

GARAWA PHONOLOGY

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0. Introduction
1. Consonants
2. Vowels
3. Distribution of Phonemes
4. Syllables
5. Word Stress

0. INTRODUCTION

The purpose of this paper is to present a phonemic analysis of the western dialect of the Garawa language.¹ A description is given of the phoneme, syllable and word levels.

Garawa is spoken by about 300 people living in the northeast of the Northern Territory of Australia, from Borroloola to Doomadgee in Queensland. There are two dialects of Garawa, eastern Garawa spoken in the area of Wollogorang cattle station and western Garawa spoken in the area of Robinson River cattle station.

1. CONSONANTS

There are nineteen consonantal phonemes in Garawa: the voiceless stops /p, t, t̥, tʃ, jk, k/ and the voiced nasals /m, n, ŋ, nʃ, jŋ, ŋ/ contrasting at the bilabial, apico-alveolar, apico-domal, lamino-alveolar, lamino-velar and velar points of articulation; the voiced laterals /l, ʃ, lʃ/ contrasting at the apico-alveolar, apico-domal and lamino-alveolar points of articulation; a voiced apico-alveolar vibrant /ʃ/; and the voiced semi-consonants /w, ɣ, ʀ/ occurring at the bilabial, lamino-palatal and apico-domal points of articulation.

1.1 CONSONANT CONTRASTS

The stops contrast in word initial position:

/pula/	<i>they</i> (dual)
/tulala/	<i>tree</i> (species)
/tjulaki/	<i>bird</i> (generic)
/kula/	<i>south</i>

word medial position:

/wapa/	<i>bark</i>
/matamata/	<i>opossum fur</i>
/waʔapa/	<i>goanna</i> (species)
/watja/	<i>quickly</i>
/wajka/	<i>down</i>
/waka/	<i>call out</i>

The nasals contrast in word initial position:

/mulu/	<i>nose</i>
/nuʔu/	<i>we</i> (plural excl)
/njulu/	<i>he</i>
/ŋuluʔ/	<i>backbone</i>

word medial position:

/nanama/	<i>that</i> (non-specific)
/muŋana/	<i>at night</i>
/paŋaŋa/	<i>father's oldest brother</i>
/puwanja/	<i>older brother</i>
/laŋinaŋa/	<i>north across something</i>
/munana/	<i>white man</i>

The laterals, the flap /ʃ/, and the semi-consonant /ɾ/ contrast in word medial position:

/kaŋala/	<i>skin grouping</i>
/tjuwa a/	<i>lying face down</i>
/walja/	<i>mammal</i> (species)
/nakaʃa/	<i>horse</i>
/ŋaʔaɾa/	<i>sun</i>

The apico-alveolar stop /t/ and flap /ʃ/ contrast in word medial position:

/matamata/	<i>opossum fur</i>
/ŋaʃawa/	<i>salt</i>

The apico-domal stop /ʈ/ and semi-consonant /ɾ/ contrast in word medial position:

/waʔapa/	<i>goanna</i> (species)
/ŋaɾapa/	<i>drink</i>

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

/patja/	<i>play</i>
/watja/	<i>quickly</i>

word medial position:

/ŋupuŋu/	<i>boomerang (generic)</i>
/ŋuwu/	<i>water</i>

The lamino-alveolar stop /tj/ and lamino-palatal semi-consonant /y/ contrast in word initial position:

/tjŋku/	<i>sit</i>
/yundu/	<i>on top of</i>

word medial position:

/yatji/	<i>country</i>
/mayi/	<i>tooth</i>

1.2 CONSONANT VARIANTS

Both the apico-domal and the lamino-alveolar stops /t/ and /tj/ have an unreleased allophone [t̚] and [tj̚]:

/kutjpa/	[ku ⁱ tj̚p ^Λ]	<i>search</i>
/paʔpaʔtji/	[paʔp ^Λ t̚tj̚]	<i>tree (species)</i>

A voiceless aspirated velar stop [kʰ] occasionally occurs in word initial position as an allophone of the velar stop /k/:

/kaʃuwa/	[kaʃuwa ^ʰ ~ kʰaʃuwa ^ʰ]	<i>name of language</i>
/kaʃi/	[kaʃe ~ kʰaʃe]	<i>east</i>

The bilabial stop /p/ has a voiced allophone [b] in word initial position preceding semi-consonant /r̥/:

/p̥ratji/	[br̥a ⁱ tj̚]	<i>tail</i>
/p̥raki/	[br̥aki]	<i>ant (species)</i>

Each of the lamino-alveolar consonants /tj, nj, lj/ has an allophone with palatal release [tjʲ], [njʲ], [ljʲ], which occur in free variation with it preceding a vowel:

/tjalu/	[tjalu ~ tjʲalu]	<i>arm</i>
/patja/	[pa ⁱ tj̚ ^ʰ ~ pa ⁱ tjʲ ^ʰ]	<i>play</i>
/njulu/	[njulu ~ njʲulu]	<i>he</i>
/punji/	[po ⁱ n̥j̚ ~ po ⁱ n̥jʲ]	<i>grass (species)</i>
/kulja/	[ku ⁱ lj̚ ^ʰ ~ ku ⁱ ljʲ ^ʰ]	<i>raw</i>

The apico-alveolar vibrant /ʃ/ fluctuates freely with a voiceless flap allophone [ʃ̥] in word final position; in emphasized speech the voiceless trill allophone [ʃ̥̃] tends to occur in word final position:

/kaʃi/	[kaʃe]	<i>east</i>
/liʃka/	[leʃkʌʋ]	<i>first born</i>
/waʃmpa/	[waʃmpʌʋ]	<i>blow</i>
/yi aʃ/	[yɛ ʌʋʃ ~ yɛ ʌʋʃ̥̃]	<i>poison</i>
/pitjpaʃ/	[pi ^{tj} pʌʋwʌʋʃ̥̃]	<i>fierce</i>

2. VOWELS

There are three vowel phonemes /i, a, u/. These contrast at front, central and back points of articulation.

2.1 VOWEL CONTRASTS

/mili/	<i>more</i>
/mali/	<i>flood waters</i>
/mulu/	<i>nose</i>
/ŋali/	<i>we (dual excl)</i>
/ŋala/	<i>while</i>
/ŋalu/	<i>cloud</i>

2.2 VOWEL VARIANTS

Each vowel has a retroflexed allophone preceding apico-domal consonants:

/yi aʃ/	[yɛ ʌʋʃ̥̃]	<i>poison</i>
/kaʃila/	[kʌʃe ʌʋ]	<i>hip</i>
/kuŋaʃ/	[kʋŋe ʌʋʃ̥̃]	<i>smoke</i>

For each vowel there is a range of allophones which vary considerably; however the following distributions of the allophones tend to occur.

The front vowel /i/ has the allophones [i], [ɪ], [e], [ɛ], [eⁱ], [eⁱ·].

The allophone [i] occurs between non-velar and lamino-alveolar or lamino-palatal consonants:

/pitjal/	[pitjʌʋi]	<i>partly</i>
/miya/	[miyʌʋ]	<i>snake (generic)</i>

The glide [eⁱ] occurs between velar and lamino-alveolar or lamino-palatal consonants:

/kinjpa/	[ke ⁱ njpa ^ʌ]	<i>caught in something</i>
/mikukiyi/	[mekuke ⁱ yi]	<i>don't!</i>

The lengthened glide [eⁱ·] occurs preceding lamino-velar consonants:

/kijŋjki/	[ke ⁱ ·jŋjki]	<i>flying fox (species)</i>
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The allophone [e] tends to occur contiguous to laterals and vibrants:

/kaɾila/	[kaɾeɪl ^ʌ]	<i>hip</i>
/liʃka/	[leʃka ^ʌ]	<i>first born</i>

The allophone [ɛ] tends to occur following bilabials:

/piwali/	[pɛwale]	<i>opossum (species)</i>
/miku/	[meku]	<i>no</i>

The allophone [ɪ] tends to occur in other environments:

/nitji/	[nitji]	<i>name</i>
/tiŋutji/	[tiŋu ⁱ tji]	<i>tree (species)</i>

The central vowel /a/ has the allophones [ʌ^ʌ], [a], [a^ʌ], [aⁱ], [aⁱ·].

The glide [aⁱ] occurs preceding lamino-alveolar and lamino-palatal consonants:

/mayi/	[ma ⁱ yi]	<i>tooth</i>
/yatjpa/	[ya ⁱ tjpa ^ʌ]	<i>burn</i>

The lengthened glide [aⁱ·] occurs preceding lamino-velar consonants:

/majkaʃa/	[ma ⁱ ·jka ^ʌ ʃ ^ʌ]	<i>husband and wife</i>
/kulanajŋa/	[kuɪl ^ʌ na ⁱ ·jŋa ^ʌ]	<i>south across something</i>

The low back allophone [a^ʌ] tends to occur between /w/ and /w/:

/wawaʃa/	[wa ^ʌ w ^ʌ ʃ ^ʌ]	<i>baby boy</i>
/wawi/	[wa ^ʌ wɛ]	<i>horse</i>

The low allophone [a] tends to occur in other stressed syllables:

/tjalu/	[tjalu]	<i>lower arm</i>
/ŋaʃawa/	[ŋaʃ ^ʌ w ^ʌ]	<i>salt</i>

The lower mid allophone [ʌ^ʌ] tends to occur in other unstressed syllables:

/nanamanŋa/	[nan ^ʌ ma ^ʌ nŋa ^ʌ]	<i>same one</i>
/wukaʃa/	[woka ^ʌ ʃ ^ʌ]	<i>tree (species)</i>

The back unrounded vowel /u/ has the allophones [u], [o], [uⁱ], [uⁱ·], [oⁱ], [oⁱ·].

The glide [uⁱ] occurs between non-bilabial and lamino-alveolar or lamino-palatal consonants:

/yuyu/	[yu ⁱ yu]	<i>yes</i>
/tjunjtjutupu/	[tju ⁱ njtjutupo]	<i>bird (species)</i>

The lengthened glide [uⁱ·] occurs between non-bilabial and lamino-velar consonants:

/watjukjanji/	[wa ⁱ tju ⁱ ·jka ⁱ nji]	<i>swatting</i>
/buŋujukjanji/	[boŋu ⁱ ·jka ⁱ nji]	<i>coming closer</i>

The glide [oⁱ] occurs between bilabial and lamino-alveolar or lamino-palatal consonants:

/ma]buyuři/	[ma]bo ⁱ yuři]	<i>to the old man</i>
/munjtji/	[mo ⁱ njtji]	<i>bush</i>

The lengthened glide [oⁱ·] occurs between bilabial and lamino-velar consonants:

/wujkutjpa/	[wo ⁱ ·jku ⁱ tjpa ^v]	<i>rub</i>
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The high allophone [ʊ] tends to occur between non-bilabial and bilabial or apico-alveolar or velar consonants:

/lukuluku/	[lukuluku]	<i>around</i>
/tjuntuř/	[tjuntuř]	<i>sand</i>

The mid allophone [o] tends to occur word finally following bilabial consonants or between bilabial and bilabial or apico-alveolar or velar consonants:

/buntal/	[bontal]	<i>river</i>
/kumu/	[kumo]	<i>flood waters</i>

2.3 ALTERNATIVE ANALYSIS OF LAMINO-VELAR STOP AND NASAL PHONEMES

It would have been equally possible to analyse the lengthened vowel glides as separate phonemes /eⁱ/, /aⁱ/, /uⁱ/ in contrast with the simple vowels /i/, /a/, /u/:

/we ⁱ ku/	<i>goanna (species)</i>
/miku/	<i>no</i>
/kulana ⁱ ŋa/	<i>south across something</i>
/munana/	<i>white man</i>
/wu ⁱ kutjpa/	<i>rub</i>
/wukuřupa/	<i>swell</i>

The lamino-velar stop and nasal would then be analysed as allophones of the velar stop and nasal conditioned by occurrence following the glide phonemes:

/we ⁱ ku/	[we ⁱ .jku]	<i>goanna</i> (species)
/wa ⁱ ka/	[wa ⁱ .jkʌ ^v]	<i>down</i>
/ku ⁱ kula/	[ku ⁱ .jkʌ ^v lʌ ^v]	<i>menstrual fluid</i>

The vowel glide [oⁱ.] would be the allophone of /uⁱ/ occurring following bilabials:

/wu ⁱ kutjpa/	[wo ⁱ .jku ⁱ tj _p ʌ ^v]	<i>rub</i>
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This interpretation would have resulted in a number of stems having allostems, and some suffixes having allomorphs. Some examples of these are:

/puntu ~ puntu ⁱ -/	<i>close</i>
/walkuša ~ walkuša ⁱ -/	<i>big</i>
/muḡanawa ~ muḡanawa ⁱ -/	<i>tomorrow</i>
/-nkuya- ~ -nkuya ⁱ -/	<i>dual</i>
/-nmuku- ~ -nmuku ⁱ -/	<i>plural</i>

By setting up the lamino-velar stop and nasal phonemes only three suffix allomorphs result:

/-ḡkuři	-jḡjkuři/	<i>towards</i>
/-kanji	-jkanji/	<i>for the purpose of</i>
/-kuři	-jkuři/	<i>(verb suffix)</i>

3. DISTRIBUTION OF PHONEMES

3.1 CONSONANT DISTRIBUTION WITHIN THE PHONOLOGICAL WORD

A phonological word in Garawa is defined as a minimal utterance carrying one primary stress marking the nucleus and borders marked by such devices as potential pause and phonemic distribution.

All words begin with a consonant with the exception of one word /alakala/ *bearers of burial platform*.

Any single consonant except /jk, ḡ, jḡ, l, lj, ř/ may occur in word-initial position. In word-final position only /n, l, l, ř/ occur.

/waṭa /	<i>kangaroo</i> (species)
/yaka /	<i>moon</i>
/tjuluř/	<i>ash</i>

Consonant clusters may comprise two or three segments.

In the data two di-clusters have been found to occur in word-initial position.

Homorganic cluster, stop + semi-consonant:

řř-	/řřařřaḡka/	<i>bush fire burning</i>
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Heterorganic cluster, stop + semi-consonant:

př-	/přaki/	<i>tail</i>
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In the data thirty-four di-clusters have been found to occur in word medial position within single morphemes.

Homorganic clusters, stop + semi-consonant:

-ʃʃ- /ʃʃaʃʃaŋka/ *bush fire burning*

Nasal + stop:

-mp- /tjampa/ *ground*

-nt- /puntu/ *close*

-ŋʃ- /paŋʃa/ *camp*

-njtj- /tjanjtja/ *rain*

-jŋjk- /tajŋjka/ *burn*

-ŋk- /tjaŋkuʃ/ *word*

Heterorganic clusters, stop + stop:

-tjp- /kulatjpi/ *pillow*

-ʃp- /paʃpaʃtji/ *tree (species)*

-ʃtj- /paʃpaʃtji/ *tree (species)*

Nasal + stop:

-njp- /kunjpa/ *good*

-np- /njinpu/ *animal (species)*

-ŋp- /kaŋpa/ *grass (species)*

-ŋtj- /miŋmiŋtjal/ *eyebrow*

-nk- /munkul/ *white ash*

-ŋk- /yuŋkur/ *wind*

Nasal + nasal:

-ŋm- /luŋmuʃ/ *fly (species)*

-njm- /kunjmampa/ *make good*

-ŋŋj- /taŋŋji/ *ankle*

-nŋ- /talanna/ *first time*

-ŋŋ- /kuŋŋaʃ/ *smoke*

Lateral + stop:

-lp- /malpu/ *old man*

-lp- /tjulpi/ *fish (species)*

-lk- /palki/ *bad*

-lk- /wilku/ *run*

Lateral + nasal:

-lm- /talmuʃa/ *bird (species)*

-lŋ- /pulpulŋitjpa/ *jump*

Lateral + semi-consonant:

-lw- /yilwil/ *nail*

-lw- /pu|witaʃi/ *white ground*

Flap /ʃ/ + stop:

-ʃp-	/tjaʃpu/	<i>gorge</i>
-ʃk-	/puʃka/	<i>tail</i>

Flap /ʃ/ + nasal:

-ʃm-	/kaʃmuʃ/	<i>spear (species)</i>
-ʃŋ-	/liʃŋinti/	<i>insect (species)</i>

Flap /ʃ/ + semi-consonant:

-ʃw-	/ŋuʃwa/	<i>thunder</i>
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In addition five di-clusters occur across morpheme boundaries within the word. In the following examples the pertinent morpheme break is marked by a hyphen.

Homorganic clusters, lateral + nasal:

-ln-	/punta nanji/	<i>from the river</i>
- ŋ-	/yupa ŋanji/	<i>from the track</i>

Flap /ʃ/ + nasal:

-ʃn-	/kunaʃnanji/	<i>from the smoke</i>
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Heterorganic clusters, lateral + lateral:

- lj-	/yupa ljuʃi/	<i>to the track</i>
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Flap /r/ + semi-consonant:

-ʃy-	/yunkuʃyuʃi/	<i>to the wind</i>
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In the data three tri-clusters have been found to occur across morpheme boundaries within the word.

Lateral + nasal + stop:

- mp-	/putjal mpa/	<i>smash</i>
- mp-	/yuwa mpa/	<i>travel by a direct route</i>

Flap /ʃ/ + nasal + stop:

-ʃmp-	/waʃ mpa/	<i>blow</i>
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3.2 VOWEL DISTRIBUTION WITHIN THE PHONOLOGICAL WORD

Only one word has been found to have a vowel word initial; /a/ occurs in /alakala/ *bearers of burial platform*. (This word may be a loan word, possibly from Yanyula.) Any vowel may occur preceding or following any consonant with the following exceptions: /u/ has not been found following /ŋ/, /i/ has not been found following /jŋ/.

4. SYLLABLES

There are three syllable types each with a single vowel nucleus. The prenuclear margin may be filled with one or two consonants while the postnuclear margin is limited to one consonant.

CV	ma.yi	<i>tooth</i>
CVC	tja	<i>flower</i> (generic)
CCV	waʃ.mpa	<i>blow</i>

A closed variant of the CCV syllable type [CCVC] occurs as the second syllable of a word between a CCV syllable and a CV syllable.

ʃra.ʃraŋ.ka *bush fire burning*

Words consist of from one to ten syllables. Words of six syllables or more are not frequently heard. Syllable types CV, CVC, and CCV may occur in any position in the word. However no more than three CVC syllables have been heard occurring contiguously.

ka.la.wujŋ.jku.ʃu	<i>inside</i>
ŋam.pa.la.ŋin.ku.ya	<i>our two</i>
miŋ.miŋ.tja	<i>eyebrow</i>
kun.til.mpa	<i>make dry</i>
pʃa.tji	<i>ant</i> (species)
yuʃ.mpa.ka	<i>(he is) shifting</i>

5. WORD STRESS

In Garawa primary stress (indicated in this section by ') is always on the first syllable of the phonological word. Primary stress is manifested by loudness, high pitch and length.

yámi	<i>eye</i>
púnjala	<i>white</i>

Secondary stress (indicated by `) occurs on the penultimate syllable of words with four or more syllables. Secondary stress is manifested by less length and loudness than primary stress, while pitch is usually no higher than that of contiguous syllables. In words of six or more syllables tertiary stress (indicated by ~) occurs on every second syllable preceding the secondary stress but never on the second syllable.

wátjimpàŋu	<i>armpit</i>
kámalaʃinji	<i>wrist</i>
yákalākālampa	<i>loose</i>
ŋánkiʃikTʃimpàyi	<i>fought with boomerangs</i>
ŋámpalāŋinmūkunjina	<i>at our many</i>
náʃiŋinmūkunjTnamìʃa	<i>at your own many</i>
nímpalāŋinmūkunānjimìʃa	<i>from your own two</i>

N O T E

1. Garawa has been classified by O'Grady, Voegelin and Voegelin in *Anthropological Linguistics* (1966:33) as being the only member of the Karawic Group of the Karawan Family of Australian languages.

The material for this paper was collected under the auspices of the Summer Institute of Linguistics during eighteen months residence at Borroloola between June 1968 and March 1970. Principal language helpers were Jerry Wollogorang, Edna Jack and Hilda Ross.

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The description presented here is based on the phonological procedure and approach developed by Pike, "Phonemics" (1947).

