liibi -joo-*; hear about something
Yaw.(Hos) *lip +*

***lilili+** 'dance sideways
Ba.(M) *lilili -joo-*; protrude
Nyik.(S) *lilili*

***liyan -ka-** 'grudge him'
Ba.(A) *liyan -ga-*
Yaw.(Hos) *liyan +ka*

***liyan(+)** 'moody (be –)
Ba.(A) *liyan -ga-*; carry a grudge
Yaw.(Hos) *liyan +*

***lool+** '?'
Ba.(A) *loolal -jiidi-*; change; Ba.(A) *lool -gardi-*; enter
Nyik.(S) *lool+*; enter

***loorrb+** 'pound'
Ba.(A) *loorrb+, loorrbloorrb -ga-*; oppose, argue
Nyik.(S) *loorrb*

***loorr(oo)+** 'flowing, rushing'
Ba.(A) *loorrooloorroo*; shaking of body in dancing
Nyik.(S) *loorr1*

***lVr** 'peel'
Ba.(A) *lolor -jiidi-*; Ba.(A) *lor -(i)nya-*; Yaw.(Hos) *laar +*; peel off (skin); Nyik.(S) *lar*

***mardaly -ka-** 'make noise
Ba.(A) *mardaly -ga-*
Yaw.(Hos) *mardaly +ka*

***mardamarda (?)** '?
Ba.(A) *mardmarda*; adv, under there
Yaw.(Hos) *mardamarda +*; can't walk

***mijala (-ni-)** 'sit (be sitting)'
Jaw.(K) *miyala*; Ba.(M) *miyal, -land-*; Ba.(A) *miyala -ni-*; be awake; Nyl.(McG) *mijal -n-*; be sitting; Nyl.(McG) *mijal -ng-*; be sitting; Nyl.(McG) *mijal -nyu-*; sit; Ngum. *mijala*; Jb.(K) *mijal*
Yaw.(K) *mijala*
Yaw.(Hos) *-mijala-*; get up
Yaw.(Hos) *midyala +*
Yaw.(Hos) *midyala +ni*; Yaw.(K) *mijala ingarn*; Jk.(HKL) *mijal*; Nyik. *mijala; -ni-, -nga-*; Warr.(K) *mijala*; Walm.(L) *mijala nga:ngarn*;

***mirdi+** 'kneel down'
Nyl.(McG) *mirdimird -ju-*
Yaw.(Hos) *mirdimirdi +*

***moorrooly(i)(+)** 'dislocate a limb'
Ba.(A) *moorroolyi*; emu feather used for adornment
Nyik.(S) *moorrooly*

***mulgula** 'work'
Ba.(A) *moorrgoolon -gal-*; Yaw.(Hos) *mulkula +'*;

***mungurr/l+** 'jealous'
Ba.(A) *moongoorr -jala-*
Yaw.(Hos) *mungulmungulkadya +*; growl around

***muundu +** 'cover, bury'
Ba.(A) *muundoo -ma-*; sing someone
Nyik.(S) *moondoo*; Walm.(L) *mundu*

***(ngaa)+** 'open mouth'
Ba.(A) *ngaa*
Nyik.(S) *nga*

***ngalar+** 'look back'
Ba.(A) *ngalar -(i)nya-*; open eyes
Nyik.(S) *ngalar+*; Walm.(L) *ngalara walyi*; turn around, turn over

***ngir- +** 'breath'
Nyl.(McG) *ngir -ju-*; Nyl.(McG) *ngirngir -ju-*; Nyl.(McG) *ngir -ngul-*;
Yaw.(Hos) *ngirir*; Nyik.(S) *ngir*; breathe deeply

***ngoolarra+** '??'
Ba.(A) *ngoolarr -ma-*; cheat, deceive
Nyik.(S) *ngoolarra+*; snore

***ngoon (+) (?)** 'intend to punish /revenge (by killing)'
Ba.(A) *ngoon*; adj. docile
Nyik.(S) *ngoon +*

***-ngula-** 'throw'
pWN **-ngulu-*; Jaw.(B) *nunagoola*
Ba.(A) *-ngulu-*; Nyul.(HKL) *-ngurl-*; Jb.(K) *-ngulu-*; Jb.(HKL) *warnungulu*
Yaw.(Hos) *-ngula- (I)*; Yaw.(K) *inanguran; -ngura-*; Warr.(K) *-wula-*;

***niim(i) -?-** 'blink'
Nyl.(McG) *nyim -w-*; Nyl.(McG) *nyim -ju-*; Nyl.(McG) *nyimnyim -ju-*
Yaw.(Hos) *nimkadya +*

***nunyji +** 'alive (be)'
TAG vowel harmony in Nyulnyul'
Ba.(M) *noonyjoo -ma- (tr)*; Ba.(M) *noonyji -joo-*; Nyul.(HKL) *ninyji*
Walm.(L) *nunjeia*

***n(y)im+ -ma-** 'shut eye'
Nyl.(McG) *nyim -m-*
Nyik.(S) *nim -ma-*;

***nyunyi** 'blow nose'
Ba.(M) *nyoonyi -joo-*; Ba.(M) *nyoonyi -ar-*
Nyik.(S) *nyoony +*

***ramu +** 'carve'
Ba.(M) *ramoo -gala-* (tr)
Nyik.(S) *ramu*

***ranyi** 'wipe
Ba.(Bow) *ranyi(ranyi) -joo- /-nya-*
Nyik.(S) *rany*

***rarrb +** 'clear'
Ba.(A) *rarrb*; Yaw.(Hos) *larrp +*; Nyik.(S) *rarrb*; Warr.(McG) *raarrb*

***rarrb+** 'comb'
Nyl.(McG) *rarrb -w-*; chafe
Yaw.(Hos) *rarrp +*

***rinyi+** 'get someone to reveal or admit to something'
Ba.(A) *rinya -boo- /-ø- /-joo-*; Ba.(A) *-rinyi-*; think
Nyik.(S) *rinyi rinyi+*; get someone to reveal or admit to something;

***rud(u)+** 'dance for balkay'
Ba.(A) *roodoo -joo-*; dance for Oolooloong
Yaw.(Hos) *rudrud +*; Nyik.(S) *rood rood*

***ruj+** 'free, let go'
Ba.(A) *rooj -ga-*; pass
Nyik.(S) *rooj*

***ruk+** 'pull undone' pWN ***ruk- -w-**
Ba.(A) *rugud -ø-*; take off, peel off; Ba.(M) *roogooroog -jiidi-*; be worn out; Nyl.(McG) *ruk -w-*
Nyik.(S) *rook -mi-*; catch

***rung+** 'suck'
Ba.(A) *roong -bi- /-(i)nya- /-ju-*
Nyik.(S) *roong -andi-*; suck out blood.;
Walm.(L) *rung+*; ache

***rurrb+** 'beat someone at doing something'
Ba.(M) *roorrb -bi-*
Nyik.(S) *roorrb+*; pay back

***ukul+** 'rasp it'
Ba.(A) *uul -(i)nya-*; pull out
Yaw.(Hos) *ukul +ma*

***waanak +** 'difficulty (be in), confuse'
Ba.(Bow) *aanag*; don't know where you're going; Nyl.(McG) *warnakwarnak -m-*; confuse someone; Nyl.(McG) *wanak -ju-*; Yaw.(Hos) *wanak +dyu*; be at a loss (Vmental) Yaw.(Hos) *wanakkadya +*; Nyik.(S) *wanag*; Warr.(McG) *warnag jan*;

***wabarr+** '?'
Ba.(A) *abarr+*; confused
Nyik.(S) *wabarr* sorry for distant person

***wanggurr** 'cry, tears'
Ba.(A) *anggurr*; tears (n); Ba.(A) *anggoorr(u) -mooroo-*; Ba.(A) *anggoorrgoon -ni-*; be in tears; Nyl.(N&W) *anggor [anggurr]*; loan from Bardi; Jb.(K) *wanggarr* Jk.(Hos) *wangkurr*
Yaw.(Hos) *wanggurrkadya+*; also yelping of dogs Yaw.(Hos) *wangkurrkadya +ni*; Yaw.(Hos) *wanggurr -ju-*; Yaw.(K) *wanggul(gaja) ingarn*; he cried.; Nyik.(S) *wanggurr*; Warr.(McG) *wanggurr ingan*; Warr.(K) *wangorr, waanggurr*

***warnkurr** 'put shoulders [?]'
Ba.(A) *arnkoorr -ma-*; gather
Nyik.(S) *warnkoorr*

***warrga- +** 'hurry'
Ba.(A) *arrgaly -gala-*; fall over
Nyik.(S) *warrkaj*

***wiid +** 'extinguish'
Ba.(M) *wiidi -joo-* (tr)
Yaw.(Hos) *wit +*

***wiiny-** 'wrinkled'
Ba.(M) *wiinyma -joo-*
Yaw.(Hos) *winykuwinyku*

***wirr +** 'scrape'
Ba.(M) *wirr -joo-* (tr)
Yaw.(Hos) *wirr +*

***wirr+** 'frightened (become, get)'
Ba.(A) *wirr -jarrmi-*; jump up
Nyik.(S) *wirr*; Warr.(McG) *wirr -ngara*

***wungu(r)l+** '?'
Ba.(A) *oongool -ga-*; be pregnant
Nyik.(S) *wungurl+*; poke fun at

***yalku** 'stand (be standing)'
Nyl.(McG) *yalk -n-*; Nyl.(McG) *yalk -ng-*; Jb.(HKL) *yalk*; Jb.(K) *yalg*; Yaw.(K) *yalgu ingarn*
Yaw.(Hos) *yalku +ni*; Jk.(HKL) *yalk ~ jalk*; Nyik.(S) *yalgu*; Warr.(K) *yalu; jid*; Warr.(K) *yalu jarran*; he is standing up;

***yardab -ju-** 'crawl'
Ba.(A) *yardab -ju-*; loan into Bardi, c.f. initial glide; Nyl.(McG) *yardab -ju-*
Yaw.(Hos) *yardap +*; also stalk; Nyik.(S) *yadab*

***yarlawarra +** 'lie on one's back'
Ba.(A) *arlarr -ni-*
Yaw.(Hos) *yalawarra +'*;

***yarr +** 'pull' pWN *** yarr -ka-**
Ba.(A) *yarr -ga-*; Ba.(A) *yawoorr -ga-*; Nyl.(McG) *yarr -k-*;
Yaw.(Hos) *yaarr +*; Warr.(McG) *yarr*

***yiinbal** 'bewitch'
Ba.(A) *iinbal*; type of song (N)
Yaw.(Hos) *yimbal +*

***yila-** 'lie on one's side'
Ba.(A) *ilogo -ni-*
Yaw.(Hos) *yirla +*

***(yurr+)** 'sink, drown'
Ba.(A) *yoorr -ma-*; come down. Loan probably.
Nyik.(S) *yoorr*

E.2 Reconstructed as Proto-Eastern Nyulnyulan preverbs

***bab(u)** 'forget'; Jk. *bab(u)*
Nyik.(S) *bab*

***balku+** 'roll, fold, plait; leash'
Yaw.(Hos) *balku +*; Nyik.(S) *balkoo*

***bard** 'explode'
Yaw.(Hos) *bard +dyu*; Nyik.(S) *bard*

***bijbij+** 'track him'
Yaw.(Hos) *bidybidy +*; Nyik.(S) *bij bij*;

***burd+** 'get up (from seat)'
Yaw.(Hos) *burd +*; Nyik.(S) *bood -ka-*

***dalyurr+** 'slip'
Yaw.(Hos) *dalyurr +*; Nyik.(S) *dalyarr*

***jarna+** 'carry on back'
Yaw.(Hos) *bururda +ka*
Yaw.(Hos) *dyana +ka*; Nyik.(S) *jarna+*

***kab(u) +** 'swim'
Ba.(A) *galuriny -inya-*; Nyl.(K) *duburl*; probably goes with the 'fly' words pEN ***jawu+** Yaw.(Hos) *durrdyawkadya +ni*; Nyik.(K) *jawu*; Warr.(McG) *jawu minjan*; swim you do

***gabu** 'eat'
Yaw.(Hos) *gabu +*
Nyik.(S) *gab +*; Warr.(McG) *gab +*

***kanyjirr** 'watch'
Yaw.(Hos) *kanydyirr +*; Nyik.(S) *kanyjir*

***karnja+** 'push over or aside'
Yaw.(Hos) *karndya +ra*; Nyik.(S) *karnja*

***kawu** 'shout'
Yaw.(Hos) *kaw +*; Walm.(L) *gawu*

***kidarr +** 'pull back'
Yaw.(Hos) *birrpkadya +ni-ngany*; Nyik.(S) *biwirr*; Nyik.(S) *gidarr*; Warr.(McG) *gidarr*

***kung** 'drink'; Nyik.(S) *koong*; Warr.(McG) *gung*

***kurdi+** 'run (away)'; Yaw.(K) *gurdi ngarndin*; he was running along; Nyik.(K) *lurraj; gurdaji; gudiji; luraj; gurrag*; (run away); Nyik.(S) *-jurrali- (II)*; come down; Warr.(McG) *gurdii-wurru*; 'associated with running (of a racehorse)'; Warr.(K) *gurdi*; Walm.(L) *kurdi ngarndin*;

***kurrbuk+** 'vomit'
Yaw.(Hos) *kurrbuk +dyu*; Nyik.(S) *koorrbook*; Walm.(L) *kung*

***laj** 'throw'
Yaw.(Hos) *layity +*; Nyik.(S) *laj*; Walm.(L) *laj ngarndiny*

***nganjak** 'ask for something'

***ngajak** Nyik.(S) *ngajak*; Walm.(L) *ngayak*

***nganja** 'carry between teeth, in mouth'
Yaw.(Hos) *ngandya +ka*; Nyik.(S) *nganja*

***ngarbngarb+** 'shimmer'
Yaw.(Hos) *ngarp +*
Yaw.(Hos) *ngarb ingaran*; emerge from water
Yaw.(Hos) *ngarbngarb+*; or unredup., also 'float'; Nyik.(S) *ngarbngarb*;

***ngidirrk** 'grind teeth'
Yaw.(Hos) *nidirrkadya +*; Nyik.(S) *ngidirrk*

***nila +** 'know'
Yaw.(Hos) *nila +*; Nyik.(S) *nila*

***nim+** 'close eye'
Yaw.(Hos) *nim +*; Nyik.(S) *nim -ma-*; close

***walyiwalyi** 'hang, dangle'
Yaw.(Hos) *walyiwalyi +*; Nyik.(S) *waly waly*

***ward+** 'stuck (be stuck)'
Yaw.(Hos) *ward +ni*
Yaw.(Hos) *ward +dyu*; Nyik.(S) *ward+*

***winbal** 'whistle'
Yaw.(Hos) *winbalkadya*; Nyik.(S) *winbal*

***wirrb(a) +ka** 'oppose him'
Yaw.(Hos) *wirrb +ka*; Nyik.(S) *wirrba +ka*; take away

***yinydya +-rnda-** 'go'
Yaw.(Hos) *yinydya +ndira*; Jk.(Hos) *inyja*; go, walk, carry.; Nyik.(S) *inyja*; Warr.(Cap) *i.nyja; rnda*; Warr.(K) *i.nyja ngindan*; he is walking along.

***yubuda +** 'grab with hands'
Yaw.(Hos) *yuburda +*; Nyik.(S) *yoobooda*;

E.3 Reconstructed as Proto-Western Nyulnyulan preverbs

***baad -w-** 'grab at'
Ba.(A) *baad -ø-*; Nyl.(McG) *bard -w-*

***barni+** 'come apart'
Ba.(M) *barni*; this way; Nyl.(McG) *barnibarn -ju-*

***bar+** 'hit'
Ba.(Bow) *bar -ø-*; hit with boomerang; Ba.(Bow) *barbar -ø-*; knock about, cut, sting, cause sharp shooting pain; Ba.(Bow) *bar -ju-*; pull or jerk; Nyl.(McG) *barbar -banyj-*; Jb.(K) *barbar kangaw*; glossed as cut, with ?;

***biili +** 'fight'
Ba.(A) *biili -joo-*; be angry; Nyl.(McG) *bil -ju-*; Nyl.(McG) *biluk -kal-*

***bilbil+** 'twinkle (of star)'
Ba.(A) *bilbil -(i)nya-*; This also means 'out of breath'.; Ba.(M) *bilbil -jala-*; Nyl.(McG) *bilbil -ju-*

***buljV -ju-** 'tired (be)'
Ba.(A) *bulju -ju-*; Ba.(M) *buljarrja -jalgu-*; to faint, collapse; Nyl.(McG) *burlji -ju-*

***burda(rr)+ -ma-** 'straighten'
Ba.(A) *burdaburda -ma-*; get things ready; Ba.(A) *burdaburda -ju-*; prepare something, put it in order; Nyl.(McG) *budarrbudarr -m-*

***darr -ra-**
Ba.(A) *darr -ar-*; come; Ba. *darr -booloo-*; Nyl.(McG) *daarr -r-, darr -r-*; Nim.(N&W) *darr -ar [darr. m-anan]*; Nyl.(Bis) *dar ma'naran*;

***dibirr +** 'rotate'
Ba.(A) *dibirr -ø-*; swing round, roll one's eyes; Nyl.(McG) *dibirr -ju-*; Nyl.(McG) *dibirr -m-*; turn around (something)

***diidid+'** 'coil up'

***diidid -ju-**
Ba.(A) *didirr -joo-, diidid -joo-*; twist necks; Nyl.(McG) *didid -ju-*

***** 'bend, tangle up'
Ba.(A) *diidid -ma-*; make something curly; Nyl.(McG) *didid -nyu-*; Nyl.(McG) *didid -w-*; untangle

***diimbi -ju-** 'marry'
Ba.(A) *diimbi -ø-*; Ba.(M) *diimbi -ju-*; Nyl.(McG) *dimb -ju-*

***diny +** 'make cracking noises'
Ba.(N&W) *diny -?-*; sound made when joints cracking; Nyl.(McG) *dinydiny -ju-*

***dudud(u) +** 'knock on'
Ba.(M) *dududu -ju-*; make noise of thunder, distant explosion; Nyl.(McG) *dudud -w-*

***dujul +** 'pound'
Ba. *duul -joo-*; Nyl.(McG) *dujuldujul -w-*; Nyl.(McG) *dujul(dujul) -ju-*

***duk+** 'shake'
Ba.(A) *dug -(i)nya-*; wipe dry; Nyl.(McG) *dukduk -ju-*; Nyl.(McG) *dukduk -nya-*; Nyl.(McG) *dukduk -nyu-*; Nyl.(McG) *dukduk -w-*
Yaw.(Hos) *winyiwinyi +*
Yaw.(Hos) *winyiwinyi +ma*

***dulul+** 'pour'
Ba.(A) *doolool -ma-*; Ba.(A) *doolool -jiidi-*; Ba.(L) *doolool -ma-*; Nyl.(McG) *dulul -ju-*; Nyl.(N&W) *jarr -ar- [djar m-aran]*

***duly -w-** 'squeeze'
Ba.(A) *duly -ø-*; open a boil or sore; Nyl.(McG) *duly -w-*

***durr -w-** 'knock over'
Ba.(A) *durr -ø-*; bump into something; Nyl.(McG) *durr -w-*

***duub+ (-ma-)** 'light - set alight'
Ba.(A) *duubu -ma-*; kindle a fire; Ba.(M) *duubu -jiidi-*; kindle a smoke signal; Nyl.(McG) *dub -m-*

***duurb -ju-** 'lucky (get) '
Ba.(A) *durrb -ju-*; have good luck; Nyl.(McG) *durrb -ju-*

***(*jabijab)** 'itch'
Ba.(M) *jabijab*; itching (adj); Nyl.(McG) *jabijab -ju-*

***jamarda (+)** 'approach'
Ba.(M) *jamarda*; coming this way (adv); Nyl.(Bis) *tja'mada ma'man*

***jibard -ma-** 'sneak up on'
Ba.(M) *jibad -ma-*; Nyl.(McG) *jibard -m-*; Nyl.(McG) *jibardjibard -m-*; walk on tiptoes; Nyl.(McG) *jibard -ju-*

***jilarl+** 'weaken'
Ba.(M) *jilarla -ju-*; die (perf); be at the point of death (impf); Nyl.(McG) *jilal -m-*

***jingkar +** 'carry on belt'
Ba.(A) *jinggar -ma-*; belt (n); Nyl.(McG) *jingkar -k-*
Nyik.(S) *jalanda*

***jinijin -ka-** 'mock'
Ba.(A) *jinininganga -ga-*; Nyl.(McG) *jinijin -banyj-*; Nyl.(McG) *jinajin(ang) -k-*

***jirrb**
Ba.(N&W) *jirrb -ø-* 'poke'; Nyl.(McG) *jirrb -m-*;

***jubil -ju-** 'spit out'
Ba.(A) *jubil -ju-*; Nyl.(McG) *jibil -ju-*; Nyl.(McG) *jibiljibil -ju-*; dribble

***jubul -ju-** 'spash, dive into the water'
Ba.(A) *juubul -ju-*; Nyl.(McG) *jubul -ju-*

***jukara** 'sneak'
Ba.(M) *joowara -jardi-*; Nyl.(McG) *jukar -jid-*; Nyl.(McG) *jukar -kard-*; sneak inside; Nyl.(McG) *jukar -kalak-*; sneak up close;

***jurnk(+)** 'make run'
Ba. *jurnk +*; Nyl.(McG) *junk -m-*

***kalkur- +** 'swim'
Ba.(A) *galguriny -(i)nya-*; Nyl.(McG) *kalkir -ju-*

***kardi(+)** 'alive'
Ba.(A) *gardi*; still; Nyl.(McG) *kardi -n-*; Nyul.(HKL) *kardi*

***karr -ju-** 'make a cracking sound'
Ba.(A) *garr -joo-*; rub to stop pain; Nyl.(McG) *karr -ju-*

***karrja -ma-** 'sharpen'
Ba.(A) *garrya -ma-*; Ba.(M) *garrjagarrja -ma-*; Nyl.(McG) *karrj -m-*; Nyl.(McG) *karrjikarrj -m-*

***karrng- (+)** 'cough'
Ba.(A) *garrngoo*; vomit; Nyl.(McG) *karrngar -ju-*; Nyl.(McG) *karrngarkarrngar -ju-*

***karr+** 'rub'
Ba.(A) *garr -ju-*; rub to stop pain; Ba.(A) *garr -bi-*; rub to stop pain; Nyl.(McG) *kaarr -ju-*

***kiiny +** 'strangle'
Ba. *giiny -ø- /-bu-*; strangle; Nyl.(McG) *kinykiny -banyj-*; commit suicide

***kiinyj -ma-** 'shut'
Ba.(A) *giiny -ma-*; shut (tr); Ba. *giiny -ø- (tr)*; Nyl.(McG) *kinyj -m-*
Yaw.(Hos) *bardin +ma*

***kulkarr** + 'laugh'
Ba.(M) *goolgarr -gama-*; Jb.(K) *kulkarr*

***kuna-**+ 'move something'
Ba.(A) *guna -ma-*; Nyl.(McG) *kunarr -m-*

***kundu**+ '(shoulder) give a piggyback'
Ba.(A) *goondoo -ma-*; Nyl.(McG) *kurnd -w-*

***kurrb -w-** 'pinch'
Ba.(A) *gurrb -ø-*; Nyl.(McG) *kurrb -w-*

***laalbu** + 'cook in hole'
Ba.(A) *laalbu*; earth oven. Not recorded as separate preverb but this is probably how you'd say it in Bardi. Nyl.(McG) *laalb -m-*

***laanybi(+)** 'steal'
Ba.(A) *laanybi -(i)nya-*; Nyl.(McG) *lanyb -kal-*

***lakurd** + 'block, obstruct'
Ba.(A) *lord -ma-*; block off; Nyl.(N&W) *lagod [lagurd]*; obstruction
Nyik.(S) *kid*

***layib -ju-** 'go well'
Ba. *layib -joo-*; Nyl.(McG) *layib -ju-*

***liyan -ma-** 'love'
Ba.(A) *liyan -ma-*; want; Ba.(A) *liyan -ngulu-*; sigh; Ba.(A) *liyan -ga-*; carry a grudge; Ba.(A) *liyan -(i)nya-*; breathe; Nyl.(McG) *liyan -m-*

***mangir'** 'faithful (be)'
Ba.(A) *mangir*; always (adv); Nyl.(McG) *mangir -n-*

***marl+ (-ju)** 'stop'
Ba.(A) *marl -joo-*; Nyl.(Bis) *marl -ga- [mal makan]*; go out; Nyl.(McG) *marl -k-*; c.f. marl 'outside'; Nyl.(Bis) *marl -ju-* [mal madjan]; have patience

***marranyi(+)** 'go'
Ba.(A) *marrany*; quick (adv); Nyl.(McG) *marriny ijidin*

***marrmarr**+ 'twitch (while sleeping)'
Ba.(A) *marrmarr -(i)nya-*; flash; Nyl.(McG) *marrmarr -jid-*

***miila -ju-** 'tell a lie'
Ba. *miila -ju- /-ø-*; Nyl.(McG) *mirl -ju-*

***mul -ju-** 'hot (get)'
Ba.(A) *mool -joo-*; Nyl.(Bis) *mVl -ju- [mael indeo kiniek]*; he is hot

***ngaanka**+ 'talk'
Ba.(A) *ngaanka -gonbu-*; send a message; Ba.(A) *ngaanka -mugar-*; make a plan; Nyl.(McG) *ngank-ang -m-*
Jk.(HKL) *ngan.ga*

***ngalngal -ju-** 'yelp'
Ba.(A) *ngarlngarl -joo-*; Nyl.(McG) *ngal -ju-*; Nyl.(McG) *ngalngal -ju-*
Yaw.(Hos) *wangkurrkadya*; c.f. under 'cry'

***ngurrngurr+ (-w-)** 'drown'
Ba.(A) *ngurrngurr -ø-*; Nyl.(McG) *ngurrngurr -w-,-nyu-,-r-*;

***nika**+ 'turn back on'
Ba.(A) *niya -ma-*; rest; Nyl.(McG) *niik -w-*; c.f. niik 'back'

***ningarr-**+ 'believe'
Ba.(A) *ningarrarda -ma- IO*; Ba.(A) *ningarrarda -ju-*; Nyl.(McG) *ningarr -m-*; Nyl.(McG) *ningarr -ju-*
Yaw.(Hos) *narli -ma-*

***nundurr** + **"hit"** 'sweat'
Ba.(A) *noondoorr*; Nouns; Ba.(N&W) *nundurr -bu- nundur inem-b ng.ai*; the sweat hit me; Nyl.(McG) *kud -ju-*; Jb.(N&W) *nundurr -dam- nundur in-dab ng.ai*; the sweat hit me.

***nyilnyil (+)** 'tangled up (become)'
Ba. *nyilnyil*; mistletoe Nyl.(McG) *nyilnyil -ju-*

***rarrb**+ 'scrape the surface'
Ba.(A) *rarrb -inya-*; clear up; Nyl.(McG) *rarrb -ju-*

***rilil(+)** 'spread something out'
Ba.(A) *rilil*; covers placed on the ground (n); Nyl.(McG) *rilil -m-*

***ruk- -jiidi-** 'undone (become)'
Ba.(A) *rugud -jiidi-*; come off; Nyl.(McG) *ruk -jid-*

***rurrb-+** 'exchange'
Ba.(A) *roorrb -bi-*; pass someone while walking; Ba.(M) *roorrbooyarra*; exchange (n); Nyl.(McG) *rurrb -dam-*; go past; Nyl.(McG) *rurrbukan -w-*

***walar** 'lie on back'
Ba.(Bow) *alar*; lying on one's back; Nyl.(Bis) *walar -ni- [walar manen]*; go to bed

***walarri** 'lying down (be)'
Ba.(A) *arlarr -ni-*; lie on one's back; Nyl.(McG) *warlirr -n-*; Ng. (S) *walarr*

***wanja -ga-** 'bring back'
Ba.(A) *aanja -ga-*; Nyl.(McG) *wanyj -k-*

***wanyja -muru-** 'give away'
Ba.(A) *anyja -muru-*; give away; Ba.(A) *anyja -ngulu-ng-*; give away; Nyl.(McG) *wanyj -jid-*; Nyl.(McG) *wanyj -m-*; Nyl.(McG) *wanyj -w-*; give back; Nyl.(McG) *wanyj -muur-*; only preverb that occurs with this verb.

***wiiny-** 'fill something up'
Ba.(A) *wiinyj -ju-*; get full; Ba.(A) *wiinyj -ma-*; fill up; Nyl.(McG) *winy -m-*

***wirr+** 'scratch oneself'
Ba.(Bow) *wirr -joo-*; scrape; Nyl.(McG) *wirrwirr -banyj-*

***wukul +** 'look at pityingly'
Ba.(A) *ugul -ø-*; scatter bait; Nyl.(McG) *wukul -jal-*

***wukurr -ju-** 'rub'
Ba.(M) *woorr -joo-*; scrub; Nyl.(McG) *wukurr -ju-*
Yaw.(Hos) *wirr +* Yaw.(Hos) *wirrwirr +* Nyik.(S) *woorr*; Walm.(L) *wurrwurr*;

***yalji -ma-** 'coax someone'
Ba.(M) *yalji -ma-*; crave something; Nyl.(McG) *yalyj -m-*

***yarr -inya-** 'pull out'
Ba.(A) *yarr -(i)nya-*; Nyl.(McG) *yarr -nyu-*

***yarrgaly -kala-** 'slip about'
Ba. *arrgaly -gala-*; Nyl.(McG) *yarrgaly -kal-*; Nyl.(McG) *yarrgaly -ju-*; Nyl.(McG) *yarrkaly -w-*; slide

***yilirl+** 'go sideways'
Ba.(A) *ilirl -jalgu-*; list; go from one side to the other; Nyl.(McG) *yirliyirl -jid-*

***yurr -ma-** 'descend'
Ba.(A) *yurr -ma-*; Nyl.(McG) *yurr -m-*

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