Ministry of Scientific and Technical Research

A Practical Study of the Orthography of Compound Words In the Karang language (ALCAM 352)

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1. INTRODUCTION

Mr. Ngang David and I (Robert Ulfers) noted the need for further development of the Karang orthography. We thus followed up on two previous studies *Karang nouns* (Ulfers 1996) and *A practical study on minimizing tone marking in the Karang language* (Ulfers and Ngang 1998). We undertook an experimental study in which we recorded and analyzed the errors of beginner, average and experienced readers to determine how to write compound words. The research was essential in determining which compounds should they be written as single units and which as separate words.

Our research agreed with previous decisions on combining certain compounds as one written unit and reinforced the decision to write compounds with a verbal component as separate words. We also determined that a certain compound in written numerals should be written as one word.

The procedure was simple and required only a good audio recorder, a group of a dozen readers and a bit of patience in listening to, charting, and analyzing the errors of readers. We hope that other language workers would also use this simple procedure to determine how to write compounds in national languages.

The decisions made here concerning the Karang language could also very easily be applied to other Eastern Mbum languages which have not yet reached the same level of their orthography development.

2. DESCRIPTION OF THE ORTHOGRAPHY OF COMPOUND WORDS

2.1 SIMPLE COMPOUNDS

The first researchers working in the Karang language made some decisions concerning how to write compound words. They concentrated on how to write Noun + Infinitive (derived noun) compounds, Adjective + Noun compounds, and Noun1 + Noun2 compounds. Our research on reading errors supports their conclusions which are stated in their Alphabet and Orthography Statement for the Karang Language (Ubels 1986 p.8).

Noun + **Derived Noun** are written as separate words

Example 1.

gel ɗerna

place falling

'harmatan'

Adjective + **Noun** are written as one word

Example 2.

ŋgernzuk (ŋger + nzuk)

senior + person

'elder'

Noun1 + **Noun2** compounds are written as one word when the overall meaning does not equal the sum of the meaning of the parts.

Example 3.

Mbihmbam (mbih + mbam)

*w*ater + rain

'year'

2.2 COMPOUNDS WITH A VERBAL COMPONENT

In addition our research clarified orthographic choices not yet decided in Karang. By analyzing reading errors we determined that the orthography of compound words which are formed with a verb should follow the same rule as number 1 above (written separately). Examples 4a and 5 contain verbs. Example 4b contains a preposition instead of a verb inferring the verb 'to be.'

Noun1 + Verb (high tone) + Noun2

Example 4a

nzuk sạh gar

man sew clothe

'taylor'

Example 4b

ndoy tul nday

bird (is)on cow

'cow bird'

Verb(high tone) + Noun

Example 5.

ik law

press heart

'patience'

It was essential to know if these compounds needed to be written as whole words because the verbs in these compounds always carry the inflected high tone mark. If the were written as suchh, it might help the reader distinguish the compound from a verb phrase, as seen in examples 6 and 7 below.

Example 6.

Nzuk kɔ́r waka

person guard(inflected) farm

"farm guard"

Example 7.

Nzuk kɔr waka

person guard farm

"The person guarded the farm"

However the in 1998 the Comité de Langue Karang adopted a new system of tone marking in which the above tone is no longer marked. This decision was based on our study on minimizing tone marking (Ulfers and Ngang, 1998). So the question still remained whether writing them as whole words or partially whole words would help in reading these compounds correctly. Our research showed that these compounds could be safely written as separate words with no hindrance to the reader. In fact combining them would cause slightly more reading errors than not. (See category 6 in illustration 3)

2.3 NUMERALS

We also determined through reading error analysis how to write certain aspects of written numerals concluding that they should mostly be written separately as follows:

Numerals are written as separate words accept for the compound *toŋ* + *ndɔk*

'remaining-hand' which is found in all written numerals that use the numbers 7,8 and 9. (See appendix ???)

Example 8.

toŋndɔk	*mbew*
left(over) + (in)hand	one
'nine'	

We confirmed that is was easiest for beginner, average and experienced readers alike to read two types of compound words as single units mentioned above in examples 2 and 3. This was encouraging in that for these compounds this system was already being used for many years and thus application of our results would be of minimal disturbance to the literacy program.

3. EXPERIMENTAL PROCEDURE

3. 1 TEXT PREPARATION

To accurately test the orthography of compound words we needed to design a reading exercise that contained both compound words written as single units and compound words written as separate words so that we could compare the results later and identify which was easiest to read.

Mr. Ngang David, a Karang speaker, drew up a list of twenty natural sentences in which every category of compound under question was employed. This list consisted of ten sentences in which the categories were written together as one word (or in some cases of triple word compounds as two) and another ten sentences in which the same or similar words were written separately.

Below is an example of two similar sentences containing the same compound words with one sentence having them written single units and the other as separate words. The compound words in question are written in italics.

Example 9.

a-6) Ŋgerzah laɓ *nunmbam* ke tusiɓa.

(*God* made *heaven* and earth)

b-6) Nun mbam ke tusiɓa kara *Ŋger zah* mí laɓ.

(*Heaven* and earth even *God* who made)

We gave each pair of sentences corresponding reference numbers for easy analysis. In the above pair the Adj + Noun compound *Ŋger* + *zah* "senior + god = God" was written as one word in the first sentence (a-6) and as two words in the second sentence (b-6). Likewise the Noun + Noun compound *nun* + *mbam* "eye + rain = sky/heaven" was written as one word in the first sentence (a-6) and as two words in the second sentence (b-6). (The complete list all twenty sentences is in appendix A.)

Nine categories of compounds were included in the twenty sentences to be analyzed later.

1) Noun1 + Noun2 compounds in which the meaning of the whole compound was more than the sum of the meaning of the parts

2) Noun1 + Noun2 combinations in which the meaning of the whole word could be determined by the parts.

3) Complex compounds: These are compounds that are formed when one compound is embedded as a noun into another compound.

4) Adj + Noun compound words

5) Noun + Derived noun (infinitive) compound words

6) Noun1 + Verb(High tone)/prepostion + Noun2 compounds. These are three part compound words which are either Noun + Verb + Noun or Noun + Preposition + Noun.

7) Verb(high tone) + Noun compounds

8) Numerals: In addition to these above compounds written numerals were also included in the reading list in which certain aspects resembled compounds.

9) High frequency combinations *mí* + *na* + Demonstrative. Because there was a question about the complexity of reading the hyphenation on two high frequency combinations we also included these in the reading list written in three different ways.

See appendix B for a complete list of all the words tested under each category

After having established the list and checked it for naturalness we printed the twenty sentences where out on half sheets of A4 paper (one sentence per sheet). We printed their reference numbers on the back of each paper. We printed these sentences with large simple fonts to avoid any influence from poor eye sight. All 'a' graphemes were changed to 'ɑ' grapheme so that it could conform to what was taught in the literacy classes. The actual point size (16) is illustrated here.

illustration 1

Ŋgerzah lɑɓ nunmbɑm ke tusiɓɑ.

For each participant a data sheet was printed of the twenty sentences in the order of their reference numbers for data recording from the audio tape.

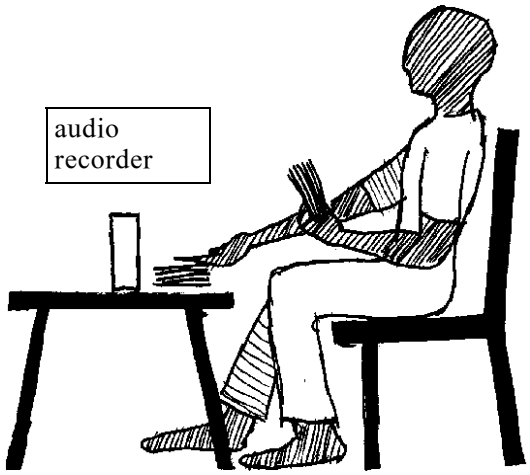
3. 2 RECORDING PARTICIPANTS

We then found twelve readers from two villages (Sorombéo and Kambang). They were all young males ranging from around 10 to 25 years old. We considered four of them as good readers (who read the twenty sentences under 6 minute's time with an average of 18.25 errors). Three were average readers (reading time 6 to 7 minutes with an average of 35.7 errors). Five of the participants were slow readers (reading time between 9.5 to 14.5 minutes with an average of 72 errors). (See appendix C for further details on the participants)

It was important to test all three groups of to see if orthography decisions would effect different reading levels in different ways. In particular reading errors made by slow readers would give us a better understanding since this group was the least accustomed to already accepted ways of writing compounds. It is also the target group for our orthography testing. The idea is that we would like to make the orthography easiest for the beginner readers so that it would not discourage participation in literacy classes.

Each participant read the twenty sentences into a tape recorder without the other participants listening. Thus all the participants read the sentences with no prior knowledge of their contents.

Illustration 2



We assured each participant that we were testing the writing system and not his skill. Then we turned on the audio recorder and handed the stack of sentences to him explaining that he should read each from top to bottom of the stack. The participant would hold all twenty sheets facing him and start by reading from the top sheet. As soon as he finished reading one sheet he would put it down on the table and read the next sheet.

Each participant also read the sentences in a random order. We guaranteed this by shuffling the half sheets of paper in between recording individuals. This was easily done since each sheet contained only one sentence. The random ordering helped to avoid the influence of previous sentences such that by random order the statistics would reflect a balanced effect in this area.

Before the participant read we took note of the order in which he read by the reference numbers on the back of each sheet. This was essential later in following the audio recording and subsequent chartingg of reading errors.

3. 3 ERROR ANALYSIS

3.3.1 Scoring errors

After all the recordings were done we took to the tedious task of analyzing each participant's reading of the twenty sentences. This was the most difficult part of the study in that it required some judgments to be made that in some cases were not easy. Thus we both listened to the recordings together and concurred on all errors.

Three categories of errors were sought and a basis of judging which words were difficult to read.

The first was repetition of segments. For each repetition of a segment in the recording we would mark that segment with parentheses (.....). If the segment was repeated more than once we marked the segment with another set of parentheses and so on adding more each time the segment was repeated

In the below example error scoring of repetition errors, the segment *'Bil mbahna* was repeated two times, *'Bil* a total of four. Thus for the entire compound word the total number of errors was four, one for each set of parentheses.

Example 10.

b-11 ((('Bil)) mbahna)) yo ri le, law rihna yo ri pi.

The next errors we looked for were misreadings. When a segment was read incorrectly (as a different word from what was written) then that segment was underlined and a note was written in the left margin of the score sheet. Each time a segment was misread it counted as one error.

The following example error scoring of misread text counts as one error in which the word *naŋsuy* was read incorrectly as *masuŋay.*

Example 11.

a-2 Mbay fạh gunri séŋ naŋsuy mí ke tuh nzakvul ye kan ri. *Read as ˈmasuŋay*ˌ

The last category of errors was that of hesitations and spacing. In other words each time the reader stopped or paused to long before reading a word that counted as one error. Likewise when it was obvious that a compound word was read with too much pause between the parts of the compound word that was also considered as one error. These errors would either be marked with a ˈ∧ˈ where a hesitation occurred or the segment was underlinded and explanation given in the right margin.

There were two errors in the reading of the sentence below. The compound word *naŋsuy* was read as two words meaning that there was an undue pause between the parts of the compound. This counted as one error and there was a hestitation in reading before the compound word *nzakvul.*

Example 12

a-2 Mbay fạh gunri séŋ naŋsuy mí ke tuh nzakvul ye kan ri. *Read as two words*
∧

We scored all these errors by hand on printouts similar to the one in appendix B. We scored only errors on items that we were testing.

3.3.2 Charting errors

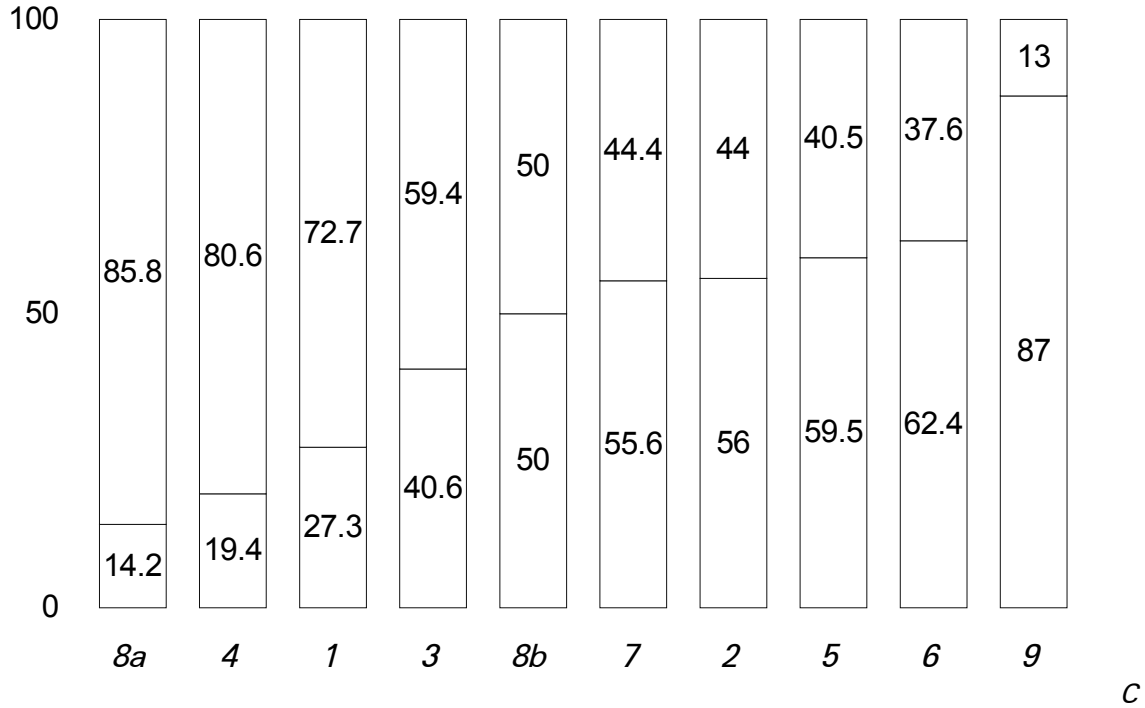
We then drew up nine sets of charts of above reading errors for every category of item under study. These charts were sudivided according to reading level so that totals of reading errors could be analyzed by level, by individual, and as well as by the whole group of participants. We further summarized the charts to clearly show the difference between the different ways of writing those items and the percentage of errors for each. (See appendix D)

Below is a general graph which roughly illustrating the whole of our orthography analysis of the reading errors across all participants. This was the basis of our orthography decisions in section 2.

The area of each column represents all the reading errors that occurred on a category under study. The area below the dividing line in the column marks the percentage errors on items written as one unit. The area above the line represents the percentage of errors which occurred on the same category of word s written separately.

For instance in category 8a (the numeral segment *toŋ + ndɔk*) the errors which occurred above the line were more numerous (85.8%) than those below (14.2%). In other words the word was better read as one unit than as separate words.

Illustration 3



Based on the reading errors the following categories were read better as whole words than separately: Categories 1 (Noun1 + Noun2 where the whole meaning of the compound is more than the sum of the meanings of the part), 3 (Complex compounds), 4 (Adjective + Noun compounds), and 8a (the numeral *toŋ* + *ndɔk*). Thus we concluded that these compounds should be written as one word in the orthography. We saw that there was no change in these conclusions when only poor readers were considered. Thus good , average, and poor readers should all benefit from the orthographic decisions made.

Categories 6 (Noun1 + Verb/Prep + Noun2) and 9 (high frequency items) were read better as separated words. Thus we concluded that these words need not be written as one unit in the orthography.

The remaining categories showed that approximately the same number of errors occurred when the items were written separately as when they were written as one unit. Thus by default we chose to write these as separate words.

4. Approval

M. Ngang David and I presented the decisions that we made in section 2 (based on this study) to the officers of the Comité de Langue Karang in April of 2000. They approved of the changes and made note of it in their meeting minutes.

5. Implementation

We recommend that the orthographic decisions made here be applied to the 2001 literacy teacher training courses. A spelling dictionary should also be published including a section on

orthography in the introduction which will include the orthographic decisions in this study. The orthography of compound nouns should be an integral part of all future writers' workshops.

We hope that Mbum languages will profit from this study and adopt similar systems of writing compound to facilitate standardization of orthographies in Mbum languages. We recommend that each Mbum language test the results in experimental literacy classes before committing themselves to it in their pedagogy.

References:

Ubels, Edward and Virginia, 1985 Alphabet and Orthography Statement for the Karang Language. 9pp.

Ulfers, Robert, 1996 Karang Nouns 12pp.

Ulfers, Robert & Ngang, David, 1998 A practical Study in Minimizing Tone Marking in the Karang Orthography 18pp.

6. Appendices Appendix A - List of reading sentences:

a-1) Gun pol bi *minay.* Ke ɣo ke *mbihmbam* boh falu *toŋndɔk* mbew.	b-1) Riŋ nzukri ké *mbih mbam* woyri laɓ boh falu *toŋ ndɔk* seɗe *mí nay.*
a-2) Mbay fąh gunri si séŋ *naŋsuy* mí ke tuh *nzakvul* ye kan ri.	b-2) Gama si kór naŋ suy bah ye mí *nzak vul* ye tu-tuh.
a-3) *Nzukmboh vul* mbay ra el gi ɓáy.	b-3) *Nzuk mboh vul* mbay ta ke fe pihna ya.
a-4) Pihna wụyaw ké si-aw ɓa *fahɓay*.	b-4) *Fah ɓay* ɣo ɓeɓ pihna ɓa ŋgį-u.
a-5) *Ŋgernzuk* Yoro fąh *tąwgar* yeri kụh kpah.	b-5) Nzuk a haniri ɣo fąh *tąw gar* woyri kụh kpah.
a-6) *Ŋgerzah* laɓ *nunmbam* ke tusiɓa.	b-6) *Nun mbam* ke tusiɓa kara *Ŋger zah* mí laɓ.
a-7) *Lawfąhna* ɓeɓ fe ɓa ŋgį w.	b-7) Gama laɓ *law fąhna* mí i mah guy ye keni.
a-8) Pihna ké *mbaypuki* so na keni mí naw.	b-8) Sem *mbay puki* mí na-ay ba hani ke sem wah.
a-9) Mbay si zɔm *nzukkɔr waka* yeri ké *bonseɗe* ra da.	b-9) Nzukri *bon say* falu *toŋ ndɔk mbew* ɓa *nzuk kɔr waka* mbay.
a-10) *Fewkaɓ kala* mí ɓay gi-aw.	b-10) *Few kaɓ kala* riŋ da.
a-11) *'Bilmbahna* ɣo hį *lawrihna*.	b-11) *'Bil mbahna* ɣo ri le, *law rihna* ɣo ri pi.
a-12) *Temɓay minaw*. Gel *faŋɓay* ke si ri.	b-12) *Tem ɓay mí na-aw*. Gel *faŋ ɓay* ke si ri ya.
a-13) Mi goŋ *Ŋgermbay* ɓá pih *Tempuki* hį mi.	b-13) *Ŋger mbay* pih *Tem puki* mí kaɓ ziŋ *ŋger nzuk* bi.
a-14) *Nzuksąhgar* puh-ay sąh gelu ya.	b-14) Pihna *nzuk sąh gar* se sol mbamba.
a-15) Bah bi gi ke *nzukfalŋgaŋ* yeri pi.	b-15) *Nzuk fal ŋgaŋ* yeri ɓa bon seɗe.
a-16) *Mbayzamay* pih nzukri si mbụh nday.	b-16) Nzukri mbụh lari ɓay hį *Mbay zamay*.
a-17) *Lekɓay* ɣo ri dale, nzukri kaɓ ɓa suki da.	b-17) *Ker ɓay* mah ye mí hį pihna si ɓa suki.
a-18) *Mah bohsį w* mba *gaŋ taysį w* mba.	b-18) *Mah boh sį w* ke *gaŋ tay sį w* suh ɓay ma vul.
a-19) *Iklaw Ŋgerzah* mba *iklaw* nzukri.	b-19) *Ik law* nzukri mah hani ke *ik law Ŋger zah* ya.
a-20) Ké *Mgbalnzuk* ku ɣo haw *naŋmbali.*	b-20) *Naŋ mbali* yehna kụh *Mbgal nzuk.*

Appendix B - The categories of compounds included in the reading list.

1) Noun1 + Noun2 compounds in which the meaning of the whole compound was more than the sum of the parts:

N + N compounds	**Meaning of parts**	**Meaning of whole**
mbay + puki	chief + white	white man
tem + puki	shadow + white	the Holy Spirit
Tem + ɓay	shadow + word	Proper name
mbih + mbam	water + rain	year
naŋ + suy	millet + grass	rice
naŋ + mbali	millet + elephant	corn
nzak + vul	mouth + house	door
nun + mbam	eye + rain	sky/heaven

2) Noun1 + Noun2 combinations in which the meaning of the whole word could be determined by the parts:

N + N	**meaning of parts**	**whole meaning**
mbay + zamay	chief + Flubé	chief of the fulbé/Lamido
mgbal + nzuk	slave + person	slave of someone (name of a village)

3) Complex compounds: These are compounds that are formed when one compound is embedded as a noun into another compound. The reading list included two **Noun + (Noun + Noun)** compounds:

N + (N + N)	**meaing of parts**	**meaning of whole**
mah + (boh + sjw)	mother + (basket + initiation)	Initiation teacher
gaŋ + (tạy + sjw)	owner + (forked-wood + initiation	Initiation promoter

4) Adj + Noun compound words

Adj + N compound	**meaining of parts**	**meaning of whole**
ŋger + nzuk	senior + person	elder
ŋger + zah	senior + god	God
ŋger + mbay	senior + chief	the Lord
tạw + gar	old + clothes	used clothes

5) Noun + Derived noun (infinitive):

N + infinitive	**meaning of parts**	**meaning of whole**
law + fạhna	heart + gathering	anger

law + *rihna*	heart + sweeting	joy
ɓil + *mbahna*	stomach + filling	full stomach

6) Noun1 + Verb(High tone)/prepostion + Noun2 compounds. These are three part compounds words which are either Noun + Verb + Noun or Noun + Preposition + Noun.

N + V/Prep + N comound	**meaning of parts**	**meaning of whole**
nzuk + *mboh* + *vul*	person + build + house	mason
nzuk + *kɔr* + *waka*	person + suvey + farm	field guard
nzuk + *sạh* + *gar*	person + sew + cloth	taylor
few + *kaɓ* + *kala*	moon + sit + outside	November
nzuk + *fal* + *gaŋ*	person + behind + shield	supporter/soldier

7) Verb(high tone) + Noun compounds

V + N compound	**meaning of parts**	**meaning of whole**
fah + *ɓay*	argue + word	argument
faŋ + *ɓay*	follow + word	judgement
lek + *ɓay*	prepare + word	a plan/preperation
ker + *ɓay*	think + word	a thought
ik + *law*	press + heart	patience

8) Numerals: In addition to these above compounds written numerals were also included in the reading list in which certain aspects resembled compounds.

8a

toŋ + *ndɔk* *(say/sedɛ/mbew)*	*leftover* + *hand* *(three/two/mbew)*	*7,8,9*

8b

bon + *NUMERAL*	*ten* + *NUMERAL*	*ten times the number*

9) High frequency combinations mí + na + Demonstarive. Because there was a question about the complexity of reading the hyphenation on two high frequency combinations we also included these in the reading list written in three different was.

mí* + *na* + *ay(**TOPIC + Verb + Suf(close) 'this here'**

mí na-ay *mínay/mí nay*

mí* + *na* + *aw **TOPIC + Verb + Suf(far) 'that there'**

mí na-aw *mínaw/mí naw*

Appendix C - Participants in the study

Name	level	reading errors	reading time (sec)	product of errors and time
Nambay Jeremie	slow	92	870	80040
Napele	slow	74	685	50690
Amongou	slow	82	595	48790
Sehoul Justin	slow	42	985	41370
Sawmihri Benjamin	slow	70	585	40950
Napele Blousse	average	40	430	17200
Bekoudou	average	38	354	13452
Abel	average	29	360	10440
Riagama Albert	good	21	340	7140
Ndalboro Esaie	good	18	350	6300
Aradjibe Salomon	good	27	250	6750
Boungang Etienne	good	7	258	1806

The figures in the last right column in the above chart were used to order the readers by reading skill. The figures are the product of reading errors and reading time

Appendix D - Error Analysis Charts for each category of item under orthographic study

Category 1 - Chart of reading errors on N1 + N2 compounds (Whole > Parts) *written as one word*

Name	Mbaypuki	Temɓay	mbihmbam	**naŋsuy**	**nzakvul**	**nunmbam**	**Tempuki**	**naŋmbali**	**Total**
Nambay Jer.	5	0	0	3	0	0	0	0	**8**
Napele	2	0	0	1	1	0	2	0	**6**
Amongou	0	0	0	0	1	0	0	1	**2**
Sehoul Justin	0	1	0	1	2	0	0	0	**4**
Sawmihri Benj.	4	0	0	0	0	0	0	0	**4**
group total	**11**	**1**	**0**	**5**	**4**	**0**	**2**	**1**	**24**
Napele Bousse	0	0	0	1	0	0	0	0	**1**
Bekoudou	1	2	0	1	1	0	0	0	**5**
Abel	0	0	0	0	0	0	0	0	**0**
group total	**1**	**2**	**0**	**2**	**1**	**0**	**0**	**0**	**6**
Ndalboro Es.	0	1	0	0	0	0	0	0	**1**
Riagama Alb.	0	0	0	0	0	0	0	0	**0**
Aradjibe Sal.	0	0	0	0	0	0	0	2	**2**
Boungang E.	0	0	0	0	0	0	0	0	**0**
group total	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**3**

Category 1 - Chart of reading errors occurring on N1 + N2 (Whole > Parts) *compounds written seperately*

Name	Mbay puki	Tem ɓay	mbih mbam	**naŋ suy**	**nzak vul**	**nun mbam**	**Tem puki**	**naŋ mbali**	**Total**
Nambay Jer.	3	1	2	3	1	0	2	3	**15**
Napele	2	0	2	1	1	1	1	1	**9**
Amongou	3	2	2	3	2	1	1	2	**16**
Sehoul Justin	2	0	1	1	2	0	1	0	**7**
Sawmihri Benj.	1	0	1	1	0	5	1	1	**10**
group total	**11**	**3**	**8**	**9**	**6**	**7**	**6**	**7**	**57**
Napele Bl.	1	0	1	1	2	1	0	0	**6**
Bekoudou	1	2	2	0	0	0	0	0	**5**
Abel	2	0	0	1	0	0	0	1	**4**
group total	**4**	**2**	**3**	**2**	**2**	**1**	**0**	**1**	**15**
Ndalboro Es.	1	0	0	1	0	1	0	0	**3**
Riagama Alb.	1	1	1	0	0	0	0	0	**3**
Aradjibe Sal.	1	1	2	0	0	2	0	0	**6**
Boungang E.	1	1	0	1	0	1	0	0	**4**
group total	**4**	**3**	**3**	**2**	**0**	**4**	**0**	**0**	**16**

Category 1- Summary chart of errors occurring on N1 + N2compounds (Whole > parts)

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)
Nambay Jeremie	**8**	23		**15**	23	
Napele	**6**	15		**9**	15	
Amongou	**2**	18		**16**	18	
Sehoul Justin	**4**	11		**7**	11	
Sawmihri Benj.	**4**	14		**10**	14	
group total	**24**	**81**	**30**	**57**	**81**	**70**
Napele Bousse	**1**	7		**6**	7	
Bekoudou	**5**	10		**5**	10	
Abel	**0**	4		**4**	4	
group total	**6**	**21**	**29**	**15**	**21**	**71**
Ndalboro Esaie	**1**	4		**3**	4	
Riagama Albert	**0**	3		**3**	3	
Aradjibe Salomon	**2**	8		**6**	8	
Boungang Etienne	**0**	4		**4**	4	
group total	**3**	**19**	**16**	**16**	**19**	**84**
	33	***121***	***27.3***	***88***	***121***	***72.7***

Category 2 – N1 + N2 compounds (Whole = parts) *written as one word*

Name	Mgalnzuk	Mbayzamay	**Total**
Nambay Jer.	3	0	**3**
Napele	1	1	**2**
Amongou	4	1	**5**

Sehoul Justin	3	2	**5**
Sawmihri Benj.	0	6	**6**
group total	**11**	**10**	**21**
Napele Bousse	1	2	**3**
Bekoudou	0	0	**0**
Abel	0	4	**4**
group total	**1**	**6**	**7**
Ndalboro Es.	0	0	**0**
Riagama Alb.	0	0	**0**
Aradjibe Sal.	0	0	**0**
Boungang E.	0	0	**0**
group total	**0**	**0**	**0**

Category 2 – N1 + N2 compounds (Whole = parts) *written seperately*

Name	Mgal nzuk	Mbay zamay	**Total**
Nambay Jer.	2	1	**3**
Napele	1	1	**2**
Amongou	1	1	**2**
Sehoul Justin	1	2	**3**
Sawmihri Benj.	1	0	**1**
group total	**6**	**5**	**11**
			0
Napele Bl.	1	1	**2**
Bekoudou	2	0	**2**
Abel	0	0	**0**
group total	**3**	**1**	**4**
			0
Ndalboro Es.	1	1	**2**
Riagama Alb.	1	1	**2**
Aradjibe Sal.	0	1	**1**
Boungang E.	1	1	**2**
group total	**3**	**4**	**7**

Category 2- Summary chart of errors occurring on N1 + N2compounds (Whole = parts)

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)
Nambay Jeremie	**3**	6		**3**	6	
Napele	**2**	4		**2**	4	
Amongou	**5**	7		**2**	7	
Sehoul Justin	**5**	8		**3**	8	
Sawmihri Benj.	**6**	7		**1**	7	
group total	**21**	**32**	**66**	**11**	**32**	**34**
Napele Bousse	**3**	5		**2**	5	
Bekoudou	**0**	2		**2**	2	
Abel	**4**	4		**0**	4	
group total	**7**	**11**	**64**	**4**	**11**	**36**
Ndalboro Esaie	**0**	2		**2**	2	
Riagama Albert	**0**	2		**2**	2	
Aradjibe Salomon	**0**	1		**1**	1	
Boungang Etienne	**0**	2		**2**	2	
group total	**0**	**7**	**0**	**7**	**7**	**100**
	28	***50***	***56***	***22***	***50***	***44***

Category 3 Chart of reading errors occurring on N + (N + N) complex compound *seperated intotwo words*

Name	mah bohsɟw	gaŋ taysɟw	**Totals**

Nambay Jeremie	5	3	**8**
Napele	4	0	**4**
Amongou	0	0	**0**
Sehoul Justin	0	1	**1**
Sawmihri Benj.	0	4	**4**
group total	**9**	**8**	**17**
Napele Bousse	4	1	**5**
Bekoudou	0	1	**1**
Abel	0	1	**1**
group total	**4**	**3**	**7**
Ndalboro Esaie	1	0	**1**
Riagama Albert	0	1	**1**
Aradjibe Salomon	0	2	**2**
Boungang Etienne	0	0	**0**
group total	**1**	**3**	**4**

Category 3 Chart of reading errors occurring on N + (N + N) complex compound *written as one word.*

Name	mah boh sɟw	gaŋ tąy sɟw	**Totals**
Nambay Jeremie	2	3	**5**
Napele	4	5	**9**
Amongou	4	3	**7**
Sehoul Justin	1	3	**4**
Sawmihri Benj.	0	3	**3**
group total	**11**	**17**	**28**
Napele Bousse	4	5	**9**
Bekoudou	0	2	**2**
Abel	0	0	**0**
group total	**4**	**7**	**11**
Ndalboro Esaie	0	0	**0**
Riagama Albert	0	0	**0**
Aradjibe Salomon	1	1	**2**
Boungang Etienne	0	0	**0**
group total	**1**	**1**	**2**

Category 3 Summary chart of reading errors occurring on N + (N + N) complex compounds

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)

Nambay Jeremie	**8**	13		**5**	13	
Napele	**4**	13		**9**	13	
Amongou	**0**	7		**7**	7	
Sehoul Justin	**1**	5		**4**	5	
Sawmihri Benj.	**4**	7		**3**	7	
group total	**17**	**45**	**38**	**28**	**45**	**62**
Napele Bousse	**5**	14		**9**	14	
Bekoudou	**1**	3		**2**	3	
Abel	**1**	1		**0**	1	
group total	**7**	**18**	**39**	**11**	**18**	**61**
Ndalboro Esaie	**1**	1		**0**	1	
Riagama Albert	**1**	1		**0**	1	
Aradjibe Salomon	**2**	4		**2**	4	
Boungang Etienne	**0**	0		**0**	0	
group total	**4**	**6**	**67**	**2**	**6**	**33**
	28	***69***	***40.6***	***41***	***69***	***59.4***

Category 4 – Chart of reading errorsoccurring Adj + N compounds *combined a one word*

Name	ŋgernzuk	tąwgar	Ŋgerzah	Ŋgermbay	Ŋgerzah	**Totals**
Nambay Jeremie	0	0	0	1	0	**1**
Napele	0	1	0	1	0	**2**
Amongou	0	4	0	0	0	**4**
Sehoul Justin	1	1	0	0	0	**2**

Sawmihri Benj.	0	0	0	0	0	**0**
group total	**1**	**6**	**0**	**2**	**0**	**9**
Napele Bousse	0	0	0	0	0	**0**
Bekoudou	0	1	0	0	0	**1**
Abel	0	0	0	0	0	**0**
group total	**0**	**1**	**0**	**0**	**0**	**1**
Ndalboro Esaie	0	0	0	0	0	**0**
Riagama Albert	0	0	0	0	0	**0**
Aradjibe Salomon	0	0	2	1	0	**3**
Boungang Etienne	0	0	0	0	0	**0**
group total	**0**	**0**	**2**	**1**	**0**	**3**

Category 4 – Chart of reading errorsoccurring Adj + N compounds *written as separatewords*

Name	ŋger nzuk	tąw gar	ŋger zah	ŋger mbay	ŋger zah	**Totals**
Nambay Jeremie	2	2	3	3	0	**10**
Napele	1	1	2	2	1	**7**
Amongou	1	2	0	0	4	**7**
Sehoul Justin	1	1	2	0	1	**5**
Sawmihri Benj.	1	1	0	2	1	**5**
group total	**6**	**7**	**7**	**7**	**7**	**34**
Napele Bousse	0	0	1	0	1	**2**
Bekoudou	1	2	0	1	0	**4**
Abel	0	0	2	0	0	**2**
group total	**1**	**2**	**3**	**1**	**1**	**8**
Ndalboro Esaie	1	1	2	0	1	**5**
Riagama Albert	1	0	2	0	1	**4**
Aradjibe Salomon	1	0	1	0	0	**2**
Boungang Etienne	0	0	0	0	1	**1**
group total	**3**	**1**	**5**	**0**	**3**	**12**

Category 4 – Summary chart of reading errors occurring Adj + N compounds

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)
Nambay Jeremie	**1**	11		**10**	11	
Napele	**2**	9		**7**	9	
Amongou	**4**	11		**7**	11	
Sehoul Justin	**2**	7		**5**	7	
Sawmihri Benj.	**0**	5		**5**	5	
group total	**9**	**43**	**21**	**34**	**43**	**79**
Napele Bousse	**0**	2		**2**	2	
Bekoudou	**1**	5		**4**	5	
Abel	**0**	2		**2**	2	
group total	**1**	**9**	**11**	**8**	**9**	**88**
Ndalboro Esaie	**0**	5		**5**	5	
Riagama Albert	**0**	4		**4**	4	
Aradjibe Salomon	**3**	5		**2**	5	
Boungang Etienne	**0**	1		**1**	1	
group total	**3**	**15**	**20**	**12**	**15**	**80**
	11	***67***	***16.4***	***54***	***67***	***80.6***

Category 5 – Chart of reading errors occurring on N + V-na(Infinitive) compound *combined a one word*

Name	lawfạhna	lawrihna	ɓilmbahna	**Totals**

Nambay Jeremie	0	0	1	**1**
Napele	2	2	1	**5**
Amongou	0	0	3	**3**
Sehoul Justin	0	0	0	**0**
Sawmihri Benj.	0	0	1	**1**
group total	**2**	**2**	**6**	**10**
Napele Bousse	0	0	2	**2**
Bekoudou	0	0	2	**2**
Abel	0	0	2	**2**
group total	**0**	**0**	**6**	**6**
Ndalboro Esaie	0	0	1	**1**
Riagama Albert	0	0	2	**2**
Aradjibe Salomon	0	0	0	**0**
Boungang Etienne	0	0	3	**3**
group total	**0**	**0**	**6**	**6**

Category 5 – Chart of reading errors occurring on N + V-na(Infinitive) compound *written seperately*

Name	law fạhna	law rihna	ɓil mbahna	**Totals**
Nambay Jeremie	0	0	4	**4**
Napele	0	0	1	**1**
Amongou	0	0	4	**4**
Sehoul Justin	0	1	0	**1**
Sawmihri Benj.	0	0	2	**2**
group total	**0**	**1**	**11**	**12**
Napele Bousse	1	0	1	**2**
Bekoudou	0	0	0	**0**
Abel	0	0	0	**0**
group total	**1**	**0**	**1**	**2**
Ndalboro Esaie	0	0	1	**1**
Riagama Albert	0	0	0	**0**
Aradjibe Salomon	0	0	0	**0**
Boungang Etienne	0	0	0	**0**
group total	**0**	**0**	**1**	**1**

Category 5 – Summary chart of reading errors occurring on N + V-na(Infinitive) compound

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)
Nambay Jeremie	**1**	5		**4**	5	
Napele	**5**	6		**1**	6	
Amongou	**3**	7		**4**	7	
Sehoul Justin	**0**	1		**1**	1	
Sawmihri Benj.	**1**	3		**2**	3	
group total	**10**	**22**	**45**	**12**	**22**	**55**
Napele Bousse	**2**	4		**2**	4	
Bekoudou	**2**	2		**0**	2	
Abel	**2**	2		**0**	2	
group total	**6**	**8**	**75**	**2**	**8**	**25**
Ndalboro Esaie	**1**	2		**1**	2	
Riagama Albert	**2**	2		**0**	2	
Aradjibe Salomon	**0**	0		**0**	0	
Boungang Etienne	**3**	3		**0**	3	
group total	**6**	**7**	**86**	**1**	**7**	**14**
	22	***37***	***59.5***	***15***	***37***	***40.5***

Category 6 –Chart of reading errors occurring on N + V/Prep + Ncompounds *combined a one or two words*

Name	Nzukmboh vul	nzukkɔr waka	Fewkaɓ kala	Nzuksąhgar	nzukfalŋgaŋ	**Totals**

Nambay Jeremie	3	2	2	4	5	**16**
Napele	0	4	2	0	0	**6**
Amongou	2	2	2	5	3	**14**
Sehoul Justin	0	1	3	0	0	**4**
Sawmihri Benj.	3	3	4	3	1	**14**
group total	**8**	**12**	**13**	**12**	**9**	**54**
Napele Bousse	0	0	1	6	1	**8**
Bekoudou	2	3	0	1	1	**7**
Abel	1	0	1	3	3	**8**
group total	**3**	**3**	**2**	**10**	**5**	**23**
Ndalboro Esaie	0	0	0	1	0	**1**
Riagama Albert	0	0	0	0	0	**0**
Aradjibe Salomon	2	2	0	0	1	**5**
Boungang Etienne	0	0	0	0	0	**0**
group total	**2**	**2**	**0**	**1**	**1**	**6**

Category 6 –Chart of reading errors occurring on N + V/Prep + Ncompounds *written separately*

Name	Nzuk mboh vul	nzuk kɔr waka	Few kaɓ kala	nzuk sąh gar	Nzuk fal ŋgaŋ	**Totals**
Nambay Jeremie	3	1	0	1	2	**7**
Napele	0	0	1	4	4	**9**
Amongou	1	2	0	0	4	**7**
Sehoul Justin	2	1	0	0	0	**3**
Sawmihri Benj.	3	0	0	1	5	**9**
group total	**9**	**4**	**1**	**6**	**15**	**35**
Napele Bousse	1	0	2	1	2	**6**
Bekoudou	0	0	0	1	1	**2**
Abel	0	0	0	2	0	**2**
group total	**1**	**0**	**2**	**4**	**3**	**10**
Ndalboro Esaie	0	0	1	1	1	**3**
Riagama Albert	0	0	0	0	0	**0**
Aradjibe Salomon	2	0	0	0	0	**2**
Boungang Etienne	0	0	0	0	0	**0**
group total	**2**	**0**	**1**	**1**	**1**	**5**

Category 6 –Summary Chart of reading errors occurring on N + V/Prep + N compounds

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)
Nambay Jeremie	**16**	23		**7**	23	
Napele	**6**	15		**9**	15	
Amongou	**14**	21		**7**	21	
Sehoul Justin	**4**	7		**3**	7	
Sawmihri Benj.	**14**	23		**9**	23	
group total	**54**	**89**	**61**	**35**	**89**	**39**
Napele Bousse	**8**	14		**6**	14	
Bekoudou	**7**	9		**2**	9	
Abel	**8**	10		**2**	10	
group total	**23**	**33**	**70**	**10**	**33**	**30**
Ndalboro Esaie	**1**	4		**3**	4	
Riagama Albert	**0**	0		**0**	0	
Aradjibe Salomon	**5**	7		**2**	7	
Boungang Etienne	**0**	0		**0**	0	
group total	**6**	**11**	**55**	**5**	**11**	**45**
	83	***133***	***62.4***	***50***	***133***	***37.6***

Category 7 – Chart of reading errors occurring on Verb + N compound *combined a one word*

Name	fahɓay	faŋɓay	lekɓay	iklaw	**Totals**

Nambay Jeremie	2	1	1	0	**4**
Napele	0	2	1	0	**3**
Amongou	0	0	0	0	**0**
Sehoul Justin	0	0	1	0	**1**
Sawmihri Benj.	2	1	0	0	**3**
group total	**4**	**4**	**3**	**0**	**11**
Napele Bousse	1	0	0	0	**1**
Bekoudou	0	2	0	0	**2**
Abel	0	2	0	0	**2**
group total	**1**	**4**	**0**	**0**	**5**
Ndalboro Esaie	0	0	0	0	**0**
Riagama Albert	1	3	0	0	**4**
Aradjibe Salomon	0	0	0	0	**0**
Boungang Etienne	0	0	0	0	**0**
group total	**1**	**3**	**0**	**0**	**4**

Category 7 – Chart of reading errors occurring on Verb + N compound *written as separatewords*

Name	fah ɓay	faŋ ɓay	ker ɓay	ik law	**Totals**
Nambay Jeremie	0	1	0	0	**1**
Napele	0	0	0	3	**3**
Amongou	1	1	0	0	**2**
Sehoul Justin	0	0	0	0	**0**
Sawmihri Benj.	1	0	2	1	**4**
group total	**2**	**2**	**2**	**4**	**10**
Napele Bousse	1	1	0	0	**2**
Bekoudou	0	0	0	0	**0**
Abel	0	2	0	0	**2**
group total	**1**	**3**	**0**	**0**	**4**
Ndalboro Esaie	0	0	0	0	**0**
Riagama Albert	0	0	0	0	**0**
Aradjibe Salomon	0	0	0	2	**2**
Boungang Etienne	0	0	0	0	**0**
group total	**0**	**0**	**0**	**2**	**2**

Category 7 – Summary chart of reading errors occurring on Verb + N compounds

Name	**Total reading errors as one word**	Total Errors	percentage errors (one word)	**Totals reading errors as separate words**	Total Errors	percentage errors (seperate words)
Nambay Jeremie	**4**	5		**1**	5	
Napele	**3**	6		**3**	6	
Amongou	**0**	2		**2**	2	
Sehoul Justin	**1**	1		**0**	1	
Sawmihri Benj.	**3**	7		**4**	7	
group total	**11**	**21**	**52**	**10**	**21**	**48**
Napele Bousse	**1**	3		**2**	3	
Bekoudou	**2**	2		**0**	2	
Abel	**2**	4		**2**	4	
group total	**5**	**9**	**55**	**4**	**9**	**44**
Ndalboro Esaie	**0**	0		**0**	0	
Riagama Albert	**4**	4		**0**	4	
Aradjibe Salomon	**0**	2		**2**	2	
Boungang Etienne	**0**	0		**0**	0	
group total	**4**	**6**	**66.6**	**2**	**6**	**33.3**
	20	***36***	***55.6***	***16***	***36***	***44.4***

Category 8a Chart of reading errors occurring on numeral segemnent - *toŋ + ndɔk*

	combined	*separate*	
Name	toŋndɔk	toŋ ndɔk	percent
Nambay Jeremie	1	2	
Napele	0	2	

Amongou	0	0	
Sehoul Justin	0	1	
Sawmihri Benj.	0	0	
group total	**1**	**5**	**17/83**
Napele Bousse	0	1	
Bekoudou	0	0	
Abel	0	0	
group total	**0**	**1**	**0/100**
Ndalboro Esaie	0	0	
Riagama Albert	0	0	
Aradjibe Salomon	0	0	
Boungang Etienne	0	0	
group total	**0**	**0**	**n/a**
TOTALS	1	6	14.2/85.8

Category 8b Chart of reading errors occurring on numeral segemnent - *bon + NUM*

	combined	*separate*	
Name	bonseɗe	bon say	percent

Category 9 High frequency hyphenated item *Mí + na + ay* chart

	separated	*combined*	
Name	mí na-ay	mínay/mí nay	percent
Nambay Jeremie	0	1	
Napele	0	1	
Amongou	0	3	
Sehoul Justin	1	1	
Sawmihri Benj.	2	2	
group total	**5**	**10**	**33/67**
Napele Bousse	0	0	
Bekoudou	2	0	
Abel	0	0	
group total	**2**	**0**	**100/0**
Ndalboro Esaie	0	0	
Riagama Albert	3	0	
Aradjibe Salomon	0	0	
Boungang Etienne	0	0	
group total	**3**	**0**	**100/0**
TOTALS	10	10	50/50

Amongou	0	3	
Sehoul Justin	0	0	
Sawmihri Benj.	0	1	
group total	**0**	**6**	**0/100**
Napele Bousse	0	1	
Bekoudou	0	1	
Abel	1	1	
group total	**1**	**3**	**25/75**
Ndalboro Esaie	0	0	
Riagama Albert	0	2	
Aradjibe Salomon	1	2	
Boungang Etienne	0		
group total	**1**	**4**	**20/80**
	2	13	13/87