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by

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NOTES ON THE "PIDGIN ENGLISH" CREOLE OF ROPER RIVER*

M.C. SHARPE

Most Aboriginals resident at Ngukurr (Roper River Settlement) during my visits there in 1966-68 speak as their first language (if younger) or usual language of communication (if older) a creole language which they refer to as Pidgin English (henceforth referred to as PE in this paper). Those fluent in English clearly differentiate the two and rarely mix them; those less fluent in English will speak a mixture of English and PE (the proportion varying with their familiarity with English) to visiting non-Aboriginals. However, almost all of them, including the most fluent in English, respond with more ease and with greater precision if the non-Aboriginal uses PE rather than English.

Two such creoles are reported from Bagot Settlement, Darwin, and, if information from others, many not being linguists, is correct, very similar creoles are spoken in other areas of the Northern Territory where there are cattle stations. Some are less mutually intelligible with English, the degree of mutual intelligibility varying with the degree of contact with white Australians. It is higher at Roper River than at Nutwood Downs and Hodgson Downs cattle stations, for example.

My elderly informant at Ngukurr, Mr Barnabas Roberts, an Alawa tribesman (now deceased), told me that stockmen brought PE to the Territory from the Queensland canefields in the last century, during the time when South Sea Island labourers were brought there. (As some of these workers took this lingua franca, known as Beach-la-Mar, back to New Guinea, it has presumably exerted some influence on the emergence of Neo-Melanesian.)

*This article also appears in the Australian Institute of Aboriginal Studies NEWS-LETTER New Series No. 2, June 1974. A few details have been updated here.

My informant told me this pidgin became a lingua franca at Ngukurr at its inception as a mission in 1908, when Aborigines from a dozen or so tribes found refuge there. It has become much more anglicised with increasing contact with white Australians. It is, however, still distinct from English as a language, unlike Queensland Aboriginal English dialects (referred to here as AbE), which are dialects of English.

In support of its relationship with Neo-Melanesian, similarities in structure and also in specific words can be adduced. For example, the usual PE word for 'food' at Ngukurr is *daga*, and for 'eat' is *dagad dagad*. PE speakers recognised *kaikai* (Neo-Melanesian for 'food, eat') as the old word in their PE. *buji* 'if' in PE seems derived from *sposim* in Neo-Melanesian by the phonological rules of the language.

There is also much in Queensland AbE which is reminiscent of PE, so much so that it seems most likely that AbE evolved from a pidgin English, and one very similar to Roper PE. The PE word for 'old woman' (apparently from English) is *ulgumen* (or *olgomen*), which is also known and used by some AbE speakers in Central Queensland. The expression *jaya lug* 'it's there, see!' is used with the same intonation in both PE and AbE. There are other shorter expressions used in both PE and AbE with the same phonology and intonation.

Some older Queensland Aborigines do indeed still use a pidgin.¹ It appears that for the less isolated communities, this pidgin has evolved into a dialect of English. A similar process may well be going on at Ngukurr, which, if conditions had not changed, would produce a variant dialect of English within a few generations.

This suggested connection of PE with Beach-la-Mar is disputed by Flint,² who on good historical grounds shows:

1. Beach-la-Mar, developing in the 18th century in the Pacific "is the direct ancestor of Solomon Island Pidgin and New Guinea Pidgin, though it shows many differences from both",³ and New Guinea Pidgin (Neo-Melanesian) was well established in north-west New Guinea by the 1880s.
2. The Pidgin spoken on the canefields was brought by Pacific Island labourers from 1863 onwards. Only between 1876 and 1884 were New Guinea labourers brought in.
3. "Long before 1880 - when both Kanaka Pidgin and New Guinea Pidgin were developed - the original Australian Aboriginal Pidgin was already established in all areas of white settlement, including the Northern Territory."⁴
4. The Islanders despised the Aborigines and had very little contact with them, therefore the language could hardly have been transferred.

It may therefore be that the pidgin Mr Roberts said was brought by stockmen was not that of the canefields, though one may have influenced the other through white contacts. My informant was old enough to remember the early years of this century, and to have met and heard accounts from older people at the time. He was also notable in other spheres for distinguishing hearsay from both probable and known fact, and from his own experience. His account therefore should not be dismissed merely because he is not a trained linguist or historian (or dare I say - because he is not a highly educated European?).

The writing and publishing of this paper has been delayed due to a number of factors. However, it was completed in time to be of use to another linguist (John Sandefur) now working on the creole. His transcriptions differ slightly for some words; we know now of a fourth preposition and more verb auxiliaries; he has more information on the stylistic continuum, including comments by creole speakers on how they see it; however, his data extend rather than contradict what is presented here.

PROBLEMS IN STUDYING PE

When studied in detail, PE at Ngukurr seems very variable, both with different speakers and with the same speaker on different occasions. One missionary nurse at Ngukurr, having done a short course in linguistics, had attempted to study PE. She had, however, abandoned the attempt, because as she told me, it varied so much from speaker to speaker. Flint in correspondence mentioned an attempt in the Torres Strait Islands to write their pidgin in the schools. This attempt was abandoned because of lack of agreement among speakers.

A possibility at Ngukurr was that each tribal group had a slightly different pidgin dialect, the difference being related to their own languages (and partially to the extent of contact with whites, as some tribal groups had minimal contact), or that there were two or more pidgin dialects used in different circumstances. Jernudd⁵ reported three English and pidgin-type languages at Bagot Settlement, Darwin, which he referred to as Aboriginal English (a restricted form of English), Creole and Roper Pidgin. He reports:

"The youth Creole is linguistically different from Pidgin. Creole is typologically closer to English than Pidgin since it has a similar phonology (although particularly the intonational characteristics are closer to Pidgin) and a more English vocabulary. Its syntax is basically a Pidgin syntax. Pidgin has preserved an Aboriginal-type phonology, in addition

to sharp syntactical differences from English. It is often referred to as Roper Pidgin (from Roper River). Many school-children switch between and are able to comment on the two Aboriginal English varieties, Pidgin and Creole. For them these varieties functionally stand in a diglossic relation (in addition to the diglossic relation between them and English). They use Pidgin to adults, Creole among themselves. Their Pidgin is in effect a modified Creole."⁶

Evidence at Ngukurr did not suggest two forms of creolised pidgin, in particular the same devoiced stops were used in speech to whites and among themselves, by children and adults; however, evidence does suggest a stylistic continuum with a Pidgin English at one extreme, and English at the other.

I have therefore gathered and sifted data using the two hypotheses below. The first hypothesis in particular has been applied by Flint and his associates in their analysis of Queensland Aboriginal English,⁷ and appears to account very well for the speech heard there. The two hypotheses are:

1. PE and standard English form the limits of a cline or stylistic continuum, and language heard will vary in type along this cline, depending on who the conversationalists are, and, if they are an Aboriginal talking with a European (or possibly also an Aboriginal not speaking or hearing PE), with the former's ability to handle English.
2. PE speakers (and native language speakers) have the same freedom to borrow foreign words and phrases with or without adjustment in pronunciation, as English speakers have. Just as in borrowing a French phrase or word, English speakers may or may not adapt the pronunciation towards that of English, so I have assumed PE speakers may do with borrowed English phrases or words.

Applying these hypotheses means, until the linguist is fluent enough and has a sophisticated enough informant, a somewhat arbitrary assigning of expressions to PE and English. There will be some difference of opinion when informants are asked whether an expression is PE or English, or whether it is correct PE or not, according to age group. (For example, Mr Roberts complained that the younger generation do not speak PE properly, quoting their use of *bla mayn* for 'my'.) There is also too much interference with PE, so similar to English, when questioning is done in English, so that monolingual elicitation in PE is to be aimed at. Where possible for this analysis, I have used PE utterances between native PE speakers; although the text examples given at the end of this

paper and some examples quoted were spoken to the linguist and tape-recorded, the analysis applies basically to overheard shorter utterances between native speakers. There was a marked shift in style, vocabulary and phonology in Mr Roberts' speech, for example (particularly in the early stages of my work at Ngukurr), when speaking to me or to relatives at Nutwood Downs (he also speaks good English to visiting non-Aboriginals). Excluded from study here is speech of some Aboriginal residents at Ngukurr who have come from non-PE speaking areas (such as Groote Eylandt). These have, like myself, learnt PE after they have learnt English, and their PE usage clearly betrays this fact.

PHONOLOGY

Phonologically, it appears the PE of a few decades ago had a phonology very similar to that of the languages of the area, and these had for the most part phonemes and patterning typical of many Australian languages.⁸ In 1967 the phonology of the PE spoken at Hodgson Downs and Nutwood Downs was still similar to this. That at Ngukurr also permitted some English phonemes and patterns. A chart of "old" phonemes is shown in Table 1. At Ngukurr, and among some speakers elsewhere, /e/, /o/ and /s/ (and sometimes /f/ and /ʒ/) are permitted phonemes, although /s/ often fluctuated with /ʒ/ in some words.

Tongue position is in general more retracted than in English, with the tip flattened. The rest position of the tongue is with the tip resting behind the bottom teeth, and the blade near the alveolar ridge. This lends a retroflexed quality to all alveolars.

Table 1. "Old" Phonemes of PE

| | bilab | alv | retr | alvpal | velar |
|-----------------------|-------|-----|------|--------|-------|
| <i>devoiced stops</i> | b | d | ɖ | ɟ | g |
| <i>nasals</i> | m | n | ɳ | ɲ | ŋ |
| <i>laterals</i> | | l | ɭ | | |
| <i>liquids</i> | | ʀ | r | | |
| <i>semivowels</i> | | | | y | w |
| <i>vowels</i> | | | | i | u |
| | | | | | a |

The devoiced stops bear closer resemblance to English voiced stops than to the English voiceless stops.

The retroflexed alveolars did not occur word or syllable initially.

The alveolar flap (/ʃ/) does not occur word initially. Possibly [ʃ] and [r] are in mutually exclusive distribution and therefore belong to the one phoneme.

After the alveopalatal sounds /ɟ/, /ɲ/ and /ɣ/ (actually labiodental articulation except when contiguous to alveolars), the phoneme /a/ is fronted to become phonetically [æ]. After the velars /g/, /ŋ/ and /w/, /a/ is backed to become phonetically /ɔ/.

With certain exceptions, consonant clusters are avoided word or syllable initially. In English borrowings, /i/ or a harmonising vowel was usually inserted between the consonants of an initial cluster: /silib/ or /ɟilib/ 'sleep', /sineg/ or /ɟineg/ 'snake', /bilɒŋgid/ 'blanket' and /buʃum/ 'from'; but /bla/ or /blaŋa/ 'belonging to', /brabli/ 'really' and /sdori/ 'story'.

Stress is phonemic, although it is often predictable to English speakers. For example, /'dilib/ 'tea', /ɟi'lib/ 'sleep', /'ginu/ 'canoe', /ɟi'neg/ 'snake'.

TECHNICAL ORTHOGRAPHY

The technical orthography chosen here is the same as the practical orthography on which Ngukurr residents are in substantial agreement. In all examples given below, the following conventions are followed: for /ɟ/, j; /ɲ/, ny; /ŋ/, ng; /ŋg/, n-g; /ɖ/, /ɳ/ and /ʃ/, rd, rn and rl respectively; and for /ʃ/, rr. All other symbols are as in Table 1.

ADAPTATION OF ENGLISH WORDS

English words adapted into PE (often with meaning shifts) follow several patterns, which appear to have applied at different times historically, in the general order shown below.

- Older words are adapted to the phoneme system shown in Table 1, with no initial or final consonant clusters (except with bl and br shown above). Single syllable words, other than auxiliaries, function words and clitics, are shunned.
 - namu/numu 'no, don't' (last vowel now o)
 - wanim/wanem 'what'
 - bala (adjective suffix) (from fellow)
 - nugudbala 'bad' (from no good)
 - dumaji 'very' (from too much)

buji 'if' (presumably of common origin with Neo-Melanesian sposim)

dumarra 'tomorrow'

jilib 'sleep'

dilib 'tea'

2. Some words are adapted to a system with a fourth vowel e added (Alawa has this phoneme). Sometimes this phoneme arises from contradiction of ay.

laygim/legim 'like'

guwe 'go away'

wanim/wanem 'what'

bujiged 'cat' (from pussy cat)

3. Some words where the English has s allow fluctuation of s and j; others, including those where English has j or ch etc., and some where English has s, allow only j.

sineg/jineg 'snake'

silib/jilib 'sleep'

basdam/bajdam 'beforehand' (from past time, former form preferred)

but

buji 'if' (from suppose through Neo-Melanesian)

binji 'stomach, belly' (from English, cognate with binge)

dumaji 'very' (from too much)

4. Some words are adapted to a five vowel system, with o added to the above four vowels, and initial consonant clusters are allowed.

sbiya 'spear'

sdori 'story'

olmen 'old man'

INTONATION

In intonation PE is very similar to the local languages. The reader is referred to my *Alawa Phonology and Grammar*⁹ for more detail on phonology and intonation. Briefly, conversational intonation is rather similar to that of Australian English, with rising sentence final intonation (rather than falling) on many statements, especially when an expression of attention is called for from the listener. A final intonational glottal stop is often present at the end of a phrase with such rising intonation. This glottal stop is more often present in narrative than in conversation, though it is very frequent after na

(or namu) 'no' and ngi 'isn't it so?' in conversation. A feature very different from English is the continuous aspect intonation, in which the voice rises to a higher pitch, either sustaining the vowel of a word (usually the verb) or repeating a word several times, with gradual increase of laryngealisation, followed by a drop to normal pitch and normal voicing.¹⁰

PRACTICAL ORTHOGRAPHY

Quite a few literate adults (older and younger) had a surprisingly consistent orthography for PE. The English series of voiced stops (with j chosen for /d/) was unanimously chosen for the devoiced stops. The digraph rr was chosen for the trilled or flapped liquid, ny for /ñ/, and ng for /ŋ/. (My suggestion, barely discussed with the people, for /ng/ in the rare cases when these two phonemes are contiguous, was n-g.) Spelling agreement was high on a number of words, particularly those with "old" phonemes only, but problems occurred with quite a number of words. (On my second hypothesis above, these could be English borrowings, sometimes partly assimilated in pronunciation to PE forms.) One such word was 'camp', which is now fairly commonly used at Ngukurr. By contrast, the word for 'play, pretend', phonetically [gʷaman], and that for 'come', phonetically [gaman] were spelt, with little hesitation, as giyaman and gaman respectively.

GRAMMAR

PRONOUNS

Table 2 (opposite page) shows the basic set of pronouns of PE. First person pronouns allow variation of forms in certain positions as described below the table.

POSSESSION

The possessor is indicated by a preposed pronoun or noun, or (usually) preposed bla plus pronoun or noun, e.g. mayn ay 'my eye', yumob mani 'your money', im asbin 'her husband', blanga im blagbala 'his fellow countryman', bla wi 'ours'.

REFLEXIVE PRONOUN

There is a reflexive pronoun mijalb, the same form for all persons and numbers.

olmen bin lujim mijalb 'The old man died' (lit. 'lost himself')
 melabad mijalb 'we by ourselves'

Table 2. Pronouns

| | <i>singular</i> | <i>plural</i> | <i>dual</i> |
|--------------------|--------------------|---------------------------|-------------------------|
| 1st inclusive (12) | yunmi ^a | yunmalabad ^b | - |
| 1st exclusive (1) | mi ^c | melabad ^b | mindubala |
| 2nd person (2) | yu | yulabad ^{d,e} | yundubala |
| 3rd person (3) | im | (im)alabad ^{f,g} | (im)dubala ^f |

^aThis pronoun refers to two people, the speaker and the one spoken to, but is here listed as a singular because of its form, and because its counterparts in the local languages also pattern as such.¹¹

^bwi is sometimes found for yunmalabad and possibly melabad, as subject and also frequently following bla, e.g. bla wi 'our business' (usually inclusive).

^cay may be used in subject position, e.g. ay/mi bin gu 'I went', and appears preferred there. mayn is used as possessive pronoun, e.g. mayn ay 'my eye'. Younger speakers use the expression ... bla mayn 'my ...'; Mr Roberts regards this as wrong grammar.

^dyumob is preferred at Ngukurr for second person plural, yulabad on the cattle stations nearby.

^emibala, yu(m)bala, imbala are occasionally heard as plurals, even from speakers who usually use the forms listed above.

^fim is occasionally prefixed to third person plural and dual.

^gje 'they' sometimes occurs.

ADJECTIVES AND NUMERALS

The suffix -bala usually indicates an adjective or numeral; some words with this suffix may also act as nouns, and some are time words.

yarlbun gudbala daga 'Lilyseed is a good food.'
 nagidbala 'He has no clothes on.'
 du, dubala 'two', 'they(dual)'
 thribala 'three'
 jarran jigibala jineg 'That is a poisonous snake.'
 yalabala 'halfcaste'
 dagbala na 'It was dark/night then.'
 alibala 'morning time'

PLURALISING OF NOUNS

There is usually no alteration in form of nouns for plurals. Exceptions are the words for 'old man' and 'old woman'.

olmen 'old man' olmen olmen 'old men'
 olgomen 'old woman' olgoolgomen 'old women'

VERBS TRANSITIVE AND INTRANSITIVE

Most transitive verbs are distinguished from intransitive verbs by the suffix -um ~ -im; the vowel is usually /u/ unless following a syllable containing the vowel /i/. Clitics -ab 'up', -dan 'down', -ad 'out', etc. and the continuous suffix -bad follow the -um suffix.

| | |
|--|--|
| mi gu 'I am going' | mi abum 'I have it' |
| mi gaman 'I am coming' | mi gilim 'I (will) hit it' |
| dubala bin dog la mi 'they talked to me' | mi gugum 'I am cooking/will cook it' |
| im bin basaway 'he died' | yu garrim? 'have you got it?' |
| ay bin jidan 'I sat down' | |
| im bin buldan 'he fell down' | mi bin megimbad 'I was making it' |
| im bin jinginad la wi 'he was calling out to us' | masgidu bin idimab mi 'the mos- quitoes were biting badly.' |
| jangudanwe 'west' (from sun go down way) | |
| but ay gibid yu mani 'I give you money' (no -um) ¹² | |

PREPOSITIONS

Three prepositions exist: langa/la 'to towards, at', blanga/bla 'pertaining to, property of, for the purpose of', and burrum 'from, in (of language).¹³

langa/la ay bin jidan la im 'I camped at his place.'
 yu gin wed la mi lilbid? 'Can you wait for me a little?'

dubala bin dog la mi *'They talked to me.'*
 yu gan jinggabad langa mi *'You can't think of me.'*
 blanga/bla melabad bajimab bla yu? *'Shall we fetch it for you?'*
 im blanga yumob mani *'It's your money.'*
 blanga im blagbala *'his fellow countryman'*
 bla masgidu im gejim *'for killing mosquitoes'*
 bla album gandri bla imalabad *'for the aid of their
 country'*
 burrum mi bin gu burrum jaya *'I went on from there'*
 burrum alawa *'in Alawa'*

TENSE, ASPECT AND MOOD OF VERBS

Tense, aspect and mood of verbs are shown by preposed auxiliaries and the verb final suffix -bad. The suffix indicates continuous aspect.

im bin megim ginu. *'He made a canoe.'* (and finished it)
 im bin megimbad ginu. *'He was making a canoe.'* (but hasn't finished it yet)

A partial list of verb auxiliaries is given in Table 3. An unmarked verb is nonpast tense. bin is also used as the past tense of the copulative verb (there is no nonpast form).

bin im jaya *'He is there.'*
 melabad bajimab bla yu? *'Shall we get it for you?'*

Table 3. Verb Auxiliaries

| | <i>Following bin in past tense forms</i> |
|--|---|
| bin (past) | andi/anda <i>'want to'</i> (intention) urldi/urldu ^a <i>'used to'</i> (habitual past) |
| gin <i>'can'</i> | |
| gan <i>'can't'</i> | |
| maydbi <i>'may'</i> | |
| ^a bin must be present for this. bin urldi/urldu is sometimes replaced by yusdu. | |

- dubala bin jaya 'Two of them were there.'
 ay bin gu la resis 'I went to the races.'
 melaban binis¹⁴ 'We finished.' (contraction of melabad
 bin binis)
- gin yu gin wed la mi lilbid? 'Can you wait for me a little?'
 gan ay gan bajimab bla yulabad 'I can't take yours.'
 andi mi andi gu 'I want to go.'
 im bin andi dalim mi 'He was going to tell me.'
 ay bin anda gambeg lang daym 'I wanted to get back
 for a long time.'
- bin urldi ay bin urldi jidan la im 'I used to stop with him.'
 du men bin urldi gilim, degimbeg la their camp 'Two men
 used to kill it and take it to their camp.'
 wi bin urldu gedim dubega 'We used to get tobacco.'
 wi yusdu gam jalwada 'We used to come to Saltwater
 Creek.'

The verb gu 'go' also has an auxiliary use as in English.

yu gu jilib! 'Go to sleep!'

(cf. wandi jilib na 'want to sleep now'¹⁵)

ADJECTIVE-LIKE VERBS

There may be some adjective-like verbs. If so,¹⁶ they have no -bala suffix, in translation are classified as verbs by English speakers, yet lack tense differentiation. A suspected example is jabi 'understand', where no past tense form has been found to date in the data.

yu jabi? 'Do you understand?'

NEGATIVE COMMANDS

libum 'leave it' is used before the verb for commands to refrain from an action, namu 'don't' in other cases.

libum! 'Stop it.'

namu lujim 'Don't lose it.'

MISCELLANEOUS WORD TYPES

A few examples of word types are given in the following paragraphs.

Locatives and directionals include iya 'here', jaya 'there', dije 'this way', jangudanwe 'west'. Certain directional information is given in some verb suffixes, for example:

gu 'go'

gaman 'come'

| | | | |
|-------|--------------------|--------|---------------------|
| guwin | 'enter, go in' | gamin | 'come in, enter' |
| guwab | 'go up, climb' | gamab | 'come up, approach' |
| gudan | 'go down, descend' | gambeg | 'come back, return' |
| guwad | 'go out, go about' | | |
| guwe | 'go away' | | |

Time words and phrases include:

| | |
|---------------|----------------------------------|
| burrum jaya | 'after that' (also 'from there') |
| dumarra | 'tomorrow' |
| baymbay | 'soon, later' |
| basdam/bajdam | 'in the past' |
| alibala | 'morning time' |

Interrogatives include:

| | |
|-------------|---|
| wanim/wanem | 'what' (also in non-interrogative sense 'thingumajig, what's it') |
| waya | 'where, why, how' (also as conjunction) |
| wije | 'which way' (e.g. wije san? 'Where is the sun now?') |

The most common demonstratives are *dijan* 'this' and *jarran* 'that'. More anglicised forms sometimes occur, e.g. *jad/jed* 'that'.

Interjections and sentence words of various types occur. There is *yuway* 'yes' and *namu* 'no'; *namu*, however, is also used as a negative with verbs, etc., as noted above. *wal* 'well' may introduce a sentence; *orayd* 'alright' may begin or end one. *jaldu* indicates a particular subject of conversation is disposed of; *binis/finish* can also be used in this way. *ngi* (with intonational glottal stop concluding) is often used sentence finally when assent from the hearer is looked for by the speaker. *gurdi* is an expression of mild horror. *bubala* 'poor fellow', an expression of nostalgia or pity, can also be used as an adjective.

yu jabi? yuway. 'Do you understand? Yes.'

yu garrim? namu. 'Have you got it? No.'

... jan barnim. orayd. '... the sun is hot. OK.'

wal, im bin dalim mi ... 'Well, he told me ...'

ay bin jagum sweg, ebrijing mayn, jaldu. 'I tossed in my swag and all my belongings.'

*melabad bin abum jabis --- binis.*¹⁷ 'We had a service.'

dagbala na ngi. 'It's dark now, isn't it.'

yu laygim Miss X? namu. gurdi! 'You like Miss X? No. Oh help!'

(on realising Miss X could have overheard this)

bubala mi. 'Poor old me.'

bubala jedi 'the jetty' (with nostalgia - it was a historic spot)

Conjunctions include an 'and', *buji* 'if', and *anles* 'unless'.

TEXT EXAMPLES

Three textual examples are given here. Text A, very short, is extracted from conversation with Welwe, a Ridarrngu man who spoke no English, after I and another white woman had attended the women's part in the Kunapipi ceremony. Text B is an account by Barnabas Roberts of his arranging of a service at one of the cattle stations (he is a lay preacher). Text C is part of an account by Barnabas of hitching a ride on his way to Katherine from Nutwood Downs. Texts B and C were spoken for tape-recording in my presence. Of the three texts, Text C is the most heavily influenced by English in both phonology and vocabulary, and Text A the least. Note that in the context of a past tense narrative, bin, the overt signal of past tense, can often be omitted.

TEXT A

olgomem ol yumob gelele olwe ...
The old women, all of you were always giving the gelele call
 melabad olbibul bin dog gud binji brabli yu bin album
we old people were really happy (that) you assisted
 jad seremani.
that ceremony.

TEXT B

... jabis, jodbala wi abum. wi abum jodbala.
a service, a short one we'll have. We'll have a short one,
 namu langbala. dumaji san. jan barnim. orayd.
not a long one, too much sun. The sun is hot. OK.
 burrum jaya alabad - melabad bin abum jabis ---¹⁷ finish.
After that they - we had a service
 wad abad mani. melabad bajimab bla yu? wal, buji
What about money? Shall we fetch it for you? Well, if
 yulabad layg. ay gan bulimad langa alabad. im blanga
you like. I can't take it to them (?). It's
 yumbala mani. namu mayn. ay gan digidad burrum yulabad,
your money, not mine. I can't take it from you,
 anles yulabad gibid mi mijalb. namu mayn. im
unless you give it to me yourselves. It's not mine. It
 blanga jerj. wandi gu la jerj, bla
belongs to the church. It'll go to the church, for

album gandri bla yunmalabad. ay bin laygajad.
helping our country. I (explained it) like that.

orayd melabad bajimab. alabad im bajimab, burrum langa
OK we'll fetch it. They fetched it and put it on

debul. abda jad waya melaban finish. ay bin gejim.
the table. After that we finished. I took it.

ay bin degim la may camp. ay bin burrum langa pouch.
I took it to my camp. I put it in (my) pouch.

melaban silib. aba wig naja sandi muwa.
We slept. After a week, there was another Sunday.

melabad bin abum sabis.
We had a service.

TEXT C

dagbala na, dagbala na. jen, jen ledi im bin dalim mi,
It was dark then. Then the lady told me,

o olmen, olmen, jarran bas im mandi gamab abas nayn.
"Oh old man, old man, that bus is going to come at 9.30."

o wal du led fo mi, du go - du gul nayd daym.
"Oh well, too late for me, too co - too cold nighttime,

gulbala. ay bin dog. o yunmi wed. maydbi yunmi
it'll be cool", I said. "Oh wait, maybe we'll

bayndim muwa naja drag. wal im bin bayndim jad dubala
find another truck." Well, she found those two

men, bin gamab goda wid. dubala bin lodimab, degim la
men, they came with wheat. They loaded it up and took it to

kajarran. fo reskos, reshos. dubala bin shibdi,
Katherine, for racecourse - race horse. They moved and

megim rum bla mi. ay bin jagum sweg jaya, ebrijing mayn,
made room for me. I threw my swag in, all my things,

jaldu. wi bin gu, wi bin drabbling raydab la larrama.
OK We went, we were travelling right up to Larrimah,

an wi bin sdop jaya fo lil wayl. dubala bin dringgimbad,
and we stopped there for a while. They were drinking

jad drongbala strong drink. drongbala dronggimbala ngugu.
that strong drink. strong intoxicating water

wada. balgim wada. (Sharpe:) balgi? (Roberts:) balgim.
 water. bitter water. balgi? balgim.

nugudbala des yuno. megim gu sili. andaburrgiyunu
Bad taste you know, makes them silly. (Alawa) After that

ngulujala ---¹⁷ dubala bin danim da lilwan
we went (a long way), they turned there(?) a little, and

bin hidim wadi. lim. (Alawa) duwi nari. im bin blagim
hit a tree, a limb, (Alawa) leaning out. It blocked

mi iya. an jad wadi rayd jaya. (Alawa) nambarla
me here, and that tree was right there. He said/it did(?)

gada nari. o wi gula dri jaya (Alawa) nari.
where it was. We were angry (?) that the tree was there.

wi bin jes misdim, wi bin andi ged gild jaya, an jad nugud.
We just missed it; we almost got killed there, which was no good.

NOTES

1. T.E. Dutton 1964. *Kanaka Contact Language in Queensland*, unpublished Field Report of the Queensland Speech Survey, University of Queensland.
2. E.H. Flint 1971. *The Aboriginal English of Informants in the 40-60+ Age Group in a far North-Western Queensland Community*, paper delivered at the 43rd A.N.Z.A.A.S. Congress.
3. D.C. Laycock 1970. "Pidgin English in New Guinea", in *English Transposed*, Ed. W.S. Ramson. Canberra: A.N.U. Press, p. 105.
4. Flint 1971, p. 5.
5. Björn H. Jernudd 1971. "Social Change and Aboriginal Speech Variation in Australia", *Anthropological Linguistics* 13.1.16-32.
6. Jernudd 1971, p. 20.
7. The Queensland Speech Survey of the University of Queensland, carried out by Flint, Dutton, Alexander and others.
8. Alawa has prenasalised stops, which can occur word initially. These are not common in Australian languages, nor are they present in PE except possibly in an occasional word borrowed from Alawa.
9. M.C. Sharpe 1972. *Alawa Phonology and Grammar*. Canberra: A.I.A.S. Australian Aboriginal Studies No. 37, also (on voice quality rather than intonation) Sharpe 1970. "Voice Quality: a Framework for Description and some Observations, *Pacific Linguistic Studies in Honour of Arthur Capell*, S.A. Wurm and D.C. Laycock (Eds.) (Pacific Linguistics Series C: 13), pp. 115-134, particularly pp. 124-127.
10. Sharpe 1972, 4.4.6, p. 37.
11. See Sharpe 1972, p. 57, also Glasgow 1964, pp. 109-111.
12. As there is no preposition before the pronoun, it appears the recipient is object or first referent of the verb as in Alawa, see

Sharpe 1972, 9.0.1 p. 79, 10.2.5 p. 96.

13. This corresponds to the case form used in the languages of the area, e.g. in Alawa, *alawiŋyunu* 'in Alawa', where the relative case, signalled by *-yunu* plus change in stem final vowel, is usually translated 'from'.

14. This contraction of *melabad bin* to *melaban* was heard several times from Barnabas Roberts, but was not noted from other speakers.

15. *wandi* and *mandi* have been heard at times in the same context as *andi/anda*. I am not certain whether they are alternate forms or are semantically distinct from *andi/anda*.

16. More evidence may prove this tentative classification false. However, in Alawa such verbs do exist, e.g. *ŋayelya* 'I understand'; *ŋayi ŋayelya* 'I don't understand' (no mood inflection, unlike other verbs), *ŋawuŋun* 'I don't know'.

17. Continuous action intonation on *jabis*, and on *ngulujala*.

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NGARDILPA (WARLPIRI) PHONOLOGY
(LANGUAGE OF THE WARNAYAKA TRIBE,
A SUBTRIBE OF THE WARLPIRI TRIBE)

LOTHAR JAGST

0. INTRODUCTION

The purpose of this paper is to present a phonemic analysis of the Ngardilpa language spoken by the Warnayaka tribe, a subtribe of the Warlpiri tribe. This presentation includes the description of the phonemes, syllable and word structures, stress patterns, intonational features and morphophonemics.¹

Prenasalised stops have been assigned phonemic status in the analysis presented in this paper. Differences between apico-alveolar and apico-domal consonants in word-initial position were difficult to ascertain. The discovery of the phone [e] in seeming contrast with other vowels made it hard to decide whether it should be a full phoneme or an allophone of one of the vowels. Analysis of stress led to the discovery that, while stress is phonologically contrastive, it is grammatically predictable because morphemes are inherently stressed.

1. PHONEME INVENTORY

Ngardilpa phonemes comprise twenty-three consonantal phonemes and six vowel phonemes: p, t, t̥, t̥j, k, ^mp, ⁿt, ^ŋt̥, ^{nj}t̥j, ^ŋk, m, n, ŋ, nj, ɹ, l, l̥, lj, r̥, ʃ, ʃ̥, w, y, l, l:, a, a:, u, u:.

1.1 CONSONANTAL PHONEMES

The inventory of twenty-three consonantal phonemes includes five stops, five pre-nasalised stops, five nasals, three laterals, two vibrants and three semi-consonants.

1.1.1 Stops

The stops contrast at bilabial, apico-alveolar, apico-domal, lamino-alveolar, and dorso-velar points of articulation.

The bilabial stop /p/ has two allophones. One is the voiceless bilabial stop [p] which occurs in word-initial and intervocalic positions and as the second member in consonant clusters where the first member is not a nasal. The other one is the voiced bilabial stop [b] which occurs in word-initial position where it freely varies with its voiceless counterpart. It also occurs as the second member in consonant clusters where the first member is a heterorganic nasal.

The apico-alveolar stop /t/ has two allophones. One is the voiceless apico-alveolar stop [t] which occurs in intervocalic position and as the second member in a consonant cluster. The other one is the voiced apico-alveolar stop [d] which only occurs as the second member in a consonant cluster and in that position varies with its voiceless counterpart.

The apico-domal stop /t̪/ has two allophones. One is the voiceless apico-domal stop [t̪] which occurs in word-initial and intervocalic position and as the second member in a consonant cluster. The other one is the voiced apico-domal stop [d̪] which only occurs as the second member in a consonant cluster and in that position freely varies with its voiceless counterpart.

The lamino-alveolar palatalised stop /tʃ/ has allophones ranging from a lightly articulated voiceless lamino-alveolar palatalised stop [tʃ] to a clearly discernible voiceless affricate [t͡ʃ]. These allophones occur in free variation in word-initial and intervocalic positions and as the second member in consonant clusters. However, the most frequently encountered allophone is the affricate [t͡ʃ] and it is considered to be the norm.

The dorso-velar stop /k/ has two allophones. One is the voiceless dorso-velar stop [k] which occurs in word-initial and intervocalic positions and as the second member in consonant clusters. The other one is the voiced dorso-velar stop [g] which occurs in word-initial position and as the second member in consonant clusters where the first member is not a nasal, varying freely in both positions with its voiceless counterpart.

All of the above stops are pronounced either with or without aspiration, even individual speakers are not consistent in this. However, it seems that non-aspirated pronunciation of the stops is the norm.

The following examples demonstrate how the various stops contrast in word-initial and intervocalic positions.

Word-initial contrasts:

| | |
|---------|--------------|
| /paʃi/ | 'little boy' |
| /ʃaɾi/ | 'heel' |
| /tjaʃi/ | 'becomes' |
| /kaʃi/ | 'stands' |

Intervocalic contrasts:

| | |
|-------------|-------------|
| /wapiʃa/ | 'father' |
| /watiya/ | 'tree' |
| /waʃiʃi/ | 'waist' |
| /watjiii/ | 'runs' |
| /wakiipiʃi/ | 'bush bean' |

1.1.2 Prenasalised Stops

Prenasalised stops comprise a voiced nasal followed by a homorganic voiced or voiceless stop.

In the earlier stages of analysis prenasalised stops were regarded as consonant clusters. They are now regarded as unit phonemes because the native speakers do not separate them into two separate segments word medially as the nasal closure of one syllable and the stop onset of the next. Extensive checking and psycholinguistic testing revealed that consonant clusters comprising nasal plus homorganic stop are, therefore, inseparable and function as a single phonemic unit. Discovery of one of the prenasalised stops in word-initial position strengthened the hypothesis since univalent CC clusters do not occur word-initially.

The prenasalised stops contrast at bilabial, apico-alveolar, apico-domal, lamino-alveolar, and dorso-velar points of articulation. They always occur syllable-initially.

The bilabial prenasalised stop /^mp/ has one allophone, the voiced bilabial prenasalised stop [^mb]. This stop is the only one in the prenasalised series that has been found to occur word-initially.²

The apico-alveolar prenasalised stop /ⁿt/ has two allophones. One is the apico-alveolar prenasalised stop [ⁿt] with voicing only on the nasal segment, and the other is the voiced apico-alveolar prenasalised stop [ⁿd]. Both of these allophones occur in free variation, but the voiced one seems to be the norm while the other one occurs more frequently in emphasised speech.

The apico-domal prenasalised stop /^ŋʃ/ has two allophones. One is the apico-domal prenasalised stop [^ŋʃ] with voicing only on the nasal segment, and the other is the voiced apico-domal prenasalised stop [^ŋdʃ].

Again, both of these allophones occur in free variation, but the voiced one seems to be the norm while the other one occurs more frequently in emphasised speech.

The lamino-alveolar palatalised prenasalised stop /ⁿJtj/ has a range of allophones beginning with a lamino-alveolar palatalised prenasalised stop [ⁿtj] and ending with a prenasalised affricate [ⁿč]. In this whole range the nasal segment is always voiced and occurs with varying degrees of palatalisation. These various allophones occur in free variation and those comprising the affricate occur more frequently and are considered to be the norm.

The dorso-velar prenasalised stop /^ŋk/ has two allophones. One is the dorso-velar prenasalised stop [^ŋk] with voicing only on the nasal segment, and the other is the voiced dorso-velar prenasalised stop [^ŋg]. Both of these allophones occur in free variation, but the voiceless one occurs more frequently and seems to be the norm.

The following examples demonstrate how the prenasalised stops contrast intervocally with nasals and stops:

| | | | |
|--------------------------|------------------|------------------------|------------|
| /pama/ | 'delicacy' | /yama/ | 'shade' |
| /pa ^m pa/ | 'blind' | /ya ^m pi/ | 'ceases' |
| /papama/ | 'call of emu' | /yapa/ | 'person' |
| | | | |
| /waniki/ | 'cross' | /manu/ | 'and' |
| /wa ⁿ ti/ | 'falls' | /ma ⁿ ta/ | 'grab!' |
| /wati/ | 'man' | /mata/ | 'tired' |
| | | | |
| /waŋa/ | 'snake' | /ŋaŋu!u/ | 'they ate' |
| /wa ⁿ ʃi/ | 'stabbing spear' | /wu ⁿ ʃuŋu/ | 'far' |
| /waʃi!i/ | 'waist' | /puʃu!u/ | 'mid-back' |
| | | | |
| /kanjiŋi/ | 'brings' | | |
| /ku ⁿ Jtjuŋu/ | 'smoke' | | |
| /kutjuŋu/ | 'threw' | | |
| | | | |
| /waŋu/ | 'without' | /yuŋu/ | 'gave' |
| /wa ^ŋ ka/ | 'speaks' | /yu ^ŋ ka/ | 'give!' |
| /waku/ | 'arm' | /yuka/ | 'enters' |

1.1.3 Nasals

The nasals contrast at bilabial, apico-alveolar, apico-domal, lamino-alveolar, and velar points of articulation.

The voiced bilabial nasal /m/ and the voiced velar nasal /ŋ/ occur in word-initial and intervocalic positions and as the second member in

heterorganic consonant clusters.

The voiced apico-alveolar nasal /n/ only occurs intervocalically and as the first member in heterorganic consonant clusters.

The apico-domal nasal /ŋ/ has two allophones. One is the voiced apico-domal nasal [ŋ] which occurs in word-initial and intervocalic positions and as the first member in heterorganic consonant clusters. The other one is the voiced flapped apico-alveolar nasal [ɲ] which only occurs following the vowels /a/ or /u/, and it is the norm in this position even though it freely varies with the apico-domal allophone.

The voiced lamino-alveolar nasal /ɲj/ occurs in word-initial and intervocalic positions and as the first or second member in heterorganic consonant clusters.

The following examples demonstrate how the various nasals contrast in word-initial and intervocalic positions.

Word-initial contrasts:

| | | | |
|----------------------|--------------|-------------------------------------|---------------|
| /maŋa/ | 'grass' | /mu ⁿ j ^t ju/ | 'blunt' |
| /ŋama/ | 'ant' | /ŋuŋu/ | 'flour' |
| /njanu/ | 'saw (verb)' | /nju ⁿ tu/ | 'you (sing.)' |
| /ŋama/ | 'female' | /ŋu ^ɲ tju/ | 'good' |
| /miyi/ | 'veg. food' | /nja ^m pula/ | 'here' |
| /njiya/ | 'what?' | /ŋa ^m pu!a/ | 'young girl' |
| /ŋi ⁿ ti/ | 'tail' | | |

Intervocalic contrasts:

| | | | |
|---------------------------------------|----------------|----------|-----------|
| /kamulu/ | 'camel' | /pimiŋi/ | 'aunt' |
| /kanu ⁿ j ^t ju/ | 'low' | /pina/ | 'knowing' |
| /kaŋuŋu/ | 'sad' | /piŋa/ | 'tobacco' |
| /kanjili/ | 'they carry' | /pinji/ | 'hits' |
| /kaŋulu/ | 'they carried' | /piŋi/ | 'ant' |
| /wanaŋi/ | 'leg' | /ŋama/ | 'female' |
| /waŋa/ | 'snake' | /ŋana/ | 'who?' |
| /wanja/ | 'emu feather' | /ŋaŋa/ | 'groin' |
| /waŋa!a/ | 'crow' | | |

1.1.4 Laterals

The laterals contrast at apico-alveolar, apico-domal, and lamino-alveolar points of articulation.

The voiced apico-alveolar lateral /l/ and the voiced lamino-alveolar lateral /lj/ only occur intervocalically and as the first member in heterorganic consonant clusters.

The apico-domal lateral /l/ has two allophones. One is the voiced apico-domal lateral [l] which occurs in word-initial and intervocalic positions and as the first member in heterorganic consonant clusters, and in a few instances in compounds as the second member in consonant clusters. The other is the voiced flapped apico-alveolar lateral [l̥] which only occurs when preceded by the vowels /a/ or /u/, and is the norm in this position even though it freely varies with the apico-domal allophone.

The following examples show the occurrence of the lateral /l/ in word initial position:

| | |
|-------------------------|----------------------|
| /l̥a ^m paʃa/ | 'father-in-law' |
| /l̥u ⁿ kaʃa/ | 'blue-tongue lizard' |
| /l̥iʃa/ | 'mouth' |

Contrast between the various laterals in word-medial position is shown in these examples.

| | | | |
|--------------|-------------|---------------------------|----------------|
| /ma pa/ | 'boomerang' | /wa u/ | 'head' |
| /ma pa/ | 'companion' | /wa u/ | 'fire' |
| /ma jpakaʃa/ | 'baby boy' | /wa ja/ | 'ground' |
| /mulutja/ | 'jealous' | /p l̥l̥/ | 'wooden scoop' |
| /mu uʃu/ | 'white ant' | /p l̥l̥/ | 'stone' |
| /mu ju/ | 'nose' | /mi ⁿ l̥il̥ji/ | 'lower back' |

1.1.5 Neutralisation between Apico-alveolar and Apico-domal Series

The contrast between the apico-alveolar series /t, n, l/ and the apico-domal series /ʃ, ŋ, l̥/ is neutralised in word-initial position and in morpheme-initial position within compound constructions.³ The apico-domal series is the norm in word-initial position, therefore symbols from that series are used word-initially in the examples throughout this paper.

| | |
|--|----------------------------|
| /ʃimana/ [ʃimana ~ tɪmana] | 'horse' |
| /ŋa ⁿ tinjanji/ [ŋq ⁿ tiñañi ~ na ⁿ tiñañi] | 'stares' |
| /l̥a ^m paʃa/ [l̥q ^m paʃa ~ la ^m paʃa] | 'father-in-law' |
| /ʃa:l̥j̥l̥uwaŋi/ [ʃa:l̥j̥l̥uwaŋi ~ ʃa:l̥j̥luwaŋi] | 'breaks limbs with weapon' |

The degree of retroflexion of the apico-domal series fluctuates in intervocalic position. Retroflexion is usually quite pronounced following the vowel /a/, not quite so pronounced following the vowel /u/, and sometimes almost imperceptible following the vowel /i/.

| | |
|-----------------------------|-------------|
| /waʃi!i/ [wqʃi!i ~ wat̥i!i] | 'waist' |
| /muʃuŋa/ [mʃuʃuŋq ~ mutuna] | 'old woman' |
| /miʃa/ [m̥iʃq ~ miʃa] | 'shield' |

| | |
|----------------------------|------------|
| /maŋa/ [mɔŋɔ ~ maŋa] | 'grass' |
| /wuŋa/ [wɔŋɔ ~ wuna] | 'trip' |
| /ŋamiŋi/ [ŋamɪŋi ~ ŋamini] | 'uncle' |
| /maɭu/ [mɔɭu ~ malu] | 'kangaroo' |
| /wiɭiya/ [wɪɭiya ~ wɪliya] | 'foot' |
| /piɭi/ [pɪɭi ~ pɪii] | 'stone' |

1.1.6 Vibrants, Trills, and Apico-domals

Five phonetically distinct *r* sounds occur in Ngardilpa speech.

The voiced apico-alveolar vibrant /ʀ/ and its allophone, the voiced apico-alveolar trill [ʀ̃], contrast in intervocalic position with the voiced apico-domal vibrant /ʀ̣/ and the voiced apico-domal semi-consonant /ʀ̥/ and its allophone, the voiced approximated resonant continuant [r̥].

| | | | |
|----------|---------------|------------|------------------|
| /tjaʃa/ | 'flame' | /maʃu/ | 'house' |
| /tjaʃ̣a/ | 'sleep' | /maʃ̣u/ | 'water coolamon' |
| /tjaʃ̣a/ | 'fat' | /maʃ̣u/ | 'black' |
| /kuʃu/ | 'dance site' | /yiʃ̣i/ | 'name' |
| /kuʃ̣u/ | 'child' | /yiʃ̣i/ | 'point' |
| /wiʃ̣i/ | 'watercourse' | /waʃ̣aʃ̣a/ | 'always' |
| /wiʃ̣i/ | 'big' | /waʃ̣aʃ̣a/ | 'cliff' |
| | | /wawaʃ̣a/ | 'covering' |

The vibrant /ʀ/ and its allophone, the trill [ʀ̃], freely vary in intervocalic positions and as the first member in consonant clusters. The vibrant /ʀ̣/ seems to be the norm but the allophone [ʀ̣̃] with varying length is invariably predictable in all cases where emphasis is applied to a word that contains a word-medial consonant cluster in which the first member is the vibrant /ʀ̣/.

| | Normal | Emphasised | |
|------------|------------|-------------|----------|
| /ŋuʃ̣tju/ | [ŋuʃ̣tju] | [ŋuʃ̣̃tju] | 'good' |
| /yinaʃ̣ki/ | [yinaʃ̣ki] | [yinaʃ̣̃ki] | 'spider' |

The apico-domal vibrant /ʀ̣/ occurs in word-initial and intervocalic positions.

The semi-consonant /ʀ̥/ and its other allophone, the continuant [r̥], freely vary in word-initial and intervocalic positions and as the first member in consonant clusters. The continuant [r̥] seems to be the norm.

In word-initial position the contrast between the apico-alveolar vibrant /ʀ/ and the apico-domal vibrant /ʀ̣/ is neutralised in that they freely vary. However, the contrast between these neutralised vibrants and the semi-consonant /ʀ̥/ is maintained.

| | |
|--|------------------------|
| /ʃa ^ŋ ka/ or /ʃa ^ŋ ka/ | 'take (it) out!' |
| /ɾa ^m paku/ | 'light, fragile' |
| /ʃaka/ or /ʃaka/ | 'hand' |
| /ɾa:kuʃa/ | 'towards flat country' |
| /ʃukuʃuku/ or /ʃukuʃuku/ | 'chest' |
| /ɾuʃpa/ | 'perforation' |
| /ʃiyinpa ⁿ tini/ or /ʃiyinpa ⁿ tini/ | 'joins by splicing' |
| /ɾiyipinji/ | 'smooths out' |

In the above, any examples with an initial /ʃ/ may be pronounced with either the allophone [ʃ] or the /ʃ/ allophone in that position. The apico-alveolar vibrant /ʃ/ is the norm in this word-initial position.

/ʃaka/ [ʃaka ~ ʃaka ~ ʃaka] 'hand'

Further, it has been observed that the allophones [ʃ] and [ʃ] in word-initial position are frequently preceded by an [ə] onset.

/ʃayipɾa/ [əʃayipɾa ~ əʃayipɾa] 'hard'

1.1.7 Contrasts between Phonetically Similar Consonantal Segments

In this section contrasts are presented between consonantal segments which have not yet been compared with each other.

Apico-domal lateral /l/ and apico-domal semi-consonant /ɾ/ in intervocalic position:

| | | | |
|--------|------------|--------|-------------|
| /maɭu/ | 'kangaroo' | /kaɭi/ | 'boomerang' |
| /maɾu/ | 'black' | /kaɾi/ | 'other' |

Apico-domal lateral /l/ and apico-alveolar vibrant /ʃ/ in word-initial and word-medial position:

| | | | |
|-----------|---------|---------|----------------|
| /lɭuɭtju/ | 'mound' | /-kɭɭɭ/ | 'unique, only' |
| /ʃutju/ | 'woman' | /kiʃi/ | 'fluting' |

Apico-alveolar stop /t/ and apico-alveolar vibrant /ʃ/ in intervocalic position:

| | | | |
|--------|-----------|--------|-----------------|
| /puta/ | 'tries' | /mutu/ | 'hitting stick' |
| /puʃa/ | 'thirsty' | /muʃu/ | 'scar' |

Apico-domal stop /ɭ/ and apico-alveolar vibrant /ʃ/ in intervocalic position:

| | | | |
|--------|-------------|------------|-------------|
| /muɭu/ | 'red ochre' | /kaɭaku/ | 'billy-can' |
| /muʃu/ | 'scar' | /kaʃawaɾi/ | 'coolibah' |

Apico-domal stop /ɟ/ and apico-domal vibrant /ɟ̣/ in intervocalic position:

| | | | |
|---------|----------|------------|---------|
| /miɟa/ | 'shield' | /kaɟiɟi/ | 'tooth' |
| /miɟ̣i/ | 'knee' | /kaɟ̣iɟ̣i/ | 'white' |

Apico-alveolar stop /t/ and apico-domal vibrant /ɟ̣/ in intervocalic position:

| | | | |
|---------|---------|---------|-----------|
| /mata/ | 'tired' | /puta/ | 'tries' |
| /maɟ̣a/ | 'maybe' | /puɟ̣a/ | 'follows' |

Bilabial stop /p/ and bilabial semi-consonant /w/ in word-initial position:

| | | | |
|----------|----------------|-----------|-------------|
| /paniya/ | 'eyes' | /piɟ̣iya/ | 'cold' |
| /wanja/ | 'emu feathers' | /wiɟ̣iya/ | 'young man' |

1.1.8 Semi-consonants

The voiced bilabial semi-consonant /w/ and the voiced alveo-palatal semi-consonant /y/ both occur in word-initial and intervocalic positions.

| | | | |
|---------|------------------|------------|---------------|
| /waɟ̣i/ | 'you don't say!' | /ɟ̣awa/ | 'no, nothing' |
| /wiɟ̣i/ | 'watercourse' | /tjiwiɟ̣i/ | 'water' |
| /wuɟ̣a/ | 'wait' | /yuwuɟ̣u/ | 'big boy' |
| /yani/ | 'goes' | /maya/ | 'more' |
| /yiɟ̣i/ | 'point' | /miyi/ | 'food' |
| /yuwa/ | 'wow, amazing!' | /kuyu/ | 'meat' |

In deliberate, slow or emphasised speech the semi-consonant /w/ is perceived as merely a rounding of the lips with a slight degree of consonantal tenseness but it still acts as a distinct syllable boundary. In the phonemic sequences /awu/ or /uwu/ in deliberate speech the phoneme /w/ freely varies with the glottal stop[ʔ] .

| | | |
|------------------------|---|--------------------|
| /tjawutjawu/ | [tjawutjawu ~ tjaʔutjaʔu] | 'small intestines' |
| /yuwuɟ̣u/ | [yuwuɟ̣u ~ yuʔuɟ̣u] | 'big boy' |
| /ɲa ⁿ tuwu/ | [ɲa ⁿ tuwu ~ ɲa ⁿ tuʔu] | 'horse' |

In normal speech in the phonemic sequence /awu/ within a morpheme, the phoneme /w/ is perceived as the high close back vowel [u] offgliding from the preceding vowel. The vowel /u/ is elided.

| | | |
|--------------|--------------------------------------|--------------------|
| /tjawutjawu/ | [tja ^u tja ^u] | 'small intestines' |
| /ɲawu/ | [ɲa ^u] | 'bad' |

In normal speech in the phonemic sequence /uwu/ within a morpheme, the phoneme /w/ is perceived as either an offglide with accompanying

elision of the following vowel /u/, or as just a lengthening of the initial vowel /u/.

/yuwuřu/ [y^uřu ~ yu:řu] *'big boy'*
 /ŋaⁿtuwu/ [ŋaⁿtu^u ~ ŋaⁿtu:] *'horse'*

When the phoneme /w/ occurs in the phoneme sequence /awa/ within a morpheme it is perceived as the high close back vowel [u] offgliding from the preceding vowel.

/|awa/ [|a^ua] *'no, nothing'*
 /paɪpawaŋu/ [paɪpa^uaŋu] *'star'*

In deliberate, slow or emphasised speech the phoneme /y/ is perceived as a voiced alveo-palatal semi-consonant with varying degrees of weak to strong articulation but still acts as a distinct syllable boundary. In such deliberate speech the phoneme /y/ in the phonemic sequences /ayi/ and /iyi/ freely varies with the glottal stop [ʔ].

/njuřuwiyi/ [ňuřuwiyi ~ ŋuřuwɪʔi] *'long time ago'*
 /miyi/ [miyi ~ miʔi] *'food'*

In the phonemic sequences /yitj, yinj, yilj/ when word-initial, the phoneme /y/ is perceived either as a voiceless alveo-palatal semi-consonant [ɣ] or as a voiceless glottal fricative [h].

/yitjařu/ [ɣitjařu ~ hitjařu] *'true'*
 /yinja/ [ɣiña ~ hiña] *'there'*
 /yilja/ [ɣilja ~ hilja] *'sends'*

In normal speech in the phoneme sequence /ayi/ within a morpheme, the phoneme /y/ is perceived as the high close front vowel [i] offgliding from the preceding vowel. The vowel /i/ of the sequence is elided.

/ŋalalayi/ [ŋalalaⁱ] *'too bad'*
 /wayiʔi/ [wɔⁱʔi] *'bush carrot'*

In normal speech in the phonemic sequence /iyi/ within a morpheme, the phoneme /y/ is perceived as just a lengthening of the initial vowel /i/.

/njuřuwiyi/ [ňuřuwɪ:] *'long time ago'*
 /miyi/ [mi:] *'food'*

1.2 VOWEL PHONEMES

The inventory of six vowel phonemes comprises the high front vowels

/i/ and /i:/, the high back vowels /u/ and /u:/, and the low-central vowels /a/ and /a:/.⁴

1.2.1 Vowel Contrasts

The vowels /i/, /u/, and /a/ contrast as in the following examples:

| | | | |
|---------|------------------|---------|------------------------------------|
| /wiři/ | 'watercourse' | /mliji/ | 'loose dirt in goannas' burrow' |
| /wuřa/ | 'wait!' | /mulju/ | 'nose' |
| /waři/ | 'you don't say!' | /maya/ | 'more' |
| /-kii/ | 'unique, only' | /pili/ | 'stone' |
| /-kuju/ | 'with' | /puja/ | 'shouts' |
| /kala/ | 'and' | /pali/ | 'dies' |

Contrast between a short vowel and its lengthened counterpart is demonstrated in the following examples:

| | | | |
|--------------------|--------------------------|----------------|-------------|
| /mimi/ | 'forehead' | /yanilki/ | 'goes now' |
| /mi:mi:njanji/ | 'scrutinises' | /yuni:lka/ | 'dirty' |
| /kukulmařa/ | 'holds with lips' | /řuřpa/ | 'unknowing' |
| /ku:lku:lpanitini/ | 'folds tightly' | /řu:řpa/ | 'larynx' |
| /tjatjakaři/ | 'other grand- mother' | /mařmařmani/ | 'weakens' |
| /tja:tja:kaři/ | 'opens and closes' | /ma:řma:řmani/ | 'twinkles' |

1.2.2 Vowel Allophones

Both short and long vowels have strongly retroflexed allophones when contiguous to retroflexed consonants.

| | |
|----------------------|-------------------|
| /-kii/ [kii] | 'unique, only' |
| /pila:li/ [piliq:li] | 'ritual friend' |
| /mu!uru/ [muyru] | 'large white ant' |
| /yu!tu/ [yuytu] | 'hollow' |
| /ma!pa/ [maqpa] | 'companion' |
| /wa!u/ [wau] | 'fire' |

The high front vowel /i/ has three allophones. The high close front unrounded allophone [i] occurs contiguous to the phoneme /y/, following palatalised consonants, and in word-final position.

| | |
|----------------|---------|
| /miyi/ [miyi] | 'food' |
| /njiya/ [ñiya] | 'what?' |

The voiced mid close front unrounded allophone [e] occurs only in word-final position when preceded by the phoneme sequences /uw/ or /u^{nj}tj/. Words comprising these sequences in word-final position are relatively rare.

| | |
|---|----------------|
| /yuwi/ [yuwe] | 'yes' |
| /kumu ^{nj} tji/ [kumu ^{nj} tje] | 'nameless one' |

The high open front unrounded allophone [ɪ] occurs elsewhere.

| | |
|-------------------|-----------|
| /pikiʃi/ [pɪkiʃi] | 'woomera' |
| /kiʃi/ [kɪʃi] | 'fluting' |

The high back vowel /u/ has three allophones. The high close back rounded allophone [u] occurs contiguous to the phoneme /w/, and in word-final position.

| | |
|------------------------|-----------------|
| /njuʃuwiyi/ [ɲuʃuwiyi] | 'long time ago' |
| /yuwuʃu/ [yuwuʃu] | 'big boy' |

The high open back rounded allophone [ʊ] occurs elsewhere.

| | |
|---------------|---------|
| /kutu/ [kʊtu] | 'close' |
| /kuyu/ [kʊyu] | 'meat' |

When the vowel /u/ is followed by the phoneme /nj/ some speakers pronounce it as a voiced high close front rounded vowel [ü] with an accompanying change in pronunciation of the phoneme /nj/ to that of the voiced apico-alveolar nasal /n/.

| | |
|---|--------------------|
| /kunjkunŋaŋi/ [kʊŋkʊŋŋaŋi ~ kʊŋkʊŋŋaŋi] | 'sucks' |
| /muyunjku/ [muyʊŋku ~ muyʊŋku] | 'bobs up and down' |

In reduplicated constructions the final vowel /i/ or /u/ of the initial group of syllables being reduplicated is pronounced as though it were in word-final position.

| | |
|-----------------------------------|-------------------------------|
| /kitikiti/ [kɪtikɪti] | 'armpit' |
| /milpɪɪpɪɪ/ [mɪlɪɪpɪɪpɪɪ] | 'eyebrow' |
| /!iŋiʃtjɪŋiʃtji/ [!iŋiʃtjɪŋiʃtji] | 'immediate area around ears' |
| /mi!iki!piki!pi/ [mɪ!ɪkɪ!pɪkɪ!pɪ] | 'shoulderblade' |
| /ʃukuʃuku/ [ʃʊkʊʃʊkʊ] | 'chest' |
| /tjapu!upu!u/ [tʃapʊ!ʊpʊ!ʊ] | 'mouth' |
| /tjaləŋutjaləŋu/ [tʃaləŋutʃaləŋu] | 'long time ago (20-40 years)' |
| /pululu/ [pʊlʊlʊ] | '(stand) still!' |

The low central vowel /a/ has three allophones. The voiced low close back rounded allophone [ɔ] only occurs when preceded by the semi-consonant /w/ and followed by a bilabial consonant. The voiced mid open central unrounded allophone [ʌ] occurs elsewhere except in word-final position, where only the voiced low open central unrounded allophone [a] occurs. In interconsonantal position the allophone [a] freely varies with the allophone [ʌ].

| | | |
|------------------------|---|-------------|
| /wa ^m pana/ | [wɔ ^m pʌnɔ ~ wɔ ^m pana] | 'wallaby' |
| /wapami/ | [wɔpʌmi ~ wɔpami] | 'walks' |
| /maɪjpakaʃa/ | [mʌɪjpʌkʌʃa ~ maɪjpakaʃa] | 'baby boy' |
| /maɪpa/ | [mʌɪpa ~ maɪpa] | 'boomerang' |

All vowels in utterance-final position may be followed by a weakly articulated glottal stop.

2. PHONEME DISTRIBUTION

2.1 CONSONANT DISTRIBUTION WITHIN THE PHONOLOGICAL WORD

The phonological word in Ngardilpa is defined as a minimal utterance marked by primary stress and borders demarcated by features such as potential pause, pitch, and predictable occurrences of certain phonemes governed by phoneme distribution. Secondary stress is a further feature in words comprising three or more syllables.

All words begin with a consonant. Any single consonant except /t/, /ⁿt/, /ⁿɬ/, /ⁿjɬ/, /ⁿk/, /n/, /l/, and /lj/ has been found to occur in word-initial position. See statement concerning /t, n, l/ in Section 1.1.5, and statement on /ʃ, ʃ̣/ in Section 1.1.6.

Neither single consonants nor consonant clusters occur in word-final position. However, in stems of compounds and reduplicated constructions consonants do occur in stem-final position of the non-final stem/s.

Any single consonant and certain consonant clusters may occur in word-medial position. Consonant clusters comprise only two consonants and may occur:

- a) within morphemes and morpheme-initially;
- b) within compound verbs at root boundaries³;
- c) within reduplicated constructions.

2.1.1 Category A, Consonant Clusters within Morphemes

Thus far, 25 different consonant clusters have been recorded within morphemes, three of these were in morpheme-initial position.

*Homorganic Clusters***Lateral + stop:**

| | | |
|--------|-------------|---------------|
| /lt/ | /kultu/ | 'side, waist' |
| /!t/ | /yu!tu/ | 'hollow' |
| /ljtj/ | /y!ljtj!l!/ | 'fingernail' |

*Heterorganic Clusters***Nasal + stop:**

| | | |
|-------|------------|---------------------------------|
| /np/ | /tjananpa/ | 'opossum' |
| /nk/ | /klnkl/ | 'devil' |
| | /-nku u/ | 'you (2nd pers.pl.subj.suffix)' |
| /ŋp/ | /wlŋpa/ | 'lightning' |
| /ŋk/ | /paŋku/ | 'cousin' |
| /njp/ | /njlnjpa/ | 'spits' |
| /njk/ | /muyunjku/ | 'twitches' |

Nasal + nasal:

| | | |
|------|-----------|-------------|
| /nm/ | /munma/ | 'early' |
| /nŋ/ | /manŋlʃi/ | 'lightning' |

Lateral + stop:

| | | |
|-------|------------|---|
| /lp/ | /milpa/ | 'eye' |
| | /-lpa/ | 'used to (habitual tense aspect suffix)' |
| /lk/ | /yalklʃl/ | 'sky' |
| | /-lku/ | 'now (present tense aspect suffix)' |
| /!p/ | /ma!pa/ | 'companion' |
| /!k/ | /mu!ku/ | 'intestines' |
| /ljp/ | /maʃaljpi/ | 'sacred site, ceremony, or ground painting' |
| /ljk/ | /waljka/ | 'cold' |

Lateral + semi-consonant:

| | | |
|------|-----------|---------------|
| /lw/ | /kalwa/ | 'egret' |
| /!w/ | /wa!waʃa/ | 'tree lizard' |

Vibrant /ʃ/ + stop:

| | | |
|-------|-----------|-------------------|
| /ʃp/ | /winlʃpi/ | 'corner of mouth' |
| /ʃtj/ | /ŋuʃtju/ | 'good' |
| /ʃk/ | /ylnaʃkl/ | 'spider' |

Vibrant /ʃ/ + nasal:

| | | |
|------|------------|--|
| /ʃm/ | /yunkuʃmu/ | 'bush bean tree' |
| /ʃŋ/ | /ŋaŋpiʃŋi/ | 'curving to the left (of flight of boomerang)' |

Semi-consonant /ɾ/ + nasal:

| | | |
|------|---------|----------|
| /ɾŋ/ | /ʔaɾŋa/ | 'really' |
|------|---------|----------|

2.1.2 Category B, Consonant Clusters within Compound Verbs at Root Boundaries

Thus far, in this category 33 different consonant clusters have been recorded at the root boundaries of compound verbs.

Homorganic Clusters

Lateral + lateral:

| | | |
|-------|--------------------|--------|
| /l / | /wawu wawu uwani/ | 'tugs' |
|-------|--------------------|--------|

Heterorganic Clusters

Nasal + stop:

| | | |
|-------|------------------|---------------------|
| /np/ | /piʃmanpinji/ | 'rebounds, bounces' |
| /ŋp/ | / akapinji/ | 'loosens, opens' |
| /njp/ | /ʃuʃunjpini/ | 'removes' |
| /ntj/ | /panpantjaŋkami/ | 'burns severely' |
| /nk/ | /ŋayinkitjiŋi/ | 'breathes deeply' |
| /ŋk/ | /tjinanakitjiŋi/ | 'stumbles' |

Nasal + nasal:

| | | |
|-------|----------------|----------|
| /ŋm/ | /tjuŋtjuŋmani/ | 'clicks' |
| /ŋjm/ | /ʔunjmani/ | 'groans' |
| /ŋjŋ/ | /kunjkunjŋani/ | 'sucks' |

Nasal + semi-consonant:

| | | |
|------|---|----------------------|
| /ŋw/ | /ŋa ^ŋ ʔiŋa ^ŋ ʔiŋwapami/ | 'walks stooped over' |
|------|---|----------------------|

Lateral + stop:

| | | |
|-------|-----------------------------|-------------------------------|
| /lp/ | /pi: ^ŋ ʔilpinji/ | 'deals a crashing blow' |
| /lp/ | /tjuwu pinji/ | 'jumps' |
| /lk/ | /tjuwu kaɾikaɾipinji/ | 'it sunfishes' |
| /ljp/ | /wiljpinji/ | 'beats up' |
| /ljk/ | /muljmuljkaʃkami/ | 'leaves impression in ground' |

Lateral + nasal:

| | | |
|-------|-----------------|-----------------------|
| / m/ | /ʔa: mani/ | 'clicks, snaps' |
| / nj/ | /miyi njinami/ | 'works while sitting' |
| / ŋ/ | /tjulju ŋunami/ | 'floats in water' |

Lateral + lateral:

| | | |
|-------|---------------|----------------------------|
| / j / | /ʔa: j uwaŋi/ | 'breaks limbs with weapon' |
|-------|---------------|----------------------------|

Lateral + semi-consonant:

| | | |
|-------|-----------------------|-----------------------|
| / w/ | /kapal kapalwapami/ | 'staggers' |
| / w/ | /tjulju wapami/ | 'walks through water' |
| / jw/ | /kiwil jkiwiljwapami/ | 'reels, staggers' |
| / jy/ | /wuɾul jyani/ | 'escapes' |

Vibrant /ʃ/ + stop:

| | | |
|-------|-------------------------------|-------------------|
| /ʃp/ | /ʃil p ʃpa ⁿ tini/ | 'punctures' |
| /ʃtj/ | /wa kuʃt jini/ | 'barks at' |
| /ʃk/ | /waʃaʃwaʃaʃkit jini/ | 'rolls on ground' |

Vibrant /ʃ/ + nasal:

| | | |
|------|--------------|------------|
| /ʃm/ | /tjakuʃmani/ | 'lifts' |
| /ʃŋ/ | /kawuʃŋaŋi/ | 'crunches' |

Vibrant /ʃ/ + lateral:

| | | |
|------|----------------|--------------------------|
| /ʃ / | /ruŋkuʃ uwaŋi/ | 'slices off with weapon' |
|------|----------------|--------------------------|

Vibrant /ʃ/ + semi-consonant:

| | | |
|------|-------------------------------|------------------------------------|
| /ʃw/ | /wawuʃwa ⁿ kami/ | 'whirrs, makes a fluttering noise' |
| /ʃy/ | /ʔa ⁿ tjaʃyin ji/ | 'supplies, gives repeatedly' |

Semi-consonant /ɾ/ + stop:

| | | |
|------|----------------|--------|
| /ɾk/ | /yaɾyaɾkaʃimi/ | 'rubs' |
|------|----------------|--------|

2.1.3 Category C, Consonant Clusters within Reduplicated Constructions

Thus far, in this category 25 different consonant clusters have been recorded at the boundaries of reduplicated roots in compound verbs.

Homorganic Clusters

Lateral + stop:

| | | |
|------|--------------------|-----------|
| / t/ | /ʔu t tu pat jini/ | 'slashes' |
|------|--------------------|-----------|

Vibrant /ʃ/ + vibrant /ʃ/:

/ʃʃ/ /ʃu^okuʃʃu^okuʃpaⁿtini/ 'scrapes off'

Heterorganic Clusters

Nasal + stop:

/np/ /panpantjaŋkami/ 'burns severely'
 /ŋp/ /paⁿʃtjaŋpaⁿʃtjaŋwapami/ 'leaves a trail'
 /ŋtj/ /tjuŋtjuŋmani/ 'clicks'
 /ŋk/ /ki^oʃtaŋki^oʃtaŋwapami/ 'waddles'
 /ŋjk/ /kunjkunjŋaŋi/ 'sucks'

Nasal + semi-consonant:

/ŋy/ /yaⁿtaŋyaⁿtaŋwapami/ 'sneaks away quietly'
 /ŋjw/ /winjwinjmani/ 'whistles quietly'

Lateral + stop:

/lk/ /kapaikapaIwapami/ 'staggers'
 /!p/ /pi^oʃta!pi^oʃta!pakaŋi/ 'plucks, flicks'
 /!tj/ /tjuwu!tjuwu!pinji/ 'bucks, hops'
 /!k/ /ku!ku!maʃaŋi/ 'holds tightly between lips'
 /!jk/ /kiwi!jkiwi!jwapami/ 'reels, staggers'

Lateral + nasal:

/!jm/ /muljmuljwapami/ 'walks leaving deep impressions'
 /!jŋ/ /ŋiti!jŋiti!j!pakaŋi/ 'cuts against the grain'

Lateral + semi-consonant:

/!w/ /wawu!wawu!juwaŋi/ 'tugs'

Vibrant /ʃ/ + stop:

/ʃp/ /paʃpaʃpaʃimi/ 'heats up'
 /ʃt/ /ʃu!tuʃt!tuʃpaⁿtini/ 'pecks'
 /ʃtj/ /tjitiʃtjitiʃwapami/ 'walks with head bowed down'
 /ʃk/ /kaliʃkaliʃkaʃkami/ 'spreads out, splits up'

Vibrant /ʃ/ + nasal:

/ʃm/ /muʃmuʃŋaŋi/ 'chews noisily'

Vibrant + semi-consonant:

/ʃw/ /waʃaʃwaʃaʃkitjiŋi/ 'rolls on ground'
 /ʃy/ /yawiiʃyawiiʃpatjiŋi/ 'cuts through in many places'

Semi-consonant /r/ + semi-consonant:

/ry/ /yarȳarȳkařiml/ 'rubs'

2.1.4 Observations Concerning Consonant Clusters

The data collected thus far yielded 50 different consonant clusters, 11 of which occur in each of the three categories. The following chart facilitates comparisons of clusters in the three categories.

| Category A | Category B | Category C |
|------------|------------|------------|
| lt | | |
| l̥t̥ | | l̥t̥ |
| | ll | |
| ljtj | | |
| | lj̥l̥ | |
| | | ʃʃ |
| np | np | np |
| ŋp | ŋp | ŋp |
| njp | njp | |
| | ntj | |
| | | ŋtj |
| nk | nk | |
| ŋk | ŋk | ŋk |
| njk | | njk |
| nm | | |
| | ŋm | |
| ng | | |
| | njm | |
| | njŋ | |
| | ŋw | |
| | | ŋy |
| | | njw |
| lp | lp | |
| lk | | lk |
| l̥k | l̥k | l̥k |
| l̥p | l̥p | l̥p |
| | | l̥tj |
| ljp | ljp | |
| ljk | ljk | ljk |
| | l̥m | |
| | l̥nj | |

continued on next page

| | | |
|-----|-----|-----|
| | !ŋ | |
| !w | !w | |
| !w | !w | !w |
| | | !jm |
| | | !jŋ |
| | !jw | |
| | !jy | |
| řp | řp | řp |
| | | řt |
| řtj | řtj | řtj |
| řk | řk | řk |
| řm | řm | řm |
| řŋ | řŋ | |
| | ř! | |
| | řw | řw |
| | řy | řy |
| | ɾk | |
| ɾŋ | | |
| | | ɾy |

Categories A and C share 3 consonant clusters, categories B and C share 2 consonant clusters, categories A and B share 6 consonant clusters, in addition to the 11 consonant clusters they all share in common. This leaves 5 consonant clusters that are unique to category A, 14 to category B, and 8 to category C.

The first member of a consonant cluster in any category is always either a nasal, a lateral, a vibrant, or in rare instances the semi-consonant /ɾ/.

The second member of a consonant cluster may never be the consonants /n/, /l/, /lj/, /ř/, and /ɾ/.

A total of only 6 homorganic consonant clusters were recorded, the remaining 44 are heterorganic.

2.2 VOWEL DISTRIBUTION WITHIN THE PHONOLOGICAL WORD

Vowels do not occur in word-initial position but all words end with a vowel. Vowel clusters do not occur. Long vowels never occur in word-final position.

The vowels /i/ and /u/ very rarely co-occur in contiguous syllables in words that do not comprise reduplicated or compounded constructions.

Vowel harmony normally occurs. Only a few exceptions have been recorded, as follows:

| | |
|-----------|-----------------|
| /kuřitji/ | 'shield' |
| /kuřitji/ | 'mother-in-law' |
| /yukuři/ | 'green' |
| /ku iřa/ | 'south' |

3. SYLLABLES

Only two syllable types occur, CV and CVC.

CV type syllables:

| | |
|-------------------|-----------------|
| /pi.na/ | 'knowing' |
| /ku.yu/ | 'meat' |
| /ma. u/ | 'kangaroo' |
| /mi:.mi:.nja.nji/ | 'scrutinises' |
| /řu:.ka.ŋu/ | 'pushed' |
| /pi. a:.li/ | 'ritual friend' |

CVC type syllables:

| | |
|--------------------|----------------|
| /kin.ki/ | 'devil' |
| /ŋuř.tju/ | 'good' |
| /ŋa.wuř.ŋa.wuř.pa/ | 'hot' |
| /li: .ki/ | 'staring' |
| /mu: .pa.lu/ | 'very careful' |
| /ma:ř.ma:ř.ma.ni/ | 'twinkles' |

Within a phonological word up to 11 CV syllables may occur consecutively.

| | |
|--|---------------------------------------|
| /ma.li.ki.tja.řa. u.ka.pa.la.nja.nu ya .ki.ni/ | 'the two dogs are biting one another' |
|--|---------------------------------------|

But at the most only two contiguous CVC syllables occur in phonological words that do not comprise reduplicated constructions.

| | |
|-----------------------------------|-----------------------|
| /řilj.piř.pa. ⁿ ti.ni/ | 'punctures' |
| /wa .kuř.tji.ni/ | 'barks at' |
| /ŋaŋ.piř.ŋi/ | 'curving to the left' |
| /piř.man.pi.nji/ | 'rebounds' |

In reduplicated constructions, however, three or four contiguous CVC syllables may occur.

/pan.pan.tjaŋ.ka.mi/ *'burns severely'*
 /ʔul.tuʔ.ʔul.tuʔ.pa.ⁿti.ni/ *'pecks'*

Some bound morphemes have the phonemic shape of CCV.

/-lku/ (*present tense aspect suffix*)
 /-lpa/ (*habitual tense aspect suffix*)
 /-npa/ (*2nd pers.sing.subj.pronominal suffix*)
 /-nku|u/ (*2nd pers.pl.subj.pronominal suffix*)

After suffixation the initial consonant of CCV suffixes fills the postnuclear margin of the final syllable of the morpheme to which it was suffixed.

/walj.ka.ka.ŋa/ *'I am feeling cool'* + /-lku/ *'now'*
 /walj.ka.ka.ŋa|ku/ *'I am feeling cool now'*

Thus after suffixation the syllabic division of the consonant cluster of the suffixed morpheme no longer coincides with the lexical division.

4. WORD STRESS

Phonological words in Ngardilpa comprise one and up to fifteen syllables. Words comprising more than fifteen syllables have not yet been found in the data. Monosyllabic words and words comprising more than ten syllables are relatively rare.

The phonological word carries primary stress on the first syllable and secondary stress on specific syllables as explained below, but the final syllable is always unstressed. Primary stress is perceived as increased intensity or loudness, raised pitch, and sometimes length. Secondary stress is perceived as less loudness and less length than in primary stress, with pitch usually no higher than that of the contiguous, non-stressed syllables.

In this section, primary stress will be symbolised by /"/ preceding the syllable, and secondary stress by /'/ preceding the syllable.

In two- and three-syllable words no secondary stress occurs.

/"pi.na/ *'knowing'*
 /"wa.ni.ⁿJtja/ *'throat'*

Exception: A few two syllable words do not conform to the stress patterning as outlined above but they are extremely rare, e.g. /yu."wi/ *'yes'*.

In mono-morphemic words comprising four syllables, secondary stress occurs on the penultimate syllable.

| | |
|----------------------|-----------------------|
| /'mi.li.'tʃi.tʃi/ | 'ceremonial armblood' |
| /'kan.ka.'la.ʃa/ | 'up' |
| /'ku.tu.'ʃu.ʃu/ | 'heart' |
| /'ŋal.minj.'minj.pa/ | 'bat' |
| /'ki.ti.'ki.ti/ | 'armpit' |
| /'ya.lju.'ya.lju/ | 'red' |
| /'nja.nja.'ki.ʃi/ | 'mistletoe' |

In mono-morphemic words comprising five and up to seven syllables, secondary stress occurs on the penultimate syllable. These are words that do not contain reduplicated syllables. Such words comprising more than seven syllables have not been found in the data.

| | |
|---|-----------------------|
| /'tju.ʃu.pulj.'pa.ʃi/ | 'full' |
| /'pin.pi.ʃi.'tjaʃ.pa/ | 'masked wood swallow' |
| /'ka.na.ka.ʃu.' ^m pa.yi/ | 'fat-tailed mouse' |
| /'ka.ʃa.ŋu.tja.ʃa.'pa. ⁿ ʃa/ | 'big scorpion' |

In mono-morphemic words containing reduplicated syllables and comprising five and up to eight syllables, secondary stress occurs, as follows:

(a) on the first syllable of each reduplicated group of syllables when these groups are preceded by two or more non-reduplicated syllables.

| | |
|---|---------------------------|
| /'ŋi. ⁿ ʃi.'tʃinj.'tʃinj.ki/ | 'rabbit bandicoot tail' |
| /'tʃi.wi.'ʃi.ʃi.'ʃi.ʃi/ | 'blue and white wren' |
| /'kaʃ.ka.ʃa.'pa.yi.'pa.yi/ | 'insect gall on coolibah' |
| /'ka.ʃa.tja.ʃa.'pu.ʃu.'pu.ʃu/ | 'bandicoot' |

(b) on the first syllable of the second group of reduplicated syllables when only one syllable, i.e. the word-initial primary stressed syllable, precedes the reduplicated group of syllables.

| | |
|------------------------|-----------------|
| /'yu.ma.ʃi.'ma.ʃi/ | 'gecko' |
| /'ʃi.ŋiʃ.tʃi.'ŋiʃ.tʃi/ | 'temple (head)' |
| /'pu.ʃu.lju.'ʃu.lju/ | 'new leaves' |

(c) on the first syllable of each reduplicated group of syllables following one word-initial group of reduplicated syllables comprising two or more syllables.

| | |
|-------------------------------|----------------------------|
| /'ŋa.wuʃ.'ŋa.wuʃ.pa/ | 'hot' |
| /'ŋa.ʃu.'ŋa.ʃun.pa/ | 'big red ant' |
| /'ŋi.ʃi.ʃi.'ŋi.ʃi.ʃi/ | 'round' |
| /'ʃu.ku.'ʃu.ku.'ti.ʃi.'ti.ʃi/ | 'small bird with red head' |

Mono-morphemic words containing reduplicated syllables and comprising more than eight syllables have not been found in the data.

In poly-morphemic words stress is determined by the inherent stress of each of the morphemes comprising such words.

Poly-syllabic morphemes comprising two and up to eight syllables are inherently stressed as explained above in the section dealing with mono-morphemic words.

Mono-syllabic morphemes other than verb roots have no inherent stress but they carry primary stress when they occur in word-initial position of poly-morphemic words, and secondary stress when they occur as the fourth syllable in a string of five inherently unstressed syllables.

The following examples of poly-morphemic words are marked only according to morphemes. Morpheme boundaries are marked by the symbol - . Verb roots are underlined. The symbols for primary and secondary stress remain unchanged.

| | |
|--|---|
| /'piʃman-' <u>pi</u> -nɟi/ | 'rebounds' |
| /'paʃ-paʃ-' <u>paʃ</u> i-mi/ | 'heats up' |
| /' <u>paŋka</u> -tja- i-'tjaʃa/ | 'he and I ran' |
| /'wili ⁰ kiʃ-' <u>paka</u> -ŋi/ | 'winks' |
| /'ka ⁰ ʔa-'paʃu-'kaʃi- i/ | 'the other old women' |
| /' <u>ka</u> - ⁿ Jtja-' <u>ya</u> -nu- pa-'tjaŋa/ | 'then, while carrying it, they went' |
| /'najanuŋu-'njanu-'kuʃa-tju/ | 'he, towards himself, (is)' |
| /'tjanjuŋu-nja-'ka-npa-' <u>maʃa</u> -ŋi/ | 'do you have tobacco?' |
| /'piʃa-'ku u- u- ku-ka-' <u>ma</u> -ni/ | 'he was then filling (it) up' |
| /'puta- ku-'ŋalu- a-'puʃa-' <u>nja</u> -ŋu/ | 'we(excl.) now tried to think about (it)' |
| /'wilpi-' <u>ma</u> -nu-ʃa- pa-'pala-'yaʃa/ | 'the two of them were pulling (it) away again' |
| /'kula-'pina- ku-'nkulu-'yiʃkinpa-' <u>ya</u> -nu/ | 'you all did not then return together' |
| /'kulaʃa-'wiyi-'njanu- a-'tjuka-'tjuka-' <u>yiʃa</u> -ŋu/ | 'repeatedly, he poked the spear at himself first' |

When a mono-syllabic morpheme occurs in word-initial position and is followed by a verb root, it carries primary stress while the first syllable of the verb root carries secondary stress.

| | |
|-----------------------------|---------------------------------|
| /'paʃ-' <u>paʃ</u> i-mi/ | 'flies (verb)' |
| /'ʃu:-'ka-ŋu/ | 'pushed' |
| /'ʃa: j-' <u>paka</u> -ŋi/ | 'fells a tree' |
| /'pu: j-' <u>kitji</u> -ŋi/ | 'removes from between the lips' |

When the exclamation or intensifier suffix /-wu/ is added to a word, the primary stress shifts from the first syllable to the penultimate syllable, and secondary stress, if any, is lost.

/ "ya.^mpi.ya + wu > ya.^mpi."ya.wu/ 'stop it! (emphatic)'
 / "ja.wa + wu > ja."wa.wu/ 'no! (emphatic)'
 / "ya.ti.'tja.řa + wu > ya.ti.tja."řa.wu/ 'north! (emphatic)'

5. INTONATION

Intonation in Ngardilpa is a complex phenomenon. Intonation is applied to phrases to affect their shade of meaning, but not their basic meaning. Sometimes intonation begins and ends at the borders of important grammatical units or of actual or potential phonological ones. Sometimes sequences of several intonation contours occur in series without pauses separating them. Speech tempo in conjunction with intonation is important also.

With intonational differences a speaker of Ngardilpa can express all sorts of mental states or feelings, such as satisfaction, discontent, disbelief, surprise, disappointment, contempt, hatred, pity, complacency, impatience, fear, doubt, pride, contentment, frustration, bellicosity, repugnancy, gaiety, etc.

Having said all that, it is significant to note that according to Hockett (1955), English intonations are built out of seven ultimate phonologic constituents, which occur only in certain arrangements relative to each other and relative to the remainder of the macrosegment. There are three pitch levels, three terminal contours, and one feature of the all-or-none type which is called "extra height". A macrosegment is defined as a stretch of speech or a short utterance with no internal pauses, and in English a macrosegment consists of two immediate constituents, namely, intonation and a remainder. There are in English less than a hundred different intonations and a transfinite number of different remainders.

Many alternative techniques for analysis of intonational systems have been and are being used by investigators, but thus far apparently no unified technique has as yet been developed. To date the intonational system of Ngardilpa has not been analysed beyond a preliminary investigation. This investigation revealed that some of the many possible intonation contours comprise the same types of elements found in some intonation contours of some of the other Western Desert Languages as well as English (this became apparent when reading Hockett).

No attempt will be made here to list or describe any of the many

types of intonation contours in Ngardilpa. A definitive description of the intonational system is presently beyond the scope of this paper because it has not yet been determined to what level within the phonological hierarchic structure this intonational system should be assigned.

6. MORPHOPHONEMICS

Most of the morphophonemic changes in Ngardilpa are governed by vowel assimilation or mutation. Vowel assimilation occurs between the vowels /i/ and /u/, and the assimilation is either progressive or regressive. The remaining changes are due to the phenomenon that requires certain suffixes to begin with a prenasalised stop when affixed to disyllabic words, and with a lateral when affixed to poly-syllabic words.

The base form of a suffix or verb is the form displayed when the suffix in question is affixed to a noun ending with the vowel /a/, or the verb in question has a suffix affixed that is void of the elements that usually trigger regressive assimilation.

Some tense suffixes cause regressive assimilation on the vowels of the verbs to which they are affixed. The elements in tense suffixes that trigger such assimilation are the vowels /i/ and /u/, and the prenasalised stop /ⁿJtj/ when it occurs suffix-initial.

| | |
|--|--------------------|
| /pu + -nji > pinji/ | 'hits' |
| /yu + -nji > yinji/ | 'gives' |
| /kitji + -ŋu > kutjuŋu/ | 'threw' |
| /tja ⁿ ti + -ŋu > tja ⁿ tjuŋu/ | 'scraped' |
| /pu + - ⁿ Jtja > pi ⁿ Jtja/ | 'keeps on hitting' |
| /yu + - ⁿ Jtja > yi ⁿ Jtja/ | 'keeps on giving' |

The final vowel of noun stems causes progressive assimilation of the vowel of the following suffix. The ergative suffix {-|u} has four allomorphs, -|u ~ -|i ~ -⁰ku ~ -⁰ki. When the noun stem comprises three or more syllables the allomorph -|u follows stem-final vowels /a/ or /u/, and the suffix vowel assimilates following the vowel /i/ to form the allomorph -|i. When the noun stem is disyllabic the allomorph -⁰ku follows stem-final vowels /a/ and /u/, and the suffix vowel assimilates following the vowel /i/ to form the allomorph -⁰ki.

| | |
|---|-----------|
| /pulu <u>ku</u> / + {- u} > /pulu <u>ku</u> u/ | 'bullock' |
| /ma <u>l</u> ki/ + {- u} > /ma <u>l</u> ki i/ | 'dog' |
| /wa u/ + {- u} > /wa u ⁰ ku/ | 'fire' |
| /wa <u>t</u> i/ + {- u} > /wa <u>t</u> i ⁰ ki/ | 'man' |

Pronominal suffixes comprising the vowels /i/ and /u/ that are subject to progressive assimilation are as follows:

| | | |
|-------------------------|---|-------------------------|
| {- i} | - i ~ - u | 'you and I (subj.)' |
| {- itjaʃa} | - itjaʃa ~ - utjaʃa | 'he and I (subj.)' |
| {- ipa} | - ipa ~ - upa | 'you all and I (subj.)' |
| {-nku u} | -nku u ~ -nki i | 'you all (subj.)' |
| {- u} | - u ~ - i | 'they (subj.)' |
| {-tju} | -tju ~ -tji | 'I (obj.)' |
| {- ⁰ ku} | - ⁰ ku ~ - ⁰ ki | 'you (obj.)' |
| {- ⁰ kupa a} | - ⁰ kupa a ~ - ⁰ kipa a | 'you two (obj.)' |

Various other suffixes that are also subject to progressive vowel assimilation are as follows:

| | | |
|-----------|-------------------|---------------------------------|
| {-kuʃa} | -kuʃa ~ -kiʃa | 'towards (allative)' |
| {-ku} | -ku ~ -ki | 'to (dative benefactive)' |
| {-kulaŋu} | -kulaŋu ~ -kilaŋu | 'of, belonging to (possessive)' |
| {-ku u} | -ku u ~ -ki i | 'with (instrument)' |
| {-ŋi} | -ŋi ~ -ŋu | 'moving hither (manner)' |
| {-ŋu u} | -ŋu u ~ -ŋi i | 'from (relative)' |
| {-iku} | -iku ~ -iki | 'now (present tense aspect)' |

Another suffix, the locative suffix {-|a} has two allomorphs, -|a ~ -⁰ka. The allomorph -|a is suffixed to noun-stems comprising three or more syllables, and the allomorph -⁰ka to disyllabic noun-stems.

| | | |
|------------------|---------------------------|-----------------|
| /yuwa i/ + {- a} | > /yuwa i a/ | 'in the house' |
| /wa ja/ + {- a} | > /wa ja ⁰ ka/ | 'on the ground' |

One particular suffix, however, is immune to vowel assimilation:

| | | |
|---------------------------------|-----------------------------|------------------------|
| /tjuŋa + {-ki i} | > tjuŋaki i/ | 'only the truth' |
| /ŋanayi + {-ki i} | > ŋanayiki i/ | 'only what's his name' |
| /ya u ^m pu + {-ki i} | > ya u ^m puki i/ | 'only over there' |

APPENDIX

LEXICOSTATISTICAL WORD LISTS

The following 100-word list was supplied by Swadesh and modified by Samarin (1967:221).

| | |
|-----------------------|-----------------------|
| 1. <i>I</i> | /ŋatju/ |
| 2. <i>you (sing.)</i> | /nju ⁿ tu/ |
| 3. <i>we (incl.)</i> | /ŋalipa/ |
| 4. <i>this</i> | /nja ^m pu/ |
| 5. <i>that</i> | /yali/ |
| 6. <i>who?</i> | /ŋana/ |
| 7. <i>what?</i> | /njiya/ |
| 8. <i>not</i> | /!awa/ |
| 9. <i>all</i> | /yuɬuɬupatu/ |
| 10. <i>many</i> | /panu/ |
| 11. <i>one</i> | /tji ⁿ ta/ |
| 12. <i>two</i> | /tjiʃama/ |
| 13. <i>big</i> | /wiɾi/ |
| 14. <i>long</i> | /kiʃiʃi/ |
| 15. <i>small</i> | /wita/ |
| 16. <i>woman</i> | /ka ⁿ ta/ |
| 17. <i>man</i> | /ŋaʃka/ |
| 18. <i>person</i> | /yapa/ |
| 19. <i>fish</i> | /yawu/ |
| 20. <i>bird</i> | /tjuɬpu/ |
| 21. <i>dog</i> | /tja ⁿ tu/ |
| 22. <i>house</i> | /yuwaɬi/ |
| 23. <i>tree</i> | /watiya/ |
| 24. <i>seed</i> | /ŋuɬu/ |
| 25. <i>leaf</i> | /tjaljuʃpa/ |
| 26. <i>root</i> | /ŋa ⁿ ɬju/ |

| | | |
|-----|--------------------|-----------------------------|
| 27. | <i>bark</i> | /wuʃamliʃi/ |
| 28. | <i>skin</i> | /pi ⁿ ti/ |
| 29. | <i>flesh</i> | /yilaʃa/ |
| 30. | <i>blood</i> | /yalju/ |
| 31. | <i>bone</i> | /yunkuŋu/ |
| 32. | <i>grease</i> | /tjaʒa/ |
| 33. | <i>egg</i> | /ŋipiʒi/ |
| 34. | <i>horn</i> | /malpi ⁿ tiʃi/ |
| 35. | <i>tail</i> | /ŋi ⁿ ʒi/ |
| 36. | <i>feather</i> | /pinkliʃpa/ |
| 37. | <i>hair</i> | /manlipa/ |
| 38. | <i>head</i> | /tjuʃu/ |
| 39. | <i>ear</i> | /ʒaŋa/ |
| 40. | <i>eye</i> | /milpa/ |
| 41. | <i>nose</i> | /mulju/ |
| 42. | <i>mouth</i> | /ʒiʃa/ |
| 43. | <i>tooth</i> | /kaʒiʃi/ |
| 44. | <i>tongue</i> | /tjalanpa/ |
| 45. | <i>finger nail</i> | /yiljɔtjilil/ |
| 46. | <i>foot</i> | /wilija/ |
| 47. | <i>knee</i> | /miʃi/ |
| 48. | <i>hand</i> | /ʃaka/ |
| 49. | <i>belly</i> | /miyaʒu/ |
| 50. | <i>neck</i> | /kakaʃa/ |
| 51. | <i>breasts</i> | /ŋapulu/ |
| 52. | <i>heart</i> | /kuʒuʃuʃu/ |
| 53. | <i>liver</i> | /yilima/ |
| 54. | <i>drink</i> | /ŋaŋi/ |
| 55. | <i>eat</i> | /ŋaŋi/ |
| 56. | <i>bite</i> | /yalkini/ |
| 57. | <i>see</i> | /njanji/ |
| 58. | <i>hear</i> | /puʃanjanji/ |
| 59. | <i>know</i> | /pina/ |
| 60. | <i>sleep</i> | /tjaʃa/ |
| 61. | <i>die</i> | /puʃkatjaʃi/ |
| 62. | <i>kill</i> | /ʒi ⁿ tjaʃpa/ |
| 63. | <i>swim</i> | /tjuljulwa ⁿ ti/ |
| 64. | <i>fly</i> | /paʃpaʃi/ |
| 65. | <i>walk</i> | /wapa/ |
| 66. | <i>come</i> | /yaniŋi/ |
| 67. | <i>lie</i> | /ŋuna/ |

| | | |
|------|-----------------|-----------------------------|
| 68. | <i>sit</i> | /njina/ |
| 69. | <i>stand</i> | /kaʃl/ |
| 70. | <i>give</i> | /yɪnʒi/ |
| 71. | <i>say</i> | /wa ^ŋ ka/ |
| 72. | <i>sun</i> | /ŋlɪlɪpa/ |
| 73. | <i>moon</i> | /maʃlɪpi/ |
| 74. | <i>star</i> | /ya ^{ŋj} tʃlɪpɪɾɪ/ |
| 75. | <i>water</i> | /ŋapa/ |
| 76. | <i>rain</i> | /ŋapa/ |
| 77. | <i>stone</i> | /pamaʃpa/ |
| 78. | <i>sand</i> | /waɪjaʃa/ |
| 79. | <i>earth</i> | /waɪja/ |
| 80. | <i>cloud</i> | /ma ^ŋ kuʃu/ |
| 81. | <i>smoke</i> | /yuijuʃu/ |
| 82. | <i>fire</i> | /waɪu/ |
| 83. | <i>ash</i> | /yupɪlpa/ |
| 84. | <i>burn</i> | /tjaŋka/ |
| 85. | <i>path</i> | /yɪʃɪyɪ/ |
| 86. | <i>mountain</i> | /ŋanka/ |
| 87. | <i>red</i> | /yaɪjuyaɪju/ |
| 88. | <i>green</i> | /yukuɾɪ/ |
| 89. | <i>yellow</i> | /ka ^ŋ tawaʃa/ |
| 90. | <i>white</i> | /kaʃɪʃɪ/ |
| 91. | <i>black</i> | /maɾu/ |
| 92. | <i>night</i> | /muŋa/ |
| 93. | <i>hot</i> | /ŋawuŋŋawuʃpa/ |
| 94. | <i>cold</i> | /pɪʃɪya/ |
| 95. | <i>full</i> | /tjuʃupɪɪjpaɾɪ/ |
| 96. | <i>new</i> | /ŋjuɪuʃpa/ |
| 97. | <i>good</i> | /ŋuʃtju/ |
| 98. | <i>round</i> | /ŋɪʃɪɾɪŋɪʃɪɾɪ/ |
| 99. | <i>dry</i> | /ɪɪ ^{ŋj} tʃɪ/ |
| 100. | <i>name</i> | /yɪʃɪ/ |

The following 100-item word list is O'Grady's List A and it is presented here to facilitate comparison with entries as listed in other Western Desert Language phonology papers also using O'Grady's List A.

| | | | |
|---|----|---------------------|--------------|
| a | 1. | <i>head</i> | /tjuʃu/ |
| | 2. | <i>hair of head</i> | /wakuɪu/ |
| | 3. | <i>forehead</i> | /ŋaɪja,mɪmɪ/ |
| | 4. | <i>eye</i> | /mɪlpa/ |

| | | | |
|---|-----|-------------------------|-----------------------------------|
| | 5. | <i>nose</i> | /mulju/ |
| | 6. | <i>ear</i> | / ana/ |
| | 7. | <i>beard</i> | /tjananka/ |
| | 8. | <i>mouth</i> | / iʃa/ |
| | 9. | <i>tooth</i> | /kaʃlʃi/ |
| | 10. | <i>tongue</i> | /tjalanjpa/ |
| | 11. | <i>throat</i> | /ɲu:ʃpa,wani ⁿ tja/ |
| | 12. | <i>nape</i> | /kakaʃa/ |
| | 13. | <i>armpit</i> | /kitikitl,ɲakuljka/ |
| | 14. | <i>elbow</i> | /matilʃitji/ |
| | 15. | <i>hand</i> | /ʃaka/ |
| | 16. | <i>fingernail</i> | /yiljtjil i,mil tjanpa/ |
| | 17. | <i>chest</i> | /ɲa ⁿ tujuʃu,ʃukuʃuku/ |
| | 18. | <i>rib</i> | /ramaʃa/ |
| | 19. | <i>breast (woman's)</i> | /ɲapulul/ |
| | 20. | <i>heart</i> | /kuʃuʃuʃu/ |
| | 21. | <i>liver</i> | /yilima/ |
| | 22. | <i>belly (external)</i> | /miya u/ |
| | 23. | <i>thigh</i> | /wanaʃi/ |
| | 24. | <i>knee</i> | /miʃi/ |
| | 25. | <i>foot</i> | /wil ya/ |
| | 26. | <i>skin</i> | /pi ⁿ ti/ |
| | 27. | <i>blood</i> | /yalju/ |
| | 28. | <i>fat, grease</i> | /tjaʃa/ |
| | 29. | <i>bone</i> | /yunkuɲu/ |
| | 30. | <i>name</i> | /yiʃi/ |
| b | 31. | <i>to see</i> | /nja-/ |
| | 32. | <i>to hear</i> | /puʃanja-/ |
| | 33. | <i>to eat</i> | /ɲa-/ |
| | 34. | <i>to drink</i> | /ɲa-/ |
| | 35. | <i>saliva</i> | /njinjpa,yaya/ |
| | 36. | <i>to bite</i> | /ya ki-/ |
| | 37. | <i>urine</i> | /mawu/ |
| | 38. | <i>excrement</i> | /kuna/ |
| | 39. | <i>to cry, weep</i> | /yula-/ |
| | 40. | <i>to speak</i> | /wa ⁿ ka-/ |
| | 41. | <i>to smell it</i> | /pa ⁿ tʃi-/ |
| c | 42. | <i>to be sitting</i> | /njina-/ |
| | 43. | <i>to be standing</i> | /kaʃi-/ |
| | 44. | <i>to be lying down</i> | /ɲuna-/ |
| | 45. | <i>to go, walk</i> | /ya-/ |
| | 46. | <i>to climb</i> | /waʃka-/ |

| | | | |
|---|-----|---------------------------|------------------------------|
| | 47. | <i>to fall</i> | /wa ⁿ ti-/ |
| d | 48. | <i>to take it, grasp</i> | /ma-/ |
| | 49. | <i>to give</i> | /yu-/ |
| e | 50. | <i>to hit (with hand)</i> | /pu-/ |
| | 51. | <i>to cut it (meat)</i> | /patji-/ |
| f | 52. | <i>person, Aborigine</i> | /yapa/ |
| | 53. | <i>woman</i> | /ka ⁿ ta,ʃutju/ |
| | 54. | <i>old man</i> | /tja upaʃu/ |
| h | 55. | <i>a spear</i> | /ku aʃa/ |
| i | 56. | <i>fire</i> | /wa u/ |
| | 57. | <i>(cold) ashes</i> | /yu pilpa/ |
| | 58. | <i>smoke</i> | /ku ⁿ Jtjuʃu/ |
| | 59. | <i>to be burning</i> | /tjaŋka-/ |
| j | 60. | <i>water</i> | /ŋapa,tjuwiʃi/ |
| k | 61. | <i>stone</i> | /pamaʃpa/ |
| | 62. | <i>ground, earth</i> | /walja/ |
| l | 63. | <i>sky</i> | /ŋuʃu/ |
| | 64. | <i>sun</i> | /wa ⁿ ta,ŋililpa/ |
| | 65. | <i>moon</i> | /maʃilpi/ |
| | 66. | <i>star</i> | /ya ⁿ Jtjilpiʃi/ |
| m | 67. | <i>by and by</i> | /ŋaka/ |
| | 68. | <i>now, today</i> | /tjalangu/ |
| n | 69. | <i>wind</i> | /mayawunpa/ |
| o | 70. | <i>north</i> | /yatitjaʃa/ |
| | 71. | <i>east</i> | /kakaʃaʃa/ |
| | 72. | <i>south</i> | /ku iʃa/ |
| | 73. | <i>west</i> | /kalaʃa/ |
| | 74. | <i>up</i> | /kankalaʃa/ |
| | 75. | <i>down</i> | /kani ⁿ Jtjaʃa/ |
| p | 76. | <i>far</i> | /wu ⁿ tuʃu/ |
| | 77. | <i>big</i> | /wiʃi/ |
| | 78. | <i>small</i> | /wita/ |
| | 79. | <i>long</i> | /kiʃiʃi/ |
| | 80. | <i>short</i> | /taʃu/ |
| q | 81. | <i>meat</i> | /kuyu/ |
| | 82. | <i>rotten (meat)</i> | /puka/ |
| | 83. | <i>dog</i> | /tja ⁿ tu,maliki/ |
| | 84. | <i>tail</i> | /ŋi ⁿ ti/ |
| | 85. | <i>snake</i> | /waŋa/ |
| | 86. | <i>egg</i> | /ŋipiʃi/ |
| | 87. | <i>a fly</i> | /yimaŋi/ |
| r | 88. | <i>(vegetable) food</i> | /miyi/ |

| | | | |
|---|------|--------------------------|-----------------------|
| | 89. | <i>tree</i> | /watIya/ |
| | 90. | <i>leaf</i> | /tjaljuřpa/ |
| s | 91. | <i>one</i> | /tji ⁿ ta/ |
| | 92. | <i>two</i> | /tjiřama/ |
| | 93. | <i>many</i> | /panu/ |
| t | 94. | <i>I intr.</i> | /ŋatju/ |
| | 95. | <i>you (sing.) intr.</i> | /nju ⁿ tu/ |
| | 96. | <i>this</i> | /nja ^m pu/ |
| | 97. | <i>what?</i> | /njiya/ |
| | 98. | <i>where?</i> | /njařpara/ |
| | 99. | <i>who?</i> | /ŋana/ |
| v | 100. | <i>black (as dog)</i> | /mařu/ |

NOTES

1. Dr A. Capell (1963) lists Waljbiri (Wailbri) as a Western Desert Language along with Walmanba (Walmala), Ngardi and Wanajaga (Waneiga) as dialects, whereas O'Grady, Voegelin and Voegelin (1966:39) subordinated Western Desert Languages under the Wati Subgroup but Wailbri under the Ngarga Subgroup.

W.J. and L.F. Oates (1970) list Walmanba (Walmala), Walbiri (Elpira, Ilpara, Ilpira, Ilpirra, Waibry, Wailbri, Waljbiri, Walpari, Walpiri, Wolperri, Wolpirra), Ngardi, Wanayaga (Wanajaga, Woneiga), and Ngalia (Nambuda, Ngallia) in the Ngarga Subgroups of the South-west Group of the Pama-Nyungan Family.

The spelling of the names of the tribes and languages in the next four paragraphs conform to the phonemic representation used throughout this paper. In the title these names are spelled according to the practical orthography.

According to the members of the Waṇayaka subtribe residing at the Hooker Creek Aboriginal Settlement in the Northern Territory, the situation is as follows: Waḷpiṛi is the collective name for a people or tribe comprising four subtribes, namely, Waṛmaḷa, Waṇayaka, Ṇaṛi, and Ṇaliya. The Waṛmaḷa tribe speaks Waṛmaḷa, the Waṇayaka tribe speaks Ṇaṛilpa, the Ṇaṛi tribe Njinin, and the Ṇaliya tribe Ṇaliya. A high degree of mutual intelligibility seems to exist between speakers of Ṇaṛilpa and Waṛmaḷa, but exact percentages of intelligibility between these and other languages spoken by the subtribes will not be available until after a dialect intelligibility survey has been conducted.

The Ṇaliya tribe supposedly was the "original" and largest tribe, but today only a small number of them remains and many others have intermarried with members of the other subtribes.

In 1969 the Waḷpiṛi population, including the four subtribes, stood at 2520. This figure was supplied by the Northern Territory Administration, Welfare Branch Research Department.

At Hooker Creek the Waṇayaka subtribe is definitely in the majority; approximately 570 Waṇayaka reside there in contrast to about only 15-25 members of the Waṛmaḷa subtribe. Greater numbers of Waṛmaḷa are said to reside at Warrabri and Yuendumu Aboriginal Settlements in the Northern Territory. Additional members of the different subtribes of the Waḷpiṛi tribe live in varying numbers in other places in the Northern Territory (Papunya, Wave Hill and Bagot Aboriginal Settlements, Wave Hill Station, Alice Springs, Willowra Station, Coniston Station, Barrow Creek, Wauchope, Tennant Creek, Phillip Creek, Banka Banka, Renner Springs, Elliot, Newcastle Waters, Daly Waters, Katherine, Limbunya, Rosewood, Mistake Creek, Inverway, Birrindudu, Mt Doreen, Mt Dennison, Napperby, Mt Wedge, Mt Allan, and other cattle stations and towns not mentioned here), and in Western Australia (Gordon Downs, Nicholson, Flora Valley, Ord River, Billiluna, Halls Creek, Spring Creek, and Kununurra).

The data for this paper was collected during seven months in 1971 and checked over a further period of two years at Hooker Creek Settlement under the auspices of the Summer Institute of Linguistics, with the assistance of language informants, Jerry and Paddy Jangala. The author is indebted to Miss Velma Leeding and others of the Summer Institute of Linguistics for their helpful and constructive comments and criticisms on the analysis of some of the phonemes in this paper.

Thanks is also due to Dr Kenneth Hale of Massachusetts Institute of Technology for supplying his unpublished "Lessons in Walbiri", and to Miss Irene Marker and Mrs Marjorie (Hockaday) Marsh of the Summer Institute of Linguistics for access to their unpublished "Walbiri Phonology".

The description presented here is based on the phonological procedures and approach developed by Dr Kenneth L. Pike (1947).

2. According to speakers aged 40 and over, the prenasalised stop /^mp/ occurs word-initially only because the initial syllable has been elided many decades ago. Younger speakers are not even aware of this and say that these words have always had the prenasalised stop /^mp/ in word-initial position.

3. A compound verb stem comprises two roots. The second root is a finite verb. The first root is dependent and functions only in this position. The first root may be a reduplication of itself.

4. The co-existence of long vowels /u:/ and /i:/ and the sequences /uwu/ and /iyi/ was determined by counting the syllables in words in

deliberate speech. The long vowels did not become two syllable nuclei as did the sequences.

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THE PHONOLOGY OF MALAKMALAK

DAVID B.W. BIRK

0.1. INTRODUCTION

MalakMalak is an Australian language spoken by a dwindling number of Aborigines on the Daly River, Western Arnhem Land, about one hundred miles south-west of Darwin. There are currently not more than twenty speakers for only nine of whom it is the mother-tongue. The outlook for the language is bleak. Seven of these nine are a family of unmarried brothers and sisters who appear resigned to the celibacy demanded of them by their late mother. The eighth is the aged father of the family. The ninth is Solomon, the son of my original informant, the late Harry PutʷPutʷ. The former is himself ageing and unwell and his ten year old son speaks rather more English than MalakMalak.

Historically, MalakMalak territory is situated on the north side of the Daly River, with the boundary about sixty miles from the mouth (Stanner 1933; Capell 1963). Most of the surviving speakers live on the north side at Wooliana. Stanner's topographical description of the Daly River (op. cit. pp. 380; 385) estimates the area of Aboriginal habitation to have been a 'narrow strip of country, less than twenty miles long, on the alluvial flats between the middle and lower reaches of the ... river.' It is originally to the MalakMalak that this settled strip of country belonged, according to Stanner (op. cit).

1.1. CONSONANTS

1.10. There are fourteen consonantal phonemes: four stops p t tʷ k, four nasals m n nʷ ŋ, two laterals l lʷ, one vibrant (flapped) ɾ, one continuant r, and two semi-consonants w y.

1.11. CONSONANTAL CONTRASTS.

The stops contrast at bilabial, apico-alveolar, lamino-alveolar, and dorso-velar points of articulation.

Word-initial examples:

| | |
|-------|--------------|
| pak | <i>sit</i> |
| tuřk | <i>drink</i> |
| tʸuřk | <i>bury</i> |
| kak | <i>hurt</i> |

Word-medial examples:

| | |
|--------|--------------------|
| apap | <i>sick, tired</i> |
| mata | <i>rain</i> |
| matʸan | <i>foot</i> |
| akak | <i>vomit</i> |

Word-final examples:

| | |
|------|--------------------------------|
| pap | <i>rush</i> |
| pat | <i>fly</i> |
| pitʸ | <i>rub firesticks together</i> |
| pik | <i>rope</i> |

1.12. The nasal phonemes m n nʸ ŋ are voiced and contrast at bilabial, apico-alveolar, lamino-alveolar, and dorso-velar points of articulation.

Word-initial examples:

| | |
|----------|-----------------------------------|
| man | <i>stomach</i> |
| nan | <i>that (demonstrative)</i> |
| nʸatnʸat | <i>chip wood</i> |
| ŋatŋat | <i>be unable to fix something</i> |

Word-medial examples:

| | |
|-------|---------------|
| aman | <i>now</i> |
| pönʸö | <i>banyan</i> |
| paŋa | <i>father</i> |
| pana | <i>again</i> |

Word-final examples:

| | |
|------|-----------------------------|
| pam | <i>put</i> |
| ŋan | <i>comparative particle</i> |
| tinʸ | <i>try (adverb)</i> |
| taŋ | <i>mix (intr.)</i> |

1.13. The lateral phonemes are voiced and contrast at apico-alveolar and lamino-alveolar points of articulation.

Word-medial examples:

| | |
|-------|------------------|
| yilik | <i>lily-root</i> |
| yilʎi | <i>bubble</i> |

Word-final examples:

| | |
|------|-------------------|
| ɲul | <i>penis</i> |
| nulʎ | <i>sea-breeze</i> |

Of the two lateral phonemes only the apico-alveolar can occur word-initially.

1.14. The vibrant (flapped) ʎ is apico-alveolar contrasting with the semi-consonant post-alveolar frictionless continuant r:

Word-medial examples:

| | |
|------|--------------|
| miʎi | <i>sun</i> |
| miri | <i>tears</i> |

Word-final examples:

| | |
|-----|--------------|
| taʎ | <i>bite</i> |
| tar | <i>crush</i> |

Neither ʎ nor r occur in word-initial position.

1.15. The semi-consonants w and y are voiced and contrast at the bilabial and lamino-palatal points of articulation.

Word-initial examples:

| | | | |
|------|--------------|------|--------------|
| wapi | <i>take</i> | walk | <i>stone</i> |
| yipi | <i>leave</i> | yalk | <i>moon</i> |

Word-medial examples:

| | | | |
|-------|--------------|-------|--------------|
| tawut | <i>blood</i> | tʎeyö | <i>shark</i> |
|-------|--------------|-------|--------------|

1.16. CONSONANTAL VARIANTS

/p/ [p]

(1) Voiceless bilabial stop, occurring word-initially and word-finally:

| | | |
|-------|---------|-------------|
| payak | [payʌk] | <i>back</i> |
| larap | [larʌp] | <i>bind</i> |

(ii) Word-finally, released and unreleased¹ allophones alternate:

tap [tap ~ ta^p] *grab*

[b] Voiced bilabial stop, occurring intervocally, and following voiced consonants:

tapak [tabak] *break*
tumpuřk [tumbuřg] *hiccough*

/t/ [t]

(i) Voiceless apico-alveolar stop, occurring word-initially and word-finally, and following a voiceless consonant:

tatʏ [taⁱtʏ] *hit*
tat [tat] *see/find*
tiktat [tiktat] *look back*

(ii) Word-finally, released and unreleased voiceless allophones alternate:

tʏeyöt [tʏeyöt ~ tʏeyöt^t] *red kangaroo*

[d] Voiced apico-alveolar stop, occurring intervocally, and following voiced consonants:

titit [tidit] *cheeky yam*
anta [andʌ] *allright*

/tʏ/ [tʏ]

(i) Voiceless lamino-alveolar stop, occurring word-initially and word-finally:

tʏiyitʏ [tʏiyitʏ] *pick up*

(ii) Word-finally, released and unreleased voiceless allophones alternate:

yinmeyitʏ [yinmeyitʏ ~ yinmeyitʏ^{tʏ}] *little (plm)*

[dʏ] Voiced lamino-alveolar stop, occurring inter-vocally, and following voiced consonants:

atʏaŋ [adʏʌŋ] *grandmother*
yentʏir [yendʏir] *dew*

/k/ [k]

(i) Voiceless dorso-velar stop, occurring word-initially and word-finally:

kak [kak] *hurt*

(11) Word-finally, released and unreleased voiceless allophones alternate:

mintʋitak [mindʋidak ~ mindʋida^k] emphatic pronoun

[g] Voiced dorso-velar stop, occurring intervocally, and following voiced consonants:

kakak [kagʌk] *long way*
pöŋköl [pöŋgöl] *knee*

/l/ Voiced apico-alveolar lateral resonant, occurring word-initially, word-medially, and word-finally:

- | | | | |
|----|--------|----------|---|
| 1. | lak | [lak] | <i>eat (meat)</i> |
| 2. | tʋölöl | [tʋölöl] | <i>go down (both recede (of water) and descend)</i> |
| 3. | palpal | [palpal] | <i>wide</i> |

[ɭ] Velarized lateral, conditioned by an immediately preceding high open back rounded vowel, occurring, either by itself or as the first member of a cluster whose second member is the voiced dorso-velar stop [g]:

kul [kuɭ] *stab (turtle)*
mulk [muɭg] *bamboo*
pulk [puɭg] *baby chicken*

/y/ [i̯] Fronted on- or off-glide:

yalk [i̯alg] *moon*
yöyö [i̯öi̯ö] *he stands up/lies down*
(v. 3.15; 3.16)
ey [ɛi̯] *spear (verb root)*

/w/ [u̯] Rounded on-glide:

walk [u̯alg] *stone*

1.2. VOWELS

1.20. There are five vocalic phonemes in MalakMalak:

| | |
|-----|-------------------------------------|
| /i/ | high close front unrounded |
| /ɛ/ | mid open front unrounded |
| /ö/ | mid close retracted front unrounded |
| /a/ | low open central unrounded |
| /u/ | high open back rounded |

1.21. VOCALIC CONTRASTS

| | |
|--------|---|
| mi | <i>food (non-meat)</i> |
| te | <i>meat</i> |
| tö | <i>hole</i> |
| ma | <i>wallaby</i> |
| mu | <i>goose</i> |
| yelik | <i>liver</i> |
| yöyöwa | 3sgmSP.5/6 (Pres) <i>he lies down/stands up</i> |
| yuyuwa | 3sgmSP.5/6 (Past) <i>he lay down/stood up</i> |
| larap | <i>bind</i> |

All vowels have slightly nasalized allophones between nasals:

| | | |
|--------|----------|--------------------------|
| nimpit | [nĩmbıt] | <i>swag</i> |
| meŋkit | [mẽŋgıt] | <i>white cockatoo</i> |
| möntöi | [mõndõi] | <i>shoulder</i> |
| ŋanʏ | [ŋãnʏ] | <i>bush cucumber</i> |
| ŋun | [ŋũn] | <i>deictic specifier</i> |

1.22. VOCALIC VARIANTS

| <u>Phoneme</u> | <u>Allophone</u> | <u>Description</u> | <u>Examples</u> |
|----------------|----------------------------------|---|---|
| /i/ | [i] | High close front unrounded vocoid occurring as the norm of the phoneme. | mi [mi] <i>food</i> pi [pi] <i>go</i> |
| | [ɪ] | High open front unrounded vocoid occurring in unstressed syllables. It occurs as carrier of primary stress only when immediately preceded, or immediately followed, by a fronted on-glide, e.g. yinʏa [i(nʏa)] (<i>initiated</i>) man, piyip [pɪiʏp] <i>sick</i> . | yinin [yɪnɪn] <i>nose</i> tiřin [tɪřɪn] |
| [e] | Mid close front unrounded vocoid | | pi! [pé!] <i>go!</i> (Verb Root imperative) |

| <u>Phoneme</u> | <u>Allophone</u> | <u>Description</u> | <u>Examples</u> |
|----------------|-------------------|---|---|
| | | occurring only in the following stressed syllable:- | |
| /ε/ | [ε] | Mid open front unrounded vocoid and the norm for this phoneme | tε [tε] <i>meat</i> pε [pε] <i>golden catfish</i> |
| | [ε ⁱ] | This allophone of /ε/ has a high fronted off-glide occurring immediately preceding the lamino-alveolar stop [tʏ] and the lamino-alveolar nasal /nʏ/ | tεtʏtεtʏ [tε ⁱ tʏtε ⁱ tʏ] <i>white ant</i> tʏεnʏ [tʏε ⁱ nʏ] <i>make</i> |
| /ö/ | [ö] | Mid close retracted front unrounded vocoid, and the norm for this phoneme. | töm [töm] <i>weak</i> pöpö [pöpö] <i>fan flames</i> |
| /a/ | [a] | Low open central unrounded vocoid, and the norm for this phoneme. | ma [ma] <i>wallaby</i> pam [pam] <i>put</i> (p10) |
| | [a ⁱ] | This allophone of /a/ has a high fronted off-glide, occurring immediately preceding the lamino-alveolar consonants /tʏ/, /nʏ/, /lʏ/. | matʏan [ma ⁱ dʏan] <i>foot</i> -manʏ [ma ⁱ nʏ] <i>"departing from" (suffix)</i> na ⁱ lʏlʏ [na ⁱ lʏlʏ] <i>skin</i> |
| | [ʌ] | mid open central unrounded vocoid occurring in unstressed syllables. | pana [panʌ] <i>again</i> waka [wagʌ] <i>bring</i> tapak [tabʌk] <i>break</i> |
| /u/ | [u] | High open back rounded vocoid and | puntu [púndu] pulu [púlu] |

| <u>Phoneme</u> | <u>Allophone</u> | <u>Description</u> | <u>Examples</u> |
|----------------|-------------------|--|--|
| | | the norm for the phoneme (in unaccepted syllables). | |
| | [ɔ] | Low close back rounded vocoid (found only, so far, in two monosyllabic lexical items). | mu [mɔ] <i>goose</i> wu [wɔ] <i>barramundi</i> |
| | [ɥ ⁱ] | This allophone of /u/ has a high fronted off-glide occurring immediately preceding the lamino-alveolar consonants /tʲ/ and /lʲ/. | wutʲ [wɥ ⁱ tʲ] <i>feel around in shallow water (for turtles)</i> nulʲ [nɥ ⁱ lʲ] <i>sea-breeze</i> |

1.3. THE INTERPRETATION OF GLIDES

The only sequences of vocoids that occur in the language are glides of the form iV, Vi and uV, where i and u are high front unrounded and high back rounded vocoids, respectively; V is any admissible vocoid. The question arises as to whether the i and u are to be interpreted as semi- onsonants or as vowels.

The only evidence available for deciding between these two possibilities are the following two classes:

- (1) the [uⁱɥⁱ] case; and
- (2) the [ɛⁱ] diphthong case.

(1) The former case concerns the word [uⁱɥⁱ] *breast/milk* (which is distinct from [uⁱ] *anger/fight*). The question is whether the vocalic nucleus of [uⁱɥⁱ] is to be interpreted as a long vowel /ɥⁱ:/ or as a disyllable with an intervocalic lamino-palatal semi-consonant, /ɥⁱɥⁱ/.

There are two arguments against the 'long vowel' hypothesis. Firstly, vocalic length is not systematically phonemic in the language.² Secondly, the word [uⁱɥⁱ] is disyllabic: there is a perceptible chest-pulse between the two like vowels. Hence, to interpret the fronted on-glide in any way other than as a lamino-palatal semi-consonant would seem to be contrary to the phonetic facts.

(2) The [ɛⁱ] diphthong case concerns the Verb Root [ɛⁱ] *kill* (potentially or actually) *with a missile* immediately followed by the Auxiliary [aⁱʌ]:

$$[\varepsilon^i] + [a^i \wedge]$$

The question is whether the fronted off-glide of $[\varepsilon^i]$ is to be interpreted vocally or semi-consonantly.

The argument against the vocalic interpretation stems from the vowel-elision rule that results from the operation of sandhi (v.1.4.) within the Verb Complex (v. fn. 4.). According to this rule, when vowels are contiguous across word-boundaries the vowel of the vowel-initial word elides the word-final vowel of the preceding word. Thus, if the fronted off-glide of $[\varepsilon^i]$ is interpreted as a vowel the following should result: $[\varepsilon^i] + [a^i \wedge] > [\varepsilon a^i \wedge]$ (a solution which does not adequately reflect the phonetic facts in that the vocalic sequence $[\varepsilon a^i \wedge]$ does not occur in the language). But if, on the other hand, the fronted off-glide is interpreted as a lamino-palatal semi-consonant the vowel-elision rule cannot apply, and the sequence $[\varepsilon^i] + [a^i \wedge]$ is interpreted as *ey aya*, as is heard in the language.

In review, then, it is clear that if the fronted glides are interpreted as semi-consonants, not only is this nearer to the phonetic facts but syllabic structure is also made neater by the avoidance of uncharacteristic vocalic sequences.

Thus, when occurring word-initially, *i* preceded by a fronted on-glide is interpreted as *yi*

$$[i^i \wedge n^i \nu a] > yin^i \nu a \text{ (initiated) man}$$

Similarly, *u*, when occurring word-initially, immediately preceded by a back rounded on-glide is interpreted as *wu*

$$[u^u \wedge m u^u a] > wumuwa \text{ steal}$$

1.4. SANDHI

Vocalic contiguity across word-boundaries is handled differently in the language depending upon whether it occurs within or outside the Verb Complex.³ Within the Verb Complex sandhi takes place:

1. $p^i \quad \acute{a}t.ta \quad > [p^i \acute{a}t \wedge]$
(VR) *go* (Aux) lexSP.2 (Pres/Past)
We (excl.) *go/went*.
2. $t^i \acute{a}tma \ y^i.ta \quad +\acute{a}řin^i \nu \quad > [t^i \acute{a}tma \ y^i \acute{a}řin^i \nu]$
(VR) *see.cnt* (Aux) 3sgmSP.2(Pres/Past +1sgOP)
He is/was looking at me.

3. ánti éy^{ma} wú^t.ta >
 adv (recip) (VR) *spear.cnt* (Aux)3plSP.2(pres/Past)
 [ʌndéⁱmʌ wú^tʌ]
They fought each other with spears.

In these and similar cases, as a result of the operation of sandhi the vowel of the vowel-initial word elides the word-final vowel of the preceding word, retaining its stress in the process, and a new phonological word is formed. Thus, in the case of both the trisyllabic words [yɪdʌřɪnʏ] and [ʌndéⁱmʌ] primary stress falls on the second syllable⁴ through the process of elision.

Outside of the Verb Complex sandhi does not take place:

4. mí akána [mí ʌgána] ~ mí ákana [mí ágana]
vegetable food adv (neg) (v.1.6.)
No food.
5. tɛ ářpuřù [tɛ ářbuřù]
meat l(ic)OP(bf)
Meat for us (inclusive).

1.5. SYLLABLE PATTERNS

The following syllable types occur:

- V a.ya lsgSP.1(Punct)
 VC ak *a species of catfish*
 CV tɛ *generic marker for animals hunted for meat, and the
 meat itself.*
 CVC tɛk *camp*
 CVCC tuřk *drink* (Verb Root).

1.6. THE PHONOLOGICAL WORD

1.60. GENERAL REMARKS

The phonological word in MalakMalak is a minimal utterance carrying one primary stress.⁵

There are two types of phonological word defined by the position of the phonological stress. In the one, stress falls on the first syllable and all odd-numbered syllables subsequent to this. In the other case stress falls on the second syllable and all even-numbered syllables subsequent to this.⁶ In the former case, phonological word-boundary immediately precedes primary stress. In the latter case phonological word-boundary recognition is assisted by potential pause and, to a minor degree, phonemic distribution: ɪʏ, ř and r cannot

occur word-initially, nor *w* word-finally.

Word stress carries little functional load in MalakMalak. Primary stress is usually accompanied by raised pitch. In the following examples of individual cases primary stress is marked by (') and secondary stress by (`).

Monosyllabic words carry primary stress:

| | |
|--------------------------------|------------------------------|
| tín ^v pí | |
| (adv) <i>go</i> | <i>Try and go!</i> |
| yén wá | |
| <i>yamstick</i> <i>pick up</i> | <i>Pick up the yamstick!</i> |

Words of two syllables are stressed on the first syllable:

| | |
|--------------------|-----------------------------|
| yóntön | <i>he</i> (Subject Pronoun) |
| t ^á qar | <i>spear</i> |
| múyin ^v | <i>dog</i> |
| wúru | <i>arm (or rivulet)</i> |

The only exceptions to this rule are (1) primary stress falls on the phase-final syllable of yes/no interrogatives and imperatives (see section 1.7.), and (2) where roots are reduplicated, in which case they carry reduplicated primary stress:

| | |
|-----------------------------------|----------------------------|
| lám ^{lám} | <i>talk/have a chat</i> |
| pít ^v pít ^v | <i>rub firesticks</i> |
| wérkwérk | <i>flat-tailed catfish</i> |
| mírmír | <i>melt</i> |
| túytúy | <i>stretch (intr.)</i> |

Trisyllabic words are usually stressed on the first and third syllables:

| | |
|----------------------|---|
| álawàr | <i>woman</i> |
| mélpapù | <i>father (reference as opposed to address)</i> |
| máparà | <i>follow</i> |
| ákunmàn ^v | <i>where from?</i> |

However, a contrastive stress-pattern may be realized within the trisyllabic phonological word: primary stress may fall on the second syllable, giving the word an emphatic force:

| | |
|----------------------|------------------------------------|
| akúnman ^v | <i>where from?</i> |
| mélpápu | <i>father</i> |
| akána | <i>negative (adverb/adjective)</i> |

If a trisyllabic phonological word in the Verb Complex has a second syllable primary stress this will be a result of sandhi (v.1.4.).

Tetrasyllabic words are usually stressed on the first and third syllables:

| | |
|-------------|---|
| mútyuřwùna | <i>very many</i> |
| múnankàřa | <i>beautiful</i> |
| kárarkwàrat | <i>take a number of objects out (of some container)</i> |

Tetrasyllabic auxiliaries receive primary stress on the second, and secondary stress on the fourth, syllables. This is the only stress-placement possibility for tetrasyllabic auxiliaries in the language:

| | |
|--------------|---|
| wiřfniwà | <i>They will sit.</i> |
| nukúttöyùŋ | <i>You (pl.) are going to lie down.</i> |
| nukútyuwà | <i>You (pl.) stood up.</i> |
| ŋák aŋkáyawà | <i>You and I eat/ate (non-meat food).</i> |

Pentasyllabic words always take primary stress on the second syllable and secondary stress on the fourth:

| | |
|----------------|--|
| tʲetwéřamàŋkil | <i>fork-stick</i> |
| aŋkíniyàŋka | <i>You and I will stand.</i> |
| aŋkõnõyùŋka | <i>You and I will lie down.</i> |
| wõřõnõyùŋka | <i>They will lie down.</i> |
| ařkíniyàŋka | <i>We are all going to stand.</i> |
| pařáratʲèřat | <i>get up and stand up (pl. subject)</i> |

Heptasyllabic words also always take primary stress on the second syllable, secondary stress falling on the fourth and sixth syllables (in accordance with the rule that every second syllable is stressed):

| | |
|-------------------------|---|
| tɛ aŋ wuwúntunùnuwàkna: | <i>He would have given you (sg) meat.</i> |
|-------------------------|---|

Hexasyllabic words take primary stress on the first syllable, secondary stress on the third and fifth:

| | |
|----------------|---------------------------------|
| nõŋkõřõnõyùŋka | <i>You (pl.) will lie down.</i> |
|----------------|---------------------------------|

That is to say, this is regular in terms of the first-syllable and odd-numbered subsequent-syllable stress rule.

Similarly, octasyllabic words take primary stress on the first syllable and secondary stress on odd-numbered syllables subsequent to this:

| | |
|--|--|
| tɛ aŋ núŋkuřùntuwõřõwàkka | |
| <i>You (pl.) would have given them meat.</i> | |

The environment for almost all instances of obligatory second-syllable stress-placement is the Verb Complex (cf. the sandhi phenomenon, 1.4.). For example, the only heptasyllabic words in the language occur as inflected auxiliaries. Pentasyllabic words tend to be either auxiliaries,

or Verb Roots such as pařárattvèřat; pentasyllabic nouns like tʸetwéřamàŋkil are rare.

1.61. THE DISTRIBUTION OF PHONEMES WITHIN THE PHONOLOGICAL WORD

1.61.1. Consonant Distribution

Any single consonant except lʸ, ř and r may occur word-initially. There are no consonant clusters in the phonological word-initial position.

1.61.2. Consonant clusters are unequally divisible into those that occur intra-syllabically and those that occur inter-syllabically. There are seven intra-syllabic consonant-clusters, all of which have a liquid as initial consonant in the cluster, and ninety-six inter-syllabic⁷ clusters.

Of the clusters that have a stop as the final consonant, fifteen have an initial nasal:

| | |
|---------------|--|
| tumpuřk | <i>hiccough</i> |
| lamtɛl | <i>stop (someone doing something)</i> |
| lamtʸak | <i>stop (tr.)</i> |
| timkut | <i>bury (rubbish etc.)</i> |
| yunpayin | <i>good</i> |
| piyantuk | <i>underneath</i> |
| yentʸir | <i>dew</i> |
| alanki | <i>bring back</i> |
| wanʸpi | <i>paddle (a canoe)</i> |
| manʸtutma | <i>big crowd (of people)</i> |
| puřuŋpuřuŋ | <i>boil (Verb Root)</i> |
| taŋtatʸma | <i>hit repeatedly</i> |
| luŋtʸɛřat | <i>(of bird, with anatomical food-bag) replenish</i> |
| manʸtʸetmatan | <i>not produce children</i> |
| pöŋköl | <i>knee</i> |

Five have an initial lateral:

| | |
|-------------------|---|
| pilp | <i>slap</i> |
| altak | <i>break (tr.)</i> |
| kaltʸet (puntuna) | <i>carry (on head)</i> |
| yalk | <i>moon</i> |
| tapulʸp | <i>extinguish fire (with fingers, as opposed to feet)</i> |

Four have a vibrant ř as initial consonant:

| | |
|--------|--------------|
| tʸuřp | <i>cut</i> |
| muřtuk | <i>hatch</i> |

muřtʲiř *trip*
 niřk *die*

Four have a continuant r as initial consonant:

| | |
|------------|---|
| (kurpuk | <i>wash</i> |
| lerp | <i>meet (predicated of a large number of persons)</i> |
| tʲewörtel | <i>forget</i> |
| purwartʲet | <i>get dark</i> |
| (purkin | <i>grey kangaroo</i> |
| kark | <i>go up a slope (a bank, e.g.)</i> |

Four have a geminated stop sequence:

| | |
|---------------|--|
| lup.pi.ma | <i>together.go.continulative</i> |
| at.ta | <i>lex SP.2 (Pres./Past)</i> |
| katʲ.tʲuřkwat | <i>throw.put inside: throw inside</i> |
| lak.katʲ | <i>eat (meat).throw: leave some meat (when unable to eat more)</i> |

Ten have a heterorganic stop sequence:

| | |
|------------|---|
| taptapali | <i>hold on to something moving (animal)</i> |
| taptʲiř | <i>drop</i> |
| kumitpuluk | <i>sand goanna</i> |
| yittʲeřat | <i>slough skin</i> |
| yitkař | <i>scale (fish)</i> |
| katʲpuk | <i>might beat (competitively)</i> |
| tatʲkak | <i>hurt (tr.)</i> |
| yikpi | <i>small</i> |
| lamtʲaktan | <i>try to stop unsuccessfully</i> |
| waktʲalkma | <i>waterfall</i> |

Of the remaining clusters that have a nasal as initial consonant, six have semi-consonants as final member:

| | |
|--------------------|--|
| manwiyuk | <i>hungry</i> |
| tat wöwöntönyöřö | <i>he/she sees/saw us (excl.)</i> |
| kinʲwat | <i>hang (up)</i> |
| manʲyur | <i>cover</i> |
| tʲiyanwat | <i>send over (food e.g.)</i> |
| katʲpuk yönpunyöřö | <i>he might beat us (ex) (competitively)</i> |

Of the clusters that have a stop as the initial consonant, thirteen have a nasal as final consonant:

| | |
|-------|--|
| apma | <i>be quiet!</i> |
| tapnö | <i>grab him (male human or animal)</i> |
| tapņa | <i>grab (something) over there</i> |

| | |
|------------|---------------------------------|
| anti tatma | <i>find each other</i> |
| tatnō | <i>find him</i> |
| nʏatnʏat | <i>chip wood</i> |
| tutŋa | <i>causative.deictic suffix</i> |
| kutʏma | <i>whistle</i> |
| tatʏnō | <i>hit him</i> |
| watʏŋuru | <i>try</i> |
| ŋakma | <i>eat</i> |
| nanakna | <i>really</i> |
| payakŋarō | <i>beetle</i> |

Eight have a semi-consonant as final consonant:

| | |
|--------------|---|
| tapwapakkatʏ | <i>turn over (tr.) (of a turtle, e.g.)</i> |
| apyurali | <i>participial form of yur: lie (down)</i> |
| tatwur | <i>be missing</i> |
| tatyur | <i>sleep fitfully</i> |
| yukutʏwat | <i>move (fire e.g.) along (to harden newly-cut canoe)</i> |
| katʏyipi | <i>leave behind (tr.)</i> |
| yanakwuna | <i>just one</i> |
| wakyɛn | <i>wet</i> |

Of the remaining clusters that have a nasal as the final consonant, twelve have nasals as initial consonants. (Three of these are germinated sequences which are morphemically glossed in what follows):

| | |
|-----------------|--|
| lamlam.ma | <i>talk (VR).cnt</i> |
| tam.ŋōyat | <i>cook (meat) wrapped up (i.e., in paperbark)</i> |
| manmal | <i>wing</i> |
| ŋun.na | <i>spatial specifier. locative</i> |
| -yinnŋa | <i>in/on/beside</i> |
| lanma | <i>light (antithesis of dark)</i> |
| tʏōŋnō | <i>fire-place (lit. belongs to fire)</i> |
| tatʏyōmpuŋ ŋayi | <i>he is going to hit her.</i> |
| wanʏma | <i>row or paddle</i> |
| tat yiminʏnō | <i>he sees/saw him</i> |
| ɛyinmanʏŋa. | <i>nobody</i> |
| tʏinnʏukma | <i>water-rat</i> |

Of the remaining clusters that have an initial lateral, four have a nasal as final consonant:

| | |
|-------|------------------------|
| wilma | <i>swim</i> |
| tōlŋ | <i>stretch (intr.)</i> |

| | |
|------------|--|
| mulʷmulʷma | <i>ripe/soft</i> |
| nilʷilʷŋa | <i>take bark off in small strips (away from speaker)</i> |

Three have a semi-consonant as final member:

| | |
|-------------------|----------------------------------|
| nöwö weʃiyen yita | <i>he makes a lot of trouble</i> |
| kalyur | <i>carry</i> |
| tʷilʷwuʃkali | <i>wrinkled (skin)</i> |

Of the remaining clusters that have a vibrant (flapped) ʃ as initial consonant, three have a nasal as final consonant:

| | |
|-----------|---------------------------------------|
| paʃmatʷ | <i>old woman</i> |
| kaʃnilyur | <i>scratch skin so as to break it</i> |
| kaʃŋöyat | <i>light pipe/cigarette</i> |

One has a lateral as final consonant:

| | |
|--------|---|
| kaʃlak | <i>pick edible meat (worm etc.) out of ground and eat it (predicated of a bird, e.g.)</i> |
|--------|---|

Two have semi-consonants as final members:

| | |
|---------|-------------------|
| kuʃwapi | <i>drag along</i> |
| kaʃyit | <i>comb hair</i> |

Of the remaining clusters that have a continuant r as the initial consonant, three have a nasal as final consonant:

| | |
|----------|------------------------------------|
| arma | <i>dry (VR)</i> |
| alawarnö | <i>for or belongs to the woman</i> |
| tarŋiʃk | <i>kill (VR) with a missile</i> |

One has a lateral as final consonant:

| | |
|--------------|------------------|
| manʷtʷurliŋʷ | <i>bush rope</i> |
|--------------|------------------|

Two have semi-consonants as final members:

| | |
|-------------|--|
| yarwa | <i>leader (of fighting contingent) or boss</i> |
| alawaryinŋa | <i>beside the woman</i> |

Of the clusters with an apico-alveolar lateral as the second consonant, one has a stop as initial consonant:

| | |
|---------|----------------|
| tatʷlam | <i>capsize</i> |
|---------|----------------|

Two have a nasal as initial consonant:

| | |
|----------|------------------------|
| lamlam | <i>talk (vb. stem)</i> |
| manlapar | <i>lung</i> |

1.61.3. Twenty-nine three-consonant clusters have been attested. They all occur word-medially across morpheme boundaries. The characteristic pattern is a syllable-final cluster (called an intra-syllabic cluster (v.1.61.2.)) followed by any one of the set of consonants permissible as second member of a two-consonant cluster. The typical composition of a syllable-final cluster in this phonological structure is: a liquid followed by a bilabial or dorso-velar stop or, in one instance, a dorso-velar nasal.

| | |
|-------------------|---|
| ŋalkpak | <i>sit down when full up with food</i> |
| tarŋalktarŋalk | <i>bump into someone</i> |
| ŋalktʲɛt | <i>stand up when full up with food</i> |
| tʲalkma | <i>fall</i> |
| tɛlkŋa | <i>singe hair from animal (away from speaker)</i> |
| ŋalkwukutʲ | <i>fill (lot of people) with food</i> |
| tʲalkyur | <i>bend over</i> |
| tʲirkktʲɛt | <i>join (VR) (e.g. two bits of wood)</i> |
| kerkkatʲ | <i>startle</i> |
| perkma | <i>rest (VR)</i> |
| karkwat | <i>take (meat, e.g.) from fire</i> |
| tʲuʳkyiwaʳa, tönö | <i>lot of people go into jungle</i> |
| ŋalamuʳkma | <i>swear, curse</i> |
| aŋuʳkna | <i>half-way</i> |
| tuʳkwat | <i>swallow</i> |
| tʲuʳkyiwaya, tönö | <i>one person goes into jungle</i> |
| talptalpma | <i>run along playing</i> |
| kölpʲɛt | <i>roast (a single animal)</i> |
| kölpma | <i>roast (unmarked for quantity)</i> |
| tapulʲp | <i>extinguish fire</i> |
| pulʲpyur | <i>(fire) dies down</i> |
| tölgma | <i>stretch (VR)</i> |
| lerpma | <i>meet, of a large number</i> |
| tuʳppak, (pöŋköi) | <i>kneel down</i> |
| tʲuʳptɛytʲ | <i>cut off</i> |
| tuʳpkatʲ | <i>dig</i> |
| tuʳptʲɛt | <i>plant (VR)</i> |
| tuʳppam | <i>plant (p10)</i> |
| mantum töʳpyur | <i>spiked by fin (of catfish)</i> |

1.61.4. Vowel Distribution

The vowels /a/ and /ɛ/ may occur word-initially, /i/, /ö/ and /u/ may not. The only other constraints on vocalic distribution are,

firstly, that /a/, /e/ and /u/ do not follow /ɪʏ/ and, secondly that there are no vocalic clusters (v.1.3.).

1.7. THE PHONOLOGICAL PHRASE

The phonological phrase consists of phonological words. There is a variety of phonological phrases defined by the following intonation patterns.⁸

A phrase-final fall in pitch level marks the end of a (non-interrogative) sentence.

A phrase-final high rise in pitch marks the end of a yes/no question. In an information question the interrogative carries a high pitch on its first syllable and primary stress falls on the phrase-final syllable with a concomitant low rise in pitch.

When the phrase-final intonation is no different from the pitch-level of the rest of the phrase, this denotes a sentence-medial phrasal statement. When the phrase-final intonation differs from that of the rest of the phrase only in that it has a low rise contour, this denotes a sentence-medial anticipative intonation.

The imperative intonation is marked by two features. Firstly, it is spoken faster than normal. Secondly, the phrase-final syllable receives primary stress with a concomitant low rise in pitch.

An emphatic negative involves a sharp fall in pitch.

N O T E S

1. A raised consonant represents an unreleased consonant.
2. Only one instance has been recorded in which vocalic length has a distinctive value: kupuk [kubuk] *dive* (predicated of an individual) as against kuwpuk [ku:buk] *dive* (predicated of a number of persons). This is equivalent to the partial reduplication that has a pluralizing function with certain Verb Roots: e.g. yur > yurur: *lie down* (predicated of an individual and a number, respectively).
3. The Verb Complex (VC) may be expanded as follows:
(adverb) {(Verb Root)(Auxiliary)} (object pronoun)
4. See section 1.6., below, for a discussion of Word Stress.
5. Primary stress falls obligatorily on the second syllable for five- and seven-syllable words and for four-syllable auxiliaries. Second syllable primary stress is optional for trisyllabic words (except where sandhi is involved, in which case it is obligatory).
6. Relative loudness, pitch and length were not measured mechanically in the analysis of stress.
7. More precisely, regarding the latter, what R.H. Stetson ('Motor Phonetics', 1928) called 'abutting consonants'.
8. What follows is not an exhaustive statement of the intonation patterns. Much more research into this area of the language is needed before such a statement will be possible.

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