

Phonology, Orthography Design, and the Development of Literacy in Daakie (Ambrym, Vanuatu)

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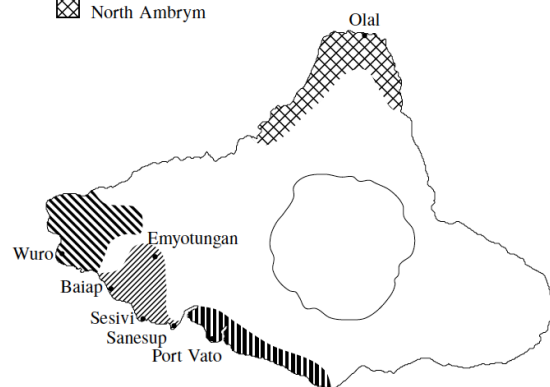
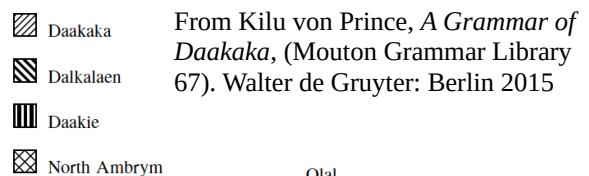
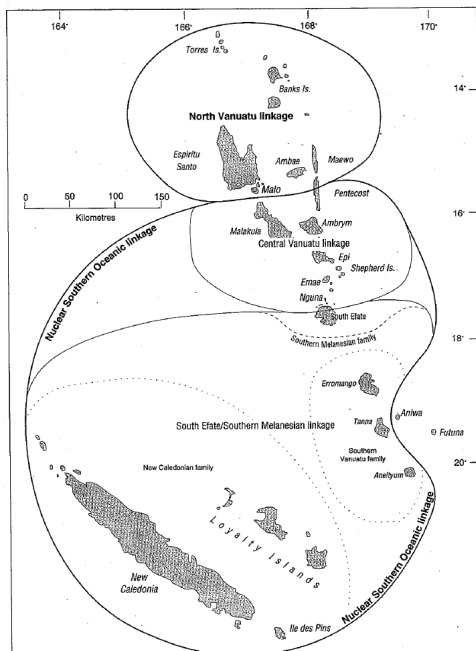
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The talk reports on certain applied aspects of the documentation project on the languages of Southwest Ambrym, focusing on Daakie, a language with about 1000 speakers. I will discuss the phonology of the language, which differs from neighboring languages most prominently by the development of rounded front vowels as allophonic variants under certain complex conditions. I will then describe the construction of a usable orthography, including considerations such as orthographic word boundaries. Finally, I will illustrate the development of a literate register of the language, and discuss the importance of this kind of work in language conservation and, more important, in the development of literacy for children in school.

1. Introduction

- Daakie is a “Melanesian” language (Austronesian, Oceanic branch, Central/Eastern Oceanic, Southern Oceanic linkage, Nuclear Southern Oceanic linkage, central Vanuatu linkage), also known as “Port Vato”.
- It is spoken by probably less than 1000 speakers in South Ambrym; closely related to the neighbouring languages Daakaka, Dalkalaen, North Ambrym; not closely related to Southwest Ambrym (settled by inhabitants of Paama).
- Previous work on North and West Ambrym languages: Paton, W. F. 1971. *Ambrym (Lonwolwol) Grammar*. Canberra: Australian National University.



From John Lynch e.a., *The Oceanic Languages*, Ch. 5: Internal Subgroupings. London: Routledge.

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2. Phonology

2.1 Consonants

(1) Consonants and their suggested orthographic representations

	Labial	Labiovelar	Alveolar	Palatal	Velar	Glottal
Voiceless stop	p	p ^w <pw>	t		k	
Voiced stops	^m b 	^m b ^w <bw>	ⁿ d <d>		^ŋ g <g>	
Nasal	m	m ^w <mw>	n		ŋ <ng>	
Fricative	v		s			h
Trill/Tap			r			
Lateral			l			
Approximant	v <w>			j <y>		

Labiovelars: A class of consonants that can be reconstructed for Oceanic (cf. Lynch, Ross & Crowley 2002). Labial stops with velar release. Only occur before high front vowels a, e.

(2) Minimal pairs for voiceless and voiced stops

Minimal pair	Example 1	Example 2
/p/ vs. /b/	[pa] ‘to be in flower’ [pih] ‘fastened’	[ba] ‘liana sp.’ [bih] ‘man that follows women’
/p ^w / vs. /b ^w /	[p ^w eŋeh] ‘to hurt’ [p ^w ih] ‘to be full’ [p ^w ili] ‘to bake’	[b ^w eŋeh] ‘coconut branch’ [b ^w ih] ‘to pass under’ [b ^w ili] ‘to fold’
/t/ vs. /d/	[tisi] ‘to write’ [towε] ‘belly of s.th./s.o.’	[disi] ‘to withdraw’ [dowε] ‘juice of s.th.’
/k/ vs. /g/	[kahe] ‘to wash’ [kolø] ‘to be fat’	[gahe] ‘to pull out’ [golø] ‘dry, barren’

(3) Minimal pairs for voiced stops and nasals

/b/ vs. /m/	[bæt] ‘bed’ [bon] ‘smell’	[mæt] ‘stupid’, ‘eye’ [mon] ‘also’
/b ^w / vs. /m ^w /	[b ^w ih] ‘to pass under’ [b ^w i:] ‘butterfly’	[m ^w ih] ‘to be dirty’ [m ^w i:] ‘left side’
/d/ vs. /n/	[diri] ‘other half of s.th.’ [døn] ‘to drown’	[niri] ‘child, of animal’ [nøn] ‘to be surprised, shocked’
/g/ vs. /ŋ/	[gahe] ‘pull out’ [giri] ‘to skin’	[ŋahe] ‘to chew’ [ŋiri] ‘to clench one’s teeth’

(4) Minimal pairs for voiced stops and their labiovelar counterparts

/p/ vs. /p ^w /	[pih] ‘to be tied’ [petpet] ‘to fasten’	[p ^w ih] ‘to be full’ [p ^w et] ‘to stay’
/b/ vs. /b ^w /	[ben] ‘his ass’ [bih] ‘man following women’	[bjen] ‘his body’ [b ^w ih] ‘to pass under’
/m/ vs /m ^w /	[met] ‘to die’ [mihmih] ‘to be wet’	[m ^w et] ‘to be short’ [m ^w ih] ‘to be dirty’

(5) Alveolar, fricative, tap, and lateral

/s/ vs. /h/	[kase] ‘due to, because of’ [base:] ‘bird’	[kahe] ‘to wash’ [bahe:] ‘penis’ (only pairs)
/s/ vs. /r/	[mese] ‘to be sick’ [sok] ‘my’	[mere] ‘eye of s.o.’ [rok] ‘far away’
/r/ vs. /l/	[gili] ‘to carve’ [ru:] ‘to move’	[giri] ‘to skin’ [lu:] ‘swamp hen’

(6) Status of h: Not in onsets, sometimes in variation with /s/ medially, and in codas (no /s/ in codas); Daakaka has /s/ in all these cases.

/h/ vs. /s/	[lehe], [lese] ‘to see’ [elae], [elase] ‘to turn’	
/CVh/ vs. /CV/	[lah] ‘to steal’ [uhtahe] ‘to ask back’	[la] ‘there’ [utahe] ‘to take again’
/-Vh/ vs. /-Vk/	[pyak] ‘to smell good’ [ɔk] ‘my (edible)’	[pyah] ‘to choose’ [ɔh] ‘rain’
/-Vh/ vs. /V:/	[lah] ‘to steal’ [sih] ‘to swell (sea)’	[la:] ‘to be sore’ [si:] ‘to hunt’

(7) Labial fricative vs. glide vs. empty onsets

/v/ vs. /v/	[vesa] ‘to decorate’ [vini] ‘to shoot’	[vesa] ‘to pound’ [vini] ‘nest’
/vɔ/ vs. /ɔ/	[vɔp] ‘fence’	[ɔp] ‘firewood’

2.2 Vowels

(8) The vowels of Daakie and their suggested orthographic representations

Short vowels			Long vowels	
i <i>	[y] <u>	u <u>	i: <ii>	u: <uu>
e <é>	[ø] <ó>	o <ó>	e: <éé>	o: <óó>
ɛ <e>	[œ] <o>	ɔ <o>	ɛ: <ee>	ɔ: <oo>
⁰ æ <á>	a <a>		a: <aa>	

Notice: [y], [ø], [œ] are allophones of [u], [o], [ɔ] in certain contexts.

Diphthong: [uœ], <uo>, e.g. in [buœ] ‘boar’, other vowel combinations are not monosyllabic.

(9) Minimal pairs for vowel length distinctions:

/i/ vs. /i:/	[si] ‘juice of’ [sili] ‘to itch’	[si:] ‘to hunt’ [sili:] ‘path’
/e/ vs. /e:/	[le] distal demonstrative [te:te:] ‘to look out’	[le:] ‘to be broken’ [te:ta:] ‘tight’
/ɛ/ vs. /ɛ:/	[mɛɛ] ‘eye of’	[mɛɛ:] ‘tail of rooster’
/a/ vs. /a:/	[a] ‘his/her (edible)’ [ba] ‘to plant’ [da] ‘blood’ [sa] ‘be ashamed’	[a:] ‘their’ (edible) [ba:] ‘to fight’ [da:] ‘talk’ [sa:] ‘float’, ‘their’
/ɔ/ vs. /ɔ:/	[kɔ] ‘to look out for’ [tœ] ‘behind’	[kɔ:kɔ] ‘water yams’ [tɔ:] ‘garden’
/o/ vs. /o:/	[soŋo] ‘to hold’ [sø] ‘to catch’	[soŋo:] ‘together’ [so:] ‘be pregnant’
/u/ vs. /u:/	[kuku] ‘carry’ [tyty] ‘to knead’	[ku:ku:] ‘move’ (redupl.) [tu:tu:] ‘mother-in-law’

(10) Minimal pairs for vowel height distinctions: front vowels

/i:/ vs. /e:/	[li:] ‘owl’, ‘cry’, ‘tree’ [si:si:] ‘acid rain’	[le:] ‘to break’ [se:se:] ‘shine’
/i/ vs. /e/	[si] ‘juice of’ [titi] ‘breast’	[se] ‘lukim of’ [tete] ‘stand on toes’
/e:/ vs. /ɛ:/	[se:] ‘to blow’	[sɛ:] ‘to move’
/e/ vs. /ɛ/	[le] ‘to take’, ‘to marry’ [leŋ] ‘to rattle’ [se] ‘to look’	[lɛ] ‘to let go, to wield’ [leŋ] ‘wind’ [sɛ] ‘of’
/a/ vs. /æ/	[man] ‘his/her’ (mok-class) [mat] ‘our’ (incl.)	[mæn] ‘to laugh’ [mæt] ‘eye’

	[pan] ‘to branch’ [tɛmat] ‘out father’	[pæn] ‘under’ [tɛmæt] ‘demon’
/e/ vs. /æ/	[met] ‘to die’	[mæt] ‘eye’

(11) Vowel height distinctions: back vowels

/u:/ vs. /o:/	[u:] ‘mountain’ [bulu:] ‘hole’ [ku:ku:] ‘move’ (redup.)	[o:] ‘coconut’ [bolo:] ‘bottle’ [ko:ko:] ‘to shut’
/u/ vs. /o/	[up] ‘crab sp.’ [uh] ‘new leaves’ [luk] ‘grow sideways’ [dy] ‘to stay’ [ly] ‘to hide’ [sy] ‘to stick, to comb’ [ty] ‘to beat’	[op] ‘to yearn for’ [oh] ‘rain’ [lok] ‘laplap’ (trad. food) [dø] ‘lichi’ [lø] ‘leaf of’ [sø] ‘to catch’ [tø] ‘chicken’
/o:/ vs. /ɔ:/	[bo:bo:] ‘a lot’ [li:o:] ‘coconut palm’ [ko:ko:] ‘to shut’ [so:] ‘be pregnant’ [to:] ‘reeds’	[bo:bɔ:] ‘sky’ [li:ɔ:] ‘Casuarine tree’ [kɔ:kɔ:] ‘water yams’ [sɔ:] ‘a, one’ [tɔ:] ‘garden’
/o/ vs. /ɔ/	[op] ‘to yearn for’ [bo] ‘to stink’ [dø] ‘lichi’ [gɔlø] ‘to block’ [lø] ‘leaf of’ [pøpø] ‘white’ [sø] ‘to catch’ [søk] ‘be circumcised’ [tø] ‘chicken’	[ɔp] ‘firewood’ [bɔ] ‘to be big’ [dœ] ‘behind’ [gɔlœ] ‘dry’ [lœ] ‘foot, footprint’ [pøpœ] ‘to carry’ [sœ] ‘reef’ [sɔk] ‘my’ [tœ] ‘behind, second’

(12) Fronting of short back vowels

After alveolar consonants	[ty] ‘to beat’, [tø] ‘chicken’, [tœ] ‘behind’ [dy] ‘to stay’, [dølœ] ‘voice of’, [dœ] ‘slow’ [nyny] ‘to fold’, [nø] ‘face of’ [sy] ‘to remove with stick’, [sø] ‘to hit’, [sœ] ‘reef’ [ly] ‘to hide’, [lø] ‘to vomit’, ‘two’, [lœ] ‘foot, footprint’ [mury] ‘short’, [sørø] ‘to talk’, [sœrœn] ‘far’, [vørøt] ‘spittle’
After labial consonants	[pø], [pøpø] ‘white’, [pøpœ] ‘to carry’, but [punɛ] ‘to narrate’ no shift after /b/: [bulu] ‘hole’, [bo] ‘stink’, [bɔ] ‘big’ [møt] ‘straight’, [møne] ‘forehead’, but [mo] ‘in front’, [mury] ‘short’ [vy] ‘introduced’, [vøt] ‘stone’, [vøløn] ‘his hair’, but [von] ‘quiet’
After glides /j/, /v/	[jø] ‘knife’, [jøvø] ‘turtle’ [vø] ‘ray’, [vœ] ‘heap of’, [vœrœlø] ‘two’, but [vuvœ] ‘bredfruit’
Diphthong /uo/	[buœ] ‘boar’, [kuœ] ‘to run’, [ŋuŋuœ] ‘yellow’, [vuø] ‘good’

After velars	no shift: [kuly] ‘dog’, [kɔlɔ] ‘fat’, [gɔlɔ] ‘dry’, [ŋɔrɔɛ] ‘eat’
no onsets	no shift: [ut] ‘louse’, [un] ‘burnt’, [ot] ‘place’, [ose] ‘enough’

(13) Blocking of fronting

no fronting	[lɔn], [lɔt] ‘his/her, our heart’, but [lok], [lom] ‘my, your heart’,
with non-	[loh] ‘to move’, [toŋ] ‘to light fire’, [lop] ‘clear’
alveolar codas	[nɔtnɔt] ‘to think’, [nɔn] ‘face’ but [nok] ‘finished’ [sɔn] ‘he/she and’ but [sok], [som] ‘I and’, ‘you and’

2.3 Syllable structure and word stress

(14) Possible syllables;

C_i does not include /h/ in initial syllables, labiodentals, only in onsets before /a/, /e/
C_f: voiceless stops, nasals, /h/ ([r] as a possible older realisation of /t/)

/V/	[a] ‘his/her’, [a'rɛ] ‘to bite’, [ɛtɛp] ‘post’, [i'li] ‘to dig’, [u'ta'hɛ] ‘take again’
/V:/	[a:] ‘nettle’, ‘their’, [li:'ɔ] ‘casuarine tree’, [o:] ‘coconut’, [u:] ‘hill’, ‘blow’
/C _i V/	[da] ‘blood’, [jɔɛ] ‘knife’, [ka] ‘to fly’, [ŋa] ‘now’, [tɛ] ‘cut’, [vɛ] ‘water’
/C _i V:/	[da:] ‘word’, [ja:] ‘sun’, [la:] ‘sore’, [te:] ‘look’, [a'ro:'vɔ] ‘basket’
/VC _f /	[ap] ‘crab sp.’, [ɛt] ‘we’, [ɔk] ‘my’, [ɛh] ‘blue’, [am] ‘your’, [un] ‘burnt’
/C _i V/	[lok] ‘laplap’, [ŋap] ‘arrow’, [p ^w ɛt] ‘stay’, [vip] ‘pigeon’, [yah] ‘strong’
/C _i JV/	[bjɛ] ‘shark’, [kjɛ] ‘to call’, [ŋjɛ] ‘he’, [sja] ‘fast’, [tjɛ'nɛm] ‘home’,
/C _i JV:/	[mju:] ‘grow’, [tje:] ‘grasshopper’, [vja:] ‘hand’, [ŋje:] ‘they’, [sja:] ‘sleep’
/C _i JVC _f /	[djuŋ] ‘mat’, [gjeŋ] ‘work’, [kjen] ‘sharp’, [pjan] ‘fire’, [vjɛt] ‘four’,

The combination of an alveolar obstruent C with /j/ often leads to a palatalized version of C, e.g. /sja/ is realized as [ʃa], /tje:/ is realized as /tʃe/, and /djuŋ/ is realized as /ʒ^huŋ/. However, in careful speech, realizations like /djuŋ/ can be heard as well.

The combination /lj/ can be heard sometimes, e.g. [ljɛk] ‘my leg’, [tɛlyɛt] ‘in-law, stranger’, but now /l/ as dropped, and /jɛk/, /tɛjɛt/ is the current representation except for a few elderly speakers.

It seems that /j/ does not occur after /n/, but we find it after /ŋ/ in the 3rd pronouns for singular /ŋjɛ/ and plural /ŋje:/, 1st singular /ŋjɔ/, 2nd singular /ŋjak/, and /ŋje/ ‘bushnut’.

Word stress is weak and not distinctive; differences like /popo/ [pɔpɔ] ‘white’ and /popɔ/ [pɔpɔɛ] ‘to carry on one’s shoulder’ presumably are segmental, and not evidence for distinctive word stress.

There is no lexical tone except for the particles ε-ε HL ‘yes’ ε-ε-ε LHL ‘no’.

Prosody not treated here – see Kilu von Prince 2015 for Daakaka.

3. Orthography

3.1 Background:

- Schooling (6 years obligatory, but not very strictly enforced) in one primary school
- The school is bilingual (English / French)
- The role of Bislama is rather restricted, at least as a written language
- More than half of the teachers do not understand Daakie
- Many people have basic reading/writing skills, no figures known.

3.2 Basic decisions for segments

Principle: The orthography should be usable, in particular, lay persons should be able to write it on standard keyboards. In this it differs from the orthographies used by SIL / Wycliffe Bible Translations for the languages of Vanuatu (see e.g. the New Testament in Uluvue, the language of the Maskylene Islands south of Malakula, an area in close contact with the Daakie area).

Letters:

- Orthography is based on Latin letters, as English / French / Bislama are the contact languages

Accents:

- Accents to distinguish vowel heights (é, ó), fronting (á); known due French
- The language could be written without accent signs, resulting in a slightly underspecified orthography (e.g. *sée* ‘to blow’, *see* ‘to move’, *léng* ‘to rattle’ vs. *leng* ‘wind’, *tóó* ‘garden’ vs. *too* ‘reed’, *góló* ‘to block’ vs. *góló* ‘to crawl’ vs. *goló* ‘to be dry’, *pópó* ‘white’ vs. *pópo* ‘to carry on one’s shoulders’)
- A minimal use of accents: Whenever accents are used to differentiate between two phonologically distinct words. Would allow, for example, to write *aroowoo* instead of *aróówóó* ‘basket’.
- A medial use of accents (used in dictionary and in published texts): Whenever vowel height is phonologically distinctive (e.g. *aroowoo* is a possible word in Daakie).
- A maximal use of accents (not feasible): Mark vowel height in all cases, even if it can be predicted.
 - The distinction between short and long /e/ and /ɛ/ is present only after alveolar onset consonants, and only in syllables without coda or with the velar coda consonants /k/ and /ŋ/ (but not /h/).
 - For short /o/ vs. /ɔ/, this distinction is only relevant in syllables with empty coda or with /p/ or /k/ as a coda consonant, and hence the orthography does not express it in other cases (e.g. [jon] ‘swim’ is written *yong*, not *yóng*).
 - The distinction /a/ – /æ/ is generally realized as /æ/ in syllables with the onset /v/, except for the loan words *Vanuatu* and *vatu* (the currency unit, meaning ‘stone’, related to Daakie [vət]); hence the orthography writes *va-* in these cases instead of *vá*, e.g. *van* ‘to go’

Vowel length

- Important distinction, must be captured in orthography (also in Daakaka, previously known as Dakaka).
- Writing two vowels, as length indication by macron too difficult to type.

- In case of accented vowels, both vowels carry accent, as there are disyllabic words with different vowels, e.g. *toót* ‘person from inland village’. In rare cases there are problems, e.g. *duut* or *dóut* ‘bush, woods’, bisyllabic.

Back vowel fronting:

- Has been established as non phonemic, even though triggering conditions are complex
- Consequently, the orthography does not distinguish between non-fronted and fronted versions of round back vowels.
- This is not a problem for native speakers of the language; it is a certain problem for other speakers, including e.g. for speakers of Daakaka.
- The dictionary will include IPA transcriptions for relevant words.
- There is a certain tendency for [ø] to be realized as [e], e.g. [pøpøtan] ‘hill, area clear of bushes and trees’ realized as [pepetan]. The orthography has *pópótan*.

Digraphs:

- Labiodentals written as digraphs ⟨pw⟩, ⟨bw⟩, ⟨mw⟩, not by “snek” ~ above p, b, m, as this is difficult to type
- /ŋ/, as the latter is difficult to type (alternative q was rejected).

3.3 Word-level decisions

Writing the modal marker

- The modal markers always precede the verb stem
- The default marker without agreement (used for 3rd person singular by default) shows vowel harmony and, to some extent, consonant harmony with the following verb stem. The following shows the realis and the potentials forms; also for dependent negation and distal.

(15)	<i>mwe pwet</i> ‘stay’, <i>mwe lehe</i> ‘see’	<i>bwe pwet, bwe lehe</i>	<i>ne pwet</i>	<i>te pwet</i>
	<i>me met</i> ‘die’, <i>me ngepngap</i> ‘be tired’	<i>be met, be ngepngap</i>	<i>ne met</i>	<i>te met</i>
	<i>mwi sii</i> ‘itch’, <i>mwi tih</i> ‘draw, write’	<i>bwi sii, bwi tih</i>	<i>ni sii</i>	<i>ti sii</i>
	<i>mi min</i> ‘drink’, <i>mi myuu</i> ‘to grow’	<i>bi min, bi myuu</i>	<i>ni min</i>	<i>ti min</i>
	<i>mo sóró</i> ‘talk’, <i>mo longane</i> ‘hear’	<i>bo sóró, bo longane</i>	<i>no sóró</i>	<i>to sóró</i>
	<i>ma are</i> ‘eat’, <i>ma ka</i> ‘fly’	<i>ba are, ba ka</i>	<i>na ka</i>	<i>ta ka</i>

Notice: No back vowel fronting in *no*, *to* in *no sóró*, *to sóró*, showing that only underlying back vowels can undergo fronting.

- It seems that generally, *mwe* and *bwe* can be used, and there is speaker variation.
- Orthographic decision, after consulting language committee: The variation of the modal marker should be written (i.e., not *mwe sii*, *mwe sóró*, *mwe are*).
- Decision for word separation, e.g. not *maka*, but *ma ka*, also for other modal markers, except for a small group of “adverbial” predicates (event-related verb serialization) that show stem alternation of the verb (much more frequent in Southeast Ambrym):

(16) *lam kie momelé* instead of *lam kie mo omelé*
 ‘they talked in this way’, lit. ‘they talked it was such’

For potentialis, dependent negation, distal: *lap kie bobelé*, *lan kie nonéle*, *lat kie toselé*

- Weakening of *m*, *p* in intervocalic position not reflected in writing:

(17) *lam ane* [lavane] ‘they eat’ *lap ane* [lavane] ‘they should eat’

Writing the copula *e* as a separate word

- *me e vanten ten*, realized as [mɛ: vanten ten], not as [m^wɛ vanten ten]
RE COP man true
'he is a true man' (i.e. he is not a zombie)

Writing the (very frequent) verb *mé* or *me* 'to come'

- Problem in frequent sequences like *me me me me me me* 'he/she/it came and came and came'
- Realization due to prosodic lengthening at end of prosodic phrases
as *me me: me me: me me:*
- As *me* 'to come' typically is prosodically lengthened, I have decided to write it with a long vowel, *mee*, e.g. *me mee me mee me mee*.
- The language committee liked this solution, but I still don't know whether it was a good one.

Writing verbal derivations

- Daakie has a number of different verb serialization patterns
- One type involves predicates that often only occur as serial verbs and never are independently inflected.
- These are written as one word with the preceding host verb (similar in Bislama, e.g. *givimbak*, *talemaot*, *pastru* 'pass through')

(18) a. *tavini ta-vini* 'cut dead', *talehe* 'cut a bit, cut and see'

- b. *wat-* 'talk', does not occur as bare root, *watahe* 'repeat', *watkoró* 'accuse',
watlingi 'say goodbye', *watpaseene* 'say clear', *watselaane* 'tell everyone',
watsyoosi 'praise', *watkoró* 'accuse'

Writing the transitivity marker *ne*

- *ne* can transitivize verbs and nouns

(19) a. *saka wele-m ne nek ne vanten kingyee ye*
CP.NEG skin-2DU DNEG afraid TR man DEM.3PL DIST
'Dont be afraid of these men.'

- b. *da ne ngyo*
blood TR 1SG
'my blood'

- Many transitive verbs have *ne* as its final syllable, others can be used as intransitive (without *ne*) and as transitive (with *ne*). Writing as one word depends on frequency of such combination

(20) *lap tah ne nasara soo*
3PL-POT sit.down TR meeting.place IDEF
'they sit down at a meeting place'

(21) *na-m longane kulu soo*
1SG-RE hear dog IDEF
'I hear a dog'

4. Verbal vs. Written Register

- Marking of direct speech by quotes
- Reducing / Elimination of recapitulative linking
- Reducing of syntactic reduplication to indicate intensity and the flow of time
- Reducing iconic lengthening to indicate the flow of time (e.g. *vaaa, vaaa* 'go, go')

5. References

Lynch, John, Malcolm Ross & Terry Crowley. 2002. Proto-Oceanic. In: Lynch, John, Malcolm Ross & Terry Crowley, (eds), *The oceanic languages*. London: Routledge, 54-91.