

Results of Psycholinguistic Testing in the Madak Language

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0. Introduction

The Madak-speaking people of Papua New Guinea live on the island of New Ireland. This language group occupies the central part of the island with villages on both the east and the west coasts along with four villages in the interior on a plateau called Lelet. There are approximately 4000 speakers of Madak which is divided into two language groups, Madak and North Madak. These two closely related languages are Oceanic Austronesian but together make up a language group distinct from the Patpatar family which is predominant on New Ireland. This topic covers only the Madak language.

The testing for this paper was done in conjunction with a dialect survey carried out during March through May, 1982. My assistant, Mitiel Lapnaba, and I took word lists from every dialect area but did psycholinguistic testing in only the Malom, Katangan and Silom dialects. The reason for this was dialect variation. All of the test items were from the Malom dialect and even in the Katangan and Silom dialects some of the test words were not familiar, so this problem would have been multiplied in the other dialects with perhaps the exception of Lelet.¹

1. Purpose

The purpose of the psycholinguistic testing was to first test some of the conclusions of the Madak orthography (Lee &

¹ ED: According to Lee (1983b), Malom, Katangan, Silom, and Lelet dialects are 90% cognate.

Lee: 1976). This included the symbolization of the phonemes /x/ and /v/, prenasalization of the voiced stops /b d g/, and the symbolization of the semivowels /u ɪ/. Secondly, testing was done to check the spelling of various words. Thirdly, testing was done to determine word breaks in verb phrases and also whether there were word breaks between nouns and their nominalizers.

The following is a listing of the test areas and the reasons why testing was needed. The numbered words are those which were tested, the numbers corresponding to those on the test list given in Section 3.

1.1 Double vowels

- 1) a. **laaleng** 'day'²
 b. **laleng** 'day'³
- 2) a. **luunun** 'price'
 b. **lurun** 'price'

In (1) above, the stem of the word 'day' is -aleng. With the nominalizer added it becomes laaleng. The stress rules support (1a) as being the correct spelling. Primary stress generally occurs on the second syllable of the word. If there was a single a, we would expect la.'leng, instead of the correct la.'a.leng. However, in a writers' workshop several Madak speakers spelled this word **laleng**, thus suggesting an alternative spelling. The same is true for the second pair of examples above (2a-b).

² Double vowels indicate vowel length, **ng** is a velar nasal.

³ Identical glosses indicate alternate spellings, not alternate pronunciations.

1.2 Symbolization of Phonemes

Lee & Lee (1976) interpreted [g] and [b] as allophones of /k/ and /p/ occurring only between vowels. However, there seems to be evidence that they may be interpreted as separate phonemes. Note the following contrasts.⁴

/lepovo/	'it is enough'	/laxalik/	'girls'
/lvovo/	'he practices'	/kakalik/	'small'

In Lee (1983a) it is suggested that the two Madak phones [g] and [b] be interpreted as separate phonemes, so testing was done to elicit the response of native speakers to the writing of [g] and [b] as phonemes and the including of them in the orthography as **x** and **v**.

- 3) a. **laxatli** 'eye'
 b. **laxaxak** 'chicken'
 c. **ixaaala** 'it is holy'
 d. **laxangka** 'ground'
- 4) a. **lavapa** 'wing'
 b. **lovotpot** 'arrival'
 c. **iravasv** 'it becomes'

Another test was done concerning the usage of the voiceless stops [p t k]. When one of these stops appears word finally and is immediately followed by a vowel, then the particular stop frequently changes to a continuant.

⁴ ED: Lee and Lee (1976) analyse the phonetic contrast of stop vs. fricative as geminate vs. single stop. See the Editor's Postscript for a discussion of the implications of the alternative analyses for testing.

- 9) a. **wa** 'where'
 b. **ua** 'where'
- 10) a. **watno** 'two days later'
 b. **uatno** 'two days later'
- 11) a. **toio** 'I don't know'
 b. **toyo** 'I don't know'
- 12) a. **ia** 'me'
 b. **ya** 'me'

1.5 Variation between **e** and **i**

This test was to determine if Madak speakers felt that there was one correct spelling of certain pronouns. It was noted that these words had different pronunciations; in this example it would either be /tinimi/ or /tinemi/ 'for you'.

- 13) a. **tinimi** 'for you'
 b. **tinemi** 'for you'

1.6 Word Breaks in the Verb Phrase

A Madak verb phrase may consist of a number of morphemes which may or may not be affixes attached to the verb stem. An example is:

di-ga-ra-t-kis
 they-past.tense-progressive-continuative-sit
 'They had been sitting.'

Due to various outside influences such as English, Tolai and Melanesian Pidgin, various language helpers suggested that the morphemes be broken into separate words but there is some evidence that phrases such as the one above must be one word phonologically. So the following examples were tested to

determine how a broad cross section of Madak speakers felt about dividing the verb phrase into words.

- 15) a. **tabai min** 'give it to him'
b. **taba i min** 'give it to him'
- 16) a. **i reng** 'he cries out'
b. **ireng** 'he cries out'
- 17) a. **i lolos** 'he is strong'
b. **ilolos** 'he is strong'
- 18) a. **ing teng** 'he is crying'
b. **ingteng** 'he is crying'
- 19) a. **it kis** 'he is sitting'
b. **itkis** 'he is sitting'
- 20) a. **di ga rat pas** 'they had been walking'
b. **di ga ratpas** 'they had been walking'
c. **di garatpas** 'they had been walking'
d. **digaratpas** 'they had been walking'
- 21) a. **niat kis** 'I am sitting'
b. **nia at kis** 'I am sitting'
c. **niatkis** 'I am sitting'
- 22) a. **nani reng** 'he is crying out'
b. **nani i reng** 'he is crying out'

1.7 Various Spelling Problems

The spellings of several common words were also tested. These words have been spelled in different ways by various speakers and therefore the need arose for testing them.

- 23) a. **lok kala** 'get'

- b. **lokaka** 'get'
- 24) a. **kape** '(take) away'
b. **kepe** '(take) away'
- 25) a. **kapmek** 'bad'
b. **kemek** 'bad'

1.8 Word Breaks - Nouns and Nominalizers

Each noun stem in text is preceded by a nominalizer plus or minus a pluralizer or other morpheme. The basic form of the nominalizer is **la**, but this changes due to vowel harmony; e.g. **la** + **ven** + **man** = **levenman** 'dogs'. Native speakers have written this either as one word or two words. Thus the following words were tested.

- 26) a. **la man** 'dog'
b. **laman** 'dog'
- 27) a. **lem panga** 'things'
b. **lempanga** 'things'
- 28) a. **leven tamang** 'gardens'
b. **leventamang** 'gardens'
- 29) a. **lat kin** 'woman'
b. **latkin** 'woman'

2. Methodology

The psycholinguistic testing was done in conjunction with a dialect survey conducted in early 1982. When my assistant and I entered a village, my assistant explained who we were (if need be) and also the purpose of our visit. He then asked if we could get some information about their language. The dialect

survey word list was explained first and then the words were elicited. Next the assistant explained the psycholinguistic testing and the procedures. He told the people that they would be shown two cards or more and be asked to choose which one they felt was written properly. There were no serious problems with these procedures but occasionally an explanation or a context for the words in question had to be given. My assistant displayed the cards and did the asking while I listened and recorded the results. The only weakness noticed was that if the testees did not respond immediately the assistant would encourage them along and would occasionally try to influence their choices.

Although only 14 villages are represented in this testing, in most cases there were several speakers who were present at the testing and the responses were from a group. It was noted that there was little difference of opinion among each group.

3. Results

Chart 1 presents the results of the choices from the 14 villages. In the cases where there are less than 14 decisions there is an asterisk. The reason for this is that some could not make up their mind on the choices or did not feel that they had an opinion on those particular items.

4. Conclusion

The author feels that psycholinguistic testing was of considerable value. First, it allowed good input from a cross section of native speakers toward establishing a permanent orthography. Secondly, it gave a large number of people the opportunity to voice their opinion on the orthography which will make for better acceptance of vernacular literature in the future. It may have been better to cover a greater area of the

Chart 1

1a. laaleng	- 4*	15a. tabai min	- 9
b. laleng	- 8	b. taba i min	- 5
2a. luunun	- 3	16a. i reng	- 8
b. lunun	- 11	b. ireng	- 6
3a. laxatli		17a. i lolos	- 9
b. laxarak	accepted	b. ilolos	- 5
c. ixaala		18a. ing teng	- 5
d. laxangka		b. ingteng	- 9
4a. lavapa		19a. it kis	- 5
b. lovotpot	accepted	b. itkis	- 9
c. iravasu		20a. di ga rat pas	- 0
5a. lobo	- 11	b. di ga ratpas	- 4
b.ombo	- 3	c. di garatpas	- 3
		d. digaratpas	- 7
6a. langgaling	- 1	21a. niat kis	- 4
b. lagaling	- 13	b. nia at kis	- 2
7a. lududu	- 11	c. niatkis	- 8
b. lundundu	- 3	22a. neni reng	- 5*
		b. neni i reng	- 8
8a. uet	- 6	23a. lok kaka	- 5
b. wet	- 8	b. lokaka	- 9
9a. wa	- 6	24a. kape	- 6
b. ua	- 8	b. kepe	- 8
10a. watno	- 9		
b. uatno	- 5		

11a. toio	- 14	25a. kapmek	- 12
b. toyo	- 0	b. kenek	- 2
12a. ia	- 14	26a. la man	- 1
b. ya	- 0	b. laman	- 13
13a. tinimi	- 11*	27a. lem panga	- 3
b. tinemi	- 3	b. lempanga	- 11
14a. sep i	- 3	28a. leven tamang	- 3
b. sev i	- 11	b. leventamang	- 11
		29a. lat kin	- 1
		b. latkin	- 13

Madak language as only two dialect areas were tested. There would be great difficulties, however, in following the same procedure though maybe a less formal testing could be done in the other areas.

Most of the results point to obvious conclusions which the author will carefully study. There were two areas that were not clear so more study and observation will need to be done. The first is the semivowel question, whether to use **u** or **w** as a symbol for [u] in the orthography. This question is also covered in Lee (1983a) where it is concluded that the symbol will continue to be **u** for the present time.

The other area of difficulty is how to write the verb stems (1.6). It seems that when only one morpheme occurred before the verb stem, the preference was to separate them (see 16-17). On the other hand, when more than one morpheme occurred before the verb stem, the testees preferred writing them as one word (18-21). More experimentation, observation and testing will be done before a definite conclusion is reached.

Bibliography

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Editor's Postscript

This study represents a noteworthy attempt to gauge native speaker reaction to orthographic decisions and hopefully will trigger similar studies in other languages. In this postscript several areas will be explored with an eye to refining the experimental techniques involved.

First, strictly speaking the survey reported on in this paper did not necessarily test psycholinguistic intuitions. For example, Lee (1983a) notes two factors affecting the symbolisation of semivowels: 1) there are few occurrences where [u] and [i] are suspect, and 2) Tolai, the prestige language in the area, writes all semivowels as u and i. Thus, a reaction in favour of u and i could have a sociolinguistic, not psycholinguistic, basis. In fact, the surprising finding in the study is that w was generally preferred over u (although only marginally).

Second, studies like this in which individual tokens or pairs of tokens are presented confront special problems when the spelling of a particular form may be related to other forms. For example, the justification for double vowels in (1-2) was morphological - the nominaliser ends with a vowel and the stem begins with a vowel. If those responding thought they were to indicate 'how the word sounded', it would not be surprising for them to choose forms with short vowels.¹ In situations like this it would be important to discuss the shape of the individual morphemes in other forms to see if this caused opinions to change. It would also be important to discuss potential minimal pairs with word final stress.

¹ This argument assumes either that phonetically these geminate vowels are short, or that long vowels are not generally significant in Madak.

A similar problem arises when testing the representation of [g] and [b] as **x** and **v**. Lee and Lee (1976) argue that the contrast between intervocalic voiceless stops and voiced fricatives arises from a contrast between geminate and single voiceless stops. Thus, [lepovo] (section 1.2) would come from /leppopo/.

This analysis is challenged in Lee (1983a) on the basis that intervocalic voiceless stops probably come from a variety of sources. Lee suggests in addition to geminate clusters, they may also arise from heterorganic sequences. In many cases, then, it is impossible to tell what the intervocalic stops are derived from. Lee argues they may not be derived at all anymore, and that as a result the voiced fricatives may be independent phonemes.

However, this more complicated analysis does not rule out the possibility that intervocalic stops are derived. It would be possible to write heterorganic sequences when they are known and geminate sequences elsewhere. Then [b] and [g] could still be written as **p** and **k**. This possibility is not allowed for in this test.

Furthermore, the strongest source of evidence for this alternative is paradigmatic. In section 1.2 it was demonstrated that word final voiceless stops become voiced fricatives before vowel initial words. In presenting forms like [sev ɪ] (14), it is important to point out the existence of [sep] in other forms. If those responding decide on this basis to spell the word as **sep** in all instances, this has implications for the general representation of fricatives.

This discussion leads into the third area for consideration, the order of presentation of tokens. Ordering (3-4), where the use of **x** and **v** is checked, before (14), where the spelling of [sev ɪ] is checked, could prejudice the results. In general, it would be good to give the forms in different orders to different groups if at all possible. This

would help guard against the acceptability of particular spellings being affected by the relative ordering of test words. It would also provide a better check of consistency within subjects if the three sets of forms testing the use of **w** vs. **u**, for example, were mixed throughout the total set of test forms.

Obviously, the more we refine tests like the one described in this paper, the more valuable the results will be. A combination of a test of individual tokens like that outlined in this paper with more extensive discussion of paradigmatic factors should result in valuable insights into how a language should be written.