Kulin and its neighbours
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The following report on the languages of the south-eastern mainland of Australia is based on nineteenth century sources and Hercus 1986. It covers work done under an ARC grant for reconstructing Kulin (1999-2002) and earlier work done under other ARC grants. It complements a series of other publications and partly overlaps with them. These are: Blake 1991, Blake & Reid 1998a, b, 1999 and 2002, Blake, Clark and and Reid 1998, Blake, Clark and Krishna-Pillay 1998, Blake 2003a, Blake 2003b, Blake 2011 and Blake, Hercus & Morey (to appear).

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List of abbreviations

Ban	Bandjalang
Bu	Bunganditj (Buwandik)
Co	Colac
Dhu	Dhudhuroa
Dja	Djadjawurrung
EK	Eastern Kulin
Gipps	Gippsland
Kau	Kaurna
Ke	Keramin
LL	Letji-Letji
MM	Mathi-Mathi
Ngar	Ngarigu
Ngaya	Ngayawang
NSW	New South Wales
NT	Northern Territory
P	Wati-Wati (Piangil dialect)
Pall	Pallanganmiddang
Q	Queensland
SA	South Australia
SH	Wati-Wati (Swan hill dialect)
Tas	Tasmania
Thag	Thagungwurrung
Tjap	Tjapwurrung
Vic	Victoria
Wa	Wathawurrung
WA	Western Australia
Warr	Warrnambool
WB	Wemba-Bereba (Hercus' Wemba-Wemba 1986 plus similar nineteenth century sources)
We	Werkaya (Wergaia)
WW	Wemba-Wemba
Wim	Wimmera (Hercus' Wergaya 1986 plus similar nineteenth century sources)
Wira	Wiradjuri
WK	Western Kulin
Woi	Woiwurrung
Wulu	Wuluwurrung

Yab   Yabula-Yabula

Yar   Yaralde

Yi   Yitha-Yitha

Yu   Yu-Yu

YY   Yota-Yota (Yota-Yota)
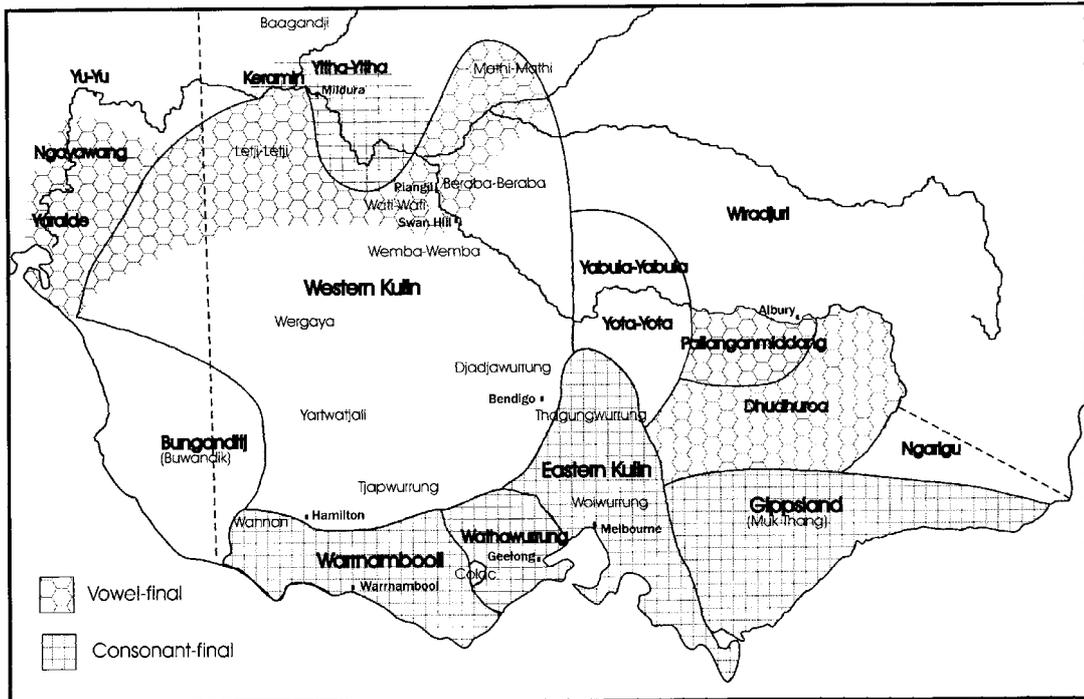
Map 1: Vowel-final and consonant-final tongues of south eastern mainland Australia

1. Lexico-statistical classification

The most widely used classification of the languages of the Australian mainland recognises 238 languages. These have been classified on the basis of lexicostatistics into 29 families with one family, Pama-Nyungan covering most of the mainland except for the Kimberleys and most of the Top End (O'Grady, Voegelin and Voegelin 1966, O'Grady, Wurm and Hale 1966). Within families there are groups, subgroups, languages and dialects. Strictly one should say within lexicostatistical families there are lexicostatistical groups, lexicostatistical subgroups, languages and dialects, since terms such as 'family' and 'group' when used with reference to Indo-European and certain other well-studied families refer to entities determined on the basis of shared innovations.

The classification groups the languages of the mainland into the 'Australian Macro-phylum', and, indeed, the languages of the mainland look as if they are genetically related. There are a few score of roots found in every 'area' of the country, what Capell called *Common Australian* (Capell 1956: 80ff). A comparison of a pair of languages hundreds of miles or more apart typically yields a figure of around 10-15% made up of some of these very widespread roots such as **tjina** 'foot', **kuna** 'faeces', **pula** 'two', **n(h)a** 'to see', **yana** 'to go', **mana** 'to get', 'to bring' and **ngu-/wu-** 'to give' plus a few other matches more or less peculiar to the pair chosen. Capell took these scattered matches to be 'the tenuous remains of former linkages rather than simply coincidences' (Capell 1956: 95). There are also widespread grammatical roots including **nga** 'first person', **n(h)u** 'third person' and **–ku**, which has dative or similar functions.

The languages of Tasmania were not included in the Australian macro-phylum in the O'Grady et al. classification. Crowley and Dixon (1981) classified the meagre sources for Tasmania into six languages. They found that there were 'insufficient cognates and systematic correspondences to justify an even tentative hypothesis of genetic relationship' with other Australian languages (Crowley and Dixon 1981: 395).

The original classification of the mainland languages has been modified in some ways. Firstly, there has been some lumping among the non-Pama-Nyungan or Northern languages (See Dixon 2002 and papers in Evans ed. 2003). Secondly, Blake 1987 points out that one set of pronouns is characteristic of the Northern (non-Pama-Nyungan) languages and another partly different set is characteristic of the Pama-Nyungan languages. However, this involves reclassifying the Tangkic group as belonging within Northern, classifying Yanyula, a one-language family in the earlier classification, as a member of the Warluwaric (or Ngarna) group of Pama-Nyungan, and taking the Karrwan family, which consists of Karrwa (Garrawa) and

Wanyi, to be an unclassified group, i.e. as belonging neither to Northern or Pama-Nyungan, since the two languages that make up the family have some characteristically Northern pronouns and some characteristically Pama-Nyungan pronouns.[2]

The term **phylum** as in 'Australian Macro-phylum' has been criticised as vague and of no genetic significance, but 'Australian Macro-phylum' is appropriate in that it demarcates a set of languages distinct from all others yet sharing similarities that may result from a common genetic inheritance, diffusion, or, more likely, a mixture of both. Recently Dixon (2002) has rejected Pama-Nyungan as any kind of significant genetic entity. He claims, for instance, that the pronouns that characterise Pama-Nyungan are the result of diffusion.

Lexicostatistics was originally conceived of as a means of determining genetic relationship. Ideally counts were confined to basic vocabulary, which was considered relatively resistant to borrowing, and the results were taken to be a measure of relative genetic proximity. In Australia, lexicostatistics is often based on whatever vocabulary is to hand, and it is often done in advance of any study of phonological correspondences. This means that a pair of words in two languages may be counted as a plus on the basis of resemblance. It is well known that cognates do not always resemble one another; conversely words that resemble one another may not be cognate. However, a lexicostatistical classification based on resemblance is a valid means of obtaining a synchronic account of relative similarity. If one is aiming at such a classification, there is no need to confine oneself to basic vocabulary, but it should be noted that the results hold only for the particular choice of vocabulary on which the comparisons are based. For historical study the mosaic resulting from lexico-statistical comparison represents an explanandum, a pattern to be explained in terms of genetic ancestry or diffusion.

Lexicostatistical counts based on Australian data tend not to contain too large a proportion of words likely to be borrowed (words for items of material culture, for instance) and where the figures obtained are quite low, below 25%, for instance, they certainly indicate the absence of a close genetic relationship. Conversely, where they are high, say over 75%, they indicate a high likelihood of genetic proximity. If the aim is to get a guide to genetic proximity, counts can include a higher proportion of words less likely to be borrowed and grammatical forms. In Australia certain functions such as ergative and locative case are marked in a large number of languages and can form a basis for counting with a view to establishing genetic proximity. However, it should be noted that to say that two languages are genetically proximate does not mean that they necessarily belong to the same subgroup. Two relatively distant branches of a tree could share a high proportion of roots through being conservative, through sharing relics that complement innovations in other branches.

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[2] Harvey 2009 assesses the evidence and comes to the conclusion that the Karrwan (Garrwan) family is a Pama-Nyungan family.

The purpose of the present paper is to say something about the genetic proximity of the languages of Victoria and nearby areas, taking the Kulin languages of western and central Victoria as a focal point. I will ignore the O'Grady et al. classification, since it is flawed on some points, and take as a starting point the classification of Dixon 2002, which groups some hundreds of sources into 17 languages on or south of the Murray.[3] A lexicostatistical comparison of 10 of these languages is shown in Table 1. The figures are based on a list of 278 words. This is a convenience sample of vocabulary based on what is well represented in the source material. Its composition is as follows:

body nouns (*head*, *hand*, *urine*, etc.)	50
human (*woman*, *father*, etc.)	23
fauna (46) and flora (14)	50
inanimate nature (*sun*, *sand*, *wind*, etc.)	30
culture (*boomerang*, *yamstick*, etc.)	15
predicates: adjectives (28) and verbs (52)[4]	80
other (*today*, *two*, *no*, *what*, etc. & *I* and *you*)	20

Unfortunately not every word is represented in every tongue, so the number of words counted is usually much lower than 278 and drops to around one hundred where the overlap in glosses between two meagre sources is low as in the case of some of the comparisons involving Colac, Dhudhuroa and Pallanganmiddang. If any available word in one tongue matches any other available word in the other tongue under comparison, a plus is recorded.[5] Some linguists record fractions in cases like this, since the greater the number of words available the greater the chances of a match. However, this method can yield lower figures for tongues with more sources. The method used here gives a more realistic figure given that languages contain

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[3] An independent classification undertalen by Julie Reid using a guide to the sources provided by Dixon to the author confirms the Dixon classification. In more recent work Blake (to appear) includes Yartwatjali as a dialect of Western Kulin mainly on the basis of the maps in Clark 1990, but sources for Yartwatjali are skimpy and the addition of Yartwatjali does not change the overall picture. Lexically it is close to the Wimmera language, Tjapwurrung and Djdjawurrung as befits its location. The term 'language' in the classification used here refers to entities quite separate in vocabulary and presumed to be mutually unintelligible. From the native perspective there are scores of languages with which people identify. Where I use a term such as 'Warrnambool language' I do so because I recognise a group of closely associated dialects, which are clearly separate from other languages, and for which I do not find an Aboriginal name in the literature. With a language as large as Western Kulin people would naturally identify with local forms rather than the larger entity.

[4] Breen (1990:154) suggests verbs are less likely to undergo loss and replacement than other types of word. I would contend that adjectives are similar. Adjectives are not always easy to distinguish from nouns by formal criteria in Australian languages. As I use it, 'adjective' covers the translational equivalent of English adjectives providing they are nominal, which they usually are, as opposed to verbal. I group verbs and adjectives as predicates since adjectives are much more often used predicatively than attributively. This is true in English, but even more so in Australian languages.

[5] I use the word 'tongue' where I want to avoid the language-versus-dialect distinction.

synonyms and near synonyms, and in many cases speakers know more than one word for a particular referent or give different interpretations to English words presented out of context For instance, in Western Kulin 'wood' can elicit a word like **kalk** meaning 'tree' or 'wood' or **wi** meaning 'firewood' or 'fire'.

The comparisons reveal a number of tongues sharing less than 20% of vocabulary with other tongues. These low figures suggest we are dealing with separate languages with no close genetic connection between them, but all of them share some basic vocabulary and some grammatical morphemes, which is consistent either with their being ultimately related, but showing the effects of long separation, or with their having accumulated material by diffusion, or through some mixture of inheritance and diffusion. However, lexico-statistical comparison also reveals some languages sharing over 40% common vocabulary. Three of these share a number of cognate grammatical forms and appear to form a sub-group within the larger context (See the first chapter of Hercus 1986 and § 4 below). They are the Kulin languages. Western Kulin covers western Victoria north of Hamilton and extends indo neighbouring parts of South Australia and New South Wales. Eastern Kulin covers central Victoria from Port Philip Bay in the south to near Echuca on the Murray. The third is Wathawurrung, which occupied an area embracing Ballarat and Geelong (See map 1). The term *Kulin* 'man' was first adopted by Schmidt 1919, as were the terms Western Kulin and Eastern Kulin, but he included Wathawurrung in Eastern Kulin.[6] Within Eastern Kulin two major dialects can be distinguished in the sources, namely Woiwurrung south of the Great Dividing Range and Thagungwurrung to the north. Within Western Kulin the following dialects can be distinguished, but it must be remembered there is some arbitrariness because it is partly a matter of chance which dialects were reported by early observers.

Mathi-Mathi (Hercus 1986)
Letji-Letji
Wati-Wati (Swan Hill)
Wati-Wati (Piangil)
Wemba-Beraba (Wemba-Wemba (Hercus 1986) plus closely related sources)
Wimmera (Wergaya (Hercus 1986) plus closely related sources)
Tjapwurrung
Djadjawurrung

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[6] The sources for Woiwurrung contain forms for 'man' such as *koolein* and *ko-leen* which suggest the word for 'man' is **kuliyn**. The presence of a final palatal nasal is confirmed by the cognate **kuloyn** in Wannon.

To the south and west of the Kulin languages lie Bunganditj and the Warrnambool language (with material mainly from three dialects: Wuluwurrung, Kunkupanut and Pikwurrung). Bunganditj and the Warrnambool language share just over 40% of vocabulary and a number of function forms. These two languages may form a subgroup, but the evidence is not overstrong (See 4.2 below).

Bunganditj and the Warrnambool language both share over 30% of vocabulary with Kulin. In § 4.4 it is suggested this high figure is the result of diffusion. The Colac language shares around 30% of vocabulary with the Kulin languages. It is poorly documented, but the few function forms found in the word lists suggest it is a Kulin language. This is discussed in § 4.3.4.

All other pairings in the area are below 30%, in most instances well below.

In the east of Victoria there is Gippsland, and in the north-east Yota-Yota[7], Yabula-Yabula, Pallanganmiddang and Dhudhuroa, where percentages of common vocabulary are very low, particularly between non-contiguous languages. Yota-Yota and Yabula-Yabula are an exception. They share about 50% of roots and appear to be quite closely related (Bowe and Morey 1999:135). In this report I include counts only for the better represented Yota-Yota. There is also Ngarigu, which seems to have covered an area running from near Omeo in eastern Victoria over the border into New South Wales. The sources for Ngarigu do not agree well, even allowing for different dialects. If we treat all the Ngarigu sources together in making lexicostatistical comparisons, the variety will lead to much higher figures than we would get for particular sources. For this reason no figures have been included in Table 1, but it is clear that Ngarigu has no close relationship with any language in the area save Gundungurra to the north (Dixon 2002:xxv).

In the north-west on the lower Murray there are five languages Yitha-Yitha, Keramin, Yu-Yu, Ngayawang and Yaralde (See map 1). Some of these share relatively high percentages with one another. It is not clear that they are all genetically related, but the fact that none of them shares much with any other tongue makes them a distimctive group (See Dixon 2002: 669). These are dealt with in § 4.5 below, and have not been included in Table 1.

In Table 1 Western Kulin is represented by Tjapwurrung and Eastern Kulin by Woiwurrung.

TABLE 1: VICTORIA: PERCENTAGES OF COMMON VOCABULARY

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[7] The community who have this language use the traditional spelling *Yorta-Yorta*. This yields a better guide to what is likely to have been the original pronunciation than *Yota*. From what we know of living Australian languages the vowel was presumably high and back, probably something like the vowel of English *put* prolonged.

	Bu	Warr	Co	Tjap	Wa	Woi	YY	Pall	Dhu	Gipps
Bunganditj	-	41	21	33	23	18	13	14	13	13
Warrnambool		-	23	37	27	24	11	11	10	13
Colac			-	31	28	27	17	14	19	20
Western Kulin: Tjapwurrung				-	52	43	14	20	22	16
Wathawurrung					-	51	15	16	14	18
Eastern Kulin: Woiwurrung						-	13	22	13	27
Yota-Yota							-	25	11	10
Pallanganmiddang								-	11	16
Dhudhuroa									-	13
Gippsland										-

2. Phonology

2.1 Inventory

Most Australian languages have a consonant inventory like the one shown in Table 2. A few in the north of the continent have only one apical series and a large number have only one laminal series.

Table 2: CONSONANTS

	labial	apico-alveolar	apico-post-alveolar (retroflex)	lamino-dental	lamino-palatal	velar
stops	**p**	**t**	**rt**	**th**	**tj**	**k**[8]
nasals	**m**	**n**	**rn**	**nh**	**ny**	**ng**
laterals		**l**	**rl**	**lh**	**ly**	
trill/flap		**rr**				
glides			**r**		**y**	**w**

The consonant inventory illustrated in Table 2 can be found in Yota-Yota (Bowe and Morey 1999:41ff), Dhudhuroa (Blake and Reid 2002:184), Gippsland (Fesl 1985: 80f), Woiwurrung (Blake 1999:59ff) and probably Pallanganmiddang (Blake and Reid 1999:18), all of which have two series of laminals. Bunganditj and Warrnambool have a laminal contrast between vowels and in homorganic nasal-stop clusters, but no opposition in word-initial position where the realisation is dental nor in syllable-final position where the realisation is palatal (Blake 2003a), (Blake 2003b). Hercus reports that Mathi-Mathi has only one series of laminal stops, which is realised predominantly as dentals and notated accordingly. Werkaya has only a palatal series. Wemba-Wemba has a palatal series, but also a few contrasting examples of a dental stop (**th**) (Hercus 1986). The situation in Wathawurrung is not clear. There are some apparent contrasts,

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[8] There is only one set of stops in most Australian languages, in particular there is usually no distinction in voicing, and this appears to be the situation in Victoria. I have adopted the convention of writing all stops as voiceless.

but many words show fluctuation in the notation. There was probably no laminal contrast in word-final position in the Kulin languages. The realisation is normally palatal, but often dental in Eastern Kulin (Blake, Clark and Krishna-Pillay 1998).

Most Australian languages have two rhotics a flap or trill (**rr**)and a glide (**r**). Hercus (1986) distinguishes the flap and the glide and finds the contrast in Wemba-Wemba and Werkaya, but she reports that only the flap is found in Mathi-Mathi. The rhotics are not distinguished in the old sources and we transcribe both the flap and the glide as **R** except where the Hercus notation provides a clue to distinguishing them.

Many Australian languages have only three vowels (**i**, **a** and **u**), but Hercus reports four (**i**, **e**, **a** and **u**) in Werkaya and Mathi-Mathi (Hercus 1986). The vowel **e** occurs. for instance, in in Wergaya **peng** 'human being'. Hercus reports six vowels in Wemba-Wemba, but the 'additional' vowels **o** and ə appear to be marginal, with ə corresponding to various other vowels in cognates.

2.2 Consonant -final nouns

A feature of Victorian languages is the presence of consonant-final nouns, a feature reflected in many place names (*Boort*, *Koo-wee-rup*, *Bunyip, Byaduk*). In most of Australia vowel-final stems predominate; some languages disallow word-final consonants, while others allow only apical or apical and laminal consonants as finals. However, most languages in Victoria allow peripheral consonants, i.e., labials and velars, to appear in word-final position. These languages also exhibit word-final consonant clusters; in particular clusters of a liquid and peripheral stop or nasal (**rrp**, **rrm**, **rrk**, **rrng**, **lp**, **lm**, **lk**, **lng**), clusters that are normally found between vowels, plus **rp**, **rm**, **rk** and **rng**. Intervocalic, homorganic nasal-stop clusters are also common in Australian languages. With marginal exceptions these clusters are not found exposed in word-final position, but a number of nasal-final nouns exhibit a homorganic stop when a suffix is added (See Table 4 below). All this leads to the conclusion that word-final vowels have been lost, exposing what had once been medials. These languages also contain a number of monosyllabic words, which are not common in most other Australian languages, at least not in the Pama-Nyungan area.[9]

In the Warrnambool language, the Gippsland language, Keramin,Yitha-Yitha and Eastern Kulin almost all nouns have a final consonant in their citation form (nominative). This is also pretty much true of Wathawurrung. In the Warrnambool language, the Gippsland language, and Eastern Kulin this consonant-final property is largely achieved by the addition of a velar nasal, which complements truncation, that is, we find some words such as **kalk** 'wood',

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[9] If vowels had been lost from final syllables, then other clusters would have been found in word-final position, but, as it is, the only word-final clusters are those than can occur intervocalically in Australian languages generally, plus clusters of **r** plus a peripheral stop or nasal.

'bone', which appear to kave been truncated, and others that have been augmented by the addition of a nasal. For example, the widespread word for 'faeces', namely **kuna**, appears as **kunang** in Eastern Kulin, Wathawurrung and the Warrnambool language. This velar does not appear in most of the dialects of Western Kulin, but in the most northly ones, namely Mathi-Mathi, Letji-Letji, Wati-Wati (Swan Hill) and Wati-Wati (Piangil) the velar nasal does appear followed by **-i**, which means most nouns are vowel-final, **kuna**, for instance, appearing as **kunangi**. Further examples are given in §2.2.2 below.

2.2.1 Truncation

The loss of stem-final vowels is obvious when one considers that the word-final consonant clusters in Kulin match closely with the permissible intervocalic clusters in the majority of Australian languages. These clusters are homorganic nasal-stop and lateral-stop clusters and clusters consisting of a liquid and a peripheral.

Table 3 illustrates the range of final consonants and final consonant-clusters in the Kulin languages. The more problematic homorganic nasal-stop clusters are discussed below.

Table 3: WORD-FINAL CONSONANTS IN KULIN

p	pap 'mother' (WK), manggep 'daughter' (WK, EK), pupup baby' (WK, Wa, EK), karip 'thigh'(WK, Wa), murrup 'ghost, spirit' (WK, Wa, EK)
t	mut 'cold'
rt	purt 'smoke' (WK, Wa, EK), turt 'star' (WK, Wa, EK), murt 'short'(WK, Wa, EK)
th/tj	mitj 'skin' (WK, Wa), palotj 'elbow' (WK, Wa, EK), puatj/puath 'grass' (WK, EK)
k	tatjak/thaRak 'arm' (WK, Wa, EK), kanak 'heel' (WK, Wa, EK), parruk 'kangaroo rat' (WK, Wa, EK), wirrak 'banksia'(WK, Wa, EK)
m	mum 'bottom' (WK, Wa, EK), waram 'left' (WK, Wa, EK)
n	putjun/puthun 'matter from body' (WK, EK), kuyun 'spear'(WK, Wa, EK)
rn	kulkurn 'young man' (WK, Wa), kurn 'neck' (WK, Wa, EK)
ny	puruyn 'night' (WK, EK)
ng	peng 'person' (WK, Wa)
l	kal 'dog' (WK, Wa), piyal 'redgum' (WK, Wa, EK), panyul 'hill' (WK, Wa, EK)
rr	kapirr 'emu', malkarr 'shield'
r	lar 'camp', mir 'eye'(WK, Wa, but EK mirng), par 'river', kar 'nose'
rrp	perrp 'light', purrp 'head', marrp 'kidney' (WK, EK),
rrk	kurrk 'blood' (WK, Wa, EK), tjarrk 'reed'(WK, Wa)
rrm	kurrm 'breast', tjarrm 'mother's brother'
rrng	?
rp	wirp 'wound, sore'
rk	mirk 'egg'
rm	?
rng	kurng 'kookaburra' (WK,EK), marng 'cloud' (WK)
lp	yulp 'right' (WK), pilp 'drum' (WK)
lk	kalk 'wood'(WK, Wa, EK), pulk 'soft' (WK, Wa, EK)
lm	tilm-tilm 'crack' (Tjap)
lng	pulng-pulng 'wave' (Dja)

Homorganic nasal-stop clusters are common in Australian languages so if it is true that languages in and around Victoria have truncated words and exposed medial consonants and consonant clusters, the question arises of what happened with homorganic nasal-stop clusters. In fact we find a few instances where a word with a final nasal has an alternative with a homorganic stop (e.g. **waRiyn/waRintj** 'wombat' (Woi)) and rather more cases where a latent homorganic stop appears when a vowel-initial suffix is added (Table 4). The suffixes illustrated in Table 4 have two forms, one used with vowel-final stems and the other used with consonant-final stems: **-ngek/-ek** 'my' (or **-ngik/-ik**), **-ngin/-in** 'your' and **-nhuk/-uk** 'his/her/its'.

Table 4: LATENT CONSONANTS

	nominative	inflected forms
mb	**maRam** 'body'	**maRamb-ik** 'I' Woi (See section 3.1 below)
	kurrm 'breast, milk'	**kurrmbuk** 'her milk' WB, Wim
	kaRim-kaRim 'stepfather'	**kaRim-kaRimbuk** 'her father-in-law' De
	tjarrm 'mother's brother'	**tjarrmbek** 'my mother's brother' Wim
	parrəm, **parrəm-parrəm** 'great grandfather'	**parrəmbuk** 'his/her ancestor', **parrəmbuk** 'his/her totem' WB
nd	**kuRun** 'knee cap'	**kuRunduk** 'his/her knee cap' Tjap
rnd	**kurn** 'neck, throat'	**kurndin** 'your throat' Tjap
ndj	**kirndiyn** 'bone hairpin'	**kirndindjuk** 'his/her hairpin' Tjap
ngg	**pathing** WW, **patjing** Wim, 'knee'	**pathingguk** 'his/her knee' WW, **pàthénggin** 'your knee' MM
	paring 'footprints, tracks'	**paringguk** 'his/her/its tracks' Wim
	larring 'lungs'	**larringguk** 'his/her lungs' Wim

It might be thought that these homorganic consonants are epenthetic, and that is the way they are treated in Wemba-Wemba by Hercus, who finds the only words that do not take a homorganic nasal before vowel-initial suffixes and clitics are those with post-vocalic final **m,** and she cites **mum**-**uk** 'his bottom' and **mam**-in 'your father' (Hercus 1986: 35-36). However, in Djadjawurrung we find not only **mam-uk** his father 'his/her father, but also **witjin-uk** 'its feather' and **patjiny-in** 'your knee' where no homorganic stop appears. This last example contrasts with **pathingguk** 'his/her knee' WW and **pàthénggin** 'your knee' MM in Table 4.

Although one can argue for truncation by illustrating the exposure in word-final position of consonant-clusters that are intervocalic in intact languages, it is surprisingly hard to support the point by finding intact cognates retaining the lost vowel, and some putative cognates that are available show an harmonic final vowel (as with the final -**u** in the widespread **murtu** 'short'), or reflect a vowel augment that has been added to consonant-final stems as with Yaralde -**i** (see Table 9 below).

The widespread words **mama** 'father' and **papa** 'mother' are nursery words consisting of a reduplicated syllable. They show up truncated to monosyllables, just as *mum* and *dad* do in English, though they were probably not used much without a possessor suffix (**mam-ek** 'my

father', **pap-in** 'your mother, etc.). **Mum** 'bottom' may also belong to this class. The root is probably **mu-**, which often appears with a dual -**rru** as in Gamilaraay **murru** or reduplicated as in Batjala **mumu**.

The clearest example of stem-final vowel loss is to be found in **wirimbul** 'ears', which clearly contains the widespread word **pula** 'two' as its final formative. Another example can be seen in **pulatj** 'two' which has acquired an extra palatal stop in Western Kulin and Wathawurrung. The form **pulatja** is found in the Warrnambool language and since formatives normally have a syllabic if not independent word origin, we might suggest that **pulatj** derives from the apocope of the final vowel. The Eastern Kulin **thirip** 'nails' probably reflects loss of a vowel. In Pallanganmiddang the form is **t[h]iriwa**, where -**wa** probably represents a weakened form of -**pa**, an increment otherwise attested, particularly in the neighbouring Dhudhuroa (see Table 6 below). Table 5 provides some examples of cognates for words that appear to have lost a final vowel.

Table 5: LOSS OF FINAL CONSONANT IN SOUTHEASTERN MAINLAND

gloss	Victorian	other
ant, large	**kalkitj** (Tjap, Wa)	**karlkitji** Warlpiri (NT) 'bullant'
bottom	**mum** (Kulin)	< **mu** + **mu** ? cf. Batjala (Q) **mumu**, Wira (NSW) **murru**
dark	**mul** (Bung)	Gabi (Q) **mulu**
ear	**wirimbul** (WK)	< ***wi-ri-ng-pula** where **pula** is widespread form for 'two'
emu	**kawirr** (WK)	Gugu Badhun etc.(Q) **kapirri,** Yawarrawarrka **(Q) kiwara.**
father	**mam** (WK)	various **mama** (< **ma** + **ma**?) Pall **mamka**
frost	**walat** (Warr)	**walata** (Pallangmiddang)
girl	**paRatj** (Warr)	Pitta-Pitta (Q) **parratja**
hard	**pinitj** (Warr)	Gooniyandi (WA) **pinyiti**
head	**muRk (**Wa)	**murrka** Warlpiri (NT)
leg	**pirn** (Warr)	Pitta-Pitta (Q) **pirna,** Baa **pirnha** 'bone'
man	**maR** (Warr)	Yu-Yu (SA), Gamilaraay (NSW), Mari langs (Q) **mari**
nails	**thiRip** (EK, Wa)	Pall **thiRiwa** (< ***thi-Ri-pa**)
short	**murt** (K, Co)	Pintupi etc. **murtu**
smoke	**thung** (Warr)	Yota-Yota **thonga,** Nyangumarta **tjungarn**
star	**turt** (K)	**thurtu, thurru** 'sun' Mari dialects (Q)
stick, wood	**kalk** (K)	**kalka** 'spear' Biri etc. (Q)
two	**pulatj** (WK)	Warr **pula.tja**

2.2.2 Nasal Augment

In a range of languages in eastern Australia extending from around the Tropic of Capricorn to Victoria a number of words end in a nasal, which is lacking in other areas. The nasal is a velar following **a**, **u** and the glide **r** and a palatal following **i**. The widespread word for 'foot', for instance, is **tjina** or **thina**, but it shows up as **tjinang** in Gabi-Gabi in south-eastern Queensland and several other languages in New South Wales. Similarly, the word for 'fire' is **wi** in several languages from southern Queensland (Wangkumara, Yugambal) and New South Wales (Gamilaraay), but **wiyn** in Wiradjuri (central NSW). In some languages such as Gabi-Gabi, Bandjalang and Wiradjuri the nasal is found on a large number of words, but in others such as

Gowar, it is found on some of this set of words but not others. In some of the languages where it is lacking it appears in suffixes. In Ngiyambaa, for instance, **guya** 'fish' takes a dative **guya-gu**, but **dharra** 'thigh' takes a dative **dharra-nggu**, strongly suggesting that a velar nasal has been lost from the nominative (Donaldson 1980:32).

As is well known to Australianists a large number of languages in the Pama-Nyungan area take an ergative -**nggu** and a locative -**ngga.** In a large proportion of these languages, mostly those in or near Western Australia, but also in some in Queensland, the allomorphs -**nggu** and -**ngga** occur with disyllabic vowel stems, which suggests that a stem-final velar nasal has been lost from the citation form, but retained in the suffixes.[10] In Eastern Kulin, Wathawurrung and Warrnambool this final nasal appears on a high percentage of nouns, mostly disyllabic, but also with words like [**wa:**] 'crow', so the generalisation might be better 'with stems of two morae'. The appearance of this nasal combined with the apparent truncation described above means that in these languages almost all nouns end in a consonant. Some have taken this nasal to be a part of the root, which has been retained mainly in the south-eastern mainland, but lost elsewhere (Capell 1956), but others have taken it to be an augment (Dixon 2002). There is evidence that this is an augment when we compare cognates in languages that do not have the velar nasal in words like **tjinang** and languages that do. In Bunganditj and in Western Victoria a final velar nasal can appear after **u**, **a** and **r** and a final palatal nasal after **i**, but no such nasal appears in words like **tjina(ng)**. These languages appear to retain a nasal that is part of the root, but they do not reflect the augment.[11]

Some examples of the contrast between the retained nasal and the putative augment are given in Table 6. The contrasts are illustrated following **i, a, u** and **r.** Western Kulin reflects the contrast, whereas Eastern Kulin reflects both the root nasal and the augment.

Table 6: FINAL NASALS

	stem final	Western Kulin	Eastern Kulin
eye	r	mir	mirng
kookaburra	rng	kurng	kurng
fire	i	wi	wiyn
man	i	kuli	kuliyn
rib	iyn	larniyn	tarniyn
knee	iyn	patjiyn, patjing	paRing
track	ing	paring	paring
faeces	a	kuna	kunang
foot	a	tjina	tjinang
crow	a	wa [wa:]	wang
food/bread	ang	nguRang	nguRang
mouth	-u	wurru	wurrung
bandicoot	-u	pu	pung
heart	-ung	thuRung	thuRung

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[10] For ideas on the development of ergative and locative allomorphy see Hale 1976:416, Sands 1996, 2001: 63f, and Dixon 2002: 157-166.

[11] Vowel-final noun stems in Western Kulin seem to be mostly those that lack the augment.

The word-final velar nasal presumably blocked trucation. It is interesting to note that a number of widespread roots bear the final nasal. Besides **kuna(ng)** 'faeces' and **tjina(ng)** 'foot', illustrated above, there are also the following: **mara(ng)** 'hand' (Warr, Bu), **munha(ng)/munya(ng)** 'louse', **tharra(ng)** 'thigh', and **liya(ng)** 'tooth'.

-**k** augment

An augment -**k** is also to be found. In the Warrnambool language, for instance, vowel-final pronoun forms familiar from other languages appear with an extra -**k**. A widespread first person singular form **ngathu** appears as **ngathuk**, and a second person singular form **ngutuk** appears corresponding to **ngurru,** second person plural, in several other languages.

2.3 Vowel-final nouns

A preference for consonant-final nouns, at least in citation form, is not the norm over the whole of Victoria. In four dialects in the northern part of the territory covered by Western Kulin almost all nouns end in a vowel in their citation form. These dialects are Mathi-Mathi, Letji-Letji, Wati-Wati (Swan Hill) and Wati-Wati (Piangil), which can conveniently be referred to as 'the Mathi group' after the best documented of them (Hercus 1986). This vowel-final property is achieved by adding a final -**i**. These languages retain the velar augment, so a root such as **wa** 'crow' appears as **wangi**. Eastern Kulin tongues exhibit the augment. The three variant treatments are illustrated In Table 7.

Table 7: THE -i AUGMENT

	Mathi Group	Other Western Kulin	Eastern Kulin
crow	**wangi**	**wa**	**wang**
faeces	**kunangi**	**kuna**	**kuna(ng)**
eye	**mirngi**	**mir**	**mirng**
foot	**tjinangi**	**tjina**	**tjinang**
star	**turti**	**turt**	**turt**
tooth	**liyangi**	**liya**	**liyang**

In Dhudhuroa in north-eastern Victoria almost all words end in a vowel. A number of words have a final syllable -**pa** following a consonant. It looks as if Dhudhuroa has employed the strategy of adding -**pa** to produce vowel-final words. This strategy is attested elsewhere in Australia. Capell (1966:85) claimed that -**pa** was originally a singular marker, perhaps because it is often used as a default where there is no case marker or number marker. Dixon (2002) sees it as a purely phonological element. The following list shows correspondences between Dhudhuroa forms with -**pa** and forms in neighbouring languages, mostly Ngarigu, without -**pa**. In all instances **-pa** is preceded by a single consonant. There is no evidence of truncation as found in the other languages of Victoria discussed above.

Table 8: DHUDHUROA

pulit-pulitpa	'lyre bird'	**pulit-pulit** (Ngarigu)
pulutjpa	'ironbark'*	**pulutj** 'native cherry' (Kulin)
thalaynpa	'tongue'	**thalayn** (Ngarigu; widespread root)
katjinpa	'arm'	**katjinda** (Djirrigayn (south coast NSW))
kalang-kalangpa	'locust'	**kalang-kalang** (Ngarigu)
karkatpa	'cold'	**karit** (Omeo), **karatha** (Ngarigu)
kawandikpa	'old woman'	**kawanditj** (Ngarigu), **kawandil** (Omeo)
kuranpa	'elbow'	**kuran** (Thagungwurrung)
mayangampa	'fly'	**mayangan** (Omeo)
nakinpa	'penis'	**nakin** (Yota-Yota)
wayatpa	'wallaby'	**wayat** (Ngarigu)
yaRaynpa	'beard'	**yaRayn** (Ngarigu; widespread root)

*The gloss 'ironbark' is probably an error. **Pulayt** is a widespread form for 'native cherry' .

2.4 Consonant-final and vowel-final languages among the Lower Murray languages
Among the five Lower Murray languages we find evidence of both augmentation and truncation. Taking them in order and moving downstream we find Keramin and Yitha-Yitha truncate with the result that most nouns end in a consonant or consonant cluster, including homorganic nasal-stop clusters. Also a large proportion of nouns are monosyllabic. Examples include the following:

> **thap** 'vegetable food', **puth** 'dust', **peyt** 'egg', **kuk** 'elder brother', **nik** 'fire', **mam** 'food, flesh', **mul** 'arm', **thalam** 'grass', **kam**, **kamp** 'back(bone)', **yeRimp** 'footprint', **munt** 'heart', **manth** 'mosquito', **pung-pung** 'kidneys', **pangk** 'lake', **nhank** 'sun', **thalk** 'lungs', **ngult** 'man'

Information on the next language downstream, namely Yu-Yu is scanty. It has some apparently truncated forms, but the overall picture is not clear. Ngayawang augments with -**ko**, possibly -**ki** following an **i** in the last syllable of the stem, but examples are few (see entry for 'possum' in Table 9). Yaralde uses -**i** as an augment for nouns not otherwise marked for case or number.[12] These augments show up in reduplicated forms such as Ngayawang **teltelko** 'noise of beating sticks' and Yaralde **kutkuti** 'crooked'. A comparison of Ngayawang with Keramin and Yitha-Yitha suggests that the Ngayawang may have truncated and then subsequently augmented. Consider the widespread form **kuna** 'faeces', which shows both as **kuna** and as **kun.ngo** (with spread of the nasality? See examples in (6) below). It is interesting that the widespread root **kuna** is truncated in Keramin and Yitha-Yitha to **kun**, and similarly with **thina** 'foot', which shows up as **thin**, **thayn** and **thani**. These words were not truncated in the Kulin tongues. There are no reflexes of other widespread disyllabic roots such as **tharra** 'thigh' and **lia** 'tooth' in the Lower Murray languages, so it is difficult to tell how whether it was general practice to truncate those roots that take the nasal augment in some languages.

Another interesting phonological development can be glimpsed in Keramin and Yitha-Yitha. In a number of languages of south-eastern Australia the first vowel of a word is

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[12] Yaralde was probably contiguous with a Kulin tongue of the Mathi-Mathi group that exhibited the i-augment. See Blake 2003:15.

sometimes lost when the following consonant is a rhotic.[13] For instance, **karip** 'thigh' is recorded in Bunganditj as **krip**. In Keramin and Yitha-Yitha this reduction seems to have gone a step further with the initial consonant being lost and exposing the rhotic as the initial. Note, for instance, **ran(th)** 'white cockatoo', which looks as if it might be derived from **krant[h]-i,** as in Yaralde. In Yitha-Yitha the word for 'emu' appears as **pRangayn** and **Rangayn,** and just **Rangayn** is recorded in the sources for Keramin and Yu-Yu. Other examples would appear to be **Runthana** 'nose' (cf. Yu-Yu **mRundu** and widespread **murru**), **Rap** 'camp' alongside **tRap**, **Rind** 'river' alongside Yaralde **maRandi,** Keramin **Ruk** 'tooth' alongside *drirk* and *treurk,* and Keramin **royn** 'dark' alongside Kulin **puroyn**.[14] Ngayawang **Rako** 'bag' may be cognate with **waRak** in Western Kulin and Bunganditj, and Yitha-Yitha **Rutan** 'dream' may be cognate with Wiradjuri **yaRutang**.

Table 9: LOWER MURRAY LANGUAGES

	Yaralde	*Ngayawang*	*Yu-Yu*	*Keramin & Yitha-Yitha*	*Other*
bark		**kartkartko**		**kartkart**	
beard		**ngulko**		**ngulk**	
boomerang				**wan**	widespread **wana** 'digging stick'
camp		**Rap(ko)**	**Ruwu**	**Rap, trap**	
cockatoo, white	**kRant[h]i**			**Ran(th)**	MM **kirrenti**
dog	**keli**				WK **kal**
egg		**thalanko**	**thalan**		
egg				**piyt**	Baa **pitji** 'eggshell'
faeces	**kuna**	**kuna, kun.ngo**	**ku**ᵗ**na**	**kun**	widespread **kuna**
father		**pitja**	**pwitja**	**payt**	Wa **pitjarng**, Baa **kampitja**
fat	**pipuli**				WK **pipul**
food, flesh	**mami**	**mam**			
foot	**thani**	**tha**ᵗ**nyi**	**thina**	**thin, thayn, thani**	widespread **thina/tjina**, Gipps **thayn**
hair, body	**yinggi**	**yinggo**			
kangaroo		**puRulko**	**puRul**	**puluka**	
leg/thigh		**nganko**		**ngan(t)**	Baa **ngandanya** 'branch'
mosquito				**mandh(a)**	Wati-Wati (SH & P) **mandji**
mother		**ngaka**	**ngaka**	**ngak**	Yab **ngakalam**
nose	**kopi**			**kap**	Bu, Warr **kapu(ng),** YY **kawu**
nose		**Runko**	**mRuntu**	**Runthana**	widespread e.g. Wir, Ban **murru**
possum	**piltaRi**	**piltki**	**pultja, pultu**	**pult, pilt**	widespread SA **pilti**
river	**maRandi**			**Rind***	MM **tindi**
sky			**nundu**	**nunt**	
smoke		**multko**	**multu**	**tum(p)**	Dhu **thumpapa**
star	**tulti**			**turti**	K ulin **turt,** Yota-Yota **turta**
stick, yamstick	**kanaki**				Tjap, Warr **kanak,** Bu, YY **kana**
sun	**ngangki**	**nganki/u**	**nganka**	**n[g]ank**	
tongue	**thalangki**				WK **tjaling** < **tjalayn**
tooth		**ngentko**			Baa **ngandi**, Gipps **ngandak**
water	**nguki**	**nguk-ko**	**nguku**	**nguk**	Baa **nguku**

* The old notations show voiceless stops in word-final nasal-stop combinations, but Hercus notates this word with a final **nd**.

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[13] Unfortunately old sources do not notate stress.

[14] Forms in italics are in the original notation.

2.5 Sound correspondences

rt-tj-R

Blake and Reid 1998b report a sound change affecting intervocalic consonants. Intervocalic retroflex t [**rt**] found in Letji-Letji and Wati-Wati (Swan Hill) and in an area running south of Swan Hill down to the Pyrennees corresponds to **tj** in most of the rest of Western Kulin and to a rhotic, probably a glide [**r**], in the easternmost sources for Djadjawurrung, and in Eastern Kulin, Wathawurrung, Colac, Warrnambool and Bunganditj. Following a suggestion from O'Grady, the retroflex stop is taken to be the original and it is assumed to have weakened to a glide in some areas and to have lost its apical character in others.[15]

Table 10: RT-TJ-R CORRESPONDENCE

	Letji-Letji Swan Hill	*othert Western Kulin*	*Djadja eastern*	*Eastern Kulin*	*Watha*	*Colac*	*Warr*	*Bung*
arm	**tharta**	**thatjik**	**thaRak**	**thaRak**	**thaRak**			
armpit		**katjap**	**kaRap**	**kathap**	**kaRap**	**kaRa**		
axe	**partiki**	**patjik**	**paRik**					
brolga	**kurtuni**	**kutjun**	**kuRun**				**kuRun**	
dive	**purtu**	**puthe-** Wem	**puRi-** 'fall'					
feather	**wirtini**	**witjan** Wim	**wiRayn**					
fly (noun)	**pirti(ki)**	**pitjik**	**piRik**					
k'roo rat		**patjuk**	**paRuk**	**paRuk**	**paRuk**		**paRuk**	
knee	**partingi**	**patjing**	**paRing**	**paring**			**paRayn**	**paRayn**
man	**wurtungi**	**wutju** Wim						
moon	**mirtiyan**	**mitjiyan**		**mirniyan**				
pelican	**partangal**	**patjangal**	**paRangal**		**partangal**		**paRangal**	**paRangal**
plenty	**kirtawil**	**kitjawil** Tjap			**kitjawil**			
rain	**mirti**	**mitjak** Wim						
red		**pitutjan** (Tjap)	**pituRang**					
return	**wirtuwa**	**withiwatha** MM						
son/small	**wartipi**	**watjip** Tjap	**waRip**					
hot (time)	**karti**	**katjayi** Tjap	**kaRi**					
sweat		**wutjala**	**wuRa**		**wuRa**			
tail	**wirt-mum**	**withangi** MM					**wiRang**	**wiRa**
taste, to	**partama**	**pathayima** MM						
water	**kartini, kayini**	**katjin**		**kayani**				
when	**nharteru**	**nyatjerruwa** Wem	**n[h]aRuki**					
whistle	**wirta**	**wirta** Wem	**wiRilen**					
wife	**martumi**	**mathimi**	**maRam**					
wombat		**mutja**					**muRayn**	**muRa**

[15] There are examples of a switch from retroflex to laminal articulation in the Arandic languahes. **Parti** 'Bardi grub' has become **itje** in various Arandic tongues with initial loss (Gavan Breen p.c.). See also Blake and Reid 1998:63.

Rhotics

Another sound correspondence that divides the Mathi group involves the treatment of clusters the first member of which is the retroflex glide **r** (See Hercus 1986 for the first report of this correspondence). Clusters with **r** as the first member in other Kulin languages outside the Mathi group are reflected intact in Wati-Wati (Swan Hill), but the rhotic is generally lost in Letji-Letji, and reflected as a high front segment (**i** or **y**) in the other dialects of the group. In Mathi-Mathi where the preceding vowel is **i**, there is no reflection of the rhotic (but see **waiwatha** 'to climb' in Table 11). Where the vowel is **a** , the **a** and the high front segment combine to yield **e** (See the entry for 'camp', for instance). In Wati-Wati (Piangil) this may occur also. It is a matter of how the digraph *ai* in the sources is interpreted. I have tentatively taken it to represent **ayi**, but it could be [**e**]. In Wati-Wati (Swan Hill) where the rhotic is retained, the vowel **a** seems to be reflected as **u** (spelled *oo* in the sources). See the entries for 'camp' and 'cloud' in Table 11..

TABLE 11: LOSS OF r BEFORE A CONSONANT

English	Kulin	Mathi	Letji	Wati (SH)	Wati (P)
break	**purka**	**puwikila 'grind'**		**puka** [sic]	
camp	**lar**	**lengi**	**langi**	**lurngi**	**laingi**
catch	**kerka** We [WW **karrka**]	**kaka-tha**		**karka**	
cheek			**tiki**	**tirk[i]**	
climb	**wirwa**	**waiwa-tha**		**wirwa**	
cloud	**marng**	**menggi**		**murnki (?)**	**manggi**
eagle	**werpil**			**wirpil**	**wayapili, waipili**
egg	**mirk**	**miki**	**mik[i]**	**mirki**	**meki?, maiki?**
eye	**mir**	**mir**	**mingi**	**mir, mirngi, mirenggel**	**maingi**
hard	**tarma**	**tenma-tha**	**terima**	**tarma, terima**	
hawk		**piwi**		**pirwi**	
heat		**kathayi**	**kati**	**karti**	
mouth	**tjarp**	**thep[i]**	**thapi**		
pluck		**kipa-tha**		**kirpa**	
run	[WW **wirra**]	**wuwa-tha**		**wirwi**	**waiwi**
turtle	**turmi-mum**	**tuwimi-mum**			
urine	**kir**				**kimon**

Clusters with the flap or trill **rr** as the first member are reflected without the rhotic in Letji-Letji. In the other three tongues there is some inconsistency as can be seen from Table 12. The **rr** is retained in Mathi-Mathi in some words such as **purrpi** 'head', but not others. Note **puyingga** 'blow' and **kematha** 'vomit', where the former has a high front vowel and the latter an **e** that may reflect **a**+**i** (or **y**) as in **lengi** etc. in Table 11. With the old sources for Wati-Wati (Swan Hill) and Wati-Wati (Piangil) the treatment of **rr** is not always clear, but it appears to have been reflected as a high front segment in **koimbi** 'breast' and **poipi** 'head'.

Table 12: LOSS OF rr BEFORE A CONSONANT

English	Kulin	Mathi	Letji	Wati (SH)	Wati(P)
blood	**kurrk**	**kurrki**	**kuki**	**ku(r)ki**	**ku(r)ki**
blow, to	**purrngga**	**puyingga**			
breast	**kurrm**		**kumbi**	**koimbi**	
breath	**purrken** Wem		**puki**	**paki, poki**	
cheek			**tiki**	**tirk[i]***	
head	**purrp**	**purrpi**	**pupi**	**pu(r)pi, poipi**	**poipi**
quick		**lirrki***		**lirka**	
vomit, to	**karrma**	**kematha**		**karma**	

*It is not clear whether these have **rr** or **r** since there is no form corresponding to **tirki** recorded in Hercus (1986), and in Mathi-mathi all rhotics are **rr**.

Intervocalic **r** is lost in Letji-Letji and Mathi-Mathi. From the entry for 'lungs' in Table 13 it would appear that sequences of **a**+**i** resulting from the loss of intervocalic **r** merge to yield **e** as in Table 11 above, but this does not hold for **karip** 'thigh'.

Table 13: LOSS OF INTERVOCALIC **r**

English	most Kulin	Mathi	Letji	Wati (SH)	Wati (P)
coals	**wiRing** Wem	**winggi**			
ear	**wiRimbul**	**wimbula**	**wimbuli**	**wiRimbul**	
lungs	**laRingg-**	**lenggi**		**lang**	
night, dark	**puRuyn**	**puinggi, puindhi**	**pung(g)i, pundji**	**puRung(g)i**	**puRung(g)i**
shield	**kiRam**		**kiyami***		
thigh	**kaRip***	**kiyap[i]**		**kaRiw[i]**	**kaRipi**

*There is one example of intervocalic flapped r being lost. Compare WB **nyarri** and MM **nengi**.

Woiwurrung also has **kiyam.

Nasals

Another correspondence involves intervocalic nasals. A palatal nasal in Werkaya or Tjapwurrrung generally corresponds to an apical nasal in other Kulin tongues. There are the usual difficulties in interpreting the sources, but at least some tokens of the apical nasal are retroflex. In Mathi-Mathi, where we have Hercus' notation, the relevant nasal is retroflex in some words and alveolar in others.

TABLE 14: INTERVOCALIC NASAL CORRESPONDENCES

English	Werkaya, Tjapwurrung	Mathi-Mathi	Other Kulin
duck	**nganyawil**		**ngarni** SH, **nganəwil** WB
fire	**wanyap**	**wanapi**	**warnapi** LL, SH, **wanap** WB
food	**panyim**	**panemi**	**parnimi** LL, SH, **panem** WB
hand	**manya, mana**	**manha[ngi]**	**marnangi** LL, SH, WP, **mana** WB, **Wim**, Wa
rib	**lanyi**	**larni[ngi]**	**larningi** SH, larni Wa, WB
whiskers	**nganyi** Tjap, **ngani** Wem, Wim		**ngani** LL, **ngarni** SH, WB

Weakening of stops

In Wati-Wati (Swan Hill) original word-final labial and velar stops weaken to **w** before a vowel as with nominative -**i** or third person possessor -**u**. Thus **karip** 'thigh' shows up as **kariwi**, **wutjup 'stomach'** as **wutjuwu** 'his/her stomach, **yungwib** 'canoe' as **yungguwi**, and corresponding to Wemba-Wemba **wathip** 'son' we find **wartuwu** 'his/her son'. Velar examples are scarce, but compare Mathi-Mathi **kanak[u]** with SH **kanawu** 'his heel'. There are also some examples of intervocalic **p** in Bunganditj and Warrnambool weakening in other languages.

(1) burn, cook   **papa** Bunganditj, Warrnambool   **pawa** Western Kulin

     emu   **kapir(ng)** Bunganditj, Warrnambool   **kawir** Western Kulin

     nose   **kapu(ng)** Bung, Warr, **kap** Yitha-Yitha   **kawu** Yota-Yota

And there are some examples of an intervocalic palatal stop weakening.

(2) blackwood   **mutjang** Dja, Warr   **muyang** Woi

     water   **katjin** Tjap, Wim   **kayini** SH WP, kayin Y, Tjap[16]

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[16] Weakening of **tj** to **y** is found in one source for Yartwatjali, namely Lake Wallace, and one source for Tjapwurrung, namely Mount Rouse.

In Wathawurrung the **d** is lost from intervocalic **nd** clusters in some words.

bite	**punda** WK, EK	**puna** Wa
call out	**karnda** WK	**karna** Wa

Palatalisation

For Wati-Wati (Piangil) the two sources in Curr 1887, namely Macredie and Curr himself (Curr 1887 III:448-51), show palatalisation of a velar stop (written *k* or *g*) to a palatal stop or similar (written *ch*). This occurs before a high, front vowel *i* as might be expected, but there are two examples where the vowel is *a*. Since this palatalisation is confined to two sources, the examples will be given in the original spelling. The abbreviations for the sources in Curr are Macredie (M) and Curr, Piangil (P). The other sources used for comparison are Davy 1889 (D) and Larmer 1889(L).

(3)		Davy, etc.	Macredie and Curr, Piangil
	white cockatoo	*whalakeli* D	*willachali* M, *walechin* P
	fly	*pika* (WW Swan Hill)	*pichi* M
	rain	*muggaree* L, *mukaria* D	*maitcheri* M, *maicheri* P (Yitha-Yitha *maggur*, Keramin *makkri*)
	stone	*mukki* (WW Swan Hill) (Yitha-Yitha *maak*)	*matchi* M
	tooth	*naroki* D	*ngarochi* P
	woman, old	*kuambiliki* D	*tillibillechi* P

Note also that Mathi-Mathi, Letji-Letji **kariki** 'spear thrower' shows up in the Piangil source as *chaieki*, presumably **tjayiki**.   The change of intervocalic **r** to **y** is independently attested (see Tables 11 and 13 above). Note too that a velar stop before nominative-**i**, as in this example, is unaffected. The Piangil source contains the words *naiki* 'today' and *narochi* 'food'. We have no cognates for these. The first appears not to reflect palatalisation. For the second, we would hope to find a form *naRoki* in a source other than Macredie or Curr, Piangil. Curr also has *natchi* for 'to see', where the expected form of the root is **nhak**.

It is interesting to note that one of the sources for the not-too-distant Lower Murray language, Yu-Yu, namely Pegler (Curr 1886 II:280-1) writes *ch* where other sources write *c* or *k*.

Laterals

Not all Australian languages allow initial laterals and in languages that do initial laterals are not very frequent. In the sources for Kulin there are a number of instances of iniial **l** alternating with initial **t**, and there are a few instances of a lateral in some tongues corresponding to a stop in others.

(4)	**larniyn, lanyin** WK	**tarniyn** EK	ribs
	lanuk Warr	**ta(r)nuk** Kulin	bucket
	lirri(t)WK	**tiriwa** Pall, **thirip** Wa, EK	nails
	litjiRi, titjiRi WS	**titjiRik** Tj	calm
	limuk, timuk We		heritage, inheritance
	luka Wa 'to cut'	**lukititit, tuktitit** 'knife' Co	
	liniwu WS	**tininu** LL	young man
	liRinga, **tiRinga** WS	**tiRingga** Y, Tj, Dw, Wa	sew

There are some examples of an intervocalic rhotic in Kulin corresponding to lateral, mainly in Bunganditj. The word for 'camp' in Bunganditj is **ngula**. This may be cognate with **ngurra** in various languages including Western Desert.

(5)	bark	**tuRang** Warr	**thulang** Warr, Wem
	bitter	**kuratj** Wim	**kilat** Bu
	child	**puRon** Wa	**pulon** Wa
	cockatoo, black	**wiRan** WK, Wa	**wilan**Warr, **wila** Bu
	fly, march	**muRun**	**muloyn** 'fly' Bu
	hair	**ngarra** WK	**ngarla** Bu
	sand	**kurrak** WK, Wa	**kulak** Tjap, Warr, Co
	smoke	**puriyn** Wim	**puloyn** Bu
	centipede	**tjiRang** Wa,	**tjilang** We
		thiRang Warr, Woi	

Spread of nasalisation

There are some examples of stops assimilating to nasals in clusters. This phenomenon can also be seen in Djadjawurrung **wainman** for 'white man'.

(6)	cold	**mutmut** Tjap, Bu	**munmut** Bu, Wa
	back of hand	**wart manya** Tjap	**warn marna** Dja (western)
	bat	**nganitj-nganitj** Wem	**nganiyn-nganitj** Tjap, Wa
	fingernail	**lirrit manya** Tjap	**lirrin manya, lirrin marna** Dja (western)

raincloud	**tharnpil** Wim, Wem	**tharnmil** Wem
run away with	**yutmila** Tjap	**yunmila** Tjap
snake	**kurnwil**	**kurnmil** (variants across Kulin)
stranger	**mayt-mayt** We	**mayn-mayt** Dja (eastern)

The suffix meaning 'having ' in Kulin that appears in three forms: -**pil**, -**wil** and -**mil**. The basic form appears to be -**pil**, with the nasal form -**mil** sometimes occurring following a nasal as in (6a).. The weakened form -**wil** is found after vowels as in Western Kulin **liya**-**wil**, lit. 'tooth-having', the term for a type of club. However, there are exceptions to this distribution as with **liyang-wil** in Wathawurrung.

3. Morphology

3.1 Pronouns with a common base

A notable feature found in a number of Kulin languages is the use of sets of pronouns consisting of a common base to which person/number suffixes are added. An analogous set occurs in English where the reflexives consist of a common base *self* to which modifiers are added for the various persons and numbers: *myself*, *yourself*, etc. The phenomenon seems to have diffused with various tongues choosing different bases (Dixon 2007). In some instances more than one tongue has employed the same base, and conversely for some tongues, more than one base is recorded. Examples of the first and second person singular pronouns are given in Table 15. The base **peng** means 'body' or 'flesh' as does **maRam**. The first person form -**(ng)ik/-(ng)ek** and the second person –**(ng)in** are possessor forms, but –**an** and –**arr** are subject forms, otherwise found on verbs or on the first word in the clause..

Table 15: KULIN PRONOUNS WITH A COMMON BASE

	I	*you*
Wemba-Bereba	**naik** **walangek**	**nayam, nain** **walangin**
Wimmera	**waluRek** **yuRwek** **tjuRmik**	**walungin** **yuRwin** **tjuRmin**
Djadjawurrung	**wangan** **pengek** **wan**	**wangarr** **pengin** **warr**
Wathawurrung	**pengek**	**pengin**
Tjapwurrung	**winek**	**winin**
Woiwurrung	**wan** **maRambik**	**warr** **maRambinherr**

The same phenomenon can be found on the southwest New South Wales where Gundungurra uses the base **kula** (Eades 1976:49).   A more remote example can be found in Warnman in northern Western Australia where the base is **parra** (O' Grady et al. 1966: 136).

3.2 Pronouns with the singular as a stem for the non-singular

Another example of pronoun systems being diffused can be found in south-western Victoria where Colac, Warrnambool and Bunganditj share a common system. Over most of Australia one finds separate pronoun stems in the singular, dual and plural, though the first person stems are usually built on the root **nga**. In Bunganditj, Warrnambool, and probably Colac, the non-singular stems appear to have been replaced by singular pronouns augmented by the appropriate person/number bound forms. These bound forms are enclitics for subject, which otherwise occur enclitic to the verb or to the first constituent of the clause.

Table 16: COLAC, WARRNAMBOOL & BUNGANDITJ PRONOUNS

		Colac	*Warrnambool*	*Bunganditj*
singular	1	**ngathu-it**	**ngathuk**	**ngathu**
	2		**ngutuk**	**nguru**
	3		**nhung**	**nhung**
dual	1inc	**ngathu-la**	**ngathu=ngal**	**ngathu=al**
	1ex		**ngathu=ngalin**	**ngathu=ilal**
	2		**ngutu=wal**	**ngur=pul**
	3		**tila=kal**	**nhung=gal**
plural	1inc	**ngath-ngorrok**	**ngathu=ngan**	**ngathu=i**
	1ex	**ngathu-nginak**	**ngathu=nganin**	**ngathu=ili**
	2		**ngutu=warr**	**ngur=pala**
	3		**tila=kanta**	**nhung=pala**

The data from Colac is limited to what is presented in Table 16, but it is sufficient to show the same kind of arrangement as found in Warrnambool and Bunganditj. Colac is certainly not closely related to Warrnambool and Bunganditj, and in any case the augments themselves do not match. Warrnambool and Bunganditj show some evidence of close genetic relationship (see section 4 below), but again the augments do not match, just the method of building up pronouns. Note in passing that the second person singular root **nguru** appears to be a plural form which has ousted earlier **ngin**-, just as *you* has ousted *thou* in mainstream English. **Ngin** is a widespread root for second person singular, and **nguru** (probably **ngurru**) is widespread as

a second person plural form in the southeastern mainland (Kulin, Gippsland, Dhudhuroa). This use of the plural for the singular is another example of diffusion.

This method of forming non-singular pronouns from the singular plus a bound form is also found in Dhurga, Dharambal and Dyirringayn on the south coast of New South Wales (Eades 1976: 49).

4. Genetic relationships

4.1 Percentages of common roots

To determine genetic relationships it is necessary to be able to distinguish inherited resemblances from those due to diffusion. In some cases the form of a word gives a clue. For instance, **mitjuk** 'skin' in Keramin, one of the Lower Murray languages, must be a borrowing from a Kulin neighbour since it breaks up into **mitj-uk** 'its skin' in Kulin, but not in Keramin. Sometimes, the distribution is a clue. This same root **mitj** is found across the whole range of dialects of Western Kulin and in Wathawurrung, but outside Kulin it is found only in neighbouring Keramin. This distribution confirms that it is a borrowing from Kulin into Keramin.

However, in most instances it is difficult to distinguish cognates from borrowings, but if we look at counts of common vocabulary between languages a number of clear trends emerge. Firstly, words for animate nature (fauna, flora) and culture tend to be shared on an areal basis. This also applies to inanimate nature to some extent. Secondly, words for body parts tend to be distributed on an areal basis, and they make a substantial contribution to 'cognate counts'. The result is 'regional vocabulary', as Capell termed it (Capell 1956:82).   In Victoria and adjacent areas the following are some of the words that have an areal distribution and make a strong contribution to counts of common vocabulary. Not all of them are peculiar to the area, but all have a concentration in the area.

> material culture: **kana** 'yamstick', **wana** (also **wankim**) 'boomerang', **malkarr** 'waddy
> shield', **kiram** 'spear shield', **tjarrk** 'reed spear', **kuyun** 'long spear'
> animate: **nganitj-nganitj** 'bat', **thulum** 'black duck, **waa** 'crow', **kapirr** 'emu', **kal**
> 'dog', **munya** 'louse', **kurra** 'kangaroo'
> inanimate: **wiyn** 'fire', **marndar** 'thunder'
> body: **nyan** 'neck', **wurru** 'mouth'

To illustrate these features tables of percentages of common vocabulary in this section are presented in semantic fields. These fields are as follows:

1. body parts (*head*, *arm*) and associated substances (*blood*, *urine*, etc.)
2. humans (*woman*, *baby*) plus kin terms (*elder brother*, etc.)
3. animate nature (*kangaroo*, *louse*, *bark*, *she-oak*, etc.)
4. culture, mostly material culture (*boomerang*, *canoe*, etc.)
5. inanimate nature (*sun*, *earth*, *fire*, *water*, etc.)
6. predicates (corresponding to adjectives and verbs in English)

The total counts also include a number of other words that do not fit these categories. These include words such as *one*, *two*, *plenty*, *yesterday, I, you* and *no.* Some of these such as *two*, *I* and *you* are represented by a small number of forms and contribute to higher scores, while other words such as *yesterday* and *no* are represented by almost as many words as there are tongues.

The first illustration takes Bunganditj as its reference point and gives percentages of common vocabulary for tongues to the east (Table 17). The number of words counted is around 200, but falls to 158 for Pallanganmiddang and 117 for Colac, since there are only meagre source materials for these two languages. The percentage of words in each category is a little over the following round figures: body 15%, human 10%, animate 20%, inanimate 10%, culture 10%, predicates 25% and miscellaneous 5% (not shown in the table). The proportions are largely determined by what is available in the sources. The tongues represented in Table 15 are as follows:

Wuluwurrung (the westernmost dialect of the Warrnambool language)
 Warrnambool language represented by Kunkupanut and Pikwurrung

The following Kulin tongues:
Tjapwurrung (a south-western dialect of the Western Kulin)
Wemba-Bereba (dialect of Western Kulin)
Djadjawurrung (easternmost dialect of the Western Kulin)
Wathawurrung (Kulin language of the Ballarat-Geelong area)
Woiwurrung (southern dialect of Eastern Kulin)
Thagungwurrung (northern dialect of Eastern Kulin)

Colac language
Yota-Yota
Pallanganmiddang
Dhudhuroa

Table 17: COMPARISONS WITH BUNGANDITJ BY SEMANTIC FIELDS

	WUL	WARR	TJAP	WB	DJA	WA	WOI	THAG	CO	YY	PAL	DHU
overall	45	41	33	29	28	23	18	18	18	12	11	14
body	63	54	50	53	50	45	41	31	29	21	29	31
human	29	23	18	23	24	14	6	11	21	5	13	12
animate	60	54	36	27	23	29	14	12	5	5	0	8
inanimate	40	29	23	23	13	4	9	0	15	4	11	9
culture	60	54	45	46	46	31	38	44	50	18	0	14
predicates	37	33	32	21	26	16	14	16	16	14	10	7

The first two columns in Table 17 gives percentages for Bunganditj and dialects of the Warrnambool languages. Wuluwurrung is the westernmost dialect of the Warrnambool language and contiguous with Bunganditj across the Glenelg. The Warrnambool figures are based on two central dialects, Kunkupanut and Pikwurrung. First note that the overall percentages are fairly high, 45 for Wuluwurrung and 41 for the other dialects. This raises the question of genetic proximity, a question to which we return below. The figures for body nouns, culture, animate and inanimate nature are much higher than the average, and they are higher for Wuluwurrung, which borders on Bunganditj, than for the other dialects.

The next three columns give figures for three dialects of Western Kulin, namely Tjapwurrung, Wemba-Bereba and Djadjawurrung. The overall figures are around 30%, which raises the possibility that Bunganditj and Kulin may be relatively closely related, but again body nouns and culture yield figures substantially above the average. The next four columns give figures for Wathawurrung, two dialects of Eastern Kulin, namely Woiwurrung and Thagungwurrung, and Colac. Again it is generally true that only the body nouns and culture figures exceed the average.

The last three entries give figures for three languages of north-eastern Victoria, Yota-Yota, Pallanganmiddang and Dhudhuroa, all of which are quite separate from one another and from any other language. The overall percentages are low, but note that the body figures are very large in proportion, in the case of Dhudhuroa and Pallanganmiddang more than twice the average.

These figures are also represented graphically in Figure 1. Overall they show that fauna and flora contribute more than the average up to a certain distance (Wathawurrung), and that material culture makes a greater than average contribution to the figures over a greater distance encompassing Eastern Kulin. A comparison of the culture figures for Bunganditj-Colac and for Bunganditj and the north-eastern languages is instructive. None of these languages appears to

be close to any other, but note the much higher figure for Colac, which is relatively near, than for the more distant north-eastern languages. The areal dispersion of terms for fauna, flora and material culture is more or less to be expected from what we know about lexical diffusion in other parts of the world, but what is unexpected is the consistently high figures for body nouns, a point discussed below.

FIGURE 1

	WULU	WAR	TJAP	DJA	WA	WOI	THAG	COL	YY	PALL	DHU
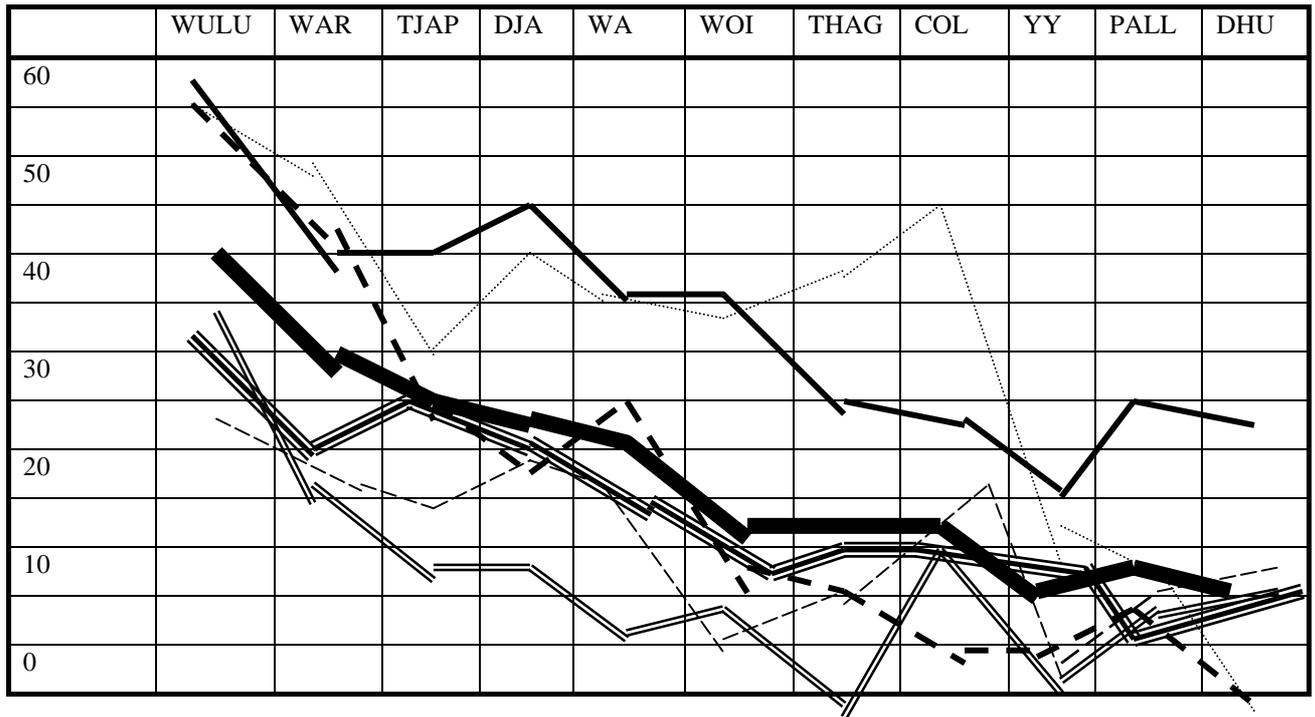
overall ▬▬▬▬▬

body ────

culture ⋯⋯⋯⋯

animate ▬ ▬ ▬ ▬

inanimate ═══════

human ─ ─ ─ ─ ─

predicates ═══════

Table 18 shows cognate percentages of common roots for Warrnambool and three dialects of Western Kulin (Tjapwurrung, Wemba-Bereba and Djadjawurrung), Colac, Wathawurrung, Woiwurrung and Yota-Yota.

Table 18: COMPARISONS WITH WARRNAMBOOL BY SEMANTIC FIELDS

	Tjap	WB	Dja	Colac	Watha	Woi	Gipps	Yota
overall	37	31	31	24	27	24	13	10
body	41	36	41	34	43	37	24	18
human	25	17	18	-	22	10	-	6
animate	49	42	40	26	35	24	11	8
inanimate	32	26	27	31	16	8	6	4
culture	44	50	50	50	45	45	8	9
predicates	29	20	18	20	18	22	16	11

As with the figures given for Bunganditj in Table 17, we find the figures for body nouns are above the average and the figures for fauna and flora and for culture are above the average as far as Woiwurrung.

To put these figures in perspective it is interesting to compare them with figures for well known European languages. I made counts for English, German, French and Italian using the same word lists as for the Australian material, but substituting where necessary, e.g. 'bear' for 'koala'. On this basis English shares 56% with German, 19% with French and 15% with Italian. German shares 13% with both French and Italian. French shares 67% with Italian. The figures for adjectives and verbs were well below the average for comparisons between Germanic and Romance. German shares 5% of adjectives and verbs with French and 7% with Italian. English shares 8% with French and 9% with Italian.

Since it is generally agreed that grammatical forms are more resistant to change than most lexical items, one should count these. However, although there tends to be close matching of categories across the languages under consideration, the forms are not reported comprehensively. A language may have several case markers or tense markers, but only one or two may be reported. In the worst case two languages may have the same set of markers a, b, c and d for a grammatical category, but a and b may be reported for one language and c and d for the other.

As can be seen from Tables 1, 17 and 18, Bunganditj, Warrnambool and the Kulin languages shares a good deal of vocabulary, which raises the question of whether this is due to inheritance or convergence. If we look at grammatical forms, we find that Bunganditj and Warrnambool share some distinctive forms, and the Kulin tongues share some distinctive forms. We shall proceed by discussing whether Bunganditj and Warrnambool are closely related (4.2), then whether the Kulin languages form a genetic group (4.3), and finally the

question of how Bunganditj, Warrnambool and the Kulin languages come to share so much more vocabulary than any of the other languages in the area (4.4).

4.2 Bunganditj and Warrnambool

Bunganditj and the Warrnambool language share 41% of vocabulary including 33% of adjectives and verbs, and a superficial inspection certainly suggests that they are close. In fact Schmidt, in his book on the classification of Australian languages, took the two to be closely related calling Bunganditj *West Buandik* and the Warrnambool Language *East Buandik* (Schmidt 1919:92ff). When we look at grammatical forms we find matches in pronoun roots and other formatives, but most of these are widely shared forms (Tables 19, 20 & 21). The first person singular **ngathu(k)** is widespread. The second person singular **nguRu(k)-ngutuk** is distinctive as a singular, but found more widely in the area as a plural. It looks as if the plural has been adopted as a singular as in English, particularly as the bound form is -**ngin** reflecting the widespread Pama-Nyungan root for second person singular, namely **ngin.** This is a development that could have been borrowed.   The third person form **nhung** is shared. The root **nhu/nu** is found right across the mainland, but the form **nhung** is distinctive. As noted in section 3.2 above, both Bunganditj and Warrnambool form their non-singular pronouns by adding a clitic to the singular form. This practice is another that could have been borrowed, and it is worth noting in this regard that the Colac language, which shares little vocabulary with Bunganditj and Warrnambool, follows the same practice, as do Dhurga, Dharambal and Dyirringayn on the south coast of new South Wales (Eades 1976:49). The existence of this method of formation means that there are no non-singular free forms to compare. Among the bound forms for subject there are a number of gaps. The sole matching form is -**ngal**, which would appear to one of numerous reflections of **ngali**, found throughout the Pama-Nyungan area. Among the oblique pronouns, which function as object and possessor forms, there are close matches in the singular, but not in the only two non-singular pronouns for which there are forms in both languages. The first person singular forms correspond well, **ngan** in Warrnambool and **ngayn** in Bunganditj. These consist of the widespread root **nga**- plus a nasal that could reflect the widespread accusative -**nya/-nha**. The second person **ngu** would appear to be the first syllable of **ngutu**, and the third person is **nhung**, the same form reported for subject function.

Table 19 GRAMMATICAL FORMS

	Bunganditj	Warrnambool	Western Vic	Wathawurrung	Central Victoria
dual	-pul	-(y)ara	-pula		
plural	-ngara	-apan	-parra		
ergative	-(l)a	-a	-ku, -ngu, etc.	-a	-(th)a
dat/loc	-u, -i, -a	-u, -i, -ngura, -kuta	-ka, -kal, -kata	-o, -iyu 'to'	-uth etc.
genitive	-ngat	-ngat	-ngkitj, -nga	-ak	-(th)al
ablative	-an		-kang		-u
'having'	-kil	-kil	-pil	-pil	-pil
present	-(y)n	-0	-a	-0	-unh
past	-an	-n(h?)	-in	-ik	-ath
future-like	-ngu, -wiya	-uk, -n(h?)	-iyn	-iyn	-(a)nh
imperative	-ngga, -ku, -wa, -a, -i	-ki	-i, etc.	-k	-k
reciprocal	-pa, -wa		-tjerra	-tjarra	-tjirri
reflexive, etc.	?	?	-ila	-la	-ila
this/that/yon	n[h]u-/ tha- / kana-, kwalu-	thin/ n[h]u-			
who	nganu	ngara, winya	winhangu, winyarr	wila	winharup
what	ngan	nganha/nganya	nhangi, minhi, nyanya	winya	winha (W), nganying, (T)
where	n[h]a, nga	windha, wundha	windha, windja	wiya	windha(ru)
when	n[h]awer	windhakatha		wilang, wiyapai	
how many	n[h]apa	ngamiya, n[h]apan		nankut	nangkut-patin
no/not	wi-	pa(r)ngat, ngi-ngi			ngapun

Table 20: PRONOUNS

		Bunganditj	Warrnambool	Mathi grp	West. Vic	Watha	Central Vic.
sing	1	ngathu	ngathuk	yiti	yandang		
		-nga	-u		-anda, -an	-(w)an	-an
	2	nguru	ngutuk	ngindi	ngin(din)		
		-ngin	-ngin		-arr	-(w)arr	-arr
	3	nhung	nhung			-0/-nhuk	
dual	1inc	ngathuwal	ngathungal	ngali	ngalein		
		-(ng)al	-ngal		-angal	-ngal/-ngalen	-angal
	1ex	ngathuwilal	ngathungalin				
		-(ng)a	-ngalang		-angalang		-angan
	2	ngurpul	ngutuwal				
		-ngut	-wal, -wul		-awal/-awul	-pul/-pulen	-pul
	3	nhunggal	tilakal				
			-pul, -kal, -tja		-pula(ng)	-pulang	
plur	1inc	ngathuwi	ngathungan		yangurrein		
		-(ng)i	-wan		-angurr	-ngitj/-watjin	-anganyin
	1ex	ngathuwili	ngathunganin				
		-angi	-wanung		-angurrang		-nganyinyu
	2	nguRpala	ngutuwaR		ngutein		
		-war, -ato			-atj	-(w)at/-	-at
	3	nhungpa(ka)	tilakanda				
			-ut, -ta, -tja		-an/-ana,	-t[h]anang	-ur, -t

Table 21: OBLIQUE BOUND PRONOUNS

		Bunganditj	*W'bool*	*Mathi grp*	*West. Vic.*	*Watha*	*Central Vic.*
sing	1	-(ng)ayn	-ngan	-(ng)ai	-(ng)ek	-(ng)ik	-(ng)ik
	2	-(ng)un	-ngu	-(ng)in	-(ng)in	-(ng)in	-(ng)in
	3	-(nh)ung	-nhung	-(nh)u	-(ny)uk	-(ny)uk	-(ny)u
						-(ny)etuk	
dual	1inc	-lu		-(ng)al	-angalak	-ngal	-ngal
	1ex				-angalang	-ngalak	-ngan
	2	-ng			-alak	-pulok	-mbul
	3				-pulak	-pulok	-pulayn
						-pulang	
plur	1inc	-nu	-nganin	-(ng)urra	-angurrak	-ngatak	-nganyin
	1ex	-rong	-ngayi		-andak	-utjak	-nganyinu
	2		-ngutin		-atak	-kanak	-ngut
	3		-tjin		-(tj)anak	-thanok	-than
						-thanang	

One of several plural markers in Bunganditj, namely -**apayn**, matches Warrnambool -**apan** and two Bunganditj locative markers -**i** and -**u** also appear in Warrnambool. The clearest match is the genitive -**ngat**, which appears in both languages and appears to be the only marker with this function. Almost all Australian languages have a suffix meaning 'having' which corresponds with –*ed* as in English *long-haired*, *short-necked*, etc. In Warrnambool this suffix is -**kil**. There are a couple of examples of this suffix in Bunganditj, too few to rule out the possibility that they appear only in words borrowed from the Warrnambool language.

In verb morphology there is a correspondence with the applicative –**ma**, but this root is found all over the mainland as some kind of verb formative, often as a causative. There is a reciprocal -**pa**/-**wa** in Bunganditj, which seems to have a counterpart in Warrnambool -**pa**, but the evidence is weak. There is also a perfective marker –**n(h)a** in Bunganditj which can be found in Warrnambool, but examples are few.

Summing up the grammatical evidence we could say that there is a distinctive shared genitive -**ngat**, a distinctive shared plural marker -**apayn**/-**apan** plus a few other poorly attested possibilities. There is of course a good deal of other material that has a much wider distribution.

Turning to the lexicon we find that the following appear to be exclusive to Bunganditj and Warrnambool, and may represent innovations in the area. The word for 'to drink', namely **thatha**, appears to be an innovation, being a reduplicated form of the widespread root **tha**-/**tja**- 'to eat'. The word **kandapul** 'whale' appears to be formed from a root **kanda** (cf. Yaralde **kandali**) plus the suffix –**pul**, so it is the formation that is distinctive not the root.[17]

(7)

wu, wurk, wurt	'arm'
wilang-gil	'echidna'
thatha	'drink'
lu, **litj**	'heart'
kuRamuk	'possum'
tuRayn	'rainbow'
yiyiR	'rib'
kuRang, kuRkang	'snake'
kupaRng	'son'
wul	'shadow'
liRpi-	'sing'
murn	'skin'
ka(r)ta	'stand'
part-part-kurt	'tomahawk' (***partik** in WK)
kandapul	'whale'

Of the other roots common to Bunganditj and Warrnambool some are shared with Kulin (See § 4.4) and others appear to have cognates elsewhere:

(8)

kuya(ng)	'eel'	**kuya** 'fish' widespread NSW, Q, SA
kapu(ng)	'nose'	**kopi** Yar,Yitha **kap**, Yota **kawu**
la(ka)	'to speak'	**laa.l.pa** 'loud cry' Warlpiri (NT)
mala	'wife'	**mala** 'woman' Dhudhuroa
maRa	'stone'	**ma(r)ti** Yaralde, **marta** Ngamini (SA)
miRit, miRing	**'ground'**	**miRi** Pallanganmidhang
mutjiR	'tomahawk'	**muyitjiR** 'stone' Woiwurrung
paRatj	girl	**parratja** 'woman' Pitta-Pitta (Q)
paRiyt, paRitj	'water'	**pari** 'creek' Wirangu, Parnkalla (SA)
pini(tj)	'hard'	**pinyiyi** Gooniyandi (WA)*
thalayn	**'elbow'**	**tjalung** Gippsland, **thalindja** Dhurga (NSW)
thang(g)a	'teeth'	**tangga** Gabi-Gabi (Q)
wamba	'get', 'fetch'	**wamba** 'to carry' Gabi-Gabi (Q)
wanga	'hear'	**wanga** Colac. Gipps
wiya	'laugh'	**wiya** Pitta-Pitta (Q)
yanda	'throw'	**yarnda** 'to spear' Nyangumarta (WA)

*also found in Tjapwurrung, neighbouring dialect of Western Kulin

Lexical roots shared between dialects of the Bunganditj language and dialects of the Warrnambool language that also occur elsewhere account for approximately 82% of the shared words (47/57 from 162 words compared). Few if any of these can reflect a shared innovation.

I will conclude by suggesting that Bunganditj and Warrnambool probably derive from a common ancestor, Bunganditj-Warrnambool, but the evidence is not overwhelming and since the languages are contiguous diffusion cannot be ruled out. There are a few likely innovations

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[17] There are a few examples of this suffix including *Warrnambool* (**warnam-bul** 'fire-having'). Compare Kulin

such as the genitive case marker –**ngat,** but much of the common grammatical and lexical material is shared with Kulin (See 4.4 below) or more widely.

4.3 Kulin

As indicated in §1, lexical comparison distinguishes the Kulin languages from their neighbours (Table 1) and lexical comparison combined with a comparison of grammatical forms distinguishes three Kulin languages. Western Kulin covers western Victoria north of Hamilton and extends indo neighbouring parts of South Australia and New South Wales. Eastern Kulin covers central Victoria from Port Philip Bay in the south to near Echuca on the Murray. The third Kulin language is Wathawurrung, which occupied an area embracing Ballarat and Geelong (See map 1). The distibution of grammatical forms is discussed in §4.3.1 and the distribution of lexical roots in §4.3.2. The distinctive dialects found in the northern part of Western Kulin, namely Mathi-Mathi, Letji-Letji, Wati-Wati (Swan Hill) and Wati-Wati (Piangil) are discussed in §4.3.3. Colac, a language for which only scanty data is available, appears to be a marginal member of the group. It is discussed in §4.3.4.

4.3.1 Kulin: grammatical forms

Tables 22, 23 and 24 display the better attested grammatical forms. Some such as -**ngin** 'your' and -**tjarra** 'reciprocal' are widespread forms and afford no evidence for the genetic unity of Kulin. The same probably applies to -**ila**, which has a number of functions including reflexive, and is likely to be cognate with reflexives such as Pitta-Pitta -**li** or reciprocals such as Pitta-Pitta and Diyari –**mali** (Blake 1979, Austin 1981). There are, however, a few markers that are peculiar to Kulin and which are found in the three major Kulin languages. These are:

1st person singular subject enclitic	-**an**
2nd person singular subject enclitic	-**arr**
1st person singular possessor enclitic	-(**ng)ik/(ng)ek**
oblique case marker	-**k**
'having' suffix	-**pil** (with variants -**wil** and -**mil**)
marking noun modifiers	-**i** [18]
imperative with intransitives	-**i** (not recorded in Wa)

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[18] This suffix is used on nominals modifying nominals. Most examples are to be found on the possessed entity in inalienable possession constructions, e.g. in Werkaya **putjun-i karr** 'matter from the nose' where **putjun** is 'matter' and **karr** 'nose' (Hercus 1986:84).

The future –**iyn** (-**ayn** in EK) is distinctive, though the same form is recorded in Thanggati on the north coast of New South Wales (Holmer 1966:75ff). If this is not a coincidence then -**iyn** must be a relic.

The distribution of the markers for past tense shows a distinction between Western Kulin (-**in**), Wathawurrung (-**ik**) and Eastern Kulin (-**ath**), as do the markers for ergative and genitive case, though the latter are not uniform across the dialects of Western Kulin. The suffix –**aya**, which converts nominals to intransitive verbs is common to Western Kulin, but not found in the available data in Wathawurrung or Eastern Kulin. It is not certain whether this is an accidental gap in the data or not.

The ergative –**tha** in Eastern Kulin is an example of a marker thinly scattered over the mainland that Sands (1996) picks out as a relic. Its presence here would suggest that this was the earliest attested ergative in Kulin, The forms –**ngu** and –**nga** marking ergative and genitive in Tjapwurrung and Djadjawurrung reflect the widespread markers ergative -**nggu** and locative -**ngga**. There has been a shift in function with –**ngga** from the concrete locative to the more abstract genitive, and a phonetic weakening from a homorganic nasal plus stop to just a nasal. Both these changes also occur in Pitta-Pitta (Q).

TABLE 22: KULIN GRAMMATICAL FORMS

	Mathi	Wemba	Wergaya	Yartwa	Tjap	Djadja	Watha	Eastern
ergative	-(k)u -(ng)u	-(k)u	-(k)u		-ngu, -u	-ngu	-a	-(th)a
genitive		-(ngg)itj	-(k)itj	-nga?	-nga	-nga	-ak	-(th)al
locative	-(k)ata	-(k)ata	-(k)ata	-u	-u	-u	-o	
allative	-(k)al	-(k)al	-(k)al		-ne	-(n)e	-iyu	
dat/loc	-(k)a	-(k)a	-(k)a				-o	-uth etc.
ablative	-(k)unga	-(k)ang	-(k)ang			-(n)ang		-u
'having'	-pil	-pil	-pil	-wil	-wil	-pil	-pil	-pil
nom modifier			-i	-i	-i	-i	-i	
present	-a	-a	-a			-a	-a	-unh
past	-in	-in	-in	-in		-in	-ik	-ath
future	-iyn	-iyn	-iyn	-iyn?	-iyn	-iyn	-iyn	-anh
past participle		-en	-en	-en	-en	-en		
imp. trans	-i	-ak	-ak	-ak	-ak	-ak	-ak	-ak
imp. intrans	-i	-i	-i			-i	-k	-i?
continuative		-ang	-ang	-ang	-ang	-ang		
reciprocal	-therra	-tjerra	-tjerra	-tjarra	-tjarra	-tjarra	-tjarra	-tjirri
reflexive	-ila	-ila	-ila	-ila	-ila	-ila	-la	-ila
potential		-itj			-itj	-itj???	-ayt	-ayt
purposive		-ap				-ap		
N → V intrans	-aya(tha)	-aya	-aya	-aya	-aya	-aya	-parra	-kurri
causative		-(k)una	-(k)una	-kunga	-(k)una	-(k)una, -kunga	-wa, -ma	

TABLE 23: KULIN POSSESSOR FORMS

	Mathi	*Wemba*	*Wergaya*	*Yartwa*	*Tjap*	*Djadja*	*Watha*	*Eastern*
sg. 1	-(ng)ai	-(ng)ek, andak	-(ng)ek	-(ng)ek	-ek	-(ng)ek	-ek	-ik
2	-(ng)in	-(ng)in	-(ng)in		-in	-(ng)in	-(ng)in	-in
3	-(nh)u	-(ny)uk	-(ny)uk	-(ny)uk	-(ny)uk	-(ny)uk	-nhuk	-u
du.1inc	-(ng)al	-angalak	-engalak			-al	-al	-ngal
1ex		-angalakang		-	-	-alak	-alak	-ngan
2		-alak		-	-	-olak	-pulok	-mbul
3		-pulak	-pulak	-ulak?	-	-olang	-pulang	-pulayn
pl.1inc	-(ng)urra	-angurrak	-engurrak	-	-ngurrak	-ingarrak	-atak	-nganyin
1ex		-angurrakang - andak		-andak	-	-andak	-wotjok	-nganyinu
2		-atak				-atak	-ut	-ngut
3		-(tj)anak	-tjanak			-anak	-thanang	-than

TABLE 24: KULIN SUBJECT ENCLITICS

	Wemba	*Wergaya*	*Yartwa*	*Tjapwurrung*	*Djadja*	*Watha*	*Eastern*
sg 1	-anda, -an	-an	-an	-an	-an	-an	-an
2	-arr	-arr			-arr	-arr	-arr
3							
du.1inc	-angal	-angal			-angal	-ngal	-angal
1ex	-angalang				-angalang		-angan
2	-awal	-awul			-awul	-pul	-pul
3	-pula	-pulang			-pulang	-pulang	-pulayn
pl.1inc	-angurr	-angurr			-angurr	-ngitj	-anganyin
1ex	-angurrang				-ngandang		-
2	-atj	-atj	-at	-kat, -wat, -at	-awat	-at	-at
3	-an	-ana, erri			-angatj	-t[h]anang	-nhurr,

4.3.2 Kulin: lexical forms

The division of Kulin into three suggested by the distribution of function forms illustrated in Tables 22, 23 and 24 is supported by the distribtion of lexical roots. Table 25 shows the percentages of common roots between the various Kulin tongues for which we have data.

Table 25: KULIN PERCENTAGES OF COMMON VOCABULARY

	WB	Ma	Le	WS	WP	Wim	Tjap	Dja	Wa	Woi
Wemba-Bereba	-	70	72	75	60	86	82	72	40	36
Mathi-Mathi	-	-	81	81	66	75	66	62	34	29
Letji-Letji	-	-	-	83	57	77	68	57	35	37
Wati (Swan Hill)	-	-	-	-	64	81	71	65	36	31
Wati (Piangil)	-	-	-	-	-	54	54	54	25	23
Wimmera	-	-	-	-	-	-	87	70	40	33
Tjapwurrung	-	-	-	-	-	-	-	81	52	42
Djadjawurrung	-	-	-	-	-	-	-	-	44	40
Wathawurrung									-	51

As can be seen, the percentages within Western Kulin are higher than between Western Kulin, Wathawurrung and Eastern Kulin. There is one exception, namely the Wati-Wati dialect spoken around Piangil, which shares a relatively low percentages of vocabulary with all other Kulin tongues. This is related to the fact that it shares a lot of vocabulary with the neighbouring but only distantly related Yitha-Yitha language (See §4.3.3 below).

The Kulin lexicon reflects a number of roots widespread across the Pama-Nyungan area such as **wa** 'crow', **tha/tja** 'eat', **kuna** 'faeces' and **tjina** 'foot'. There are also words widespread in the southeastern mainland such as **kurnwarra** 'swan' plus a number of words that have apparent cognates in remote languages. Examples include the following,

emu	**kapir/kawir**	Warungu (Q) **kapirri**
spear, long	**kuyun**	various Q'land, Yolngu[19]
star	**turt**	YY, Mari lgs (Q) **thurtu**, Mayali (NT) **dirt**)
wood, stick	**kalk**	Biri (Q), etc. **kalka** 'spear'

There are a few roots that appear to be exclusive to Kulin such as **kanak** 'heel', **tjatjak/tjartak/tjaRak** 'arm', **pu** 'bandicoot', **yurn** 'native cat', and **yundap** 'forearm', plus **liya-wil** 'type of club', which is formed from the widespread root **liya** 'tooth' plus -**wil** 'having'.

A number of roots appear to be exclusive to just one or two of the three Kulin languages. These include:

bad	**nhulam**	Wa, EK	WK *****yartang**
blind	**nhim**	WK, Wa	EK **paramuth**, **turt miRng**
come	**pirn-**	WK, EK	Wa **wart-** (and also in WK)
die	**wik-**	WK, EK	Wa **thirta**
frightened	**pamb-**	WK, EK	Wa **nga(r)p-kunang** (prob. innovation)
good	**manamith**	Wa, EK	WK t(**h**)elk-
grass	**puwatj**	WK, EK	Wa **paRa(R)**
man, young	**kulkurn**	WK, Wa	EK **yan**-**yan**
possum	**walert**	Wa, EK	WK **wile**
speak	**ki-**	WK, Wa	EK **thump**-/**tjump-**

As can be seen, where lexical items are shared between two of the Kulin languages we find some shared between Wathawurrung and Western Kulin, some between Wathawurrung and Eastern Kulin, and some between Western Kulin and Eastern Kulin. It can be difficult to distinguish retentions from innovations, but some words show evidence of word formation processes and therefore likely to represent innovations. Among the forms common to

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[19] Evans and Jones 1997:403

Wathawurrung and Eastern Kulin we find **wuRka-pil** 'black', which contains -**pil,** the 'having'
suffix, and **pakurrk** 'woman', which seems to contain the feminine suffix –**kurrk** (cf. **patjur**
'woman'). But if we use this for grouping Wathawurrung and Eastern Kulin, we find apparent
innovations in other pairs of Kulin languages. For instance, the widespread root **pula** 'two'
appears with an extra formative as **pulatj** in Western Kulin and Wathawurrung (and
Warrnambool), and *parting 'knee' appears to be an innovation in WK and EK since
Wathawurrung **pun**, with its apparent cognates in Gippsland and further afield would appear to
be a relic. For most words there is no clue as to whether a form found in a pair of Kulin
languages is an innovation or a relic complementing an innovation in the third language. This
distribution is not unexpected given that the three Kulin languages are in contact. There does
not appear to be any way of subgrouping within Kulin.

4.3.2 The Mathi group

Within Western Kulin four dialects spoken in the north western part of the territory stand out by
virue of having a number of distinct forms. These dialects are Mathi-Mathi, Letji-Letji and the
Wati-Wati dialect spoken around Swan Hill, all of which share over 80% of vocabulary, and the
Wati-Wati dialect spoken around Piangil, which shares a relatively low percentages of roots
with a other three, but shares various distinctive characteristics with them. The low percentage
of common roots is related to the fact that the Piangil variety of Wati-Wati shares a lot of
vocabulary with the neighbouring, but only distantly related, Yitha-Yitha language.

The distinctive grammatical forms found in the four dialects are illustrated in Table 26.
Note that in contrasting the distinctive first person singular forms with those of other Kulin
tongues, we need to remember that most of the latter have lost their free forms. **Yandang** is
found in Wemba-Wemba and **ngatj** in is found in some Wemba-Bereba sources . The first
person singular possessor form -(**ng**)**ai** appears to have been borrowed from Baagandji (Hercus
1982: 89, 128 and p.c.).

Table 26: DISTINCTIVE GRAMMATICAL FORMS IN THE MATHI GROUP

	Mathi group	other Western Kulin
first person singular	**yiti** (WP **nyiti**)	**yandang** , **ngatj**
first person singular possessor	**-(ng)ai**	**-(ng)ek**
third person singular possessor	**-u**	**-uk**
nominative	**-i**	-

The expected first person pronoun would be **ngatju** or **ngathu**, which appears as **ngatj** in some Wemba-Bereba sources. **Yiti** may have arisen via the following stages: **Ngatji**> **ngitji**> **nyiti**>**yiti**. If the nominative -**i** had become attached to **ngatj**, then there could have been regressive vowel harmony, palatalisation and subsequent denasalisation. All of these changes are attested in the Australian data. However, one would expect **yitji** or **yithi** rather than **yiti**. The difference in the possessor forms is just the lack of the formative –**k** in the Mathi group. The nominative –**i** is certainly an innovation, probably derived from the –**i** used to mark nominal modifiers in other Kulin tongues (Hercus 1986: 84 and p.c.). However, the four dialects of the Mathi group are in contact and this innovation may have diffused. It is significant that here are very few lexical differences between the Mathi group and the other dialects of Western Kulin. The few forms peculiar to the Mathi group within Western Kulin are shown in Table 27. The forms for 'nose' appear to be cognate with Dhudhuroa **thindi.wa** in northeastern Victoria, and the root for 'big' seems to match **krawi** in Yaralde, so there is little evidence of lexical innovation.

Table 27: DISTINCTIVE LEXICAL ROOTS IN THE MATHI GROUP

English	Mathi-Mathi	Letyi-Letyi	Wati (Swan Hill)	Wati (Piangil)
and	nga	pa	nga	pa
by and by	tharti	ta(r)tim	ta(r)ti	
cockatoo, white	kìrréndi		keRangi, keRanyi	keRangi, keRandi
nose	thindi	tjandji	tjandji	tjandhi
long ago	thàlékata		tjaleka *	
plenty	kuku		kuku	
quick	lirrka		lirrka	
sister, younger		mini, mianiki	mini, miani	meniki
speak, to			lata	latuna
speak, to	yarna	yarna		
stone		maki	maki	matji**
swell up, full	wawunatha		wawaya	wawuna

* The root **tjalek** appears in other dialects of Western Kulin and in Wathawurrung with other meanings such as 'yesterday' and 'evening'.
The form **mak is found in Yitha-Yitha

4.3.3 Colac

As mentioned in §1, the Colac language, the language of the Gulidjan or *Kolak ngat* 'Sand people' is poorly documented. The Gulidjan occupied a surprising small territory in fertile country surrounded by dialects of the Warrnambool language, Western Kulin and Wathawurrung (Clark 1990: 220-35). There is practically no grammatical information save what can be gleaned from word lists, but what there is suggests Colac is a Kulin language,

though standing apart from the other three. Some percentages of common vocabulary for Colac and other tongues from western and central Victoria are shown in Table 28.

TABLE 28: COMPARISONS WITH COLAC BY SEMANTIC FIELDS

	Bung	Warr	Wim	Tjap	Dja	Watha	Woi
overall	18	23	29	31	31	28	27
body	29	35	40	42	44	44	41
human	21	-	21	21	21	14	19
animate	5	26	15	16	20	16	26
inanimate	15	31	36	44	41	31	25
culture	50	50	33	29	29	29	43
predicates	16	20	21	33	33	32	32

In terms of overall percentages Colac shares less with the Kulin tongues than they do with one another, and it shares less again with Warrnambool and Bunganditj.[20] The overall percentages owe a great deal to body nouns. For instance, a comparison with Wathawurrung yields 17 out of 39 matches with body nouns (44%) in an overall count of 183 words. Figures in the other categories are based on too few comparisons to be of much significance, except for predicates where the figure of 9 out of 28 for Wathawurrung (32%) is typical and around the overall average, giving no clear indication of a close genetic affiliation with any other of the neighbouring languages.

Though there is practically no grammatical data available, the following pronouns are recorded.

		nominative	genitive
(10)	I	**ngathuwit**	**ngathangit**
	we two	**ngathula**	**ngathangula**
	1st person	**ngathangorrok**	**ngathangangorrok**
	1st person [inc?]	**ngathunginak**	

The first formative in these pronouns, **nga-**, is no guide to genetic affinity, since it is practically ubiquitous within Australia. The second formative, which we have transcribed -**thu**, resembles the second formative in Bunganditj **ngathuk**, Warrnambool **ngathuk** and Wemba-Bereba **ngatj**, but it must be remembered that -**thu** is a widespread formative in first person singular pronouns (ultimately an ergative marker). As noted in § 3, Colac shares with the Warrnambool Language and Bunganditj a distinctive means of forming non-singular pronouns, namely by

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[20] Colac scores 17% with Yota-Yota, 11% with Yabula-Yabula, 19% with Dhudhuroa, 20% with Pallanganmiddang and 19% with Gippsland See Table 1).

using the singular as a stem and adding person/number markers, witness **ngathuwit** and **ngathu-la** in (10). However, morpho-syntactic patterns are eminently diffusible, so this does not give any evidence of genetic proximity with Warrnambool and Bunganditj.

Apart from this, the evidence that can be gleaned from pronoun forms suggests a connection with Kulin. The genitive of three pronoun forms is clearly formed with -**ang**, which matches -**ang**- in the Wimmera tongue. The form **ngathangorrok** looks as if it contains -**angurr**-, the bound form for first person plural inclusive in Wemba-Bereba.

The second person singular possessor form is recorded as -**ngin**, which matches the Kulin form, though it is not peculiar to the area

The form *malankaugnek* is recorded for 'my aunt'. This appears to be **malankau-ngek** or **malankaung -ek,** where -**ngek** or -**ek** is the form for first person possessor in the Kulin languages.

A number of body part terms are recorded with the suffix -*gnenok*, which we transcribe as -**nyin(h)uk** (possibly **-ngin(h)uk**). This is obviously a third person possessor form and its appearance in word lists matches the distribution of -**(nh)u** in the Mathi group and in Woiwurrung, **-(nh)uk** in the other tongues of Western Victoria and -**a^tnin** in the Warrnambool language. A number of compound body part terms also contain **nyinuk** as in **lirri nyinuk ma** 'fingernail' where **lirri** is 'nail' and **ma** 'hand'. This expression is probably literally 'nail-its hand'. The form –**nyin(h)uk** is distinctive, but the final syllable may match –**(nh)uk**, the third person possessor form in Kulin.

However, though most of the evidence from grammatical forms suggests that Colac is a Kulin language, the vocabulary is not so obviously Kulin, and it suggests that if the Colac language is Kulin, it is a rather marginal member of the Kulin group. The vocabulary contains a large proportion of words recorded only in this language (e.g. **purterong** 'child', **ngolika** 'to drink', **ngolimeRik** 'eagle', **maynka** 'frightened', **thaRong** 'man', **part**-**part** 'moon', **pungu** 'possum', **patka** 'to sit', **winmala** 'to steal', **waRa** 'stomach', **tRi** 'stone'and **miRi** 'teeth'), plus a few words reflected in non-contiguous languages which must be relics, e.g. **birri** 'breast', which is found in northeastern Victoria (Pallanganmiddang and Dhudhuroa) and New South Wales (Wiradjuri), **putjung** 'egg', which has likely cognates in Yota-Yota, Pallanganmiddang and the Gippsland Language, and **pun** 'knee', which is shared with Wathawurrung, the Gippsland Language and other distant languages.[21]

4.4 Bunganditj, Warrnambool and Kulin

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[21] **Birri** 'breast' is likely to be a based on a nursery root augmented by a non-singular suffix.

A feature of the area is widespread sharing of vocabulary between Kulin, Bunganditj and the Warrnambool language. This raises the question of whether they form a genetic group, but, as illustrated above, a survey of grammatical forms gives no evidence of such a connection. Some of the shared words are widespread roots such as **thara** 'thigh' and **thalayn** 'tongue', and others are widespread in the southeastern mainland (Table 29).

TABLE 29: KULIN, BUNGANDITJ, WARRNAMBBOL SHARED ROOTS FOUND IN SOUTHEASTERN

MAINLAND

angry	**kuli**	WK, Bu	Baagandji (NSW) **kurlika**
bite	**pund-**	WK, Wa, EK, Warr	Gipps
blood	**kurrk**	WK, Wa, EK, Bu, Warr	Yar, Gipps etc.
cheek	**wang**	Wa, EK, Warr (Tjakot)	Gipps, Thawa (NSW)
cherry	**paloyt**	WK, Wa, EK, Bu, Warr	Gipps
dog	**kal**	WK, Wa, Bu, Warr	SA & Darling area
ear	**wir**(**ng**)	WK, Wa, EK, Bu, Warr	Gipps **wring**
eye	**mir**(**ng**)	WK, Wa, EK, Bu, Warr	Gipps **mri**
father	**mama**	WK, Wa, EK, Bu	Pall, Dhu, WD
feather	*****wirtayn**	WK, Bu	Gipps **wirt**-**wirt**
fire	**wiyn**	WK, Wa, EK, Bu, Warr	Wir etc.
louse	**munya**, **murna**	WK, Wa, EK, Bu	YY, Dhu, Wira, etc.
mother	**papa**	WK, EK, Bu	Pall, Dhu
mouth	**wurru**	WK, Wa, EK, Warr	YY, Yab[22]
neck	**nyan**	WK, Wa, EK, Warr	Gipps, Wira (NSW)
shield	**malkarr**	WK, Wa, EK, Bu, Warr	YY, Dhu, Wira (NSW)
stick, a	**kana**(**k**)	WK, Wa, EK, Bu, Warr	YY, Gipps, Wira (NSW)
stomach	**pili** (Bu **puli**)	WK, EK, Bu	YY **puli**, Gipps **pulen**
throw	**yungk-**	WK, Wa, Bu	YY, Pall
thunder	**marndar**	WK, Wa, Bu, Warr	Yar, Dhu, Pall

If we look at the distribution of shared vocabulary, we find first that there is a higher percentage of shared roots between neighbours than between distant tongues. As illustrated earler in Tables 1 and 17 Bunganditj shares 33% of vocabulary with Tjapwurrung, but less with Wathawurrung and less again with Woiwurrung. Similarly, Warrnambool shares 37% with Tjapwurrung, but 27% with Wathawurrung and only 18% with Woiwurrung.[23]

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[22] In Bunganditj **wuRa** is 'cheek'**;** **wurru** is likely to be cognate with **wur(r)u** 'throat' found in Wiradjuri, Gamilaraay and Wangaaybuwan (NSW).

[23] In Blake 2011 I distinguish Yartwatjali from Tjapwurrung. When this paper was written I lumped the two together. As can be seen from Map 1, Yartwatjali is located between Bunganditj and Tjapwurrung.
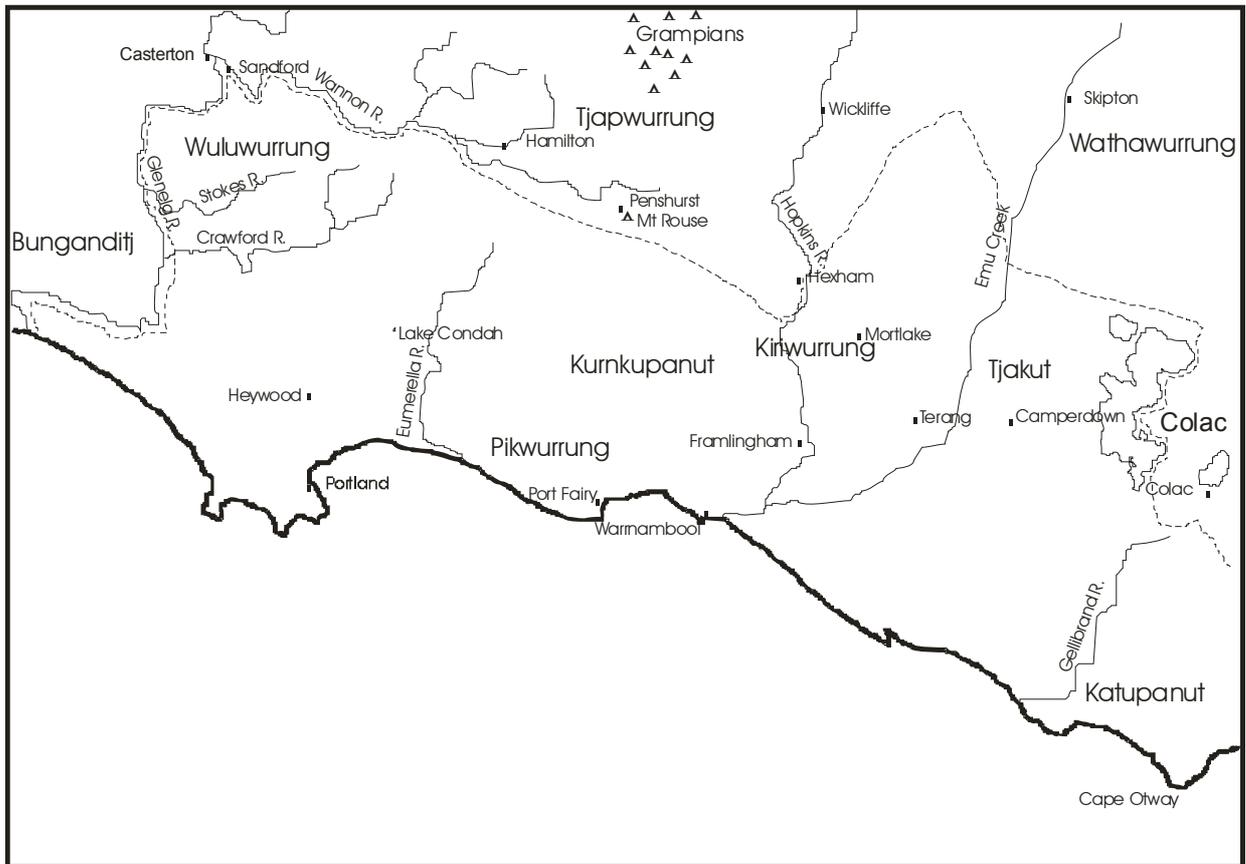
Map 2: Warrnambool dialects

The sources for the Warrnambool language cluster into four dialects: Wuluwurrung (north-western), Pikwurrung (southern), Northern (including Dawson's Kurnkupanut) and Tjakut (north-eastern). It is significant that the dialects closer to Kulin share a higher percentage of common forms with neighbouring Kulin tongues (See Map 2). While Pikwurrung shares 30%, Northern shares 34%, Tjakut 36% and Wuluwurrung 39%. This tendency is reflected in the distribution of particular forms. Some shared roots that are widespread in Kulin have limited penetration in the Warrnambool language suggesting borrowing from Kulin into the Warrnambool language. Examples include:

(11)   **kirk-kirk** 'mosquito'   Kurnkupanut, Northern

   kuloyn 'man'   Wuluwurrung

   muRa 'wombat' (Kulin **mutja**) Wuluwurrung

   mut-mut 'cold'   Wuluwurrung (also Bunganditj)

   ngakuwi 'shadow'   Northern

   pakar 'shoulder'   Northern

   parraynmal 'emu'   Wuluwurrung, Northern

   parut 'kangaroo rat'   Northern

popiya 'bucket' (Tjap)	Northern
wart 'back'	Tjakut
wuka 'give'	Wuluwurrung, Northern
wurru(**ng**) 'mouth'	Wuluwurrung, Northern
yungguit 'canoe'	Wuluwurrung

The last word in (11), namely **yungguit** 'canoe' also appears in one source for Bunganditj, and in some sources for Ngayawang and Yitha-Yitha. It is found right across Western Kulin (both as **yungguip** and **yungguit**) so the distribution clearly suggests borrowing from Kulin into neighbouring languages.

There is a widespread form **tharang/tjarang for** 'thigh', but the form **karip** is found in Western Kulin, Wathawurrung, Warrnambool and Bunganditj. However, two sources for southern dialects of the Warrnambool language record *tera* and *tar-rup*, apparent reflexes of the widespread form, which is also retained in Eastern Kulin. It would appear that **karip** has been borrowed into the Warrnambool language, but has not entirely ousted **tharang/tjarang**.[24]

In the case of Bunganditj it is difficult to make generalisations about dialect differences since the more substantial sources all come from the south and the northern dialects are represented only by short word lists in Taplin 1879. However, it is interesting to note that some roots pervasive in Kulin are found only in the northern dialects of Bunganditj, namely **kurrk/kurruk** 'blood' and **papi** 'mother', plus **yungguip/yungguitj** 'canoe', which was mentioned above.[25]

Some shared words are found only in Western Kulin and Bunganditj. These include reduplicated forms such as **katim-katim** and **letim-letim** for 'boomerang'. The development of these reduplicated forms seems to be an areal phenomenon and the reduplicated formations appear to have ousted forms built on **wan** such as **wani** in the Mathi group and **wankim** in Wathawurrung and Eastern Kulin (also Gippsland **wan**.**kim**, Pallanganmiddang **wan**.**ki**, Dhudhuroa **wankewa**, etc.).

A few words afford evidence of having been borrowed from Bunganditj into Kulin such as **kuma mir** 'white person', which is transparently 'green/blue eyes' in Bunganditj but opaque in Kulin.

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[24] **Karip** may be related to Kulin **kar** 'leg' and **kara** 'to kick'. There is –**ap**, an agent/instrument-forming suffix, in Tjapwurrung, but I can find no evdence for –**ip**.

[25] The distribution of forms for 'hand' is interesting. The form widespread in the Pama-Nyungan area is **mara**, but **marna** is found in Kulin and Bunganditj (and in Ngarigu (east Gippsland) and Dhurga (southeast NSW)). Warrnambool has **mara**, as do two sources for Bunganditj.

Some of the shared words are fauna and flora terms such as **patjuk**/**parrutj** 'kangaroo rat' and **muthang** 'blackwood', and some are material culture terms such as **kiRam** 'spear shield', all categories likely to be borrowed, and some are body-part terms such as **putj** 'liver', which, although considered basic vocabulary and resistant to borrowing, are clearly easily borrowed (See §5).

In general it would appear that the widespread sharing of roots between Kulin and Bunganditj and the Warrnambool language is due to diffusion. This diffusion along the southern border of Kulin contrasts with what we find along the other borders and suggests sustained, friendly contact.

4.5 Kulin's other neighbours

Even if Kulin does not have a close genetic connection with Bunganditj and Warrnambool, the fact remains that there is a dramatic difference between the percentages for Kulin-Bunganditj and Kulin-Warrnambool on the one hand and Kulin and other neighbours on the other. Some percentages are given in Table 1, to which we could add 12% between Wiradjuri and Wemba-Bereba. The percentages are around 20% or less, with a few higher figures that are discussed below. These figures are made up of pan-mainland forms such as **tha-**/**tja-** 'to eat', **kuna** 'faeces', **thina**/**tjina** 'foot', **ngu-** 'to give', **yan-** 'to go', **nha-** 'to see', **nyin-** to sit', **pula** 'two', **minya** 'what', **winya**/**wintha** 'where' and **ngan-** 'who'. There are also examples of widespread forms such as **kuli** 'angry', **wan-** 'boomerang', **pirri** 'breasts', **kaka** 'come here!', **wiyn** 'fire', **kuya** 'fish', 'eel', **mama** 'grab', **yarra** 'whiskers' and variants of **nga**, **ku** and **yi** 'yes'. Some contribution is made by roots widespread in the area **mukarr-mukarr** 'bag', **kal** 'dog', **tulum** 'black duck', **munha** 'louse', **nhan** 'neck', **malkar**r 'waddy shield', **marndarra** 'thunder' and **kana** 'yamstick'. There are also other examples involving categories likely to be diffused. These include **kutjeRu** 'club' (EK **kutjeRuyn**, Dhu **kutjeRu**, Gipps & Ngarigu, **kutjeRung**), **wankim** 'boomerang' (EK, Wa **wankim**, Pall **wanki**, Dhu **wankiwa**, Gipps **wankim**), **kuRuk** 'brolga' (Warr, EK **kuRuk** 'brolga', Gipps **kuRakan**), **kawan** 'echidna' (EK & Gipps), **thuliyn** 'goanna' (Kul & Wir), **wila** 'brush-tail possum' (WK **wila**, Wir **wilay**) and **pana** 'ring-tail possum' (WK & YY).

Some roots are found in western Victoria and eastern Victoria but not central Victoria, their discontinuous distribution suggesting they are relatively old forms interrupted by innovations..

back	**panhu**	Bu, YY, Dhu
die	**thirta**	WK, Gipps
elbow	**tjalayn**	Bu, Warr; Gipps **tjalung**

egg	**putjung**	Co**;** YY **putjanga**, Pall **puya**, Gipps **puyang**
frost	**than**	WK, Wa, Gipps, Ngarigu
hear	**wanga**	Bu, Warr, Gipps
knee	**pun**	Wa, Co, Gipps
shadow	**ngak**	WK, Gipps
track	**than**	Warr; YY **tana**
swim	**wira**(**ka**)	WK, Gipps
wife	**mala**	Bu, Dhu **mala** 'woman'

Where the figures rise above 20% it is between neighbours and diffusion is the likely cause. An example can be found on the northern perimeter of Kulin. There are five languages on the lower Murray, which Dixon (2002) calls the Lower Murray languages. They are (going upstream) Yaralde, Ngayawang, Yu-Yu, Keramin and Yitha-Yitha. They share sufficient vocabulary for them to be considered some kind of group, but it remains unclear whether they form a subgroup, a relic group or an areal group. A notable feature of the group is that they share very little vocabulary with their neighbours outside the group. Yitha-Yitha, for instance, shares only 7% with Wiradjuri. Where there is grammatical data available, there is nothing to suggest that any of the group is likely to be closely related to any outside. However, there is some sharing between the north-eastern Kulin tongues and Yitha-Yitha and to some extent Keramin. Yitha-Yitha shares 27% with nearby Wati-Wati (Swan Hill) and 35% with Wati-Wati (Piangil), but only 17% with Wemba-Bereba and Werkaya. The distinctive words shared between Yitha-Yitha and Wati-Wati and northern Kulin dialects include **tiRk** 'cheek', **wirpil** 'eagle', **mundji** 'mosquito', **ninanguRi** 'pelican', **makaRi** 'rain', **wirrwa** 'to run', **mak** 'stone', **tharrin** 'axe' and **kalko** 'yesterday'. **TiRk**, which loses its rhotic in Letji-Letji (see Tables 9 & 10), shows up in Yitha-Yitha as **tik**, so it must be a borrowing from Kulin, likewise **wirpil** 'eaglehawk', which shows up in Yitha-Yitha as **waipili** and **wirrwa** 'to run', which appears in Yitha-Yitha as **wiwa**. Yitha-Yitha **thaRin** 'axe' corresponds with **thayini** in Piangil, so it must be a borrowing in the other direction, the intervocalic **r** having become a palatal glide (See Table 11).[26]

There are a number of roots found in the Lower Murray languages and the Upper Murray languages, which are not shared with the intervening Kulin languages, a point originally noted by Hercus (pers. comm.). This perhaps suggests that Kulin may have expanded north and separated erstwhile neighbours. It is also interesting to note that there were a number of small languages inhabiting the Murray Valley, but Kulin is an exception in that it covers a wide area across the plains, but has an extension north across the Murray. As noted

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[26] **Kanaki** 'a type of club' in Kulin also appears in Yaralde. The root appears to be Kulin **kanak** 'heel' , probably because the club has a heel-like knob on the end. The term is motivated in Kulin but not in Yaralde, so it must be a borrowing into Yaralde.

earlier there is extensive sharing of vocabulary between Kulin and both Bunganditj and Warrnambool, but little borrowing between northern Kulin and neighbouring languages, apart from that between Wati-Wati (Piangil) and Yitha-Yitha. It may be that Kulin has long been in contact with Bunganditj and Warrnambool, but not so long with languages along its northern border. Examples of roots that seem to be shared between Lower and Upper Marray languages are given in Table 30.

Table 30: LOWER AND UPPER MURRAY

English	Lower Murray	Upper Murray
brother, elder	Ng **maRuk(k)o**	Dhu **maRukani**
bro, younger	Ng **t[h]at[h]i**	YY **thatjipa**
bite	Yi **yingan**	YY, Yabula **yin-**
camp	Ya **manti**	YY **manu, mana**; Pall **mani**[27]
child	Ng **nguwil**	Yabula **nguliwak**
creek, river	Ya **kuRi**	Pall **kiRu**
crow	Ke **walk, waak**	YY, Yab **waka**, Dhu, Gipps **wakaRa***
drink	Ke, Yi **nguku(lu)**	Ngarigu **ngukai,** Thawa **ngukal**
duck, black	Ya **nakaRi**, Ng, Yu **naka**	YY **naika**
ear	Ng **marlo**, Ke **mar(al)**, Yi **marl**	YY **maRmu**, Yab **maRam**, Pall, Dhu **maRampa**
elbow	**kuki**	YY **kuk-**
fat	Yu **patuRa**	Pall **pataRa**
hair	Yar **kuRi**	Pall **kuRuwa**
head	**pet-puko**	YY **puko**, Pall **puwa**, Gipps **pRuk**
mother	Ng, Yu **ngaka**	Yab **ngakalam**
mother's father	Ng **ngatha**	Gipps **ngatjen**
mopoke	Ng **kokok**	YY **kokok**
mouth	**toRi**	Pall **theRa**
neck	Ng **nguRo**	Pall **nuRu**
nose	Yar **kopi**, Ke, Yi **kap** (Bu **kapu**, Warr **kapung**)	YY, Yab **kawu**
quick	Ng **peRata**	YY **piRetj**
rain	Yar *parnar*	Ngarigu *pana*
smoke	Yi **thum(p),** Ke **thu**, (Warr **thuwung**)	Dhu **thumpapa**,YY **thonga**, , Pall **thuwu**, Gipps **thun**
snake	Yu **tuwu**, Baa **thuru**	Pall **tjuyu**, Dhu **tjutjuwa**, Gipps **thurung**
spear, long	Yar **wondi**	Pall **wonda**
star	Yitha **tingi**	Pall **tjimpa [<tjing-pa?]**, Dhu **tjimpawa**
steal	Ng **petin**	YY **pitha**
take	Yar **mandi**	Pall **maynda**
thigh	Yu **manta**	Pall **manta**
tooth	Yar **taRi**, Yu **taRakin**, Ke, Yi **tRik**	YY **tiRa**, Yab **taRawil**
tooth	NG **ngent.ko**	Gipps **ngarndak**
uncle	Ng **wawa**	YY **wawa**
what	Ya **minyi**	NE **minhe**

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[27] For the correspondence between intervocalic **nt** and **n** compare widespread **marntara** 'thunder' with YY **manara**.

where	Ng **ta'la**	Dhu **thawuna**
who	Ya **nganggi**	NE **ngani**
woman. old	Yi **koRam-koRam**, Ke **pik-koRamp**	YY **kuR(u)muka**

*The onomatopoeic root **wa**- is widespread. What is noted here as significant is the form **waka**.

5 Conclusions

It is tempting to think that the pattern of languages and dialects found in Australia at the period of European occupation reflects the fate of a proto-language having broken up into daughter languages, those daughter languages having split into grand-daughter languages and so on. But it is sobering to note that hardly any widespread forms such as **tjinang** 'foot' or any of those scattered forms such as **kuli** 'angry' appear in Tasmania, which was cut off from the mainland about 14,000 years ago (Lambeck & Chappell 2001).[28]

One general point to emerge is that comparisons of vocabulary reveal that body nouns consistently show a higher percentage of resemblances than the overall percentages. The traditional wisdom is that body nouns are basic vocabulary and therefore resistant to borrowing. However, there is reason to question this. A survey of body nouns reveals that while a few are distributed over most of the mainland, many body roots cover large continuous areas. If body nouns have been strongly retained from a remote proto-language that is reflected over the continent, then we would expect them to have a distribution over the continent with gaps here and there where they have been replaced. Some roots such as **thalayn** 'tongue' and **kata** 'head' pretty much fit this picture. However, many other body roots are confined to particular areas. These of course could reflect a proto-language, but their distribution tends not to be supported by similar distributions of other lexical and grammatical roots. It is hard to escape the conclusion that roots for some body parts are subject to diffusion. The case of **karip** 'thigh' was mentioned above, as was the appearent borrowing of **mitjuk** 'skin' from Kulin into Keramin.

Consider. for instance, the following roots:

ngama 'breast' A nearly continuous distribution in the eastern mainland from southern Cape York to the Murray, extending into the Lake Eyre region of South Australia. **Ngama** also appears as 'mother' in this same area, but also in a few languages on the Queensland-Northern Territory border plus some further west such as Walmatjari.

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[28] **Pula** 'two' is found in south-eastern Tasmania (Plomley 1976:331)

mulya 'nose' A continuous distribution covering Western Australia, south of the Kimberleys, and South Australia and adjacent parts of Queensland and the Northern territory. However, it may be that similar forms such as Gamilaraay **murru** are related.

nganka 'whiskers'. A continuous distribution covering Western Australia, south of the Kimberleys, and South Australia, the southern part of the Northern Territory and extending into western Queensland. This is to some extent complemented by **yarrayn** 'whiskers', which covers continuous area from south-eastern Queenland down to the Victorian coast.

yuri 'ear'. A continuous distribution in South Australia and the lower Darling (Baagandji). The form **pina** is widely scattered, mostly over the Pama-Nyungan area, including one source for Ngarigu.

kuma(ri) 'blood'. A pretty much continuous area in South Australia and Queensland. The most widespread word for blood is **kurrk**.

Summary

A comparison of lexical and grammatical forms in the Murray Valley and the area to the south reveals the following:

- The Kulin languages represent a genetic group. They split into Western Kulin, Wathawurrung and Eastern Kulin. Certain roots are found exclusively in the pair WK-Wa, others in the pair WK-EK and others again in the pair Wa-EK. This distribution does not allow a neat subgrouping within Kulin. This is not unexpected where people are in contact. Neat splitting of the type that can be represented in a tree diagram is possible where the speakers of a language go their separate ways, but not where they remain in contact. In Austronesian, for instance, we find both situations. The comparative method based on shared innovations works well where people sail off to distant islands, but works less well with those who remain in contact (Pawley and Ross 1995).
- Western Kulin may have expanded north across the Murray. It is a 'big' language and is the only 'big' language to cross the Murray Valley, a valley otherwise the preserve of 'small' languages. There are relatively few sharings of vocabulary between this northern extension of Kulin and its neighbours compared with the massive sharing between Kulin and both Bunganditj and Warrnambool.
- On the evidence of some grammatical forms in the word lists it seems that Colac may also be a Kulin language, though there is little support for this relationship in the lexicon.

- Bunganditj and Warrnambool probably form a genetic group.

- There are a number of roots whose distribution is coextensive with Bunganditj, Warrnambool and Kulin which raises the question of whether the three may form a genetic group. However, there are no distinctive grammatical forms shared across these languages, only widely distributed ones, and the distribution of shared vocabulary is greatest between neighbours, which suggests diffusion.

- Certain features are distributed on an areal basis. These include consonant-final nouns, vowel-final nouns, the development of intervocalic retroflex stops into a palatal stop or a rhotic glide, and the use of pronouns consisting of a common base plus various person-number markers.

References

Austin, P. 1981. *A grammar of Diyari*. Cambridge: Cambridge University Press.

Blake, B.J. 1979. Pitta-Pitta. In R.M.W. Dixon and B.J.Blake eds. *Handbook of Australian languages*, volume 1. Canberra: ANU Press and Amsterdam: John Benjamins, 182-242.

Blake, B.J. 1987. Redefining Pama-Nyungan: towards the prehistory of Australian languages. *Aboriginal History* 1: 1-90

Blake, B.J. 1991. Woiwurrung: the Melbourne language. In R.M.W.Dixon & B.J.Blake eds. *The Handbookof Australian languages* vol. 4. Melbourne: OUP (Australia), 30-122.

Blake, B.J. 2003a. *TheWarrnambool language*. Canberra: Pacific Linguistics.

Blake, B.J. 2003b. *The Bunganditj (Buwandik) language of the Mount Gambier region.* Canberra: Pacific Linguistics.

Blake, B.J. (to appear) Dialects of Western Kulin, Western Victoria: Yartwatjali, Tjapwurrung, Djadjawurrung.

Blake, B.J. and J. Reid, 1998a, Classifying Victorian languages. In B. Blake ed. *Wathawurrung and the Colac language of Southern Victoria*. Canberra: Pacific Linguistics, 1-58.

Blake, B.J. and Reid, J. 1998b. Sound changes in languages of Western and Eastern Victoria. *Australian Journal of Linguistics* 18: 57-72.

Blake, B.J. & J. Reid, 1999. Pallanganmiddang: a language of the Upper Murray. *Aboriginal History* 23:15-31.

Blake, B.J. & J. Reid, 2002. The Dhudhuroa language of north-eastern Victoria: a description based on historical sources. *Aboriginal History* 26177-210.

Blake, B.J., Clark, I. and Reid, J. 1998. The Colac language. In B.J.Blake ed. *Wathawurrung and the Colac language of southern Victoria,* 155-76. Canberra: Pacific Linguistics.

Blake, B.J., Clark, I and Krishna-Pillay, S. 1998. Wathawurrung: the language of the Geelong-Ballarat area. In B.J.Blake ed. *Wathawurrung and the Colac language of southern Victoria,* 58-153. Canberra: Pacific Linguistics.

Blake, B.J. 2011. Dialects of Western Kulin, Western Victoria: Yartwatjali, Tjapwurrung, Djadjawurrung. [Web reference to come]

Blake, B.J., Hercus, L., and Morey, S. (to appear) *The Mathi group of languages.*

Bowe, H. and S. Morey, 1999, *The Yota-Yota (Bangerang) language of the Murray Goulburn including Yabula-Yabula*. Canberra: Pacific Linguistics.

Bowe, H., Peeler, L. and S. Atkinson, 1997, *Yota Yota language heritage*. Clayton: Monash University Department of Linguistics

Breen, Gavan. 1990. *Salvage studies of western Queensland Aboriginal languages*. Canberra: Pacific Linguistics.

Breen, Gavan. 2001. The wonders of Arandic phonology. In J. Simpson et al. eds *Forty years on: Ken Hale and Australian languages*. Canberra: Pacific Linguistics, 45-70.

Capell, A. 1956. *A new approach to Australian linguistics*. Sydney: University of Sydney (Oceania Linguistic Monographs No 1).

Clark, I.D. 1990. *Aboriginal languages and clans: an historical atlas of western and central Victoria*. Monash Publications in Geography 37. Clayton: Monash University.

Crowley, T. & and R.M.W. Dixon. 1981. Tasmanian. In R.M.W.Dixon & B.J.Blake eds. *The Handbookof Australian languages* vol. 2.   Canberra: ANU Press & Amsterdam: Benjamins.

Curr, E.M., 1886-7. *The Australian Race*. Melbourne: Government Printer.

Dawson, J. 1881, *Australian Aborigines, the languages and customs of several tribes of Aborigines in the Western District of Victoria, Australia*. Melbourne: George Robertson.

Davy, H. 1899. 'Lower Lachlan and Murrumbidgee', Humphrey Davy, Glen Dee, Balranald. In J. Mathew *Eaglehawk and crow*, 208ff. London: Nutt & Melbourne: Melville, Mullen & Slade.

Dixon, R.M.W. 2002. *Australian languages: their nature and development*. Cambridge: Cambridge University Press

Dixon, R.M.W. 2007. Grammatical diffusion in Australia: free and bound pronouns. In A.Y. Aikhenvald and R. M. W. Dixon, (eds.) *Adjective Classes: A Cross-Linguistic Typology*. Oxford, Oxford University Press: 67–93.

Donaldson, T. 1980. *Ngiyambaa: the language of the Wongaaybuwan*. Cambridge: Cambridge University Press.

Eades, D.E. 1976. *The Dharawal and Dhurga languages of the New South Wales south coast*. Canberra: AIAS.

Evans, N. 2003 ed. *The Non-Pama-Nyungan languages of northern Australia*. Canberra: Pacific Linguistics.

Evans, N. & Jones, R. 1997. The cradle of the Pama-Nyungans: archaeological and linguistic speculations. In P. McConvell & N. Evans. 1997. *Archaeology and Linguistics: Aboriginal Australia in global perspective*, pp 385-417. Melbourne: OUP.

Eyre, E.J. 1845. *Manners and customs of the Aborigines and the state of their relations with Europeans*. London: T. & W. Boone.

Fesl, E. 1985. *Ganai: A study of the Aboriginal language of Gippsland based on 19th century materials*. Monash University master's thesis.

Flood, J. 1983. *Archaeology of the dreamtime*. Sydney: Collins.

Fulford, F.W. 1886. North-west Bend of the Murray River. In Curr II: 278-9.

Hale, K. 1976. On ergative and locative suffixial alternations in Australian languages. In R.M.W.Dixon ed. *Grammatical categories in Australian languages*, 414-7. Canberra: Australian Institute of Aboriginal Studies and New Jersey: Humanities Press.

Harvey, M. 2009. The genetic status of Garrwan. *Australian Journal of Linguistics* 29.2:195-244

Hercus, L. 1986. *Victorian languages: a late survey*. Canberra: Pacific Linguistics.

Hercus, L.A. 1982. *The Baagandji language*. Canberra: Pacific Linguistics.

Hercus, L.A. 1992, *Wembawemba dictionary*. [ISBN 0 646 10459 4]

Holmer, N.M. 1966. *An attempt towards a comparative grammar of two Australian languages.* Canberra: AIAS.

Horgen, M. 2004. *The languages of the Lower Murray*. MA thesis. Bundoora: La Trobe University.

Hosking, D. & McNicol, S. 1993. *Wiradjuri*. Canberra: Produced with assistance of AIATSIS.

Howitt, A.W. 1904. *The native tribes of South-east Australia*. London: Macmillan (Facsimile ed. Canberra: Aboriginal Studies Press 1996)

Lambeck, K. and Chappell, J. 2001. Sea-level change through the last glacial cycle. *Science* 292: 679-86.

Larmer, J. 1889. Junction of Lachlan and Murrumbidgee. JPRNSW 32:227-8.

Macredie, T. 1887. Piangil. List 201[a] in Curr III 448-9.

Mathew, J. 1899. *Eaglehawk and crow*. London: Nutt, and Melbourne: Melville and Slade.

Mathews, R.H., 1909, The Dhudhuroa Language of Victoria. *American Anthropologist* XI:278-284.

Meyer, H.A.E. 1843. *Vocabulary of the language spoken by the Aborigines of the southern and eastern portions of the settled districts of South Australia…. preceded by a grammar*. Adelaide: James Allen.

Moorhouse, M. 1846. *Vocabulary and oulines of the grammatical structure of the Murray River language*. Adelaide.

O'Grady, G. Voegelin, C.F. and Voegelin, F.M. 1966. Languages of the world: fasicle 6. *Anthropological Linguistics* 8:2.

O'Grady, G., Wurm, S and Hale, K. 1966. *Map of Aboriginal languages of Australia.* Victoria B.C.: University of Victoria.

Pawley, A. and M. Ross. 1995. The prehistory of the Oceanic languages: a current view. In P. Bellwood, J.Fox and D. Tryon eds *The Austronesians. historical and comparative perspectives*. Canberra: Department of Anthropology, RSPAS, ANU, pp39-74.

Pegler, A.H. 1886. Ned's Corner Station, Murray River. In Curr II: 280-1.

Plomley, N.J.B. 1976. *A word-list of the Tasmanian Aboriginal languages*. Tasmania: Author and Tasmanian Government.

Sands, K. 1996. *The ergative in proto-Australian.* Munich: Lincom Europa.

Schmidt, W. 1919, *Die Gliederung der australischen Sprachen*. Vienna.

Smyth, R.B., 1878, *The Aborigines of Victoria* (2 volumes). Melbourne: Government Printer. Taplin, G., 1879, *The folklore, manners, customs, and languages of the South Australian Aborigines*. Adelaide: Spiller, Government Printer.

Talplin, G. (ed.) 1879. *The folklore, manners, customs and languages of the South Australian Aborigines*. Adelaide: Government printer.

Tindale, N.B. 1940. Distribution of Australian tribes. *Transactions of the Royal Society of South Australia* 64: 140-231.

Tindale, N.B. 1974. *Aboriginal tribes of Australia.* Berkeley: University of California Press and Canberra: ANU Press.