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PREFACE

These Workpapers are being produced in two series by the Summer Institute of Linguistics, Australian Aborigines Branch, Inc. in order to make results of SIL research in Australia more widely available. Series A includes technical papers on linguistic or anthropological analysis and description, or on literacy research. Series B contains material suitable for a broader audience, including the lay audience for which it is often designed, such as language learning lessons and dictionaries.

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Because of the preliminary nature of most of the material to appear in the Workpapers, these volumes are being circulated on a limited basis. It is hoped that their contents will prove of interest to those concerned with linguistics in Australia, and that comment on their contents will be forthcoming from the readers. Papers should not be reproduced without the authors' consent, nor cited without due reference to their preliminary status.

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INTRODUCTION TO
SERIES A VOLUME I

The papers in this volume are descriptions of aspects of the phonologies of five Australian Aboriginal languages. Some have been written after detailed analysis and published to make data available, e.g. Alyawarra Phonology by Nancy Turtle. Others are the result of shorter periods of field work and analysis. These are being made available in preliminary form here and may be further edited and published more widely in the future.

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WHAT ARE CONTRASTIVE SYLLABLES?
THE WIK-MUNKAN PICTURE

Barbara J. Sayers

Wik-Munkan is an Australian Aboriginal language now mainly spoken at Aurukun on the Archer River on the West Coast of Cape York Peninsula, Queensland. There are approximately 750 people who speak Wik-Munkan either as their first or second language. They live either at Aurukun or in the surrounding area including Welpa, Coen, Edward River, cattle stations and the Aurukun outstations, Peret and Titree.

The language is classified as Pama-Nyungan family, Pama-Maric Group, Middle Paman Sub-Group (O'Grady, Voegelin and Voegelin 1966:54).

This paper was prepared for oral presentation at the Linguistic Society of Australia meeting in Sydney in August 1975, using data collected while resident at Aurukun for periods between 1962 and 1975.

Wik-Munkan (Wik-Munƙan) has proved to be a fascinating language to study in many areas, and the syllable is one of these. There seemed to be no simple answer to the syllable structure so it became a challenge to find a satisfactory solution. The practical needs of a bilingual education programme emphasized the need for such a solution.

The analytical problems can be classified into two categories-- both based on the assumption that syllables exist as a valid level in the phonological hierarchy and that they are a psychological reality to the Wik-Munkan speaker and reader.

The first category of problem is called Identificational and includes

1. establishing the phonemic status of schwa;
2. identifying contrastive syllable boundaries;
3. analysing indeterminate syllable boundaries where interlude consonants occur, e.g. CVC.VCVC.

Once these problems are handled there is still a further problem in syllable analysis. This is because the resultant long list of syllable patterns (15) does not adequately show the relationship of certain of these patterns to other patterns (' indicates primary word stress; ` indicates secondary word stress; ˇ indicates lack of stress; (C) indicates an obligatory interlude consonant, not an optional consonant). CVC, CVCC, CVCCC, CV:C, CV:CC, CV(C), CV(C)(C), CV:C(C), (C)VC, (C)VCC, V, VC, VCC, CV. This list corresponds to what Pike (1967:389) calls an 'emic class of emic syllables'.

The second category of problem could be called Organizational and is involved in setting up contrastive construction types of syllables. To do this I have followed Pike's hierarchical model and have compared the syllable with the phoneme and the clause (see Table 1). While following Pike's model, I have found his definition of contrastive syllables inadequate for describing Wik-Munkan.

Analysing syllables in the following way allows for well-defined structural units with features of contrast, variation and distribution. Within each syllable type in Wik-Munkan, non-identical syllable patterns are regarded as equivalents, e.g. CVC, CVCC, CVCCC.

The purpose of this paper is to analyse the list of Wik-Munkan syllable patterns into contrastive construction types. In each syllable type syllable patterns are categorized by similar features of construction and distribution in the foot and the word. Each construction type has its allowable variation.

To set up these construction types the question I have sought to answer are these:

1. What features of syllables would group them together as being similar enough in structure to each other to be members of one contrastive syllable type?
2. What range of variation would be allowable within a contrastive type?
3. What is significant in the way these syllable types occur or are restricted in occurrence as they are distributed into feet and words?

COMPARISON OF ANALYSIS OF PHONEMES, SYLLABLES AND CLAUSES

<u>Phonemes</u>	<u>Syllables</u>	<u>Clauses</u>
[p], [p ^h], [b]	pam, kal, t̥ip	She hit the dog.
/p/ which is one phoneme of a type of phoneme called stops	CVC which is one syllable pattern of a type of syllable called Independent	You saw me.
/p/, /t̥/, /t/, /ʃ/, /k/	Syllables CVC, CVCC, CVCCC, CV:C, CV:CC	SVO which is one clause pattern of a type of clause called Transitive Clauses SVO, VO, V

TABLE I

A further problem in the analysis of Wik-Munkan syllables is that most Wik-Munkan words have alternate forms of pronunciation, i.e. either with or without a final non-contrastive vowel. I have chosen to analyse this as a feature of the word rather than, as in the case of a monosyllabic word, a word of one emic syllable with a variant form of two etic syllables. This variation may occur in words of any number of syllables and is one reason why I find it preferable to treat it as a variant of a word. A further aspect of this problem is

that the minimal form which can be pronounced by a Wik-Munkan speaker is the closed syllable CVC which has an alternate etic disyllabic form CVCV. This emic syllable CVC can be pronounced in three possible ways: CVC, CV.CV or CVC.V, e.g. /pam/ [pam] ~ [pa.ma] ~ [pam.a] 'man'; i.e. the shortest word in which an open syllable can be pronounced is in the disyllabic variant of a monosyllabic word. A single open syllable can never be pronounced in isolation. Words with two emic syllables can also be pronounced in various ways, e.g. /ye:la/ [ye:l.a] ~ [ye:.la.la] ~ [ye:l.a.la] 'sea'.

The closed syllable shape CVC is analysed as the emic form of words with the etic variants CVC, CV.CV, and CVC.V for the following reasons:

- (i) The final vowel of the etic disyllabic form is phonemically non-contrastive and is for the most part a phonetic variant of the phoneme /a/. This vowel (or its obligatory absence) is handled as a contrastive intonation carrier in pre-pause positions--and this includes words pronounced in isolation (Sayers: 1973 and 1976). In other than pre-pause positions this word-final vowel is handled as a rhythm feature of the phonological clause and is not a free variant in this position.
- (ii) Historically many disyllabic words have become monosyllabic, in many cases by a shift of a contrastive vowel from S_2 to S_1 , e.g. ga:ne to ge:n 'what'.

1. CONTRASTIVE TYPES

1.1 GROUNDS OF CONTRAST

In analysing Wik-Munkan syllables as contrastive construction types, two major criteria have been used. Firstly, syllables have been divided in relation to whether or not they can be pronounced in isolation. This gives the Independent-Dependent distinction.

Secondly, syllables have been divided in relation to the stress of the nucleus, which gives a Stressed-Unstressed distinction. These classifications intersect and are both necessary in identifying the three Wik-Munkan syllable types: Independent, Inter-dependent and Dependent.

1.2 FEATURES OF CONTRAST

The features of syllables that are considered relevant in analysing contrastive syllable types are

- (i) Onset: the obligatory presence or absence of an onset consonant and the status of such a consonant when it occurs,
- (ii) Nucleus: the stressed or unstressed nature of the nucleus,
- (iii) Coda: the obligatory or optional presence of coda.

These features are summarized in Table II.

FEATURES OF CONTRAST OF THE THREE SYLLABLE TYPES

Feature Contrasted	Independent Syllable	Interdependent Syllable	Dependent Syllable
Onset: (O)	+	[+]	±
Stressed Nucleus: (SN)	+	+	-
Coda: (K)	+	[+]	±

NOTE: [+] one or other feature so represented is an interlude consonant.

TABLE II

1.2.1 INDEPENDENT SYLLABLE TYPE

An Independent Stressed Syllable is composed of an obligatory Onset followed by an obligatory stressed Nucleus followed by an obligatory Coda and can be represented by the following formula:

$$IS = +O +SN +K$$

For the fillers of the slots see the summary in Table III in Section 2.

Examples: $\overset{\cdot}{C}\overset{\cdot}{V}\overset{\cdot}{C}$ pam 'man', kek 'spear', $\overset{\cdot}{C}\overset{\cdot}{V}:C$ wa:t 'crow', $\overset{\cdot}{C}\overset{\cdot}{V}\overset{\cdot}{C}\overset{\cdot}{C}\overset{\cdot}{C}$ noyngk 'shadow', 'shade'.

1.2.2 INTER-DEPENDENT SYLLABLE TYPE

An Inter-dependent Stressed Syllable is composed of an obligatory Onset or Interlude Onset followed by an obligatory stressed Nucleus followed by an obligatory Interlude Coda or Coda. One of the margin slots is filled by an interlude consonant and the other is filled by an independent consonant. This syllable type can be represented by the following formula:

$$IntDS = +[O]/O +SN +K/[K]$$

Both syllables in each of the following examples are inter-dependent syllables--one of each variant.

$\overset{\cdot}{C}\overset{\cdot}{V}\overset{\cdot}{C}\overset{\cdot}{V}\overset{\cdot}{C}$ +	$\overset{\cdot}{m}\overset{\cdot}{u}\overset{\cdot}{t}\overset{\cdot}{i}\overset{\cdot}{t}\overset{\cdot}{j}$ +	'stingray type'
$\overset{\cdot}{C}\overset{\cdot}{V}\overset{\cdot}{C}\overset{\cdot}{V}\overset{\cdot}{C}\overset{\cdot}{C}$ +	$\overset{\cdot}{t}\overset{\cdot}{a}\overset{\cdot}{t}\overset{\cdot}{a}\overset{\cdot}{m}\overset{\cdot}{p}$ +	'we (pl) will see'

1.2.3 DEPENDENT SYLLABLE TYPE

A Dependent Syllable is composed of an optional Onset followed by an obligatory Unstressed Nucleus followed by an optional Coda, and can be represented in the following formula (Onset and Coda cannot

FILLERS OF SLOTS IN EACH CONTRASTIVE SYLLABLE TYPE

Feature	Independent Syllables		Interdependent Syllables		Dependent Syllables
	Primary Stress	Secondary Stress	Primary Stress	Secondary Stress	
Manifested					Unstressed
Onset:	Any C except /ʃ/	Any C	Any C except /ʃ/	Any C as interlude C	Any C except /ʃ/
Nucleus: Vowel Length	Any short or long vowel	/a, i, u, i: /	Any short or long vowel	Any short vowel	/i, a, u/
Pitch Height	Highest	Lower	Highest	Lower	Indefinite (non-pertinent)
Pitch Control	+	+	+	+	-
Coda: Allowable Consonants	1-3 Consonants (Any C or allowable di- or tri-cluster)	1-2 Consonants (Any C except /r/ or one of the following homorganic nasal-stop clusters: mp, nt, nk)	1-2 Consonants (Any C except /ʃ/ as one single interlude C. Any stop as interlude C2 of an allowable di-cluster)	1-2 Consonants (Any single C or mp, ɲŋ)	1-2 Consonants (Any single C or one of the following homorganic nasal-stop clusters: mp, nt)
Vl or Vd Allophone of stop when C2 of di- clusters	Voiceless	Voiceless	Voiceless	Voiceless	Voiced

TABLE III

co-occur except in one example which could be analysed wǎnj.tjǐŋt ('old woman'):

$$DS = \pm 0, \quad +USN \quad \pm K$$

±

Examples:

S ₂	in CVC.VC	kóm.ǎn	'young woman'
S ₂	in CVC.V.CVC	tjók.ǎ.làn	'scrub turkey'
S ₁	in CV.CVC	kǔ.tjék	'head'
		kǎ.kál	'he kept on carrying it'

2. ALLOWABLE VARIANTS

The allowable variants and the non-allowable variants of the fillers of each slot of the three contrastive syllable types are summarized in Table III. Of special interest is the very restricted distribution of voiced allophones of stops. These allophones only occur as C₂ of a dicluster in a dependent syllable.

3. DISTRIBUTION

The distribution of the contrastive syllable types is summarized in Table IV. The facts about the distribution of syllables handled here are other than related to their isolatability.

4. DISCUSSION OF PRESENT ANALYSIS

I believe the present analysis is valid and will discuss one of my reasons.

4.1 THE UNSTRESSED SYLLABLE AND THE PHONEMIC STATUS OF SCHWA

One feature of a syllable is that it is the unit on which contrastive pitches are carried. In Wik-Muncan each syllable is a carrier

DISTRIBUTION OF EACH SYLLABLE TYPE INTO THE FOOT AND THE WORD

Independent Syllables		Inter-dependent Syllables	Dependent Syllables
The Foot			
Independent syllables occur as the nucleus of any foot in words of 'normal rhythm', i.e. $\overset{\vee}{\text{SS}} \overset{\vee}{\text{S}} \overset{\vee}{\text{SSS}}$		Inter-dependent syllables only occur in words where 'normal rhythm' cannot occur. Each syllable is a foot, i.e. $\overset{\vee}{\text{S}}$	Dependent syllables always occur within a foot in 'normal rhythm' words-- other than as the nucleus.
The Word			
Primary Stressed Syllables	Secondary Stressed Syllables	Primary and Secondary Stressed Syllables	Unstressed Syllables
<p>1. As monosyllabic words.</p> <p>2. As primary stressed syllable of words of 'normal rhythm' pattern.</p> <p>3. As S_1 of second root of compound words.</p>	<p>1. As S_3 of 'normal rhythm' words.</p> <p>2. As S_2 of (a) words of $\overset{\vee}{\text{SS}}$ when there is optional open transition between S_1 and S_2, e.g. wámpǎpùl ~ wámpǎpùl 'they (dl) came', (b) words of $\overset{\vee}{\text{SS}}$ pattern where the junction of S_1 and S_2 produces a CC or CCC that does not occur unambiguously as a syllable coda, e.g. tái.pùl 'they (dl) saw'.</p>	<p>These syllable subtypes are interdependent and only occur as the pattern $\overset{\vee}{\text{SS}}$, when (a) there is only a single C at the junction of S_1 and S_2, e.g. mútítj 'stingray', (b) the CC or CCC at the junction of S_1 and S_2 occurs elsewhere as an unambiguous syllable coda, and open transition between S_1 and S_2 is obligatorily absent, e.g. wámpǎn 'I will come'.</p>	<p>$\overset{\vee}{\text{VC}}$ pattern (a) As S_2 in the words of $\overset{\vee}{\text{SS}}$ and $\overset{\vee}{\text{SSS}}$ patterns (only in $\overset{\vee}{\text{SSS}}$ pattern when there is a CC at the junction of S_2 and S_3), e.g. tái.ǎn 'I saw', tái.ǎn.tàn 'they (pl) see'. (b) As S_3 of words of $\overset{\vee}{\text{SSS}}$ pattern, e.g. wámpǎt.ǎn 'I brought it'.</p> <p>$\overset{\vee}{\text{VCC}}$ pattern As word final unstressed syllable, e.g. tái.ǎmp 'we (pl incl) saw'.</p> <p>$\overset{\vee}{\text{CV}}$ pattern As word initial syllable when S_2 is primary stressed syllable, e.g. kǔ.ték 'head'.</p> <p>$\overset{\vee}{\text{V}}$ pattern As S_2 in words of $\overset{\vee}{\text{SSS}}$ pattern (when there is only a single C at the junction of S_2 and S_3), e.g. tók.ǎ.làn 'scrub turkey'.</p>

NOTE: 'Normal Rhythm' is an alternating stress pattern of stressed and unstressed. + below consonant indicates an interlude consonant.

TABLE IV

of pitch, either controlled or indefinite. Thus a single unit of contrastive pitch--level on short vowels, and falling on long vowels on syllables whose coda begins with a semi-vowel--identifies an individual syllable. Thus a CVCC or CVCCC pattern without falling pitch is one syllable, e.g. tánt 'to them' and wómp 'big noise'. However, phonemes which form a CVCC or CVCCS pattern, but have a step down of pitch or falling pitch, indicate two emic syllables (except CVSC pattern, where S stands for semi-vowel, which is only one syllable), e.g. [pínt] 'plain', [púnt] 'to them (d)', [wún] 'we (d) lay down'.

A further feature that identifies [púnt] 'to them (d)' as two emic syllables is the distribution of the allophones of stops in syllables. Voiceless allophones occur in the coda of stressed syllables, either as single C or as C₂ or C₃ in a cluster. In unstressed syllables a voiceless allophone occurs as a single C, but a voiced allophone occurs as C₂ of a nasal-stop cluster. When a voiced stop occurs in a cluster in a word such as [púnt], the voiced stop indicates a contracted syllable, manifested only by the closing stop. The contracted syllable in this example is the third person referent suffix -ánt.

A further feature that identifies an unstressed syllable is the actual phoneme sequence that makes up the consonant cluster. Allowable clusters that occur as the coda of syllables are clearly identified in monosyllabic words. The final member of such clusters is always a stop except in the clusters yn and ym. When a cluster consists of other than one of the allowable sequences of consonants in unambiguous monosyllabic words, the final member or members of the cluster are analyzed as a second syllable. This syllabicity is carried in the nasal or lateral, or by a voiced stop, as previously explained (with accompanying pitch drop), e.g. [wámpmb] 'we (pl incl) came', [tán] 'you and I saw', [nóykn] 'in the shade', [pátn] 'we bit'.

When a cluster which can occur as the coda of a syllable occurs across syllable boundaries, the identifying features are then pitch and timing, or the occurrence of the optional form with [ə] between the consonants, e.g. [wún.pùl] ~ [wúnəpùl] 'they (dl) lay down'.

In child speech unstressed syllables are usually pronounced with a clear vowel, e.g. [píntàl] 'plain', while in adult speech, where certain correspondences of phonemes, such as homorganic stop and nasal or stop and lateral, occur at the border of S₁ and S₂, the second syllable is most frequently actualized as a syllabic nasal or lateral e.g. [pínt.ǎ] 'plain', [nóyŋk.ǎ] 'in the shade', [wámp.ǎb] 'we (pl incl) came'.

Unstressed syllables preceding primary stress fall into two categories. One is the partially reduplicated form of verb stems where all vowels, both long and short, are neutralized to [ə], e.g. [kě.kál] 'he kept on carrying it' and [pě.pé:y] 'he kept on crying'.

The second category is limited to a few onomatopoeic words such as [tě.lák.ǎŋ] 'cracking noise' or [tjě.lúp.ǎm] 'right in (splashing noise)'.

An alternate analysis would include vowelless syllables in words such as [pínt.ǎ] 'plain' or [nóyŋk.ǎ] 'in the shade'. In some instances this would produce allomorphs of suffixes where certain phonetic correspondences between the closing C of the stem and the C of the following morpheme occurred.

The Wik-Munkan people themselves perceive these nasals and laterals as unstressed syllables. They have difficulty trying to read words without a vowel--the phoneme /a/--written before the nasal or lateral. The reaction of the people themselves, plus the phonetic evidence of pitch drop/syllabicity make me prefer an analysis which allows for these nasals and laterals to be handled as unstressed syllables--the alternate analysis results in 'problem' consonant clusters for the reader.

In a few problematic examples, such as [wǎnjtjít] 'old woman', even the most sophisticated Wik-Munkan literates have spelling problems which are basically the result of syllable boundary ambiguity-- and I have the same problems in the same places. It is hoped that one day, one of the Wik-Munkan people will be able to analyse his or her own language, both to his or her own satisfaction and for the benefit of the Wik-Munkan people.

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