ON THE NGAJU DAYAK SOUND SYSTEM
(Pulau Petak dialect)
T. W. J. Milings and W. A. L. Stokhof

The aim of this paper is twofold:
0.1 To give a glimpse at the sound system of the Ngaju Dayak language.
0.2 To supply a frame of reference for the improvement of the Ngaju Dayak orthography.

The Ngaju Dayak language is the mother tongue of the Dayaks who live along the riversides of Kapuas (a), Kayahan (b), Rungan (c), Manching (d), and some parts along the riversides of Barito (e), and Katingan (f) in Central Kalimantan. The number of Ngaju Dayak speakers is not yet known but it is estimated that there are at least more than half a million.

The Ngaju Dayak language is the most important vernacular in Central Kalimantan and has for a long time functioned as the lingua franca among the inhabitants of Central Kalimantan. August Hardeled (1858) was the first Westerner to reach them and later on used one of the dialects of Ngaju Dayak, that of the Pulau Petak dialect - a dialect spoken by the people at that time - to write Biblical stories so that this language at last became the medium in church circles and Zending schools.

Trades that make contacts with the Ngaju Dayaks, like Baamang (IV), Kotawaringin (V), Ott Danum (VII), Sing (VII), Taboyan (VIII), Lawangan (IX), Maanyan (II), even the Banjarese (III) who trade with the Ngaju Dayaks use this language as the medium of communication. In contrast, the Ngaju Dayaks who travel in the territories of the above mentioned tribes, except the Banjarese, do not have to adapt themselves with and to use local language in communication.

Ever since establishment of national independence in Indonesia in 1945. through the Government's increasing attention at all school levels. Indonesian has come to replace the Ngaju Dayak language in many respects. In urban areas and educational centres there has been some indication of diglossia with Indonesian in high positions, but in the rural areas and in the church services of Central Kalimantan, the Ngaju Dayak language still holds its previous functions.

In order to inform the reader about recent publications on Ngaju Dayak, a selected bibliography is added which should be used in addition to Uhlenbeck's valuable contributions to the field:
A. A. Cense, E. M. Uhlenbek.
E. M. Uhlenbeck.

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3 The Phonology

3.1 The Consonants

3.1.1 Labials

3.1.1.1 /p/ → [p] in all positions except [C#]:
[puh'ar'] 'sibling'
[gu'apw] 'roof'
[mnp'atok] 'killed'

3.1.1.2 /b/ → [b] in all positions except [C#]:
[b'thaw] 'kinds of fish'
[b'atut] 'noisy'
[mvb'uhan] 'why'

3.1.1.3 /p/ → [p-] (the archiphoneme of /p/ and /b/) in final position:
[l'udpar] 'door'
[k'ulpur] 'to cover'

3.1.1.4 /m/ → a) [m-~ m] in [VC#]:
[g'umam, g'umam-] 'infant gum disease'
b) [m-] in [VC#]:
[h把握'm-, h'apam-, hotnpun] 'your thatched roof'

3.1.1.5 /w/

a) [w'guban, w'guban] 'season'
[b'od'] 'kind of salted fish'

b) [w] in all other positions:
[t'waw] 'odour'
[nw'ait] 'making wadi'
3.1.2 Alveolars
3.1.2.1 /t/ → [t] in all positions except [VC♯]
[ tô: − 'proof against'
[t'ɔ:x-] 'here'
[nt'ɔkan-] 'attacked'

3.1.2.2 /d/ → [d] in all positions except [VC♯]
[d'umah] 'to come'
[t'indu?] 'mother'
[uduk-] 'to mix'

3.1.2.3 /T/ → [t] (the archiphenome of /t/ and /d/) in final position:
[h'ubat-] 'noisy'
[that-] 'weight'

3.1.2.4 /r/ → [r'骀] :
[r'骀at-, r'骀at-] 'kiss of fruit'
[r'骀at-, oRat-] 'prosa'
[mr'骀e] 'to stir, to stir'
[nk'ti?] 'naked, naked?' 'to replace, to substitute'
[mR'骀wey, mR'骀wey] 'to invite'

3.1.2.5 /I/ → [I]:
[lol'than-] 'how'
[bok'o.pal] 'to tickle'
[nl'nghur] 'go too far'

3.1.2.6 /n/ → a) [n~n] in [VC♯]
[môh'tjan-, mâh'tjan] 'light'
b) [n] in all other positions:
[n'haw] 'lost'
[nt'haw] 'called'

3.1.2.7 /N/ → [n~n] the symbol of neutralization between /n/ and the sequence of phonemes /my/ in front of /dy/ or /ty/:
[ŋ'uluk-, ŋ'uluk-] 'handed'
[ŋ'ulak-, r'ulak-] 'often'

3.1.2.8 /s/ → [s]:
[sam'sma?] 'tale'
[t'ı:su?] 'grandchild'
[h'mus] 'eager, thirsty'
[sn')mn-] 'iron'

3.1.3 Palatal
/y/ → [j]:
[ysh] 'yes'
[yu:'at-] 'neck'
[hand'alay] 'worm'

3.1.4 Velars
3.1.4.1 /k/ → [k] in all positions except [VC♯]
[k'uluk-] 'head'
[ok'n-] 'sibling's children'
[jk'span-] 'to put on'

3.1.4.2 /g/ → [g] in all positions except [VC♯]
[g'awu?] 'work'
[h'ag'ay] 'to lift care of'

3.1.4.3 /K/ → (the archiphenome of /k/ and /g/) in final position:
[s'qapak-] 'thigh'
[t'elak-] 'torn open'

3.1.4.4 /ŋ/ → a) [ŋ~ŋ] in [VC♯]
[p'ın', p'ın] 'seed'
b) [ŋ] in all other positions:
[q'ə:wa?] 'downstream'
[ŋ'at-] 'feeling'
[ŋ'at-] 'laid up'

3.1.5 Glottal
3.1.5.1 /h/ → a) [h~h] in [VC♯]
[hsa:θ, hsa:θ] 'loin-cloth'
[h'saθ, h'saθ] 'to joke'
[tak'sokah, tok'sokah] 'tak'sokah, tak'sokah'

b) [h~n] in other positions:
[b'uhnt-, b'uxnt-] 'ulcers'
[b'əus, x'əus] 'to be eager to, to thirst'

3.1.5.2 In rapid speech /h/ (in third person singular possessive marker /sh/, /sh/) can be omitted if followed by a place/time marker, but in a word with final /h/ as an element of the word base it cannot be suppressed. Compare ['makahθe', 'makohθe?] and ['makatθe?, 'makatθe?] 'that child of his' with ['kwaθe?] 'that loin-cloth' which cannot be pronounced *[kwaθe?].

On the other hand a word base in [tзe] does not permit the insertion of /h/ between the vowel and the consonant: [m'at?] 'eye' cannot become *[m'ahte?].
The words ['makahθe?, 'makatθe?, 'makatθe?, 'makatθe?'] are considered quadruplets.

3.1.6 Phoneme clusters:
3.1.6.1 /ty/ → [c]:
[c'qalck-] 'often'
[c'oRat] 'manner'

3.1.6.2 /dy/ → [j]:
[j'ɛ:ha?] 'in the future'
[j'uk-] 'to encourage'

3.1.6.3 /ny/ → [ŋ]:
[ŋ'əlaŋ] 'year'
[ŋ'əlaŋ] 'eight'
[ŋ't:mar] 'creeping'

3.1.7 Table 2. (Approximative) Phonetic Table

(Table 2, see next page)

1) After final non-long vowels[ʔ] functions as juncture marker. It always occurs at the end of an utterance. 2) [y] and [i] (glides) are not distinctive in the position [uV], [iV] respectively, with the exception of [uV]:

[g'u:am, q'uam-] 'infant gum diseases'
[b'ug', b'uθ] 'grandfather'
[d'ug-, d'υnt-] 'money'
[k'ug', k'uθ?] 'both of us'

but [k'um?u] 'isolation' cannot be pronounced *[k'um?u].
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<td>Velar</td>
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<td>Glottal</td>
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</tbody>
</table>

| [g'ijan, g'ian-] | 'to push' |
| [mam'il, m'at:] | 'that will do' |
| [koh'lia, koh'la'] | 'orangutan' |
| [ro'di'li', ro'di'li'] | 'radio' |

3.1.8

3.1.8.1 /p/ is a voiceless labial stop.

3.1.8.1.1 Non-Continuant vs Continuant:

/p/ vs /m/ - /puat/ - 'load' vs /muat/ - 'can be loaded'
/p/ vs /w/ - /sapi/ - 'cow' vs /sawi/ - 'kind of vegetable'

3.1.8.2 Voiceless vs Voiced:

/p/ vs /b/ - /paas/ - 'to wipe' vs /baas/ - 'wild'

3.1.8.3 Labial vs Alveolar:

/p/ vs /t/ - /paal/ - 'leg' vs /tai/ - 'faeces'
/p/ vs /d/ - /papa/ - 'dirty' vs /pada/ - 'kind of fish'

3.1.8.4 Labial vs Velar:

/p/ vs /k/ - /paas/ - 'to wipe' vs /kuas/ - 'waste'
/p/ vs /g/ - /pasak/ - 'peg' vs /gasak/ - 'to struggle'

3.1.8.2 Labial vs Alveolar:

/b/ vs /b/ - /baad/ - 'face' vs /tai/ - 'be able to'
/b/ vs /d/ - /bue/ - 'grandfather' vs /due/ - 'two'

3.1.8.3 /p/ is a labial stop.

3.1.8.4 /t/ is a voiceless alveolar stop.

3.1.8.4.1 Stop vs Trill;
/t/ vs /r/ - /teP/ - 'door' vs /areP/ - 'self'

3.1.8.4.2 Voiceless vs Voiced;
/t/ vs /d/ - /hamiK/ - 'to stamp' vs /handaK/ - 'to want'

3.1.8.5 /d/ is a voiceless labial stop.

3.1.8.5.1 Stop vs Trill;
/d/ vs /s/ - /daary/ - 'broken' vs /naray/ - 'what'
/d/ vs /g/ - /daa/ - 'to add up' vs /sahan/ - 'pepper'
/d/ vs /l/ - /damah/ - 'flat' vs /lambah/ - 'asceticism'

3.1.8.5.2 Voiceless vs Voiced; See 3.1.8.4.2

3.1.8.5.3 Non-Continuant vs Continuant;
/d/ vs /n/ - /daray/ - 'broken' vs /naray/ - 'what'

3.1.8.5.4 Alveolar vs Labial; See 3.1.8.1.3 and 3.1.8.2.3

3.1.8.5.5 Alveolar vs Velar;
/d/ vs /k/ - /dua/ - 'two' vs /kue/ - 'both of us'
/d/ vs /g/ - /dihop/ - 'to help' vs /guhop/ - 'root'

3.1.8.6 /t/ is an alveolar stop.

3.1.8.7 /k/ is a voiceless velar stop.

3.1.8.7.1 Non-Continuant vs Continuant;
/k/ vs /n/ - /kilak/ - 'approval' vs /nilak/ - 'being approved'

3.1.8.7.2 Voiceless vs Voiced;
/k/ vs /g/ - /kasiq/ - 'odor of urine' vs /gasiq/ - 'top'

3.1.8.7.3 Velar vs Labial; See 3.1.8.1.4 and 3.1.8.2.4
3.1.8.7.4 Velar vs Alveolar: See 3.1.8.4.4 and 3.1.8.5.5

3.1.8.8 /g/ is a voiced velar stop.

3.1.8.8.1 Non-Continuant vs Continuant: /g/ vs /k/ - /gark/ 'motion' vs /karak/ 'disassemble'

3.1.8.8.2 Voiced vs Voiceless: See 3.1.8.7.2

3.1.8.8.3 Velar vs Labial: See 3.1.8.1.4 and 3.1.8.2.4

3.1.8.8.4 Velar vs Alveolar: See 3.1.8.4.4, 3.1.8.5.5, and 3.1.8.6

3.1.8.9 /K/ is a velar stop.

3.1.8.9 /K/ vs /g/ - /buak/ 'name of bird' vs /buang/ 'empty'

3.1.8.9 /K/ vs /h/ - /buah/ 'right'

3.1.8.9 /K/ vs /T/ - /buat/ 'to load'

3.1.8.9 /K/ vs /P/ - /bupa/ 'opan'

3.1.8.9 /K/ vs /r/ - /bura/ 'bubble'

3.1.8.10 /r/ is an alveolar trill.

3.1.8.10.1 Trill vs Stops: /r/ vs /t/ - See 3.1.8.4.1

3.1.8.10.2 Alveolar vs Labial: /r/ vs /p/ - /para/ 'buttock' vs /papa/ 'dirty'

3.1.8.10.3 Alveolar vs Velar: See 3.1.8.9

3.1.8.10.4 Non-Continuant vs Continuant: /r/ vs /n/ - /bure/ 'foam' vs /bune/ 'laziness'

3.1.8.10.5 Alveolar vs Nasal: /r/ vs /n/ - /pama/ 'even though' vs /pama/ 'manual'

3.1.8.11 /m/ is a labial nasal.

3.1.8.11.1 Continuant vs Non-Continuant: See 3.1.8.1.1 and 3.1.8.2.1

3.1.8.11.2 Labial vs Alveolar: /m/ vs /u/ - /mama/ 'uncle' vs /mana/ 'meaning'

3.1.8.11.3 Labial vs Velar: /m/ vs /ŋ/ - /pama/ 'every thought' vs /papa/ 'manacle'

3.1.8.11.4 Nasal vs Central: /m/ vs /w/ - /lemu/ 'week' vs /lwe/ 'village'

3.1.8.12 /n/ is an alveolar nasal.

3.1.8.12.1 Continuant vs Non-Continuant: See 3.1.8.5.3 and 3.1.8.19.4

3.1.8.12.2 Alveolar vs Velar: /n/ vs /ŋ/ - /sana/ 'as soon as' vs /sana/ 'bake'

3.1.8.12.3 Alveolar vs Labial: See 3.1.8.11.2

3.1.8.12.4 Nasal vs Fricative: /n/ vs /s/ - /buma/ 'assassin' vs /busu/ 'youngest child'

3.1.8.12.5 Nasal vs Lateral: /n/ vs /l/ - /sana/ 'as soon as' vs /sala/ 'wrong'

3.1.8.13 /ŋ/ is a velar nasal.

3.1.8.13.1 Continuant vs Non-Continuant: See 3.1.8.7.1 and 3.1.8.8.1

3.1.8.13.2 Velar vs Labial: See 3.1.8.11.3

3.1.8.13.3 Velar vs Alveolar: See 3.1.8.12.2

3.1.8.14 /n/ is a nasal.

3.1.8.15 /s/ is an alveolar fricative.

3.1.8.15.1 Continuant vs Non-Continuant: /s/ vs /t/ - /sana/ 'as soon as' vs /tana/ 'rice-field'

3.1.8.15.2 Alveolar vs Glottal: /s/ vs /h/ - /bisa/ 'wet' vs /biha/ 'wild black radish'

3.1.8.15.3 Fricative vs Lateral: /s/ vs /l/ - /kusa/ 'basket' vs /kula/ 'kind of meal'

3.1.8.16 /h/ is a glottal fricative.

3.1.8.16.1 Glottal vs Alveolar: /h/ vs /s/ - See 3.1.8.15.2

3.1.8.17 /l/ is an alveolar lateral.

3.1.8.17.1 Continuant vs Non-Continuant: /l/ vs /t/ - /lua/ 'hunger' vs /tau/ 'to be able to'

3.1.8.18 /w/ is a labial resonant central continuant.

3.1.8.18.1 Continuant vs Non-Continuant: /w/ vs /p/ - See 3.1.8.1.1

3.1.8.18.2 Central vs Nasal /m/: See 3.1.8.11.4

3.1.8.18.3 Labial vs Palatal: /w/ vs /y/ - /bawa/ 'to call' vs /baya/ 'only'

3.1.8.18.4 /w/ vs /u/ - /bala/ 'hair' vs /balau/ 'hungry'

3.1.8.18.5 /w/ vs /t/ - /kangalaw/ 'pass' vs /kangalat/ 'the hungriest'

3.1.8.18.6 /y/ is a palatal resonant central continuant.

3.1.8.18.7 Palatal vs Labial /w/: See 3.1.8.18.3

3.1.8.18.8 /y/ vs /l/ - /balay/ 'tail' vs /balai/ 'with ginger'

3.1.8.19 Clusters of two phonemes vs one phoneme:

3.1.8.20.1 /ty/ vs /t/ - /tyara/ 'manner' vs /tara/ 'praise'

3.1.8.20.2 /dy/ vs /d/ - /dyata/ 'to fall' vs /datu/ 'great grandfather'

3.1.8.20.3 /dy/ vs /t/ - /dyata/ 'dragon' vs /tata/ 'to shower'

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3.1.9.2 Table 4. Attested consonant clusters

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3.2 Vowels

3.2.1 Table 5. Chart of vowel phonemes

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3.2.1.1 /i/ a) [I ~ i] in [Vq#] (word base): [m'hi:n-, m'hi:n-] 'fish-trap' in [NVNG#]: [s'um?, s'um?] 'quiet' b) [i] in [VC#] (word base): [b'uhut-] 'ulcer' [b'uhus] 'grey monkey' c) [I ~ I ~ i ~ i] in [NV(N)CV]: [n'I.haw, n'I.haw, n'I.haw, n'I.haw] 'lost' d) [I ~ I] in all other positions: [b'isa?, b'isa?] 'wet' [d'I.mapa?', d'I.mapa?] 'to cross'

3.2.1.2 /i/ a) [i] in [NV#]: [kar'an:i] 'its festivity' b) [i] in [VF#]: [pamb'uli:] 'his return' [kuhāR'di:] 'his cleverness'

3.2.2.1 /e/ a) [e ~ e] in [Vq#] (word base): [k'a'jæn-, k'a'jæn-] 'in a hurry' b) [e ~ e] in [NVy]:

3.1.9 Table 3. Consonant distribution

<table>
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<th>VC#</th>
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<td>v</td>
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<td>v</td>
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</tbody>
</table>
3.2.2.2 /ə/ → a) [e] in [NV#]:
[kad'ê, nê; kâd'ê] 'his deaf'
b) [e] in [V#]:
[ma:] 'to care for it'
3.2.3.1 /u/ → a) [u] in [Vg#] (word base):
[b'qû] 'late'
b) [u] in [VC#] (word base) except [VS#]:
[s'ap] 'to reverse'
[c] 'to carry'
d) [u. u] in all other positions:
[tu, pe, tu] 'to get rid of'

3.2.3.2 /ã/ → a) [ã] in [NV#]:
[r'omû, r'mû] 'his belongings'
b) [ur] in [V#]:
[b'au] 'his face'
3.2.4.1 /o/ → a) [o] in [Vg#] (word base):
[s'ompR^y, s'omR'ø] 'lamp-chimney'
b) [o] in [Vv]:
[pâr'õw^y, y:] 'having cavity inside'
c) [ã] in [VC#] and [Vv#] (word base) except in [VS#]:
[n'â] 'year'
[b'ô] 'path'
d) [õ] in [NY(N)CV]:
[n'samba, n'amba, n'samba, n'amba] 'answer' or 'order'
3.3.1 /e/ → a) [e:] in [NV#]:
[mû, mû, mû] 'to stab with a lance'
b) [e:] in [V#]:
[kô] 'his arrogance'
3.2.4.2 /a/ → a) [a:] in [NV#]:
[b'uqû, b'uqû] 'empty'
b) [a] in [VC#] (word base) except [VS#]:
[t'iu] 'below'
[r'aqbat] 'basket'
[k'pal] 'ship'
[t'a: b'uqû] 'name of bird'
[wâ] 'loin-cloth'
c) [a. a] in [V#] (word base):
[b'aho, b'aho] 'rice'
d) [ã. a] in [NY(N)CV]:
[nû, nû, nû, n'û, n'û] 'to open mouth widely'
3.2.5.2 /A/ is the archiphoneme of /a/ and /a/ in accentual units of three or more syllables in [VCV(N)CV]:
[œ: a] 'very old'
[pal'dûkû, pal'dûkû] 'dourly'
[pal'dû]; pal'dû] 'Palou's father'
3.2.5.3 /ã/ → a) [ã] in [NV#]:
[mû, mû, mû, mû] 'his uncle'
b) [ã] in [V#]:
[b'uqû] 'its fruit'
3.2.6 /a/ → [a] 'heavy phoneme' with 'mid' as optional feature, the basic phoneme of which is /a/ [a]. This phenomenon occurs only in the possessive ending of third person singular:
[b'uwitsh, b'uwitsh] 'its ulcer'
[tàk'sol'sh, tàk'sol'sh] 'its head'
[t'maksh, t'maksh, t'maksh, t'maksh, t'maksh] 'that child of his'
[t'maksh, t'maksh] 'his child plus past marker'

Although the functional value of [o] is quite limited, we think it necessary to posit a phoneme /a/. The fact that /a/ can always be replaced by /a/ but that /a/ not always can be substituted for /a/ points in our view to the distinctiveness of the former:
/buwitsh/, /buwitsh/ 'its ulcer'
/stapah/, /stapah/ 'its door'
/ewah/, /ewah/ 'his loin-cloth'

It is rather different in the case of accentual units with three or more syllables in [CV(N)C]. Here /a/ and /o/ are fully interchangeable; the opposition low vs mid is neutralized between two initial consonants:
However, we may say that in some units /A/ can be omitted while in other units it cannot. The absence of /A/ in [kC(N)C] is optional (heavy form), while in the basic form the archiphoneme /A/ is necessarily present. This means that in every consonant cluster in initial position /A/ can be inserted, while not every /A/ between two initial consonants can be omitted:

/ŋili/ (heavy) → [ŋil̪i] 'very old'
/ŋili/ (basic) → [ŋil̪il̪i] 'very old'

/kambj/- (heavy) → [kambj] 'robe'
/kambj/- (basic) → [kambj] 'robe'

/plau/ (heavy) → [plau] 'dowry'
/plau/ (basic) → [plau] 'dowry', but not * [ambalak-, tambalik-]

/tambali/ → [tambalik-, tambalik-] 'overturned'
/lawah/ → [lawa] 'kind of wasp'

not * [l1awah]

3.3.2 Phonemes /u/ and /o/ are obviously in opposition, but in some instances we find doublets:

/sakola/, /sakula/ 'school'
/gohoP/, /guhoP/ 'roar'
/kheho/, /keho/ 'fire'

Compare: /soho/ 'to order' vs /suha/ 'to flood'

/o/oh/ 'man' vs /uluh/ 'to let (a rope) run out'

3.3.3 In phonemic transcription the place of stress is not indicated because it is not functional. According to our investigation the place of the stress is on the penultimate syllable except when followed by the third person singular possessive marker or and a place-time marker. In this case stress remains on the penultimate syllable of the word base:

['makan'] 'child'
['makah', 'makau'] 'his child'
['makah', 'makah'] 'that child of his'
['makah', 'makah'] 'this child of his'
['makah', 'makah'] 'his child plus past marker'

3.4 Table 6. Approximative Phonetic Chart

/i/ vs /i/ - /i/ 'ginger' vs /i/ 'its ginger'
/i/ vs /e/ - /isai/ 'flesh' vs /ise/ 'to count'
/i/ vs /e/ - /isai/ 'flesh' vs /ise/ 'its counting'
/i/ vs /a/ - /bawa/ 'female' vs /bawa/ 'to call'
/i/ vs /a/ - /bawa/ 'female' vs /bawa/ 'its call'
/i/ vs /a/ - /bawa/ 'fico' vs /bawa/ 'kind of plant'
/i/ vs /a/ - /bawa/ 'hot' vs /haru/ 'just a moment ago'
/i/ vs /a/ - /baili/ 'to visit' vs /taloh/ 'thing'
/i/ vs /a/ - /lai/ 'ginger' vs /laa/ 'hunger'
/i/ vs /a/ - /lai/ 'its end' vs /lawu/ 'to fall'
/i/ vs /a/ - /lai/ 'its end' vs /lawu/ 'his fall'
/i/ vs /a/ - /lai/ 'its ginger' vs /lai/ 'hunger'
/i/ vs /a/ - /lai/ 'its ginger' vs /lai/ 'his hunger'
/i/ vs /a/ - /bawäi 'the female' vs /bawa/ 'call'
/i/ vs /a/ - /bawäi 'the female' vs /bawa/ 'its call'
/i/ vs /e/ - /bawi 'the female' vs /bawi 'scream'
/i/ vs /e/ - /bawi 'the female' vs /bawi 'his scream'
/e/ vs /a/ - /e/ 'carry' vs /aton/ 'have'
/e/ vs /a/ - /e/ 'blackened with soot' vs /sai/ 'its fault'
/e/ vs /a/ - /e/ 'blackened with soot' vs /sal/ 'to refuse to'
/e/ vs /a/ - /e/ 'blackened with soot' vs /sai/ 'his refusal'
/e/ vs /a/ - /e/ 'weight' vs /sai/ 'root'
/e/ vs /a/ - /gari 'nickname' vs /gari 'its aloe-wood'
/e/ vs /a/ - /buree 'foam' vs /buree 'its foam'
/e/ vs /a/ - /akü 'his sibling's child' vs /akü 'its'
/e/ vs /a/ - /akü 'his sibling's child' vs /akü 'its'
/e/ vs /a/ - /mamburé 'to make it foam' vs /mamburé 'to hunt it'
/e/ vs /a/ - /mamburé 'to make it foam' vs /mamburé 'to hunt it'
/e/ vs /a/ - /mamburé 'to make it foam' vs /mamburé 'to hunt it'
/e/ vs /a/ - /mamburé 'to make it foam' vs /mamburé 'to hunt it'
/ə/ vs /ɛ/ - /penyalalə/ 'something to make it black with soot' vs /penyalə/ 'something to make him refuse to'
/ɛ/ vs /a/ - /sala/ 'its being blackened with soot' vs /sala/ 'wrong'
/ɛ/ vs /ɑ/ - /kasala/ 'its being blackened with soot' vs /kasala/ 'its fault'
/ɑ/ vs /ɑ/ - /gita/ 'rubber' vs /gita/ 'his getting sight of'
/ɑ/ vs /u/ - /uhaT/ 'root' vs /uhaT/ 'to pull out'
/ɑ/ vs /ɑ/ - /pakα/ 'masti' vs /pakα/ 'its nail'
/ɑ/ vs /o/ - /sala/ 'wrong' vs /salo/ 'refusal'
/ɑ/ vs /ɔ/ - /sala/ 'wrong' vs /salo/ 'his refusal'
/ɑ/ vs /a/ - /katâ/ 'its symbol' vs /kata/ 'its name' vs vegetable'
/ɑ/ vs /ɑ/ - /katâ/ 'its symbol' vs /kata/ 'its symbol'
/ɑ/ vs /o/ - /kajohala/ 'his being confidential' vs /kajohala/ 'arrogance'
/ɑ/ vs /o/ - /kajohala/ 'his being confidential' vs /kajohala/ 'arrogance'
/u/ vs /a/ - /bau/ 'face' vs /bau/ 'its face'
/u/ vs /o/ - /umbeT/ 'to stop' vs /umbeT/ 'to fit'
/u/ vs /o/ - /bau/ 'face' vs /baou/ 'its face'
/ɔ/ vs /o/ - /bau/ 'its face' vs /bao/ 'its face'
/ɔ/ vs /o/ - /bau/ 'its face' vs /bao/ 'its face'
/o/ vs /o/ - /soho/ 'order' vs /soho/ 'his order'

### Table 8.

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<tr>
<th>a</th>
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<th>ɔ</th>
<th>ɔ</th>
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<td>v</td>
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<td>v</td>
<td>v</td>
<td>v</td>
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<td>v</td>
</tr>
</tbody>
</table>

### Phonetic transcription

[popul'si mān'ampā b'u.yu?]

s'inde mān'ampā mān'ampu hbumāŋ - c'ē rē tu tu hbumāŋ? l'awī l'ift: k'ōndak-mān'ampā b'u.yu? mērōh l'ift: mān'ampu-hbumāŋ b'u.yu? dū.mahā tō.koh pul'orī. k'ūyug pul'orī: s, qppāng n'a.ray g'wām - ?

tumbah popul'si: 'k'aw māt'ī n'a.ray gaw'īkūdā? '

tumbah pul'orī: 'tupā qppāng, b'u.yu māp u.law jārīnī. - l'ift-tantā 'indaq.'

pul'orīs s'quipā-tu tu 'awī k'ōndak-pul'orītī, 'awī k'ōndak-dīqā maractē, p'ōlūs mālīhī b'apās, sambil b'ōndaqā: 'l'ift- tantā 'indaq. jārīnī g'wām qppāng.'

k'alōte hante hante l'ift: b'ōndaqā. s'quipā-tu tu tu s'quipā 'dāng p'anakaqāte, qy'andaqā t'quipā qy'andaqāte, 'tupā pul'orī dīqā prōba l'ift.'

### Phonemic transcription

/pA-paloi mānampa b'umāŋ/.

s'inde andaw pA-paloi mānampa hbumāŋ, are tu tu hbumāŋ te, awī i handak mānampa b'umāŋ.

mētoh i mānjalīn b'umāŋ te, dumā naqāh paloi. kwan paloi: 'o, apāŋ nary gawqām.'

tumbah pA-paloi: 'k'ōwēh māt'am? dīa ikaw mīte n'awī, law jārīnī. - l'ift-tantā 'indaq.'

pul'orīs s'quipā-tu tu 'awī k'ōndak-pul'orītī, 'awī k'ōndak-dīqā maractē, p'ōlūs mālīhī b'apās, sambil b'ōndaqā: 'l'ift- tantā 'indaq. jārīnī g'wām qppāng.'

k'alōte hante hante l'ift: b'ōndaqā. s'quipā-tu tu tu s'quipā 'dāng p'anakaqāte, qy'andaqā t'quipā qy'andaqāte, 'tupā pul'orī dīqā prōba l'ift.'

### Indonesian translation

Pa Paloi membuat bubu.

Suatu hari Pa Paloi mengumpulkan bambu. Banyak sekali bambu itu, karena ia hendak membuat bubu. Ketika ia menjalin bubu itu, datang anaknya Paloi.
Kata Paloi: "O, ayah, apa pekerjaanmu?"
Jawab Pa Paloi: "Di mana matamu? Tidak kauf ihat apa kerjaku ini?"
Menjawab Paloi: "Tapi ayah, bubumu terlalu jarang. Rapat temunan ibu."
Pa Paloi marah sekali karena perkataan Paloi itu, tapi Paloi tidak memperdulikannya, lalu meninggalkan babaknya, sambil berdendang:
"Rapat temunan ibu, jarang bubu ayah." Begitu terus menerus ia berdendang. Marah sekali Pa Paloi dengan anaknya itu, semrawut perasaan hatinya tapi Paloi tidak memperdulikan dia.

3.6.4 English translation

Pa Paloi made a fish trap

One day Pa Paloi gathered bamboo. There was much bamboo, because he wanted to make a fish trap. When he was weaving the fish trap, his son Paloi came.

Paloi said: "O, father, what are you doing?"
Answered Pa Paloi: "Where are your eyes? Don't you see what my work is?"
Paloi remarked: "But father, your fish trap is very far apart. Mother's fabric is close."
Pa Paloi was very angry because of those words of Paloi, but Paloi did not mind that, then (Paloi) left his father, while singing:
"Mother's fabric is close, father's trap is far apart." He sang it again and again. Pa Paloi was very angry with that son of his, annoyed was his heart but Paloi did not mind.

4.2

This orthography is mainly based on the Indonesian spelling system. (See: Stokhof: 'Perihal ejaan Bahasa Daerah' Bahasa dan Sastra 1977 forthcoming).

In this proposal the long vowels are written by a digraph. The third person singular possessive marker is written: sh for all varieties, this being the optimal shape of it in slow and deliberate speech. Loanwords should be written according to the Indonesian spelling system. The place of stress is not indicated because it is not distinctive.

Text written in the proposed orthography

Pa Paloi manampa buwu


Kuan Paloi: "O, apang, naryay gawum?"
Tombah pa Paloi: "Koweh matam? Dia ikaw nite naryay gawingku toh?"
Tombah Paloi: "Tapi apang, buwum lalaw jarang. Iit tantang indang."
Pa Paloi sangit tutu awi kotak Paloi te, tapi Paloi dia marukee, palus maliki bempa, sambili badinding: "Iit tantang indang, jarang buwun apang."
Kalote hante-hante iee badinding. Sangit tutu pa Paloi dengan anakah te, nagarandat angat steyah, tapi Paloi dia paraba iee.

4.1 Orthography

<table>
<thead>
<tr>
<th>phoneme</th>
<th>suggested symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>/i/</td>
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<td>/i/</td>
<td>ii</td>
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4.2

Selected Bibliography

1939 Grundzüge der Phonologie, Prague.
C. L. Ebeling,

idem,
1967 'Some premises of phonemic analysis',
Word 23, New York.

See also: W. A. L. Stokhof,
1975 'Notes on the Bahasa Indonesia Phonology'
Bijdragen KITLV 131 (2/3), The Hague.

idem,
forthcoming 'Tata suara Bahasa Indonesia', Bahasa
dan Sastra, 1977, Jakarta.

Teras Mbing (34 years old), a native speaker of
the Ngaju Dayak (Pulau Petak Dialect) functions as
the informant. Apart from Dayak he is also pro-
Ficient in Banjarese and Indonesian.

3. the following symbols are used in this paper:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>'→'</td>
<td>'is realized as'</td>
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<tr>
<td>'≈'</td>
<td>'in free variation with'</td>
</tr>
<tr>
<td>'N'</td>
<td>'nasal consonant'</td>
</tr>
<tr>
<td>'V'</td>
<td>'vowel'</td>
</tr>
<tr>
<td>'C'</td>
<td>'consonant'</td>
</tr>
<tr>
<td>'V'</td>
<td>'prolonged vowel'</td>
</tr>
<tr>
<td>'C-'</td>
<td>'unreleased consonant'</td>
</tr>
<tr>
<td>'#'</td>
<td>'word boundary'</td>
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</tbody>
</table>
| '≠'    | 'place of the stress' (single quo-
|       | nationmark in front of a continuant) |
| 'C'    | 'syllable constituting consonant'    |

FOOTNOTES

1. See Map, p. 59.
2. As the theoretical framework the theories of
   Trubetzkoy and Ebeling are chosen:
   N. S. Trubetzkoy,