WERI PHONEMES

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0. INTRODUCTION

Weri is a language spoken by an estimated 2000-3000 speakers in the Weri Valley and several neighbouring valleys, Ono and Biaru, at the headwaters of the Waria River in the Morobe District of the Territory of New Guinea. It belongs to the same language family as Kunimaipa and Biangai.

The corpus of data, including a dictionary of about 1000 words, was gathered in the village of Sim over a period of 7½ months from January 1962 to September 1963. The main informant has been a 21 year old girl, Yawa, who also speaks Kate, and during the earlier months a young man of about 25 named Asi. Use was also made of data gathered by David and Ruth Cummings of S.I.L. during an earlier residence of eight months.

1. INVENTORY OF PHONEMES

1.1. Chart of Phonemic Norms

Consonants:

	Bilabial	*Alveolar*	*Velar*
Stops	p	t	k
Fricative		s	
Nasals	m	n	ŋ
Lateral		l	
Vibrant		r̆	
Semi-vowels	w	y	

Boxwell, H. and Boxwell, M. "Weri Phonemes". In Frantz, C.I., Frantz, M.E., Outridge, D., Outridge, J., Loving, R.E., Swick, J., Pence, A., Staalsen, P., Boxwell, H. and Boxwell, M. editors, *Papers in New Guinea Linguistics No. 5.* **A-7:77-100**. Pacific Linguistics, The Australian National University, 1966. DOI:*10.15144/PL-A7.77*

Vowels:

	Front	*Central*	*Back*
High	i		u
Mid	ɪ		ʊ
Low	e[1]	a	o

Tone: *High* ´

Low Unmarked

1.2. Description of Contrastive Features. Weri consonants occur at three points of articulation: bilabial, alveolar, and velar. Only the stops and nasals contrast in all three positions, while semi-vowels occur at bilabial and alveolar points of articulation.

Bilabial consonants show a three-way contrast, with stop, nasal, and semi-vowel; while there is a contrast between stop and nasal for velar consonants. The major consonantal contrast is at the alveolar point of articulation, with stop, fricative, nasal, lateral, vibrant, and semi-vowel all contrasting here.

Both front and back vowels contrast in high, mid, and low positions. A central low vowel contrasts with its front and back counterparts.

There is also a contrast between high and low tone.

2. INTERPRETATION

2.1. Status of Items which may be either Consonant or Vowel. [i] and [u] have been interpreted as /y/ and /w/ when they are non-syllabic and occur in syllable initial consonant position. When they take the peak of syllabicity and occur in vowel position in a syllable they are interpreted as /i/ and /u/.

/yéwáis/ 'I come'
/ápyewas/ 'I search for'
/íntíp/ 'bird'
/níáman/ 'I will speak to you'
/ní/ 'you'
/wesyámɪ/ 'I send'
/éwɪset/ 'tobacco'
/úlan/ 'cough'
/úlúpít/ 'heart'
/kú/ 'yes'

2.2. Status of Items which may be either Sequence or Unit

2.2.1. Though there are no non-suspect consonant clusters, [mp], [nt], and [ŋk], which occur only in syllable final position, have been interpreted as sequences.

The alternative interpretation, as unit phonemes, creates three extra phonemes which are limited to syllable final position. Though the present interpretation, as a sequence of two phonemes, creates two extra syllable patterns with limited fillers of the final two consonant slots, this is preferred because -

1. the sequence occurs across morpheme boundaries in some cases;

2. all the reverse sequences occur;

3. the phonetic syllable division is always between the two when followed by a vowel.

/kútúm-pel/ 'sky'
/kepún-tepar/ 'two heads'
/íng-ketúlte/ 'ankle'
/kaúp-ment/ 'tree type'
/yókót-námp/ 'boy'
/úmkek-ŋes/ 'large box'

2.2.2. Suspect VV clusters have been interpreted as sequences of two vowels because of non-suspect VV clusters and reverse sequences which occur. A non-phonemic primary or secondary stress may occur on either one or neither of the members of such clusters. High tone may occur on either, neither, or both.

/néa/ 'Speak to me!'
/óán/ 'from up there'
/náíkeĭɪp/ 'pumpkin'
/paíménť/ 'tree type'
/kaɪtípuĭu/ 'female friends'
/kóímap/ 'bird type'
/koínte/ 'grass area'
/kaúpment/ 'tree type'
/aulŭ/ 'back of knee'
/áŭĭŭ/ 'place name'
/kíĭááméntíaĭ/ 'two trees'
/íop/ 'man's name'
/múa/ 'he struck'
/úámú/ 'joint in stem of plant'

2.2.3. Long vowels have been interpreted as sequences of two vowels because they contrast with short vowels and because of the non-suspect VV pattern. Either may carry a stress and either may have a high tone.

/íís/ 'vegetable water'	/ís/ 'Go up!'
/íít/ 'blood'	/ít/ 'eye'
/ísáǏɪɪp/ 'man's name'	/áǏɪp/ 'you two'
/kíít/ 'two teeth'	/kít/ 'sun'
/ffŋk/ 'bird type'	/ɪŋk/ 'along there'
/léépǏía/ 'dried up'	/léŋɪ/ 'Stop!'
/wéeǏ/ 'Bury!'	/weǏ/ 'Chop with grain!'
/ŋéep/ 'egg'	/ŋép/ 'press'
/noók/ 'I (agentive)'	/nókóíǏɪn/ 'I can't find'
/ŋóónúp/ 'moon'	/ŋolúp/ 'not yet'
/ŋáap/ 'blunt'	/nák/ 'having eaten'
/fláaǏ/ 'two mothers'	/flaǏ/ 'story'
/káát/ 'houses'	/kát/ 'rat'
/kúʊm/ 'hot'	/kúm/ 'vomit'
/pátʊʊp/ 'duck'	/pású/ 'roof bearer'
/ŋúút/ 'bottom eyelashes'	/ŋúsi/ 'village name'
/kúútí/ 'Chop!'	/kúsí/ 'yesterday'
/puúk/ 'he (agentive)'	/kúk/ 'sound'

2.2.4. Because of the trend to prefer an alternative analysis with a minimum of phonemes, and because of some limitations of distribution, the possibility of interpreting [i] and /ɪy/, and [u] as /ʊw/ or /ʊo/ were investigated.

This interpretation was rejected, and the interpretation as simple vowel phonemes preferred because -

1. all seven vowels clearly contrast in all positions;

2. there is no limitation of distribution of vowels in the different syllable types or in the word;

3. it provides the simplest and most reasonable description of distribution of all phonemes. Other interpretations create some severe limitation of distribution;

4. it provides the simplest definition of a syllable and fewer syllable types;

5. it avoids the multiplication of consonant and vowel clusters associated with the other interpretations.

3. DESCRIPTION OF PHONEMES

3.1. Chart of Phoneme Sequences

	i	ɪ	e	a	o	ʊ	u	p	t	k	s	m	n	ŋ	l	ǰ	w	y
i	x		x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
ɪ		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
e	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	
a	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x
o	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		
ʊ	x	x	x	x		x		x	x	x	x	x	x	x	x		x	x
u		x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	
p	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x
t	x	x	x	x	x	x	x		x	x			x	x		x	x	x
k	x	x	x	x	x	x	x		x				x	x		x		
s	x	x	x	x	x	x	x		x			x	x	x	x	x	x	x
m		x	x	x	x	x	x	x	x	x		x	x	x		x	x	x
n	x	x	x	x	x	x	x		x	x		x	x	x		x	x	x
ŋ	x	x	x	x	x	x	x		x	x		x	x		x	x	x	x
l	x	x	x	x	x	x	x	x	x	x		x	x	x		x	x	
ǰ	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	
w	x	x	x	x	x													
y			x	x	x													

3.2. Consonants

/p/ [p] Voiceless bilabial stop.

[b] Lightly voiced bilabial stop, occurring intervocalically in free fluctuation with [p].

/pólúp/	[pó'lʊ̃p]	'pig'
/kápá/	[ká'pã̂/ká'bâ]	'breast'
/kapít/	[kà'pĩ̂t/kà'bĩ̂t]	'pot'
/úlpíníp/	[úlpĩ̂:'nĩ̂p]	'shirt'
/káúp/	[ká'ʊ̃p]	'tree type'

/t/ [t] Voiceless alveolar stop.

[d] Lightly voiced alveolar stop occurring intervocalically in free fluctuation with [t].

/tolíl/	[tò'lɪ̄ɬ]	'what'
/kátákɪɪ/	[kátákì'ɪ̄/ kádákì'ɪ̄]	'to the house'
/katúp/	[kà'tʊ̄p/kà'dʊ̄p]	'rat'
/últé/	[úl'tē]	'hat'
/kaút/	[kà'ū̀t]	'end'

/k/ [k] Voiceless velar stop.

[g] Lightly voiced velar stop, occurring intervocalically in free fluctuation with [k].

/kól/	['kō̤ɬ]	'dry'
/kákatí/	[kákà'tī́/ kágà'tī́]	'inside the house'
/kákal'ní/	[kákàl'nī́/ kágàl'nī́]	'other side of the house'
/kélkaa/	[kélkà'ɪ̄]	'armpit'
/yáak/	[yá'ʔk]	'garden'

/s/ [s] Voiceless fronted alveolar grooved fricative, occurring utterance initially and finally, and sometimes medially though this generally tends to be lightly voiced.

[ts] Voiceless fronted alveolar grooved affricate, occurring in the same position as [s] with some speakers.

[z] Lightly voiced fronted alveolar grooved fricative, tending to occur in utterance medial position, but freely fluctuating with [s] contiguous to voiced consonants and less frequently word initially and finally.

[tz] Lightly voiced fronted alveolar grooved affricate, occurring in the same position as [z] with some speakers.

/sí/	['sī̀/'tsī̀]	'Go!'
/ní sɪ/	['ní 'zɪ̀/'ní'tzɪ̀]	'You go!'
/wáis/	[wá'ì̀s/wá'ì̀ts]	'Come!'
/yéwáisma/	[yéwáī̀z'mà/ yéwáī̀tz'mà]	'Is he coming?'
/ní yéwáisɪn ma/	['ní yéwáī̀zīn'mà/ 'ní yéwáī̀tzīn'mà]	'Are you coming?'

/sa/	['sa̋/'tsa̋]	'went'
/pí sa/	['pí'sa̋/'pí'tsa̋]	'he went'
/kúp sípɪn/	['kúp sí'pɪ̀n/ 'kúp zí'pɪ̀n]	'will ripen'

Contrasts between /t/ and /s/:

/tí/ 'Take out!'	/sí/ 'Go!'
/kat/ 'rat'	/kas/ 'afraid'
/wát/ 'Carry!'	/wás/ 'Make!'
/wétak/ 'having carried'	/wésak/ 'having made'
/kútʊm/ 'sky'	/kúsúm/ 'grass type'

/m/ [m] Voiced bilabial nasal.

/mí/	['mī]	'Put!'
/man/	['mà̋n]	'Give him!'
/ímeɬ̌/	[í'mè̋ɬ̆]	'water'
/ompʊ́p/	[òm'pʊ̄p]	'man'
/kaúɬ̌ʊm/	[kàú'ɬ̆ʊ̀m]	'You sleep (future)!'

/n/ [n] Voiced alveolar nasal.

/ŋ/ [ŋ] Voiced velar nasal.

Contrasts between /n/ and /ŋ/:

/ní/ 'Eat!'	/ŋín/ 'Sharpen!'
/nán/ 'Give me!'	/ŋáan/ 'before'
/ún/ 'You all stay (future)!'	/ʊŋ/ 'woman'
/ínéɬ̌/ 'axe'	/íŋés/ 'leg'
/pán/ 'very'	/páŋ'/ 'betel nut'

/l/ [ɬ̥] Voiceless retroflexed lateral, occurring utterance final contiguously following back vowels.

[l̥] Voiced retroflexed lateral, occurring elsewhere following back vowels.

[ɬ] Voiceless alveolar lateral, occurring utterance final contiguously following non-back vowels.

[l] Voiced alveolar lateral, occurring elsewhere.

/áplupʊ/	[áplū'bʊ̀]	'liver'
/lflámúp/	[lílá'mʊ̄p]	'parent-in-law'
/kélte/	[kél'te̋]	'blanket'
/káplak/	[káp'là̋k]	'mud'
/ketúlte/	[kètúl̥'te̋]	'joint'

/kúl/	[ˈkṵɬ]	'pandanus nut'
/kúlmént/	[kúlˈmẽnt]	'pandanus palm'
/íl/	[ˈíɬ]	'Cut (singular)!'
/íleɪ/	[ílēˈɪ̀]	'Cut (plural)!'
/ímpʊlʊ/	[ímpʊ̄ˈl̥ʊ̀]	'sore'

/ǐ/ [ɬ] Voiceless alveolar flapped lateral, occurring utterance final in fluctuation with voicing.

[ǐ] Voiced alveolar flapped lateral, occurring elsewhere.

/pí íyaɪǐ/	[ˈpí íyāˈɪ̀ɬ]	'he washes'
/pí íyaɪǐma/	[ˈpí íyāɪ̀ǐˈmà]	'Is he washing?'
/tanúǐ/	[tàˈnṵ̂ǐ]	'Dance (singular)!'
/tanúǐeɪ/	[tànúǐ̀ēˈɪ̀]	'Dance (plural)!'
/ǐúúkan/	[ǐúːˈkàn]	'night'

Contrasts between /l/ and /ǐ/:

/koúlúpú/ 'smoke'	/kóǐúpú/ 'skin'
/úlúp/ 'seed'	/úǐút/ 'vein'
/wál/ 'Hang on line!'	/wáǐ/ 'sharpening stone'
/wálií/ 'long'	/wáǐí/ 'Close!'
/lflámúp/ 'parent-in-law'	/ǐfǐíŋewel̆/ 'stairs'

Contrasts between /t/ and /ǐ/:

/tí/ 'Dig up!'	/ǐí/ 'Extinguish!'
/tí/ 'Take out!'	/ǐí/ 'Break!'
/wétak/ 'having carried'	/wéǐak/ 'having sliced'
/kotúp/ 'young person'	/kóǐup/ 'skin'
/wát/ 'Carry!'	/wáǐ/ 'sharpening stone'

/w/ [w] Voiced high close back rounded non-syllabic vocoid.

Contrasts between /p/ and /w/:

/pí/ 'he, she'	/wí/ 'Put!'
/páŋ/ 'betelnut'	/wáŋ/ 'boat, aeroplane'
/pák/ 'wind, roll'	/wák/ 'having taken'
/mápi/ 'place name'	/náwin/ 'did not put'
/yépel/ 'rains'	/yéwat/ 'I make'

/y/ [y] Voiced high close front unrounded non-syllabic vocoid.

Contrasts between /y/ and /t/:

/tókóǐí/ 'Bow your head!'	/yókófǐɪn/ 'you are finding'

/tén/ 'we (exclusive)'	/yén/ 'I am eating'
/táŋ/ 'steep'	/yáŋ/ 'ground'
/tapít/ 'that thing'	/yapít/ 'sugar cane'
/ténta/ 'we also'	/tányya/ 'is singing'

Contrasts between /s/ and /y/:

/séɪ/ 'Go!'	/yéɪ/ 'is doing'
/sók/ 'wet'	/yók/ 'right'
/sáŋkel/ 'Read!'	/yáŋkel/ 'in the ground'
/kásum/ 'village name'	/kayául/ 'is sleeping'
/kíseɪ/ 'Rest!'	/kíyes/ 'is resting'

3.3. Vowels

/i/ [i] Voiced high close front unrounded vocoid.

/ɪ/ [ɪ] Voiced high open front unrounded vocoid.

Contrasts between /i/ and /ɪ/:

/í/ 'water'	/f/ 'banana'
/inél/ 'axe'	/ímú/ 'fence'
/ní/ 'you sg.'	/nf/ 'Eat!'
/wi/ 'Put!'	/wí/ 'Get!'
/nin/ 'to you'	/nín/ 'You all eat (future)!'

/e/ [e] Voiced mid open front unrounded vocoid.

Contrasts between /ɪ/ and /e/:

/f/ 'banana'	/é/ 'here'
/nf/ 'Eat!'	/né/ 'I, me'
/wíl/ 'Come!'	/wel/ 'Slice!'
/pínt/ 'grass type'	/ként/ 'wind'
/lí/ 'Break!'	/lé/ 'and'

Contrasts between /i/ and /e/:

/í/ 'water'	/é/ 'here'
/ni/ 'you singular'	/né/ 'I, me'
/lí/ 'Extinguish!'	/lé/ 'and'
/nin/ 'to you'	/nén/ 'to me'
/int/ 'bird'	/ént/ 'take off'

/a/ [a] Voiced low open central unrounded vocoid.

Contrasts between /e/ and /a/:

/é/ 'here'	/á/ 'Speak!'
/épɪl/ 'this'	/ápɪl/ 'Come up!'
/né/ 'I, me'	/na/ 'he ate'
/ként/ 'wind'	/kant/ 'bite'
/yémeŋk/ 'I give him'	/yémaŋk/ 'he gives him'

/o/ [o] Voiced mid close back rounded vocoid.

Contrasts between /a/ and /o/:

/á/ 'Speak!'	/ó/ 'up there'
/ápɪl̆/ 'Come up!'	/ópel̆/ 'frog type'
/kant/ 'bite'	/kónt/ 'hook'
/katúp/ 'rat'	/kotúp/ 'young person'
/ká/ 'house'	/kó/ 'black'

/ʊ/ [ʊ] Voiced high open back rounded vocoid.

Contrasts between /o/ and /ʊ/:

/óm/ 'only'	/ʊ́m/ 'Stay!'
/kóntét/ 'hook'	/kúnte/ 'inanimate shadow'
/tol/ 'what'	/túl/ 'collapse'
/kot/ 'small'	/kút/ 'decay'
/kó/ 'black'	/tʊ́/ 'Pick!'

/u/ [u] Vocoid high close back rounded vocoid.

Contrasts between /ʊ/ and /u/:

/úpít/ 'knife'	/úpísú/ 'navel'
/tʊ́/ 'Pick!'	/kú/ 'yes'
/kúnʊm/ 'heavy'	/kúnum/ 'clay type'
/mʊ́/ 'Hit!'	/kú/ 'yes'
/kút/ 'decay'	/kúk/ 'sound'

Contrasts between /o/ and /u/:

/ópel̆/ 'frog type'	/úpísú/ 'navel'
/kó/ 'black'	/kú/ 'yes'
/kot/ 'small'	/kúk/ 'sound'

Contrasts between all vowels:

/ní/ 'you'	/l̆í/ 'Extinguish!'
/ní/ 'Eat!'	/l̆í/ 'Break!'
/né/ 'I, me'	/l̆é/ 'and'
/na/ 'he ate'	/l̆á/ 'bow'
/kó/ 'black'	/l̆ósíl̆áʊ/ 'mountain'
/mʊ́/ 'Hit!'	/yál̆ʊ/ 'perspire'
/kú/ 'yes'	/l̆ú/ 'landslide'
/nín/ 'to you'	/íl̆/ 'Wash!'
/nín/ 'You all eat (future)!'	/wíl̆/ 'Come along!'
/nén/ 'to me'	/él̆ɪp/ 'village name'
/nan/ 'Give to me!'	/ál̆ɪp/ 'you two'
/ŋolúp/ 'new'	/ol̆ʊ́p/ 'what'
/ŋún/ 'talk'	/súl̆ok/ 'jump'
/ŋúnŋúún/ 'prayer'	/úl̆út/ 'vein'

3.4. Tone. Tone is a feature of many New Guinea languages especially in the main highland area.[2] Weri, a member of the Kunimaipa-Fuyege-Tauade-Weri-Biangai family,[3] has two emic tones, high tone indicated by an acute accent over the vowel, and low tone which is left unmarked. Unlike most tone languages, the pitch range between high and low tone is quite narrow. Tone perturbation has not been observed.

3.4.1. Description

/ ˊ / [˜] High pitch with slight downglide, occurring word final. This glide drops further on an open syllable than on a closed.

[ˊ] High pitch, occurring elsewhere.

/elímes/	[èlí'mès]	'large sharpening stone'
/ítú/	[í'tú̃]	'eye'
/ítút/	[í'tu̇̃t]	'eyes'
/ǐamú/	[ǐà'mú̃]	'pimple'
/ǐamút/	[ǐà'mu̇̃t]	'pimples'

/Low/ [¯] Mid pitch, occurring medially following a high tone and before a low tone in a series of two or more lows, except where the series of two lows is a word final geminate cluster. In this case the first member carries a low pitch and the second a mid. Where there is a series of mid allotones, each one steps progressively down in pitch.

[˜] Low to very low downglide, occurring elsewhere word finally. This glide drops further on an open syllable than on a closed.

[`] Low pitch, occurring elsewhere.

/úmkektepaǐ/	[úmkēktē'pàɨ̆]	'two boxes'
/ákʊnet/	[ákū'nèt]	'time'
/ŋúntúǐʊ/	[ŋúntú'ǐʊ̀]	'friends'
/síplaap/	[síplà'ːp]	'lizard'
/koǐʊpɪɪǐ/	[kòǐʊ̀pì'ːɨ̆]	'stone club'

In words up to four syllables, four tone patterns, one two syllable, and three four syllable, have not been observed. They are low-low, high-high-low-high, high-low-high-high, and high-low-low-high.

3.4.2. Tone Contrasts

Between high-high and low-high:

/ǰéǰút/ 'bridges'	/peǰút/ 'pandanus leaves'
/kópút/ 'tree type (plural)'	/kopút/ 'thighs'
/ŋéǰú/ 'bamboo'	/ŋeǰú/ 'bean'

Between high-high and high-low:

/kóntát/ 'hooks'	/kóntʊp/ 'girls'
/úŋút/ 'thorn'	/úŋʊp/ 'wife'

Between high-low and low-high:

/wápʊt/ 'needles'	/watút/ 'horns'
/wápɪt/ 'road juncture'	/yapít/ 'sugar'
/úmʊp/ 'frog'	/ompʊ́p/ 'man'

3.5. Stress. Stress in Weri is non-phonemic, occurring on the final syllable of a word. Each preceding alternate syllable carries a secondary stress. Often in four and five syllable words the stress on the antepenultimate syllable is equal to or heavier than that on the ultimate.

/ŋíntíp/	[ŋín'tĩp]	'bee'
/kúǰípú/	[kúǰí'pʊ̃]	'hair of arm'
/úǰúámít/	[úǰúá'mĩt]	'mist'
/ákʊnetepaǰ/	[ákūnētē'pa̰ǰ̰]	'times'

4. DISTRIBUTION OF PHONEMES

4.1. General. The syllable, the unit chosen for the description of distribution, is defined as a unit of tone placement. It consists of a single vowel nucleus with an optional marginal onset of one consonant, and an optional closure of one or two consonants.

The following CV patterns have been observed:

V	/á/	'Speak!'
	/ínéǰ/	'axe'
	/ǰíeɪ/	'Extinguish!'
VC	/óm/	'only'
	/kaúpment/	'tree type'
	/saút/	'I went'
VCC	/ínt/	'bird'
	/ompnámp/	'man'
	/káíŋk/	'miss'
	/kaʊmpnémes/	'sweet potato'

CV	/né/	'I, me'
	/kotúp/	'young person'
	/ílolʊ/	'waterfall'
CVC	/kan/	'road'
	/kélte/	'blanket'
	/píáĭɪpta/	'they two also'
	/kóntʊp/	'girl'
CVCC	/ként/	'wind'
	/kóntnamp/	'girl'
	/omnámpta/	'the man also'

Any syllable type may occur in any position in a word or as a whole word.

Words of up to seven syllables have been observed.

/ní/	'you'
/ténɪp/	'we two (exclusive)'
/píáĭɪp/	'they two'
/ŋʊntúpúĭʊ/	'leeches'
/ŋásúmétepaĭ/	'two head pads'
/ĭíĭíŋeweĭɪaĭ/	'two ladders'
/móĭmóĭaimentíaĭ/	'two tomatoes'

4.2. Specific. Four classes of consonants and one of vowels occur. Semi-vowels occur only syllable initial. Nasals occur in all positions except the final C of CC. Stops occur in all positions except the initial C of CC. /s, l, ĭ/ occur in all single C positions. All vowels may occur in all positions.

Because /w/ and /y/ only occur syllable initial they do not occur in vowel-consonant sequences within a syllable. Of the 63 possible vowel-consonant combinations, /ɪk/ and /ʊs/ have not been observed. Seven of the possible 77 consonant-vowel sequences within a syllable have not been observed. Six of these involve /y/ and /w/. They are /yi, yɪ, yu, yʊ, wu, and wʊ/. The other is /mi/.

Limitations of CC sequences across syllable borders may be noted in the chart of phoneme sequences (p.81). One point of interest is that /s/ has not been observed as the second member of a CC cluster.[4]

There are 49 possible sequences of two vowels, but there appears to be no pattern to the ones which have not been

noted. To date the following have not been observed: /iɪ, ɪi, ɪu, eo, ae, oe, ʊɪ, ʊo, ʊu, uɪ, uo, uʊ/. 22 three vowel sequences have also been noted as well as the following four sequences: /oɪaʊ, oɪau, and aʊaʊ/.

4.3. Frequency of Phonemes. A phoneme count was made of 17 pages of text totalling 3,664 phonemes. Vowels totalled 46 percent, and consonants 54 percent, of the phonemes. Of the vowels /a/ comprised 31 percent, /ɪ/ 25 percent, /e/ 12 percent, /i/ 11 percent, /ʊ/ 8 percent, /o/ 8 percent, and /u/ 5 percent. Front vowels, totalling 48 percent of the vowels, were much more frequent than back vowels with 21 percent. The stops were the most frequent consonants with 41 percent of the consonant occurrence. Next followed nasals with 26 percent, laterals with 15.5 percent, semivowels with 11 percent, and fricatives with 6.5 percent. Of all the phonemes, the frequency from most to least was as follows: /a, ɪ, k, n, p, t, e, i, l̆, m, ʊ, w, o, s, l, ŋ, u, y/.

5. ORTHOGRAPHY

5.1. Proposed Orthography

Phoneme		*Proposed Symbol*
/p/	[p, b]	**p**
/t/	[t, d]	**t**
/k/	[k, g]	**k**
/s/	[s, z, ts, tz]	**s**
/m/		**m**
/n/		**n**
/ŋ/		**ng**
/l/	[l, ɬ, l̥, ɬ̥]	**l**
/l̆/	[l̆, ɬ̆]	**r**
/w/		**w**
/y/		**y**
/i/		**ë**
/ɪ/		**i**
/e/		**e**
/a/		**a**
/o/		**o**

Proposed Orthography - *continued*

Phoneme	*Proposed Symbol*	
/ʊ/	u	
/u/	ü	
/ ˊ /	Unmarked	Low functional load
/Low tone/	Unmarked	

5.2. List of Pidgin words as pronounced by the vernacular speaker (using practical orthography):

Pidgin	*Weri*	*English*
ananas	ananasip	pineapple
anien	anëanët	onion
balus	parüsu	aeroplane
bateri	paterë	battery
didiman	tëtëman	agricultural officer
dokta	rot	doctor
dram	taramit	drum
fok	pokit	fork
gras	karasit	grass
hama	amaat	hammer
kabis	kapës	cabbage
kiap	këap	government officer
krismas	kërësmakë	Christmas
manggo	mangkoop	mango
masta	masap	white man
muli	müre	citrus fruit
pika	pëëker	pick
pepa	pepewer	paper
sop	sokopnemes	soap
tin	tënet	tin
trak	taraku	truck
wel	weel	oil

5.3. Sample Text, in Phonetic and Orthographic Script

1. **ne pene waŋamkan e wɪĬ wauĬ ɪak petiĬulmɪak wɪ:n**
   ne pene wangamkan e wir waür iak petërülmiak wiin

moĬɪsuk ni pene es ŋaɪ sɪ pɪl yenɪa
morisuk në pene es ngai si pil yenia

2. **pit ɪak mak**
   pët iak mak

3. **mɪak o ka:tak is ku:p Ĭe yunaŋmu Ĭe Ĭei Ĭe ɪak koiĬ**
   miak o kaatak ës kuup re yünangmü re reë re iak koër

wawaʊ 4. o yaɪlʊ:k sɪ es ŋaɪm wiak 5. yokota:ǐ es
wawau o yailuuk si es ngaim wëak yokotaar es

naʊn ɪn ten yunakɪ:ǐ 6. yuna es utnent ne nent ɪak wais
naun in ten yünakiir yüna es ütnent ne nent iak waës

7. yunaŋmua pita pimɪn wia ʊn 8. nem pʊt wak wais e
yünangmüa pëta pëmin wëa un nem put wak waës e

wi ulmɪaut kaǐkuǐi
wë ülmiaüt karkürë

1. This morning I came here and when I had finished work and put (things) away, Maurice said to me, "You go now and get some firewood." 2. So I said, "Yes." 3. I went to the house and looking around found Kuup, Yunangmu, and Rei. 4. We went up to the bush and after looking for firewood for a long time, put it down. 5. The two boys didn't get any firewood, only we, Yunangmu and I. 6. Yunangmu got a bundle of firewood, and I one, and came. 7. Yunangmu put away hers for herself. 8. I went along and brought my things and put them away here under the house.

NOTES

1. Here and throughout the paper, in both phonetic and phonemic script, 'e' represents 'ɛ' and 'o' represents 'ɔ'. In addition, suprasegmentally, '◜' represents high pitch with a slight downglide and '◝' represents low to very low downglide.

2. See A. Capell, A Linguistic Survey of the South-Western Pacific, New and Revised Edition, South Pacific Commission, *Technical Paper No.136*, Noumea, 1962, p.113; and Stefan Wurm, "Tonal Languages in New Guinea and Adjacent Islands", *Anthropos*, vol.49, pp.697-702 (1954).

3. See *Languages of the Goilala Sub-district* by Walter Steinkraus and Alan Pence, Summer Institute of Linguistics. Printed and published by the Department of Information and Extension Services, Port Moresby, Territory of Papua and New Guinea, April 1964. Apart from Weri, Biangai also has phonemic tone, but Kunimaipa has no phonemic prosodies.

4. Except the girl's name /**kúnsawe**/, a borrowed word.