

# Language Recovery of the New South Wales South Coast Aboriginal Languages

## Part A Analysis and Philology

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## Chapter A.3 Phonology

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The phonological analysis presented in this chapter is based largely on the wordlists, texts and stories collected by Mackenzie (for example *Mēgaaolāli Wurragul - The Nutgatherers*, 1874:255), and Mathews (for example *The Parable of the Sower*, notebook 4:16-20). Wordlists of other early collectors such as Horatio Hale (around 1840s), and Richard Dawsey (in Curr, 1887) were used mainly for comparative purposes and to fill any possible gaps left between Mackenzie's and Mathews' material. Only two out of all collectors of South Coast Language (SCL hereon) sources are from a non-English speaking background. Gaimard (1834) and Lau (ca 1850, in Fletcher, 1991) were from French and German speaking backgrounds respectively, hence Gaimard's transcriptions of the words collected at Jervis Bay often differ from those of the English-speaking collectors. This distinction is discussed where relevant throughout the text.

The outline of the phonology chapter presented here therefore differs somewhat from that of conventional grammars written on AALs. It provides not only the data and findings but also a view into the processes of working from archival material. This chapter is relatively voluminous because the phonological analysis serves as the foundation for the whole language analysis in this study.<sup>19</sup>

In her analytical work on the SCLs, Eades (1976) based her phonetic and phonological analysis of the SCLs exclusively on the audio recordings produced by Luise Hercus and Janet Mathews in the early-mid 1960s, using the available archival material only to complement her findings. In contrast, the phonological analysis in this

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<sup>19</sup> For additional helpful insight into working with Aboriginal languages from historic written material, I would also like to refer the reader to *Paper and Talk* (Thieberger, 1995) and Koch's (2009) 'The methodology of reconstructing Indigenous placenames: ACT and southeastern NSW'.

chapter is based almost exclusively on the written historic sources. Eades' established phonetic transcriptions were consulted as a comparative method for the determination of retroflex stops. Similarly, Capell's recording of Les Bundle, noted as the last *fluent* speaker of any of the SCLs, was consulted for the purpose of shedding some light onto the quality of rhotics.

There are two reasons for the general omission of Luise Hercus', Janet Mathews' and Diana Eades' audio material from the corpus in this study, and they are:

1. To present a language description based on the historic material from the 19<sup>th</sup> century<sup>20</sup> to get a picture of the most traditional use of the languages possible. The material compiled later in the mid 20<sup>th</sup> century was collected when English would have left an even deeper mark on the traditional languages (see Austin, 1986 for a comparative study on the impact of English on different aspects of Gamilaraay, Ngiyampaa and Dharrawal). However, I stress throughout this thesis that for purposes of language reclamation all available source material is of equally great importance.
2. The nature and variety of the archival SCL corpus by different collectors in many cases provided sufficient data allowing for a comparative method to establish the standardisation of the orthography and phonemicisation of lexical items.

Finding words only in isolated instances throughout the SCLs corpus posits the dilemma of whether to incorporate cognates from other NSW languages – particularly in cases where transcribed *n/d* may have been wrongly transcribed instead of dental nasal/stops *nh/dh*.

From an areal perspective, linguists (see Dixon, (2002a); Yallop, (1982) and Busby, (1980) for example) have ruled out a retroflex series in the Australian Aboriginal Languages (AALs hereon) of south-eastern NSW. I argue that these typological studies were conducted before extensive linguistic work on south-eastern

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<sup>20</sup> I include here Mathews' material that was collected between late 1890s and 1902.

Australian traditional languages had truly commenced<sup>21</sup>. Relying on their typological observations presents us with the danger of too quickly dismissing unexpected language aspects and/or patterns in the archival material.

Throughout this chapter, phonemes will be mostly referred to not by their IPA symbol, but by the representing grapheme or digraph used in this orthography. Phonemes will be presented in the convention of /forward slashes/ in some parts throughout the discussion.

### A.3.1 The Orthography

The orthography used here is that used by various language projects on the NSW South Coast and was chosen by representative Aboriginal community members during the early stages of the Dhurga language teaching projects at two schools on the South Coast (Board of Studies workshop, Vincentia High School, 4<sup>th</sup> March 2005). Various subsequent language projects on the South Coast adopted the same spelling system and it is therefore retained in this study to enable community members to utilise this work without having to learn a different orthography.

The basic rule for assigning a suitable SCLs orthography was the need for symbols that were easily accessible on the average keyboard. This allows students and language learners to write the languages without having to use special keys.

In order to avoid an English pronunciation of word-final *ny/dy* as in ‘many’ or ‘muddy’, community members decided to use *nj/dj*. It was considered to be of greater importance than to risk the affrication of the phonemes due to the *j* triggering a *dsh* or *tsh* sound, as in ‘judge’ or ‘church’.

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<sup>21</sup> For work on NSW languages in progress or recently completed, see Giacon et al (2003 - Gamilaraay, Yuwaalaraay), Morelli (2008 - Gumbaynggirr), Lissarrague (2007 - Dhanggati, and 2010, - Gathang), Oppliger (n.d. - Dharug), Steele (2005 - Sydney language) and Jones (2008 - Darkinyung), to name just a few.

All stops are represented by their voiced counterpart, which is an orthographic convention that is used in many language reclamation projects and/or programs in most south-eastern AALs.

The nasal-stop cluster /ng/ is distinguished from the velar nasal /ŋ/ with the use of a full stop, i.e. *n.g* versus *ng* for the latter.<sup>22</sup>

Homorganic nasal-stop clusters *nhdh* and *njdj* are transcribed in this orthography as *ndh* and *ndj* respectively. This decision was made to avoid language learners and readers being faced with convoluted strings of consonants. Transcribed words such as <*bundhaia*> ‘he used’ (A-M.2.6-21-PoPS) will consequently not be phonemicised as *banhdha-ya* to show a dental nasal-stop cluster, but are reduced to *bandha-ya*. We can also not rule out that the preceding nasal was an apical, and not a dental nasal.

Vowel length and rhotic distinction is difficult to assign in many cases; this means that when a *rr* is given in my phonemicisation, it represents a trill; whereas a *r* means that it could be either an approximant rhotic or a trill. Similarly, a long vowel *aa/ii/uu* in my phonemicisations means that it has been analysed as a long vowel; whereas *a/i/u* denotes that it could be either a short vowel or a long vowel. See discussions in A.3.7.5 and A.3.8.2.1 for further discussion on rhotics and vowel length.

Proper nouns (names and placenames) and sentence initial words are capitalised; and punctuation follows the English spelling convention.

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<sup>22</sup> This convention frequently raises initial concern with some community members regarding any possible confusion with the conventional function of the full stop marking the end of a sentence. But this apprehension is generally relieved after discussing the use of diacritics and other punctuation, such as apostrophes (*that’s*) or umlauts (*Käfer* ‘beetle’ German, or *naïve*) that are used in the long established spelling systems such as these European languages.

## A.3.2 The Phoneme Inventory

The SCL phoneme inventory (see Table 2) presented here consists of two laminal and two apical phoneme series, corresponding bilabial and velar phonemes, a trill, a rhotic approximant, and the two semivowels. The inclusion of the apico-postalveolar series is based on the examples in the language corpus that show evidence of these phonemes, but these are not consistently transcribed. It is possible that Mathews was not familiar with retroflex stops and nasals until he worked on other languages after the south-east NSW languages.

The vowel system consists of three vowels; the high front and back vowels /i/ and /u/, and the low central vowel /a/, and their long counterparts.

Table 2. Phoneme Inventory of the South Coast Languages

Consonants						
	bilabial	apico- alveolar	apico-post- alveolar/ retroflex	lamino- dental	lamino- palatal	dorso- velar
stop	b	d	rd	dh	dj	g
nasal	m	n	rn	nh	nj	ng
lateral		l	rl		lj	
trill		rr				
approximant	w		r		y	

Vowels			
	front	central	back
high	i (ii)		u (uu)
low		a (aa)	

There is a lack of reliable minimal pairs to clearly identify phonemic vowel length, although long vowels are clearly transcribed by the early collectors. Based on the evidence of long vowels in the original sources, and the inclusion of phonemic vowel length in other south-eastern AALs such as Wiradjuri and Gathang. Vowel length is therefore tentatively included in the phonemic inventory, and phonemicisations show long vowels where they have been analysed as such.<sup>23</sup>

This inventory differs from Austin's (1997:23) reconstructed proto-Central New South Wales phoneme inventory due to the inclusion of the apico-post-alveolar (retroflex) series (except the approximant.); but it correlates with inventories of some other NSW languages such as the western NSW language Paakantji (Hercus, 1982)<sup>24</sup>.

Like most AALs (Evans, 1995a:724 and Dixon, 2002a:550), the SCLs show no phonemic distinction between voiced and voiceless stops.

### A.3.2.1 Apico-post-alveolar/retroflex consonants

The existence of retroflex consonants in the SCLs has always been treated as an unresolved issue. Eades (1976) omitted a retroflex series in her SCLs analysis based on the omission of retroflex consonants in Mathews' inventory and the lack of

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<sup>23</sup> The transcriptions of words with long vowels with digraphs, i.e. *aa/ii/uu*, rather than opting for a single grapheme *a/i/u* to represent either short or long vowel, was also of great importance for community members in learning the pronunciation of their languages.

<sup>24</sup> Apart from the inclusion of the dental laminal in the Paakantji phonemic inventory.

retroflex sounds (except one example as discussed below) in the audio recordings from the 1960-70s by Hercus, J Mathews and Eades.

Firstly, Mathews gives no hint of retroflex consonants, and we have seen that he had quite a good ear and explained sounds well. Secondly, I have not heard any retroflexes on tape and although they could have been forgotten, one would expect at least some hint. (Eades, 1976:34)

But Eades contradicts the latter argument in her phonetic transcription of ‘frog’ [gɔŋgɑŋ] “which had been given on tape by three different *Dharrawal* informants with definite retroflexes” (Eades, 1976:34). The same word was transcribed by Tindale <'kur'gart> (WL-T.75), whereas Mathews transcribed a word-final palatal stop <koor'-gaty> (U-M1.1).

Capell also interpreted Mathews’ *rC* transcription as being inconclusive and did not rule out that *Dharrawal* contained retroflex consonants.

It is not always possible to interpret Mathews’ *r+C*. Such a combination is a normal English interpretation of a retroflex consonant, but Mathews is not completely consistent, and some of the instances where a retroflex is given in the following pages [of Capell’s grammar] may therefore be incorrect: *r+C* may actually be intended;... (Capell, nd)

Capell continued to comment that retroflex consonants are “much rarer in eastern Australia than in the north, west and centre” and the same typological observation has been established by Dixon (2002a:565).

But reiterating here from the introduction to this study, we cannot rule out that works like these may have a limiting effect on language research in south-eastern Australia. Although typological observations on AALs presented to date include the linguistic findings of languages of south-eastern NSW, it is imperative to remember that many of these languages have only been fairly recently, or are in the process of being, re-analysed.

Furthermore, retroflex consonants have been identified on some closer related south-eastern NSW AALs. Hercus and J. Mathews (1969:199), for example, identified

retroflex stops in Ngarigo, a neighbouring inland language of the SCLs, although only in three words.

Within the SCLs archival material, Mathews did not list retroflex consonants in his spelling keys in the published grammars of the SCLs. However, in a later publication on the grammars of some NSW and Victorian languages, Mathews (1904a:207) presents the reader with information on retroflex consonants (the applicable languages are not given by Mathews) and the difficulty of identifying them.

In several native words, an indistinct sound of *r* seems to come before consonants. Thus, it is difficult to distinguish between *thurl-tha* and *thul-tha*; between *kur-nu* and *ku-nu*; between *bur-al* and *burd-al*.

The fact that this description was published after his SCLs publications could suggest Mathews' increasing knowledge of function and aspects of AALs. We cannot rule out that this description may have also applied to the SCLs, which would explain alternation in *rC* spelling. Considering that the SCLs material was the earliest he collected (as evident from the order of his notebooks and publications), we need to allow for possible gaps in his knowledge that he was later able to fill. (See Chapter A.2 (Methodology) on Mathews' increase in knowledge of language function throughout his work on the SCLs and afterwards.)

There is also a possibility that Mathews may have been uncertain about retroflex consonants (other than the approximant rhotic) at the time he was collecting the SCL material. This would explain at least some of the discrepancies between his notebook entries and subsequent published item. For example, <*mirnung*> 'semen' (A-M.2.3-50) in his notebook was later published as <*minnung*> 'sperm' (A-M.1.3-276). The change in the choice of translation alone shows that Mathews reviewed his notebook entries and made appropriate changes. So we cannot rule out that he would have at the same time decided to change the spelling of the word to avoid uncertainties.

It is apparent that at least some transcribed *arC* sequences are representations of the long central vowel *aa*, particularly in the earlier collectors' material.

*waadhu* 'skin' < *wardoo* > (U-C.1-33)  
< *wâ-dhoon-gan'-yan* > (U-M.1.1)  
< *wardo* > (U-RD-423)  
< *wardu* > (MY-HH-480)

Note that only one of these four transcriptions is by Mathews and his differs greatly from the others because he uses *â* instead of *ar* to denote a long vowel and he identifies the following stop as dental nasal. But transcriptions such as < *kardeer-â-nga* > (U-M.2.2-76) 'rend, tear' where Mathews marked the long vowel (or possibly stress) clearly with a diacritic on the vowel, *â*, leave the possibility of retroflex stop or rhotic-stop cluster for the *ar* sequence in the first syllable.

In < *bibburdugang* > (A-M.1.3-277) *biburdugang* 'brown hawk' — Dhurga < *bib-bur-noong'-ga* > (U-M.1.1) — the *rn/rd* alternative spelling between the two may also support a retroflex consonant. Both *rd* and *rn* share the same place of articulation, apico-post-alveolar; only the manner of articulation differs here, i.e. the stop in *rd* versus the nasal *rn*.

In regards to distribution, no transcriptions that could be analysed as retroflex consonants have been recorded in word-initial position, only in inter-vocalic and word-final position. Compared to *rn* and *rd*, word-final *rl* has not been found in unambiguous transcriptions. Each individual retroflex consonant will be discussed in the following appropriate sections.

### A.3.3 Contrast

Within the SCLs corpus, the general transcriptional tendencies are that palatal nasal and stops *nj* and *dj* are followed by front or central vowels, /i/ and /a/ respectively, but rarely by the high back vowel /u/. In contrast, dental nasals and stops, *nh* and *dh*, are

found frequently when followed by *a* or *u* (or *oo*, *ū*), but only in one isolated instance preceding *i* in Mackenzie's material, i.e. *dhidbula* < *Thitbūlo* > 'he spat' (DM-AM-TuPu). No examples are recorded with *nh* preceding a high front vowel /i/. This pattern of occurrence follows Dixon's (2002a:561) observation that

[i]n most (but not all) double laminal languages there is a strong association between lamino-palatal phonemes and a following *i*, and between lamino-dentals and a following *u* or *a*.

A more unusual feature for a Pama Nyungan language is the presence of word-initial apicals (Alpher, 2004:112) that are found in the SCLs. Here we have reliable transcriptions and a comment by Mathews (1904b:xxxviii), where he offers the following explanation for the relatively small occurrences of word-initial *d* (as opposed to *dh* and *dj*) in one of his published grammars.

Th is frequently used at the commencement of a word instead of dh, and in such cases an initial t sound is substituted for that of the d. Dh and th are generally interchangeable. At the beginning of a word our English sound of d and t seldom occurs, it is generally pronounced dh or th, in the way just explained.

Table 3 shows examples demonstrating alveolar, lamino-dental and lamino-palatal contrast.

Table 3. Laminal and Apical Contrast in the South Coast Languages

Phonemicised	English	Language /Place	Original spelling
<i>daarlawan</i>	great shark	U	< <i>dâr'-lou-an</i> > U-M 1.1; < <i>tarowann</i> > 'dente' (poisson) JB-G-12
<i>dhana</i>	foot	A; ILL	< <i>dunna</i> > A-WR-419; < <i>dhunna</i> > A-M.1.3-276; < <i>thunna</i> > A-AM.1-255; < <i>Thunna</i> > A-ILL.SoM.JB; < <i>dhun'-na</i> > A-M.1.1; < <i>tanna</i> > JB-G-13; < <i>dana</i> > U- HH-480; < <i>Thun.na</i> > BB-JL-225
<i>djamaga</i>	good	U; DM; MY; BB; B	< <i>jum'-ug'-a</i> > U-M.1.1; < <i>tyamugu</i> > MY-HH-481; < <i>jumiga</i> > DM-AM-253; < <i>jum-ma-ga</i> > U-M.2.2-7; < <i>jummaga</i> > U-M.2.2-7; < <i>jamagambooraga</i> > U-M.2.2-7; < <i>jam'aga</i> > U-M.2.2-17; < <i>Jumaga</i> > BB-JL-266; < <i>jummerger</i> > B-R; < <i>jummagang</i> > DM-M.2.6-27; < <i>jumaga</i> > DJ-M.2.2-60
<i>dirrindhara</i>	person scarred with <i>birin</i>	A	< <i>dirrindhurra</i> > A-M.2.4-23
<i>dhidbu<sup>-l</sup></i>	spit	DM	< <i>Thitbūlo</i> > (DM-AM-1877-272-Wand/Hu-TuPu)
<i>djinggi</i>	star	U	< <i>jing'-gee</i> > U-M.1.1; < <i>tingee</i> > U-C.1-25/U-RD-423; < <i>Gin.gee</i> > BB-JL-225; < ' <i>djinggi</i> ' > WL-T.75
<i>durun.gadja</i>	three	J ; U; BB	< <i>dooroogai</i> > JB-C.1-15; < <i>dooroogai</i> > U-RD-422; < <i>too'roon gad'ya</i> > U-M.2.2-55; < <i>too'roon goweraga</i> > U-M.2.2-55; < <i>Toorung.gow.aree</i> > BB-JL-266
<i>dhugan</i>	camp	U; DM	< <i>thoo'-gan</i> > U-M 1.1; < <i>doogan</i> > BB-RD-423; < <i>Tookun</i> > UL-JL-266; < <i>Tugon.</i> > BB-JL-226; < ' <i>d,ugan</i> ' > WL-T.75; < <i>thogundtha</i> > DM-AM-No-WND- Tu; < <i>thōgunda</i> > D-AM-Bi-Bu; < <i>thugandha</i> > DM-M.1.8- 60; < <i>dhoo-gan'-no</i> > U-M.2.2-17
<i>djungga</i>	octopus	U; WL	< <i>tyoong'-ga</i> > U-M 1.1; < <i>djungga:</i> > WL-T.75; < <i>dūnga</i> > E-87
<i>nanari</i>	mother in law	A; DM	< <i>nanari</i> > A-M.1.3-275; < <i>nanaridyandi</i> > A-M.2.6-25- GW; < <i>Nanarimurranhung</i> > A-M.2.6-25-GW; < <i>Nunnaridtha</i> > DM-JB-AM-GW
<i>nhaway</i>	today	A; U	< <i>now'-i</i> > U-M.2.2-47; < <i>nthow-ay</i> > U-M.2.2-17; < <i>nhauwai</i> > A-M.1.4-148; < <i>nauwai</i> > A-M.2.6-24-GW

<i>nja</i> <sup>2</sup>	see, look	DJ; U; DM	< <i>nyandoo</i> > DJ-M.2.3-1; < <i>nya-ban-yan</i> > DJ-M.2.2-58; < <i>nyabugana</i> > DJ-M.1.5-166; < <i>nya</i> > DM-AM-JB-GW; < <i>nyaouiyēna</i> > DM-AM-253; < <i>nyellugga</i> > U-M.2.2-77; < <i>nyullaga</i> > U-M.2.2-22
<i>ni</i> <sup>3</sup>			
<i>nhi</i> <sup>4</sup>			
<i>njiinj</i> <sup>5</sup>	this/here	A; DM; U	< <i>nyinyi</i> > A-M.2.6-25-GW; < <i>nyilli</i> > A-M.1.4-133; < <i>ñeen</i> > U-M.2.2-17; < <i>ñeeñ</i> > U-M.2.2-7; < <i>nyeen</i> > DM-M.2.6-29; < <i>nyemma</i> > DM-AM-248
<i>nugurr</i>	nose	U; WL; JB; A; ILL	< <i>nô'-goor</i> > U-M.1.1; < <i>noogooroo</i> > U-C.1-21, < <i>noogooroo</i> > U-RD-422; < <i>noukoro</i> > JB-PG-11; <'nugur> WL-T.75; < <i>noogoor</i> > A-WR-418; < <i>nugur</i> > A-M.1.3-276; < <i>nokorroh</i> > ILL-SoM.JB.ILL
<i>nhuruubabaa</i>	mud	U	< <i>nhoo-roo'-ba-bâ</i> > U-M.1.1
<i>njurgun</i>	bullrush	U	< <i>nyoor-goon</i> > U-M.1.1

1 This is an isolated example of *dhi*- within the SCLs corpus.

2 The verb root *nja*- 'see' is given here to allow for multiple examples from various SCLs.

3 About five words are found in the SCLs corpus that are spelled with word-initial *n*. All of these examples are found in single instances and from collectors (Howitt, Dawsey, Lau) that did not transcribe dental sounds.

4 No examples with word-initial *nhi* are found within the SCLs corpus.

5 The phonemicised word is taken from the Dhurga corpus, but demonstratives from other SCLs are listed as further examples.

However, absence of phonemic contrast of lamino-dental and lamino-palatal stops in vowel-medial and word-final positions can be found in the SCLs, which is a frequently found feature in other AALs.

Often phonemic contrasts within a [apical or laminal] series are neutralized in certain positions — most languages neutralize the alveolar/retroflex word-initially, and some neutralize the lamino-dental/lamino-palatal contrast word-finally. (Evans, 1995a:727)

Laminal variation in all environments is found in several NSW languages such as Dhanggati (Lissarrague, 2007), the Hunter River and Lake Macquarie languages (Lissarrague, 2006) and Gumbaynggirr (Morelli, 2008), to name just a few. Within the SCLs, word-final laminal variation is recorded in one word only, but occurs more

frequently inter-vocally. Table 4 shows examples of laminal variation in word-final, intervocalic and word-initial position. Note that the second example is taken from the corpus within one language, Djirringanj; and the last example is a variation observed between Dharrawal and Dhurga. Apart from examples that reach across languages, no examples with word-initial variation have been identified within any one language.

Table 4. Transcribed intervocalic and word-final variation in the South Coast Languages

Variation	Language/Place	English
<kan'-na-go-badh'> (U-M1.1) <'djanunggu'ba:dj> (WL-T.75) <ɖanagubaɖ> (E-78)	U; WL	echidna
<badhal> (DJ-M.2.3-1) <badyal> (DJ-M.1.5-163)	DJ	camp
<bindhi> (U-M.1.3-276) <bendje> (JB-G-12) <Binjee> (BB-JL-225)	U; JB; BB	stomach
<dyadyang> (A-M.2.2-39); <jaja> (DJ-M.2.3-1); <dyadyamurrinung> (A-M.2.6-1) <dhadha> (U-M.1.3-275); <tethungaŋkūro> (DM-AM-1878:269-JB-Gy); <dhādhādha> (DM-AM-253); <Dhadhūyine> (DM-AM-253); <tatha> (JB-RD-422); <dadung> (MY-AH.2)	A; DJ  U; DM; Y	elder brother

Equally noteworthy is the lack of recorded variation in nasals. One of the reasons may well be that the dental nasal *nh* is the most difficult sound to distinguish for people from language backgrounds that are not familiar with this sound; and compared to dental stops *dh*, the interdental nasal *nh* is relatively sparsely recorded throughout the corpus. In her more recent work on the SCLs, Eades (1976) did not

transcribe a single word-initial dental nasal from the 1960s collected audio material, and only one intervocalic dental nasal in the word *yunhunj*<sup>25</sup> 'Aboriginal man'.

## A.3.4 Phonotactics

The typical SCL word is at least disyllabic and starts with a single consonant and ends in either a single consonant or vowel. But a small number of monosyllabic words are used in communities such as *mii*<sup>26</sup> 'eye' (La Perouse Dharrawal) and *mudj* 'friend' (Wreck Bay). *Mudj* is also known as *mudji*, so the mono-syllabic version may just be a shortened form. Both examples are known and used in communities.

### A.3.4.1 Consonant Distribution

Laterals, rhotics, retroflex consonants and vowels do not occur word-initially in the SCLs (with the exception of one frequently transcribed initial *i* which will be discussed further below). The same rules regarding word-initial phonemes are shared with neighbouring languages like Ngunawal and Gandangara (Besold, 2003), Ngarigu (Hercus, 1969) and the Sydney language (Oppliger, pc, 3rd July 2008). However, Hercus (1969:201) observed rare occurrences of word initial *l* in Ngarigu - no such exceptions of word-initial laterals, or rhotics, have been recorded anywhere in the SCLs corpus.

As previously mentioned, apical consonants /n/ and /d/ can be found in word-initial position in the SCLs, but not as often as laminal and dental stops and nasals.

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<sup>25</sup> Presented in the orthography used in this study, Eades' original transcription is *yunjun*.

<sup>26</sup> La Perouse Dharrawal community members suggested that *mii* is 'single eye' and that the Dhurga/Dharumba word *mabura* is a combination of *mii* 'eye' and *-bara* 'dual marker'. I have not been able to find reference in the source material that would confirm or refute this. The suggestion is plausible, but the plural marker in Dharrawal is *-wulali* and we would expect to find a construction more like *\*miiwulali*. *mii* is most likely a shared word in the Botany Bay Dharrawal and the Sydney language.

Typical disyllabic SCL words are structured as follows and allow the following consonant in each slot. Words with three or four syllables are structured the same with the same consonants or clusters as in  $C_2$  and  $C_4C_5$  possible in each additional word-medial syllable.

$C_1VC_2V(C_3)$  with single consonant in intra-morphemic position  
 $C_1VC_4C_5V(C_3)$  with a consonant cluster in intra-morphemic position

Table 5. Distribution of Consonant Phonemes in the South Coast Languages

	$C_2$	$C_1$	$C_5$	$C_4$	$C_3$
bilabial	b, m, w	b, m, w	b, m		<i>b, m, w</i> (all rare)
apico-alveolar	d, n, l, rr	d, n	d	d, n, l, rr	<i>l, rr, d, n</i> (stop and nasal rare)
apico-post alveolar/ retroflex	rn, rd, rl, r			rn, rl	rn, rd, rl
lamino-dental	dh, nh	dh, nh	dh, dj	nh, nj	<i>dh</i> (one instance only)
lamino-palatal	dj, nj, lj, y	dj, nj, y		y	dj, nj, y
dorso-velar	g, ng	g, ng	g	ng	g, ng

Note that bilabial stop *b* and nasal *m* are only found in isolated instances word finally.<sup>27</sup> The only examples showing word-final *b* are:

<*jurup*> ? (DM-AM-G)  
 <*wannup*><sup>28</sup> ‘who are you?’ (WW-M.2.2-8)

<sup>27</sup> The bilabial stop /b/ is also found in rare cases in other Yuin languages, such as ‘lightning’ *malub* in Ngarigo (Hercus 1986:246).

<sup>28</sup> <*wannup*> is most likely a shortened version of *wanaga-bi* ‘who-you (singular)’, being *wanang(g)a-bi* in Dhurga and Dharumba.

Wordfinal *dh* occurs in one example by Mathews, <*kan'-na-go-badh'*> (U-M.1.1) with alternating word-final *dj* in a transcription by Tindale <'djanunggu'ba:dj> (WL-T.75).

One exception to rules of vowel distribution is found in the (almost) consistent transcription of word-initial high front vowel *i* in the second person free pronoun *yindiga*. A selection of various spellings is shown in Table 6 below. The second last example is a phonemicisation by Capell (n.d), which was based on Mathews' material. This spelling was later also adopted by Eades (1976). Within the historic source material, only Ridley's (1887b:419) Illawarra wordlist and one of Mathews' (1901b:137) Dharrawal grammars transcribed a word-initial palatal nasal.

Table 6. Various transcriptions of the South Coast languages 2<sup>nd</sup> person free pronoun

Source spelling	Source reference
< <i>inde</i> > < <i>indiga</i> >	JB-C.1-41
< <i>indigal</i> >	DJ-M.1.5-162
< <i>in'digal</i> >	B-AH.1.3
< <i>indigumbul</i> >	DJ-M.1.5-162
< <i>indiganyu</i> >	DJ-M.1.5-162
< <i>indiganūti</i> >	DM-AM-1878:269-JB-Gy
< <i>indygāga</i> >	DM-AM-1877-272-Wand/Hu-TuPu
< <i>in'doowoo</i> >	U-M.2.2-7
< <i>ind'eega</i> >	U-M.2.2-8
< <i>nyindigang</i> >	A-M.1-137
< <i>ngindigung</i> >	ILL-WR-419
< <i>njindigang</i> >	A-AC.1-25
< <i>nyindiga(ng)</i> >	U/A/DJ/DM-E-49

Note that the two last examples are phonemicised forms by Capell (nd) and Eades (1976).

Other transcribed vowel-initial words are generally found with alternative spelling showing semivowels *w* preceding a transcribed *u* or *oo*, and *y* or preceding *ny*, as in these two examples.

Table 7. Vowel-initial Transcription

Phonemicised	English	Source spelling
<i>yira</i>	tooth	< <i>era</i> > (BB-RD-423) < <i>ira</i> > (JB-G-12) < <i>yira</i> > (MY-HH-480) < <i>era</i> > (BB-JL-225) < <i>'ira</i> > / < <i>'i(lg)a</i> > (WL-T.75)
<i>wumbara</i>	black duck	< <i>oom.bur.er</i> > (TB-R) < <i>woom.barra</i> > (BB-JL-226)

(The cultural centre in Wallaga Lake, *Umbara*, is named after the collective totem of the South Coast people. The word itself is pronounced by communities as /ambara/.)

### A.3.4.2 Consonant clusters

Consonant clusters cannot occur word-initially or word-finally in the SCLs and can be categorised into heterorganic or homorganic clusters.<sup>29</sup> However, homorganic nasal-stop clusters (*mb*, *nd*, *nhdh*, *njdj*, *ngg*) are common in morpheme-initial position, such as one of the morphophonemic variants of the Dhurga ‘plural marker’ *-mbaraga* or the Dhurga ‘continued action’ marker *-mba*. The following sections will look at clusters found in both intra- and inter-morphemic environments.

<sup>29</sup> Homorganic clusters are nasal-stop clusters where the nasal and the stop are pronounced at the same place of articulation (see Table 1). Hence we have *nd* for example, where both consonants are apico-alveolar, pronounced with the tip of the tongue against the alveolar ridge, and the only difference is that *n* is pronounced with the airflow through the nose being constricted by the back of the tongue.

Intra-morphemically consonant clusters generally consist of two consonants but the sequence of consonants in clusters is not random — clusters are governed by patterns and/or rules. This means only certain consonant phonemes can occur in either first or second place in any given cluster, as shown in Table 8 below.

Table 8. Distribution of Consonant Phonemes in the South Coast Languages

	C <sub>4</sub>	C <sub>5</sub>
bilabial	m	b, m
apico-alveolar	d, n, l, rr	d
apico-post alveolar	rn, rl	rd
lamino-dental	nh	dh
lamino-palatal	y, nj	dj
dorso-velar	ng	g

Consonant clusters across morpheme boundaries (i.e. inter-morphemic clusters) can create sequences that cannot be found in intra-morphemic position, for example in *mirrigang-bulali* <*mirrigangbulali-wulanhung*> (A-M.2.6-1) “the two dogs of the two men”. This *ngb* sequence, for example, is not found in intra-morphemic clusters.

The possible CC sequences can vary between AALs (Dixon, 2002a:554), but there is not enough comparative data available for all of the SCLs to determine whether the most southern language shares the same features as the most northern language. The analysis presented here is therefore largely based on the data available for Dharrawal and Dharumba, due to the larger available material for these two languages.

Clusters with retroflex consonants are based on the phoneme inventory presented in this study, which includes retroflex stop/nasal and lateral. Hence, words such as

< *burl'-guñ* > (U-M.1.1) 'dirty', are analysed here as a sequences of the apico-postalveolar laminal *rl* and the velar stop *g*.

One possible word-initial cluster *by* is found in *byuwan* 'fat', which is transcribed in the sources consistently with the cluster, although it is likely that the last example < *by.un* > by Robinson should be transcribed as *baywan* or *bayan*.

< *byoo'-wan* > U-M.1.1  
< *byoo'-wan-gee* > 'fat man' U-M.1.1  
< *buon* > U-RD-423  
< *by.un* > B-R.1-174

Eades (1976:77) phonemicises 'fat' as *byuwan* with the remark that "this is the only word with an initial consonant cluster and it breaks the phonotactic pattern...[h]owever, it is clearly attested on tape and in Mathews' evidence for this word". A cognate of *byuwan* is found in neighbouring inland languages where source materials present transcriptions that follow expected phonological rules, and has been phonemicised by Koch (Yuin Vocabulary – in progress) as *biwan*.<sup>30</sup>

< *bee.wun* > YS-R-2000:210  
< *be`wan* > NGW-M-1904:303  
< *bewanbang* > NGW-M-1904:303  
< *bunun* > QBN-CU-1887:425  
< *bewan* > MO-BU-1887:433  
< *bē-wan* > NGO-M-1908:337  
< *be.ung* > OM-R-2000:199

The question arises whether to adopt Koch's phonemicisation, which complies with (expected) phonological rules, or to stay true to the pronunciation as recorded by the early collectors. This is an ongoing issue when working from archival material for community reclamation purposes.<sup>31</sup>

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<sup>30</sup> Koch's abbreviations here are YS = Yass, NGW = Ngunawal, QBN = Queanbeyan, NGO = Ngarigo, R = Robinson, M = Mathews. BU = Bunce and CU = Curr.

<sup>31</sup> The same issue could arise with the phonetic sequences *gwi* as in < *Gwianggal* >, which Koch (pc) analyses as *Guyanggal*; in his interpretation the sequences [iua] and [uia] are interpreted by English speakers as /yua/ and /wia/ but by AAL speakers as /iwa/ and /uya/. (Koch, pc)

All clusters listed in the following sections occur in intra-morphemic position.

### A.3.4.2.1 Homorganic Consonant clusters

Homorganic nasal-stop clusters are the most commonly found consonant sequences and consist of a nasal and stop from the same series. However there are no examples of overtly transcribed homorganic clusters such as *nhdh*, *njdj* (or *rnrđ*) as such in the source material. Nasals in these clusters are all transcribed as *n* only, apart from the velar nasal-stop cluster *ngg*. It is therefore impossible to distinguish whether early transcribers recorded for example the heterorganic nasal-stop cluster *n+dh* or a homorganic nasal-stop cluster *nhdh*. (This contrast occurs less frequently in AALs than the *ndj* and *njdj* contrast.)

In practical terms, this does not posit a problem because the orthography used in this study simplifies homorganic palatal and dental nasal-stop clusters to *ndj* and *ndh* respectively, as discussed earlier. In case of possible retroflex nasal-stop clusters, early transcribers marked the appropriate nasal and not the following stop, i.e. *rnd* rather than *nrd*, as in the example *burnda*. This word is still known and used in communities today. The pronunciation, as it is used today, sounds more like a rhotic-nasal-stop sequence.

<i>burnda</i> <sup>32</sup>	‘penis’	< <i>burnda</i> > (A-M.1.3-276), (A-M.2.3-50)
		< <i>burn'-da</i> > (U-M 1.1)
		< <i>panda</i> > (JB-G-13)
		< <i>banda</i> > (WL-T.75)
<i>gurndira</i>	‘ironbark’	< <i>goorn-dee'-ra</i> > (U-M.1.1)

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<sup>32</sup> The phonemicisation is based on Mathew’s transcriptions (see the first two spellings) and present community knowledge. The third spelling < *panda* > is by the Frenchman Gaimard and the first vowel in this word is a back mid vowel, not unlike the vowel in ‘pot’. This vowel is closer to the high back vowel /u/ than the mid central vowel /a/. Tindale’s transcriptions frequently show discrepancies with other collectors’ spellings, and his linguistic work is not necessarily reliable (see Monaghan, 2003 and Breen, n.d., for discussion on Tindale’s work).

Table 9 shows all possible homorganic nasal-stop clusters and examples from the SCLs corpus.

Table 9. Homorganic Consonant clusters in the South Coast Languages

Cluster	Source spelling	English translation
<i>mb</i>	< <i>jambi</i> > (DM-(AM-1874-256-Ull/Bi-Bu1) < <i>tembi</i> > (U-WR.4)	‘brother in law’
<i>nd</i>	< <i>moon'-doo-ba</i> > ((U-M.1.1) < <i>mundooaba</i> > (U-C.1-35) < <i>mundupira</i> > (U-AH/JH) < <i>Mundaba</i> > (U-JL.BB-226) < <i>mundooaba</i> > (U-RD-423) < <i>'mundu'ba</i> > (WL-T.75)	‘tomahawk’
<i>rnd</i>	< <i>goorn-dee'-ra</i> > (U-M.1.1)	‘ironbark’
<i>ndh</i>	< <i>mundha</i> > (A-M.1.3-278) < <i>mundtha</i> > (A-AM.1.255) < <i>moontha</i> > (A-M.1.2.106) < <i>mūndtha</i> > (DM-AM.1-255) < <i>moontha</i> > (U-RD-421)	‘black snake’
<i>ndj</i>	< <i>bendje</i> > (JB-G-12) < <i>Binjee</i> > (U-JL.BB-225) < <i>bindji</i> > (WL-T.75)	‘stomach’
<i>ngg</i>	< <i>wang-gan</i> > (U-M.2.2-43) < <i>wangganda</i> > (U-M.2.2-44) < <i>wainggan/'wenggan</i> > (WL-T.75) < <i>wang'-gan gool'-lee</i> > (U-M.2.2-17)	‘Aboriginal woman’

Note that *wanggan* is also found consistently transcribed by Mackenzie as < *wenkin* > in the Dharumba corpus, but the large number of Mathews’ examples that break the syllable between *ng* and *g* points to the *ngg* cluster. Mackenzie also transcribed *ng* clusters frequently but almost exclusively across morpheme boundaries.

Mathews provides one near minimal pair of *ngg* versus non-cluster *ng* in *mingga(w(u))* < *meeng'-gô* > ‘grasstree’ (U-M.1.1) and *minga* < *meeng'-a* > ‘mother’ (U-M.1.1).

### A.3.4.2.2 Heterorganic Consonant Clusters

The SCLs have a variety of heterorganic clusters in intra-morphemic position and examples are given in the following pages. Clusters that can occur inter-morphemically will be discussed later.

The interpretation of clusters in archival material can differ between individual researchers and the analysis presented here is on a tentative basis until further and comparative work is done on phonotactic issues in south-eastern AALs.

There is no correlation between the consonants found in slot C<sub>4</sub> and C<sub>3</sub> as recorded in other AALs such as Martuthunira (Dench, 1987:75), for example.

#### A.3.4.2.2.1 Heterorganic nasal-stop clusters

Identifying heterorganic nasal-stop clusters, other than *nb*, is difficult due to the uncertainty of the existence of retroflex consonants in the SCLs, and for reasons discussed previously. In examples like <*jirnganggali*> ‘sneeze’ (A-M.1.3-279) Mathews transcribed an *mng* sequence that could be analysed as either a rhotic-velar nasal cluster *r + ng* or a nasal-stop cluster *m + g*, although the former is less likely to occur in AALs.

##### A.3.4.2.2.1.1 *nb*

The heterorganic *nb* cluster is not found in a large number of words in intra-morphemic position, but occurs in three of the more salient words within the SCL corpus.

<i>bunbari</i>	‘small boy’	< <i>bunbari</i> > (A-M.1.3-275)
<i>bunbal</i>	‘tree, wood’	< <i>boonbal</i> > (U-M.1.1) < <i>'bunba:l</i> > (WL-T.75)
<i>ganbi</i>	‘fire’	< <i>kunbee</i> > (ILL-QR-1890) < <i>kanbi</i> > (A-WR-419)

#### A.3.4.2.2.1.2 *n.g*

A commonly occurring cluster is found in intra-morphemic environment in salient words such as:

*ban.garri* ‘hill’ < *bun'-gur-ree* > (U-M 1.1)  
< *bungoree* > (U-M.2.2-16)

#### A.3.4.2.2.1.3 *njg*

Two examples are shown here that also recapture the two spelling conventions for the palatal nasal, as used by Robinson and Mathews. The word from Robinson’s Bega wordlist ‘hut’, and Mathews’ Dharrawal word for ‘man that uses many women’ both show clearly marked *njg* clusters.

*panjgira* ‘hut’ < *pinegeerer* > (B-R)  
*banjgaladha* ‘fornicator’ < *buñgaladha* > (A-M.2.3-51)  
< *bũñ-gulladha* > (A-M.2.3-50)

#### A.3.4.2.2.1.4 *rng*

Presenting the retroflex nasal-velar stop cluster here is based on the discussion about the inclusion of the retroflex consonants in this phoneme inventory.

*garn.ga* ‘old woman’ < *karn'-ga* > (U-M 1.1)

#### A.3.4.2.2.1.5 *rnd (= rn + rd)*

*gurndira* ‘ironbark’ < *goorn-dee'-ra* > (U-M.1.1)  
*marndidja* ‘meat’ < *murn'-di-dya* > (U-M.2.2-46)

#### A.3.4.2.2.2 Nasal-nasal cluster

The only cluster of this kind found in the SCL corpus is the *nm* sequence and only in this example.

*ngarinma* ‘wife’s father’ < *ɲarinma* > (DM-AM-1877-272-Wand/Hu-TuPu)

#### A.3.4.2.2.3 Nasal-approximant cluster

#### A.3.4.2.2.3.1 *ny*

There is some difficulty distinguishing the *n + y* cluster from the palatal nasal *nj* in the corpus due to the identical transcription of *ny*. Although these clusters are rare in AALs, there are examples, such as the one shown here, where Mathews broke up words into syllables clearly separating the nasal from the following *y*. Compare this to the break up of the previously mentioned < *bũñ-gulladha* > (A-M.2.3-50). This cluster is therefore presented with a sense of caution.

<i>gunyu</i>	‘black swan’	< <i>koon'-yoo</i> > (U-M.1.1)
<i>binyaaru</i>	‘cormorant’	< <i>bin-yâ'-roo</i> > (U-M 1.1)

#### A.3.4.2.2.4 Stop-stop clusters

Although stop-stop clusters are not found in large numbers in the SCLs corpus, the following examples are well represented.

##### A.3.4.2.2.4.1 *db*

*db* is found in only three instances in word-medial position throughout the SCLs corpus.

<i>madbu</i>	‘stringbag/net’	< <i>mud'-boo</i> > (U-M.1.1)
<i>midbambu</i>	‘eyelid’	< <i>meed-pum'-boo</i> > (U.M.1.1)
<i>djidbalang</i>	‘sweet’	< <i>dyitbalang</i> > (A-M.1.3-278)

##### A.3.4.2.2.4.2 *dg*

Examples are rare and are restricted to Dharrawal examples. Also note that *dg* is used in some early sources for /dj/.

<i>wadga-</i>	‘sew’	< <i>wutgurra</i> > (A-M.1.3-279)
<i>madmadgang</i>	‘dove’	< <i>mutmutgang</i> > (A-M.1.3-277)

##### A.3.4.2.2.4.3 *djg*

As with the *dg* example, this cluster is only found in the Dharrawal corpus and in verb constructions.

*badjga-* ‘arise/get up’ < *baitgang* > (A-M.1.3-279)

#### **A.3.4.2.2.5 Lateral-nasal clusters**

##### **A.3.4.2.2.5.1 *lm***

This is a frequently occurring cluster that is found in one of the most transcribed words in the whole SCLs corpus – the Dharrawal word for ‘beat/hit’. Note that only one transcription out of dozens is shown here. The transcription is consistent throughout the corpus.

*bulma-* ‘strike/beat/kill/hit’ < *bulma* > (A-M.1.3-279)

#### **A.3.4.2.2.6 Lateral-stop clusters**

##### **A.3.4.2.2.6.1 *lb***

Although the cluster is not found in many examples, these two demonstrate that this cluster is found in intra-morphemic position.

*djiriilbun* ‘toadfish’ < *jir-reel-boon* > (U-M.1.1)  
*Dhalba Dhalbu* Tilba Tilba (placename) < *Dhülbo Dhülboo* > (U-M.2.2-48)

##### **A.3.4.2.2.6.2 *lg***

*dhalga(y)* ‘ground’ < *dhulga* > (A-M.1.3-276)  
< *dthulga* > (A-AM.1-255)  
< *dhalgai* > (A-M.2.6-23-PoS1)

##### **A.3.4.2.2.6.3 *rlg***

*barlga* ‘back’ < *barl'-ka* > (U-M 1.1)  
*burlgun* ‘dirty’ < *burl'-guñ* > (U-M 1.1)

#### **A.3.4.2.2.7 Lateral-approximant clusters**

There are various lateral-approximant clusters found, the most common one being *ly*. Examples are predominantly from the Dhurga and Dharrawal corpus, largely due to the larger amount of material available for these languages, compared to Djirringanj. The Dhurga word *bulwal* ‘strong’ is a frequently occurring word in the Dhurga corpus

and the transcription is consistently showing an *lw* cluster. Only two of the instances are shown here.

#### A.3.4.2.2.7.1 *rlw*

*ngurlwan* ‘drop’ (n) <*ngurl'wan*> (U-M.2.2-76)

#### A.3.4.2.2.7.2 *lw*

*gilwa* ‘darkness’ <*gil'-wa*> (U-M.1.1)  
 <*i-il-wa*> (U-C.1-27), (JB-RD-423)  
*bulwal* ‘strong’ <*bul-wal*> (U-M.2.2-23)  
 <*bull-wull*> (U-M.2.2-22)

#### A.3.4.2.2.7.3 *ly*

There remains some uncertainty as to whether a transcribed *ly* sequence in an original source spelling is trying to reproduce the palatal lateral *lj* /*ʎ*/ or the *ly* cluster. This is not a common cluster in AALs, but is found in some languages such as Marthuthunira (Dench, 1995) and the cluster is therefore presented here with a sense of caution.

*dhalyan* ‘palm berry’ <*dhŷlyŷn*> (A-M.2.6-16)

### A.3.4.2.2.8 *Approximant-stop cluster*

#### A.3.4.2.2.8.1 *yg*

This is not a commonly occurring cluster, but found clearly in these three examples.

*gaygan* ‘arm’ <*ki'-kan*> (U-M.1.1)  
*bidhaygal* ‘pelican’ <*bedhaigal*> (DM-AM.1-255)  
 <*Bithai-gala*> (DM-AM-1877-272-Wand/Hu-TuPu)  
*gurayga* ‘slate crane’ <*koor-ar-ay'-ga*> (M.1.1)

### A.3.4.2.2.9 *Rhotic-approximant cluster*

#### A.3.4.2.2.9.1 *rrw*

Bearing in mind that the quality of the rhotics is in many cases difficult or impossible to distinguish in the language material, the cluster presented here is with some uncertainty regarding the rhotic being a trill or an approximant. However, a *rC*

(approximant rhotic +C) is unlikely as they are not common in AALs. Examples are found predominantly in placenames and Dharrawal verbs.

<i>Bundarwa</i>	[placename]	< <i>Bundarwai</i> > (DM-AM-1874-256-Ull/Bi-Bu1)
<i>garwa</i>	‘scratch’	< <i>garwa</i> > (M.1.3-279)
<i>barwa-</i>	‘drop/fall down’	< <i>burwura</i> > (A-M.1.3-279)
		< <i>Būrwa</i> > (A-M.2.6-16-PoS1/a)
<i>garwaray</i>	‘wild fig’	< <i>Kurwēry</i> > (A-AM-1874-250-YK)

### A.3.4.2.2.10 *Rhotic-nasal cluster*

#### A.3.4.2.2.10.1 *rrm*

This cluster, as *rrw* discussed above, appears in predominantly Dharrawal verbs, two shown below. Again, the verbs were collected by Mathews and no alternative spelling is found by another collector. However, the first example *garma* is found in both Mackenzie’s and Mathews’ language material. As with the *rrw* cluster, this is found predominantly in Dharrawal verbs stems.

<i>garma</i>	‘net’	< <i>Kūrma</i> > (A-M.2.6-25-GW)
		< <i>gurmanhung</i> > (A-M.2.6-25-GW)
		< <i>Kurmannū</i> > (A-AM-1874-250-YK)
<i>barma-</i>	‘step (on)’	< <i>barmaidha</i> > (A-M.2.6-25-GW)
<i>nharma-</i>	‘pretend’	< <i>nhūrmurra</i> > (A-M.1.3-279)

### A.3.4.2.2.11 *Rhotic-stop cluster*

#### A.3.4.2.2.11.1 *rb*

This cluster is transcribed frequently throughout the corpus

<i>burburan</i>	‘quail’ <sup>33</sup>	< <i>boor'-boor-an</i> > (U-M.1.1)
<i>gurbungama</i>	‘ribs of canoe’	< <i>kur-bung'-a-ma</i> > (U-M.1.1)

## A.3.4.3 Inter-morphemic consonant clusters

Clusters that occur across morpheme boundaries can have combinations that are not found in intra-morphemic position.

<sup>33</sup> Possible a quail-like native bird like the ‘plains wanderer’, found in south-eastern NSW.

#### A.3.4.3.1.1.1 *ngb*

*mirigang-bulali* ‘dog-DU’ < *mirigangbulali* > (A-M.2.6-1)

#### A.3.4.3.1.1.2 *ngw*

*mirigang-wa* ‘dog-3sPSSR’ < *mirigangwa* > (DJ-M.1.5-162)

#### A.3.4.3.1.1.3 *rrdh*

*gumirr-dhirra* ‘hole-with’ < *gumirdhirra* > (A-M.2.6-25-GW)

#### A.3.4.3.1.1.4 *rrdj*

*yandabinhurr-djan* ‘don’t you all come to me’ < *yendabeenhoordyen* > (A-M.2.2-164)

### A.3.5 Stress

Information on stress assignment is found in the transcriptions of some of the early collectors. Mathews and Howitt marked many words in their wordlists for stress with an apostrophe at the end of the stressed syllable, i.e. *mabara*<sup>34</sup> ‘eye’ shows the stress assigned on the first syllable in < *mab'-o-ra* > (U-M.1.1) and < *ma'bra* > (DJ-AH.1.3).

Hair of head, Jou'-oor	Nose, Nò'-goor
Hair of beard, Yar'-rañ	Nostril, Ngoor-doo-ngoer-doo
Eye, Mab'-o-ra	Jaw, Mun'-tha

Figure 50. Mathews Dhurga stress assignment

Later, and in contrast, Tindale marked stress at the beginning of a stressed syllable as in the same word < *'mabara* > (WL-T.75).

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<sup>34</sup> The spelling *mabura* has been used for several years in Dhurga language teaching projects. That spelling was based on earlier research before more source material was incorporated in the language analysis.

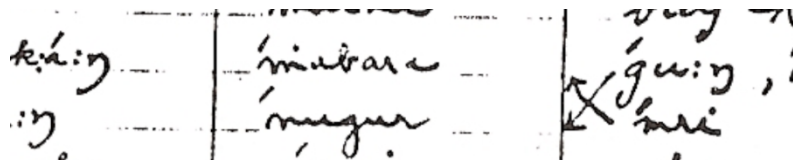


Figure 51. Tindale stress assignment

But there are other less overt clues to stress assignment. Using the same example as above, we note that Howitt's transcription of *mabura* lacks the second vowel. Vowels in unstressed syllables are in many cases omitted in the transcriptions, and are in danger of being misinterpreted as consonant clusters.

In another example, *bagaranj* 'sun', we know from Mathews' and Tindale's transcriptions, <bug'garañ> (U-M.2.2-46) and <'ba,garinj> (WL-T.75), that the stress falls on the first syllable. The same can be concluded from Larmer's transcription in <Bug.green> (BB-JL-225). The *g+r* sequence in <Bug.green> is absorbed into the liquid consonant following the unstressed vowel in the second syllable. A good example of a vowel disappearing in an unstressed syllable can be found in the English word 'library' which is pronounced in Australian English as something sounding more like /laibri/.

### A.3.5.1 Stress pattern

The general stress pattern in SCLs is commonly observed in AALs (Dixon, 2002a:557). Stress falls on the first syllable in disyllabic words and no example is found in the source material that shows stress on the final syllable in a disyllabic word. Words that are still used in communities are often pronounced with stress on a long vowel on the final syllable. For example, Mathews transcribed *budjan* 'bird' <boo'-jan> (U-M.1.1) and *miriga* <mir'-re-ka> (DW-M.2.2-27), clearly marking stress on the first syllable, whereas some speakers in communities pronounce both words with a long vowel and stress on the second/final syllable.

In words with three syllables or more, primary stress falls on the first or second syllable. Where stress is marked on a second syllable in a polysyllabic word, a long vowel in that stressed syllable is in some cases indicated. See Mathews' notebook excerpt (M.2.2-197) showing stress marked on polysyllabic words, such as in < *boo-gâ'-lee* > 'ringtail possum'.

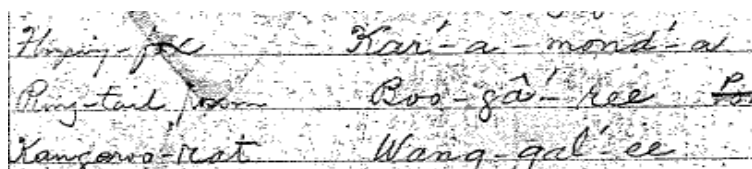


Figure 52. Excerpt of Mathews *Thurga and Dyirringany* Notebook p. 197

It is possible that collectors may have misinterpreted long vowel pronunciation as stress on that syllable. One such example is Mathews' transcription of *burnaaga* 'goanna' *bur-nâ'-ga* > (U-M.1.1) with stress and long vowel in the second syllable, whereas Tindale (albeit ca 35 years later) assigns stress to the first syllable and a long vowel in the second, < *'bana:ga* > (WL-T.75).<sup>35</sup> This is just one example that may suggest that Mathews may sometimes have marked vowel length rather than stress in some of his transcriptions. Or, alternatively, it is another instance of observed stress shift between traditionally spoken language and the pronunciation/stress as used in communities today.

But Mathews also transcribed words that show that stress and vowel length are independent. Both examples show stress marked on the first syllable, but long vowel on second, or third, syllable.

<i>gabaanu</i>	'head'	< <i>gou'-â-na</i> > (U-M.1.1)
		< <i>kab'-bân</i> > (U-M 1.1)
<i>djarambaadhi</i>	'plain spear'	< <i>jar'-ram-bâ-dhee</i> > (U-M.1.1)

<sup>35</sup> Note that if the nasal in *burnaaga* is a retroflex, Tindale did not transcribe it as such. But, as mentioned previously in this text, recent studies on Tindale's material has found that his transcriptions are not necessarily that reliable (Breen, n.d. and Monaghan, 2003)

In cases where collectors' stress assignment differs, it is impossible to favour one collector's transcription over the others'. As shown previously, alternation in stress on words still used in South Coast communities is evident and we can therefore not rule out that the differences in the historic material are not also a product of individual informants' preference. In practical terms, i.e. for purpose of language revitalisation, this means that one stress assignment will have to be chosen over another.

### A.3.6 Voicing

The goal of the early language collectors was obviously to transcribe sounds as accurately as possible and therefore provided phonetic rather than phonemic transcriptions. Mathews made this quite clear in some of his published grammars.

Every word is spelt phonetically, the letters having the same value as in English. (Mathews, 1901:1)

And although these phonetic transcriptions enable us to get some idea of patterns of voicing of stops in particular environments, it became obvious that there was a more patterned variation *between* different collectors' data, than *within* any particular collector's corpus. The findings offered in this section are therefore an observed chronological change from the use of voiceless stops to voiced stops, rather than a statistical presentation of occurrences of voiced and/or voiceless stops in different word positions.

The corpus shows that pre-Mathews, collectors favoured the use of voiceless stops in their spelling, whereas Mathews and subsequent collectors preferred the use of voiced stops. Gaimard (1834) almost exclusively used voiceless stops in his Jervis Bay word list. But his preferred use of voiceless stops may be explained by the difference between the articulatory processes of stops in French and in English. In English (and

German), word-initial voiceless stops are strongly aspirated, whereas French word-initial stops are unaspirated (Ladefoged and Maddieson, 1996) and therefore lack of aspiration is most likely perceived as voicing.

Hermann Lau (in Fletcher, 1991) provided the other SCL wordlists collected by a person from a non-English speaking background. Lau's native language was German, which does not have voicing distinction word-finally, for example *Hund* 'dog' is pronounced with a word-final /t/. However, Lau's wordlist shows no distinctive pattern in transcribed voicing as may be expected. Lau used voiced and voiceless stops in the same environments, i.e. <*purana*> 'field' and <*burara*> 'morning star' (ILL-HL) and <*tagala*> 'snow' and <*dargalli*> 'time' (ILL-HL).

With the exception of one word, Dawsey (1887) transcribed word initial alveolar and velar stops as voiceless but used the voiced bilabial stop in word-initial position apart from one example. Similarly, Howitt's (n.d. manuscript) used more voiceless than voiced word-final stops in all positions.

Compared to Mathews, Mackenzie used remarkably more voiceless stops in all environments.

However, the large chronological gaps between the different collections and the clearly recorded increase in recorded voiced stops support the argument that contact with English had an impact on the pronunciation of the SCLs. Phonological changes caused by the impact of English on some NSW languages is well attested (Austin, 1986) and it could be argued that the SCLs underwent a change to an increased voicing of stops in all environments.

Mathews showed that he was aware that the voicing distinction was not contrastive when he informed his readers "t is interchangeable with d, p with b, and g with k in most words where these letters are employed" (Mathews, 1901:140). But it is unlikely that Mathews' awareness of phonological aspects stretched beyond this

observation. Phonology was at the time an undeveloped and unrecognised field in the description of Australian traditional languages and remained so until the 1950s (Moore, 2008a).

Table 10 shows transcriptions of some of the more salient words in the corpus, and the shift from voiceless to voiced word-initial stops.

Table 10. Recorded voicing of word-initial stops in archival material of the South Coast languages

	Source spelling		Source spelling
<i>dhanga</i> 'food'	1874 < <i>thungong</i> > DM-AM1.A-7 1887 < <i>tungi</i> > U-RD-420 1889 < <i>Tung.ah.</i> > BB-JL-266 1901 < <i>thung'-â</i> > U-M.1.1 1903 < <i>dhungang</i> > A-M.1.3-277 1938 < <i>'dangali</i> > WL-T.75	<i>ganbi/ganji</i> 'fire'	1838-42 < <i>kânye</i> > MY-HH-481 1844 < <i>kambe</i> > TB-R 1886 < <i>kani</i> > U-C.1.29 1886 < <i>gani</i> > U-RD-423 1887 < <i>kanbi</i> > A-WR-419 1870s < <i>kunbi</i> > DM-AM.1-255 pre 1889 < <i>ka'nbi</i> > DJ-AH.1.3 1889 < <i>kunbee</i> > ILL-SoM.JB ca 1900 < <i>gan-yee</i> > U.M.2.2-43 1903 < <i>kanbi</i> > U-M.1.3-277 1938 < <i>'ganji</i> > WL-T.75
<i>dhana</i> 'foot'	1834 < <i>tanna</i> > JB-G-13 1838-42 < <i>dana</i> > MY-HH-480 1874 < <i>thunna</i> > DM-AM.1-255 1887 < <i>dunna</i> > A-WR-419 1898 < <i>Thun.na</i> > BB-JL-225 1901 < <i>dhun'-na</i> > U-M.1.1 1903 < <i>dhunna</i> > A-M.1.3-276 1938 < <i>'dana</i> > WL-T.75	<i>buru</i> 'kangaroo'	1870s < <i>pürü</i> > A-AM.1-254 1886 < <i>booroo</i> > U-C.1-9 1887 < <i>booroo</i> > U-RD-422 1887 < <i>booroo</i> > U-AH/JH 1887 < <i>booroo</i> > A-WR-418 1898 < <i>Burroo</i> > UL-JL-266 ca 1900 < <i>burru</i> > DM-M.2.6-30 1901 < <i>boo'-roo</i> > U-M.1.1 1902 < <i>bürru</i> > DJ-M.1.5-161 1903 < <i>buru</i> > A-M.1.3-277

The observed tendencies in voicing over time, and preferences found within any particular collector's material, are:

1. There is generally less variation in voicing between *b* and *p* than there is for *d/t* and *g/k*.
2. Pre-Mathews collectors used voiceless stops more frequently than Mathews.

This could be due to a change in voicing over time or because Mathews was

aware of voicing not being phonemic, and followed a suggested orthography. This is a question that has not been satisfactorily answered and perhaps both factors played a role.

3. Mackenzie transcribed voiced stops in inter-vocalic position more frequently than in word-initial position. For example <*thullimalara kaiūngo*> “they were catching kaioong”, and <*yakaiolanna*> ‘they (two) said’. In examples such as <*mēgaaloāli*> ‘woman-PL’, where the intervocalic vowel is transcribed with a voiced stop, the voiced stop may be due to a preceding long vowel transcribed here as *ē*.

4. In the only two wordlists by collectors from non-English speaking background, the following patterns were found. Gaimard’s (1834) French Jarvis Bay used almost all transcribed stops voiceless. In contrast, Hermann Lau (Fletcher, 1991) showed no particular tendency towards voiced or voiceless stops in German Ulladulla wordlists. Lau used both in all environments except word-finally, where stops are transcribed voiceless.

Mathews used voiceless stops in only a small number of instances in either word-final/inter-vocalic/word-initial position or in nasal-stop consonant cluster. A rare example of the latter is found in ‘string bag’ *madbu* transcribed as either <*mud-poo*> (U-M.U.2.2-44) or <*mud-‘boo*> (U-M.1.1). Mathews never transcribed the bilabial stop as *p* in inter-vocalic environment.

### **A.3.7 Realisation of phonemes**

Distribution of phonemes was discussed earlier in this chapter. This section provides further insight into, and discussion on, interpretative issues that arise when working from historic sources. Although the concept has already been discussed in Chapter A.2

(Methodology), the discussion here is included to serve as a kind of reference guide. It allows readers to access the motivation and explanation for my suggested spellings.<sup>36</sup>

As previously mentioned, consonants will mostly be referred to by their graphemic representation rather than IPA symbols to avoid confusion for readers of non-linguistic background. However, phonemes may be represented in the conventional /forward slashes/ and their IPA symbol when required throughout the discussion.

### A.3.7.1 Long consonants

Long consonants are generally not mentioned in the language analyses of the south-eastern AALs, but Luise Hercus (pc, 27<sup>th</sup> January 2010) suggested evidence for long consonants in Ngarigu. Phonemic consonant length is found in some of the northern AALs, such as in stops in Nhanda (Blevins, 2001).

Both Mathews and Tindale indicate an occurrence of long consonants. Tindale marked these in his manuscript with a double colon, the same convention also used for long vowels, as seen in <ban:a> ‘rain’ in the excerpt from his Wallaga Lake wordlist.

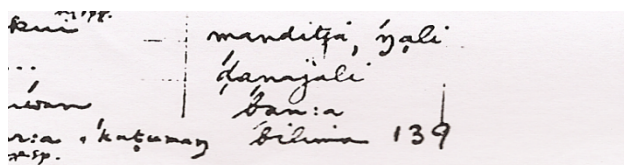


Figure 53. Tindale excerpt wordlist

But the reliability of Tindale’s transcriptions has been questioned by researchers who worked extensively with Tindale’s collected material (Breen, n.d. and Monaghan,

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<sup>36</sup> Even though in many cases this might be self-explanatory or familiar ground to linguist readers, the processes are not clear to most Aboriginal community members. Over the last five years I have had many discussions and queries from community members about how to standardise spelling of historic source material. It is for their benefit that I have included this section.

2003) and is therefore presented here as fodder for thought, rather than as a basis for analysis.

Mathews (1903:261) gives a hint for the occurrence of long consonants; he remarks in some of his SCLs publication that “[i]n all cases where there is a double consonant, each letter is distinctly enunciated” (Mathews, 1901:130 and 1903:261). But it is unlikely that Mathews meant to transcribe a long consonant each time he spelled a word with *ll* or *nn* for example. Even though Mathews used a different orthography for his transcriptions, he still maintained the English spelling conventions, with a double consonant following a short vowel, i.e. ‘robber’ versus ‘robot’. In AALs, a phonetic distinction in consonant length has been observed (see for example Wagiman (Cook, 1987)). Hence we have tendencies for a consonant to be longer if following a short vowel, especially a stressed one, and shorter if followed by a long vowel.

But Mathews often broke up words into syllables, and in some cases a syllable ended in the same letter that the following syllable started with.

### A.3.7.2 Stops

Early language collectors had little problems transcribing consonants that are found in their own native language(s), i.e. English — or French in Gaimard’s (1834) and German in Lau’s case (Fletcher, 1991). Therefore *b* and *g* and were easy phonemes to identify and transcribe for the early collectors, as was the palatal stop *dj* which is fairly consistently transcribed in the sources.

However, identifying stops gets messier when it comes to apico-alveolar stop /d/ and the dental stop /d̪/. Dental stops *dh* are often transcribed with *d* only, especially in the earliest transcriptions. Mathews and Mackenzie both transcribed stops regularly and fairly consistently.

### A.3.7.2.1 Bilabial stop /b/

*B* can be followed or preceded by all vowels in word-initial and intervocalic position. Word-finally, *b* is only found in two instances, one of them is shown in (1).

- (1) *wannup*  
wana(ga)-b  
who-2s  
*who are you in Wodi Wodi DM-M.2.2-8*

Note that the word-final *b* is here a shortened version of *wana(ga)-bi* ‘who-you (singular)’.

### A.3.7.2.2 Apico-alveolar stop /d/

The interpretation or identification of *d* proves to be difficult in many cases as the earliest collectors did not transcribe the dental stop /d̪/, but used *d* instead. For example, whereas Mathews transcribed *dhana* ‘foot’ as <*dhun'-na*> (U-M.1.1), Howitt spelled the same word <*dana*> (U-HH-480). This common misrepresentation of the dental stop as *d* can lead to assuming too quickly that many transcribed *ds* are dental stops. Without evidence in other sources of the SCLs that warrant an alteration of the original transcription, the original spelling of *d* has been maintained in the phonemicised version.

In almost all instances the transcribed *d* is followed by a back vowel *u* or central vowel *a*, but only in very few cases by *i*. Two of these rare examples are:

<i>dirrindharra</i>	‘person scarred with birrin’	< <i>dirrindhurra</i> > (A-M.2.4-23)
<i>dildil</i>	‘open’	< <i>dill, dill</i> > (A-M.2.4-25)

### A.3.7.2.3 Lamino-dental stop *dh* /d̪/

*dh* is represented in the historic language material as *th*, *dh* and *dth*. In regards to pronunciation, Mathews wrote that “dh is pronounced nearly as in ‘that’ with a slight sound of d preceding it” (Mathews, 1901b:141). In Gandangara material collected by

Everitt (undated manuscript), word-initial /dh/ is transcribed as *idth*, which is likely due to facilitate ease of articulation.

*dh* occurs in word-initial and intervocalic position, and can be preceded or followed by any vowel. Word-final dental stops were not recorded in the SCLs corpus except one Dhurga example <*kan'-na-go-badh'*> (U-M.1.1) ‘echidna’, which was later transcribed by Tindale with the alternative lamino-palatal stop in <*'djanunggu'ba:dj*> (WL-T.75).

#### A.3.7.2.4 Lamino-palatal stop *dj* /dʒ/

The quality of this phoneme is relatively easy to establish from the transcriptions and pronunciation keys offered by Mathews and Mackenzie. Nevertheless there are more spelling conventions used by early collectors than for any other sound.

Most often, this phoneme is transcribed in the corpus as *dy*, in some cases as *j* or in rare occurrences *tsh* or *tch* in word-final position as in <*kabūtsh*> ‘dead’ (DM-AM-1874-256-Ull/Bi-Bu1) and <*dhug'-gatch*> ‘frost’ (U-M.1.1). This variation in spelling may suggest that the quality of the lamino-palatal stop may have had in word-final position a more affricated quality than the generally transcribed *dy* sound. Mathews (1901a:50) confirms this with the note in another publication of his only published Dharumba grammar, that “at the end of a word, ty or dy is pronounced nearly as tch in watch or hitch, omitting the final hissing sound” (1902c:53).

Another spelling convention found in early sources that attempts to describe a palatal stop, when followed by /a/, is the *ait* sequence as in these examples.

<i>ngadjung</i>	‘water	< <i>ngaityung</i> > A-WR-419
<i>badjga-</i>	‘get up’	< <i>baitgang</i> > A-M.1.3-279

Mathews elaborates more on the pronunciation of this phoneme in one of his published Dhurga grammars.

Y, followed by a vowel, is attached to several consonants, as *dya*, *lyee*, *byoo*, *tya*, and so on, which are supposed to sound as one syllable, sounding all letters. Y sometimes follows a consonant at the end of a word, as in *gur-ra-gaty*, meaning slow. In such cases it must form a part of the preceding syllable; thus *gaty* should be pronounced all in one.

Mackenzie transcribed the word-initial and intervocalic palatal stop with *j* in words like <*Jejuŋ*> *djadjung* ‘moon’ (A-AM-1874:260-Pl) and sometimes with the English spelling convention *dg* (as in ‘judge’) in inter-vocalic position, i.e. <*Mudgěry*> (A-AM-1874-250-YK). Mathews spelled the same word <*mudyerree*> (A-M.2.2-175).

Other early collectors transcribed word-initial palatal stops with *g*, as in the English word ‘George’, as in the example taken from Larmer’s Batemans Bay wordlist.

*djinggi(i)* ‘star’ <*Gin.gee*> (BB-JL-225)

The common tendency in AALs (Dixon, 2002a) for palatal stops to be followed by the high front vowel *i* and to a lesser extend by *u* and *a* is also observed in the SCL material.

### A.3.7.2.5 Apico-post-alveolar (retroflex) stop *rd* /*d*/

Transcriptions of word-final and inter-vocalic *rd* are frequent in the SCLs corpus.

Inter-vocalically, examples that stand out are:

*ngurdungurdu* ‘nostril’ <*ngoor-doo-ngoor-doo*> (U-M.1.1)  
*ngardamari* ‘copulation’ <*ngürdamurri*> (A-M.2.3-50)

Examples showing what are considered in this study to be most likely instances of word-final retroflex stops are also in small numbers and in only one instance each within the whole SCL corpus. One such example is *bangurd* <*bungurt*> ‘water hen’ (A-M.1.3-277).

Some examples with word-final *rd* can on closer inspection be dismissed as retroflex stop transcription, or at least be classified as too ambiguous. The Dharrawal



### A.3.7.3 Nasals

All nasals occur in word-initial and inter-vocalic environments. The palatal nasal *nj* and velar nasal *ng* also occur word-finally. The retroflex nasal *m* is found in word-final and inter-vocalic position only and the apico-alveolar nasal *n* is found only in a small number of examples in word-final position. No word-final dental nasal *nh* has been transcribed in any of the languages. The bilabial stop *m* only occurs in isolated instances in word-final position.

#### A.3.7.3.1 Bilabial nasal /m/

The bilabial nasal *m* occurs word-initially and inter-vocalically with all vowels. Examples showing *m* word-initially are frequent.

<i>maramal</i>	‘hand’	< <i>murramul</i> > (A-M.1.3-276)
<i>mundur</i>	‘strong/heavy’	< <i>moon'-door</i> > (U-M.1.1)
<i>minga</i>	‘mother’	< <i>meeng'-a</i> > (U-M.1.1)

Inter-vocalically, *m* is found in examples such as:

<i>gami</i>	‘mouth’	< <i>kummi</i> > (A-M.1.3-276)
		< <i>kommi</i> > (A-WR-418)
<i>ngumung</i>	‘knee’	< <i>ngumung</i> > (A-M.1.3-276)
		< <i>'ngumu</i> > (WL-T.75)
<i>mama</i>	‘older sister’	< <i>mama</i> > (U-M.2.2-39)
		< <i>mâ '-ma-dhâ</i> > (U-M.1.1)

Word-final *m* is only found in, but consistently transcribed with a final /m/, in the Dharrawal demonstrative *nham* ‘that’ (A-M.1.4-134). But within any given language, exceptions such as these can often be found in high frequency words (Walsh, pc December 2009).

#### A.3.7.3.2 Apico-alveolar nasal /n/

*n* is transcribed in smaller number compared to *nh* and *nj*, and occurs more frequently when followed by *a* or *u*, compared to a following *i*. This applies to both word-initial

and inter-vocalic environment. Inter-vocalically, *n* is found in commonly occurring words such as:

*bana* 'rain' < *bunna* > (A-M.1.3-276); (ILL-SoM.JB); (U-C-17/RD-423); (BB-JL-225),  
< *bana* > (A-AC.1.-25); (MY-HH-481)  
< *bun'-na* > (U-M.1.1)  
< *punner* > (B-R)

(Note that Tindale transcribed *bana* with a long /n/ < 'ban:a' > (WL-T.75); see A.3.7.1 for discussion on long or double consonants.)

One word that is consistently transcribed with word-initial *n*, and occurs in a large number throughout the whole SCLs corpus is *nugurr*.

*nugurr* 'nose' < *nô'-goor* > (U-M.1.1)  
< *noogooroo* > (U-C.1-21)  
< *noogooroo* > (U-RD-422)  
< *noukoro* > (JB-G-11)  
< 'nugur' > (WL-T.75)  
< *noogoor* > (A-WR-418 >  
< *nugur* > (A-M.1.3-276)  
< *nokorroh* > (ILL-SoM.JB)

Word-finally, *n* is transcribed consistently in relatively few words, but is consistently transcribed as such in one of the most salient words in the Dhurga corpus.

*dhugan* 'camp' < *thoo'-gan* > (U-M.1.1)  
< *doogan* > (U-RD-423)  
< *Tookun* > (UL-JL-266)  
< *Tugon.* > (BB-JL-226)  
< 'd,ugan' > (WL-T.75)

The salience of these two words in the corpus and consistency in spelling of the nasal in *nugurr* and *dhugan* suggests that the original transcription of *n* is correct, rather than a mistranscribed (or misinterpreted) dental or palatal nasal.

But as with the corresponding apico-alveolar stop *d*, there is sufficient evidence to suggest that in some instances of a transcribed *n*, a dental nasal may have been more appropriate. Even within Mathews' material, alternative spelling is found as in the following example.

*nhaway* 'today' < *now'-ī* > (U-M.U.2.2-47)  
 < *nthow-ay* > (U-M.2.2-17)

### A.3.7.3.3 Lamino-dental nasal *nh* /ɲ/

Word-initially, *nh* is transcribed frequently by Mathews. Inter-vocally *nh* is found in lesser number compared to word-initially, and is not found in word-final position. One of the rarer examples transcribing inter-vocalic *nh* is found in the Dharrawal privative marker *-ganha* < *gunnha* > (A-M.2.6-23-PoS1).

The lamino-dental nasal *nh* was most likely the most difficult consonant to isolate for the early language collectors, due to *nh* being an unfamiliar phoneme for people from European language background, and because the perceptual cues are not as obvious as in the dental stop *dh*.

There is no doubt that both Mackenzie and Mathews were aware of the lamino-dental nasal phoneme /ɲ/. This is demonstrated in some of Mathews' earliest SCLs material where he used, and underlined, the spelling convention *nth* for word-initial dental nasal.

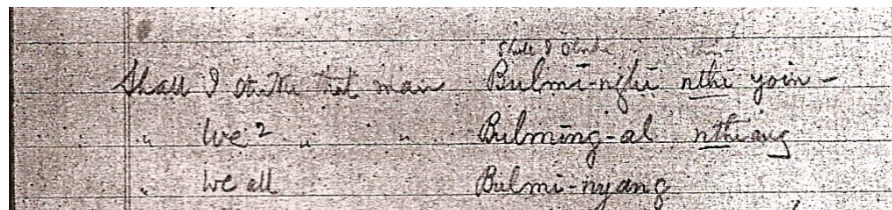


Figure 54. Mathews excerpt Notebook *Thurga and Dyirringany* p. 97

Mathews, and to a lesser extent Mackenzie, were also the only early collectors who transcribed *nh* frequently, if not always consistently. In his spelling key Mathews (1901b:141) described this phoneme: “*nh* has nearly the sound of *th* in ‘that’ with an initial sound of the *n*” - this also explains his *nth* transcriptions. The transcription of *nth* was a way of indicating dental articulation.

Based on phoneme distribution recorded in other AALs, we can assume that dental nasals were much more prevalent in the SCLs than the archival language material shows. Due to the difficulty of distinguishing dental from alveolar nasals the records do not support a more detailed analysis of the distribution of this phoneme. We can, however, assume that the distribution closely follows that of the dental stop, but in order to reduce the risk of over-generalising no dental nasals are assigned to an otherwise transcribed alveolar nasal unless there is some evidence found in other material of the same language.

#### **A.3.7.3.4 Lamino-palatal nasal *nj* /ɲ/**

The lamino-palatal consonant is transcribed consistently throughout the corpus in word-initial, inter-vocalic and word-final position. This suggests that most collectors had no problem distinguishing the palatal nasal from other nasals. The conventions/symbols or digraphs used to transcribe this sound differs greatly though.

Mathews represented this phoneme in his publications and handwritten notes with *ny* or *ñ*, and he compared the sound to the Spanish nasal as in the word *mañana* ‘tomorrow’.

The sound of the Spanish ñ is frequent, both at the beginning and end of a syllable. (1901b:129)  
The sound of the Spanish ñ is frequent. At the commencement of a word or syllable I have represented it by ny, as nyir, which is articulated as one syllable. At the termination of a syllable, ñ is adopted, as yoo-iñ. (1901a:50)

The lamino-palatal nasal is found in Mathews’ aforementioned spelling system in words such as *njamanj* ‘younger brother’ <*nyammañ*> (A-M.1.3-275). But Mathews did not always apply this orthographical convention as suggested in the latter quote. We still find examples in his corpus that show *ñ* word-initially. This is observed frequently in Mathews’ notebooks where he transcribed palatal nasal initial demonstratives such as *njiinj* ‘this’ <*ñeeñ*> (U-M.2.2-7) with *ñ* in both initial and final position.

In contrast, Mackenzie, and other earlier transcribers, seemed to address word-final palatal nasals by using the *ain* sequence when the palatal nasal was preceded by /a/. (Similar to the *ait* sequence transcribing *adj*.) Another frequently found spelling convention is *ine* to transcribe *anj*.

*biribanj* ‘emu’ < *biribain* > (DM-AM.1-254)  
 < *birriban* > (U-M.2.2-45)  
 < *Birree.bine* > (BB-JL-225)  
 < *'biriba:nj* > (WL-T.75)  
 < *birribain* > (A-WR-418)

Gaimard, from a French speaking background, used the French *gn* digraph, as in *agneau* ‘lamb’, or Italian *gnocchi*, to transcribe the palatal nasal *nj*, as in *dhanj*-‘eat’ < *taingn* > JB-G-12, and seen in this excerpt of his published wordlist.

Patte d'oiseau. <i>Tanna.</i>	Squale (grand) de Jervis. <i>Paro.</i>
Peau. <i>Bagagno.</i>	Telline (coquille). <i>Madjawa.</i>
Peigne (coquille). <i>Korongo.</i>	Testicule. <i>Moura.</i>

Figure 55. Gaimard excerpt 1834:12

### A.3.7.3.5 Apico-post-alveolar (retroflex) nasal *rn* /ŋ/

Repeating here from Eades (1976:34), one example that seems almost impossible to analyse as anything but the retroflex nasal (in a consonant cluster) is the following example.

*gurndiira* ‘ironbark’ < *goorn-dee'-ra* > (U-M.1.1)

This example leaves no ambiguity as to whether the *r* following a vowel marks a long vowel as in the English ‘mark’.

Word-finally, *marrorn* < *murroorn* > ‘march fly’ (A-M.2.2-102) and *yarungarn* < *yar'-ung-arn* > ‘long’ (U-M.1.1) are two examples that show word final retroflex nasals.

### A.3.7.3.6 Velar nasal *ng* /ŋ/

The velar nasal *ng* occurs in word-initial, word-final, inter-vocalic position and in the homorganic velar nasal-stop cluster *ngg*. In inter-vocalic and word-initial position, *ng* is followed by the central or high back vowels, *a* and *u*.

<i>ngumung</i>	‘knee’	< <i>ngumu</i> > (U-M.1.1) < <i>omonn</i> > (JB-G-12) < <i>'ngumu</i> > (WL-T.75) < <i>ngumung</i> > (A-M.1.3-276) < <i>ūmungo</i> > (DM-AM-1878-271-Wand/No-Tu)
<i>ngawuli</i>	‘woolleybutt’	< <i>ngau-wuli</i> > (A-M.2.4-58)

Inter-vocalically, *ng* is found numerous times across the SCL corpus in words such as:

<i>warranganj</i>	‘boomerang’	< <i>warrang'añ</i> > (U-M.2.2-14) < <i>war-rang'-an</i> > (U-M.1.1) < <i>warrangan</i> > (U-RD-423); (U-M.2.2-135) < <i>'waranga:nj</i> > (WL-T.75) < <i>wurangaing</i> > (A-WR-419)
<i>gulungulu</i>	‘thumb’	< <i>koo-loong'-oo-loo</i> > (U-M.1.1)

*ng* is a sound found in the English language and posed no problem for the early collectors from English speaking background when in word-final or intervocalic position. Word-initially, as we can see from the previous examples, it caused early language collectors more problems and the initial sound is omitted altogether. Also see the previously listed transcription of *ngumung* by Gaimard, i.e. < *omonn* > (JB-G-12).

<i>ngadjung</i>	‘fresh water’	< <i>adjoo</i> > (B-R) < <i>atchoun</i> > (JB-G-12) < <i>nijong</i> > (ILL-SoM.JB)
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Note that Gaimard also transcribed *ngulu* ‘forehead’ with a word-initial *h* < *holo* > (JB-G-12).

Mackenzie used the symbol  $\eta$  for the velar nasal in his handwritten notes, as seen in the word < *pūrūwāŋga* > in the second row. (Note that Mackenzie still used *ng* in some instances.)

*Murra-murra maunmirria, ngaimaia Kangargraon,  
 kūrūhgiatū mēgaalali Kangargraon pūrūwāhga; hāi-  
 miaola pūrūhāiaoluh; kaliaolanai mihi mirigahga;*

Figure 56. Mackenzie excerpt < *Mēgaaloāli Wurragul* > story in Dharawal

In the published version of this text (Mackenzie, 1874:255), this symbol was presumably not available and the typesetting changed it to the upside down capital *G*. This symbol was simply typeset in a smaller font (as seen below) for lower case and larger font for upper case.

**Murra-murra maunmirria, ngaimaia Kangargraon; Kūruaiālū  
 mēgaalali Kangargraon pūrūwāoga; haimialaola pūruaiioluo;  
 kaliaolanai mihi mirigaoga; yakaiolanna “wadthain bundamia!”**

Figure 57. Mackenzie excerpt < *Mēgaaloāli Wurragul* > 1874:255

In another publication of Mackenzie’s texts (Mackenzie, 1877:272), a symbol more closely resembling the IPA symbol was used, in both large and small font size.

*pū-rū-rū-rū-rū. Būthūlā Tūtawai thulinyo: thitbūlo wakāra,  
 guia, ŋarawan, kurrū, Kūrūgama yanāla; yaukūpa “Kūwai-ai-  
 ai! Pūlūngūl! Kununga-lūni yai yāukāraŋ, ŋarinna Kunnum-  
 haitūhāi*

Figure 58. Mackenzie excerpt < *Tūtawa, Pūlūngūl* > 1877:272

Examples showing *i* following the velar nasal have been found in either word-initial or inter-vocalic environment and can generally be phonemicised as a *ngay* sequence, as in ‘yes’ *ngay* < *ngi* > (A-M.1.7-4).

## A.3.7.4 Lateral consonants

Lateral consonants are along with rhotics (and retroflex stops and nasals) the only consonants that cannot occur in word-initial position in the SCLs.

### A.3.7.4.1 Alveolar lateral /l/

*l* occurs freely in inter-vocalic and word-final position, although less frequent word-finally.

<i>ngala-</i>	‘sit’	(A)
<i>wiiling</i>	‘lip’	(A, DM, U)
<i>gumbal</i>	‘strong’	(A)
<i>bayiil</i>	‘man’	(DJ)

*l* occurs in consonant clusters such as *lm*, *lw* and *lg*, but predominantly across morpheme boundaries creating clusters such as *ldj*, *ldh* and *lb*.

### A.3.7.4.2 Lamino-palatal lateral *lj* /ʎ/

Despite Dixon’s (2002a:549) proposal of the ‘single lateral line’<sup>37</sup>, we have evidence in the SCLs material that suggest that the SCLs include *lj* in their inventory. In one of his published Dhurga grammars, Mathews (1901a:50) noted that

Y, followed by a vowel, is attached to several consonants, as *dya*, *lyee*, *byoo*, *tya*, and so on, which are pronounced as one syllable, sounding all the letters.

Mathews’ observation implies that a palatal lateral may have been part of the phoneme inventory. A relatively small number of examples are found in the corpus that could suggest that at least sometimes a transcribed *ly* is a lamino-palatal lateral phoneme and not a transcription of a *lV<sub>y</sub> + vowel* sequence.

However, *ly* may not be an as frequently occurring phoneme as other palatal phonemes. Hercus and Mathews (1969:201) reported that in Ngarigo “*lj* is rare and is

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<sup>37</sup> Dixon (2002a:549) drew a line from north to south near the eastern part of Australia and suggested that the languages falling east of that line only had the laminal apical lateral *l*, but not the retroflex or the lamino-dental laterals *rl* and *lh*, respectively.

found only medially. It is a separate phoneme and is not in complementary distribution with *j*". This observation may well also apply to at least some of the SCLs.

One of Mathews' biblical stories, *The Parable of the Sower*, shows the word < *dhŭlyŭn* > 'palm berry' (A-M.2.6-16), and Mackenzie recorded < *sēlyene* > 'sail' (DM-AM-253). However, no spelling alternatives exist due to these words only appearing in these instances by the same collector in the same spelling.

Another example is 'eaglehawk', which is transcribed in a large number throughout the SCL corpus. Mathews translated 'eaglehawk' in the Dharrawal corpus as

*maljan* 'eaglehawk' < *mulyan* > (A-M.1.2-106); (A-M.1.4-130)  
< *mullin* > (A-AM1.255)  
< *mullyan* > (A-M.1.3-276)

All spellings suggest that this is a disyllabic word with an unlikely lateral-glide sequence *ly*, or the palatal lateral phoneme *lj*, and not a *liya* sequence, which the collectors would have transcribed as a three-syllable word in at least one instance.

However, a hesitation to identify these *ly* sequences as palatal laterals could be based on cognates available for the same word in other NSW languages. For example, in Ngiyampaa (Donaldson, 1980) and Wiradjuri (Rudder, 2006) 'eaglehawk' is phonemicised as *maliyan*.<sup>38</sup> We find this alternating spelling within the SCLs corpus. For example, 'north(-east) wind' is transcribed by both Dawsey and Mathews within the Dhurga corpus as:

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<sup>38</sup> See also Koch (2009:149) for further transcriptions of *maliyan* in south-eastern NSW languages: "A property north-west of Canberra that in the nineteenth century was held by pioneer Henry Hall had the name 'The Mullion'; 'Mullion' was also used as the name of a parish in County Cowley (Moore 1999: vi, 96). This is plausibly derived from *maliyan* or *malyan*, the word for the wedge-tailed eagle, commonly called 'eaglehawk', which is attested for a number of languages of the region, including Wiradhuri (*mul.le.yan* in Robinson 2000: 178, McNicol and Hosking 1994: 90), Ngunawal (*mul.yun* and *mul.le.yal* in Robinson 2000: 208 and 209 respectively, *mulleun* in Mathews 1904: 304), Wolgal (*maliang* in Howitt 1996[1904]: 102), Dharrawal in the Illawarra (*mulyan* in Mathews 1901: 130), and Yuwaalaraay, Yuwaalayaay, and Gamilaraay in inland northern NSW (*maliyan* in Ash et al. 2003: 106)."

< *bullya* > (U-RD-421)

< *pal'-ya* > (U-M.1.1)

But it is shown in the Dharrawal corpus with a clear break up of the *ly* sequence.

< *bullē'-arŭng* > (A-M.2.4-53)

< *bulleanga* > (A-M.2.4-53)

The fact that the two spellings occur in corpus of different languages, i.e. Dhurga versus Dharrawal, and that Mathews marked stress on the second syllable, emphasizing the *liya* sequence, might suggest that a distinction exists within the phonemicisation of this word. Note that the Dharrawal examples follow the spelling of this word in other NSW languages, whereas the more southern language Dhurga might be distinguished from this by the use of a palatal lateral, which has also been analysed to be part of the inventory of the Sydney language (Troy, 1994) and the north-western NSW language Paakantji (Hercus, 1982), for example.

Whether or not a palatal lateral is part of the SCLs inventory (or possibly just for the southern languages) remains an unresolved issue at this stage. I have listed observations that might point to its existence, but factors that could speak against *lj* in the SCLs, are suggested lack of multiple laterals in the languages of eastern Australia (Dixon, 1980:141) and the alternative spelling of cognates in other related languages as well as the remarkably small number of transcribed *ly/lj* in the whole SCL corpus.

#### **A.3.7.4.3 Apico-post-alveolar (retroflex) lateral *rl* /*l̠***

There are fewer instances that show a *rl* sequence that can be analysed as a retroflex lateral, compared to the retroflex nasal and stop. In the various transcriptions of the Dhurga and Dharrawal word for 'back', which Mathews spelled < *barl'-ka* >, two other spelling variations from other collectors also contain rhotics, which supports a retroflex sound in the first syllable.

*barlga* ‘back’                    < *barl'-ka* > (U-M.1.1)  
    < *'ba(r:)ka* > (WL-T.75)  
    < *bulga* > (A-M.1.3-276)  
    < *Pulgar* > (ILL-SoM.JB)

Tindale’s transcription < *'ba(r:)ka* > suggests that this word may have been pronounced with or without a rhotic (in fact a long rhotic, according to Tindale). Another possibly related transcription is offered by Mathews and also contains a rhotic.

(2) *yandama burgawang*  
       yanda-ma                    bar(l)gawang  
       go-PRST                    backwards  
       *he stepped backwards DJ-M.2.3-13*

Similarly, < *bur'l-guñ* > ‘dirty, like water’ (U-M.1.1) shows the same sequence/breakup of letters, but in this case we do not have an alternative spelling available in the SCLs corpus.

Various transcriptions of the Dhurga and Dharrawal word for ‘chin’ also point to a retroflex lateral consonant. Note that although the majority of the spellings do not give a hint of an underlying *rl*, the two examples that do are worth a closer look.

*warlu* ‘chin’                    < ***war'-loo*** > (U-M.1.1-68)  
    < *wallu* > (A-M.1.3-276)  
    < *walu* > (A-M.1.3-276); (A-AC.A.1-25)  
    < ***wourlung*** > (ILL-SoM.JB)<sup>39</sup>  
    < *walo* > (JB-G-11)  
    < *walu* > (MY-HH-480)

There is no hint of a long vowel; in fact the second transcription marks a short vowel through the transcription of the double consonant after *a*, i.e. < *wallu* >.

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<sup>39</sup> Here the *ou* sequence may denote a long vowel.

### A.3.7.5 Rhotics

Rhotic contrast is common in AALs, with the majority showing a phonemic distinction between a trill and the approximant as in the English *r* (Evans, 1995a:729). There is no doubt that a trill (represented as *rr*) and an alveolar approximant (*r*) are part of the SCL phoneme inventory; there is sufficient evidence in the transcriptions, as well as being clearly audible in Les Bundle narrating the *King of the Sea* story (Recorded by Arthur Capell, 1955). But as to the distribution and phonemicisation of rhotics from the historic language material, many of these are inconclusive, particularly intervocalically.

The convention used to deal with the uncertainty of the quality of rhotic in some words is as follows: *rr* always represents an analysed trill, whereas *r* denotes that the rhotic could be either an approximant or a trill.

What we can say is that rhotics cannot occur in word-initial position; however, rhotics do occur in morpheme initial positions such as the verbal purposive suffix *-ri*. Rhotics occur inter-vocalically with all vowels, and can occur in word-final position. Word-finally, it is most likely that all word-final rhotics are trills, as word-final approximants are not commonly found in AALs. Rhotics in consonant clusters are discussed in the appropriate sections in this chapter.

Mathews employed a fairly consistent spelling and pronunciation key in all of his published SCLs grammars. Firstly he suggests that the letters he uses in his orthography correlate in sound to their English pronunciation.

...nineteen letters of the English alphabet are sounded, comprising fourteen consonants and five vowels, namely a, b, d, e, g, h, i, j, k, l, m, n, o, p, r, t, u, w, and y (Mathews, 1901b:129)

...the letters have the same value as in English with the undermentioned qualifications (Mathews, 1901a:50)

From the first statement it then seems that his letter *r* represents the approximant as in the English word 'rain'. But then he continues to mention that:

*r* has a rough trilled sound, as in hurra!...no matter what its position in the word may be. (Mathews, 1901a:50 and 1901b:127)

He does not specifically state whether there are two (or more) rhotics and he does not overtly transcribe any existing difference in rhotics by means of a spelling convention.

In many cases, a transcribed *rr* (as other double consonants) in the archival sources is most often an indicator that the preceding vowel is short.

Of course there is the possibility that even though Mathews was able to distinguish different rhotic sounds, he had problems doing so consistently and confidently. Identifying rhotics may have been a problem for Mathews as much as it was for more acknowledged linguists who worked on AALs more recently. Tindale, for example, had problems correctly transcribing trills and approximants as Breen (2006, <http://www.anu.edu.au/linguistics/nash/aust/nbt/symbols.html>, visited 12 October 2009) found out.

Of 44 instances of a rhotic-initial consonant cluster, Tindale got two right. He had the right rhotic about half the time, but usually interpolated a vowel. Word-final rhotics are correct in eight of 34 cases. I conclude that there is no point in even noticing which of the two *r* symbols Tindale used.

Capell (n.d. Dharrawal grammar) offers the only unambiguous verification of the existence of two rhotics. Capell addressed the distinction of the word *guri* 'ear'

*guri* 'ear' < *koori* > (A-WR-418); (U-C.1-19), (U-RD-422)  
< *guri* > (A-M.1.3-276); (A-AC.1-25)  
< *kouri* > (JB-G-12)  
< *gūri* > (MY-HH-480)  
< *Kooree* > (BB-JL-225)  
< '*guri*' > (WL-T.75)

from the widely accepted term for Aboriginal people of south-eastern Australia 'Koori'. Because 'Koori' is a loanword from languages to the north of the SCLs such

as Darkinyung (Jones, 2008), Dhanggati (Lissarrague, 2007) and Awabakal (Lissarrague, 2006), it may have been homonymous with the SCL word *guri* ‘ear’. Capell’s (n.d. Dharrawal grammar) observation that

“ear” and “man” are distinguished by the untrilled r in the former [and] the trilled in the latter may be correct, but may also have been a product of the necessity to distinguish between the body part and the people (or men) of the more northern language groups. According to Capell then, the word ‘Koori’ from the northern coastal languages might be appropriated into the SCL orthography as *gurri*. (However, if we take the common pronunciation of ‘Koori’, the phonemicisation should look more like *guuri*, with a long vowel and without the trill but the continuant rhotic.<sup>40</sup>)

Whether or not the SCL rhotic(s) also included a third rhotic, a tap, is possible but not attested from the language material available for the SCLs. The variable spelling of *d/t* versus *r(r)* that can be found in different transcriptions of words with a tap is not found in the SCL corpus.

### A.3.7.5.1 Apico-alveolar trill *rr* /r/

Word-finally trills are well documented, and there are various common spelling conventions that hint at the transcription of the trill. Inter-vocalically transcribed trills are not that easy to identify as they lack the special conventions that are listed here.

The simplest way to transcribe a word-final trill, which is used in remarkably small numbers of instances, is by a word-finally transcribed *rr*, as seen here in two of Mathews’ examples.

<i>marr</i>	‘hornet’	< <i>mur-r</i> > (A-M.1.3-278)
<i>baabirr</i>	‘honeysuckle’	< <i>bâ'-birr</i> > (U-M.1.1)

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<sup>40</sup> At this stage, SCL communities, that I am involved with, have decided to keep the current spellings of names such as ‘Koori’ to avoid confusion.

In most cases, however, only one *r* is transcribed. This is a convention used consistently by Mackenzie. For example in one of his texts, he transcribed the exclamation < *wir wir!* > (DM-AM-G) ‘make haste!’ that can be phonemicised as *wirr wirr*.

Similarly, word-final *rh* can be found transcribing a word-final trill, which is found in this example in Larmer’s Batemans Bay wordlist.

*murr*            ‘tobacco’        < *Moorh* > (BB-JL-226)

Yet another alternative spelling is found in the name of the New South Wales township — *Yass*. The clue is given by Mowle (1891:2, in Koch, 2009:132), stating that *Yass* was pronounced *Yarr* (close to /jʌr/) by Aboriginal people. Similarly, Ridley (1877:258) commented on the spelling of a word containing *s* in John Rowley’s George’s River, Cowpastures and Appin wordlist.

The *s* here must be, I think, [sic] a mistake. Nowhere in Australia have I heard the sound *s* in any aboriginal word. The sound of *dy* (in *hidyard*) approaching to *j*, or *g* in *Roger*, is sometimes mistaken for *s*, so is *rr*.

By transcribing the word-final trill with (double) *s*, the transcriber was trying to convey the partial devoicing of the final trill, as was also witnessed in the transcription of the above *rh* spelling.

The spelling variation of words with a final trill can also often show a following vowel. This is also due to the collector transcribing the release of the final trill. Here we have examples such as these throughout the corpus.

<i>nugurr</i>	‘nose’	< <i>noogoor</i> > (U-WR-418)
		< <i>nokorroh</i> > (ILL-SoM.JB)
		< <i>noogooroo</i> > (U-C.1-21)
		< <i>noukoro</i> > (JB-G-11)
		< <i>'nugur</i> > (WL-T.75)
<i>marrarr</i>	‘spider’	< <i>marara</i> > (U-RD-421)
		< <i>mur'-rar</i> > (U-M.1.1)

But inter-vocalically the identification of trills in the language material is not that simple. It is unclear whether Mathews used the general rule of using *rr* for a trill, and a single *r* as a continuant in inter-vocalic position. *Gari*<sup>41</sup>, for example, is broken up into syllables in <*kâ'-ree*> (U-M.1.1) showing only one *r*, whereas *garriba* <*gar'-ree-ba*> ‘flat-tailed mullet’ (U-M.1.1) breaks the syllables with a double *rr*.

However, Mathews also transcribed the same word with *rr* or *r*, as in *buru*. Although his transcription of *buru* is in almost all cases with a single *r*, in rare instances he used *rr* in <*būrru*> (DJ-M.1.5-161) and <*burru*> (DM-M.2.6-30). Another indication is also the break up of the word in another instance <*boo'-roo*> (U-M.1.1). RHM probably treated /u/ as a long vowel of English, which would not require doubling of a following *C*; but his *rr* after *u* would normally denote a short vowel, perhaps a low vowel as in *hurry*.

### **A.3.7.5.2 Post-apico-alveolar approximant rhotic *r* /ɻ/**

Although there is solid evidence for the existence of the trill in the SCL inventory, identifying rhotics other than the trill proves to be somewhat inconclusive. In all of his published SCL grammars, Mathews clearly states that the letter *r* in his transcription is always a trill, but also includes *r* in the list of sounds that are also found in English. Furthermore, Mathews does not offer different spelling conventions for any distinction in rhotics.

There is no identified alternation in spelling of the same word with either *r* or *y*, which would suggest a rhotic approximant.

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<sup>41</sup> Mathews' transcription of *gari* ‘snake’ <*kâ'-ree*> (U-M.1.1) suggests a long vowel, due to the use of the diacritic used above the vowel. However, this word is pronounced in communities these days with a short vowel. I also had the pleasure to hear the well-known artist Jimmy Little use the word *gari* (with a short vowel) when telling a story at the Gulaga Mountain Handback (held at Tilba Tilba, 6<sup>th</sup> May 2006). Jimmy Little's father (Jimmy Little sr) was from Wallaga Lake and recorded on field tapes in the 1960s by Luise Hercus and Janet Mathews.)

Ultimately, the only direct statement regarding a rhotic distinction is the earlier cited quote by Capell (n.d.), where he gives the distinction between *guri* ‘ear’ versus the phonemicised *gurri* (Koori) ‘Aboriginal man’.

### A.3.7.6 Semivowels

Semi-vowels occur in all AALs (Dixon, 2002a:552 and Evans, 1995a:729) and are recorded in the SCLs corpus in word-initial and inter-vocalic environments preceding all three vowels. Word-finally, the palatal glide *y* is found in a small number of instances.

Lenition of the velar stop /g/ is found in few words in Dharrawal, where *g* > *w*. ‘Lyrebird’ (‘pheasant’ in the old wordlists), for example, is consistently transcribed in Dhurga with *g* but with *w* in Dharrawal.

<i>djagula</i>	‘lyrebird’	< <i>jâ'-goo-la</i> > (U-M.1.1), < <i>chakola</i> > (U-RD-421) < <i>Jag.goola.</i> > (BB-JL-266) < <i>Tagula</i> > (BB-JL-225)
<i>djawula</i>	‘lyrebird’	< <i>jaula</i> > (A-M.2.5-46) < <i>jaulangai</i> > (A-M.2.5-46) < <i>jowler</i> > (ILL-SoM.JB)

Curiously, Mackenzie’s spelling of ‘lyrebird’ in his Dharumba text *The Pheasant and the Eel* consists of both *g* and *w* *djagwila* < *Jakwila* > (DM-AM-1874-260-Ull/Th-Ee). The discrepancy in transcription between Mathews’ and Mackenzie’s ‘lyrebird’ may possibly be explained by Mackenzie’s language material being published more than 25 years before Mathews collected his SCL material - although that does not explain the lenition in Dhurga.

Inter-vocalic semi-vowels are in many cases omitted in the transcriptions of early language collectors, as this example by Mathews shows in *buwandVyu* ‘oak’ < *bu'-an-de-oo* > (A-M.2.4-59).

Other *by* sequences in the old sources can be deconstructed differently, such as in (3) below, where the *by* sequence represents a b + diphthong sequence just as the English word *by* and/or *bye* in < *bumbye* > (A-M.2.6-14), i.e. /bai/.

- (3) *nuggung bumbyau-a*  
 nungung      bumba-ya-wa  
 good          be-PST-3p  
*they (pl) have been good (A-M.2.6-14)*

In other instances, *by* represents a word-final /bi/ as in *grubby*, as in < *jambydthain* > *djambi-dha-yin* ‘brother.in.law-ERG-1ip.PSSR’ (DM-AM-1874-257-Ull/Th-Bu2).

Examples such as these demonstrate the need for a comparative, and often cumbersome, approach and methodology that is required to phonemicise almost any word found in the historic language material.

### A.3.7.6.1 Bilabial semivowel *w*

*W* can be found word-initially and inter-vocalically, and can be followed by any of the vowels.

<i>wiling</i>	‘lips’	< <i>wilin</i> > (U-M.1.1) < <i>willi</i> > (U-C.1-19) < <i>wiling</i> > (U-HH-480) < <i>Wil.lee</i> > (BB-JL-225) < <i>wee'-leen</i> > (U-M.1.1-68) < 'wili > (WL-T.75),
<i>wadha</i>	‘where’	< <i>waddha</i> > (A-M.1.4-149) < <i>wudtha</i> > (A-AM.1-248)
<i>wuraambin</i>	‘guardfish’ <sup>42</sup>	< <i>woor-âm'-been</i> > (U-M.1.1)

There are isolated examples that suggest a word-final *w*. Given that *y* is found word-finally (in Dharrawal at least), there is the possibility that *w* may occur in the same environment.

*banggaw*      ‘burrawang’ < *bung-gou* > (U-M.1.1)

<sup>42</sup> ‘Guardfish’ is the original translation of this word; it most likely refers to ‘garfish’.

Interestingly, inter-vocalic *w* is rarely recorded as such. Early language collectors generally transcribed a vowel-*w*-vowel sequence omitting the *w*. This is particularly observed when the following vowel is *u*, as shown here. (Also see spelling alternations for *yuwinj* ‘man’ in the following section on the palatal semivowel.)

<i>bangawu</i>	‘lizard’	< <i>bungao</i> > (U-RD-421)
<i>djawurr</i>	‘hair’	< <i>jou'-oor</i> > (U-M.1.1)
		< <i>jaour</i> > (U-C.1-23)
		< <i>tīaur</i> > (MY-HH)
		< <i>Tajoworoo</i> > (BB-JL-225)
		< <i>'djawar</i> > (WL-T.75)

In examples with following central vowel *a*, the bilabial semivowel seems to be more regularly transcribed, i.e.:

<i>dhawara</i>	‘night’	< <i>dowera</i> > (U-C.1-25)
		< <i>dâwara</i> > (MY-HH-481)
		< <i>dowera</i> > (U-RD-423)
		< <i>tahouawann</i> > (JB-G-12)
		< <i>dhub'-boo-râ</i> > (U-M.1.1)
		< <i>Towara</i> > (BB-JL-225)
		< <i>Tub.ba.ra.</i> > (BB-JL-226)
		< <i>tawara</i> > (WL-T.75)
		< <i>dowerer</i> > (B-R)
		< <i>thau'-a-ra</i> > (B-AH.1.3)

Note the alternative spelling in < *dhub'-boo-râ* > (U-M.1.1) and < *Tub.ba.ra.* > (BB-JL-226) of the bilabial stop replacing the bilabial approximant. It is unlikely, in this case, that these are dialectal differences because the word is transcribed with both *w* or *b* in Larmer’s Batemans Bay list.

The transcription of the word-initial cluster *gw* in the old sources often represents a *guy* sequence with an unstressed vowel. In ‘curlew’ < *kwee'-ir-wur'-wur* > (U-M.1.1), Mathews may have omitted to transcribe an unstressed first vowel where the *u* between *g* and *w* was dropped and could be phonemicised as *guyirrwurrwurr*.

The commonly found SCL word *guya* ‘south’ can be found in the alternative spellings:

<i>guya</i>	‘south’	< <i>kwia</i> > (A-M.1.4-147)
		< <i>narri-guia</i> > (A-M.2.3-48)
		< <i>'guja</i> > (WL-T.75)
		< <i>Guiaain</i> > ‘south-ABL’(A-AM-1874:260-PI)

Similarly, the word for ‘echidna’ *gunungguyirr* is transcribed by Mathews as < *gununggwir* > (A-M.1.3-277), but he also shows the break up of the *gw* cluster in < *gununguyir(ngai)* > (A-M.2.5-46).

### A.3.7.6.2 Palatal semivowel *y* /j/

*Y* can occur in all environments, but is only found in word-final position in Dharrawal, in the 1<sup>st</sup> person singular pronominal clitic *-ngay* as in < *yandingai* > *yandi-ngay* ‘I am walking’ (A-M.2.6-14) and *biyangalay* < *biṅṅāly* > ‘grass’ (A-AM-1874-250-YK), for example. In this respect Dharrawal is phonologically closer to the more northern coastal NSW languages, such as Dhanggati (Lissarrague, 2007) and Darkinyung (Jones, 2008), where a word final *ay* sequence is commonly found.<sup>43</sup>

Within the original sources, word-initial *y* is sometimes omitted when followed by the high-front vowel *i*. This is not an unusual phonological occurrence in AALs.

<i>yira</i>	‘tooth’	< <i>irra</i> > (A-WR-419), (A-M.1.3-276)
		< <i>era</i> > (U-C.1-23), (U-RD-423)
		< <i>yira</i> > (MY-HH-480)
		< <i>'ira</i> > (WL-T.75)

The other vowels *a* and *u* follow word-initial *y* in equal distribution.

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<sup>43</sup> Both authors adopted the spelling convention using *ayi* and *uyi* instead of *ay* and *uy* (respectively).

<i>yarrambal</i>	‘long’	< <i>yarrambal</i> > (A-M.1.3-278)
<i>yuwinj</i>	‘man’	< <i>yuiñ</i> > (A-M.1.4-130)
		< <i>yooïn</i> > (A-M.1.7-1)
		< <i>Youhen</i> > (ILL-SoM.JB)
		< <i>Yowin</i> > (ILL-SoM.JB)
		< <i>juwinj</i> > (A-AC.1-25)
		< <i>yoo'-iñ</i> > (U-M.1.2-102)
		< <i>You.een</i> > (BB-JL-226)
		< <i>'juinj</i> > (WL-T.75)
		< <i>uïn</i> > (U-C.1-9)
		< <i>yuen</i> > (MY-HH-480)
		< <i>hewin</i> > (B-R)

A small number of examples suggest that *y* may occur before consonants, for example *gaygan* ‘arm’ < *ki"-kan* ><sup>44</sup> (U-M.1.1), which is a cluster that occurs in other NSW languages such as Bandjalang (Sharpe, 2002).

As observed with the bilabial semivowel *w* (see also the various transcriptions of the word *yuwinj* above), inter-vocalic *y* is also rarely transcribed but easily analysed as such from the natural pronunciation of the transcribed vowel-vowel sequences. Here we find several alternative spellings; one of them is the use of diacritics on vowels such as *ī* to represent a *ay* vowel-glide sequence.<sup>45</sup> For example, the Dhurga and Dharumba word for ‘sit, stay, live’ can be found spelled in various ways.

<i>mayi-</i>	‘sit, stay, live’	< <i>my'-ee-ga</i> > (U-M.1.1)
		< <i>mīeega</i> > (U-M.2.2-79)
		< <i>ma-i-ga</i> > (U-RD-423)
		< <i>Miare</i> > (BB-JL-226)

As an additional note, repeated here from Chapter A.2 (Methodology), it is significant that the use of the IPA symbol /j/ to represent *y* in the phonetic transcriptions by Tindale has caused some problems with misinterpretation within communities. Tindale transcribed *Yuin* as < *ju:in* > (Tindale, n.d.), which has been

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<sup>44</sup> *ī* is also found with the alternative use of diacritic *ī* in some publications as well as handwritten manuscripts. The variable use in published material is most likely due to typesetting issues or preferences.

<sup>45</sup> See previous footnote.

interpreted by community members as /ɖʒuwin/ (or in English spelling *dshoo(w)in*). This is a good reminder that all collected language material, regardless of its quality and/or consistency, is susceptible to misinterpretation when analysed in isolation.

## A.3.8 Vowels

The SCLs vowel inventory contains the triangular three-vowel system found in the majority of AALs (Butcher, 1994), consisting of the high front vowel *i*, low central vowel *a* and the high back vowel *u*. Vowel length distinction is evident from the transcriptions in the old sources, but there are no reliable minimal pairs in the sources that show that the distinction is phonemic. The phonemic distinction is therefore cautiously included in the phoneme inventory of the SCLs, and also for practical reasons: to allow representation of long vowels in the phonemicised spellings for language teaching purpose. In the phonemicised words, a transcribed long vowel, *aa*, *ii* or *uu*, represents a long vowel only; whereas vowels represented with a short vowel *a*, *i* and *u*, could be either the short vowel or a long vowel. See 3.8.2.1 for more discussion on vowel length.

Based on phonotactic rules, there are no diphthongs in the SCLs, but vowel-glide-vowel sequences occur word-medially or word-finally. Word-final vowel-glide sequences *ay* also occur in Dharrawal and Dharumba, such as on the previously mentioned (Dharrawal) first person singular pronominal clitic =*ngay* or (Dharumba) *bayangalay* ‘grass’ <*biäñǎlay*> (A-AM-1874-250-YK).

### A.3.8.1 Vowel quality

Based on Butcher’s (1994) study on the phonetic range of stressed vowels in three vowel systems in (spoken) AALs, we may assume that his plotted vowels /ɪ/, /e/ and

/ʊ/ also most closely describe the vowel phonemes in the SCLs. Butcher (1994:28) argues that the phonetic space of these vowel phonemes is smaller than previous literature had suggested. Identifying such a detailed variation of vowel phonemes from an archival written corpus is obviously impossible, but the phonetic transcription of (some of the) early collectors gives a glimpse into variation.

For the purpose of determining vowel quality, of Dhurga and Dharrawal at least, it was also necessary to consult Eades' (1976) transcriptions of Hercus', Janet Matthews' and her own audio recording from the 1960-70s. Eades (1976:22) notes that

[c]learly the phonetic vowel inventory has been strongly influenced by a large number of English vowels such as [æ, ɔ (ʊ), ʊ, ə]

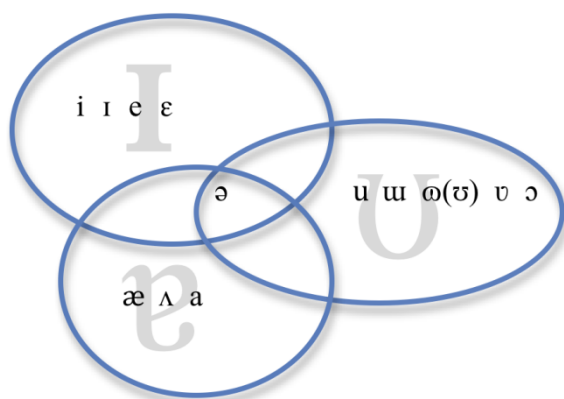
[and i]t is quite obvious that the informants today pronounce all vowels as if the words were in English.

There is no doubt that the pronunciation of the languages would have changed over decades with English becoming the dominant, or first, language in a very short period of time. But I would also like to suggest that there might be some evidence that vowels (in English words as used by Aboriginal Community members) are influenced by the traditional AALs. While this is a well-documented phenomenon in Aboriginal English within communities that still speak traditional languages (Butcher and Anderson, 2008), we may not expect this in speakers in south-eastern NSW, where local AALs have not been spoken fluently since early/middle 20<sup>th</sup> century. My reason for suggesting this observation is in fact the pronunciation of my own name *Jutta*. Regardless of how this name is pronounced in Germany, /jutʌ/, the majority of people from Australian English speaking background call me /jʌ:tʌ/ with a long fronted vowel. Not giving it much thought at first, I realised only after two or three years that

some of the Aboriginal community members I work(ed) with pronounce my name /jɔtʌ/ or, in one case, with a slightly dentalised /t/.<sup>46</sup>

Eades (1976:22) provided a list of vowels in her phonetic analysis of the 1960-70s SCLs audio recordings and she identified the following allophones [i, ɪ, e, ε, ə, u, ʊ, ω, ʊ, ɔ, æ, ʌ, a] shown below grouped together according to underlying vowel phoneme as proposed by Butcher (1994).

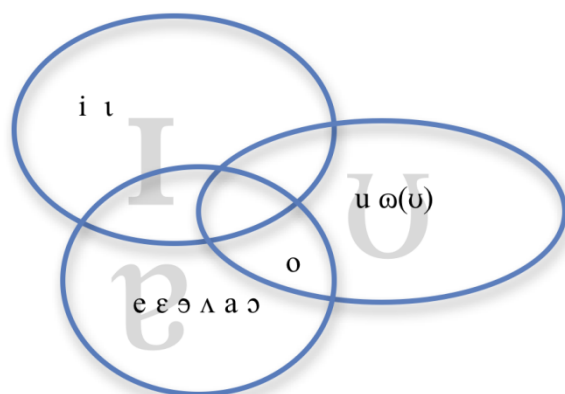
Table 11. Eades' (1976) identified vowels in the South Coast Languages with underlying vowel phonemes



Similar, but not identical, are the identified vowel variations that were identified in Ngiyampaa (Donaldson, 1980).

<sup>46</sup> None of these community members grew up speaking their traditional language(s). This is just one of the observations that call for a detailed research study on the articulatory phonetics of Aboriginal community members in south-eastern Australia.

Table 12. Identified vowel variations in Ngiyampaa (Donaldson, 1980)



Donaldson collected this material from speakers of Ngiyampaa, which may be the reason for the discrepancies, such as /æ/, the vowel in ‘cat’, in Eades’ observations from tapes of remembering speakers, not fluent speakers. Note the larger variation of /ɐ/ in Ngiyampaa speakers compared to a larger variation of /ʊ/ in Eades’ analysis.

But as the analysis in this study is based on the archival material rather than the audio recordings Eades used, the following sections will attempt to map the early collectors’ symbols for vowels.

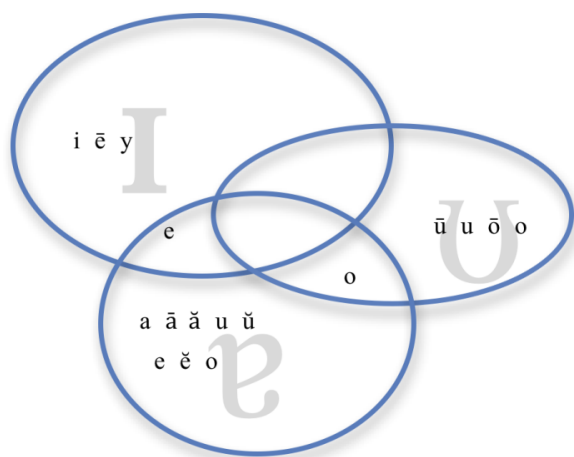
### A.3.8.2 Vowel transcription in the source material

Since the majority of the SCLs corpus consists of Mackenzie’s and Mathews’ collected material, this section will look predominantly at their vowel transcription. Both Mathews and Mackenzie used detailed spelling systems with an array of diacritics on vowels to distinguish vowel quality and length. But their inventories differ in that Mackenzie uses a much greater variety of diacritics than Mathews did.

Tables 13 and 14 show Mackenzie’s and Mathews’ orthographic symbols and their identified phonetic and phonemic value based on phonetic analyses of other (spoken) AALs (Butcher, 1994) and Eades’ (1976) proposed vowel range. Note that

these are the general rules, but exceptions are found. Long vowels are distinguished by Mathews in his published spelling key where *ee* is the long vowel “as in meet”, *oo* is the long vowel “as in moon” and *â* is long “as in far”. However, there are numerous instances where *oo* is describing a short /u/ and *â* a short, but possible stressed vowel.

Table 13. Mackenzie’s vowel symbols and their phonemic value

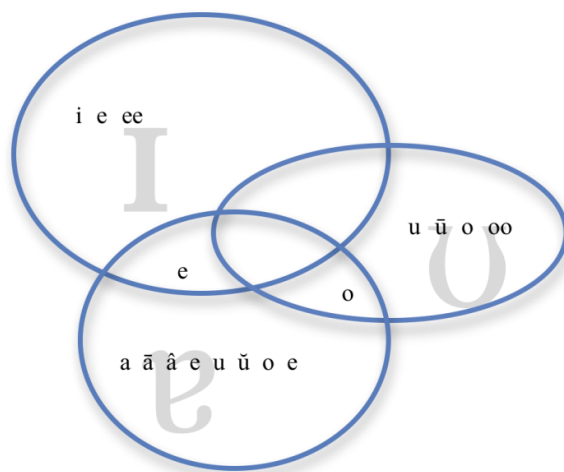


The most noticeable difference between Mackenzie’s and Mathews’ vowel graphs is the lack of the use of *oo* in Mackenzie’s transcriptions (bar one exception in <boombi>(DM-AM-1874-260-Ull/Th-Ee)). Mathews used *oo* in both his published and unpublished notes, but not in his transcribed stories, which leads to the questions whether he copied them from some other source.<sup>47</sup>

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<sup>47</sup> One source that may have supplied the biblical stories may have been Rev. Mr Ridley, whose collection of other SCLs also contains some phrases that fit within a religious context.

Table 14. Mathews' vowel symbols and their phonemic value



The symbols found in the overlapping areas of phonemes are impossible to identify as being one or the other phoneme. But this is not the fault of the transcriber; Mathews wrote about the blurry lines.

It is hard to distinguish between the short, or unmarked, sound of a and that of u, a difficulty also met with in several other languages. (Mathews, 1901a:50 Dhurga)

It is frequently difficult to distinguish between the short sound of a and that of u. A thick sound of i is occasionally met with, which closely approaches the short sound of u and a. (Mathews, 1901b:129 Dharrawal)

It is therefore impossible to identify each underlying vowel; it is likely that different speakers may have had nuances in their own pronunciation that may have led to the different vowel transcriptions.

This approach can also be applied to wordlists transcribed by non-English speaking collectors. Joseph Gaimard, for example, provided a list that show transcriptions based on his native language French.<sup>48</sup> (Consideration should also be given here to potential differences in pronunciation between French spoken during the

<sup>48</sup> Although another non-English background individual, Hermann Lau, a German speaker, collected words in the Illawarra region, his transcriptions are based on English pronunciation and do not show any expected regularities in vowel transcriptions that we would expect from a German speaker, i.e. *u* always representing /u/ etc. (See also Chapter A.2 (Methodology) on further discussion of Lau's material.)

1830s and French spoken as today.) In his *Baie de la Jervis* wordlist, Joseph Paul Gaimard (1834:11-13) naturally based the spelling of the words on the spelling conventions used for the French language.<sup>49</sup> Whereas English speaking collectors used the letter *u* to transcribe either /a/ or /u/, Gaimard did not transcribe any vowel with a *u* (other than *ou* for /u/). This is due to *u* in French spelling convention having sounds, rounded front vowels in the examples given here, that are not found in AALs, i.e. words such as *sur* ‘on’ /syʁ/ or *brun* ‘brown’ /bʁœ̃/.

However, because often several distinct variations are found in transcriptions of the same word, not only between collectors but also within any one collector’s material, the examples given in the tables are only a rough guide and show the general rules. Analysing and phonemicising words from archival written material will still require a comparative approach for each individual word.

### A.3.8.2.1 Vowel length

Long vowels are marked in the historic language material in various ways. This may be with the use of a diacritic above the vowel or appropriating English spelling conventions into the transcriptions.

Ultimately, only one reliable potential minimal pair has been found in the two Djirringanj morphemes, the 2s subject clitic = *bi* and the negative imperative suffix - *bii*. Another example is the pair of words below, which is suspicious enough not to base an analysis on.<sup>50</sup>

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<sup>49</sup> The spelling and usage of the French language has long been a focus of the *L’Académie Française*, which started to produce dictionaries in 1694 (Wikipedia, [http://en.wikipedia.org/wiki/Dictionnaire\\_de\\_l'Académie\\_française](http://en.wikipedia.org/wiki/Dictionnaire_de_l'Académie_française), visited 1<sup>st</sup> January 2010) and considers itself to be the ‘custodian of usage’ (Baddeley, 1995).

<sup>50</sup> Taboo words such as *gala* ‘vagina’ are still very much known in SC communities. A ‘searching for’ advertising in the *Koori Mail* a few years ago, which are submitted by community members looking for relatives or friends they had lost contact with, at one stage was looking for a well known community member with the text along the lines of ‘I am looking for [name]. His traditional name is Galagala

Phonemic vowel length is not uncommon in AALs of New South Wales. Language analyses that were based in part on living speakers' information, such as Bundjalung, Gumbaynggirr, Paakantji and Ngiyampaa (see Wafer et al (2008) for all New South Wales languages) propose this distinction in their phoneme inventory. But for other New South Wales languages that also only exist mainly through archival written archival material, the question of phonemic vowel length distinction remains. Recent elaborate analyses on Darkinyung (Jones, 2008) and Dhanggati (Lissarrague, 2007), for example, which are two of the closest related New South Wales languages to the SCLs, also propose phonemic vowel length with a cautionary note.

The first minimal pair only shows a distinction in Mathews' final vowel being marked with the diacritic *â* in the word translated as 'warm/summer' and the lack of it in *gala* 'vagina'.

<i>gala</i>	'vagina'	< <i>kul'-la</i> > (U-M.1.1)
		< <i>kala</i> > (JB-G-11)
		< <i>'gala</i> > (WL-T.75)
<i>galaa</i>	'warm/summer'	< <i>gullâ</i> > (U-M.2.2-150)
		< <i>Kulla</i> > (BB-JL-225)

Eades' also (1976:25) gives a minimal pair to demonstrate phonemic vowel length and notes that these two words were given as a minimal pair by a reliable informant who "commented of their close phonetic similarity, but different meaning".

[ga:ndi]	'smoke, tobacco'
[gandi]	'money'

But words for introduced concepts cannot necessarily be used as reliable examples, as the need to describe newly introduced concepts requires some language engineering, and that may well have included lengthening or changing of vowel to distinguish two semantically related items. In contemporary La Perouse Dharrawal, for example, kinterms are adjusted to allow for appropriation of the European kinship

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Munmun'. This caused much amusement to many community members – both *gala* and *mun* are well known words for 'vagina' on the South Coast.

system. Thus *ngaba* and *ngabu* for ‘mother’ and ‘grandmother’, and *baaba* and *babaa* for ‘father’ and ‘grandfather’ respectively, whereas traditional kinship systems would distinguish between father’s father and mother’s father or mother’s mother and father’s mother - but not show a lexical relation between F and FF or M and MM.

### A.3.9 Conclusion

This chapter presented not only the phonemic inventory of the South Coast languages, but also incorporated some discussion that reflects the processes involved in phonemicising language found in historic language material. It provides insight into the complexity of this kind of work and shows that it requires a broad and holistic approach, one that takes into consideration the methodology and background of the early language collectors and demands a constant comparing between sources and often re-evaluation and re-analysis.

This chapter provides the background and basis for the following morphological and syntactical analyses.