

DOCUMENT RESUME

ED 282 427

FL 016 725

AUTHOR Larrimore, B., Ed.
 TITLE Papers in Literacy. Work Papers of SIL-AAB, Series B, Volume 12.
 INSTITUTION Summer Inst. of Linguistics, Darwin (Australia). Australian Aborigines Branch.
 REPORT NO ISBN-0-86892-316-8
 PUB DATE Dec 84
 NOTE 185p.
 PUB TYPE Collected Works - General (020) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC08 Plus Postage.
 DESCRIPTORS *Bilingual Instructional Materials; Creative Writing; *Creoles; Diagnostic Tests; Ethnic Groups; Foreign Countries; *Indigenous Populations; Language Research; Language Tests; *Literacy Education; Material Development; Orthographic Symbols; *Phonology; Reading Instruction; Reading Materials; Teacher Education; Uncommonly Taught Languages; Vowels
 IDENTIFIERS *Aboriginal People; Anindilyakwa; *Australia (Northern Territory); Kunbidji; Ndjebbana

ABSTRACT

Four papers relating to literacy education for Australian Aboriginal peoples are presented. "Testing Epenthetic Vowels in Anindilyakwa" by Velma J. Leeding reports on a study of Aboriginal perceptions of a short transitional vowel. In "Diagnostic Testing of the Anindilyakwa Orthography for Both Reading and Writing," Velma J. Leeding outlines the content and results of the tests designed to determine the viability of the Anindilyakwa orthography chosen by the Aborigines at Umbakumba, Groote Eylandt, Northern Territory. "Preparing Vernacular Beginning Reading Materials for the Ndjebbana (Kunbidji) Bilingual Education Program: Some Linguistic Aspects" by Graham R. McKay discusses linguistic issues in the development of instructional materials for a literacy program in Northern Territory schools. "Reports on Warlpiri Literacy Workshops" by Stephen M. Swartz describes a literacy teacher training program and a writers' workshop at Lajamanu, and includes materials from both programs. (MSE)

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PAPERS IN LITERACY

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DECEMBER 1984

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Series B Volume 12

PAPERS IN LITERACY

Editor: B. Larrimore

SUMMER INSTITUTE OF LINGUISTICS
AUSTRALIAN ABORIGINES BRANCH
DARWIN
DECEMBER 1984

NATIONAL LIBRARY OF AUSTRALIA

Cataloguing-in-publication Data

Papers in literacy.

Bibliography.

ISBN 0 86892 316 8.

1. Australian languages - Addresses, essays, lectures. 2. Linguistics - Australia - Addresses, essays, lectures. 3. Reading research - Australia - Addresses, essays, lectures. I. Larrimore, Bonnie. II. Summer Institute of Linguistics. Australian Aborigines Branch. (Series: Work papers of SIL-AAB. Series B; Volume 12).

499'.15



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ISSN 0157-5066
ISBN 0 86892 316 8

PREFACE

These Work Papers are being produced in two series by the Summer Institute of Linguistics, Australian Aborigines Branch, Inc. in order to make results of SIL research in Australia more widely available. Series A includes technical papers on linguistic or anthropological analysis and description, or on literacy research. Series B contains material suitable for a broader audience, including the lay audience for which it is often designed, such as language learning lessons and dictionaries.

Both series include both reports on current research and on past research projects. Some papers by other than SIL members are included, although most are by SIL field workers. The majority of material concerns linguistic matters, although related fields such as anthropology and education are also included.

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TESTING EPENTHETIC VOWELS IN ANINDILYAKWA

Velma J. Leeding

0. INTRODUCTION

A short transitional vowel occurs in Anindilyakwa following flap /ř/, retroflex /ɾ/ and alveolar /l/. It can be so short in the unstressed position that it has not been recorded as a phonetic variant or, with a change of stress/rhythm, can have the same [mora] of length as a full vowel.

[akářŋa ~ akaříŋa] 'teeth'

[yimúřŋ^wa ~ yimuřúŋ^wa] 'fruit (sp.)'

Difficulties have been experienced in determining whether all such

vowels have full phonemic status or are simply a phonetic transition between two consonants. Some of the Aborigines only accept one of the variants as the correct precise form but may use both, but not all speakers agree as to the precise form of specific words.

When the epenthetic vowel has not been written, some Aboriginal literates have had problems in reading the resultant series of consonants, especially when a series occurred more than once in a word. Miss Judith Stokes, C.M.S. linguist at Angurugu, noted that, in testing reading, the Aborigines there did not accept the inclusion of the vowel in a group of words with a possible epenthetic vowel. I have noted at Umbakumba that, when writing, if an Aboriginal failed to write the consonant grapheme which closes a syllable, the missing consonant plus a vowel was inserted when self-correcting.

Individual literate Aborigines at Umbakumba have been using different spellings of their own choice since 1977 but were taught the Angurugu spelling from 1975 to 1977. The Angurugu spelling of some words has been altered since 1975.

The purpose of this paper is to outline the methods of testing Aboriginal reactions to the epenthetic vowel and the interpretation of the results in relation to the phonological and morphological factors so that guidelines can be established for consistency in spelling. The orthography used throughout the paper is the current choice of the Umbakumba Aborigines and does not represent a one-to-one correspondence between phoneme and grapheme.

1. **TESTING METHODS**

Testing took place at Umbakumba over a period of 18 months. Four different tests were given, using either auditory discrimination or writing skills.

Method 1:

This test was administered in 1979. Sets of three or four "control" words were made to suit each word with a problem. Each problem word was added to two sets, viz. with the minimum number of syllables or the maximum number. The Aborigines were asked to listen to the set and state whether the last word "fitted" the set, i.e. had the same number of syllables. The test was based on auditory discrimination and patterning.

Method 2:

In the first half of 1980, 24 tests (377 words) were set up to cover the

whole orthographical system. Eleven "control" words where a full vowel occurred in the same position as an epenthetic vowel were included throughout and 53 words with an epenthetic-type vowel were tested in the last 15 tests.

The tests utilised writing skills. The testees were given the word, asked to pronounce it for themselves, and to fill in the missing part (see Appendix). The tests were designed so that the "part" to be written was either one or two syllables, or a part of a syllable. (A weakness in the test materials showed up later, viz. there should have been more "control" words where only a single grapheme was needed to complete the word.)

The tests were given over a period of 12 weeks. They were titled "Revision Lessons," and the Aborigines were told by the linguist that the aim was to check their spelling to see where more help was needed. The testees were not told which specific graphemes were being checked in each test but it was often deduced.

Method 3:

As Method 2 did not produce a consistent pattern, further testing was done as a separate exercise. In late 1980, an initial list of 47 words was compiled. Examples of "control" words and problem words were taken randomly from the dictionary and listed in alphabetical order. Each Aboriginal was tested individually.

The lists were typed out with the following caption: "How many syllables are in the following words? We can read the words in both spellings but there is a problem because we are not all spelling them the same way. Tick the way you would like to spell the word." This was followed by words listed with the two alternatives in spelling, together with the English meaning. (See Appendix, Table 1.) The original aim was to use the written form so that there would be no interference because of the pronunciation by the linguist. The method of administering the test did not prove to be satisfactory because the first testee did not use the skill of breaking words into syllables but examined the appearance of the two forms. The method was then changed to one of only auditory discrimination where the Aboriginal repeated the word, broke it aloud into syllables and counted them. (This technique was familiar because it is used in adult literacy classes.) The linguist then ticked the corresponding form.

In January 1981, Miss Judith Stokes supplied a list of a further 30 words of her choice. One word was deleted because it was not known/used at Umbakumba. Unfortunately, some of the flora and fauna words were not known by all testees and could not be included in the scores.

The number of syllables counted was accepted for scoring purposes, whether or not they accurately pronounced the closure each time. This was felt to be the more accurate way of evaluating their concept of the emic vowels.

Method 4:

The testing of epenthetic vowels was incorporated into the testing of the whole orthographical system in April and May 1981. Tests were developed along similar lines to those for diagnostic testing of English reading. In one section of the test, literates were required to write a list of 100 words which had been read onto cassette tape by a mature speaker of Anindilyakwa. "Control" words and "problem" words were scattered throughout the list.

2. **THOSE TESTED**

In Method 1, two literate Aborigines were tested before it was decided to disband this type of testing.

In Method 2, six literates were tested with ages ranging from 22 to 44 years of age.

In Method 3, there were eleven Aborigines selected to do the original test but only nine of these were available for the supplementary test. Some were fully literate in the vernacular but others were only in the process of becoming literate. All had done sufficient in auditory discrimination of syllables to be able to cope with the test. Ages ranged from 22 to 44 years of age.

In Method 4, five literates were tested with ages ranging from 24 to 37 years of age.

3. **RESULTS OF THE TESTING**

Method 1:

Anindilyakwa has a strong pattern of rhythm/stress/timing. It was found that, once this pattern was set up through the "control" words, the problem words were made to fit the pattern. Thus problem words were accepted in the two alternative sets. The testing method was considered to be unsatisfactory and was discontinued.

Method 2:

The scores for this method of writing the missing syllables are given on Table 2 (Appendix). The Table is divided into two major sections for

"control" versus "problem" words. The words are then grouped under the consonants contiguous to the possible epenthetic vowel. These groups are then classified as to whether the linguists recorded a full vowel, an epenthetic or zero. The scores for each word vary because some words were repeated and others were not known by all Aborigines.

A comparison of the scores in relation to the phonetic values assigned by the linguists is as follows:

- (a) where both linguists have recorded a full vowel the Aborigines included the vowel and were fully in agreement except in one word.
Score: 58/63 94%
- (b) where both linguists have not recorded a vowel the Aborigines tend to agree to its omission.
Score: 190/245 78%
- (c) where the linguists have recorded both or zero the Aborigines have a slight preference for its omission.
Score: 66/100 66%
- (d) where the linguists differ as to a vowel or an epenthetic
No examples

Method 3:

The scores are shown in Table 3 (Appendix) following the same format as previously.

As there is always a possibility that the order of the words could have influenced the choices, the scores are listed on Table 1. These indicate that the words were considered separately, with the possible exception that a pattern was set up for words beginning with 'y'. Looking at the individual tests, two literates had a strong tendency towards inclusion of the vowel, two towards its omission, but the other seven varied.

A comparison of the scores is as follows:

- (a) where both linguists have recorded a full vowel the Aborigines prefer to insert the vowel.
Score: 99/109 91%
- (b) where the linguists have not recorded a vowel the Aborigines prefer to omit one.
Score: 176/231 76%

- (c) where the linguists have recorded both or zero the Aborigines have a slight preference to insert a vowel.
Score: 199/324 61%
- (d) where one linguist has recorded a full vowel but the other hasn't the Aborigines prefer to insert the vowel.
Score: 53/66 80%

Method 4:

The scores for the method where the whole word was written are shown on Table 4 (Appendix) in the same format. Those Aborigines who had a strong tendency for or against the insertion of a vowel showed the same tendency here as in Method 3.

A comparison of the scores is as follows:

- (a) where both linguists record a vowel the Aborigines tend to insert the vowel.
Score 54/64 84%
- (b) where the linguists have not recorded a vowel the Aborigines have a strong tendency to omit it.
Score: 75/82 92%
- (c) where the linguists have recorded both or zero the Aborigines have shown no obvious preference for either its inclusion or omission. There is a slight preference for its insertion.
Score: 18/32 56%
- (d) No examples

4. COMPARISON OF METHODS

A comparison of the scores for the various methods is shown in the chart below. Methods 2 and 4 required writing skills but Method 3 only auditory discrimination skills. Note that the percentages in (a) and (d) refer to the insertion of a vowel but in (b) and (c) to the omission.

	CONTROL WORDS		PROBLEM WORDS	
	(a)	(b)	(c)	(d)
Method 2	94%	78%	66%	-
Method 3	91%	76%	39%	80%
Method 4	84%	92%	44%	-

In the Control words, there is little difference between Methods 2 and 3 but Method 4 yielded a significantly higher percentage of omissions of the epenthetic vowels. In the Problem words, Method 2 shows a higher percentage for the omission of epenthetic vowels. It would seem, therefore, that the methods using writing skills show greater omission of the vowel than the method using only auditory discrimination skills. It must be remembered, however, that those taking the written tests were fully literate and more experienced in handling the orthography than some of those taking the auditory test.

A more concise way of making a comparison between the methods is to limit it to only those words which appear on more than one list. The details are shown on Table 5 (Appendix) where the words are listed according to the groups for scoring.

	CONTROL WORDS		PROBLEM WORDS	
	(a)	(b)	(c)	(d)
Method 2	100%	90%	65%	-
Method 3	100%	81%	42%	91%
Method 4	90%	95%	58%	100%

In both the Control and Problem words, Methods 2 and 4 have shown higher percentages of omission of the epenthetic vowel than Method 3. This correlates generally with the previous chart but the differences in percentages are more marked.

5. ANALYSIS OF RESULTS.

It is obvious from the scores that, where the linguists are most confused, so are the Aborigines. While it would be easy to say that the problem lies in the teachers' insecurity being transferred to the students, it is also possible that the structure of the language is a source of the problem. The possible factors have been investigated as applied to the larger test using Method 3. Methods 2 and 4 show a stronger tendency for the Aborigines to omit the epenthetic vowels. Remarks cover only those words where an epenthetic is involved, unless otherwise stated.

(i) The Factor of Stress

The epenthetic vowel is sometimes optionally stressed and lengthened to a full vowel. Were vowels inserted in this position? The general rule

for word stress is that primary stress falls on the penultimate syllable. It was anticipated that this would be a likely place for the insertion of the vowel.

In the three words where an optional vowel occurs in the stressed syllable, a vowel was inserted in only 38% of the occurrences.

Where an epenthetic vowel was recorded in thirteen words but was unstressed, testees inserted the vowel 76% of the time.

As the vowels were inserted only half as many times for the optional full, stressed vowel as for the unstressed epenthetic, it seems unlikely that stress and its resultant lengthening of the vowel are criteria for decision-making.

(ii) The Factor of Rhythm/timing

The rhythm and timing of utterances is always maintained and syllables seem to be inserted or deleted in order to maintain that rhythm. While the system is not fully analysed, pairs of words with similar rhythm patterns have been compared. These were selected randomly and are listed below.

	Vowel Inserted	Vowel Omitted
<i>awarr*walya</i>	6	5
<i>ayarr*murra</i>	6	5
<i>ngarrabuwarr*kina</i>	4	8
<i>ayangkidirr*bura</i>	2	8
<i>mar*mba</i>	8	1
<i>mar*nja</i>	4	5
<i>yarr*kaliwa</i>	9	2
<i>yarr*kwumarnda</i>	7	2
<i>yarr*buwa</i>	10	1
<i>yarr*milya</i>	10	1
<i>yilarr*banda</i>	2	8
<i>dimirr*mala</i>	8	3
<i>yingarr*banla</i>	1	4
<i>yirarr*nganja</i>	4	5

In four pairs out of the seven, the two words show a similar ratio but in three they do not. The differences are great enough to indicate that this factor is not a strong criterion in making decisions.

(iii) Number of Syllables

This criterion is closely linked to that of rhythm/timing. Have the testees made their decisions because of a preference for an even or odd number of syllables in the word?

The following statistics show the scores for each set of words in terms of their preference for the maximum number of syllables.

2 → 3	(98/129)	76%
4 → 5	(78/155)	50%
6 → 7	(31/110)	28%
3 → 4	(66/165)	33%
5 → 6	(29/67)	43%

These results do not actually show a preference for either odd or even number of syllables but they do show that the Aborigines are most likely to add a vowel in short words. The average length of a word is three to six syllables.

(iv) Consonant Clusters

The structure of the language permits a syllable to be closed by one or two consonants, thus making a possible sequence of three consonants. Has a potential sequence of three consonants influenced their decision?

In 11 words where the omission of a vowel creates a tri-cluster, the vowel was omitted in 47% (60/127). This suggests that the complexity of a string of consonants is not in focus.

(v) Preceding Consonant

Have the literates been influenced by the phonetic quality of the consonant preceding the epenthetic?

Scores for the omission of the vowel are as follows:

Following	rr	(249/510)	49%
	r	(55/91)	60%
	l	(22/42)	52%

As the results are fairly consistent, the preceding consonant does not appear to be influencing decisions.

(vi) Following Consonant

Has the phonetic nature of the following consonant influenced decisions? Were more vowels inserted if the following consonant was a continuant rather than a stop?

Scores for the omission of the vowels are as follow:

		<u>pre-stop</u>		<u>pre-continuant</u>	
Following	rr	(147/259)	67%	(101/248)	41%
	r	(8/9)	90%	(48/97)	50%
	l	(21/31)	68%	(1/11)	9%

More vowels were omitted preceding stops than continuants. Decisions do seem to have been based to some extent on a preference for the vowel before continuants.

(vii) Morpheme Boundaries

Was a vowel always inserted at a morpheme boundary? There are two types of morphemes involved in the tests for which the rules for syllable deletion vary, viz. a juncture formed by a root/stem and its affixation, versus two morphemes which form a compound stem. In the first type a full vowel can be reduced to an epenthetic but in the second the syllable /ki/ is deleted under certain rules creating the sort of consonant sequence where an epenthetic is likely to occur.

In the list of Control words, all those where the linguists recorded a vowel were of the first type. The Aborigines included the vowel 90% of the time. In the list of Control words where a vowel was not recorded by linguists, the Aborigines omitted the vowel 83% (5/6) of the time—these were of the second category. Problem words are only available for the second category for which Aborigines omitted the vowel 61% (19/31) of the time.

The results show that where the linguists have written a vowel between a root and its affixation, the Aborigines agree. The problem area is in the situation where a syllable is deleted in a compound stem. It would appear that some of the Aborigines react to the syllable which has been deleted by writing a vowel but it should be noted that no Aboriginal inserted the full syllable. (In some compound stems the rule to delete /ki/ is obligatory but in others it is optional.)

(viii) Phonetic Realisation of a Full Vowel or Epenthetic

The results show that, when a full vowel is heard, the Aborigines mostly hear it and write it (average score 90%). When an epenthetic is not heard by the linguists, the Aborigines usually omit it (average 82%).

When the linguists record an epenthetic and zero, the Aborigines are in a state of indecision. The linguists mostly write \emptyset in this situation but there is a significant lack of consistency. The Aborigines have omitted the vowel on an average of 50%.

When one linguist has recorded a full vowel and the other has not, there is an average of 80% for the Aborigines in inserting a vowel. Looking at the specific words, however, shows that the Aborigines agree with each linguist about half of the time.

It does seem that the phonetic nature of the vowel is influencing the decisions in that full vowels are usually identified as such.

6. CONCLUSION

There are apparently three factors which have tended to influence the Aborigines in making their decisions.

(i) Following Consonant

The phonetic nature of the continuant, rather than the stop, has influenced some Aborigines to insert a vowel, but the scores are not high enough for this to be used as a criterion for spelling.

(ii) Morpheme Boundaries

Where the morpheme boundary occurs between a root/stem and an affix, the scores of the Aborigines are high enough to indicate that this vowel should always be written. Most of these words were included in the Control Group because the linguists have always heard and written the vowel, e.g. *yirri-nga* 'we'. The tests corroborate the present orthography.

The more difficult problem is where there is a morpheme juncture within a stem. Most stems have long and short forms when the root is an adjective or a verb, e.g. *a-jalki-ngburingka* ~ *a-jalk-buringka* 'dry (of a place)'. In some nouns, only a short form appears to be used, e.g. *a-larr-mur.da* 'dusk' where the first morpheme of the stem is *-larrki-*. Anindilyakwa has long and short forms of quite a lot of words with some

Aborigines only using the short forms. Where a syllable is optionally deleted, the normal practice is to allow the literate to spell according to both long and short forms. If this practice is extended to cover the deletion of a syllable which results in a possible epenthetic, the vowel would not be written. Such a decision, however, is based on the structure of the language because the test scores do not give a definite conclusion.

(iii) Phonetic Realisation

The Aborigines, like the linguists, have leaned heavily on the pronunciation to determine the emic nature of the vowel. While there is confusion and indecision shown in the scores, it is also apparent that where a full vowel occurs there is much less indecision. It would appear that the best system would be to write only the full vowels and to omit the vowel wherever an epenthetic occurs without variation with a full vowel.

It should also be noted that there has been very little inconsistency in the linguists' writing of the full vowel. The problem with the epenthetic has arisen because of a lack of consistency in pairs of words which are phonetically the same but have been spelt differently, e.g.

[yaɻ ^ə ŋa]	<i>yarrnga</i>	'leech'
[maɻ ^ə ŋa]	<i>marringa</i>	'sleep'
[dimiɻ ^ə marə]	<i>dimirmara</i>	'sandfly'
[diɻ ^ə malə]	<i>dirrimala</i>	'wind'

This has led to conflict and insecurity. Some Aborigines seem to have chosen one as the norm while others chose the other, but most have been generally confused. This confusion seems to have been extended into other words where the epenthetic follows /r/ and where spelling has been consistent.

Because there is confusion, it would seem wisest to make a decision on both the structure of the language (linguistic) and on the contrast in scores between a full vowel and a problem vowel (tests). It is concluded that:

(a) Control words in Group (a) should be written with a vowel but some words from Group (d) should also be included, e.g. *yarrimilya* 'coral'.

(b) Control words in Group (b) should continue to be written without a vowel, e.g. *arrkwara* 'worm'.

(c) Problem words where the linguist hears either zero or an epenthetic are in contrast with the full vowels and should be written without a vowel, e.g. *marrnga* 'sleep', *awarrwalya* 'shade'.

Having made such decisions, language data was again checked. Minimal contrasts were found to be maintained:

<i>darrba</i>	'trepan'
<i>darriba</i>	'stingray'
<i>amaringka</i>	'edible roots'
<i>amarngka</i>	'laugh'

It was also found that, with the writing of *marrnga* 'sleep' without a medial vowel, the optional form of the root correlated with other words where the consonant cluster /rrng/ is reduced to /n/ preceding a stop, e.g. *la-marrng-bujina* ~ *la-man-bujina* 'to sleep well'.

Where a vowel is inserted or deleted to maintain the rhythm of the sentence, rules are tentatively stated as:

(i) an emic vowel can be reduced to an epenthetic when it occurs in an unstressed position, usually antepenultimate.

(ii) an epenthetic vowel (non-phonemic) can be lengthened to a full vowel when it falls in the penultimate syllable. This is rare and the resultant vowel is not phonemic. If the maintenance of the rhythm requires the addition of a syllable, it seems to occur at the places where there is usually an epenthetic.

The above rules must be applied systematically to all data so that the Aborigines can begin to be systematic also. It is highly likely that some will react to a change in a common word which they have learned to spell in a certain way. It has been found, however, that if these words are not focused on, the change comes automatically once a strong pattern has been established in phonics. Both linguists have a few words which will need to be altered.

After the above system was set up, the words were grouped and shown to the Aborigines. For words where the linguists disagreed between the presence or absence of a full vowel, the Aborigines were asked individually to place them into one of the existing groups. (This did not duplicate the problems of Method 1 because no rhythm pattern was set up.) There was agreement. Table 6 lists the words in the suggested orthography.

APPENDIX

REVISION LESSON 10

ngarra _____ ngina

arung _____ kwa

naning _____ ka

ma _____ milya

a _____ ma

yini _____ ka

mang _____ kwa

ami _____ ngwa

_____ nga

yi _____ ngwa

nu _____ ka

nga _____ kinama

na _____ ka

_____ ma

_____ nga

ngarriki _____ ka

TABLE 1: DESIGN OF THE AUDITORY DISCRIMINATION TESTING

Original List

akarringa	akarrnga	teeth	3:8
alarrikbulala	alarrkbulala	thin	4:7
alyarrimur.da	alyarrmur.da	dark	2:9
alarringkawarriya	alarrngkawarriya	tatty	2:9
alyikarribilyirra	alyikarrbilyirra	slippery	1:10
ambarringarna	ambarrngarna	how many	4:7
amurrikbalya	amurrkbalya	soft	7:4
arngkiringkawura	arngkirngkawura	sometimes	5:15
awarriwalya	awarrwalya	shade	6:5
ayangkidirribura	ayangkidirrbura	level	2:8
ayarrimurra	ayarrmurra	arm	6:5
ayilibiyiliba	ayilbiyilba	scrub	0:10
ayirribiyirra	ayirrbiyirra	continuous	1:10
angkibarringwarringwa	angkibarrngwarringwa	heavy	2:8
balimarna	balmarna	hat	10:1
darriyiba	darriba	slug	5:5
darriba	darrba	stingray	8:3
dimarringa	dimarrnga	cricket	7:4
dimirrimara	dimirrmara	sandfly	8:3
dimirrimala	dimirrmala	wind	8:1
mamirrikwura	mamirrkwura	rib	7:4
marribura	marrbura	scorpion	11:0
marringa	marrnga	night	9:2
mijirrikwudarrba	mijirrkwudarrba	pool	3:8
milarringkwa	milarrngkwa	berry	5:6
milyirrikwa	milyirrkwa	hibiscus	1:10
mulikwa	mulkwa	stomach	6:5
ngarrabuwarrikina	ngarrabuwarrkina	hide	4:8
ngarribarrikwudina	ngarribarrkwudina	go a little way	4:6
nidirriburakina	nidirrburakina	straighten	3:8
nijarridina	nijarrdina	finish	10:1
ngarrimurmuringkina	ngarrimurmurngkina	understand	8:3
niyirrimana	niyirrmana	swim	5:6
nanakarringina	nanakarrngina	get water	9:2
yambirrikwa	yambirrkwa	fish	3:8
yarrida	yarrda	rash	10:1
yarribuwa	yarrbuwa	cuttlefish	10:2
yarrikaliwa	yarrkaliwa	shell	9:2
yarrima	yarrma	fish	9:1
yarrimilya	yarrmilya	coral	10:1
yarringa	yarrnga	leech	10:1
yilarribanda	yilarrbanda	snake	2:8
yiliba	yilba	root	4:6

yimurringwa	yimurrngwz	prune	6:5
yinikarrika	yinikarrka	hawk	3:8
yirringa	yirrnga	we	10:1
yirrima	yirrma	gum	9:0

Supplementary List

adarriba	adarrba	short	0:9
amaringka	amarngka	laugh	1:8
aringkawa	arngkawa	wise	9:0
arrida	arrda	rash	7:2
arrikwara	arrkwara	worm	6:3
dirrikba	dirrkba	plover	8:1
arribilya	arrbilya	sickness	5:1
karriba	karrba	turtleshell	6:0
mangkarrika	mangkarrkba	plum	2:6
marimba	marmba	palm	8:1
marinja	marnja	bees' eggs	4:5
marringmur.da	marrngmur.da	currant	8:1
marrikwurra	marrkwurra	fish	9:0
munginjarrikwa	munginjarrkwa	shell	6:3
murikwarringa	murikwarrnga	spear	5:2
yarrikwumarnda	yarrkwumarnda	shell	7:2
yikariba	yikarba	woomera	1:8
yilarriba	yilarrba	palm	0:9
yilikarinja	yilikarnja	shell	5:1
yilyikarrimur.da	yilyikarrmur.da	flyingfox	4:5
yimalyarribirra	yimalyarrbirra	shell	3:2
yimurribunga	yimurribunga	shark	1:1
yimurriminya	yimurriminya	mussel	1:2
yingarribanja	yingarrbanja	limpet	1:4
yingkarima	yingkarma	skink	1:5
yinibarringinja	yinibarrnginja	gum tree	5:4
yirarringanja	yirarrnganja	paperbark	4:5
yirinjirra	yirnjirra	fish	2:7
yirimba	yirmba	seagull	4:3

N.B. The numbers shown in the final column were added after the tests were completed. These are the scores for the Aborigines, e.g. akarrVnga 'teeth' where 3 included the vowel and 8 omitted it.

NOTATIONS USED IN TABLES 2-5:

- * the position of the vowel under discussion
 - ∅ zero, where no vowel was written or inserted phonetically
 - () optional
 - both where the linguists recorded an absence of a vowel or an epenthetic
 - MP the vowel under discussion is at the boundary of morphemes
 - V a full vowel has been recorded, identified or written
- Where the total number of responses recorded for a word exceeds the number of test participants, this indicates the word was used more than once in the tests.

TABLE 2: SCORES BASED ON METHOD 2

1. Control Words

	<u>Aborigines</u>		<u>Linguists</u>	
	<u>v</u>	<u>∅</u>		
<u>rr + stop</u>				
wumarr*bina	1	5	v	v
narr*karrina	5	0	v	v
<u>rr + nasal</u>				
naniyarr*ngka	6	0	v	v
ngarrirr*ngkina	6	0	v	v
<u>r + stop</u>				
kwur*ba	8	0	v	v
<u>r + nasal</u>				
ar*ngka	6	0	v	v
ar*ngmarra	6	0	v	v
<u>l + stop</u>				
al*ka	6	0	v	v
angal*ba	8	0	v	v
<u>l + nasal</u>				
kwul*nga	6	0	v	v

<u>rr + stop</u>				
ayirr*biyirr*ba	1	11	0	0
murirr*ba	2	4	0	0
alarr*kbulala	1	5	0	0
amaburr*kwakbala	1	4	0	0
aringkwarr*kwa	2	4	0	0
dikwurirr*kwa	3	3	0	0
mangkarr*kba	1	5	0	0
mangkwurr*kwa	1	5	0	0
naningkwarr*ka	2	4	0	0
nawarr*ka	1	5	0	0
ningwarr*ka	1	5	0	0
niribarr*ka	2	4	0	0
ngarrarr*kinama	3	3	0	0
ngarrikilarr*ka	2	4	0	0
ngarrilarr*kbalkina	0	6	0	0
yinikarr*ka	1	5	0	0
<u>rr + nasal</u>				
akwularr*mbarrina	1	5	0	0
alirr*ma	2	4	0	0
malyirr*milya	2	4	0	0
nimularr*mbarrina	0	6	0	0
akiwabarr*ngwarr*ngwa	5	5	0	0
alarr*ngkwularrngkwala	3	9	0	0
amulirr*ngwa	2	4	0	0
arr*ngka	5	0	0	0
<u>r + stop</u>				
abiyar*buwa	0	6	0	0
abiya (r) karbiya	0	6	0	0
naningkwarr*ba	0	8	0	0
yikar*ba	2	5	0	0
<u>r + nasal</u>				
angar*mungkwa (MP)	0	8	0	0
ar*mbulirra	0	6	0	0
awar*mbuwar*mba	0	12	0	0
yilikar*mba	0	6	0	0
yir*njirra	0	6	0	0
amar*ngilyarra	2	6	0	0
ar*ngkawura	3	3	0	0
ar*ngkaywaya	1	5	0	0
ar*ngkirra	3	3	0	0
marngkir*ngkiwilyarra	0	6	0	0

2. Problem Words

<u>rr + stop</u>			
nikwuyarr*baja	0	6	both both
wurriburr*ba	2	4	both both
dirr*kba	4	2	both ∅
yambirr*kwa	3	7	both ∅
<u>rr + nasal</u>			
alarr*mur.da (MP)	1	5	both ∅
yirr*ma	2	3	both ∅
akarr*nga	2	4	both ∅
marr*nga	3	3	both both
ngarrakarr*ngina	4	2	both ∅
yarr*nga	7	5	both ∅
yimurr*ngwa	2	4	both ∅
<u>r + nasal</u>			
mar*mba	0	6	both ∅
yir*mba	2	4	both both
mir*ngkirra	2	3	∅ both
yibur*ngkibur*ngkirra	0	8	∅ both

TABLE 3: SCORES BASED ON METHOD 3

1. Control Words

	<u>Aborigines</u>		<u>Linguists</u>	
	<u>v</u>	<u>∅</u>		
<u>rr + stop</u>				
arr*bilya (MP)	5	1	v	v
darr*ba	10	0	v	v
karr*ba	6	0	v	v
marr*bura	11	0	v	v
marr*kwurra	9	0	v	v
munginjarr*kwa	6	3	v	v
nijarr*dina (MP)	10	1	v	v
yarr*buwa	10	2	v	v
<u>rr + nasal</u>				
yirr*nga (MP)	10	1	v	v
marr*ngmur.da	8	1	v	v

<u>r + nasal</u>				
ar*ngkawa	9	0	V	V
yilkar*nja	5	1	V	V

<u>rr + stop</u>				
adarr*ba	0	9	∅	∅
alyikarr*bilyirra (MP)	1	10	∅	∅
ayirr*biyirr*ba	1	10	∅	∅
yilarr*ba	0	9	∅	∅
yingarr*banja	1	4	∅	∅
alarr*kbulala	4	7	∅	∅
arr*kwara	6	3	∅	∅
mangkarr*kba	2	6	∅	∅
mijirr*kwudarrba	3	8	∅	∅
milyirr*kwa	1	10	∅	∅
ngarrabuwarr*kina	4	8	∅	∅
ngarribarr*kwudina	4	6	∅	∅
yinikarr*ka	3	8	∅	∅

<u>rr + nasal</u>				
niyirr*mana	5	6	∅	∅
alarr*ngkawarriya	2	8	∅	∅

<u>r + stop</u>				
yikar*ba	1	8	∅	∅

<u>r + nasal</u>				
yingkar*ma	1	5	∅	∅
mər*nja	4	5	∅	∅
yir*njirra	2	7	∅	∅
amar*ngka	1	8	∅	∅
ar*ngkir*ngkawura	5	15	∅	∅

<u>l + stop</u>				
ayil*biyil*ba	0	10	∅	∅
yil*ba	4	6	∅	∅

2. Problem Words

<u>rr + stop</u>				
ayangkidirr*bura	2	8	both	∅
darr*ba	8	3	both	∅
nidirr*burakina	8	3	both	∅
yilarr*banda	2	8	both	∅
yimurr*bunga	1	1	both	both
yarr*da	10	1	both	both

arr*da	7	2	both	both
amurr*kbalya	7	4	both	∅
dirr*kba	8	1	both	∅
mamirr*kwura	7	4	both	∅
yambirr*kwa	3	8	both	∅
yarr*kaliwa	9	2	both	both
yarr*kwumarnda	7	2	both	∅

rr + nasal

alyarr*mur.da (MP)	2	9	both	∅
ayarr*murra (MP)	6	5	both	∅
dimirr*mara	8	3	both	∅
yilyikarr*mur.da (MP)	4	5	both	∅
yimurr*minya	1	2	both	∅
yirr*ma	9	0	both	∅
akarr*nga	3	8	both	∅
ambarr*ngarna	4	7	both	∅
angkibarr*ngwarr*ngwa	2	8	both	∅
dimarr*nga	7	4	both	both
marr*nga	9	2	both	both
milarr*ngkwa	5	6	both	∅
murikwarr*nga	5	2	both	∅
nanakarr*ngina	9	2	both	∅
yarr*nga	10	1	both	∅
yimurr*ngwa	6	5	both	∅
yirarr*nganja	4	5	both	∅

rr + w

awarr*walya	6	5	both	both
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r + nasal

mar*mba	8	1	both	∅
yir*mba	6	3	both	both

l + stop

mul*kwa	6	5	both	∅
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rr + stop

yima(l)yarr*birra	3	2	v	∅
-------------------	---	---	---	---

rr + nasal

dirr*mala	8	1	both	v
yarr*ma	9	1	both	v
yarr*milya	10	1	v	both
yinibarr*nginja	5	4	∅	v

<u>r + nasal</u>				
ngarrimu(r)mur*ngkina	8	3	∅	v
<u>l + nasal</u>				
bal*marna	10	1	v	both

TABLE 4: SCORES BASED ON METHOD 4

1. Control Words

	<u>Aborigines</u>		<u>Linguists</u>	
	<u>v</u>	<u>∅</u>		
<u>rr + stop</u>				
arr*baja (MP)	5	0	v	v
naniwarr*bikina	4	1	v	v
nara ayakiwarr*bikima	4	0	v	v
warningwarr*birra (MP)	3	2	v	v
dakwarr*kwarra (MP)	3	2	v	v
marr*kwurra	4	1	v	v
nakbilyarr*kayina	4	1	v	
yingarr*kwulina	3	2	v	
<u>rr + nasal</u>				
naniyarr*ngka	5	0	v	v
yirr*ngakburrangina (MP)	5	0	v	v
yirr*(ng)wanja	5	0	v	v
mamurr*(nyi)nya	4	1	v	v
<u>rr + w</u>				
nikadirr*warnima	5	0	v	v
<u>rr + stop</u>				
akilyarr*ba	1	3	∅	∅
niwamburr*bijanga	0	5	∅	∅
yilarr*ba	0	5	∅	∅
dilarr*kbulala	0	5	∅	∅
nanirndirr*ka	0	3	∅	∅
<u>rr + nasal</u>				
nilarr*mburrana	0	5	∅	∅
yilarr*ngkwuwarra	0	5	∅	∅

<u>r + nasal</u>				
awar*mbuwar*mba	1	9	∅	∅
dimar*ngkambilyima	1	4	∅	∅
namar*ngkinama	1	4	∅	∅
<u>l + stop</u>				
maburambal*ba	1	4	∅	∅
wal*balbarrija	1	4	∅	∅
mal*dabirra	0	5	∅	∅
nara al*dadangima	1	2	∅	∅

2. Problem Words

<u>rr + stop</u>				
mamalarr*birra	3	2	both	∅
ngarrikwuyarr*ba	1	4	∅	both
<u>rr + nasal</u>				
dimirr*mara	3	2	both	∅
nara akbikbarr*ngwuma	3	2	both	∅
yimurr*ngwa	1	1	both	∅
yimudirr*ngwa	2	3	both	
<u>l + nasal</u>				
bal*marna	5	0	V	both

TABLE 5: COMPARISON OF SCORES FOR THE SAME WORDS TESTED BY DIFFERENT METHODS

1. Control Words

	Method 2		Method 3		Method 4	
	V	∅	V	∅	V	∅
<u>V recorded</u>						
ar*ngkawa	6	0	9	0	-	-
marr*kwurra	9	0	-	-	4	1
naniyarr*ngka	6	0	-	-	5	0
<u>V omitted</u>						
alarr*kbulala	1	5	4	7	0	5
awar*mbuwar*mba	0	12	-	-	1	9
ayirr*biyirr*ba	1	11	1	10	-	-

mangkarr*kba	1	5	2	6	-	-
yikar*ba	2	5	1	8	-	-
yilarr*ba	-	-	0	9	0	5
yinikarr*ka	1	5	3	8	-	-
yir*njirra	0	6	2	7	-	-

2. Problem Words

Both or ∅

akarr*nga	2	4	3	8	-	-
alarr*mur.da	1	5	2	9	-	-
dimirr*mara	-	-	8	3	3	2
dirr*kba	4	2	8	1	-	-
mar*mba	0	6	2	7	-	-
marr*nga	3	3	9	2	-	-
ngarrikwuyarr*ba	0	6	-	-	1	4
yambirr*kwa	3	7	3	8	-	-
yarr*nga	7	5	10	1	-	-
yimurr*ngwa	2	4	6	5	1	1
yirr*ma	2	3	9	0	-	-
yir*mba	2	4	6	3	-	-

V or ∅

bal*marna	-	-	10	1	5	0
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TABLE 6: SUGGESTED SPELLING

1. Words With Phonemic Vowels

Most of these words are from the Control group (a) but some problem words have been added. Group (d) words are marked ***.

rr + stop

arribilya
darriba
karriba
marribura
marrikwurra
marringmur.da
muginjarrikwa
nijarridina
yarribuwa
wumarribina***

rr + nasal

yarrimilya***

r + nasal

aringka-wa
aringmarra
yilikarinja

l + nasal

balimarna***

2. Words Where The Epenthetic is not Emic and is Omitted

Some of these words are from the Control Group (b) but many others are added. Group (c) words are marked ** and Group (d) as ***.

rr + stop

adarrba
alarrkbulala
alyikarrbilyirra
amaburrkwakbala
amurrkbalya**
arrda**
arrkwara
a (wu) ringkwarrkwa
ayangkidirrbura**
ayirribiyirra
darrba**
dikwurirrkwa
dirrkba**
mamirrkwura**
mangkarrkba
mangkwurrkwa
mijirrkwudarrba
milyirrkwa
murirra
nankingangwarrka
nawarrka
nidirrburakina**
nikwuyarrbaja**
ningwarrka
niribarrka
ngarrabuwarckina
ngarrarrkinama
ngarribarrkwudina
ngarrikilarrka
ngarrilarrkbalkina
wurriburra
yambirrkwa**
yarrda**
yarrkaliwa**
yarrkwumarnda**
yilarrba
yilarrbanda**
yima (l) yarrbirra**
yingarrbanja
yinikarrka

rr + nasal

akarrnga**
akiwabarrngwarrngwa
akwularrmbarrina
alarrngkwawarriya
alarrngkwularrngkwala
alirra
ambarrngarna**
amilyirngwa
arrngka
ayarrmurra**
al (y) arrmur.da**
angkibarrngwarrngwa**
dimarrnga**
dirrmala***
dimirrmara**
malyirrmilya
marrnga***
milarrngkwa**
murikwarrnga**
nanakarrngina**
nimularrmbarrina
niyirmana
ngarrakarrngina**
yarrma**
yarrnga**
yilyikarrmur.da**
yimurrbunga**
yimurrminya**
yimurrngwa**
yinibarrnginja***
yirarrnganja**
yirra**

rr + semi-consonant
awarrwalya**

r + stop
abiya (r)karbiya
abiyarbuwa
naningkwarba
yikarba

r + nasal
amarngka
amarngilyarra
angarmungkwa
arbulirra
arngkawura
arngkayiwaya
arngkirngkawura
arngkirra
awarumbuwarmba
marmba**
marnja
marngkirngkiwilyarra
mirngkirra**
ngarrimu (r)murngkina***
yiburngkiburngkirra**
yilikarmba
yingkarma
yirmba**
yirnjirra

l + stop
ayilbiyilba
mulkwa**
yilba

WORK PAPERS OF SIL-AAB
Series B Volume 12
December 1984

**DIAGNOSTIC TESTING
OF THE
ANINDILYAKWA ORTHOGRAPHY
FOR BOTH
READING AND WRITING**

Velma J. Leeding

0. INTRODUCTION

The purpose of this paper is to show the content and results of the tests set up to determine the viability of the Anindilyakwa orthography chosen by the Aborigines at Umbakumba, Groote Eylandt, Northern Territory.

The testing was done in April and May 1981, and examined and documented by August of that year. The author has been employed by the Department of Education, Northern Territory, as linguistic adviser for the Groote Eylandt bilingual program since 1974. A copy of the complete testing and marking, with tapes, is being filed with the Australian Institute of Aboriginal Studies, Canberra.

The paper consists of sections outlining the way the diagnostic tests were compiled and administered, the scores for both reading and writing, and the conclusions about the orthography based on those results. Even though the focus was on testing the orthography, the interpretation of other miscues was handled and is included in the paper in order to show that all errors have been covered. A list of linguistic notations and terms used in this paper is given in the first part of the Appendix.

0.1 HISTORY OF THE ORTHOGRAPHY DEVELOPMENT

In 1972, the linguist at Angurugu developed an orthography which was later taught to Teaching Aides in the Angurugu school by the literacy worker. In 1974, when I checked the literacy skills of these Aides working in the bilingual program, I discovered that there were constant errors in the spelling of the vowels and some consonants. The literacy worker's evaluation of the problem was that the course had been too fast and that more practice was needed. The orthography continued to be used in the Angurugu School but, again in 1976, the non-Aboriginal teachers in the bilingual program reported to me that the Aboriginal Teaching Aides still could not spell accurately and consistently and, therefore, were not really competent to teach vernacular literacy to the children. At that time, for this and other reasons, the bilingual program at Angurugu was suspended.

In 1975, I began teaching vernacular literacy classes with the Aboriginal Teaching Aides at Umbakumba, using the Angurugu primers. It was observed in 1976 that, after months of daily practice, the Aides could not spell the vowels and peripheral consonants with consistency. As a linguist, I found that, in applying the phonological rules as stated, I could not spell consistently within my own data or with that of the Angurugu linguist.

In 1976/7, the Aborigines at Umbakumba were encouraged to write whatever they felt was correct while I reconsidered the analysis. At the end of 1977, the orthography was revised in accordance with new linguistic insights after discussion with the Aborigines and the Angurugu linguist and literacy worker. It was known at that time that there were still residual problems in the analysis and that more work had to be done on it. The changes were instituted for both communities but the decision was partially rescinded at Angurugu six months later during my absence from Groote Eylandt.

Upon my return in 1979, the Department of Education ruled that the status quo, as of mid-1977, was to be used in both communities while further testing and analysis was done. It was, therefore, extremely difficult for the Umbakumba Aborigines to become consistent in any

orthography when two different ones were in circulation, viz. previously-printed school literature and teaching notes in the mid-1977 one, and church literature from Angurugu utilising some of the late-1977 modifications. Their own choice of orthography was discussed and practised for not more than one hour per week on a casual basis and almost no literature produced at Umbakumba. Some minor changes continued at Angurugu as the linguist revised her analysis.

Testing of different aspects of the orthography was done at Umbakumba between August 1980 and May 1981. The results of the final comprehensive test are examined in this paper. At a formal meeting in December 1981, nine literate Aborigines agreed to a limited amount of over-differentiation in the vowels in order to accommodate the Angurugu people. In all but possibly one instance, the literate Aborigines were correct in their perception of contrastive sounds. The residual problems in my phonological analysis were resolved in August 1981, largely due to insights gained in these discussions.

0.2 THE ORTHOGRAPHY

The language, Anindilyakwa, has a primary dichotomy of rounded versus unrounded in the consonants, and high versus low tongue height in the vowels.

The symbols have not changed since its inception in 1972 except for the use of 'k' instead of 'g' in order to give more contrast in the shape of words. The orthography utilises single graphs, digraphs and trigraphs, all of which are called graphemes in this paper. The choice of graphemes was based on those listed in Leeding and Gudschinsky (1974). The phoneme and grapheme equivalents are:

<u>Phoneme</u>	<u>Grapheme</u>
Stops:	
p, p ^w	b
t, t	d
ɬ	j
ʈ	rd
k	k
k ^w	kw

Nasals:

m, m ^w	m
n̄, n	n
ñ	ny
ṅ	rn
ŋ	ng
ŋw	ngw

Other consonants:

l̄, l	l
l̄j	ly
l̄	rl
ř	rr
r̄	r
y	y
w	w

Vowels:

i [i, i, u]	i, u
a [e, a, ɔ]	a

Spelling conventions reduce the number of letters in some consonant clusters or allow contrastive clusters to be represented in the orthography.

/ñt̄/	nj
/l̄j̄/	lj
/ṅt̄/	rnd
/r̄t̄/	r.d

A hyphen is used between the root/stem and suffix to break words into smaller parts and to facilitate sight recognition of recurring suffixes. An early attempt to place a hyphen between prefixes and the root/stem did not prove to be satisfactory. The Aborigines had to be able to handle word-derivations before being able to apply the spelling convention. There seems to be, however, an innate ability to recognise the suffix as optionally added to the basic part. For this reason the

hyphen is not used on verbs which have obligatory suffixation.

There is under-differentiation in the consonants, viz. one symbol is used for each pair of alveolar and dental phonemes because one of each pair has a low functional load or occurs mainly in loan words; and one symbol has been used for each pair of rounded and unrounded labial consonants because most of the Aboriginal literates felt it was too late to change (some people who read only by sight might be upset). The Angurugu and Umbakumba orthographies both use these symbols but the Angurugu linguist does not have the rounded labials as contrastive in her analysis.

In all other cases there is a one-to-one correspondence between the consonant phoneme and the grapheme. Ease of transition into English is maximal given the difference in the structures of the languages and their phonetics.

There is over-differentiation in the vowels. The allophone [u] was retained because the Aborigines were seeking a compromise with the Angurugu orthography where /u/ is considered to be phonemic. They felt that, with their experience in speaking and writing English, they could cope with writing /i/ as 'u' in a restricted environment. They chose to write 'u' within the syllables, i.e. following /m^w, p^w, k^w, ŋ^w, w/ as 'mu, bu, kwu, ngwu, and wu' respectively. The one exception to this rule was to write 'i' between /w/, /m^w/, /p^w/ and a following /y/. I felt that, as these syllables were all said in isolation in the phonics method used, the literates would pronounce them as [u] and be able to write them. The grapheme 'i' was to be written in every other position.

0.3 SPECIFIC DIFFERENCES IN THE TWO ORTHOGRAPHIES

Differences occur in the way the symbols are used for rounded velar consonants, the vowels 'i' and 'u', and lengthened vowels. The Angurugu orthography also uses 'e'.

Rounded velars

The Angurugu linguist (personal communication) regards [k^wu] and [ku], [ŋ^wu] and [ŋu] as non-contrastive with /k^w/ and /ŋ^w/ as the consonant phonemes. The allophones 'ku' and 'ngu' are, however, represented in the orthography: 'ku' and 'ngu' are written preceding a rounded consonant and 'kwu' and 'ngwu' elsewhere.

At Umbakumba both Aborigines and linguist prefer only the use of 'kw' and 'ngw' where they are emic units. It not only prevents over-differentiation but gives consistent representations of the roots at morphophonemic boundaries—an advantage pedagogically and requested by non-Aboriginal teachers.

The two orthographies compare as follows:

<u>Phonemic</u>	<u>Umbakumba</u>	<u>Angurugu</u>	
ayakwa	ayakwa	ayakwa	'speech, language'
ayakwi#laŋwa	ayakwu-langwa	ayakwu-langwa	'about the language'
ayakwi#wa	ayakwu-wa	ayaku-wa	'to the language'
ayaŋka	ayarrka	ayarrka	'hand'
ayaŋki#laŋwa	ayarrki-langwa	ayarrki-langwa	'from the hand'
ayaŋki-wa	ayarrki-wa	ayarrku-wa	'to the hand'

A similar phonological feature is realised with the syllables [k^wa ~ k^wɔ] and [ŋ^wa ~ r^wɔ] at morpheme boundaries where only the second occurs phonetically. Rounding of the consonant is simultaneous with the velar articulation and many non-native speakers do not hear it. The Aborigines, however, are aware of it. The 'w' is written at Umbakumba but not at Angurugu.

<u>Phonemic</u>	<u>Umbakumba</u>	<u>Angurugu</u>	
a#laŋkwi#afakpi#wa	alarrngkwarrakpa	alarrngkwerekpa	'outdoor things'
	[alaŋkweŋekpa]		
a#laŋkwi#awaŋyi#wa	alarrngkwawarriya	alarrngkawarriya	'bad things'
	[alaŋk ^w ɔ waŋiya]		

Low vowel [e]

The short vowel [e ~ ə ~ eⁱ] is written consistently as 'a' at Umbakumba because both the Aborigines and the linguist do not regard it as a contrastive sound. The three vowels are in mutually exclusive distribution or in free variation with [a]. The front allophones are contiguous to a lamino-palatal consonant or precede an underlying [Ci].

In the Angurugu analysis, the vowels are seen as shared allophones of the phonemes /a/ and /e/ as well as in phonemic variation. In the orthography only one symbol is chosen in each word in the literature: 'a' preceding palatals where it is more statistically frequent than 'e' and is considered the phoneme (about six words are seen as exceptions); 'e' in environments where it is more statistically frequent than its variant (but Aborigines are not corrected if they write 'a' before /r/); 'e' where only that variant occurs. The aim of these rules is to make the use of 'e' as numerous as possible.

High vowel [u]

At Umbakumba the high vowel [u] is regarded as an allophone of /ɨ/ occurring contiguous to rounded consonants and often in free variation with [ɨ]. In order to compromise with Angurugu, the Aborigines decided that 'u' should be included to a limited degree. It could be written within the syllable where the preceding conditioning consonant co-occurred but not used elsewhere, viz. 'mu' for /m^wɨ/; 'bu' for /p^wɨ/; 'kwu' for /k^wɨ/; 'ngwu' for /ŋ^wɨ/. In other environments where the conditioning consonant from the following syllable would be dropped in auditory discrimination techniques, the vowel would be written as 'i'. There was one exception to the rule, viz. 'wi', 'mi' and 'bi' would be written preceding 'y' in the next syllable.

The rules are feasible but I predicted problems with the exception because the rounding which is not marked on the labial consonants would be omitted also on the vowel and contrasts with /mɨ/ and /pɨ/ thus removed. There are also places where a clear phonetic [i] occurs in variation with [u] preceding other lamino-palatals in syllables with rounded velars. It was thought that their expertise in English phonics would be helpful but it seemed to me to be likely to produce greater problems.

The Angurugu linguist regards both /u/ and /i/ as phonemes but allows for restrictions in their distribution. The sounds are said to be contrastive only on the basis of a few analogous pairs. The orthography reflects the analysis, viz. 'i' is written between two unrounded consonants where only unrounded allophones can occur; 'u' contiguous to a rounded consonant; 'u' or 'i' where they are considered to be contrastive. Apart from the few analogous pairs, the crucial difference is the writing of 'u' preceding a rounded consonant, e.g. Umbakumba: *arima* 'big'; Angurugu: *aruma* 'big'. Because of suffixation this is statistically very frequent.

Lengthened vowels

In a small number of words, lengthened vowels sometimes occur in variance with another form, e.g. /yakaya/ ~ /yakayi/ [yakaⁱya ~ yakaⁱ:] 'ouch!'. Stress normally falls on the penultimate syllable and, in line with the above, a lengthened [i:] in a word-final stressed position is interpreted as 'iyi'. At Angurugu, [aⁱ: ~ eⁱ:] is written 'ayi' but [i:] as only 'i'.

Word-medially, VCV sequences where the consonant is 'y' or 'w' reduce to a long or short vowel. At Umbakumba, both options are recognised in the orthography but at Angurugu only the longer, more traditional form is placed in literature.

Apart from the above, there are a few words where [eⁱ] is optionally lengthened in a stressed syllable or to suit the sentence rhythm. Umbakumba Aborigines were uncertain as to whether these should be written as 'a' or 'ayi'. In the tests, the two options are inserted on a random basis. Angurugu uses 'e'. After the tests were administered the glide was found to be an allophone of /a/, conditioned by a following deep structure [Ci] which frequently elides in the surface form.

0.4 THE TEACHING METHOD

Anindilyakwa words are long, averaging between three and six syllables but up to fourteen syllables. There is also a very complex pattern of prefixation and suffixation which produces several hundred prefix combinations on verbs. Similarly, other word classes (parts of speech) can take up to forty-three changes of prefixes. Because of this complexity, it is essential that Aboriginal literates develop competency in using phonic skills. Eventually, like all readers, common words and affix combinations are read by sight.

The teaching method was based on the reading scheme proposed by Gudschinsky (1973) which uses both "look and say" and phonics methods. The system has been revised to suit this particular language and a new Adult Literacy Course designed in 1980. Gudschinsky accepts the syllable as the smallest phonological unit which can be isolated naturally by native speakers of a language. In Anindilyakwa, vowels are isolated in phonics drills but not the consonants. The latter is taught by contrast and negative focus. The phonic value of each grapheme is thus learnt.

The initial formal literacy course for adults takes approximately forty hours to cover all graphemes in all positions in the word and to enable the literates to write a short story independently. Wherever possible, an unstructured advance course is held to give revision in areas which seem to be difficult for all literates.

All Aborigines at Umbakumba under forty years of age can read English but ability varies greatly. Some can operate the phonic rules for writing. There are Aborigines who have taught themselves to read Anindilyakwa by applying the rules for English phonics but these people do not write Anindilyakwa except by finding the words in existing literature and copying them. Facility in reading seems to depend on the correct assignment of phonic values to the consonants and recognising a high versus a low vowel. For example, as they cannot distinguish the vowels in 'man' and 'men' phonetically in English, they tend to ignore the difference in graphemes in Anindilyakwa. These Aborigines are not

considered to be fully literate and are not included in statistical counts of literates in the community.

1. **CONTENT AND DESIGN OF THE TESTS**

The tests are based on information gleaned from books and articles, and from discussions with other linguists and teachers. The Principal, Mr. Peter Clarke, and two teachers at the Umbakumba School, Miss Lorraine Fischer-Johnson and Miss Barbara Marugg, have been extremely helpful.

Suggestions for the diagnostic testing of English phonics have been closely followed. The amount of testing, however, has had to be adapted to suit this particular situation where the language structure is vastly different and the focus is on the viability of the orthography rather than the competence of the literate. The tests were designed to see if the literates could handle their own choices of orthography with consistency and accuracy. While different levels of competency were expected, it was hoped that a general over-all pattern would be seen.

Even though there is a wide range of literature on tests for reading, very little seems to have been written on testing writing. Writing tests in Anindilyakwa followed the same ideas as for reading. Both lists of words and stories were used—the former gave no contextual clues while the latter did. As an orthography is only really tested by the literates applying phonics skills, lists of words which had not been seen before were essential. There was no way to evaluate with certainty whether the words written in stories resulted from the use of phonics skills or from memorisation.

1.1 **READING TESTS**

The reading tests were divided into two sections: (a) reading lists of words with no contextual clues; and (b) reading stories with contextual clues.

The layout was designed to give an uncluttered appearance because a heavy block of the long Anindilyakwa words looks rather formidable. The Reading Lists were placed in two columns; the stories had fairly short lines with hyphens used only where they occur in a word as part of the orthographical system. Too much hyphenation at the end of lines is known to cause problems in reading fluency. All pages were double-spaced.

(a) Reading Lists (words)

The Reading Lists contained words from all word classes (parts of speech). List 1 had 61 words, List 2 had 42 words, and List 3 had 53 words, thus making a total of 156 words. (See Appendix: 'Worksheets for Reading Lists'.)

The words used in these tests had not, generally speaking, been used in teaching and testing previously. There were, however, a few common words included to give the reader confidence, to restore confidence after some particularly difficult words, or to ensure that some rare graphemes were tested.

In English diagnostic testing the availability of short words allowed for a concise number of occurrences for each grapheme. This could not be as concise in Anindilyakwa because of the long words and very low frequency of some graphemes. In order to get five occurrences of each (except 'rl' which occurs in only one word) common graphemes had to be multiplied unnecessarily. Frequency counts for consonants and vowels are shown in 'Reading Lists: Statistical Frequency of Graphemes' (see Appendix). The entry of graphemes in syllabic units proved to be the quickest for cross-reference of allophones. Open syllables are tabulated alphabetically but only consonants counted. Consonants closing a syllable and vowels which alone comprise a syllable are shown separately.

Reading List 1:

The words contained only open syllables (CV) which are the easiest to read. An attempt was made to have at least three occurrences of each grapheme but it proved to be too unwieldy and some were left for other lists. This was the easiest test.

Reading List 2:

This list contained mostly words with open syllables but also some with closed syllables or rarer consonants, such as retroflexes. Closure of syllables and series of consonants, not the length of words, cause the most difficulty in reading. This test is harder than the first one.

Reading List 3:

Each word contained at least one closed syllable, sometimes two. The reading of the consonant clusters is more difficult where digraphs and trigraphs occur. Some epenthetic vowels were written but this helps rather than hinders reading fluency because it breaks up the consonant

clusters. This was by far the hardest test but, if handled satisfactorily, indicates that the reader can cope with the whole orthographical system.

(b) Stories for reading

Four stories were prepared for testing, none of which had been read before by those tested. Stories 1, 2 and 4 were not generally known but Story 3 is one of the best known Yantarrnga stories. None of those tested had heard the particular version used for testing. (See Appendix.)

Story 1 was told by Mr. Gula Lalara and recorded on cassette by Mrs. Katie Herbert. Story 2 was told and recorded by Mrs. Maria Yantarrnga, Story 3 by Mrs. Tapinkanga Yantarrnga, and Story 4 by Mr. Gula Lalara. There are a few instances where the recording and the script prepared for testing are not identical.

Story 1:

The story was taken from an Angurugu booklet which has not been circulated at Umbakumba. It was selected because it was relatively easy to read, was in the popular conversational style for story-telling, and had a predominance of words with the controversial high vowels, 'i' and 'u'. The first half of the story was written in the Umbakumba orthography and the second in the Angurugu orthography (as in the original). The reader's ability in using the two orthographies could thus be evaluated. The context was established in the Umbakumba orthography.

Story 2:

This story was very short but contained several difficult words. No paragraphing was used because the Aboriginal literates usually do not paragraph when writing stories. It is traditional but known by only a few of the older people.

Story 3:

This story was probably the hardest to read because it was concise with very little repetition of words. Some words were probably not well known. It had a wide range of consonants and closed syllables as well as quite a number of long verbs. From this story it should be apparent as to whether or not the ends of words were being decoded.

Story 4:

The story is incomplete but left at a natural cut-off point. It was chosen because it had quite a number of words with the controversial 'a' versus 'e'. The first part was written retaining the Angurugu orthography while the second part used the Umbakumba orthography. This was in reverse order to Story 1. The emphatic suffix, *-ayika*, is also controversial and was written in four possible ways because of the indecision which has surrounded it, viz. *e-ka*, *-ayika*, *'ayika* and *a-ka*. While all these possibilities have been discussed at Umbakumba, the last two have not previously been used in teaching.

1.2 WRITING TESTS

The tests were divided into two parts: (a) writing a list of words; and (b) writing four short stories. Such testing allowed the literates to choose their own vocabulary, i.e. the words they write frequently or choose to write, but also required them to write words controlled by the person setting the tests. Many of these controlled words would not have been seen before in their specific affixed form, and provided the ideal data for evaluating the viability of the orthography.

(a) Word lists for writing

The words were not common in reading material at Umbakumba and have not been used regularly in teaching and testing. This meant that some uncommon constructions were used and these gave difficulty to the younger literates. A few common words were included to bring about or sustain confidence.

There were three writing lists: List 1 had 30 words; List 2 had 40 words and List 3 had 30 words, making a total of 100 words. Each list was read onto cassette tape by Mrs. Katie Herbert, without the linguist reading the words to her. The linguist was present to ensure a good recording and to check that each word was correctly read. The words were said only once but were spaced to the count of three (which accounts for the whispering on the tape).

The statistical frequency of each grapheme was counted to ensure that each was adequately tested. The goal was five occurrences of each but this could not be attained without greatly increasing the number of words. The 'Statistical Frequency of Graphemes' and 'Worksheets for Writing Lists' charts were compiled in the same way as those for reading tests. (See Appendix.)

Writing List 1:

This list had words with all open syllables and was the easiest test.

Writing List 2:

The words contained mostly open syllables but some closed syllables (CVC or CVCC) were included. Rarer graphemes were used also. The greatest problem is in writing the consonant/s that close/s syllables. Anindilyakwa words end only in a vowel and a lot of practice in auditory discrimination exercises is needed to overcome writing errors.

Writing List 3:

All words included at least one closed syllable, sometimes two. The test was really difficult and any person handling it well is competent in handling the whole orthographical system.

(b) Writing of stories

Four stories were to be written, between half to a full page of an exercise book. The first two stories to be written were sets of sequences of picture cards made by non-Aboriginal teachers. The last two stories were to be written from large colour photos taken from sets supplied to the school. Topics chosen were well known and were selected because words with controversial graphemes would have to be written. The topics were: a turtle and a dog; a man on a fishing expedition; a group of desert Aborigines sitting around a fire; and a stockyard scene.

As the choice of vocabulary could not be controlled, either phonics skills or memorisation could be used by the authors. Changes to the spelling of common words, however, are significant if they are systematic and not just random error. There appeared to be no way in which these tests could be controlled to remove the variables in creative writing.

The stories were later read onto cassette tapes by Mrs. Katie Herbert for the following reasons: (a) to show that another Aboriginal literate could read what had been written even though it hadn't been seen before; (b) so that other linguists could hear the spoken form along with the written.

2. ADMINISTRATION OF THE TESTS

2.1 PERSONS TESTED

Discussions about orthography changes had been limited to about ten people who had enough competence and confidence to handle the situation. The common practice for orthography testing is to keep the initial group small, usually not more than ten. It is the workability of the phonics system which needs to be tested, not how many people can use it or like the individual symbols. There is no one at Umbakumba under 40 years of age who is monolingual.

The original aim was to test five out of the ten literates initially taught in the Angurugu orthography but subsequently exposed to all changes, and five new literates taught only the final Umbakumba choices. The latter, however, did not finish the literacy course in time for the Education Department deadline. The men in the community were happy to relegate the testing and final decisions to the women involved. The following is a brief description of those tested, with the first names changed to prevent any embarrassment.

Carla Mamarika: aged 25 years, previously employed as a Teaching Assistant but now employed in the administrative offices. She was involved in discussions after completing the literacy course in 1977, and in casual practice and testing during 1980 and 1981. Her skill was used in the post primary classes and in the church.

Heather Mamarika: aged 26 years, employed as a Teaching Assistant but at Batchelor College for teacher training in 1981. She was in the first literacy class in 1975 and involved in requests for changes since then (especially the using of the shorter forms 'ku' and 'ngu' for rounded velar consonants). Heather has continued teaching the vernacular aspects of the bilingual program in the pre-school, and in story-writing and artwork.

Maxine Mamarika: aged 37 years, formerly employed as Infants 1 Teaching Assistant and as a literacy worker in the bilingual program. She completed the Literacy Course in 1976 and later taught vernacular literacy to the school children; she produced a prolific amount of stories and translations for the school. Her fluency in reading was utilised in the church services. She continued with casual testing and practice up until 1980.

Roberta Yantarrnga: aged 26 years, employed as a Teaching Assistant in the infants classes. Having completed literacy training in 1975, she taught vernacular literacy to the school children, and prepared

supplementary teaching materials as well as writing stories. She is probably the most interested in understanding the structure of her own language. Roberta was not involved in the 1980 discussions but joined in again in 1981.

Sophia Bara: aged 24 years, employed as a health worker in the local government clinic. She completed the literacy course in 1976 when employed as a Teaching Assistant. She has continued to write or translate articles on health and to record the Aboriginal names on birth certificates. In 1980 and 1981 Sophia assisted me in teaching literacy to other health workers and took part in discussions and in casual testing. (She took the current test after leaving hospital and was still not really well.)

2.2 ADMINISTERING THE TESTS

Instructions were written in English but explained to the testees, all of whom were bilingual and competent in recording on cassettes. An example of the instructions is as follows:

Reading Stories 1 to 4

1. You can read the stories in any order you like but the first one is the easy one.
2. Read the story once through to yourself.
3. Put "Story No. . . ." on the tape and read the story right through. If you cannot read a word, say the syllables out loud.
4. Do the same for each story.

It became obvious during the compilation of the tests that I would need to administer one in order to check that instructions were clear and the content suitable. I tested Heather Mamarika. Though the tests were not changed, some problems were observed.

(a) Problems in the reading tests

Despite the care taken in choosing vocabulary, some words were not known—three in List 1, one in List 2, and three in List 3. Numerically it is not great but Heather's confidence was lowered to a considerable degree after each failure to decode a word. Aborigines suffer "loss of face" (a sense of shame) very acutely when mistakes are made. Recording

the words meant that a permanent record was available containing the errors. The shyness and insecurity was apparent in whispered speech and slow hesitant reading which was not normal. The words were retained because it was anticipated that others would know them.

In stories where a difficult or uncommon word occurred in the first sentence and could not be decoded quickly, confidence was lost. It was only restored after a couple of sentences in which contextual clues made the meaning apparent.

(b) Problems in the writing tests

No problems occurred in the writing of short stories. Heather did these by herself at home. Literates are used to this activity and are confident in doing it.

The main problem arose with the use of the cassette for recording the lists of words for writing. Although the words were carefully and clearly pronounced, the initial consonants were hard to hear and another prefix was sometimes substituted. These initial consonants are all common and were not crucial in the final analysis.

The best way to have conducted this part of the test would have been to have a "live" speaker present the words. Because testing had to be done when testees were available, this was not possible at this time. The other alternative would have been to include the English meaning but this would have added another variable, viz. the degree of proficiency in English.

The other testees were only given the Instructions Sheets which were explained to them, and all necessary paper, pencils and cassettes. Each one completed the tests and operated the equipment alone. The locale and other details are shown on the following chart.

Testee	Locale	Instructions explained by	Approximate time taken
Carla	school office	L. Fischer-Johnson (Deputy Principal)	3 hours in two sessions
Heather	school staff room and at home	V. Leeding (Linguist)	4½ hours in three sessions
Maxine	home	V. Leeding	3 hours in two sessions

Roberta	school office	L. Fischer-Johnson	2½ hours in two sessions
Sophia	clinic room and at home	V. Leeding	2½ hours in two sessions

3. MARKING THE TESTS

The tests were compiled to check the viability of the orthography, not reading comprehension. The marking, therefore, focused on the application of phonic skills in reading and writing. The margin of error allowable within the framework of a viable orthography is not known. Marking was certainly not a simple procedure.

The marking was done by Mrs. Katie Herbert, an Anindilyakwa speaker, and myself as linguist. It was felt necessary to have the tests checked by a native speaker of the language who was also literate. As Mrs. Herbert helped with the setting up of the tests, she was the obvious one to assist in their marking. If there was a difference of opinion her decision was final.

3.1 THE READING RECORD

Identification of reading errors was based on the criteria below. Every care was taken to be consistent.

The following miscues were considered to be errors:

- ... omissions and insertions
- ... repeated errors were counted as an error each time
- ... a different grammatical form of the word, i.e. a change in the prefix or suffix
- ... a word read wrongly by sight or because of the context
- ... general visual discrimination miscues

The following miscues were NOT considered to be errors:

- ... self-corrections
- ... acceptable variations of the same word, e.g. an alternative phonetic form; the short form; a longer precise form; an alternative form because of rhythm/timing. Literates were taught to read what was there but to use their own norm when reading aloud.
- ... unknown words
- ... epenthetic vowels, either inserted or omitted (these were evaluated in separate tests)

Words obviously erased from the tapes were counted as errors in word scores but it was later deemed fairer to exclude these for the particular testee in the syllable scores. Where one word was substituted for another, the number of errors was in accordance with the number of syllables in the original. A check was made after the tests to determine the unknown words. (Where a language has short words such detailed planning would not be necessary.)

The notational key is given below (excluding symbols listed in the Key in the Appendix) for those setting up similar testing.

correct response	no marking in the stories, ticked in the lists
wrong response	written above the typed copy
omissions	circled
insertions	marked by a caret and inserted above the typed copy
self-corrections	sc with an arrow to the point of correction
#	not a word
?	hard to hear
< >	unknown word

Footnotes on each page, cross-referenced to incorrect responses, described the nature or meaning of each error to facilitate later collation.

3.2 THE WRITING RECORD

The evaluation of errors was the same as for reading except for an additional instance where the low vowel written before a suffix was not counted as an error. Phonological rules apply at these boundaries giving alternative forms.

All hand-written material needed to be typed before being marked so that the system could be consistent with that for reading tests. The darkest impression was considered to be the final choice where letters were over-written.

4. TEST SCORES

In the testing of reading ability in English, scoring usually involves counting word errors. This method, however, is not detailed enough for the long words in Anindilyakwa. In addition, it was the adequacy of the phonic skills in relation to the orthography that was being tested. The basic isolatable unit for pronunciation is the syllable which, given the high percentages of accuracy in reading and writing, was suitable for estimating percentages of accuracy.

When the tests were set up, statistics were tabulated in relation to the consonants, either initial or final in the syllable, and the vowels. To present the results in these terms proved to be too time-consuming and of little real value. Errors in syllables were counted and the percentage of accuracy ascertained. (Had percentages been calculated on the grapheme, the percentages of accuracy would have been even higher).

4.1 READING SCORES

The percentage of accuracy in reading the syllables is shown on Table 1. The percentages are shown for each testee and are based on the total number of errors, omissions or insertions.

TABLE 1
Percentage of accuracy in reading syllables

Testee	Lists	Stories	Average
Maxine	96.7%	98.4%	97.6%
Roberta	96.8%	97.0%	96.9%
Sophia	95.2%	98.1%	96.7%
Carla	93.0%	96.1%	94.6%
Heather	91.8%	95.2%	93.5%

While the percentages of accuracy in words did not show a realistic picture of accuracy, Table 2 gives the figures for those who might be interested in the comparison.

TABLE 2
Percentage of accuracy in reading words

Testee	Lists	Stories	Average
Maxine	91.1%	94.7%	92.9%
Roberta	91.7%	90.9%	91.3%
Sophia	90.0%	94.9%	92.0%
Carla	81.8%	92.2%	87.0%
Heather	77.6%	88.1%	82.9%

Note that the disparity in the percentages of accuracy for words versus syllables is greater for the less competent reader.

Two different orthographies were used in Stories 1 and 4. The speed of reading and correct intonation patterns indicated that both were read satisfactorily with comprehension. The focus of scoring was placed on the percentage of accuracy, again based on syllables as the more reliable estimate. Table 3 lists the percentages of accuracy in each orthography.

While in six cases out of ten the Angurugu orthography to which they had been exposed the longest had a slightly higher percentage of accuracy, the differences are negligible. The overall average scores are: Angurugu orthography 97.4%; Umbakumba orthography 97.9%.

TABLE 3

Percentage of accuracy for each orthography
estimated in syllables

Testee	Story 1		Story 4	
	Ang.	Umb.	Ang.	Umb.
Maxine	100.0%	98.2%	100.0%	97.9%
Roberta	98.2%	97.9%	97.6%	99.0%
Sophia	99.1%	98.7%	98.8%	97.2%
Carla	97.3%	98.7%	98.2%	96.6%
Heather	97.3%	97.9%	87.0%	96.5%
Averages	98.4%	98.3%	96.3%	97.4%

For those who are interested in seeing the percentages of accuracy in the two orthographies according to a statistical count of words, these are presented in Table 4. The average scores for the Angurugu orthography were 94.6% and for the Umbakumba one, 93.4%. While the higher one reverses in this scoring, the percentages are still almost equal.

TABLE 4

**Percentage of accuracy for each orthography
estimated in words**

Testee	Story 1		Story 4	
	Ang.	Umb.	Ang.	Umb.
Maxine	100.0%	95.7%	100.0%	95.9%
Roberta	96.7%	91.4%	93.8%	95.9%
Sophia	98.3%	96.9%	96.9%	89.0%
Carla	95.0%	96.7%	96.9%	91.7%
Heather	93.3%	94.2%	71.7%	90.4%
Averages	96.7%	94.0%	91.9%	92.6%

The number of syllables and words tested for each orthography was not equal. In Story 1, the testing in the Angurugu orthography was for 60 words (215 syllables) and for Umbakumba 86 words (380 syllables); and for Story 4, 32 words (168 syllables) and 72 words (284 syllables) respectively. The variable occurred because the focus overall was on examining the viability of the Umbakumba proposals.

4.2 WRITING SCORES

The percentage of accuracy in writing syllables in both lists and stories is shown on Table 5, based on the total number of errors, omissions and insertions.

TABLE 5

Percentage of accuracy in writing syllables

<u>Testee</u>	<u>Lists</u>	<u>Stories</u>	<u>Average</u>
Roberta	87.0%	89.1%	88.0%
Sophia	81.7%	86.0%	83.9%
Maxine	80.7%	86.0%	83.4%
Carla	82.0%	85.5%	83.3%
Heather	80.1%	82.6%	81.4%

The percentage of accuracy in words is shown on Table 6 for those interested in the comparison.

TABLE 6

Percentage of accuracy in writing words

<u>Testee</u>	<u>Lists</u>	<u>Stories</u>	<u>Average</u>
Roberta	50.0%	68.1%	59.5%
Sophia	42.0%	56.5%	49.3%
Maxine	42.0%	54.5%	48.3%
Carla	37.0%	54.4%	45.7%
Heather	31.1%	47.7%	39.4%

Note that, as in the reading, the disparity in the percentage for writing syllables versus words is greater for the less competent.

5. INTERPRETING THE SCORES

5.1 READING

The average percentages of accuracy in reading syllables (Table 1) range

between 97.6% and 93.5%, indicating that all those tested were competent readers. Such high percentages also indicate that, for reading, both orthographies are adequate. The viability of both orthographies is attested as per Table 3 which shows that overall average percentages have a difference of only .5%.

All the usual reading devices appear to have been used by all readers, i.e. sight word and phonic attack skills, self-correction techniques, meaningful substitutions, and guessing based on comprehension of what has already been read.

If reading comprehension and accuracy were the only aims of testing, the above information would be sufficient. In evaluating the viability of the phonetic alphabet itself, closer attention must be given to individual graphemes, especially those that are controversial. The interpretation of the scores covers all graphemes.

5.1.1 CLASSIFICATION OF READING ERRORS

In order to investigate the nature of the reading errors, each person's errors were divided into seven categories, as shown below. All errors were listed in syllables because the combination of consonant and vowel is more relevant than the word to issues of orthography. Syllables containing two errors were listed twice.

- (i) incorrect calling of graphemes
- (ii) methathesis/reversal of graphemes or syllables
- (iii) omission of one syllable when two syllables have the same initial consonant
- (iv) omission of a reduplicated morpheme which usually alters the grammatical meaning, e.g. intensifier
- (v) substitution of another grammatical form, e.g. pronominal prefix, aspect-changing suffix
- (vi) substitution of one word for another
- (vii) error/omission/insertion because a preceding syllable had been called wrongly

In Categories (ii) to (iv), errors were probably due to a lack of concentration or because of tension, having been read correctly but called incorrectly. All errors produced a more common word. Metathesis and the deletion of the first of two similar syllables are features of the language but only in some phonological environments. There is also a tradition where "reading" of bark paintings is from right to left but, as reversal errors are minimal, this is not likely to be the cause of error.

Category (v) lists errors where not enough attention has been given to the beginning or the end of a word. Substitutions usually made sense but were not what the author intended. Initially in literacy classes, adults did not read for meaning but the tests show that this problem is now overcome.

Category (vi) errors were largely due to guessing from the context. A more common sight word of similar shape was called, a meaningful word substituted where a difficult one could not be decoded quickly, or a grammatical word anticipated incorrectly, e.g. *mijiyalya* 'beach' for *miyalkwa* 'low tide'; *arakba* (action accomplished) for *kambirra* (action accomplished so that another can take place).

Category (vii) lists syllables changed to create a meaningful word. A preceding syllable was called incorrectly, necessitating further change, e.g. *ayakwa* 'word' for *-ayika* (emphatic).

5.1.2 DISCUSSION OF READING ERRORS

Category (i) is the only one where errors can be positively identified as relating to the testing of specific graphemes. In the other categories, the required graphemes were omitted, were correct but reversed, or were changed completely with the substitution of morphemes or words.

The problems observed in Category (i) are as follows:

(a) grapheme substitutions: palatal, dental or alveolar consonants (9 errors out of 275+)

The graphemes 'ly' and 'ny' were read as /l/, /n/ or /y/. There is a structural reason for difficulties in this area: communilect and ideolect variation occurs between /ly/, /l/ and /y/, and /ny/ and /y/. Some people use both variants in some words and others only one. In literacy classes, the Aborigines were taught to read what is written but to pronounce it according to their own norm. In the majority of Anindilyakwa words, only one or the other occurs.

In some cases, the problem was due to residual insecurity because of the structure or because a digraph was involved and only part of it read. Errors were at a minimum, indicating that teaching method has coped with the problem and that the graphemes were read satisfactorily.

(b) digraphs: retroflexed and flap consonants (8 errors out of 690+)

Digraphs were occasionally read as either another digraph or a cluster

(i) the lengthened glide [eⁱ:] written as 'ayi' (10 errors out of 55)

The testees were originally taught to write 'e' for this glide but reacted against it on the grounds that it did not "feel right". Given the choice of 'a', 'ay' or 'ayi', they selected 'ayi' for the long glide and 'a' for the short one.

The errors fall into two groups: final or non-final in a word.

Final: Only one word was included in the test and only one testee got it right. The others substituted a very common word in its place, indicating that they probably read it by sight.

Non-final: The remaining six errors in 50 occurrences (12%) seem to have occurred because a change of vowel usually indicates two syllables.

In comparison with other percentages of accuracy, this high rate of error shows considerably less ability to handle these graphemes. If the percentage of accuracy were as low for the lengthened vowel in (h), errors could have been attributed to problems in writing length but there is no evidence of this.

It should also be noted that no problems occurred where the short vowel glide with the same phonetic quality was written as 'a'.

(j) full stop as a spelling convention (4 errors out of 25)

The full stop is used to separate two full phonemes from a digraph representing only one phoneme, e.g. 'rd' for /ɾ/ versus 'r.d' for /ɾ+d/. The Aborigines do not like this convention because the full stop is seen to be related to the end of a sentence rather than the middle of a word. The closure of the syllable was usually omitted and a more common word substituted.

5.2 WRITING

The testees showed themselves to be competent in writing skills and thus suitable participants for testing. The percentages of accuracy (Table 5) range between an average of 88.0% and 81.4%.

Writing provides a far better indication of the viability of the orthography than reading, especially when testees are bilingual and biliterate.

errors out of 35) where either one or none was written. Such syllables are rare in the language but do occur in some very common morphemes.

Errors occur because of structural pressures in the language which cause problems in auditory discrimination. Only a vowel occurs word-finally and so syllable final consonants are dropped when word-medial syllables are said in isolation. Practice in auditory discrimination and editing one's own work has reduced such error to a minimum for most literates.

(d) velar consonants (4 errors out of 455+)

There were no errors in writing these consonants correctly but there were four instances where 'k' or 'm' were added after 'ng'. The combinations of consonants, 'ngk' and 'ngm', are common in the language. Although the /ŋ/ can elide, full forms are always written.

The problems arising in Category (iv) are as follows:

(e) rounded velar consonants

The orthography uses 'w' to symbolise the feature of rounding on velar consonants. The syllables 'kwu' and 'ngwu' contrast with 'ki' and 'ngi', respectively. The data was hard to evaluate because at times the wrong syllable was written. This was considered to be an error in auditory discrimination. The errors listed here are the ones where the combination of consonant and vowel were incorrect as far as the orthography was concerned. What is examined here is the correct use of the orthography in writing the syllables 'kwu/ngwu' or 'ki/ngi' (but not 'ku/ngu') preceding a rounded consonant.

Table 7 shows the percentages of accuracy in writing the above symbols, 'kwu', 'ngwu', 'ki' and 'ngi', according to the Umbakumba orthography. It is divided into two sections: within the morpheme and at the morpheme boundary. The average percentages show that there is about equal ability in handling the graphemes within the morpheme (68.3%: 43/63) and at the morpheme boundary (64.6%: 42/65).

TABLE 7

Percentages of accuracy in writing the rounded/
unrounded velar consonants preceding u

Testees	Within the morpheme		At the morpheme boundaries	
	Lists	Stories	Lists	Stories
Roberta	100.0% (9/9)	100.0% (7/7)	88.9% (8/9)	100.0% (5/5)
Sophia	66.6% (6/9)	33.3% (1/3)	71.4% (5/7)	0.0% (0/2)
Maxine	100.0% (7/7)	100.0% (4/4)	83.3% (5/6)	60.0% (3/5)
Carla	70.0% (7/10)	33.3% (1/3)	57.1% (4/7)	88.9% (8/9)
Heather	0.0% (0/10)	100.0% (1/1)	16.7% (1/6)	33.3% (3/9)

Two testees who were strongly in favour of writing Cwu throughout but who were originally taught both spellings as contrastive, gained 96.7% (29/30) and 86.4% (19/22). The testee who was in favour of Cw but taught only Cu throughout, gained 65.5% (19/29). The two testees who preferred Cu but were taught both as contrastive, gained 57.1% (12/21) and 19.2% (5/26). The testees' percentages showed a wide range of variation but there is evidence that most chose one set of graphemes rather than using both in a systematic way.

The highest scores of accuracy were attained by those who chose to write 'w' to indicate rounding.

The Angurugu orthography originally had Cwu and Cu in contrast but this was changed in 1980 to mutually exclusive distribution with /kw/ and /ŋw/ as the phonemes. The orthography, however, uses the allophones: Cw preceding unrounded consonants and Cu preceding rounded consonants. At the morpheme junctures, the surface form is written.

Table 8 shows the percentages of accuracy in relation to each orthography. The percentages for Cwu preceding unrounded consonants is the same for both orthographies, with the controversial area being the one preceding rounded consonants.

TABLE 9

Percentages of accuracy in writing 'w' as the
rounding of a velar consonant preceding 'a'

Testees	Lists	Stories
Roberta	100.0% (10/10)	100.0% (12/12)
Sophia	70.0% (7/10)	93.0% (11/12)
Maxine	100.0% (10/10)	100.0% (14/14)
Carla	100.0% (10/10)	100.0% (11/11)
Heather	100.0% (10/10)	95.0% (19/20)

There is one other problem related to the spelling of the rounded velars. Because the basic form of a syllable and the surface form can differ, a decision was made regarding the spelling at the morpheme boundaries. When a root ends with /kɨ/ or /ŋɨ/ and the suffix begins with a rounded consonant, the root-final syllable can optionally change to [kʷu] or [ŋʷu] in the surface structure. The Aborigines chose to write the basic forms /kɨ/ and /ŋɨ/ in this environment in order to keep the form of the root consistent. If phonic skills are applied the syllable is isolated and the basic form is pronounced and written.

It is extremely difficult to make an assessment of the syllable at the morpheme boundary because two orthographical issues are involved. Ignoring the vowel, the following percentages of accuracy were estimated according to whether C or Cw was written:

Cw preceding C	50%	(3/6)
Cw " Cw	41.5%	(10/24)
C " Cw	87.2%	(34/39)

The greatest percentage of accuracy correlates with the recognition of the hardest one to identify, i.e. the basic form /kɨ, ŋɨ/ which is [kʷu,

occurred the emic /ɨ/ was written. The choice of 'u' meant that the rounding of the consonant was transferred graphemically to the vowel, thus changing 'i' to 'u'. The results show that this is not working. There is an inability to write the allophone consistently or there is a conflict between the emic and the allophonic. After 'm' /mw/ and 'b' /bw/, the emic 'i' /ɨ/ was preferred.

As the Angurugu orthography would use the same symbol 'u' between two rounded consonants and mostly use 'u' between the rounded and unrounded consonants, the percentages of accuracy would apply in that case too. The results show that, except for 'wu' in the stories, the testees did not succeed in using the Angurugu orthography correctly.

It should be noted that two testees wrote 'bw' for the rounded phoneme /pw/. This has never been written in any of the literature and only been briefly discussed in classes. One testee wrote this way before any discussion had taken place.

Spelling convention: 'i' written following an unrounded consonant and preceding a rounded one

The grapheme 'i' was chosen following an unrounded consonant and preceding a rounded consonant. All the allophones from a high front vowel to a back rounded vowel occur, basically [i~ɨ~u~ɯ]. The allophones of the vowel begin as unrounded and become progressively rounded in anticipation of the rounded consonant, but there are variants which are wholly rounded. The emic value of the vowel is /ɨ/.

Table 14 shows the percentages of accuracy and is divided into two sections: within the morpheme and at the morpheme boundary. (The number of occurrences differ in the word lists owing to the inclusion or exclusion of transitional vowels.)

Reading versus writing

For bilinguals who have basic literacy skills in another language, reading alone is not an adequate test. The errors in writing were far greater and far more indicative of the orthographical problems, e.g. the high vowel problem was not evident at all in the reading.

Controlled data

The data was controlled in all parts of the tests except the writing of stories. In these stories some difficult or controversial symbols were just not used. If the testing consisted only of creative writing, the tests would have been inadequate. Secondly, because there is no way to judge whether phonics or memorisation of spelling has been used in creative writing, such testing is very hard to evaluate, even to identifying systematic versus random error.

The most adequate data was in the word lists because the person setting the tests made sure that all controversial graphemes or sequences of graphemes were included. With uncommon words used, there is a high probability that phonics skills were used. Tests could be set up using only words but the stories add much more interest for the testees.

Recorded material

Tape recordings of reading were all, generally speaking, clear and easy to document. Recording of the word lists for writing was not a good idea. A "live" native speaker is necessary for two reasons: to make sure that the testee hears each word clearly (especially chosen prefixed forms) and to ensure that all words are written. Some were missed because of the use of a cassette recorder. While using a "live" speaker may cause problems in organization, any other methods cause greater problems in marking and evaluating the tests. It has been suggested that pictures could have been used but this was not possible in Anindilyakwa because specific prefixes and suffixes had to be tested and because all word classes were considered to be relevant.

Locale and supervision

There appears to be little difference in the results no matter who gave out the instruction sheets. (The lowest scores were for the testee who had the linguist present!)

There was tension for all testees because they knew that orthography

decisions rested on their accuracy. Some were disturbed by children or relatives. Some did not like recording because other non-Aboriginals might listen to it and note their mistakes. The situation with previous testing kept tenseness to a minimum because they were told that the tests were being done in order to see what revision was needed. It is important that testees be as relaxed as possible.

Number of testees

Although the number of testees was small, the results gave a good spread of the type of errors occurring. More testees may have changed the actual percentage of errors but would probably not have added any more types of errors since all experienced similar problems to a greater or lesser degree. The sampling was adequate and indicated clearly where the problems were in the orthography.

The original decision was made by nine people with two in strong disagreement on one issue. As there was this division in opinion, it would have been seen to have been fairer to keep the same proportion, i.e. one to four rather than two to three.

6.2 ORTHOGRAPHY EVALUATION

The high percentages of accuracy in reading and writing indicate that the testees were competent literates and that their work was a sound basis upon which to establish the orthography. While not all testees had attained the same level of fluency and accuracy in reading and writing, the results show that there was a general ability to use the orthographical system. The percentage of accuracy for writing was lower than for reading, in some cases to a considerable degree.

Information was not available for a comparison to be made between these percentages and another orthography which is known to be viable. The results, therefore, were assessed from within the present testing.

6.2.1 GRAPHEMES WHICH ARE NOT CONTROVERSIAL

The graphemes which have been handled with almost no error are as follows:

stops:	b, d, j, k
nasals:	m, n, ng
other cons.:	l, r, y, w
vowels:	a, i

Table 15 gives a comparison of the percentage of error in reading and writing for graphemes which are not controversial. Both linguists consider the orthography to be satisfactory for these graphemes. It can be seen that the margin of error falls between 1% and 11% except for syllable closure and full stop. Note that these percentages are a little high because all errors have been precisely counted, but with high numbers of occurrences (marked +) some may have been missed.

TABLE 15

Comparison of percentages of errors for non-controversial graphemes

Graphemes	Reading	Writing
palatal consonants	3.3% (9/275+)	10.9% (25/230+)
retroflexed and flap consonants	1.2% (8/690+)	9.5% (42/440+)
syllable closure	3.1% (13/420+)	21.6% (66/305+)
velar consonants	0.4% (3/805+)	0.9% (4/455+)
/a/ as 'i'	0.1% (8/2385+)	0.0%
full stop	16.0% (4/25)	100.0% (5/5)

The reason for the errors in syllable closure is that the phonics teaching method which isolates syllables (or sounds) is in conflict with a word pattern which always ends in a vowel and thus causes syllable-final consonants to be dropped. The most significant factor was that one testee had no errors, and three had only a minimum number of errors. These results indicate that the orthography is satisfactory but that special attention and time must be given in this difficult area.

The convention placing a full stop between graphemes enables the contrast between [rṭ] and [ṭ], and [ŋṭ] and [ŋṭ] to be represented in

the orthography as 'r.d' and 'rd' respectively. The original Umbakumba orthography devised by Mr. Fred Gray used 't' instead of 'd' and this problem did not arise. In 1975, I asked the Umbakumba people to change to using 'b' for 'p' and 'd' for 't' in order to bring the two communities into harmony. That compromise has resulted in an orthographical device which the Aborigines cannot handle even though it has been practised for years. They use it accurately in the class when it is being taught but consider it silly to have a full stop in the middle of a word when it should be at the end of a sentence.

The 'r.d' and 'rn.d' sequences have a very low functional load and there are no minimal pairs of words which would cause difficulty. As after six years of practice they have not been able (or, perhaps, willing) to use it, the results show that this orthographical device is not satisfactory.

6.2.2 GRAPHEMES WHICH ARE CONTROVERSIAL

Table 16 lists the percentages of error for controversial graphemes. Only in the case of 'ayi' is there any indication in the column for reading that there are orthographical problems, or even any real difficulty. These results show that, for bilinguals literate to some degree in another language, reading alone is not an adequate test of an orthography unless one is prepared to say that 'ayi' is the only problem.

The wide range of percentages of error in writing indicates that some graphemes are not adequately handled. Error must be evaluated in the light of difficulties in the structure of the language, and overdifferentiation between phoneme and grapheme.

easier. The old system of writing vowel allophones suited the non-Aboriginals, including the linguists, because phonetic values were written and easily recognised by native speakers of English. I believe it is essential that the orthography be designed to suit the Aborigines who "own" the language so that they may become the authorities on the correct spelling of their own language. The orthography must be workable for all members of the community, not just the ones who are skilled in reading English. The Aborigines at Umbakumba are very concerned about having the orthography as easy as possible for the sake of the children who will be virtually monolingual when learning to read and write.

An example of the orthography as per the above recommendations is in the Appendix. Parts of Stories 1 and 4 for reading have been re-spelt.

na	[[˘] na -]	-	1	-	1
		-	-	-	-
na	[na ne na/e]	16 1 -	13 2 1	16 4 -	45 7 1
nga	[nga nge nga/e]	9 - -	1 1 1	16 - 1	27 1 2
ngwa	[ngwa ngwe]	1 -	2 2	2 -	5 2
nya	[nya nye]	- -	3 1	- -	3 1
ra	[ra re]	4 -	- 2	5 -	5 2
rda	[ɽa ɽe]	1 1	1 -	4 1	6 2
rna	[na -]	1 -	2 -	1 -	3 -
rra	[rra rre rra/e]	8 2 -	9 1 1	12 1 1	29 4 2
wa	[wa we wa/e]	7 - 1	7 3 2	3 - -	17 3 3
ya	[ya ye ye/a]	14 2 1	2 1 2	5 1 2	21 4 5
bi	[pi]	6	2	10	18
bu	[pwu/i]	7	3	2	12
di	[ɽi ɽu]	8 1	4 1	5 1	17 3
di	[ti -]	- -	1 -	- -	1 -

ji	[ji ju]	3 1	1 2	5 1	9 4
ki	[ki kwu kwi/u]	7 - 6	4 1 4	7 3 7	18 4 17
li	[li lu]	2 1	1 2	- -	3 3
li	[li lu]	2 1	- 1	- -	2 2
lyi	[lyi lyu]	5 1	1 1	- -	6 2
mi	[mi mwu/i]	4 2	2 3	4 5	10 10
ni	[ni nu]	- -	1 1	- -	1 1
ni	[ni nu]	3 1	- 8	4 1	7 10
ngi	[ngi ngwu/i ngwu/i]	- 1 2	2 1 3	2 1 1	4 3 6
nyi	[nyi nyu]	- -	1 1	- -	1 1
ri	[ri ru]	1 3	1 -	2 -	4 3
rdi	[rdi ru]	1 -	1 2	1 -	3 2
rli	[rli lu]	-	1	-	1
rni	[rni nu]	1 -	1 2	1 -	3 2
rrr	[rrr rru]	12 1	8 2	7 1	27 4

interesting or meaningful way (cf. Glass 1978: 143). These problems, as far as we could see, would apply equally to Kunibidji. For instance, in teaching young English-literate adults to write Kunibidji I used key words (initially obtained from senior adults) to illustrate the contrasts between sounds (letters) which needed to be distinguished. I found that many of the clearest contrasts could not be used because one or other of the contrasting pair of items was unknown to these people. The problem could be expected to be more acute with the young children of these same adults.

Christie (n.d.: 1), basing his comments on research such as that of Harris (e.g. 1980), suggests that the predominantly 'visual' rather than 'verbal' thinking processes of Aboriginal children makes the learning of sight words more effective than 'phonics', which I take to be a term covering analysis and synthesis involving abstract units on either of a couple of phonological (sub-morphemic) levels - phonemes or syllables (cf. Glass 1978: 144). It was decided, in the Kunibidji program, to combine elements of four approaches:

(i) Language experience work in which captions and stories dictated by the children are written under their own pictures by the teacher and read back.

(ii) Breakthrough to Literacy approach in which sentences and words can be built up by the children using small cards without prior mastery of writing skills.

(iii) A structured set of Instant Readers (primers) to teach sight morphemes or words, based on a count of words and affixes used by the children themselves.

(iv) A phonic letter recognition strand is built into the reading workbook series *Rid ngamangka ngaréndjeya*, along with the sight morphemes. We believe that some phonics is necessary to form the basis of word attack skills in reading and to lead to phonically based writing skills.

Some of the reasons for the above decisions will become more apparent as we outline some overall typological features of the language below. Note that similar considerations to those mentioned above have also influenced the choice of method for teaching English language and literacy to Aboriginal people in the Northern Territory (e.g. Breakthrough, Batchelor 1975; All's Well, Keppert 1981).

2. VERB STRUCTURES AND FORMS

Ndjébbana is a prefixing language. In the Australian Aboriginal context this means that affixation is not restricted to suffixation as it is in

(proximate past/present) form *-ba* or the Past 2 form *-bála*. Thus we often find a form like *barra-móya* meaning 'they are eating it' instead of the correct form *bárraba* as given in example 1 below.

In general, problem forms have been avoided where other complications also arose or the corrected adult forms were used where these were straightforward. In any case we have tried in the first twenty Instant Readers to use only a single tense, the Past 2 or remote past. Only with the verb *nó* 'to sit' did we not follow this pattern but used the Past 1 because of irregularities in other tenses. This variation has imposed some sequence of tense constraints on the use of this verb in any sort of connected narrative. In other words this verb in the Past 1 cannot be followed by any Past 2 verb form.

The major problems in the verbs, however, are not due to this plethora of conjugation classes but arise out of some phonological processes related to the movement of stress and vowel length, which, incidentally, is symbolised in the orthography using an acute accent. We cannot give full details at this point but examples 1 to 5 should give some idea of the phenomena involved. The general problem raised is the inability in some verbs to keep to a standard form of the verb root and/or of the pronominal prefix.

1. *ba-ya-móya* (VIIID)
they-FUT-eat
They will eat it.

bá-rra-ba
they-pl nonFUT-eat (Past 1)
They are eating it.

ba-rra-bá-la
-eat-Past 2
They ate it.

kóma ba-ya-bá-ngana
NEG they-IRREAL.-eat-Past 2 Neg.
They didn't eat it.
2. *bi-yi-ríma* (VI)
they(du)-FUT-hold
They will hold it.

bá-rrí-rama
they-du nonFUT-hold (Past 1)
They are holding it.

(Waybananga 1979) three groups of Kunibidji speakers - his own Yirridjanga group Kanakána from upriver; Mabárnad, a Yirridjanga group from Maningrida itself, in the river estuary; and Márro, a Djówanga group from the northern coastal area. The test word he used was 'fire'. Mabárnad people call it yúya, Kanakána people call it ngayawárrwarra, and Márro people call it ngálngarda. The children normally seem to use the first of these forms at school.

Other examples of a rough Djówanga/Yirridjanga division in the coastal dialects are given in examples 9 and 10.

9.	<u>Djówanga</u> yána marnawarrínjba	<u>Yirridjanga</u> yéna kórna/karrónba	'earlier today' (yam type)
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10.	The verb root -rlúrrabayi (II) 'arrive' has a suppletive future tense form -míba.	The verb root -rlúrrabayi (III) 'arrive' forms all tenses regularly on the same root.
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Finally there are some verbs for which the Djówanga dialect has an inflected form for the Past 2 Negative (formed by suffix) while the Yirridjanga dialect uses an auxiliary construction. Both dialects use both types of Past 2 Negative in particular words (one per word) but the distribution is a little different. The Yirridjanga uses slightly more auxiliary forms, which appear to be a simplifying innovation parallel to the gradual extension of 'weak' past tense formations in English and German at the expense of the 'strong' forms. See example 11.

11. -rórradjdja (I) 'to clean (transitive)/to clear'

<u>Djówanga</u>	Kóma nga-ya-rarraddja-ngóna NEG I-IRREAL.-clean-Past 2 Neg. I did not clean it.
<u>Yirridjanga</u>	Kóma na-rórradjdja nga-ya-ngkayína NEG INFIN-clean I-IRREAL.-do (Past 2 Neg.) I did not clean it.

Occasionally, too, there are forms which are simplified by younger adults and by children as in example 12.

12.	<u>Older</u>	<u>Younger</u>	
	<i>barrarókadjdjiba</i>	<i>barraródjdjiba</i>	'children'
	<i>karrabba</i>	<i>arrabba</i>	'and, like'
	<i>Ndjúdda</i>	<i>Djúdda</i>	'Juda Point'
	<i>nbarrábarra</i> etc.	<i>barrábarra</i>	'big (masc. sg.)'

Our policy has been not to standardise one dialect or form rather than another, but to admit whichever form the writer uses in speech, provided only that the written form is an accurate phonemic representation of a genuine spoken form. This may even result in minor variation within a single work in particular words. This policy has followed the general inclinations of the literacy workers - though on occasion they will want to check a form with particular old people and defer to them in pronunciation. We can probably expect some indigenous standardisation to take place once literacy is more firmly established, but we cannot predict which directions such standardisation will or should take. The lack of standardisation at present permits a more phonic approach by new literates.

6. AUXILIARY CONSTRUCTION

One further point of relevance to producing natural Ndjébbana materials is the extremely common use of a type of auxiliary construction in which a general positional or motion verb is appended to a more specific verb within the same intonation contour and without pause between the two. In translation this auxiliary verb adds nothing to the meaning. It is possible for such a second verb to have its full force (e.g. sitting, lying, going) but in this case there will be a pause between the two. Some examples of the auxiliary construction are given in example 13.

13. a *Birri-walédjba birri-rekarawéra.*
 They-paddled they-moved
 'They paddled (canoe).'
- b *Karró'a duram ka-rendjína ka-béna.*
 many drums they-stood they-went
 'There were many drums there.'
- c *Nga-ngúdjeya nga-nóra.*
 I-talk I-sit
 'I am talking.'

- d *Díłkarra ngíya-na ngíya-na.*
 Moon let's-look let's-sit
 'Let's look at the moon (to determine what phase).'
- e *Njirrikébbba nji-yi-wákka. Njirrikébbba nji-yi-wákka nji-yarra.*
 We we-FUT-go back We we-FUT-go back we-will
 go
 'We'll go back.'
- f *Yá-nabo barra-yóra-nja.*
 she-fell they-lay-dual feminine
 'She fell on top of her mother.' (of calf and cow buffalo)

This auxiliary construction, though normal and almost obligatory in adult speech, does not appear to be so common in children's stories. It has been omitted from the structured readers partly because of this and partly because use of it would double the length of any sentence and produce a more forbidding reading task.

7. REPETITION AS A PROBLEM IN EDITING

One final feature, common to many Aboriginal languages, presented an editing problem for the Children's Experience Readers series. We aimed in these to edit out, where possible, excessive hesitation, repetition, English words etc. We needed to distinguish, however, between repetition which functioned like 'Um' in English, as a mark of hesitation, and repetition which carried significance of one of two kinds.

Firstly, in the absence of the reduplication processes productive in many Aboriginal languages, repetition may function in Kunibidji as a marker of duration or iteration as in examples 14 a and b.

14. a '*Nirrikébbba níyarra budborl?*' *Njirriyáŋkana, 'I.'*

Njarrakkóya, njarrakkóya, njarrakkóya, njarrakkóya,
yaláwa njarrowolobéna kúl...

'Do you two want to go to the football?' We said, 'Yes.' Four days later (lit. 'we slept, we slept, we slept, we slept' - four times) we came to school...

- b *Njírrabba njarrabéna ngána nakkáyala. Njarrowolabéna,*
njarrowolabéna, njarrowolabéna...

We were walking along on foot. We walked and walked...

Secondly repetition of part of a previous sentence at the beginning of a new sentence has a sort of connective function equivalent to 'then...' in English, as in example 15, in which the phrase meaning 'we'll cook it' is repeated in the second sentence.

15. *Yúya nayákama, yaláwa ngabadjóraba ngabayúkana. Ngabadjóraba ngabayúkana yaláwa ngabamóya ngabayúkana.*

'Get some firewood and we'll cook it and then (having cooked it) eat it.'

It is clearly not appropriate simply to edit out all repetitions which, by English standards, are superfluous. Their functions must be recognised, even though in the English translation these can be handled differently, without any repetition.

8. MATERIALS BEING PRODUCED

Apart from a variety of readiness materials and workbooks the program has been producing three main series of reading books for the children. These are:

Instant Readers - A series of beginning readers or primers (20 designed by the end of 1981, 40 intended in all) with strictly controlled vocabulary and structures. These are to be used to draw together and consolidate the week's reading instruction in various forms including language experience work, breakthrough, workbook exercises etc. There is one sentence and one illustration per page. In the earliest books these are one word sentences. Varying the prefixes and verb roots is designed as an introduction to the segmentation of verb complexes into morphemes.

Story Readers - A series using the same sequencing and the same controlled vocabulary as the Instant Readers, and designed to supplement that series. A further series of Photo Readers, again using the same controlled vocabulary and intended as a second supplementary series, was started in 1981.

Children's Experience Readers - A series of books (over twenty printed up to the end of 1981 with another thirty in various stages of production) each containing a story told on tape by a child, later transcribed by literacy workers and sometimes undergoing a little editorial modification to remove English words, excessive hesitation or repetition. These are at a variety of levels of difficulty and will be

used to extend the children's reading experience beyond the strictly controlled Instant Reader, Story Reader and Photo Reader series.

In addition the program is slowly building up a series of more advanced Adult Readers containing stories and other materials provided by or written by adults. These will be suitable for supplementary reading at advanced levels and have also been used for reading to adults to promote awareness of the program. A couple of photo caption books, a picture dictionary, a Christian song book, two comics in Kunibidji and English versions and a T-shirt are among miscellaneous items so far produced, the last couple being conceived and executed by the white teacher of the Kunibidji class in the school. Finally a regular community newspaper, *Manayingkarirra Djurrang*, containing English, Kunibidji, Burarra and an occasional other language item, began publication in 1981.

It can be expected that experience in classroom use of the materials prepared will bring about future modifications. In addition further linguistic study will no doubt raise issues which will further determine the course of materials development. It is an exciting process.

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REPORTS ON WARLPIRI LITERACY WORKSHOPS

Stephen M. Swartz

0. INTRODUCTION

Approximately 700 Aboriginal people live at Lajamanu in the Northern Territory of Australia. Lajamanu is one of five major population centres for people speaking the Warlpiri language. These speakers number about 3,000, none of whom were literate in Warlpiri as recently as fifteen years ago. The orthography has been standardised since 1974, at which time a bilingual education scheme was instituted at Yuendumu, another Warlpiri community some 600 kilometres south of Lajamanu. In 1982, after numerous requests from the community, the Department of Education initiated a bilingual program at Lajamanu as well.

At the time of the inception of the Lajamanu bilingual program, there were very few Warlpiris who could read their own language even at a very rudimentary level. The rate of literacy for persons over forty years

was less than 1% (and is still estimated at between 1% and 5%). Due to carryover from English literacy, a number of the more capable English literates were able to "wade through" Warlpiri books, of which there were painfully few. Only a few adults had received any kind of formal instruction in Warlpiri literacy. That came from the previous SIL workers in the community, Lothar and Else Jagst.

There were three crying needs recognised almost immediately, the lack of any one of which would hamstring efforts at implementing bilingual education. These needs were (and, to a certain extent, still are): trained teachers who are fluent readers of Warlpiri, trained writers who can express themselves fully on paper in language, and a large body of stimulating reading materials.

In early 1982, a teacher linguist, Christine Nicholls, was assigned to the Lajamanu school. It was her responsibility to implement the bilingual program. At about the same time SIL assigned Lois Glass to join my wife Beverly and myself at Lajamanu to specialise in adult Warlpiri literacy. The result of this, on top of persistent efforts by Paddy Patrick Jangala, senior literacy worker at the school, can fairly be described as a literacy boom in Lajamanu which is still going on.

The following two reports describe in some detail literacy training workshops held at Lajamanu during 1982. Samples of materials used in the two workshops are included in the Appendices.

1. **REPORT ON WARLPIRI LITERACY TEACHER TRAINING AT LAJAMANU**

This report is a description of a Warlpiri training program in vernacular literacy which commenced on 4 March 1982. The original report was written in stages as the program developed and has been updated for this publication.

In late February I was approached by Margaret Osborn and Peter Spinks, both from the N.T. Dept. of Education, and asked to conduct a training program for the Warlpiri teachers currently working at the local school. It was intended that the course would parallel somewhat that being offered at Batchelor in vernacular literacy.

The course began with ten participants, five of whom were employed as teachers in the local school, three of whom were receiving instruction from Julius Waber (at that time on-site lecturer under the RATE scheme), and two others who were participating strictly for their own benefit.

I was ably advised and assisted by fellow SIL literacy worker Lois Glass and my wife Beverly. As the class was divided between those who were fairly advanced readers and those who were just beginning to learn, it was necessary to devote much time to individual instruction.

1.1 GOALS

We developed the course with the following general goals in mind: 1) to improve the reading ability of all the students, both beginning and advanced; 2) to teach spelling, concentrating on word and syllable structure; 3) to encourage the students to work to improve their fluency in reading books aloud, especially those people who are working in the school and are in a position to read books to the children; 4) to develop skills in creative writing and book production; and 5) to develop their ability to critically evaluate their own work and the work of others, with attention to the recognition of and correction of errors.

1.2 WEEK ONE

The previously mentioned course at Batchelor consisted of 48 hours of instruction divided into two eight-week periods of three hours per week. Due to constraints on my time, we compressed the timetable, the first half of the course running from 4 March to 2 April and the second half to be held later in the year (see section 2). We met five days a week from 11:00 to 12:30, or about $7\frac{1}{2}$ hours per week, more than the minimum required by Batchelor. Attendance was excellent with six students present for all sessions, none of the rest missing more than two sessions.

We used a very eclectic approach in teaching this course. The only textbooks were six books which the students purchased for their own study. These books were the *Jijajikirli* series (Gospel of Mark chaps. 2-5), *Yipuruyamukurlu*, and *Nawakurlu*, all published by SIL. These books were selected for practice reading since we had sufficient copies of these on hand for everyone, and, being translated material of foreign subject matter, emphasis could be placed on reading for comprehension.

Days one and two were spent administering a number of tests designed to give some idea as to the students' capabilities in reading both Warlpiri and English. The first test was an English cloze test on the story "Lost," one of several developed by Ian Bachelor and used to test incoming students at Dhupuma and Kormilda Colleges. Spelling Test A was a Warlpiri spelling dictation test in which twenty words, randomly selected, were read aloud to the students with them writing the words down. Spelling Test B was also a Warlpiri spelling test. In this test there were fifteen pairs or triplets of words, the words in each set being minimal sets contrasting with each other in only one sound and letter (could be a digraph or trigraph). One word in each of the fifteen sets was selected and read aloud to them, and the participants were to circle that word on their printed papers. The fourth test was a flashcard recognition test of forty Warlpiri words, again randomly

previously recorded the story on cassette and I played this through twice. Then the class divided themselves into two groups, men and women, and those that could took turns reading the first two pages. The slower ones followed along with assistance from the others. The last half of the period, I discussed with them the differences between the English and the Warlpiri alphabets and also began discussion of digraphs and trigraphs.

Day 4 again began with the cassette recording of *Yipuruyamukurlu*, the idea being to demonstrate fluent reading style, if not perfect pronunciation. After this we divided into two groups with each one taking a turn at reading if possible. We, the tutors, sat in on these groups listening for troublesome words or phrases. Those who finished reading the third and fourth pages of the book went on to read the entire book to themselves.

After this I pointed out to the whole group a few of the words which had caused trouble or had been misread the previous day. These were words which had close minimal pairs both in sound and in spelling.

Then I went into a discussion of the difference between vowels and consonants, the difference being that with vowels the air flow from the lungs is unimpeded and in consonants the air flow is partially or completely impeded. I then began a discussion and demonstration of the processes involved in the production of speech sounds. I dealt primarily with the action of the lips, jaw, tongue, vocal chords and nasal passage. We did a bit of self examination to feel how these different parts function when we speak.

I then introduced and explained how we can represent the various sounds using face diagrams (cutaway side view). I used the overhead projector to draw pictures to represent the three sounds *p*, *m* and *mp*. Each pupil had blank face diagrams which they also filled in for the various sounds. The purpose of all this was to help them relate what is going on in their mouth to what they must put on paper when spelling.

After this, pupil A worked with H and I on their beginning exercises, as A wished to improve his skills as a teacher. The rest continued on with practice reading.

Day 5, I introduced the sounds/letters *k*, *ng* and *ngk*. The method for introducing these sounds was to first talk about words which have these sounds in them both initially and medially. I had previously prepared a list of words with these sounds which I handed out to the pupils (also done for the previous day's sounds; see Appendix A). Then using the face diagrams again, we discussed how these sounds were produced and how this set differed from Day 4 sounds (velar articulated rather than

bilabial articulated though not with the technical language used).

The beginning groups then began working on their materials. For them we began working through a book of Warlpiri dictations produced at Yuendumu, entitled *Nyampu Yimi Witapatu Ngulaju Kurdukurduku Yirrarninjaku*, "These Little Stories Are For Children To Write." It is basically a Gudschinsky-style primer with the controlled introduction of letters and sight vocabulary, relying mainly on the ability of the pupil to recognise syllable structures and make words out of these. A progress chart was started for each of the beginning students, as within the group the ability to read and to recognise the syllables, words and sentences varied. Pupil A again assisted with two of the beginners requiring much individual attention.

I administered two exercises to the advanced group. The first was a cloze word test in which I selected about fifteen words from the *p*, *m* and *mp* list. These were listed down the page with these three letters omitted from each word with blanks where they should be. No one missed more than two of these. The second of these was a comprehension check on the *Yipuruyamukurlu* book. I had formulated and typed out ten questions asking for mainly content information obtainable directly from the story text itself. I read through the list with them first as I was interested in their answers, not in their ability to read my questions. The results were very good with no one missing more than one. Most gave one word or phrase answers, but pupil C wrote out fairly complete sentence answers.

Day 6 started with a quick review of the six letters introduced. I pointed out to the students a list of about eight words containing these six sounds which were minimal pairs.

The beginning group continued on with their exercises.

The advanced pupils C and D recorded on to cassette the *Yipuruyamukurlu* story. We checked all the advanced pupils on their understanding of the face diagrams once again. Then we began our first attempt at creative writing. We discussed a variety of topics which we could write about. After a while one of them suggested writing about all the rain we'd had lately and the flooded creek. (See sample story in Appendix A.) This captured their attention and interest, and each one began writing his own story. As they finished they read them to each other or else to themselves.

In the remaining time I had them work on another cloze word test, this time a list of twenty words selected from Day 4 and Day 5 words. With six consonants to choose from, the work went more slowly and was left to complete on Day 7.

Day 7 was another review and checkup day for both the advanced and beginning groups. The first part of the period was spent with the whole group reading *Yipuruvamukurlu* aloud. The four advanced pupils alternated reading for the rest of the group. I then read through a second list of prepared questions on the story with everyone participating with the answers. The group showed much enthusiasm answering these questions. Then we divided into the two groups again.

The beginning group was dictated a list of words to spell in their notebooks, the words being taken from page one of the dictation exercises. Then they continued on with their exercises, sometimes working together, sometimes by themselves.

I also dictated a more difficult list of words to the advanced group, these words being taken from the word lists from week one, concentrating on the consonants covered to date. I then wrote the words on the blackboard and let them check their own spelling. Then they worked to complete Day 6 cloze word test and began work on an exercise to build words from the 18 syllables formed by *a, i, u, p, m, mp, k, ng, and ngk*. These two exercises were carried on into Day 8.

For those who had written stories about the local creek, I handed back type-written copies of their work typed as they had written them. They were instructed to add to, amend or correct their own stories as they wished after reading them to someone else. They also received copies of each other's stories to look at. I began working individually with pupil A who felt his story was complete, so we began making editorial changes as he felt they were needed. I showed him how to do such things as insert words, transpose words, delete sections, use commas and full stops, and combine words and affixes which belong together.

To summarise the first week, we (the tutors) were especially impressed by the level of enthusiasm shown by everyone. We experimented with a variety of methods and exercises, and for the most part the pupils cooperated fully. Two areas of reticence were evident, these being that most did not enjoy demonstrating their skills on the blackboard and some were reluctant to record on to cassette tape. But attendance was good (average of 8.4 per day out of 11 who came at least once). Progress and improvement was shown by all the pupils, advanced or beginning, the crucial thing with the latter group being their stick-to-it-iveness until the basics were mastered. Class periods averaged at least 1½ hours per day, and each day I had to formally dismiss the group as none made a move to go on their own. I interpreted this as a good sign and trusted we could maintain that level of interest.

thoroughly and began the second half on Friday, leaving this section for the fourth week. The advanced students worked to complete their second set of stories, the theme for these being the poor condition of the road due to the rain and its consequences (sample story in Appendix A).

It was felt by all the tutors that it was necessary to have some outlet for these stories. Therefore, in conjunction with the school and the transition/year 1 staff, the Warlpiri teaching assistants planned to duplicate these books at school by hand in the form of large lap readers (two to three feet in length). These then could be read to the school children. Another project under consideration was to have each of the Warlpiri teachers be responsible to read one new Warlpiri book per week and then to read that book to various grade groups throughout the school. Again the purpose here was to give additional practice in the skill of reading.

1.5 **WEEK FOUR**

During week 4, two new students began attending. One was placed in the intermediate group and the other in the beginning. Attendance remained good with daily totals of 8, 13, 10, 11 and 8.

The new letters taught using face diagrams were *rt*, *zn*, *znt*, *t*, *n* and *nt*. By week's end the intermediate group had completed exercises through page 17 of the dictation exercises. An auxiliary reading activity for this group was to have them work individually on a series of graded readers and to check these with one of the tutors when they felt competent.

Two spelling tests of randomly selected difficult-to-spell words were given to the advanced group. Scores on the two lists of twenty words each were as follows:

Figure 2: Spelling Test Scores

Pupil	Spelling Tests	
	#1	#2
A	15	-
B	9	4
C	13	12
D	13	15
E	10	12
F	5	4

These spelling lists were corrected in class and used as a teaching exercise. Both lists contained difficult and not always common words to spell and so provided a useful indicator of the student's ability to sound out words.

Week 4's writing exercise was to compose and send a letter by mail to a friend in another town. The group enjoyed doing this and seemed pleased by their ability to do so.

One other activity was begun, one designed to increase reading fluency and speed by breaking the habit of looking at the page one word at a time. Various short stories or parts of stories were printed on transparencies. A piece of cardboard was cut out so that a rectangular slit was left in it wide and long enough to reveal about one line of text at a time. By either flicking the overhead projector on and off or by sliding the cardboard or transparency, I could move at varying speeds down the story. This was done during two class sessions and seemed to be an effective method to teach them to take in as much as possible with one glance.

Spelling Test A was re-administered to four of the group. Scores are given in Figure 3. Comparing these scores with those obtained at the beginning of the course, general improvement can be seen. (F did not take the first test). The second column is a subjective evaluation on my part of the advanced group's reading ability. Student E proved exceptional in two areas: spelling and reading fluency. In fact, when reading for the group, she needed to be cautioned to slow down a bit so

that the beginning group could follow along! The rest in the advanced group proved able to read any piece of Warlpiri material with varying degrees of proficiency. Only pupils B and F had significant difficulties in decoding strange material, but once having been prompted, these two could also work their way through. Mainly all of these needed more and more practice in reading.

Figure 3: Scores on Spelling Test A

Pupil	Spelling Test A	1-10 Fluency
A	-	8
B	7	4
C	13	8
D	-	6
E	19	10
F	7	4

1.6 SUMMARY

By the end of the course a total of 30 hours of instruction had been given. A summary of the things accomplished is given here in reference to the goals set forth in section 1.1 of this report.

1) to improve reading ability: Rather a hard item to gauge. The advanced students all had a greater confidence in their ability to read and did not shy away from exercises in group reading, although one or two suffered a little embarrassment, due more I believe to their personalities than to their ability. The intermediate group who had command of enough letters and syllables to read simple books could be described as literate. The beginners did not yet have command of enough letters to read anything beyond the exercise pages. With all of the students, however, the significant factor in their development as readers was and is the development of an attitude which views the reading of books as an interesting and worthwhile exercise for their leisure time, an attitude which only a handful in the entire community have even in reference to English literature.

2) to teach spelling: Again the key is practice and more practice for them all. Improvement was demonstrated among the advanced students, and

the beginning and intermediate groups also were tutored on letters and on syllable recognition.

3) to increase reading fluency: The almost daily reading of the *Jijajikirli* and other reading books as a class activity sharpened the skills of the Warlpiri teachers and gave the others (even the beginners) an obtainable goal to work towards.

4) creative writing: We were pleased and encouraged by the three writing projects completed by the advanced group. We anticipated holding a creative writers workshop within the year and the development of a community newspaper to provide an outlet for writers and also to promote reading as an activity.

5) to develop the ability to critically evaluate their own and other's work: Only a little was done in this area. There is a cultural pressure not to criticize another's work. Among those beginning creative writing, most were now using full stops as punctuation and a few correctly used capital letters.

We were pleased with both the response to the course and the results. The beginning and intermediate groups will continue on, depending on their own level of motivation. It is hoped that those who are teachers will now be encouraged to put these skills into use at the school both by reading to the children and producing lap readers and other books.

Plans were then made to conduct a writers workshop later in the year, and a report of this workshop is given in section 2.

2. **REPORT ON WRITERS WORKSHOP AT LAJAMANU**

This report is a summary of activities during a writers workshop held at Lajamanu from 18 October to 12 November 1982. The workshop was held in conjunction with the local Warlpiri school and recently established Literacy Centre. Invaluable assistance was given by Christine Nicholls, teacher-linguist, whose presence ensured the smooth day to day running of the workshop and whose organisational skills are largely responsible for the Literacy Centre itself. Further able assistance was given by Lois Glass who worked with those teaching assistants and literacy workers whose skills were not developed sufficiently to participate in a workshop of this type but who wished to share in the overall learning atmosphere. A special note of thanks goes to the school staff who put up with the inconvenience of losing their teaching assistants for several hours each day.

We began the workshop with fifteen people either being recommended because of their jobs as teachers or literacy workers or because they

wished to participate on their own. During the four week period, five people either dropped out completely or attended so sporadically as to miss out on any significant level of instruction. There was little overlap between participants in this workshop and the previous one.

Whereas the earlier workshop was designed to augment the skills of fluent reading and spelling, this second workshop concentrated on creative writing skills. We were amazed to see how a number of the women displayed tremendous creativity and facility in their writing. We used one film of an Aboriginal legend to stimulate their thinking, but after awhile they began writing on things that interested them. During the final days of the workshop, we gave some basic instruction in translation theory and practice.

Since these workshops, there has been rapid development in the bilingual part of the school under the direction of Christine Nicholls. Six people were initially employed on a part-time basis as literacy workers charged with the task of developing materials for use in the school and in the community at large. The school bilingual program was initiated as a transition and year one program only, with plans to add an additional grade each year. Despite there being a great deal of material available through the bilingual programs at Willowra and Yuendumu, there is an ongoing need for locally authored books and readers. Thus the need for such training in creative writing.

2.1 APPROACH

Because we began with such widely disparate literacy skills, we embarked on a series of tests to determine the various levels. A full report on the testing procedures used appears in Appendix B. On the basis of the results, three of the participants were assigned to receive basic literacy instruction under Lois Glass, and it is anticipated that at a later date one or more of these may progress far enough to benefit from further workshop training. The others were divided into morning (11:00-12:30) and afternoon (1:15-3:00) groups meeting four days a week.

2.2 GOALS

The workshop had several goals at the outset: 1) to train the participants in writing expressively in Warlpiri, 2) to produce literature for use in the school and in a community newspaper, 3) to improve on self-editing skills such as spelling and punctuation and the need for multiple drafts and 4) for the less accomplished oral readers, improvement of reading fluency.

I had ordered nearly a dozen films in the hopes of using a few for inspiration viewing. As it turned out, only one film arrived in time,

but it was of excellent quality and provoked several good stories. We also planned one excursion with the younger school children to one of the nearby waterholes.

One thing of note was the initial reluctance of some participants to begin work on any particular assignment in Warlpiri. However once they were assured that we really did want them to write in Warlpiri and not in English, most responded well and without significant difficulties.

2.3 ACTIVITIES

Following is a day by day description of activities.

Day 1 We began with a discussion of the purposes and need for Warlpiri literacy. I discussed with them some basic rules for writing, adapting these mainly from material used at an SIL literacy workshop in Port Keats. We then discussed the various things that went on during the *Purlapa Wiri*, a Territory-wide Aboriginal ceremonial festival held at Lajamanu. Then they all began writing on one aspect of that week of dancing and singing. Worksheet 1 proved useful in that the participants saw how better pieces of writing tended to be longer and to put a picture in the reader's mind.

Day 2 Several people had already finished their stories, these tending to be fairly short. I had also written one in Warlpiri, so I used myself as a guinea pig to make a few teaching points on editing a story. I read mine aloud and encouraged comments, suggestions and corrections. There were plenty! As was the case throughout most of the workshop, people were very hesitant to comment publicly on someone else's work, so any editing was done privately with myself or with them helping each other in pairs.

Day 3 We completed Worksheet 2 on using specific rather than generic words. This also proved to be a useful exercise, well worth repeating at a later date.

Day 4 There was an unexpected visit from an artist from the Department of Education, so we spent the day learning about various art techniques and silk screen printing.

Day 5 We completed Worksheet 3, but the exercise provoked little response except for number 3 at the bottom. In the future I would incorporate this worksheet with worksheet 2. Those who had completed their *Purlapa Wiri* stories began work on stories concerning their jobs and families.

Day 6 We discussed the upcoming excursion to Catfish Waterhole and how

we could be observing the various activities there. We also had a look at various books at the Literacy Centre, examining them in particular in relation to the artwork. Preferred styles apart from ever-popular colour tended to be realistically executed drawings done in heavy black ink. There was little appreciation for childish drawings even if done by an Aboriginal artist.

Day 7 We went to Catfish Waterhole with the younger school children. Activities included finding bush tucker, swimming and chasing a small crocodile.

Day 8 Only two participants who made the Catfish trip attended but both of these completed first drafts. The one story was quite imaginative though riddled with spelling errors. Again this pointed to the importance of allowing maximum freedom from spelling and punctuation restrictions for those who might be creative but not yet proficient in basic writing skills.

Day 9 We watched the film *The Legend of Jinini*. I highly recommend this well-produced depiction of a Top End legend. This film was obtained from the Department of Education film library in Darwin.

Day 10 We went through Worksheet 5 on emotions. The second half of the worksheet was geared specifically to the previous day's film, and the participants were encouraged to consider the emotions of one of the characters during some highlight in the film and then to incorporate these emotions into their story. Evidence of this did come out in several of the stories.

Day 11 We went through Worksheet 4 on similes and metaphors. Only one example of a phrase or sentence metaphor was produced, and in subsequent writing, no such uses of simile or metaphor occurred. This may not be a natural feature of the language, or it may be one that needs further development.

Day 12 We went through Worksheets 6 and 7 on editing procedures. Both worksheets contained Warlpiri stories written with all punctuation and capitalization removed, and I believe it was a helpful exercise in raising their awareness of the importance of such things.

Days 13-15 We commenced the exercises in introductory translation principles, beginning with a few examples of poor translation. Five of the people did reasonably well on the exercise. One thing this exercise pointed out was a need for these people to have a bit of instruction in the grammatical structure of their own language as a basis for translating even simple stories into Warlpiri.

Day 16 Those with stories to complete did so. I repeated the oral reading samples test on three of the participants. Two of them commenced work on a story to translate into Warlpiri for use in the school.

2.4 MATERIALS PRODUCED

In terms of actual production, the following stories and items were written: nine stories based upon the recently held *Purlapa Wiri* where nearly a thousand Aboriginals from all over the country came to Lajamanu for a week of ethnic dancing and singing; five stories written about each person's family and job; five stories written about the excursion to Catfish Waterhole; five stories written about the film *The Legend of Jinini*; and five translated versions of a simple Bible story. This last item, though not in the original planning, came about in response to a request for an introduction to translation principles. Seven worksheets were completed, a number of these based upon worksheets used previously by SIL teams at Port Keats and Tinaroo Dam. Also completed was a seven-page translation exercise. (See Appendix B for copies of worksheets and translation exercises.)

Several workshop participants expressed a desire to see their work in print, and most if not all of these stories have been printed in a community newspaper. Following are English translations of some of the stories produced, one example on each topic.

Purlapa Wiri

In September, people gathered here in Lajamanu in preparation for the *Purlapa Wiri*. Lots of people gathered from the south, and from the north, and from the east, and from the west. Many came in trucks, buses and aeroplanes. They danced their own corroborees. They danced really well. Some danced the kangaroo dreaming, some others danced the bird dreaming and the fish dreaming. The people from Amata danced a sacred corroboree, and we threw dirt at them to ward off illness.

My Job and Family

My name is _____ Napanangka, and I work in the little children's school. I take care of the really little children, and I teach them to sing and to make books. They learn to speak Warlpiri and English at

school. I am the mother of one boy and one big girl. I also raised another woman's little baby. My husband Jupurrula carves many things such as boomerangs and coolamons for the teachers. The children we take hunting one by one, we and the teachers.

Trip to Catfish

A while back we took the children to Catfish. As soon as we got to Catfish and got down off of the truck, the children jumped into the water. We all were swimming. After that _____ Napanangka spotted a big clump of marnta [plant resin] in a tree. After she had climbed the tree and got it, she showed it to the Europeans. They looked at it and nibbled off little pieces of it.

After that _____ Napangardi saw a little crocodile in the water. After she showed us, we all ran to see it. We only saw its two eyes. When it saw us, it dove back underneath the water. After that we waited for it with sticks. We walked round and round with sticks waiting for it.

After that we ate a lunch of food and meat. After that we went swimming again. While we were in there the Europeans thir w us apples.

After lunch the old women went a long ways away for fish. When they returned, they carried back fish. After that we came back to Lajamanu. That's all.

The Legend of Jinini

Long ago the world was without people; only birds and animals lived at first. A man and a woman were put there by the Dreaming. He gave them the names Purukupali and Pima. These two did not have any children.

Then the man went hunting for meat. The woman stayed behind and then, unaware of any danger, she walked around a big pile of rocks. A whirlwind emerged from there, and she became afraid. A little bit later a child was born. They sat with it in the creekbed for a long time.

Now the big child sat with its mother in the shade, and a young boy approached her in the shade with the child. From a distance he looked at her from among the leaves. He loved her. That boy lusted after that woman.

Now her husband used to always go out hunting after meat. The woman used to wait looking all around for the young boy; then leaving the

child lying in the shade she went off. Day after day those two used to secretly run off.

Later the mother and the young boy came back to the child, who was lying in the sun, and the mother embraced it. She listened for its breathing. But it just lay there limply.

Then the woman's husband came upon those two in the shade with the child, and the man took the woman by the arm and slapped her. After that she ran away.

The man held the child in his embrace. Putting the child down he swore at the young man and told him, "You have brought shame on us all." Picking up a stick he chased that young man.

Picking up the child he went towards the ocean and with it he drowned himself. But Japara [the young boy] became afraid and went up into the sky and turned into the moon.

That's all my story.

3. CONCLUSION

What results can be seen from all of this? First of all, the reading and writing skills of all the Warlpiri assistant teachers improved greatly, this being to their benefit not to mention the benefit of the Warlpiri children who look to them as role models. Second, numerous books have been produced semi-independently by people who participated in these workshops. Such stories as *The Little Red Hen*, *The Fox and Hen*, *The Man and the Cockatoo*, and *The Prodigal Son* have been first-drafted by various ones working from modified English versions. This has speeded up the process of getting a good first draft which heretofore had to be done face-to-face between the translator and language consultant. Now, several of these Warlpiri people are gaining experience in the basics of story writing and translating. Third, whereas before all cassette recording of stories was done by myself, the translator, now there is a small but growing number of people capable of producing good quality, fluent narrations. Fourth, we have since followed the first two workshops with another writers workshop, again with a number of first time writers. Several of the Warlpiri people have also visited the SIL centre in Darwin and received hands-on training in book production in the printshop and cassette recording in the studio. A further benefit to the community is that upwards of a dozen people are employed part-time at the Lajamanu Literacy Centre.

It is difficult to evaluate all the effects these workshops have had. One definite benefit has been to show various of the Warlpiri people

that literacy is not some magical tool owned by only the whites. A prevalent attitude among them is that English is easy (notwithstanding basic non-literacy in this area too) and that Warlpiri is hard. Now Warlpiri literacy is seen as being do-able. The attainment of this skill is increasingly being seen as a way of exercising control over their own community, as a way of preserving what yet remains of their cultural heritage.

APPENDIX A: MATERIAL FROM TEACHER TRAINING WORKSHOP

8 March 1982

English Alphabet

a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s
t
u
v
w
x
y
z

Warlpiri Alphabet

a

d

g

i
j
k
l
m
n

p

r

t
u

w

y

English Vowels

a e i o u

Warlpiri Vowels

a i u aa ii uu

9 March 1982

p

parra

pantirni

m

mardu

marrka

mp

pampa

mpa

161

