Chapter 9: The genetic position of Enindhilyakwa

"A study of language contact phenomena in the immediate region (Heath 1978b, 1981a) showed that Ngandi, Nunggubuyu and Anindhilyakwa, though nominally contiguous, have not been in intense recent contact relationships. […] [T]here is no indication of important grammatical diffusion, or even heavy lexical diffusion, among the three focal languages themselves in recent centuries. […] We will therefore consider structural similarities and cognate morphemes […] of the three languages to reflect genetic inheritance rather than borrowing." (Heath 1997: 201)

This chapter investigates the genetic relatedness of Enindhilyakwa with the adjacent Gunwinyguan language family, and in particular with Wubuy and Ngandi. Wubuy (aka Nunggubuyu[1]) is spoken around the Rose River mouth opposite Groote Eylandt and is geographically the closest neighbour of Enindhilyakwa (Map 1.1). Ngandi is spoken directly to the south and east of Wubuy country. Enindhilyakwa and Wubuy were both classified as family-level language isolates in the O'Grady et al. (1966) classification, whereas Ngandi was subsumed under the Gunwinyguan (GN) family. This classification was based primarily on lexico-statistics. In recent work, however, Wubuy has been added to the GN family, based on shared systems of verbal suffixal paradigms (Alpher, Evans & Harvey 2003; see also Harvey 2003a). Heath (1978b, 1997) and Baker (2004) provide evidence for a subgrouping of Wubuy and Ngandi.

Yet the genetic position of Enindhilyakwa has remained largely uninvestigated. Some researchers have observed that, although Enindhilyakwa and Wubuy differ substantially in their vocabularies, they are structurally very similar (Capell 1942: 376; Worsley 1954a: 20). Yallop (1982: 40) notes that the two languages are "similar in grammar and possibly share the distinction of being the most grammatically complex Australian languages". Based on these structural similarities, Heath has long claimed that Enindhilyakwa forms a subgroup with Wubuy and Ngandi (1978b, 1984: 638, 1990, 1997, n.d.), but without providing much evidence to support this claim - for example by systematically comparing grammatical morphemes of the three languages.[2] Dixon (2002) follows Heath's proposed subgrouping, though still "without any justification for the reasons" (Evans 2005: 254).

Thus, the grouping of Enindhilyakwa together with Wubuy and/or Ngandi is not an accepted view by most linguists. Alpher, Evans & Harvey (2003), henceforth AEH, in their study of GN verbal suffixes, state that the relationship of Enindhilyakwa to any other language has not "been demonstrated conclusively at this point with any significant body of cognate lexical items or

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[1] The language is probably best known as Nunggubuyu, as in Heath (1982, 1984), but strictly speaking, the Nunggubuyu are the people and Wubuy is their language.

[2] Although he makes a start in his unpublished Enindhilyakwa sketch grammar by comparing verbal suffixes paradigms. In Heath (1997) he takes the genetic relation of the three languages as a given, and he discusses the verbal prefixes. In particular he deals with the *non*-cognacy of some of the morphemes involved, amongst others the non-cognate 'Inverse' markers in the three languages. His important proposal is summarised in Appendix L.

grammatical morphology" (p.308, fn4). Baker (2004, fn25) claims that Enindhilyakwa "retains so little in the way of recognisable monomorphemic roots and inflections that it is impossible to say whether it was once related to Ngandi and Nunggubuyu". Heath (1978b), although arguing for a subgrouping of the three languages, concedes that the genetic relationship is problematic. His preliminary data suggest that Enindhilyakwa is rather remote from the other prefixing languages, "particularly in pronominal and tense-aspect inflections of verbs and in case suffixes" (p.5). In later work he claims that Ngandi, Wubuy and Enindhilyakwa "form a clear genetic subgroup" (1997: 200), but without providing evidence to substantiate this proposal. Evans (2005: 250) concludes that the support for Heath's claim is slender, and that Enindhilyakwa should, for the moment, be maintained as a family-level isolate - as was originally proposed by O'Grady et al.

At the same time, Wurm (1972) and Koch (2004) stress that it should not be forgotten that the O'Grady et al. classification - although widely adopted, and institutionalised by frequent quotation (Koch 2004: 33) - was "to be regarded as only a very preliminary and highly tentative genetic classification" (Wurm 1972: 109), and that each grouping requires confirmation or correction by traditional historical methods (Koch 2004: 33). Koch (2004) provides the following representative statement:

> "[O'Grady et al.] contains a preliminary classification of Australian languages based on cognate densities calculated by Hale, O'Grady and Wurm, in which the authors make a plea for the future consideration of types of evidence additional to that of lexicostatistics, in order that a balanced perspective of Australian historical linguistics might be achieved." (O'Grady 1966: 71)

Indeed, in recent work the scope of for example the GN family has undergone many revisions. As already mentioned, Wubuy has been included, as have Warray and Uwinymil (now extinct) (AEH). R. Green (2003) expresses scepticism about whether GN really is a family at all, and makes proposals for a single "Arnhem" family, based on shared verbal suffixes, which unites GN with the Maningrida languages to its north, Gaagudju to the west, and some others (though without mentioning Enindhilyakwa).

In this chapter I propose another revision of the O'Grady et al. schema, which is that Enindhilyakwa is not an isolate. Focussing on Wubuy, I will show that the two languages share a significant amount of vocabulary (at least 32% of core vocabulary) and verbal suffixal paradigms. Because of space and time limitations, I will only bring Ngandi into the discussion of the verbal suffixal paradigms. It will turn out that there are plenty of formal similarities, including shared innovations, to indicate that the three languages are genetically related. Therefore, Jeffrey Heath was right: Enindhilyakwa shares a common ancestor with Wubuy and Ngandi. In other words, Enindhilyakwa is to be subsumed under the Gunwinyguan family.

There are several reasons for why the considerable amount of shared vocabulary and grammatical morphology has not been recognised before. Firstly, as argued in Chapter 2, Enindhilyakwa phonology and phonotactics have undergone dramatic changes, resulting in a system that is atypical of the GN languages (or, indeed, of other Arnhem Land languages). These changes include: (i) strong tendency to avoid codas - evidenced by the fact that all words end in [a], the heavy usage of schwa-epenthesis, and the development of complex consonants; (ii) loss of retroflexion and palatalization of laterals; (iii) development of the mid-central phoneme /ə/; (iv) loss of phonemic status of [u]; and (v) loss of /o/. Further phonological shifts will come to light in this chapter.

These sound changes may obscure related forms. For example, Enindhilyakwa *a+lhvmilya* 'NEUT+bloodwood' is proposed to be a reflex of proro-Gunwinyguan (pGN) **dhumurluk* 'bloodwood' (Wubuy: *lhumurluk*, Ngandi: *dhumurluq*), through the following sound changes, which are all regular:

(i)   **dh > lh* (a well-known shift in Wubuy that has thus far not been identified in Enindhilyakwa; section 9.2.1.2.2): **dhumurluk > *lhumurluk*

(ii)   reanalysis of the *u* vowels, which in Enindhilyakwa can only occur surrounded by velars (sections 2.6.7 and 9.2.2.2.3): **lhvmvrlvk*

(iii) pre-palatalisation of retroflex lateral (section 9.2.2.1): **lhvmilyvk*

(iv)   loss of intolerated word-final codas and conversion of word-final vowel to *a* (rule P-7B; sections 2.6.3.1 and 9.2.2.2.4): **lhvmilya*

(v)   addition of the NEUT class prefix *a-* and fusion of class marker and stem (section 3.4.1):
       a+lhvmilya

Not all correspondences involve such complex reconstructions; for example Enindhilyakwa *mulkwa* 'VEG.belly' corresponds to Wubuy *murlku* 'belly' by loss of retroflexion of the lateral and conversion of the word-final vowel only.[3]

A second reason for why corresponding forms have not been recognised before may be that sometimes only *incorporated* forms have cognates in other GN languages. For example, Harvey (2003a) reconstructs the body part noun 'head' as **Long*[4] ~ **rong* for pGN (Wubuy: *rlaang*, Ngandi *rlong*). This does not resemble the Enindhilyakwa noun *arvngka* 'NEUT.head' much. However, the form that is incorporated into verbs and adjectives is suppletive in Enindhilyakwa:

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[3] Corresponding forms may also be obscured by the orthography in the previous work of Leeding (1989, 1996). For example, [mulkʷa] 'belly' is represented as *mwilkwa* or *mwilhkwa* in her orthography (I believe the lamino-dental lateral of in coda position in the latter variant is incorrect; lamino-dentals are incompatible as codas in Enindhilyakwa - as they typically are in Australian languages [Hamilton 1996]). This representation obscures similarities with Wubuy *murlku*.
[4] Harvey (2003a) does not reconstruct an alveolar-retroflex contrast in morpheme-initial position, using archiphoneme symbols.

lyang- 'head' (see Chapter 7 and Appendix N). This is clearly related to the Wubuy and Ngandi forms through the regular sound changes proposed in this chapter: **rl > ly*, and **o > a* (the vocalic shift also took place in Wubuy). Enindhilyakwa free nominals have frequently been replaced, as suggested in section 7.6.

Another reason for why the shared grammatical morphemes have not been recognised before may simply be that no-one has yet taken up the task of systematically comparing the Enindhilyakwa and Wubuy paradigms, despite their being adjacent languages with similar structures (Evans 2003b: 4). Due to the "difficulties" of the Enindhilyakwa data (AEH p.308, fn4), and probably also to the presumed isolate status of the language, Enindhilyakwa has been left out of most historical and comparative studies on GN languages, including: verbal inflectional morphology (Heath 1978b; AEH; R. Green 2003; Baker 2004), phonology (Heath 1978b; Harvey 2003a), and pronominal and noun class prefixes (Heath 1978b; Harvey 2003b - though see Heath 1997). Enindhilyakwa was also ignored in Verstraete's (2005) comparative study of composite mood marking in non-Pama-Nyungan languages, even though this language would be the richest in his sample in terms of morphologically distinct modal categories (Chapter 6).

The current chapter is a first attempt at a systematic comparison of Enindhilyakwa and Wubuy, and, to a lesser extent, Ngandi. I will address the three main criteria for recognising a genetic relation between languages (Campbell & Poser 2008: 4):

1) shared basic vocabulary
2) systematic sound correspondences in shared forms
3) shared grammatical features (especially morphological)

Section 9.1 starts with an investigation of the vocabulary shared between Enindhilyakwa and Wubuy. The regular sound correspondences in the shared forms will be examined in section 9.2. Section 9.3 compares the verbal inflectional suffixal paradigms of Enindhilyakwa, Wubuy and Ngandi, and links them to the reconstructed pGN paradigms, where available.

The classic criterion to establishing a subgroup within a larger family is common innovations (Bowern & Koch 2004). Given the sheer mass and complexity of the morphology that we have to deal with in determining whether a locally shared feature is an innovation or a retention (I. Green 2003: 129), a rigorous and comprehensive demonstration that Enindhilyakwa constitutes a subgroup with Wubuy and Ngandi, by reconstructing an intermediate parent language within GN, is an elaborate undertaking. Not only do we need to show that Enindhilyakwa retains features from pGN, but we also have to demonstrate that it has innovated in common with Wubuy and Ngandi. In this dual task I will focus on what I believe are the most representative developments and tentatively reconstruct some higher level forms for the language ancestral to Enindhilyakwa,

Wubuy and Ngandi. The main aim, though, is to lay some solid foundations on which a much lengthier proof of the subgrouping claim can later be built.

The Wubuy data in this chapter come from Heath (1982, 1984), and the Ngandi and pGN data from Heath (1978b), Harvey (2003a) and AEH.[5] Their orthographic representations have been adjusted to the orthography used in this thesis.[6] The Macassan data come from Evans (1992), maintaining the original orthography. The Macassan consonant inventory distinguishes between voiced and voiceless stops, which is reflected in the orthography, and it does not contain retroflexes. The symbol *r* is used for the apico-dental trill (cf. Enindhilyakwa *r*, which represents retroflex /ɻ/; *rr* is used for the apico-alveolar trill /r/). Furthermore, Macassan has a glottal stop, the orthographic symbol for which is *ʔ* (note that the GN symbol is *q*). The '+' sign designates a frozen boundary or a bound form.

9.1 Shared vocabulary

Appendix O presents a 186-item Swadesh list of Enindhilyakwa and Wubuy core vocabulary. This list consists of body parts, verbs, adjectival nominals, terms for common natural phenomena, manufactured items and basic human classification terms. Basic core vocabulary is considered to be more resistant to borrowing than nominals belonging to the domain of ceremonies, natural species and some material objects (Harvey 2003a; Koch 2004).[7] Inspection of the core vocabulary list gives the following lexical cognacy rates:

- free forms: 31.7%
- free forms and bound forms: 38.7%
- free forms and bound forms and semantic change: 45.2%

Free forms are verbs, nouns, and so on. Bound forms are the nominal roots that can be incorporated into verbs and adjectives discussed in Chapter 7, and the bound thematics discussed in Chapter 5. 'Semantic change' refers to forms (free or bound) that have undergone a shift in meaning. Three different percentages are given because, as already mentioned, in some cases only an incorporated nominal or a bound thematic corresponds to a free form in another language. Including bound forms increases the cognate density, which increases even further when including those forms that have undergone a semantic shift. According to these cognate densities,

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[5] AEH and Harvey (2003a) use the following daughter languages for the reconstruction of pGN: Wubuy, Ngandi, Ngalakgan, Rembarrnga, Mangarayi, Bininj Gun-Wok, Dalabon, Kunbarlang, Jawoyn, and Warray. Heath (1978b, 1997) only discusses Wubuy, Ngandi and Enindhilyakwa.

[6] This is not problematic because GN languages (and Australian languages in general) do not have a phonemic contrast between voiced and voiceless stops - the orthographic symbol for which is thus more or less arbitrary.

[7] Borrowing is a major problem with shared vocabulary, and an important factor in Arnhem Land (Heath 1978b), as it is universally. Heath argues that, due to the social structures of this area, especially the norm of multilingualism and intermarriage, this allows for extensive borrowing, including bound morphemes and phonemes. This appears to be an issue of concern across Australia, as argued extensively by Dixon (2001, 2002, inter alia). Core vocabulary, however, is considered to be immune to diffusion.

Enindhilyakwa and Wubuy are different subgroups of the same group in the O'Grady et al. classification (which requires 26-50% shared core vocabulary).

The following examples illustrate some corresponding free forms of core vocabulary: body part terms in (1), adjectival nominals in (2) and verbs in (3). Many more correspondences can be found in Appendix O. Appendix P contains the full list of Enindhilyakwa, Wubuy and pGN correspondences that this study has uncovered.

(1)   **Enindhilyakwa**   **Wubuy**   **pGN**

	Enindhilyakwa	Wubuy	pGN
skin	*-makulya*	*makurlak*	**kurlak*
hand, fin	*a+yarrka*	*yarrka*	*?*jakku* 'left hand'
belly	*mulkwa*	*murlku*	
throat	*yambiya*	*yambiya*	

(2)

	Enindhilyakwa	Wubuy
some, few	*-adhvrra*	*adharra*
old	*-yuwangkwa*	*yiwangku*
new	*-kadhuwa*	*kadhuwa*
alone	*-awura*	*wiriwiri*

(3)

	Enindhilyakwa	Wubuy
lie down	*-murrkulha-*	*-murrkulha-*
bathe	*-ngambe-*	*-ngambi-*
pull	*-arrka-*	*-arrki-*
come in of tide	*-angkarr-*	*-angkarri-*

The following examples lists some Enindhilyakwa incorporated nominals that correspond to free forms in Wubuy and pGN.

(4)

	Enindhilyakwa	Wubuy	pGN
head	*lyang-*	*rlaang*	**L/rong*
voice	*yeng-*	*yang*	**yang*
leaves	*mvnjvrr-*	*manjarr*	**manjarr*
leg	*lharr-* 'bone, long and solid things'	*lharrbij*	**dharr*

Examples of corresponding forms with semantic shifts are the verb stem *-warda-*, which means 'hit, kill' in Enindhilyakwa, but 'tap, knock, break' in Wubuy. Other examples are Enindhilyakwa *arnda* 'NEUT.elbow' and *-arndaka-* 'to hunt with spear', which have a plausible semantic relation with Wubuy *warndak* 'woomera' (pGN **borndok* 'woomera'; **o > a* being a regular change in Wubuy and Enindhilyakwa): an elbow is an important body part involved in spear-throwing, and the hook on a woomera (a spear-throwing device) has the same shape as an elbow (as became clear in Chapter 7, shape is an important feature in Enindhilyakwa in classifying objects).

Although borrowing appears to be most probable in certain nominal domains (e.g. ceremonies, natural species, material objects), the fact that a nominal belongs to such a domain does not

necessarily mean it is a loan (Harvey 2003a: 209). There are correspondence sets of material objects that show a strong correlation with the GN group of languages, such as 'woomera':

(5) BGW *borndok*, Dalabon *borndok*, Ngalakgan *borndok*, Rembarrnga *borndok*, Ngandi *borndok*, Wubuy *warndak* (Kungarakany *borndok*, Ritharrngu *barndak*) (Harvey 2003a: 210)

Non-GN languages are given in brackets. Based on these correspondences, Harvey reconstructs **borndok* 'woomera' for pGN. This form corresponds to the Enindhilyakwa noun *arnda* 'NEUT.elbow' and the verb *-arndaka-* 'to hunt with spear', allowing for semantic shift. In Wubuy the ancestral **b* has lenited to *w*, which is a regular sound change (see Heath 1978b). The initial consonant has disappeared in Enindhilyakwa, but there is some evidence that it once was *w*, as in Wubuy. This tentative evidence is presented in Appendix Q.

9.1.1 Bound thematics

Thematics provide another context in which correspondences can be found. All GN languages have two types of verb stem, simple and complex (AEH p.310). Simple verb stems consist of a verb root to which the tense/aspect inflection may be added directly, while complex verb stems consist of either a verb or nominal root (designated 'prepound'), followed by a 'thematic' which takes the inflections. These segments are tightly fused and the stem may be synchronically unanalyseable. Chapter 5 described simple and complex stems in Enindhilyakwa, which follow the GN pattern. Some Enindhilyakwa bound thematics are also attested in Wubuy, Ngandi and pGN. An example is the reconstructed pGN thematic **+ma-*, which can also function as an independent verb **-ma-* 'do, say'. The same form occurs in Enindhilyakwa (see Table 5.9), where it can also function as an independent verb (*-ma-* 'do, say'), as well as a thematic (e.g. *-ya+ma-* 'do, say'; *-kurarr+ma-* 'spit'; *-rndang+ma-* 'make an intermittent noise'). AEH reconstruct the 'do/say' verb as **-yama-* for pGN, which they propose is a compound of the prepound **ya* (which may be related to **yang* 'voice') plus thematic *-ma-* (p.339). The Enindhilyakwa reflex is *-ya+ma-*.

Enindhilyakwa thematics may also correspond to independent verbs in other languages. For example, *-ka-* 'carry' is a common GN verb and reconstructed for pGN (AEH). In Enindhilyakwa it only occurs as a bound thematic, and the same is true for Wubuy (see Heath 1984: 419, 470), where it may lenite to *+wa-*. This is illustrated with the following correspondences (Enindhilyakwa conjugation 3 corresponds to Wubuy conjugation N; section 9.3.4.3).

(6)   Enindhilyakwa [3]   Wubuy [N]

	Enindhilyakwa [3]	Wubuy [N]
taste, try, test	*-lhawurr+ka-*	*-lhawi+wa-* 'ask, inquire'
sneak up on	*-wal+ka-*	*-waal+ka-*
send	*-lharr+ka-*	*-lharr+ka-*
hunt	*-ngurr+kwa-*	*-ngurr+ka-*

Another example is the reconstructed pGN INCH suffix *-me-. This is not a synchronically productive INCH suffix in Enindhilyakwa, but +mv- is attested as a thematic in a number of complex stems (*e > v is a regular sound change; section 9.2.2.2.1). The continuant hardens to a stop when following a stop (tentative evidence for this archaic process is given in Appendix D). All verb stems composed of this thematic are intransitive, and the prepounds may be attested as free forms, which are mostly nouns:

(7) Enindhilyakwa +mv- ~ +bv-   Enindhilyakwa free form   Wubuy free form

    -lhakar+mv- 'choke'   *lhakar* 'saliva'
    -rerr+mv- 'dry'   *rarri* 'dry'
    -warrngarv+mv- 'sneeze'   *-warrngara-* 'to burp'
    -nyirr+mv- 'blow nose'   *enyirra* 'NEUT.runny nose'
    -rak+bv- 'blow didgeridoo'   *yiraka* 'MASC.didgeridoo'
    -mvdhilyak+bv- 'cough'   *amvdhilya* 'NEUT.common cold'

Another common Enindhilyakwa thematic is +bi- (Table 5.9). This is proposed to be related to the Wubuy INCH suffix -wi- ~ -bi- (the Wubuy continuant hardens to a stop after a stop or nasal). Stems composed of this thematic are intransitive, and the prepounds may be attested as free forms in Wubuy (Enindhilyakwa conjugation 1A corresponds to Wubuy I$_1$; section 9.3.4.4):

(8) Enindhilyakwa +bi- [1A]   Wubuy INCH -wi- ~ -bi- [I$_1$]

    -yeng+bi- 'speak'   *-yam+bi-* 'speak'
    -errik+bi- 'throw'   (*-warrka-* 'to throw')
    -errek+bi- 'vomit'   (*warrkard* 'vomit')
    -me+bi- 'sing'   (*-maya-* 'to sing')

The Enindhilyakwa stems could be historically composed of a nominal (still attested as free forms in Wubuy), plus an INCH suffix (also still productive in Wubuy). The Enindhilyakwa *e* vowels may result from i-umlaut (rule P-5). The 'speak' stem contains the nominal *yang* 'voice' (pGN *yang* 'voice') in both languages. In Enindhilyakwa *a* has been fronted due to the preceding lamino-palatal (rule P-4), and in Wubuy the nasal has assimilated to the following stop (cf. Heath's Nasal-assimilation rule P-27 for Wubuy [1984: 70]).

    Table 9.1 (next page) lists the attested corresponding bound thematics in Enindhilyakwa, Wubuy, Ngandi and pGN. Enindhilyakwa thematics may correspond to free verbs in other languages. The thematics belong to matching conjugations in Enindhilyakwa and Wubuy: for example, Enindhilyakwa conjugation [3] of thematic +ka- corresponds to Wubuy [N], and so on. The only exception is *(+)ba-*, which is proposed to be a reflex of pGN *-bu-* 'hit', but the paradigms do not match. This issue is taken up in section 9.3.4.2.

Enindhilyakwa		Wubuy		Ngandi	pGN
thematic	example	thematic	example		
+mi- ~ *+bi-* 'thematic' [1A]	*-errek+bi-* 'vomit' *-edhvrre+mi-* 'deny'	*-wi-* ~ *-bi-* 'INCH' [I₁] *+mi-* [I₁]	*X-wi-* ~ *X-bi-* 'to become X' *-wadhaari+mi-* 'to say no'		
+mv- ~ *+bv-* 'thematic' [1A]	*-mvdhilyak+bv-* 'cough' *-lhvlhvl+mv-* 'blow fire'	*??(+)wu-* ~ *(+)bu-* 'hit, thematic' [MA₁]	*-yaali+bu-* 'cough' *-ranga+wu-* 'yawn'		INCH *-me-*
(+)ma- 'do, say, thematic' [4]	*-kurarr+ma-* 'spit'	*-ma-* 'INCH' [A₁]	*X-ma-* 'to become X'	*+ma-* 'thematic' [4a]	*(+)ma-* 'do, say, thematic'
(+)ba- 'hit, argue, thematic' [4]	*-jira+ba-* 'pour'	*(+)wu-* ~ *(+)bu-* 'hit, thematic' [MA₁]	*-yaali+bu-* 'cough' *-ranga+wu-* 'yawn'	*(+)bu-* 'hit, thematic' [irr.]	*-bu-* 'hit'
(+)ma- 'get, thematic' [2A]	*-lharr+ma-* 'chase'	*(+)ma-* [A₃] 'get, thematic'	*-lharr+ma-* 'chase'	*(+)ma-* 'get, thematic' [irr.]	*-ma-* 'get'
+ka- [3] 'thematic'	*-lharr+ka-* 'send'	*+ka-* [N] 'thematic'	*-lharr+ka-* 'send'	*(+)ka-* 'carry, thematic' [5]	*-ka-* 'carry'
-ka- ~ *-kwa-* 'FACT, give' [4]	*X-ka-* ~ *X-kwa-* 'to make X'	*-wa-* ~ *-ka-*, *-ka-* 'FACT' [A₁]	*X-wa-* ~ *X-ka-* 'to make X'	*-wo-* 'give'	*-wo-* 'give'
+dha- [2B] 'thematic'	*-rid-vm-dha-* 'read'	*+dha-* [A₂] 'thematic'	*-rid-em-dha-* 'read'	*+dhu-* 'thematic' [1]	-

Table 9.1: Corresponding bound thematics in Enindhilyakwa, Wubuy, Ngandi and pGN

Thematic *+dha-* is common to Enindhilyakwa and Wubuy and is used to inflect Kriol loans (section 5.4.3). Other GN languages use different thematics here (e.g. Rembarrnga, Ngalakgan and Warray use *+mi-* [AEH]). Ngandi *+dhu-* is a thematising augment.

Some common free verbs in GN languages, such as *-bu-* 'hit' or *-ka-* 'carry', correspond to bound forms in Enindhilyakwa. This may be why Baker states that Enindhilyakwa retains very little in the way of recognisable monomorphemic roots (2004: fn25). The Enindhilyakwa correspondences to these common GN roots may be obscured by the fact that they are locked up in the verb stem.

9.2 Sound correspondences

This section investigates the sound correspondences between Enindhilyakwa and Wubuy, and the sound changes that have taken place. I will not be concerned here with the Ngandi sound correspondences. Before embarking on this exercise, it will be useful to reiterate the phonemic inventories of the two languages. The Wubuy consonants and vowels are set out in Tables 9.2 and

9.4, respectively, and the Enindhilyakwa consonants (save the complex segments) and vowels in Tables 9.3 and 9.5, respectively.

Wubuy has a phonemic length distinction in the vowels, but this is of little functional interest and there are very few minimal pairs (Heath 1978b, 1984). It is hard to hear the difference between phonemic long and short vowels (Brett Baker p.c.). There is no phonemic length distinction in the corresponding Enindhilyakwa vowels, so I will ignore Wubuy vowel length in what follows. Enindhilyakwa *a* and *e* are inherently longer than the remaining vowels.

	Labial	Dental	Alveolar	Retroflex	Palatal	Velar
Stop	*b*	*dh*	*d*	*rd*	*j*	*k*
Nasal	*m*	(*nh*)	*n*	*rn*	*ny*	*ng*
Lateral		*lh*	*l*	*rl*		
Tap/trill			*rr*			
Approx.	*w*			*r*	*y*	

Table 9.2: Wubuy consonant phonemes

	Labial	Dental	Alveolar	Retroflex	Palatal	Velar	Labialised velar
Stop	*b*	*dh*	(*d*)	*rd*	*j*	*k*	*kw*
Nasal	*m*	(*nh*)	*n*	*rn*	*ny*	*ng*	*ngw*
Lateral		*lh*	*l*	(*rl*)	*ly*		
Tap/trill			*rr*				
Approx.	*w*			*r*	*y*		

Table 9.3: Enindhilyakwa consonant phonemes

	Front	Central	Back
High	*i, i:*		*u, u:*
Mid			
Low		*a, a:*	

Table 9.4: Wubuy vowel phonemes

	Front	Central	Back
High	*i*		
Mid	*e(:)*	*v*	
Low		*a(:)*	

Table 9.5: Enindhilyakwa vowel phonemes

Some remarks can be made about these inventories in the context of the GN languages and the Arnhem Land languages in general (based on Harvey 2003a):

(a) Within the GN family, lamino-dentals are only found in Wubuy and Ngandi (a lamino-dental stop is also common in the Yolngu and Maran languages). Enindhilyakwa also has a lamino-dental series. The lamino-dental lateral only occurs in Wubuy and Enindhilyakwa

(b) All GN languages, except Wubuy and Mangarayi, show a systematic contrast between fortis and lenis stops (a stop contrast is an areal feature of Arnhem Land, and Harvey 2003a reconstructs it for pGN). Enindhilyakwa, like Wubuy, lacks this contrast

(c)   A phonemic glottal stop /ʔ/ is an areal feature in the Top End languages: it occurs in the Yolngu languages and all GN languages save Wubuy, and Enindhilyakwa

(d)   The palatal lateral /ʎ/ is found as a phoneme in Enindhilyakwa and as a phonetic variant in Wubuy (Heath 1984: 12). This segment occurs in no GN language (though it appears in Kamu, Matngele [Eastern Daly] and Wardaman [Yangmanic])

(e)   The mid-central phoneme /ə/ that is common in Enindhilyakwa is absent in Wubuy and most other GN languages, except Rembarrnga (and Dalabon has a high-central /ɨ/)

(f)   Most GN languages, including Ngandi, have a mid-back vowel /o/, which is reconstructed for pGN. Enindhilyakwa and Wubuy lack this vowel

(g)   /u/ is a common vowel phoneme in Arnhem Land and in Australia generally, but in Enindhilyakwa it is not contrastive (Chapter 2)

I will first discuss the corresponding matching sounds in section 9.2.1, and then turn to the systematic changes in section 9.2.2.

9.2.1   Matching correspondences

9.2.1.1 Heath's lenition scenario for Wubuy stops and continuants

Two features that Enindhilyakwa and Wubuy have in common that are especially relevant in the investigation to their genetic relatedness are the absence of two contrasting stop series, and the presence of the lamino-dental lateral. Heath (1978b) proposes an historical scenario for Wubuy in which these two features are related. He suggests that the single stop system in Wubuy descends from an ancestral system with a fortis-lenis contrast, preserved in Ngandi. The ancestral fortis stops developed into lenis stops in Wubuy, pushing the old lenis stops into continuant status (an historical 'push chain').

Harvey (2003a) interprets the fortis-lenis stop contrast in Arnhem Land languages as geminate vs. singleton stops. He reconstructs the geminate-singleton contrast for pGN. I will follow Harvey (2003a) here in representing the fortis stops as geminates and the lenis stops as singletons. An example of Heath's lenition chain is *dhdh > dh*, and *dh > lh.* Heath proposes that the following correspondences systematically hold between Wubuy and Ngandi (where Ngandi is representative of other GN languages, and of pGN).[8] The correspondence *d : rr* is left out here as it is not uncontestably attested (Heath 1978b: 38).

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[8] In this scenario etymological continuants either exist alongside the derived ones, or, in some cases of *w, are deleted, becoming Ø (Heath 1978b).

Ngandi	*bb*	*b*	*dhdh*	*dh*	*dd*	*rdrd*	*rd*	*jj*	*j*	*kk*	*k*
Wubuy	*b*	*w*	*dh*	*lh*	*d*	*rd*	*r*	*j*	*y*	*k*	*w*

Table 9.6: Systematic correspondence sets for Wubuy and Ngandi (Heath 1978b: 37-41; Harvey 2003a: 211)

If geminate > singleton is thought of as the earliest shift, then the singleton > continuant shift can be understood as "readjustments designed to maintain as many as possible of the old [geminate-singleton] oppositions in new form" (Heath 1978b: 40). Heath notes that since *lh* did not occur in the proto-language, the lenition *dh > lh* did not create any chain reaction. This is significant, because *dh* was very common. The shift *dh > lh* should be weighted as more important than say, *rd > r* (ibid).

Synchronically, the continuants can harden back to stops in certain environments in Wubuy, which in effect reverses the historical lenition process. The lamino-dental lateral, for instance, has a hardened variant *dh* occurring after a stop or nasal: *lh > dh* / C$_{[+stop/nasal]}$ ___. As we will see in the next section, this hardening process is only marginally present in Enindhilyakwa.

9.2.1.2 Enindhilyakwa and Wubuy stops and continuants

In this section I will show that the Enindhilyakwa singleton (phonetically lenis/short) stops systematically match those in Wubuy. The same is true for the continuants. Furthermore, traces of the Wubuy hardening rule can also be found in Enindhilyakwa. These similarities, in particular the matching lamino-dental lateral, which is absent in GN and in Arnhem Land in general, are indicative of shared phonological innovations. I will only list a few correspondences of each phoneme under discussion; many more correspondences can be found in Appendix P. Ngandi and pGN correspondences will also be provided where available.

9.2.1.2.1 Bilabials

The Enindhilyakwa bilabial singleton stop corresponds to this phoneme in Wubuy, as shown in Table 9.7. The labio-velar glide also matches in the two languages, as illustrated in Table 9.8 (next page).

	Enindhilyakwa *b*	**Wubuy *b***	**pGN *bb**
man's child	*nebiba* (~ *nebbibba* VL1 p.26)	*nabiba*	*bibbi*
to put down	*-abvrra-*	*-burra-*	
to bathe	*-ngambe-*	*-ngambi-*	
to bubble, boil	*-bvlbeeyi-*	*-bulbayi-*	
good at	*abarda*	*babarda* 'to be lame'	
coral trout	*dhvmabvrna*	*dhumaabirna*	

Table 9.7: Enindhilyakwa *b* : Wubuy *b*

	Enindhilyakwa *w*	**Wubuy *w***	**pGN *b**
to hit	**-*waja*-** 'brush away' +***baja*-** 'hit'	+***wadja*- ~ +*badja*-**	*-*badja*-
new	-*kadhuwa*	*kadhuwa*	
ALL case	-*wa*	-*wuy ~ -kuy*[9]	
to sew	-*warrka*-	-*warrka*- ~ -***barrka**-	
to hit, tap	-*warda*-	-*warda*- ~ -***barda**-	
shellfish sp.	*melhuwa*	*malhiwu*	

<u>Table 9.8</u>: Enindhilyakwa *w* : Wubuy *w* : pGN *b

As can be seen from Table 9.8, morpheme-initially Wubuy *w* has two variants: it can vary with *k* (e.g. -*wuy* ~ -*kuy* 'ALL case'), or with *b* (e.g. -*warrka*- ~ -*barrka*- 'to sew'). Heath proposes that this necessitates positing two morpho-phonemically distinct *w* phonemes in Wubuy: w_1 (which alternates with *k*) and w_2 (which alternates with *b*). Hardening takes place after a stop or nasal: compare *nga-**warrkaa*** 'I sewed it', where *w* is maintained following a vowel, with *ngam-**barrkaa*** 'I would have sewed it' where *w* hardens to *b* following a nasal (Heath 1978b, 1984). The two phonemes can be traced back to their historical source, Heath claims: w_1 originates from lenition of *k, and w_2 from lenition of *b (1978b). The original stops are preserved in Ngandi: ***kudduq*** : *wudu* 'tree sp.', and ***budhdhalakk*** : *wudhalak* 'ochre'.

This productive hardening does not happen in Enindhilyakwa. At active morpheme boundaries, such as those between prefixes and stems, epenthetic schwa is inserted between two consonants (rule P-1), and stem-initial *w* is preserved: for example, the stem -*warrka*- combined with the '1' prefix *nvng*- gives *nvngu-**warrka*-** '1-sew', not **nvng-**barrka*-** (cf. Wubuy *ngam-**barrkaa***). Schwa-epenthesis can be seen as removing the hardening environment: stem-initial *w* is not preceded by a stop, but by a vowel.

There are, however, some lingering traces of the *w* > *b* hardening in Enindhilyakwa, as in some frozen reduplicated stems: -*lhvngak+**balhu**+walha* 'wide and tall'; -*wilyik+**bilyik**-* 'warm up food on ashes'; -*angv+**banga**-* 'RDP+bite'; and -*alyv+**baly**-* 'RDP+eat'. The latter two verb stems begin with a vowel, but in Appendix Q I suggest that they may historically have started with *w*.[10] In Appendix D I provide more tentative evidence for hardening of *w* > *b* in Enindhilyakwa.

There are no apparent traces in Enindhilyakwa of *w* hardening to *k*, à la Wubuy w_1. From the available correspondences, it appears that Wubuy w_1 relates to Ø- in Enindhilyakwa:

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[9] Word-final *y* is not possible in Enindhilyakwa: all words end in *a*. The ALL suffix always occurs word-finally, which could explain the correspondence of Wubuy *uy#* : Enindhilyakwa *a#*. Either the sequence *uy* has been replaced in Enindhilyakwa, or the final *y* has disappeared and the remaining vowel converted to *a*.
[10] According to this hypothesis, stem-initial *w* has a hardened variant *b* when reduplicated: *nu-**wangv**+**banga*** 'he kept on biting it'.

	Wubuy *w- ~ k-*	**Enindhilyakwa *Ø-***
say no	*-wadhaari+mi-* ~ *-kadhaari+mi-* [I₁]	*-edhvrre+mi-* 'deny' [1A]
in poor physical condition	*-wirr-kirrkirru-j-* ~ *-kirr-kirrkirru-j-*	*-erri+kirrik+arrnga-* 'be tired'
wet	*warlarlij* ~ *karlarlij*	*alya*
look	*-warrangka-* ~ *-karrangka-* [A₁]	*-rrvngka-* [4]
stab	*-walharra-* ~ *-kalharra-* [A₂]	*-a(r)dhvrra-* [2B]

Table 9.9: Stem-initial Wubuy *w- ~ k-* : Enindhilyakwa *Ø-*

Note that w_1 and w_2 are only distinct in Wubuy in morpheme-initial position; morpheme-internally we find stable *w*, *b* and *k* segments.

To summarise so far, the following correspondences systematically hold between Enindhilyakwa and Wubuy bilabials:

	anywhere	**morpheme-internal**	**morpheme-initial**	
Enindhilyakwa	*b*	*w*	*w-* (~ *b-*)	*Ø-*
Wubuy	*b*	*w*	*w- ~ b-*	*w- ~ k-*

Table 9.10: Summary of systematic correspondences of bilabials

Since Enindhilyakwa *b* matches Wubuy *b*, as does morpheme-internal *w*, this suggests that the lenition scenario proposed by Heath for Wubuy can also account for the Enindhilyakwa data.

There is an additional complication though: Wubuy *b* sometimes corresponds to Enindhilyakwa *kb*. In section 2.5.7 the *kb* cluster was analysed as a complex single segment, for the reasons given (e.g., it is never broken up by an epenthetic vowel and it syllabies in the onset). Interestingly, Enindhilyakwa *kb* corresponds to a geminate *bb* in other GN languages, as illustrated in Table 9.11. Harvey (2003a) reconstructs **bb* for pGN.

	Enindhilyakwa *kb*	**Wubuy *b***	**pGN **bb***
flat area	*akbal-*	*abarla*	**kabbal*
dry	*ekbvrvngka*		**kabburk*
plover	*dhv+rrvkba*	*birrbirrk*	**berrebberreb*
tree sp.	*mangkarrkba*	*mangkarrabi*	
pelican	*dhv+makbvlha*	*maabulhu*	
now	*arakba*	*ardaba*	
desert	*a+yilkbilkba*	*wulbulk*	
to jump	*-akbi+janga-*	*-abi-*	

Table 9.11: Enindhilyakwa *kb* : Wubuy *b* : proto-Gunwinyguan **bb*

These data counter the lenition scenario above according to which pGN **bb* would correspond to *b* in both Wubuy and Enindhilyakwa. One possible answer to this discrepancy is that there were *two* distinct stop clusters in the language ancestral to the GN family and Enindhilyakwa: a heterorganic cluster **kb* and a homorganic cluster **bb*. The former is preserved only in Enindhilyakwa, whereas

in the other languages it assimilated to a geminate, which lenited to a singleton in Wubuy. The second ancestral cluster was the homorganic cluster *bb*, which lenited to *b* in Wubuy and Enindhilyakwa, but was preserved in the other GN languages:

(9) a. *kb* > *kb*   (Enindhilyakwa)
           > *bb*   (GN) > *b* (Wubuy)
     b. *bb* > *b*   (Wubuy, Enindhilyakwa)
           > *bb*   (GN)

One question to answer with this hypothesis is, was /kp/ the only heterorganic cluster to get converted to a geminate (or long) consonant? In Appendix C I discuss some further heterorganic consonant clusters that may correspond to a geminate in GN languages. A full account of the various stop cluster correspondences must await further phonological analysis of the Enindhilyakwa clusters, and a more detailed investigation of corresponding segments.

9.2.1.2.2 Lamino-dentals

The Wubuy lamino-dental laterals and stops correspond to these phonemes in Enindhilyakwa, as shown in Tables 9.12 and 9.13, respectively (more correspondences can be found in Appendix P). The lamino-dental nasal is a rare phoneme in both languages, as it is in Ngandi (it is absent in other GN languages [see Heath 1978b: 35]). The only attested correspondence with a lamino-dental nasal is Enindhilhyakwa *anhvma* 'NEUT.mangrove (tree)' and Wubuy *anhuma* 'seedpod of mangrove tree' (NEUT).

	Enindhilyakwa *lh*	**Wubuy *lh***	**Ngandi *dh***	**pGN *dh***
to stand	**-*lha*lha-**	**-*lha*-**	**-*dh*i-**	***dha-**
leg	**lhandharr-** **lharr-** 'bone'	**lharrbij**	**dharrbbij**	***dharr**
beard	**lhabvrr-** 'face'	**dhaarrak**[11]	**dhawarrak**	***dhawarrak**
meat	**lhangungkwV-** **-ma+dhangkwa**	**lhangku**	**dhangku**	***dhangku**
canoe	*a+**lhamukwa***	**lhamuku**		(GP ***dhamukku*** VL1 p.59)
tree sp.	**lhang-** 'long tall standing things, e.g. trees'	**lhangki**	**dhangkiq**	***dhangkiq**
bloodwood	*a+**lhvmilya***	**lhumurluk**	**dhumurluq**	***dhumurluk**
to chase	**-lharrma-**	**-lharrma-**		
shellfish sp.	*melhuwa*	*malhiwu*		

Table 9.12: Enindhilyakwa *lh* : Wubuy *lh* : Ngandi *dh* : pGN *dh*

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[11] As Harvey (2003a: 261) notes, this form is unexpected - the regular reflex would be *lhaarrak* - and may be influenced by the Ritharrngu form *dhawarrak*.

	Enindhilyakwa *dh*	Wubuy *dh*	Ngandi *(dh)dh*
Dreaming	*a+ma+lhawudhawarra*	*lhawadhawarra*	**dh**owo 'word, story'
ochre	*alvdha*	*wudhalak*	*budhdhalak*
some, few	*-adhvrra*	*adharra*	
to move	*-dharrbv-*	*-dhadharrbi-*	
to stab	*-adhukwa-*	*-adhuka-*	

Table 9.13: Enindhilyakwa *dh* : Wubuy *dh* : Ngandi *(dh)dh*

Heath (1978b) proposes that the Wubuy simple stop derives from an ancestral geminate stop **dhdh*, preserved in Ngandi (cf. **budhdhalakk* : Wub *wudhalak* 'ochre'). The evidence for Enindhilyakwa *dh* corresponding to Ngandi (or pGN) *dhdh* is scarce: I have only found one potential correspondence: Enindhilyakwa *alvdha* 'NEUT.ochre' could be related to the Wubuy form by metathesis.[12]

Correspondences of Enindhilyakwa and Wubuy *lh* with Ngandi *dh*, by contrast, are plentiful. This suggests that Heath's change **dh > lh* for Wubuy also holds for Enindhilyakwa. Based on Wubuy and Ngandi, Harvey (2003a) reconstructs **dh* for pGN,[13] even though this sound does not occur in most GN languages: it continues as either a palatal stop (e.g. Ngalakgan *jangku* 'meat'), as an alveolar (e.g. Rembarrnga *dangku* 'meat'), or as a lamino-dental lateral (Wubuy, Enindhilyakwa). The reconstructed pGN singleton **dh* is thus only preserved in Ngandi.

If indeed Enindhilyakwa has undergone the lenition **dh > lh*, then the form *-ma+dhangkwa* 'meat, flesh' is unexpected - the regular reflex would be *-ma+lhangkwa* (the *ma-* prefix is the inalienable possession prefix[14]; section 3.4.5.1). The hardened stop may be influenced by the Ngandi *dhangku* and/or Ritharrngu *dhaangku*. Alternatively, it may be indicative of a preceding consonant that induced hardening of the continuant back to the stop: *lh > dh*.

Wubuy *lh* regularly hardens to its homorganic stop counterpart after a stop/nasal. For example, the verb stem *-lharrma-* 'to chase' has two realisations: in *nga-lharrma-ni* 'I chase it', where *lh* is preserved after a vowel, and *ngam-dharrma-ni* 'I will chase it', where *lh* hardens to *dh* after a nasal (Heath 1984: 63).

This hardening is not a productive process in Enindhilyakwa. At synchronically active morpheme boundaries such as between prefixes and stems, the lamino-dental lateral is maintained regardless of whether the prefix ends in a vowel or a consonant. An epenthetic vowel is inserted between two consonants of an affix and a stem: compare *na-lharrme-na* 'it(VEG) chases it(NEUT)' (prefix: *na-*), with *kv-lharrme-na* 'I will chase it(NEUT)' (prefix: *k-*).

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[12] The Wubuy and Ngandi correspondences here are also sparse: the only example of **dhdh* : *dh* in Heath (1978b) is the 'ochre' example. The only correspondence I found in Harvey's (2003a) extensive list is Ngandi *ngadhdhu*, Wubuy *ngadhu* 'cycad'. This word has no correspondence in Enindhilyakwa.

[13] He thereby refutes Heath's (1978b) claim that the lamino-dental stop has diffused from the Yolngu languages.

[14] The INALP prefix allows the possessor or 'whole' to be represented by a pronominal prefix: for example *dhv-ma+dhangkwa* 'meat of FEM class animal' (e.g. *dhvngarrbiya* 'FEM.crocodile').

However, as with the labio-velar continuant discussed above, there are some traces of hardening of the lateral. Examples include the frozen reduplicated stem *-lharrmvn+dharrma-* 'RDP+chase', and the complex stem *-akbal+dhamvra-* 'to tie around waist', from *-lhamvra-* 'tie, wrap'. More evidence of this hardening is presented in Appendix D. These data suggest that the hardening *lh > dh* may have been productive at some point in Enindhilyakwa, as it still is in Wubuy today.

In sum, Enindhilyakwa *dh* corresponds to Wubuy *dh*, and the lamino-dental laterals also match in the two languages. In both languages the evidence for the **dhdh > dh* shift is rather marginal, as there are not many cognates. The shift **dh > lh*, on the other hand, is well-supported in both languages. The lamino-dental lateral is an innovation characteristic of Enindhilyakwa and Wubuy.

9.2.1.2.3 Alveolars

The alveolar stop is a rare phoneme in Enindhilyakwa. Consequently, there are very few corresponding alveolar stops in Wubuy and Enindhilyakwa. Some involve homorganic clusters, as in Table 9.14.

	Enindhilyakwa *d*	Wubuy *d*
to close	-dhi**d**a-	-dhi**d**a-
to want	-ngayi**nd**a-	-nganyba**nd**a-
fish sp.	ma**nd**arra	ma**nd**arra

Table 9.14: Enindhilyakwa *d* : Wubuy *d*

The lenition **d > rr* is not incontestably attested in Wubuy (Heath 1978b: 38) and will not be addressed here either.

9.2.1.2.4 Retroflexes

In Heath's account, the Wubuy retroflex stop *rd* descends from a geminate stop **rdrd*, preserved in Ngandi (cf. **mirdrdiwiriq* : *mirdiwiri* 'possum'). The ancestral singleton **rd* preserved in Ngandi continues in Wubuy as a continuant (cf. **mardakarr(i)jj* : *marakarr(i)j* 'dangerous') (Heath 1978b: 37). The Enindhilyakwa correspondence to Wubuy *rd* is unclear: it can be either *rd* (Table 9.15), or *r* (Table 9.16, next page). The retroflex continuant, on the other hand, matches in the two languages, as shown in Table 9.17 (next page).

	Enindhilyakwa *rd*	Wubuy *rd*
grass	a+ma**rd**a	ma**rd**a
to climb	-wu**rd**a-	-wi**rd**a- ~ -bi**rd**a-
mud-whelk	yi+lha**rd**a	lhaa**rd**u

Table 9.15: Enindhilyakwa *rd* : Wubuy *rd*

	Enindhilyakwa *r*	Wubuy *rd*
ray sp.	*a+***r***imba*	***rd***uumbi*
olive Ridley turtle	*yi+jirakamvrra*	*ja***rd***akaamirri*
spear bush	*a+wa***r***uwara*	*wa***rd***awa***rd***a*
didgeridoo	*yi***r***aka*	(Yolngu: *yi***rd***aki*)

Table 9.16: Enindhilyakwa *r* : Wubuy *rd*

	Enindhilyakwa *r*	Wubuy *r*
to push	*-ji***r***a-*	*-ju***r***a-*
to scrape	*-***r***ija-*	*-***r***uja-*
to buzz around, fly away	*-wu***r***uma-*	*-wu***r***uma- ~ -ku***r***uma-*[15]
red emperor fish	*yimawu***r***a*	*yimawu***r***u*

Table 9.17: Enindhilyakwa *r* : Wubuy *r*

Loss of retroflexion is a synchronically productive procvess in Enindhilyakwa (section 2.5.8), which may account for the *rd* : *r* correspondences in Table 9.16. The Wubuy continuant hardens to a stop after a stop/nasal (e.g. *nga-ruma* '1-go' ~ *ngan-rduma* 'IRR.1-go'), but there is no trace of hardening in Enindhilyakwa. In reduplicated and complex stems schwa-epenthesis occurs between the stop/nasal and continuant and the continuant is preserved. Examples are: *-rakv-rakaji-* 'RDP-make a comfortable place' and *-makv-ruk+bijangaji-* [place-body+jump] 'to move camp'.

9.2.1.2.5 Lamino-palatals

In Heath's scenario Wubuy palatal stops developed from a geminate *jj*, preserved in Ngandi (cf. **mardakarr(i)jj* : *marakarr(i)j* 'dangerous'). The ancestral singleton stop lenited to a glide in Wubuy (cf. **jorlk-dhu* : *yarldha* 'go past'). The palatal stops and glides systematically match in Wubuy and Enindhilyakwa, as demonstrated in Tables 9.18 and 9.19 (next page), respectively.

	Enindhilyakwa *j*	Wubuy *j*
water python	*dhu+wal***j***a*	*arl***j***a*
paddle	*miye***j***a*	*miya***j***a*
root or vine sp.	*ma+ri***j***a*	*rii***j***a*
mist	*a+wi***j***a*	*wuu***j***a*
to scrape	*-ri***j***a-*	*-ru***j***a-*

Table 9.18: Enindhilyakwa *j* : Wubuy *j*

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[15] I suggested in Table 9.9 above that Wubuy morpheme-initial *w-* ~ *k-* corresponds to Enindhilyakwa *Ø-*. However, this is only the case when the following vowel is *a* or *e*, as this is a permitted morpheme-initial vowel. When the following vowel is *u*, which is not a permitted morpheme-initial vowel, *w* is preserved (but does not harden to *k*).

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	Enindhilyakwa *y*	**Wubuy *y***	**pGN *y (*j?)**
hand, fin	*a+yarrka*	*yarrka*	?*jarrka 'water goanna' ?*jakku 'left hand'
throat	*yambiya*	*yambiya*	
voice, language	*yeng-*	*yaang*	*yang
to do, say	*-yama-*	*-yama-*	**yama-*

Table 9.19: Enindhilyakwa *y* : Wubuy *y*

The lamino-palatal glide in the last two examples in Table 9.19 is not derived from an ancestral stop **j*, but is an etymological continuant (cf. *yang, **-yama-*). In Heath's account derived continuants may exist alongside etymological ones, which may be what we see happening here.

Wubuy *y* (whether etymological or derived) productively hardens to a stop when following a stop/nasal: an example is *nuny-jama-ny* 'you said' (Heath 1978b: 38). Again, this does not happen in productive affixation patterns in Enindhilyakwa, where *y* is maintained and an epenthetic vowel is inserted when two consonants meet across a morpheme boundary: *nvngki-yama* 'you said' (prefix: *nvngk-*). Some traces can however still be found, as the frozen reduplicated stem *-yamvn+jama-* 'RDP+say'.

9.2.1.2.6 Velars

In Heath's scenario the Wubuy velar stop descends from *kk, preserved in Ngandi (cf. **-makka-* : *-maka-* 'tell') (1978b: 37). The labio-velar glide *w* lenited from *k (cf. *kudduq : *wudu* 'tree sp.'). Enindhilyakwa *k* systematically corresponds to Wubuy *k*, and to Ngandi and pGN *kk*, as shown in Table 9.20. Enindhilyakwa *w* corresponds to Wubuy *w*, as was demonstrated in Table 9.8 above.

The systematic sharing of Wubuy and Enindhilyakwa *k*, which corresponds to *kk* in other GN languages, suggests that the change *kk > *k* is shared between Wubuy and Enindhilyakwa. The ancestral *k in turn lenited to *w* in both languages, as is evidenced by *-walka-* : *-waalka-* : *-kalkka-* 'to sneak up on'.

	Enindhilyakwa *k*	**Wubuy *k***	**Ngandi *kk***	**pGN *kk**
herring	*alkvrra*	*warlkarra*	*warlkkarra*	*warlkkarra
parallel grandparent	*kaku*	*kaaku*	*kokkok*	**ka(k)kak*
tobacco	*dhambakwa*	*dhamba(a)ku*	*dhambakku*	*dhambakku ~ *jambakku
to tell	*-maka-*	*-maka-*	*-makka-*	
to sneak up on	*-walka-*	*-waalka-*	*-kalkka-*[16]	

Table 9.20: Enindhilyakwa *k* : Wubuy *k* : Ngandi *kk* : pGN *kk

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[16] Heath (1978a) writes *galka*, where *g* represents a lenis stop, and *k* a fortis stop. Since Heath's lenis-fortis analysis is interpreted as a singleton-geminate contrast, I have retranscribed his form to conform to the transcription in this thesis.

As usual, the Wubuy glide hardens back to its historical source after a stop or nasal, but this variation is not attested in Enindhilyakwa. Enindhilyakwa *w* that corresponds to Wubuy *w ~ k* disappears in stem-initial position (Table 9.9). The stem *-walka-* 'sneak up on' is interesting in this regard: the Wubuy variant after a stop/nasal is not the anticipated form *-kaalka-* (as would be expected from Ngandi *-kalkka-*), but *-baalka-*. The stable *w* in the Enindhilyakwa correspondence *-walka-* supports a *w-* ~ *b-* in Wubuy (see Table 9.10). Perhaps the Enindhilyakwa/Wubuy stem-initial segment originally was *w-* ~ *k-*, but it was reanalysed as *w-* ~ *b-*.

9.2.1.3   The mid-back vowel

Enindhilyakwa and Wubuy both lack the mid-back vowel *o*, which is present in all other GN languages. Harvey (2003a) reconstructs **o* for pGN. In Wubuy the regular reflex of **o* is *a* (Heath 1978b: 44). This is also true for Enindhilyakwa:

	Enindhilyakwa *a*	**Wubuy *a***	**Ngandi *o***	**pGN **o***
woomera	*arndaka* 'to throw spear'	*warndak*	*borndok*	**borndok*
head	*lyang-*	*rlaang*	*rlong*	**L/rong*
ground	*jal(k)-*		*jolkko*	**jolkko*
to give	*-kwa-*		*-wo-*	**wo-*
to chop	*-ridha-*	*-lha-*	*-dho-*	**dho-*
to hit (PP)	*-ba-*	*-ba-*	*-boo-*	**bo-*
Dreaming	*a+ma+lhawudhawarra*	*lhawadhawarra*	*dhowo* 'word'	
dark, night	*marrvnga*			**morr* 'be/get dark'
plant sp.	*dhv+makelya*			**makorlkorl*

Table 9.21: Wubuy *a* : Enindhilyakwa *a* : pGN **o*

The correspondence *e* in the last word, *dhv+makelya* 'FEM+mistletoe', to pGN **o* probably is an *a* vowel that has been fronted due to the following lamino-palatal according to rule P-4.

The change **o > a* is a shared innovation of Wubuy and Enindhilyakwa.

9.2.1.4   Summary of shared innovations

Table 9.22 summarises the correspondences that systematically hold between Enindhilyakwa, Wubuy and pGN. Correspondences are given in parentheses where they are assumed according to Heath's scenario, but cognates are scarce. Ngandi is in all cases identical to pGN.

pGN, Ngandi	(**bb*)	(**b*)	(**dhdh*)	**dh*	(**jj*)	**y* (**j?*)	**kk*	**o*
Wubuy	*b*	*w ~ b*	*dh*	*lh*	*j*	*y*	*k*	*a*
Enindhilyakwa	*b*	*w (~ b)*	*dh*	*lh*	*j*	*y*	*k*	*a*

Table 9.22: Summary of shared phonological innovations

The sound changes common to Enindhilyakwa and Wubuy that are best supported by cognates are *dh > lh, *kk > k and *o > a. The other diachronic shifts that Heath proposes for Wubuy appear to be plausible for Enindhilyakwa also, but at present lack sufficient cognates.

The correspondence pGN *bb : Enindhilyakwa kb : Wubuy b is well-attested. This correspondence is especially interesting in the light of the debate on whether the phonetically fortis/long stops in Arnhem Land languages are to be analysed as geminate clusters or as single segments (see Harvey 2003a; Baker 2008a and the references therein). Since GN long stops may correspond to the heterorganic cluster kb in Enindhilyakwa, this supports a geminate analysis.

9.2.2 Sound changes

This section investigates the language-specific sound changes in Enindhilyakwa.

9.2.2.1 The laterals

Retroflex laterals are extremely rare in Enindhilyakwa, occurring only in a handful of identifiable loanwords (Leeding 1989). In the GN languages, on the other hand, retroflex laterals are common. In onset position they correspond to a palatal lateral in Enindhilyakwa, as shown by the following correspondence sets.

	Enindhilyakwa *ly__*	Wubuy *rl__*	Ngandi *rl__*	pGN *rl__*
head	*lyang-*	*rlaang*	*rlong*	*L/rong*
skin	*-ma+kulya*	*ma+kurlak*	*kurlaq*	*kurlak*
bloodwood	*a+lhvmilya*	*lhumurluk*	*dhumurluq*	*dhumurluk*
curlew	*dhu+walya*	*wuwarlurlu*	*kuwarlurlu*	*kuwarlu*
butterfly	*wurrv+milyija*			*merlemerle*
to go around	*-wilyake-*			*warluk-*
plant sp.	*dhv+makelya*			*makorlkorl*
sugarbag	*yi+lyakwa*	*rlaku*		
language name	*e+nindhilyakwa*	*nundhirlaku*		

Table 9.23: Enindhilyakwa *ly* : Wubuy, pGN *rl* (onset)

Retroflex laterals in coda position correspond to an alveolar lateral in Enindhilyakwa:

	Enindhilyakwa *__l*	Wubuy *__rl*	pGN *__*rl ~ *l*
belly	*mulkwa* (~ *murlkwa*)	*murlku*	
plain	*-akbal-*	*abarla*	*kabbal*
herring	*alkvrra*	*warlkarra*	*warlkkarra*
barramundi	*yukulbanda*	*yingkurlbandi*	
water python	*dhu+walja*	*arlja*	
toadfish	*yulkwa ~ yurlkwa*	*yirlku*	
shellfish sp.	*yu+wa(r)lkurra*	*warlkurrk*	
tree sp.	*ma+balba*	*barlbi*	
to pelt with stones	*-am+balk-*	*-warlka- ~ -barlka-*	

Table 9.24: Enindhilyakwa *l* : Wubuy, pGN *rl* (coda)

There are some exceptions to the above two patterns: in some words *rl* in Wubuy onsets corresponds to *l* in Enindhilyakwa, as shown in Table 9.25. Most of these are listed in the dictionary as Macassan loans (but only one of them is included in Evans' 1992 list of Macassan loans in Top End languages). Macassan did not have a retroflex lateral, so we can assume that Enindhilyakwa preserved the original alveolar lateral, while Wubuy turned it into a retroflex. Note that the Macassan loans do not have a noun class prefix in Enindhilyakwa, indicating that overt noun class marking on nouns had already lost its productivity at the time of Macassan contact (which is believed to have started in the late 17th century [MacKnight 1976; section 1.1.5]).

	Enindhilyakwa *l*__	**Wubuy *rl*__**	**Macassan *l*__**
Clan name	*lalara*	*rlarlarra*	-
egret	*a+marrvrla ~ a+marrvla*	*marraarla(k)*	-
sheet iron	*babvlvkarna*	*babirlikan*	?
Carissa sp.	*jungkulvla*	*jingkurlirli*	?
shovel spear	*lama*	*rlama*	*lamaŋ*
northeast wind	*lungkurrma*	*rlungkurrma*	?

Table 9.25: Enindhilyakwa *l* : Wubuy *rl* (onsets in loanwords)

Loss of the Macassan final nasal is common in some Australian languages (Evans 1992: 58), and happened in the Enindhilyakwa and Wubuy versions of Macasssan *lamaŋ* 'shovel spear'.

The first two words in this table, *lalara* and *amarrv(r)la*, are not loanwords. Here we cannot tell whether it is the alveolar or the retroflex lateral that is archaic, as we only have correspondences in two languages. The *l ~ rl* variation in Enindhilyakwa 'egret' may be due to apical dissimilation (Table 9.44 below): Enindhilyakwa does not tolerate sequences of same place apicals in consecutive syllables (with the exception of reduplication). Sequences such as *l…rr* are dispreferred (whereas reduplication of segments, such as *l…l* or *rr…rr*, is not problematic). Loss of retroflexion in *amarrvrla* would result in a sequence of two apico-alveolars, so the choice is between two equally unsatisfactory options: maintaining the retroflex lateral, or allowing a sequence of two same place apicals. Note that this problem is resolved in *lalara* (Wubuy: *rlarlarra*): the alveolar tap present in Wubuy is converted into a retroflex in Enindhilyakwa, thereby avoiding a clash of apicals.

The interesting shift from a retroflex to a palatal lateral in Enindhilyakwa (Table 9.23) is reminiscent of the prepalatalisation of apicals in the Arandic languages. Koch (1997: 180-1) proposes the following diachronic change of etymological retroflex laterals[17]: **rli > yl*. This shift took place in Alyawarr and Arrernte, as evidenced by **karli* 'boomerang', which became *aylaylv* in Alyawarr, and *alyv ~ ilyv* in Arrernte. The phonetic realisation of the Alyawarr sequence *ayl*,

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[17] Prepalatalisation also affected apical obstruents and nasals in Arandic.

with a palatal onglide, is [æil] ~ [ɛil] (Harvey 2011: 88). In Arrernte the prepalatalised lateral merged with the etymological prepalatal lateral *ly* (Koch 1997).

The prepalatalisation scenario could also account for the **rl > ly* change in Enindhilyakwa. If we take pGN **dhumurluk* 'bloodwood' (Enindhilyakwa: *alhvmilya*) as an example, I propose the following changes concerning the lateral:

(10) **url > *uyl* (prepalatalisation of retroflex) *> *iyl* (assimilation of **u* to palatal onglide) *> ily*

As Harvey (2011) notes for Arandic, the nature of the diachronic relationship between retroflexes and prepalatals in Enindhilyakwa remains a topic for further investigation.[18]

9.2.2.2 The vowels

The Enindhilyakwa vowel phonemes /ɛ/ and /ə/ are absent from Wubuy. Leeding (1989) claims that [ɛ] is synchronically an allophone of /a/, generated by a high front vowel in the next syllable. Schwa is a synchronic allophone of /ɨ/ in her analysis, conditioned by a following retroflex consonant. In Chapter 2 I dismissed these claims and argued that /ɛ/ and /ə/ are both contrastive sounds. Yet Leeding's analysis may provide a plausible *historical* scenario, as Enindhilyakwa /ɛ/ frequently corresponds to Wubuy /a/ __ /i/. And Enindhilyakwa /ə/ corresponds to a variety of vowels in Wubuy, in a number of conditioning environments, retroflexes being only one of them. The two vowels are discussed here in turn.

9.2.2.2.1 The phoneme /ɛ/

The following examples involve Enindhilyakwa /ɛ/ corresponding to Wubuy *a* followed by *i* in the next syllable (I use orthographic representation for the other languaes as that is how the data are transcribed).

	Enindhilyakwa /ɛ/	Wubuy *a __ i*	pGN / Mac **a*
sedge sp.	*mendheba*	*mandhabi*	
shellfish sp.	*melhuwa*	*malhiwu*	
salt	*dhv+lhvngena*	*lhanganik*	
dry	*-rerr+mv-* (verb)	*rarri* (adj)	
tuskfish	*yembvrrkwa*	*yambirrku*	
trepan	*dherriba*	*dhaarriba*	Mac *taripaŋ*
bush	*erriberriba*	*warrinybarriny*	
to deny	*-edhvrre+mv-*	*-wadhaari+mi-*	
raincloud	*ebvrra* (VL1 p.44)	*-abirrarraki-* 'to dawn'	

Table 9.26: Enindhilyakwa *eC(C)V* : Wubuy *aC(C)i*

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[18] Another interesting correspondence involving the lamino-palatal lateral is Macassan *ladiŋ* 'knife', which continues as *lyelyinga* 'knife(NEUT)' in Enindhilyakwa. The alveolar lateral and the alveolar stop are both uncommon sounds in Enindhilyakwa, which may be why they both developed into the common sound *ly*.

These correspondences suggest that Enindhilyakwa /ɛ/ may historically derive from /a/ through i-umlaut. Although this is also a synchronic rule (P-5), in some of these examples there is no /i/ vowel that could have conditioned raising of /a/ to [ɛ]. For example, there is no synchronic reason for /ɻaɾ+mə/ in Table 9.26 to be realised as [ɻɛɾmə] 'to dry', so i-umlaut must have been a diachronic process.

The Enindhilyakwa verbs *-errik+bi-* 'throw' and *-errek+bi-* 'vomit' in (8) above could then have developed from the Wubuy verb *-warrka-* 'to throw' and noun *warrkard* 'vomit', respectively, by addition of the INCH suffix *-bi-*, as shown in (11) and (12):

(11) **-warrka-bi-* [throw-INCH] > **-warrk+bi* (loss of root-final vowel) > *-werrk+bi- ~ -werrik+bi-* (i-umlaut) > *-errk+bi- ~ -errik+bi-* (loss of stem-initial vowel) 'to throw'

(12) **-warrkard-bi-* [vomit-INCH] > **-warrkerd+bi-* (i-umlaut) > **-warrke+bi-* (simplification of consonant cluster) > **-warrek+bi-* (metathesis) > *-werrek+bi-* (i-umlaut) > *-errek+bi-* (loss of stem-initial *w*) 'to vomit'

Harvey (2003a) reconstructs **e* for pGN, but this does not seem to continue in Enindhilyakwa, and neither in Wubuy. Furthermore, Macassan *e* does not map onto *e* in Enindhilyakwa or Wubuy - rather, as is the rule for Top End languages (Evans 1992: 62), Macassan *e* maps onto *i*:

	Enindhilyakwa *V*	**Wubuy *V***	**pGN / Mac *e***
plover	*dhv+rrvkba*	*birrbirrk*	pGN **berrebberreb*
butterfly	*wurrv+milyija*	*murla* 'mosquito'	pGN **merlemerle*
INCH	*+mv-* (thematic)	*-ma-*	pGN **-me-*
fish hook	*bikanga*	*bikangi*	Mac: *pekaŋ*
machete	*kaliwanga*	*kaliwanga*	Mac: *kalewaŋ*
canoe	*libaliba*	-	Mac: *lepalepa*
fish bait	*libanga*	*libangi*	Mac: *eppaŋ*

Table 9.27: Wubuy *V* : Enindhilyakwa *V* : pGN or Macassan **e*

From these correspondences it appears that Wubuy and Enindhilyakwa both lost pGN **e* as a phoneme, which continues as a variety of vowels. Macassan *e* continues as *i*, as in the other Top End languages. The Enindhilyakwa *e* vowel arose independently, from *a* conditioned by the high front vowel in the next syllable.

9.2.2.2.2 The phoneme /ə/

The Enindhilyakwa vowel /ə/ (orthographic symbol: *v*) relates to a number of vowels in Wubuy and pGN. Firstly, it may correspond to *i* adjacent to a retroflex or tap/trill, as illustrated in Table 9.28.

	Enindhilyakwa /ə/ (v)	**Wubuy i (~ u)**	**pGN *i**
Turrum fish	*kv(r)nkvrna*	*kirnkirn*	**kirnqkirn*
shoulder	*a+mvrndha*	*muurn*	**mirni*
tusk fish	*yembvrrkwa*	*yambirrku*	
milkfish	*yimvrarra*	*yimirdaarri*	
sinker	*mvr(v)ngkvrra*	*mirnkirra*	
coral trout	*dhamabvrna*	*dhumaabirna*	
eagle ray	*a+marnvndhangwa*	*marnindhangu*	
INSTR case suffix	*-mvrra*	*-mirri*	Yolngu, Wa: *-mirri*[19]

Table 9.28: Enindhilyakwa /ə/ : Wubuy and pGN *i* (in rhotic environment)

Front vowels commonly centralise in retroflex environments in Australian languages (Flemming 2003), and Enindhilyakwa is no exception. Retroflex environments are also a common conditioning factor for the high central vowel in Dalabon (AEH p.334; Baker 2004: 8). Front vowels are incompatible with retroflexed consonants in Enindhilyakwa, and they are very rare with the alveolar tap/trill and the retroflex continuant. Wubuy is special in this regard in allowing a front high vowel to precede a retroflex or tap/trill. These correspondences tell us that one possible source for the Enindhilyakwa phoneme /ə/ is /i/ in a conditioning retroflex environment.

Alternatively, Enindhilyakwa /ə/ may correspond to /a/ in an unstressed position:

	Enindhilyakwa /ə/ (v)	**Wubuy a**	**pGN *a**
herring	*ˈalkvrra*	*warlkarra*	**warlkkarra*
fish sp.	*ˈadhvka*	*adhakak*	
salt	*dhv+lhvˈngena*	*lhanganik*	
season	*akvˈlharr-*	*akalhal-*	
some, few	*ˈadhvrra*	*adharra*	

Table 9.29: Enindhilyakwa /ə/ : pGN **a* (in unstressed position)

These correspondences suggest that another possible source for Enindhilyakwa /ə/ is from reduction of /a/ in unstressed position. Vowel-reduction in unstressed syllables is also attested in Arandic (Koch 1997), and GN (e.g. pGN **bardrdi* 'marchfly' > *bardrdv* 'mosquito' in Dalabon, *bardrdv(q)* 'marchfly' in Rembarrnga) (Harvey 2003a: 223, 226).

Thirdly, Enindhilyakwa /ə/ may be a reflex of pGN **e*, as per Table 9.27 above. And finally, Enindhilyakwa /ə/ may correspond to Wubuy *u* (pGN **u*) surrounded by consonants other than labio-velar *w* or labialised velars *ngw* and *kw* (or phonetic non-labialised velars for which a labialised underlying representation is possible), as illustrated in Table 9.30.

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[19] Heath claims that the PROP suffix *-mirri* is reconstructable for proto-Yolngu. He suggests that this suffix has diffused into Wubuy, Enindhilyakwa and Warndarrang, where it was adopted as an INSTR suffix (1978b: 78-9).

	Enindhilyakwa /ə/ (v)	**Wubuy u**	**pGN *u**
bloodwood	*a+lhvmilya*	*lhumurluk*	**dhumurluk*
mangrove (tree)	*anhvma*	*anhuma*	
pelican	*dhv+makbvlha*	*maabulhu*	
hair	*ma+mvngba*	*muung*	?**mud* 'body hair'
flea, lice	*yi+mvrnda*	*murndik*	
to put down	*-abvrra-*	*-burra-*	

Table 9.30: Enindhilyakwa /ə/ : pGN **u* (in non-conditioning environment)

These data confirm the analysis in Chapter 2 that [u] obtains its rounding from contiguous rounded velars: since [u] is only compatible with labialised velars (whether these are labialised on the surface or underlyingly), **u* was reanalysed in other environments as a different vowel in Enindhilyakwa: /ə/. This schwa in turn may have assimilated to lamino-palatals, as in **dhumurluk* > *a+lhvmilya* 'bloodwood', and be realised as [i].

Macassan loanwords have undergone a similar treatment. The Macassan vowel *o* maps onto *u* in the Top End languages (Evans 1992: 62). An example is *tambako* 'tobacco', which continues as *dhambakku* in Ngandi, *dhambaku* in Wubuy, *jambakku* in Ngalakgan, et cetera. In Enindhilyakwa, the rounding of [u] is interpreted as a feature of the preceding velar (rule P-3). The rounding of the consonant only shows up in word-final position: *dhambakwa* (see Table 9.35 below). In environments incompatible with [u], Macassan *o* may correspond to [ə] in Enindhilyakwa (and [a] in word-final position):

	Enindhilyakwa /ə/ (v)	**Wubuy u**	**Macassan o**
sail, cloth	*dhvmbala*	*dhumbala*	*sombalaʔ*
northeast wind	*dhvmbvrra*	*dhimburru*	*timoroʔ*
nail, peg	*baja*	*baaju*	*pasoʔ*

Table 9.31: Enindhilyakwa /ə/ : Wubuy *u* : Macassan *o*

The last word is interesting, because Tindale recorded it as *baju* 'spearhead' (1925: 93), with word-final [u]. This could mean that the Enindhilyakwa conversion of word-final vowels to [a] (rule P-7B) is a comparatively recent phenomenon.

9.2.2.2.3 The vowel [u]

Enindhilyakwa [i] is incompatible with *ngw*, *kw* and *w* (for the latter only when not followed by a conditioning lamino-palatal; hence *awija* 'NEUT.mist' is permissible because of the following *j*; see section 2.6.7). The Wubuy correspondences with rounded velars only involve *w*; *ngkw* and *kw* are unattested in Wubuy.

	Enindhilyakwa [u]	**Wubuy *i***
shellfish sp.	*melhuwa*	*malhiwu*
to climb	*-wurda-*	*-wirda- ~ -birda-*
alone	*-awura*	*wiriwiri ~ biriwiri*

Table 9.32: Enindhilyakwa [u] : Wubuy *i* (contiguous to *w*)

Wubuy *i* corresponds to Enindhilyakwa [u] when adjacent to *w*. This confirms my analysis in Chapter 2 that the rounding of [u] is an underlying feature of consonants in Enindhilyakwa. The *melhuwa* word indicates the following ordering of historical changes:

(13) 1. i-umlaut (P-5): *malhiwu > *melhiwu*
      2. vowel rounding and backing 1 (P-2): *melhiwu > *melhuwu*

Since /a/ can only raise to [ɛ] when conditioned by a high front vowel in the next syllable, this must have happened before assimilation of /i/ to the following labio-velar to become [u].

On the other hand, if Wubuy *u* occurs in an environment that *is* compatible with this vowel in Enindhilyakwa - i.e., contiguous to velars - this quality is maintained. This is also the case for Macassan loans:

	Enindhilyakwa [u]	**Wubuy *u***	**Macassan *u***
to sleep	*-mungkulha-*	*-mungkulha-*	
to catch fish	*-kurda-*	*-kura-*	
sacred	*-kurdukurda*	*kurdukurdu*	
cloud	*a+ngubina*	*ngubunung*	
sea wasp	*yabungurra*	*yabungurru*	
rudder	*kulvnga*	*kulinga*	*guliŋ*
coconut	*kalukwa*		*kaluku*

Table 9.33: Enindhilyakwa [u] : Wubuy *u* : Macassan *u* (contiguous to velars)

In these correspondences the Enindhilyakwa velars are interpreted as underlyingly rounded (i.e. /mVŋkʷVɭa/ [muŋkuɭa] 'sleep'). This is supported by *kalukwa* 'coconut', where the Macassan word-final *ku* maps onto [kʷa] in Enindhilyakwa (recall that all words end in [a]).

When the Wubuy correspondence has *u* followed by an unrounded velar in the next syllable, this *u* may be maintained in Enindhilyakwa, while the velar is interpreted as rounded:

	Enindhilyakwa [u]	**Wubuy *u***	**Macassan *u***
to hunt	*-ngurrkwa-*	*-ngurrka-*	
to stab	*-adhukwa-*	*-adhuka-*	
to come together	*-mvrndukwa-*	*-murnduka-*	
SE wind	*dhungkwarra*		*tuŋkara*

Table 9.34: Enindhilyakwa *u(C)kwa#* : Wubuy *u(V)ka#*

In these correspondences, [u] quality in Enindhilyakwa is maintained, at the expense of the velar.

9.2.2.2.4 Word-final [a]

One of the main differences between Enindhilyakwa and all other GN languages is that every word in Enindhilyakwa ends in [a].[20] Wubuy correspondences may end in a consonant, such as *kuwak* 'koel' (Enindhilyakwa: *kuwaka*). Others may end in a different vowel, such as *yakarri* 'sweetlips (fish)' (Enindhilyakwa: *yakarra*). Correspondences that end in /Cu/, where /C/ is a velar, relate to [C^{w}a] in Enindhilyakwa, as shown in Table 9.35. Macassan loans ending in /Co/, where /o/ maps onto /u/ in Top End languages, correspond to [C^{w}a] in Enindhilyakwa. This is also true for English loans ending in /Co/, as shown in the table.

	Enindhilyakwa [C^{w}a]#	Wubuy *Cu#*	pGN *Cu#*	Mac *Co#*
tobacco	*dhambakwa*	*dhamba(a)ku*	**dhambakku ~ *jambakku*[21]	*tambako*
meat	*-ma+dhangkwa*	*lhangku*	**dhangku*	
canoe	*ma+lhamukwa*	*lhamuku*	GP: *dhamukku* (VL1 p.59)	
deep sea	*mukumukwa*	*mukumuku*		
catfish	*yi+mvdhvrrngwa*	*midhurrungu*		
old (man)	*n-eni-yuwangkwa*	*yiwangku*		
anchor	*balangwa*	*balangu*	(e.g. Yanyuwa *balangu*)	*balaŋo*
coconut	*kalukwa*		Mac: *kaluku*	
calico	*kalikwa*	*kaaliku*		Eng: *calico*

Table 9.35: Enindhilyakwa [C^{w}a]# : pGN */Cu/# : Mac /Co/#

Since Enindhilyakwa [u] is generated by rounded velars, the preceding velar is reanalysed as underlyingly labialised: **Cu* > /C^{w}V/. This becomes [C^{w}a] word-finally. The mapping of Macassan *o* onto *u* can only be observed indirectly in Enindhilyakwa, due to the fact that the preceding velar becomes rounded: *Co#* (Mac) > *Cu#* (GN) > [C^{w}a]# (Enin).

The fact that Macassan *o* continues as *u* in Enindhilyakwa and Wubuy (which may be reanalysed as /ə/ in Enindhilyakwa), is interesting, because it differs from the treatment of pGN **o*: I have shown in Table 9.21 above that the reflex of this **o* is *a* in both languages (e.g. pGN **borndok* : Wub *warndak* 'woomera' : Enin *-arndaka-* 'to hunt with spear'). I proposed this to be an innovation unique to Enindhilyakwa and Wubuy. This must then have taken place at a different time than the mapping of Macassan *o* onto *u* that has happened across the Top End. The treatment of the English loan *calico* in Table 9.35, which continues as *kalikwa* in Enindhilyakwa, tells us that English *o* is treated like Macassan *o*, at least in word-final position. This suggests the following ordering of the changes in time:

(14) 1. pGN **o* > *a* (Enin, Wub)
       2. Macassan, English *o* > *u* (GN) (= [C^{w}a] when word-final in Enin)

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[20] The only other Arnhem Land language in which all words end in a vowel is Tiwi (Dixon 2002: 646).

[21] The reconstruction of 'tabacco' for pGN comes from Harvey (2003a), who does not distinguish between loanwords and inherited words in his paper.

The word *kalikwa* is a dictionary entry, which I have never heard myself. If this is indeed phonetically [kalikʷa], with [i] preceding [kʷ], as the spelling suggests, then this also tells us that rule P-2 (vowel rounding and backing) is not applied to recent loanwords. That is, we do not get /kalikʷa/ [kalukʷa] (as this would be spelled *kalukwa* in the dictionary).[22]

9.2.2.3 Summary of sound changes

Enindhilyakwa has undergone drastic sound changes that distinguish its phonology from that of other GN languages. Some changes are shared with Wubuy, and some are language-specific:

- pGN *o > a* (shared with Wubuy)
- pGN *e > V* (shared with Wubuy)
- pGN *dh > lh* (shared with Wubuy)
- loss of singleton-geminate stop contrast (shared with Wubuy)
- creation of phoneme /ə/ (in retroflex or rhotic environments)
- creation of phoneme /ɛ/ (by i-umlaut)
- limiting the distribution of [u] to a restricted set of predictable environments, and the related development of labialised velars /kʷ/ and /ŋʷ/
- creation of phoneme /ʎ/ (by loss of retroflexion and prepalatalisation)
- apical dissimilation (see also section 9.3.4.3 below)
- all words ending in [a]
- extensive usage of vowel epenthesis

The latter two changes, together with the syllabification of certain consonants clusters as onsets (sections 2.3.2 and 2.5.7), appear to be driven by the pressure to avoid codas.

9.3 Verbal suffixal paradigms

Verbal suffixal paradigms are assumed to be particularly resistant to borrowing. They are also the site of greatest irregularity and least productivity (Heath 1978b; Baker 1999; AEH). The sharing of such paradigms thus provides evidence for genetic relationships between languages. The study of shared paradigmatic irregularities has been crucial to the genetic subclassification of languages in Australia and elsewhere in the world. Even in cases of intense linguistic diffusion such as those in Eastern Arnhem Land (Heath 1978b), verbal conjugational irregularities do not appear to diffuse (as opposed to, say, case suffixes or pronominal clitics [AEH]).

This section lines up some of the Enindhilyakwa tense/aspect suffixal paradigms from Chapter 6 with the corresponding paradigms in Wubuy, Ngandi and pGN. My objective here is twofold: firstly, by showing that the Enindhilyakwa paradigm exhibits many of the characteristics of the

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[22] An alternative explanation is that the [i] vowel is maintained to differentiate *kalikwa* 'calico' from the Macassan loan *kalukwa* 'coconut' (< *kaluku*).

GN paradigm, I aim to establish that Enindhilyakwa is a GN language. But secondly, I will demonstrate that Enindhilyakwa also diverges from the typical GN paradigm, and that this can be captured by reconstructing a common ancestor of Enindhilyakwa, Wubuy and Ngandi.

9.3.1 Tense, aspect, mood categories

Like all GN languages save Mangarrayi (AEH), and also like other non-Pama-Nyungan (nPN) languages, the basic form of the Enindhilyakwa verb is (where IN stands for incorporated nominal):

pronominal prefixes (+ *applicative*) (+ *IN*) + *verb stem* (+ *derivational suffix*) + TAM

As in the GN languages, the Enindhilyakwa verb stem may be simple or complex, with complex stems consisting of an uninflecting prepound plus an inflecting thematic element.

NPN languages characteristically combine verbal prefixes with the suffixes to mark a variety of modal meanings (Verstraete 2005). The Irrealis category is typically marked with a specific prefix, which may be morphologically fused with the bound pronominals, as was described in Chapter 4 for Enindhilyakwa.[23] The GN languages, by contrast, do not follow the nPN pattern as they not tend to have a broad modal prefix; instead they distinguish between Realis and Irrealis in the tense suffixes (AEH; Verstraete 2005). Five languages in Verstraete's sample of 28 nPN languages are organised this way, four of which are GN: BGW, Ngalakgan, Rembarrnga and Ngandi distinguish between Realis and Irrealis in the suffixes only.[24] Dalabon is another GN language that operates this way (Evans & Merlan 2003).

The organisation of the Enindhilyakwa and Wubuy TAM systems differs from the typical GN pattern (including Ngandi), but resembles the pattern characteristic of the other nPN languages in sharing one set of tense suffixes between distinct sets of Realis and Irrealis prefixes. What sets Wubuy and Enindhilyakwa apart, however, are the striking correspondences in the inflectional suffix system and its covariation with the prefix system. Table 9.36 compares the Wubuy and Enindhilyakwa TAM systems with those of BGW (Evans 2003a) and Wagiman (Wilson 1999) (cited in Verstraete 2005). The BGW system follows the typical GN pattern, whereas Wagiman shows the pattern characteristic of the nPN languages. Wagiman is both geographically and genetically distant from Wubuy and Enindhilyakwa (Map 1.1). These languages are randomly chosen to show the characteristics of Enindhilyakwa and Wubuy on the one hand, and their shared distinctions with other nPN languages on the other.[25]

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[23] The Enindhilyakwa and Wubuy Irrealis markers are not cognate, as argued in Heath (1997). See Appendix L.
[24] The fifth language is Mawng.
[25] Labels: R 'Realis'; IRR 'Irrealis'; P1 'Punctual/atomic Past'; P2 'Continuous/neutral Past'; NP1 'Punctual/atomic Non-past'; NP2 'Continuous/neutral Non-past'; NP3 'Negated Non-past' (Enindhilyakwa), 'Future negative and Evitative' (Wubuy); PP 'Past Perfective'; PI 'Past Imperfective'; FUT 'Future'; PR 'Present'; H 'Habitual'.

		Enindhilyakwa	Wubuy	BGW	Wagiman
Positive	Past1	R-verb-P1	R-verb-P1	PST-verb-PP	PST-verb-PP
	Past2	R-verb-P2	R-verb-P2	PST-verb-PI	PST-verb-PST(H)
	Past Potential	IRR-verb-P2	IRR-verb-P2	PST-verb-IRR	IRR-verb-PST(P)
	Present1	R-verb-NP1	R-verb-NP2	NP-verb-NP	PR-verb-PR
	Present2	R-verb-NP2			
	Future1	IRR-verb-NP1	IRR-verb-NP1		FUT-verb-FUT/IRR
	Future2	IRR-verb-NP2	IRR-verb-NP2		
	Imperative1	IMP-verb-NP1	IRR-verb-NP1	NP/PST-verb-IMP	
	Imperative2	IMP-verb-NP2	IRR-verb-NP2		
	Evitative	IRR-verb-NP2/P2-*maka*	IRR-verb-EVIT/NP3-*maki*	NP-verb-NP	IRR-verb-FUT
Negative	Present	a-/ŋ-verb-NP3	IRR-verb-NP1	NP-verb-NP	IRR-verb-PR
	Future		R-verb-NP3		IRR-verb-FUT
	Imperative				FUT-verb-FUT/IRR
	Past	IRR-verb-NP2	IRR-verb-NP2	PST-verb-IRR	IRR-verb-PST(P)
	Evitative	IRR-verb-P2-*maka*	R-verb-EVIT/NP3-*maki*	NP-verb-NP	

Table 9.36: TAM systems of Enindhilyakwa, Wubuy, Bininj Gun-Wok and Wagiman

The Wubuy/Enindhilyakwa system differs substantially from the BGW system. Beside the fact that the Realis-Irrealis distinction is not made in the prefixes but in the suffixes, tense is confined to Realis mood in BGW, and aspect is confined to the Past tense. In Wubuy/Enindhilyakwa, tense and aspect do not have such limitations: tense occurs in both Realis and Irrealis mood, and aspect in both Past and Non-past tense. We will see below that one major innovation of Wubuy and Enindhilyakwa is the aspectual distinction in the Non-past (which also happened in Ngandi).

Wagiman has more categories expressed by prefixes, and more categories expressed by suffixes than do Wubuy/Enindhilyakwa. Nonetheless, like BGW, Wagiman only makes aspectual distinctions in the Past (Perfective, Habitual and unmarked Past). This language uses different suffixes for Present (PR) and Future (FUT), while in Wubuy/Enindhilyakwa the same suffixes are used for both categories (the Present-Future distinction is made by the prefixes). Different prefixes are used to mark Future/Imperative and Past Potential in Wagiman (FUT and IRR, respectively). In Wubuy/Enindhilyakwa these categories are both marked with IRR prefixes.

The Negated Non-past is expressed by a distinct suffix in Wubuy/Enindhilyakwa, which does not exist in the other languages.

The distribution of mood prefixes and tense/aspect suffixes in Enindhilyakwa and Wubuy is virtually the same. Some minor differences are that the Enindhilyakwa NP3 takes a special prefix (*a-* ~ *ng-*) and is used for the Negated Non-past. In Wubuy NP3 is used for the Future Negative (with Realis prefixes), or the Evitative (with Irrealis prefixes). Another difference is the neutralisation of aspect in the Present Realis Positive in Wubuy, but not in Enindhilyakwa. Furthermore, Wubuy lacks distinct Imperative (IMP) and Hortative (not shown) prefix series

present in Enindhilyakwa, which were suggested in section 4.2 to be recent innovations. But these differences are minor and, as Heath (n.d.) puts it, "do not disguise the very obvious close formal connection between the verbal systems of the two languages".

9.3.2   The innovated Non-past category

Whereas the verbal inflectional suffixes in the bulk of GN languages encode one Non-past category and two Past categories (typically Past Perfective [PP] and Past Imperfective [PI], also labelled Punctual and Continuous in some grammars [AEH]), Enindhilyakwa, Wubuy and Ngandi have elaborated the Non-past. Enindhilyakwa and Wubuy have created an aspectual distinction in the Non-past, which Heath labels NP1 'Punctual' and NP2 'Continuous' for Wubuy. Ngandi distinguishes Present (PR) and Future (FUT).[26] In Chapter 6 I also labelled the two Non-past categories NP1 and NP2, where NP1 represents atomic Non-past and NP2 neutral Non-past.

Baker (2004) proposes that the pGN Non-past (which encodes Present and Future tenses) corresponds to Wubuy NP1 and Ngandi FUT. The inflectional category equivalences are presented in Table 9.37, with their Enindhilyakwa correspondences as proposed in this chapter (apart from the Enindhilyakwa data, this table is taken from Baker 2004).

Enindhilyakwa	Wubuy	Ngandi	pGN
Non-Past1	Non-Past1	Future	Non-Past
Non-Past2	Non-Past2	Present	
Non-Past3	Non-Past3	Evitative	Irrealis
Past1	Past1	Past Punctual	Past Perfective
Past2	Past2	Past Continuous	Past Imperfective
	Evitative	Potential	

Table 9.37: Verb inflectional category equivalences of Enindhilyakwa, Wubuy, Ngandi and pGN

The Enindhilyakwa/Wubuy NP2 and Ngandi PR are an innovation. The suffix representing these categories is *-na* or *-ni*.

The PP and PI of pGN roughly correspond to these categories in Enindhilyakwa, Wubuy and Ngandi (labelled P1 and P2, respectively, in Enindhilyakwa and Wubuy). The pGN IRR corresponds to Wubuy NP3 and Ngandi EVIT according to Baker (2004). The Enindhilyakwa NP3 is formally distinct from the corresponding Wubuy and Ngandi categories.[27] I view these as language-specific generalisations and will not address them here. The Wubuy Evitative ~ Ngandi Potential are an innovation, which lacks an analogue in pGN (ibid). This category does not appear

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[26] Ngalakgan and Rembarrnga also have a FUT category, but this is an innovation unique to these two languages, unrelated to the innovated Ngandi and Wubuy/Enindhilyakwa NP categories. In Ngalakgan and Rembarrnga the Future is composed by adding FUT suffixes to the (pGN) NP stem (Baker 2004). The innovated Ngandi FUT ~ Wubuy/Enindhilyakwa NP1 categories are built by adding the relevant suffixes directly to the verb root.
[27] Enindhilyakwa NP3: *-ma* ~ *-ngvma*, with both allomorphs often possible for the same verb; Wubuy NP3: mostly *-Ø*, sometimes *-u* after a stem ending in *u*; Ngandi Evitative: often *-Ø*, in some irregular verbs *-yi* or *-ngi*.

to have a formal or functional equivalence in Enindhilyakwa and will therefore not be discussed here either. Only the Wubuy/Enindhilyakwa names for the inflectional categories will be used in the following sections, together with pGN Non-Past (NP).

9.3.3 Generalisations

To appreciate the shared innovations and the language-specific generalisations, it is useful to line up the inflectional endings of the corresponding (sub-)classes in the three languages. This is done in Table 9.38, which is to be read in a vertical direction. The corresponding conjugations are based on shared verbs, and on formal similarities of the suffixes. Corresponding suffixes that are formally similar to those in Enindhilyakwa are bolded.

		1A(i)	2A	3	4	6A (stance)
Enindhilyakwa	NP1	*-Ø*	*-ya*	*-ya*	*-Ø*	*-nga-Ø* ~ *-ya*
	NP2	*-na*	*-na*	*-ja*	*-na*	*-Ø*
	P1	*-Ø*	*-Ø*	*-Ø*	*-Ø*	*-nga-Ø*
	P2	*-nv*	*-ngv*	*-rnv* ~ *-nv*	*-Ø*	*-Ø*
		I₁	A₃	N	A₁	NGA₁ (stance)
Wubuy	NP1	*-ny*	*-ng*	*-ng*	*-ng*	*-nga-ng*
	NP2	*-na*	*-ni*	*-n-jii*	*-na*	*-a*
	P1	*-ny*	*-ny*	*-ng*	*-ny*	*-nga-ny*
	P2	*-ni*	*-ngi*	*-n-di*	*-a*	*-Ø*
		3a	irregular	5	4a	
Ngandi	NP1	*-ng*	*-yang*	*-n*	*-rang*	
	NP2	*-na*	*-ni*	*-n-jini*	*-na*	
	P1	*-ny*	*-y*	*-ng*	*-ng*	
	P2	*-ni*	*-ngi*	*-n-di*	*-ri*	

Table 9.38: Generalisations in corresponding Enindhilyakwa, Wubuy, Ngandi conjugations

From this table we can observe that the NP2 suffixes are formally very similar in each conjugation in the three languages. The stance verbs in the right hand column are anomalous in Enindhilyakwa and Wubuy, but these verbs tend to be irregular in other languages also (AEH p.318). The enigmatic retroflex nasal in Enindhilyakwa P2 of conjugation 3, which occurs in no other GN language, will be argued in section 9.3.4.3 to be related to Wubuy and Ngandi P2 *-n-di*. Another important commonality between Enindhilyakwa and Wubuy is the *-nga-* augment for stance verbs.

The following language-specific generalisations can be observed:

- Enindhilyakwa: NP1 *-ya* ~ *-Ø*; P1 *-Ø*
- Wubuy: NP1 *-ng* (Baker 2004); P1 *-ny* (AEH)

- Ngandi: NP1 regularly adds -*Vng* to the reconstructable pGN NP form (AEH) (this can be seen in the table only in class 4a -*r-ang*, which corresponds to pGN **-r*); P1 -*ng* is an analogical reformation in some cases (AEH p.336)

These generalisations only apply to the NP1 and P1 and do not descend from a proto-language, so they cannot contribute to the reconstruction of inherited forms. The Enindhilyakwa zero morphs where the other languages have overt morphemes are problematic when trying to relate categories. Both the NP1 and P1 have zero allomorphs, but these categories are distinct by virtue of the NP1 allomorph -*ya*, and the P1 allomorph -*nga*. The existence of zero morphs in more than one category means that the absence of a morpheme carries less meaning than overt material does in Wubuy and Ngandi. In other words, -Ø does not carry a tense meaning in Enindhilyakwa. Hence these empty morphs are useless when they correspond to overt forms in other languages (I do believe, however, that the zero forms are relatable to the Wubuy and Ngandi overt endings: since the majority of these Wubuy and Ngandi endings consist of a single consonant only, it is plausible that these have been deleted in Enindhilyakwa due to the ban on word-final codas). In what follows, I will focus on the NP2 and P2 forms.

9.3.4 Tense/aspect suffixal paradigms

Enindhilyakwa has six main inflectional classes characterised by distinct pairs of NP2 and P2 suffixes, as discussed in Chapter 6. These are the most variable suffix categories in Enindhilyakwa and thus most diagnostically useful. The same categories are the most variable in Wubuy and Ngandi, though in Ngandi the PP category is also quite flexible. In Enindhilyakwa most of the classes can be further divided into subclasses, with only minor formal differences between them, such as the quality of the stem-final vowel, or the presence of suffix allomorphs. Heath lists a larger number of classes in Wubuy, comprising a total number of 18, plus an additional eight high-frequency monosyllabic roots with special paradigms.[28] Ngandi has six classes, plus a number of irregular roots with special paradigms. Not all classes in the three languages are attested in the other languages. Contrary to Wubuy and Ngandi, Enindhilyakwa does not appear to have irregular verbs that require special paradigms.

In the following sections I will start with the conjugations that are least complex in their cross-linguistic comparison (conjugations 2 and 4), and then work my way through the more complex

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[28] The Wubuy classes are distinguished by and named after the final vowel of their roots (e.g. A_1, I_1, U_1), or after a characteristic augment that is used in a subset of inflected forms (e.g. N, NGA_1, MA_1). The subscripts are used to differentiate more than one class. However, paradigms of different classes can be very similar (e.g. U_2 and A_1, or U_3 and I_2, take almost identical suffixes). In other words, if one disregards the quality of the stem-final vowel, the number of verb classes may be reduced in Wubuy. In my analysis of the Enindhilyakwa classes outlined in Chapter 6 I disregard the quality of the stem-final vowel and look at the suffixes only.

ones (conjugations 3, 1 and 6, in that order). I will not discuss the Enindhilyakwa conjugation 5, as this has one member: the causative suffix *-ji-*. This class has no analogue in Wubuy or Ngandi.

Based on the common features, I will reconstruct the paradigms of the immediate parent language, which I will call 'Eastern GN' (EGN) (after Baker's 2004 'EGN' subgroup, which only comprises Wubuy and Ngandi). I will compare the EGN paradigms with the pGN paradigms, taken from AEH. It is important to note here that Wubuy and Ngandi were used by AEH in their reconstruction of pGN, so similarities between Wubuy, Ngandi and pGN are to be expected. Crucially, I will show that Enindhilyakwa fits in with this characteristic pattern.

9.3.4.1 Enindhilyakwa 2A, 2B : Wubuy A$_2$, A$_3$: Ngandi 2

Enindhilyakwa conjugation 2 is characterised by NP2 *-na* and P2 *-ngv*. Two subclasses were distinguished in Chapter 6, based on the place of articulation of the final consonant of the verb root (but their inflectional endings are the same). In subclass 2A this consonant is a peripheral, and in subclass 2B it is a coronal. The stem-final vowel in class 2 is /a/. The two subclasses have close correspondences in the Wubuy classes A$_3$ and A$_2$, respectively. The Wubuy verbs also end in /a/ (which provides the name for the classes), which is preceded by a coronal consonant for class A$_2$ verbs, and a bilabial for A$_3$ verbs. Most A$_3$ verbs end in *-ma* (Heath 1984: 417-8). Wubuy classes A$_2$ and A$_3$ only differ in the NP2.

The following shared verbs are attested in the corresponding conjugations (more can be found in Appendix P):

(15)		Enindhilyakwa 2A	Wubuy A$_3$	Ngandi (irr.)
	get, thematic	*(+)ma-*	*(+)ma-*	*(+)ma-*
	chase	*-lharr+ma-*	*-lharr+ma-*	
	fly away, buzz around	*-wurv+ma-*	*-wuru+ma-*	

(16)		Enindhilyakwa 2B	Wubuy A$_2$	Ngandi 2
	hit	*+baja*	*+badja-*	*-bajja-*
	thematic	*+dha-*	*+dha-*	*+dha-*
	hit, tap	*-warda-*	*-warda-*	
	yell	*-arda-*	*-arda-*	
	catch fish with hands	*-marra-*	*-marra-*	
	write, draw [29]	*-arrvkarra-*	*-arrarra-*	

The correspondences of Enindhilyakwa subclass 2A are illustrated in Table 9.40 with the verb *-ma-* 'get'. This verb can be found as a free verb in all GN languages (AEH). In EGN, it also functions as a thematic (section 9.1.1).

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[29] These are probably Macassan loans (< Mac *ukirriq* 'write').

	Enindh. 2A *(+)ma-* 'get, thematic'	Wubuy A₃ *(+)ma-* 'get, thematic'	Ngandi (irr.) *(+)ma-* 'get, thematic'	pEGN *(+)ma-* 'get, thematic'	pGN *-ma-* 'get'
NP1	*-mi-ya*	*-ma-ng*	*-mi-yang*	**-mi-yang*	**-ma-ng*
NP2	*-me-na*	*-ma-ni*	*-ma-ni*	**-ma-ni*	
P1	*-mv-Ø*	*-mi-ny*	*-ma-y*	**-ma-y*	**-ma-y*
P2	*-ma-ngv*	*-ma-ngi*	*-ma-ngi*	**-ma-ngi*	**-ma-ng-iny*

Table 9.39: Enindhilyakwa 2A, Wubuy A₃, Ngandi and pGN *-ma-* 'get'

The NP2 suffixes in the three languages are quite similar and can be reconstructed as **-ni*. The suffix-final *a* quality in Enindhilyakwa is probably due to analogy with the NP2 of other conjugations in this language, which is typically *-na*. Stem-final *a* is raised to *e* in Enindhilyakwa (i-umlaut), while Wubuy and Ngandi maintain *a* quality. The NP2 form ancestral to Enindhilyakwa, Wubuy and Ngandi can therefore be reconstructed as **ma-ni*, preserved exactly in Wubuy and Ngandi, but with the following changes in Enindhilyakwa:

(17)   **-ma-ni > *-me-ni* (root vowel conditioned by suffix vowel) > *-me-na* (suffix vowel changed to [a] analogous to other conjugations)

The P2 endings also match in the three languages and can be reconstructed as **-ngi*. In Enindhilyakwa **/i/* became /ə/ (symbol: *v*), which is a regular sound change for vowels in unstressed position, as proposed in section 9.2.2.2.2. Since no i-umlaut occurs in Enindhilyakwa, I analyse the Enindhilyakwa suffix as *-ngv* rather than *-ngi*.

The NP1 forms are quite different in the three languages. Heath (n.d.) hypothesises that in the language ancestral to Wubuy, Ngandi and Enindhilyakwa, **-mi-ya-ng* was the NP1 form, preserved exactly in Ngandi. In Enindhilyakwa the final consonant of **-mi-ya-ng* was lost due to the ban on word-final codas, resulting in *-mi-ya* (loss of the final consonant in the NP1 ending has happened in all conjugations, as we will see below). Wubuy generalised the NP1 ending *-ng* found in other conjugations, resulting in **-ma-ng*. I will follow Heath and reconstruct NP1 **-mi-ya-ng* for pEGN.

The Enindhilyakwa P1 suffix *-Ø* is formally unrelated to the P1 ending in the other languages. Enindhilyakwa P1 has a zero allomorph in all conjugations (plus an allomorph *-nga* in conjugations 2B and 6), which corresponds to overt material in the other languages. The Enindhilyakwa ending thus does not contribute to the reconstruction of the pEGN P1, except that this probably consisted of a single consonant, as this is always deleted in Enindhilyakwa. In Wubuy the ending *-ny* is by far the most common P1 inflection across the conjugations, so its presence here is likely to be due to analogy. The Ngandi ending *-y* is comparable to pGN. Since the Enindhilyakwa and Wubuy endings do not appear to go back to a proto-language, I reconstruct P1 **-y* for pEGN, preserved in Ngandi.

Comparing the proposed pEGN paradigm with the pGN paradigm reconstructed by AEH, we can observe some differences but also similarities. The NP2 suffix *-ni* does not occur in pGN at all, but is characteristic of pEGN. The pEGN NP1 *-yang* contains a segment *y* absent in pGN. However, the P1 endings are arguably the same, and pEGN P2 *-ngi* is relatable to pGN *-ng-iny*. The *-ngi* ending occurs in BGW also; AEH reconstruct *-ng-iny* as deletion of a segment is more plausible than insertion.

Table 9.40 illustrates the Enindhilyakwa 2B, Wubuy A$_2$ and Ngandi 2 paradigms with the verb *-badja-* 'hit'. This verb is also reconstructed for pGN (AEH). In Enindhilyakwa and Wubuy these are bound stems. The Ngandi correspondence is *-bajja-*, with assimilation of the cluster *dj* to a geminate *jj* (AEH).[30]

The endings of Enindhilyakwa class 2B only differ from 2A in Table 9.39 above in the presence of the P1 allomorph *-nga*. Wubuy A$_2$ only differs from A$_3$ in the NP2.

	Enindh. 2B +*baja*- 'hit'	**Wubuy A$_2$** +*wadja*- ~ +*badja*- 'hit, kill'	**Ngandi 2** -*bajja*- 'hit, kill'	**pEGN** *-bajja*- 'hit, kill'	**pGN** *-badja*- 'punch'
NP1	+*baji-ya*	+*wadja-ng*	-*bajja-ng*	*-badja-ng*	*-badja-ng*
NP2	+*baje-na*	+*wadja-i* > -*wadjii*	-*bajja-ni*	*-badja-ni*	
P1	+*bajv-Ø* ~ +*bajv-nga*	+*wadji-ny*	-*bajji*	*-badji*	*-badji*
P2	+*baja-ngv*	+*wadja-ngi*	-*bajja-ngi*	*-badja-ngi*	*-badja-ng-iny*

Table 9.40: Enindhilyakwa 2B, Wubuy A$_2$, Ngandi 2 and pGN *-badja-* 'hit'

The Wubuy and Ngandi NP1 endings are identical, whereas Enindhilyakwa *-ya* most likely does not continue from a proto-language but is a generalisation from conjugation 2A (Table 9.39). It can be reconstructed for pEGN as *-ng*. The NP2 can be reconstructed as *-ni*, preserved in Ngandi. Heath suggests that the Wubuy suffix *-i* is historically identical to *-ni* (1984: 413). The vowel harmony that takes place in Enindhilyakwa also suggests the suffix is historically *-ni*: *-baja-ni* > *-baje-ni* > -*baje-na*. As was proposed for *-me-na* 'get-NP2' in (17) above, the suffix-final *i* changed to *a* analogous to other conjugations (as NP2 is typically *-na*). The P1 uses a bare stem in Ngandi and in one variant in Enindhilyakwa. The Wubuy ending *-ny* is distinct, but this is most likely an analogical intrusion, as was proposed for conjugation A$_3$ above. Hence I tentatively

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[30] AEH (p.336) reconstruct *-badja-* 'punch' for pGN, with a word-medial cluster *dj*. In their reconstruction, the *dj* cluster assimilated to a geminate *jj* in some languages: Ngandi, BGW and Ngalakgan *-badja-* > -*bajja-*. Heath (1978b: 37) interprets this cluster as *dj* in Wubuy (i.e. +*badja*-), and as *dj* in Enindhilyakwa also (Heath n.d.). However, in the other previous works this consonant is not treated as a cluster, but as a single lamino-palatal *j*. I think this lamino-palatal may have some fortis articulation, which I will assume results from assimilation of the pGN cluster to a geminate, which in turn became singleton: *dj* > *jj* > *j*: ~ *j*.

reconstruct a bare stem for pEGN. The P2 is virtually identical in the three languages and can be reconstructed as *-ngi. This became -ngv in Enindhilyakwa, as proposed above.

Comparing the pEGN and pGN paradigms, we see that the NP1, P1 and P2 forms are relatable. The anomalous NP1 -ya in Enindhilyakwa was proposed to be an analogical intrusion, which does not descend from a proto-language. The P1 is proposed to be represented by bare stems in both proto-languages, where the anomalous Wubuy form -ny presumably is due to paradigmatic levelling. The pEGN P2 *-ngi is relatable to pGN *-ngi-ny by loss of the final consonant, as was proposed above (the -ngi ending is also found in BGW). The NP2, on the other hand, is an innovation characteristic of the EGN languages.

9.3.4.2 Enindhilyakwa 4 : Wubuy A$_1$: Ngandi 4a

The verbs in these classes also end in /a/ in the EGN languages. Some attested shared verbs in these classes are (see Appendix P for more correspondences):

(18)

	Enindhilyakwa 4	Wubuy A$_1$	Ngandi 4a
do, say, thematic	*(+)ma-*	*-ma-* 'INCH'	*-ma-*
do, say	*-ya+ma-*	*-ya+ma-*	*-yi+ma-*
tell	*-maka-*	*-maka-*	*-makka-*
sew, mend	*-warrka-*	*-warrka- ~ -barrka-*	
FACT	*-ka- ~ -kwa-*	*-wa- ~ -ka-, -ka-*	

Table 9.41 lists the corresponding paradigms for the thematic *-ma*, which also functions as an independent verb in Enindhilyakwa, meaning 'do, say'. Notice that this root belongs to a different conjugation than *-ma-* 'get' in Table 9.39 above. The corresponding Wubuy form, though formally matching this thematic, actually functions as an inchoative (AEH p.333).

	Enindh. 4 *(+)ma* 'do, say, thematic'	Wubuy A$_1$ *-ma-* 'INCH'	Ngandi 4a *(+)ma-* 'do, say, thematic'	pEGN **(+)ma* 'do, say, thematic'	pGN **(+)ma-* 'do, say, thematic'
NP1	*(-)ma-Ø*	*-ma-ng*	*-ma-rang*	**-ma-?*	**-ma-r*
NP2	*(-)mv-na*	*-ma-na*	*-ma-na*	**-ma-na*	
P1	*(-)ma-Ø*	*-ma-ny*	*-mu-ng*	*?*-ma-ny*	**-ma-ny*
P2	*(-)ma-Ø*	*-ma-a > -maa*	*-mi-ri*	?	**-ma-r-any ~ *-ma-r-iny*

Table 9.41: Enindhilyakwa 4, Wubuy A$_1$, Ngandi 4a and pGN *(+)ma-* 'do, say, thematic'

The Wubuy and Enindhilyakwa NP1 and P1 endings involve the usual generalisations and thus do not contribute to the reconstruction of inherited forms. The NP2 endings are identical in the three languages and can be reconstructed as *-na.* The change of the stem-final vowel from /a/ to /ə/ in Enindhilyakwa is interesting, because the presence of schwa could indicate an old retroflex form

(see section 2.5.8). It is therefore possible that the NP2 suffix *-na* suffix is added to the reconstructed pGN NP stem in pEGN, as shown in (19). Using the NP as a base for other categories is a characteristic feature of GN languages (AEH).

(19) *-ma-r-na* > *-mv-rna* (assimilation of /a/ to /ə/ due to the following retroflex) > *-mv-na* (loss of retroflexion (regular))   (Enin)
              > *-ma-rna* > *-ma-na* (loss of retroflexion)   (Wub, Ngan)

This vocalic shift did not occur in Wubuy and Ngandi, as these languages do not have a phoneme /ə/.

The P2 ending is *-a* in Wubuy. It is impossible to tell if the Enindhilyakwa P2 ending is *-a* or -Ø, since /a/ vowels in this language are inherently long(ish). I presume it is -Ø, because there is no language-internal evidence for P2 *-a*. Ngandi P2 *-ri* is unrelatable to Enindhilyakwa/Wubuy *-a*.

AEH note a number of complexities in the reconstruction of this paradigm in pGN. The NP, for example, is the only reconstructed inflection that ends in something other than a vowel or a nasal (p.334). The reconstruction of *-ma-r* is based on the Jawoyn form *-ma-r*, Warray *-ma-rl* and Ngandi *-ma-rang* (recall from Table 9.39 that Ngandi regularly adds *-Vng* to the pGN NP form). Loss of final *-r* in the remaining languages (e.g. BGW *-me-*, Mangarayi *-ma-*), AEH argue, would have had both phonological and analogical motivations, such as deletion of *r* in coda positions in BGW. This consonant is also lost in Enindhilyakwa and Wubuy, which have their usual generalisations: -Ø and *-ng*, respectively. These are not related to the reconstructed pGN *-r* (though the Enindhilyakwa form could result from the regular deletion of suffix-final consonants).

AEH propose that the Wubuy P1 is a reflex of pGN *-ma-ny* (p.333). The Ngandi *-ng* suffix is not a regular reflex of *ny*, they suggest, and is most probably an analogical reformation on the basis of other P1 *-ng* forms (p.336). Based on AEH, the pEGN P1, then, could be reconstructed as *-ma-ny* also. This has undergone paradigmatic levelling in Enindhilyakwa and Ngandi.

The P2 shows considerably more variation than the NP in GN, but the reconstructed *r* is preserved in a number of languages (e.g. Mangarayi *-ma-ri*) (AEH p.334). AEH propose the changes in (20) for Wubuy and in (21) for Ngandi (p.335):

(20) *-ma-r-any* > *-ma-r-ay* (loss of final nasal element (deletion of this element is regular)) > *-maay* (deletion of *r* (not regular)) > *-maa* (deletion of final vowel of highly marked trimoraic syllable)

(21) *-ma-r-iny* > *-ma-r-i* (replacement of P2 allomorph *-iny* by predominant allomorph *-i*) > *-mi-ri* (root vowel harmonising to suffix vowel)

Since the Enindhilyakwa P2 is the same as the Wubuy ending, this could mean that Enindhilyakwa underwent the same changes as Wubuy, and that the reconstructed pEGN forms should be the

same as the pGN forms. However, the Wubuy derivation proposed by AEH includes a number of irregular changes. The pEGN P2 therefore requires more investigation.

Another monosyllabic verb root belonging to class 4 is *-ba-* 'hit, argue'. Its correspondences in Wubuy and Ngandi appear to be *(+)wu- ~ (+)bu-* 'and *(+)bu-* 'hit, thematic', respectively, as in Table 9.42.

	Enindh. 4 *(+)ba-* 'hit, argue'	**Wubuy MA₁** *(+)wu- ~ (+)bu-* 'hit, thematic'	**Ngandi (irr.)** *(+)bu-* 'hit, thematic'	**pEGN** **(+)bu-* 'hit, thematic'	**pGN** **-bu-* 'hit'
NP1	*-bv-Ø*	*-bi-ny*	*-bu-nung*	**-bV-?*	**-bu-n*
NP2	*-bv-na*	*-bu-ma-na*	*-bu-ma-na*	**-bu-ma-na*	
P1	*-ba-Ø* (and *-ba-ma*?)	*-ba-ng*	*-boo-m*	*?*-boo-m*	**-bo-m*
P2	*-ba-Ø*	*-bi-ni*	*-bu-ni*	**-bV-ni*	**-bu-n-iny*

Table 9.42: Enindhilyakwa 1A, Wubuy MA₁, Ngandi (irr.) and pGN **-bu-* 'hit'

These paradigms differ substantially. The NP1 forms and the P1 forms involve the regular generalisation *-Ø* in Enindhilyakwa, which is unrelated to the overt Wubuy and Ngandi endings. The Enindhilyakwa P2 does not involve an equivalent of the *-ni* suffix in Wubuy and Ngandi. And the NP2 is characterised by the augment *-ma-* in Wubuy and Ngandi, which is absent in Enindhilyakwa. Baker (2004) proposes that this augment is derived from the P1 form, preserved in Ngandi (cf. *-boo-m*). The P1 acting as a stem for the NP2 is an innovation common to Wubuy and Ngandi, he argues. The Enindhilyakwa NP2 form does not have this *ma*-augment, so this language has not undergone this innovation.

There are, however, some indications that these forms are related. Firstly, the Ngandi P1 stem *-boo-* (pGN **-bo-*) corresponds to the Wubuy and Enindhilyakwa P1 stems *-ba-*. The reflex of **/o/* is /a/ in Wubuy and Enindhilyakwa (section 9.2.1.3). Secondly, there are two examples in the data of a bound form *+ba-ma* 'hit':

(22) a. *nvm-arrk-ba-ma*[31]
   VEG-small.and.round.and.many-hit-P1
   'a wave hit the boat'   (Ansec1)
   b. *Nv-mvlk-ba-ma-mvrra*
   3m-head-hit-P1-*ma*
   'Borneo's name' (Lit: 'a shovel spear hit his head')   (Ansec1)

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[31] An alternative transcription of *-ba-ma* is 'hit.P1-*ma*', where *-ma* is not a P1 ending but the very common 'first person focalisation marker' discussed in section 6.7. This example would then imply something along the lines of 'I tell you, the wave hit the boat', or 'I saw that the wave hit the boat'. However, this alternative transcription is not available for (22b), where the *-mvrra* variant of the 'first person focalisation marker' follows the suffix *-ma*.

These are probably old forms, as they are unattested in the current language (in addition, [22a] is song language, and [22b] is a proper name, which may be aberrant forms). Nonetheless, these forms could be the missing link to the reconstruction of pEGN P1 *-boo-m (> *-ba-ma in Wubuy/Enindhilyakwa > -ba-ng in Wubuy).

The P1 ending -ma then disappeared in Enindhilyakwa, as it did in Wubuy. It also disappeared as an augment in the NP2 in Enindhilyakwa, while it is preserved in Wubuy.

9.3.4.3 Enindhilyakwa 3 : Wubuy N : Ngandi 5

The verb roots in this conjugation end in /a/. The corresponding verbs in this conjugation include:

(23)		Enindhilyakwa 3	Wubuy N	Ngandi 5
sneak up on		-walka-	-waalka- ~ -baalka-	-kalkka-
taste, try, test		-lhawurrka-	-lhawiwa-
send		-lharrka-	-lharrka-
hunt		-ngurrkwa-	-ngurrka-

Most correspondences in this conjugation involve the thematic +ka-. Heath suggests that the Wubuy thematic may historically derive from the verb *-ka- 'carry', though no synchronic segmentation is viable (1984: 470). Enindhilyakwa complex stems composed of +ka- are also no longer segmentable, but Ngandi still has a free verb -ka- 'carry', which can also function as a thematic. Table 9.43 compares three complex stems composed of thematic +ka-, with pGN *-ka- 'carry'. The n-augment present in the NP2 and P2 provides the name for the Wubuy class.

	Enindh. 3 -wal+ka-	Wubuy N -waal+ka-	Ngandi 5 -kal+kka-	pEGN *-kal+kka-	pGN *-ka-'carry'
NP1	-walki-ya	-waalka-ng	-kalkka-n	*-kalkka-n	*-ka-n
NP2	-walka-ja	-walka-n-jii	-kalkka-n-jini	*-kalkka-n-jini	
P1	-walka-Ø	-walka-ng	-kalkka-ng	*-kalkka-ng	*-ka-ng
P2	-walka-rnv ~ -walke-nv	-walka-n-di	-kalkka-n-di	*-kalkka-n-ni	*-ka-n-iny

Table 9.43: Enindhilyakwa 3, Wubuy N, Ngandi 5 and pGN *-ka- 'carry'

I reconstruct the pEGN complex stem as beginning with *k, followed by a geminate stop *kk, both preserved in Ngandi. The stop lenites to a continuant in Wubuy and Enindhilyakwa, and the geminate to a singleton.

The Enindhilyakwa and Wubuy NP1 involve the usual generalisations and can be eliminated from the reconstruction. This leaves Ngandi NP1 -n, which I tentatively reconstruct for pEGN.

In the NP2, Wubuy and Ngandi add the suffix -jii ~ -jini to the proposed reconstructed NP1 stem (as mentioned, using the NP1 as a base for other tenses is a common feature of GN languages).

This does not happen in Enindhilyakwa, where the NP2 suffix *-ja* appears to be added directly to the root. However, Heath recorded the NP2 of the verb *-ngurrkwa-* 'hunt' as *-ngurrkwa-n-ja* (Wub: *-ngurrka-n-jii*), where the NP2 suffix is preceded by a *-n-* segment. Here the NP2 *is* added to the reconstructed NP1 form. Hence it is possible that the synchronic *-ja* suffix results from cluster simplification:

(24) *-kalkka-n-jini* > *-walka-n-jini* (Wub, Enin; lenition of geminate and singleton stops) > *-walka-n-ji* (Wub, Enin; deletion of final segment *-ni*) > *-walka-ji* (Enin; cluster simplification) > *-walka-ja* (*i > a* through analogy (all words ending in *a*))

I reconstruct the NP2 suffix as *-jini-*, preserved in Ngandi, as deletion of a segment is easier than insertion.

In the P1, Wubuy and Ngandi both have *-ng*, whereas Enindhilyakwa has generalised -Ø. From weight of numbers the P1 is to be reconstructed as *-ng*.

The Enindhilyakwa P2 has two allomorphs: one with a retroflexed nasal and preservation of stem-final /a/, and one with an alveolar nasal and vocalic shift /a/ > [ɛ]. The corresponding Wubuy and Ngandi forms are built on the NP1 stem: the P2 suffix *-di* is a post-nasal variant of *-ni* (Heath 1984: 67). Heath notes that this denasalisation is not productive in Wubuy and only applies to this suffix; other combinations of *n-n* are reduced to *n*. Hence the P2 suffix can be reconstructed as *-ni*, which is added to the NP1 stem.

The Enindhilyakwa P2 forms are puzzling. The retroflex nasal is not found in Wubuy or Ngandi, or in any other GN language (AEH p.335).[32] The vocalic change that accompanies the apical change is a common feature of Enindhilyakwa, occurring in several environments (section 2.5.8). There are two potential historic sources for the P2 suffix in Enindhilyakwa. One is that the two consecutive *n* segments do not become *nd* in Enindhilyakwa but *rn*:

(25) *-walka-n-ni* > - *walka-n-di*   (Wub, Ngan)
              > *-walka-rni* > *-walka-rnv*   (Enin)

In this analysis, the retroflex nasal originates from a geminate nasal. The vocalic shift */i/ > /ə/ is conditioned by the retroflex environment.[33]

Another possible scenario is apical dissimilation. Most verb roots belonging to conjugation 3 involve an alveolar consonant. As already noted in section 9.2.2.1, Enindhilyakwa appears to have

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[32] With one exception: Rembarrnga PI *-mv-rn* of thematic +*ma-*. See section 9.3.4.4.

[33] Heath (n.d.) suggests that the source of the P2 suffix *-rnv* lies in the reconstructed P2 ending *-n-di*, preserved in Wubuy and Ngandi, rather than *-n-ni*. He hypothesises that Enindhilyakwa has had a tendency to retroflex some cases of *nd*, as evidenced by correspondences such as Enindhilyakwa *-mvrnduwa-* vs. Wubuy *-munduwa-* 'count, sort'. Perhaps, Heath suggests, forms like *-walka-n-di* became *-walka-rn-rdi* in Enindhilyakwa, with the nasal augment triggering retroflexion. This became *-walka-rni* by dropping of the final consonant. However, it is unclear how the nasal augment could trigger retroflexion of the stop, so I abandon this hypothesis.

had a tendency to avoid sequences of same-place apicals within one word. A sequence of same-place apicals in Wubuy frequently corresponds to apicals with a different place of articulation in Enindhilyakwa. Consider the correspondences in Table 9.44: where Wubuy allows sequences of two alveolars or two retroflexed consonants, this is not the case in Enindhilyakwa.

	Enindhilyakwa	Wubuy
to descend	*-dhvrrvrndv-*	*-dhirrida-*
to criticise, refuse to accept	*-arndvrra-*	*-aandirra-*
smoking pipe, pipe bush	*yilyarra*	*yilaarri*
tree sp.	*mardvdharra*	*mirdardarri*
clan name	*lalara*[34]	*rlarlarra*
type of fish	*marndarra ~ mandarra*[35]	*mandarra*

Table 9.44: Apical dissimilation in Enindhilyakwa

If the hypothesis of apical dissimilation is correct, it could explain the incompatibility of verb roots and suffixes both having an alveolar consonant. The Enindhilyakwa strategy to overcome this conflict is to turn the alveolar nasal in the suffixes into a retroflex.

One major problem with the apical dissimilation hypothesis is the the NP2 allomorph *-na*, as this would be expected to be incompatible with the alveolar consonant in the verb root. I suggest that the *-na* allomorph is a more recent development, due to the current unstable status of retroflexed consonants. In other words, there is no *synchronic* incompatibility of same-place apicals.

Another problem with this hypothesis is that there is no retroflexion of the nasal in other conjugations, where stems can contain an alveolar consonant. Examples are *-arrikarre-na* 'write-NP2' [2B]; *-lharrme-na* 'chase-NP2' [2A]; *-warrkv-na* 'sew-NP2' [4]; *-lharr-na* 'fall-NP2' [1A]. The synchronic lack of retroflexion could have a number of reasons. The first word is probably a Macassan loan (< *ukirriq* 'write'), which could have entered the language after apical dissimilation had ceased being active. Apical dissimilation in *-lharrme-na-* could be blocked by the intervening bilabial. And in the verbs belonging to conjugations 4 and 1A, there are some traces of retroflexion of the nasal in the tense/aspect suffixes, as pointed out in the next two sections.

9.3.4.4 Enindhilyakwa 1 : Wubuy I$_1$ and I$_2$ (and MA$_1$, A$_1$, A$_2$) : Ngandi 3a (and irr.)

Conjugation 1 is the largest conjugation in Enindhilyakwa. It is also formally the messiest, with a large number of subclasses and various corresponding Wubuy and Ngandi classes. The

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[34] The development of this word involved two stages: first, retroflexion on the lateral was lost, which has taken place everywhere in the language. Then, the alveolar tap changed into a retroflex due to apical dissimilation: **rlarlarra > *lalarra > lalara*. (It is of course also possible that the proto-form had a retroflex continuant, and that this developed into a tap in Wubuy.) Note that a sequence of reduplicated apicals is permissible.
[35] For the *mandarra* variant, the retroflex may subsequently have been neutralised back to an alveolar, due to the current unstable status of retroflex consonants.

Enindhilyakwa class displays variation in the NP2 and P2 suffixes between an alveolar nasal and a retroflex nasal. The NP2 suffixes vary between *-na ~ -rna* and the P2 suffixes between *-nv ~ -rnv*. About nine subclasses were distinguished in Chapter 6 based on the presence of the retroflex nasal, and on the presence and quality of the stem-final vowel. The Enindhilyakwa stems in this class end in *i, e, v*, or a consonant. The majority of Wubuy correspondences belong to class I$_1$ and I$_2$, which end in *i*, and which take the NP2 suffix *-na* and P2 suffix *-ni*. However, some correspondences belong to MA$_1$, A$_1$ or A$_2$. Most corresponding Ngandi roots belong to class 3a, which also end in *i* and take NP2 and P2 suffixes *-na* and *-ni*, respectively.

- **Subclass 1A: NP2 *-na,* P2 *-nv* (Wubuy I)**

Enindhilyakwa subclass 1A is characterised by the absence of retroflexion in the NP2 and P2 suffixes. Several subclasses can be distinguished in Enindhilyakwa based on the quality of the root-final vowel in the NP2 and P2. Most corresponding Wubuy verb roots end in /i/, which may correspond to /i/, /ə/, /ɛ/, or Ø in Enindhilyakwa. The following are some of the correspondences.

(26)	Enindhilyakwa 1A(i, ii)	Wubuy I$_1$	Ngandi 3a
INCH	*-dhv-*	*-dhi -*	*-dhdhi-*
thematic	*+bi- ~ +mi-*	*-wi- ~ -bi-* 'INCH'	
speak	*-yeng+bi-*	*-yam+bi-*	
deny	*-edhvrre+mi-*	*-wadhaari+mi- ~ -kadhaari+mi-*	

Table 9.45 lists the corresponding paradigms. Ngandi class 3a is included here because it is the conjugation used for stems ending in *i* and it formally matches the Enindhilyakwa and Wubuy classes to a large extent. AEH provide no relatable verb in pGN.[36]

	Enindh. 1A(i) *-bi-* 'thematic'	**Wubuy I$_1$** *-wi- ~ -bi-* 'INCH'	**Ngandi 3a** *-Xi-*	**pEGN** *+bi-* 'thematic'
NP1	*+bv-Ø*	*-bi-ny*	*-Xi-ng*	*-bi-?*
NP2	*+bi-na*	*-bii-na*	*-Xi-na*	*-bi-na*
P1	*+bv-Ø*	*-bi-ny*	*-Xi-ny*	*-bi-ny*
P2	*+bi-nv*	*-bii-ni*	*-Xi-ni*	*-bi-ni*

Table 9.45: Enindhilyakwa 1A, Wubuy I$_1$, Ngandi 3a *+bi-* 'thematic'

Reconstruction of this subclass is fairly unproblematic, apart from the NP1 form, which differs in the three languages and thus does not warrant reconstruction. The NP2 suffixes are identical and can be reconstructed as *-na*. It is unclear whether the lengthening of the stem-final *i* that we see in

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[36] Although the pGN INCH *-me-* is proposed to be related to Enindilyakwa *+mv- ~ +bv-* (section 9.1.1), which also belongs to conjugation 1A(i). The pGN forms are: NP *-me-n*; PP *-me-ny ~ -mi-ny*; PI *-me-n-iny* (AEH p.332). These are relatable to the Enindhilyakwa paradigm.

Wubuy also happens in Enindhilyakwa.[37] However, since high vowels tend to be short in Enindhilyakwa, I will assume no lengthening here (moreover, as shown in Table 9.46 below, a long stem-final *ii* in Wubuy corresponds to *e* in Enindhilyakwa). The P1 can be reconstructed as *-ny*, which as usual corresponds to a zero suffix in Enindhilyakwa. The P2 is to be reconstructed as *-ni*, with the regular shift */i/ > /ə/ in Enindhilyakwa.

Subclass 1A(iii) has stem-final /ɛ/ in the Enindhilyakwa NP2 and P2. This vowel corresponds to /iː/ (orthographically represented as *ii*) in Wubuy class I$_2$. The following Wubuy correspondences are attested (no Ngandi or pGN correspondences were found), with the paradigms in Table 9.46:

(27) Enindhilyakwa 1A(iii) Wubuy I$_2$

bathe	*-ngambe-*	*-ngambi-*
enter	*-awiyebe-*	*-yabi-*
howl	*-ngare-*	*-ngara-* (A$_2$), similar inflection to *-ngari-* 'fade away' (I$_1$)

	Enindh. 1A(iii) *-ngambe-* 'bathe'	Wubuy I$_2$ *-ngambi-* 'bathe'
NP1	*-ngambv-Ø*	*-ngamba-ng*
NP2	*-ngambe-na*	*-ngambii-na*
P1	*-ngambv-Ø*	*-ngambi-ny*
P2	*-ngambe-nv*	*-ngambii-ni*

Table 9.46: Enindhilyakwa 1A(iii) and Wubuy I$_2$ -*ngambi*- 'bathe'

The Enindhilyakwa and Wubuy forms correspond in the regular way: overt material in the Wubuy NP1 and P1 corresponds to zero in Enindhilyakwa. The NP2 and P2 suffixes are virtually identical. The Enindhilyakwa stem-final /ɛ/ corresponds to /iː/ in Wubuy. This is particularly interesting in the light that Enindhilyakwa does not have long vowels, while Wubuy does not have /ɛ/ in its inventory. Since /ɛ/ is inherently long(-ish), this may be the Enindhilyakwa strategy to cope with the long /iː/ present in Wubuy. The /a/ vowel in the Enindhilyakwa stem harmonises to the stem-final /ɛ/, as in -*awiyebe*- (cf. Wubuy -*yabi*-) 'enter'. The 'bathe' verb, although represented as -*ngambe*- in Stokes/Waddy orthography, can be heard as [ŋæmpɛ] or [ŋɛmpɛ] (Heath n.d. writes -*ngämbe*-). Raising of the /a/ vowel supports an historic stem-final /i/.

A final correspondence to Wubuy class I is Enindhilyakwa class 1A(v). Here the Wubuy stem-final /i/ corresponds to Ø in Enindhilyakwa. The following are the attested correspondences.

(28) Enindhilyakwa 1A(v) Wubuy I$_1$

fall	*-lharr-*	*-lharri-* 'untie, release'
come in of tide	*-angkarr-* (also 'run, blow of wind')	*-angkarri-*
wait	*-embirrar-* 'wait'	*-ambunari-*

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[37] It is also unclear whether it happens in Wubuy, because, as Heath notes, this lengthening is not consistent and is more common for the I$_2$ than the I$_1$ class (1984: 91).

Table 9.47 presents the paradigms.

	Enindh 1A(v) -lharr- 'fall'	Wubuy I₁ -lharri- 'untie, release'
NP1	-lharr-Ø	-lharri-ny
NP2	-lharr-na	-lharrii-na
P1	-lharr-Ø	-lharri-ny
P2	-lharr-nv	-lharrii-ni

Table 9.47: Enindhilyakwa -*lharr*- 'fall' 1A(v) and Wubuy I₂ -*lharri*- 'release'

Stem-final /i/ present in Wubuy is not present in Enindhilyakwa, which explains the absence of vowel harmony. For the rest, the Enindhilyakwa and Wubuy forms correspond in the regular way.

To summarise, in overall Enindhilyakwa subclass 1A corresponds to Wubuy classes I₁ and I₂. The Wubuy verbs end in /i/, which corresponds to a variety of segments in Enindhilyakwa:

- /Ci/ (1A(i)) (causing i-umlaut on preceding /a/: /aCi/ > [εCi])
- /Cε/ (1A(iii)) (with vowel harmony: /aCε/ > [εCε]. Corresponds to Wubuy /Ci:/)
- /C/ (1A(v)) (no vowel harmony)

• **Subclass 1B: -*rna* ~ -*na*, -*rnv* ~ -*nv***

Subclass 1B is characterised by variation in the NP2 and P2 of an alveolar nasal with a retroflex nasal, as listed in the Dictionary. Another level of subdivision involves the vocalic contrast that accompanies the apical contrast: in subclass 1B(i) the retroflex nasal is preceded by *a* and the alveolar nasal by *e*, while in subclass 1B(ii) the alveolar and retroflex nasal vary without affecting the preceding vowel. There are few corresponding verbs in Wubuy, which belong to a variety of classes: I₁, A₁ or A₂. There are no attested correspondences in Ngandi.

I will only discuss subclass 1B(ii), which can be further subdivided into 1B(ii-a), comprising stems ending in /a/, and 1B(ii-b,c), which end in a consonant. The only corresponding Wubuy verb of the latter belongs to class I₁. Table 9.48 presents the paradigms.

	Enindh. 1B(ii-c) -*arrk*- 'pull'	Wubuy I₁ -*arrki*- 'pull'
NP1	-*arrk*-Ø	-*arrki*-ny
NP2	-*arrk*-rna ~ -*arrk*-na	-*arrkii*-na
P1	-*arrk*-Ø	-*arrki*-ny
P2	-*arrka*-rnv	-*arrkii*-ni

Table 9.48: Enindhilyakwa -*arrk*- 1B(ii-c) and Wubuy -*arrki*- I₁ 'pull'

The NP1 and P1 correspond in the usual way, while the Enindhilyakwa NP2 and P2 contain a retroflex nasal not found in Wubuy. The majority of the stems in class 1B involve an apical consonant in Enindhilyakwa or Wubuy:

(29)   Enindhilyakwa 1B   Wubuy (various classes)

	Enindhilyakwa 1B	Wubuy (various classes)
count	*-mvrndu+wa-* [1B(i)]	*-mundu+wa-* [A₂]
wander, deviate	*-marra+wa-* [1B(ii-a)]	*-marra+wa-* [A₁]
pull	*-arrk-* [1B(ii-c)]	*-arrki-* [I₁]
look for, find	*-akbvrrang-* [1B(ii-b)]	*-warrangka-* [A₁]

The retroflex nasal could in the NP2 and P2 be due to apical dissimilation, as was proposed for the retroflex nasal of conjugation 3 in section 9.3.4.3 above.

This leaves us with the class 1B stems that do not involve an alveolar apical, which thus could not have triggered retroflexion of the nasal in the suffixes. A possible source for these retroflex nasals is inheritance from pGN. Retroflex nasals are absent in GN languages, with one exception: in Rembarrnga, the P2 of thematic *+ma* is *+mv-rn*. AEH reconstruct P2 **+ma-r-any ~ *+ma-r-iny* for this thematic in pGN, with the retroflex approximant preserved in a number of languages (see Table 9.42 above). Although the corresponding Enindhilyakwa thematic *+ma-* was argued to belong to conjugation 4, which does not involve retroflex consonants, there are two verbs in conjugation 1B(ii) with an element *(+)ma-*. These are *-akvma-* 'put' and *-ma-* 'light a fire'. The NP2 and P2 suffixes of these verbs contain a retroflex nasal, which cannot have been triggered by the presence of an alveolar consonant in the stem, because there is none. Instead, the source of the retroflex nasal may lie in the presence of a retroflex continuant reconstructed for pGN, which AEH propose developed into a retroflex nasal in Rembarrnga. The Enindhilyakwa verb *-akvma-* 'put' corresponds to the pGN verb **-kut+ma-* 'put down', which conjugates like the *+ma-* thematic (AEH p.340). Table 9.49 presents the corresponding paradigms.

	Enindh. 1B(ii-a) *-akv+ma-* 'put'	**Rembarrnga** *+ma-* 'thematic'	**pGN** **-kut+ma-* 'put'
NP1	*-akv+ma-Ø*	*-Ø*	**-kutma-r*
NP2	*-akv+mv-rna*		
P1	*-akv+ma-Ø*	*+mi-ny*	**-kutma-ny*
P2	*-akv+ma-rnv*	*+mv-rn*	**-kutma-r-any ~ *-kutma-r-iny*

Table 9.49: Enindhilyakwa *-akvma-* 'put' 1B(ii-a), Rembarrnga thematic *+ma-* and pGN **-kutma-* 'put'

The Enindhilyakwa NP1 and P1 display the generalisations found elsewhere. The Enindhilyakwa NP2 and P2 may relate to the reconstructed **-r* in the pGN NP and P2 forms (Rembarrnga drops the thematic in the NP). In fact, this is what AEH (p. 335) suggest for the Rembarrnga P2. The changes they propose are:

(30) **+ma-rany > *+ma-r-ny* (deletion of final unstressed vowel) *> +mv-rn* (reduction of the complex **r+ny* cluster to the single segment *rn*, and reduction of vowel to *v*)

The Enindhilyakwa P2 *-rnv* may have evolved in a similar way, but without the vowel reduction:

(31) *(+)ma-rany > *(+)ma-r-ny (deletion of final unstressed vowel) > *(+)ma-rn (reduction of the complex *r+ny cluster to rn > (+)ma-rnv (adding of final vowel to avoid codas)

Similarly, the rn segment in the Enindhilyakwa NP2 may have originated from the reconstructed pGN NP *-kut+ma-r. Enindhilyakwa added the regular NP2 suffix -na to the NP1 (pGN NP) stem:

(32) *+ma-r-na > +mv-rna (reduction of *r+n cluster to single segment rn, and reduction of vowel to schwa)

This process can account for the presence of a retroflex nasal in stems that do not involve an alveolar consonant. The retroflex nasal synchronically varies with an alveolar in some conjugations, due to the current unstable status of retroflexed consonants in Enindhilyakwa.

9.3.4.5   Enindhilyakwa 6 (stance verbs) : Wubuy NGA₁, NGA₂ : Ngandi (irregular)

These highly distinct classes are composed mainly of stance verbs. The NP1 and P1 categories are characterised by the augment -nga- in Enindhilyakwa and Wubuy, which is added to the stem and to which the inflectional suffixes are attached (the Wubuy conjugations are named after this augment). The Enindhilyakwa paradigms are furthermore distinguished by the -Ø allomorph in all categories. This allomorph also appears in the Wubuy P2.

Three subclasses were identified in Chapter 6, based on the form of the suffix allomorphs. In subclass 6A the NP1 suffix varies between -Ø and -ya. Subclass 6B is distinguished by intrusion of the NP2 and P2 suffixes from conjugation 1 (the largest conjugation). In subclass 6C the NP2 suffix varies between -Ø and -na, and there is a vocalic change in the P2. All subclasses have the nga-segment in (at least one allomorph of) the NP1 and P1 categories in common. This feature is shared with Wubuy. It is less consistent in Ngandi.

The reconstruction of stance verbs is particularly complex. This is because these verbs tend to cluster together and are often the subject of analogical forces that produce language-specific innovations across the set (AEH p.318). Making cross-linguistic comparisons is especially difficult for the verb 'to stand', as some GN languages have more than one 'stand' root, which may be formally similar but have slightly different paradigms. AEH reconstruct two 'stand' roots for pGN, with a semantic contrast: *-dha- 'stand (dynamic)' (e.g. 'stand up') and *-dhi- 'stand (stative)' (e.g. 'be standing'). R. Green (2003) reconstructs the same formal and semantic contrast for proto-Maningrida, and for proto-Arnhem. AEH note that some GN daughter languages have merged the two paradigms, while others have generalised one verb or the other as their free 'stand' verb, and one as their bound form. They note that Wubuy, Ngandi and Ngalakgan have distinct free and bound forms, with different paradigms. This is the case in Enindhilyakwa too. In fact, this language has *two* distinct bound forms and one free form, all with different paradigms. In what follows I will argue that all three are relatable to pGN *-dha- and *-dhi- in a complex way,

involving conjugational shift and analogical extension. We will see that Enindhilyakwa and Wubuy stance verbs have very similar paradigms, which differ quite radically from those in Ngandi and pGN.

We first turn to the reconstruction of Enindhilyakwa subclass 6A, which corresponds to Wubuy NGA₁. The attested shared verbs are listed in (33); I did not find any corresponding verbs in Ngandi or pGN. Table 9.50 presents the corresponding paradigms.

(33)   Enindhilyakwa 6A   Wubuy NGA₁

     sleep   *-mungkulha-*   *-mungkulha-*
     lie down   *-murrkulha-*   *-murrkulha-*
     bend down *-abilyu+wendha-*   *-bilya-* 'be tilted' [NGA₂]; *-wudha-* ~ *-budha-* 'be up'

	Enindh. 6A *-mungkulha-* 'sleep'	Wubuy NGA₁ *-mungkulha-* 'lie down'
NP1	*-mungkulhv-nga-Ø* ~ *-mungkulhi-ya*	*-mungkulha-nga-ng*
NP2	*-mungkulha-Ø*	*-mungkulha-a* > *-mungkulhaa*
P1	*-mungkulhv-nga-Ø*	*-mungkulha-nga-ny*
P2	*-mungkulha-Ø*	*-mungkulhi-Ø*

Table 9.50: Enindhilyakwa 6A and Wubuy NGA₁ *-mungkulha-* 'sleep'

The *nga*-augment occurs in the NP1 and P1 in both languages. These categories correspond in the usual way: the Wubuy NP1 *-ng* and P1 *-ny* are the standard generalisations and relate to a zero morph in Enindhilyakwa. The NP2 and P2 suffixes are formally very similar in the two languages (again, it is impossible to tell whether the Enindhilyakwa suffix is *-a* or *-Ø*, as this merges with the stem-final *a*). The Enindhilyakwa NP1 has a variant *-ya*, which replaces the *nga*-augment. This supports its analysis in section 9.3.4.1 as an innovation, as it replaces an archaic segment.

Subclass 6B contains 'stand' verbs, which have correspondences in Wubuy and other GN languages. Some of the attested correspondences are:

(34)   Enindhilyakwa 6B   Wubuy NGA₁, NGA₂   Ngandi (irr.)

     stand   *+lhalhv-*   *-lha-*   [NGA₂]   *+dhu-*[38]
     sit   *-ambarr-*   *-burra-* [NGA₁]
     emit smell *-kvrru+wanji-* *-wanja-* [NGA₁] (*arrawuj* 'odour')

Besides the bound form *+lhalhv-* 'be upright', there are two more 'stand' verbs: *(+)arji(ya)-* ~ *(+)adhi(ya)-* (subclass 6C), and the bound form *+aya-* (subclass 2B, Table 9.40). The following are an example of each.[39]

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[38] This thematic appears in *-jaka+dhu-* 'stand', but is synchronically inseparable (Heath 1978a: 100). Its paradigm is distinct from the thematising augment *+dhu-* that belongs to conjugation 1.

(35) a. *nuw-ang+maku+lhalha*
    3a-?chin+?place+be.upright.P2
    'they were all sitting' (anin4_dl_au_003)

  b. *a-rrak-arjiyinga*
    2.IMP-forehead-stand.NP1
    'sit down!' (anin4_md_au_001)

  c. *nuw-ang+mak+aya-nga*
    3a-?chin+?place+be.upright-P2
    'they were all sitting' (anin4_dl_au_003)

Table 9.51 (next page) presents the corresponding paradigms of Enindhilyakwa +*lhalhv*-, Wubuy -*lha*- and Ngandi +*dhu*- 'stand, be upright'. AEH and R. Green (2003) propose that Wubuy -*lha*- and Ngandi +*dhu*- descend from pGN *-*dhi*-. The NP1 and P1 forms in Enindhilyakwa and Wubuy both have an augment -*nga*-, to which the tense/aspect suffixes are added. In Ngandi only the P1 contains a similar augment. The Enindhilyakwa NP1 and P1 suffixes themselves involve the generalisations found elsewhere, which do not warrant reconstruction. The Wubuy NP1 is the generalised -*ng* ending found elsewhere, whereas the P1 is similar in Wubuy and Ngandi, and can be reconstructed as *-*nga-ny* or *-*ngi-ny* for pEGN. I reconstruct a *nga*-augment in the NP1 and P1 for pEGN, preserved in Enindhilyakwa and Wubuy.

	Enindh. 6B +*lhalhv*- 'be upright'	**Wubuy NGA₂** -*lha*- 'stand'	**Ngandi (irr.)** +*dhu*- 'stand (stative)'	**pEGN** *-*dha*- 'stand'	**pGN** *-*dhi*- 'stand (state)'
NP1	+*lhalhv-nga-Ø*	-*lha-nga-ng*	+*dhi-nyang*	*-*dha-nga-?*	*-*dhi*
NP2	+*lhalhv-na*	-*lha-ra*	+*dhu-rda*	?*-*dha-rda*	
P1	+*lhalhv-nga-Ø* ~ +*lhalha-Ø*	-*lha-nga-ny*	+*dhi-ngi-ny*	*-*dha-nga-ny* ~ *-*dhi-ng-iny*	*-*dhi-yi*
P2	+*lhalhv-nv* ~ +*lhalha-Ø*	-*lha-y,- lhi-Ø*	+*dh-i*	*-*dha-?*	*-*dhi-ny*

Table 9.51: Enindhilyakwa +*lhalhv*- : Wubuy -*lha*- : Ngandi +*dhu*- : pGN *-*dha*- 'stand (stative)'

The NP2 and P2 suffixes appear to be unrelated. The Enindhilyakwa endings are most likely an intrusion from conjugation 1. However, the stem-final /ə/ could indicate a former retroflex consonant, which is still present in Wubuy and Ngandi NP2. I tentatively reconstruct *-*rda*, with lenition *rd to *r* in Wubuy/Enindhilyakwa, and subsequent loss of retroflexion in Enindhilyakwa:

(36) *-*dha-rda* > *-*lha-rda* (regular *dh > *lh*, Enin, Wub) > *-*lha-ra* (regular lenition of *rd, Enin, Wub) > *-*lhv-ra* (regular vowel reduction in retroflex environment, Enin) > *-*lhv-rna* (addition of regular NP2 -*na* suffix) > -*lhv-na* (regular loss of retroflexion)

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[39] Note that the translations involve 'sit', and not 'stand'. This is not as contradictory as it seems, because 'sit' is conveyed in Enindhilyakwa by compound stems composed of a body part plus one of the stance verbs, such as 'forehead+stand' = 'sit' in (35b).

AEH suggest that Wubuy *-lha-ra* and Ngandi *+dhur-rda* are survivors of an archaic pGN form *-*dhuru*. This form appears as the NP *-duru* in Rembarrnga, and also finds cognates in the Maningrida languages outside GN (see R. Green 2003). In Enindhilyakwa the only remnant of the former retroflex is the presence of *v*.

R. Green (2003) proposes that pGN *-*dha-* 'stand (dynamic)' relates to the Wubuy 'minor derivational suffix' *-ja-* ~ *-dha-* (Heath 1984: 401)[40], and to the Ngandi thematising augment *+dha-*. The Wubuy element belongs to conjugation A_2. Heath suggests that *-ja-* could be underlying *-ya-* with hardening after a stop (1984: 401).

The Enindhilyakwa correspondence is *-aya-* 'be upright', which belongs to class 2B (corresponding to Wubuy A_2; section 9.3.4.1). The third Enindhilyakwa 'stand' verb, *-ardji(ya)-* 'stand', may be related to *-aya-* through hardening of *y > j* following the stop *rd* (see Appendix D for some evidence of continuants hardening to stops). The paradigms are listed in Table 9.52.

	Enindh. 6C *-arji(ya)-* 'stand'	**Enindh.2B** *-aya-* 'be upright'	**Wubuy A_2** *-ja-* ~ *-dha-* 'der. suffix'	**Ngandi 2** *+dha-* 'thematic'	**pEGN** *-dha-*	**pGN** *-dha-* 'stand'
NP1	*-arji(yi)-* *(nga-)Ø*	*-ayv-Ø?*	*-dha-ng* ~ *-ja-ng*	*+dha-ng*	*-dha-ng*	*-dha-ng-en*
NP2	*-arjiya-Ø*	*-aye-na*	*-dha-i* ~ *-ja-i* > *-dhii* ~ *-jii*	*+dha-ni*	*-dha-ni*	
P1	*-arji(yi)-* *nga-Ø*	*-ayv-Ø* ~ *-ayi-nga*	*-dhi-ny* ~ *-ji-ny*	*+dhi*	*-dha-?*	*-dha-ng-iny*
P2	*-arjeeyv-Ø*	*-aya-nga*	*-dha-ngi* ~ *-ja-ngi*	*+dha-ngi*	*-dha-ngi*	*-dha-ny*

Table 9.52: Enindhilyakwa *-arji(ya)-*, *-aya-* : Wubuy *-dha-* : Ngandi *+dha-* : pGN *-dha-* 'stand'

I tentatively reconstruct *-dha-* for pEGN, where *dh* is preserved in Ngandi but varies with *j ~ y* in Wubuy, and which changes to *y* in Enindhilyakwa. The paradigm of *-arjiya-* [6C] is unrelated so it will not be considered in the reconstruction. The NP1 suffixes involve the usual generalisations, except for the P1 allomorph *-nga* in Enindhilyakwa. It could be related to pGN *-ngi-ny*. The NP2 suffixes can be reconstructed as *-ni* (Heath 1984: 413 suggests the Wubuy *-i* suffix is historically *-ni*). In Enindhilyakwa the suffix vowel triggers vowel harmony in the stem: *-aya-ni* > *-aye-ni* > *-aye-na*). The P2 ending can be reconstructed as *-ngi*.

The proposed pEGN paradigm differs quite substantially from the pGN paradigm. The only relatable endings are in the NP1.

If the hypothesis that *-arji(ya)-* is related to *-aya-* through hardening of *y* induced by the preceding [ɻ] is correct, then one of the two verbs must have shifted conjugations. Since the *-aya-*

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paradigm is related to the Wubuy paradigm of *-ja-* ~ *-dha-* and Ngandi *+dha-*, this suggest that *-aya-* has retained the original endings. The *-arji(ya)-* verb must then have changed conjugations, perhaps by analogy to other stance verb in conjugation 6B.

In overall, I propose that the two reconstructed stance verbs for pGN, **-dhi-* 'stand (stative)' and **-dha-* 'stand (dynamic), correspond to three different verbs in Enindhilyakwa, two bound and one free from:

(37) pGN **-dhi-* 'stand (stative)'   > *+lhalhv-* 'be upright' (Wubuy *-lha-*, Ngandi *+dhu-*)
      pGN **-dha-* 'stand (dynamic)' > *-aya-* 'be upright' (Wubuy *-dha-* ~ *-ja-*; Ngandi *+dha-*)
                                   > *-arji(ya)-* 'stand'

I encountered one textual example of *-adhiya-* 'stand', which confirms its archaic source with an interdental stop:

(38) *M-akina mamangwurrajija m-ibina*   **nvm-adhiya-ma**   *arvngka-manja me-m-ikirra*
     VEG-that VEG.feather   VEG-that   VEG-stand.NP2-*ma*   NEUT.head-LOC VEG-INALP-name
     miyamba   m-akina.
     VEG.crest.feather   VEG-that
     'The feathers that stand up on the cockatoo's(FEM) head are called 'crest feathers'.'
                                                                              (GED p.87)

In AEH's reconstruction, the dynamic stand verb **-dha-* has a *ng*-augment, which is associated with a 'standing up' meaning. The semantic contrast of 'be standing' versus 'stand up' also exists in Enindhilyakwa, but it is encoded in the tense/aspect suffixes. As proposed in section 6.5, the NP1 and P1 suffixes in Enindhilyakwa mark instantaneous changes of state that do not have any proper subparts. For stance verbs, this translates into changes of posture such as 'stand up' or 'sit down'. Stance verbs marked with the aspectually neutral NP2 or P2 suffixes, by contrast, do not have such readings and most often imply being in the posture, such as 'be standing'. The contrast is illustrated by the following pairs of examples, where the (a) examples involve NP1 or P1 suffixes marking an instantaneous change of state, while the (b) examples marked with P2 suffixes denote being in the stance.

(39) a. *warma-jungwa,   arjiyinga*
        IMP.2.rise-REFL.NP1 IMP.2.stand.NP1
        'get up, stand!'   (JH ex. 113)
     b. *yingi-nyak-arjeeyv-ma*
        3f-chest-stand.P2-*ma*
        'she [mother cat] was sitting upright'   ('Bujikeda' y100-1)

(40) a. *nvngv-ruku+lhalhv-nga-ma*
        1-body+be.upright-P1-*ma*
        'I squatted down'   (VL1 p.434)

b. *nanga-rrvngka   ying-ang+maku+lhalha=dha*
   3m/3f-see.PST   3f-?chin+?place+be.upright.P2=TRM
   'he saw her sitting there'   ('Search' z110)

Heath (1984) does not discuss these aspectual differences in Wubuy, but he notes in his (1982) dictionary that the NP1 or P1 form (labelled 'punctual') of *-burra-* 'sit' means 'sit down', and the NP1 or P1 of *-lha-* 'stand' denotes 'stand up'. This could mean that the Enindhilyakwa and Wubuy systems operate in the same way: the NP1 and P1 suffixes encode a change of state whereas the NP2 and P2 do not have such readings. Thus, whereas AEH attribute the semantic contrast in pGN to the augmented stems, in Enindhilyakwa and Wubuy the semantic contrast is catered for by the suffixes. The suffixes encoding a change of state meaning just happen to attach to the *nga-*augmented stems.

In Enindhilyakwa and Wubuy the distinctive *nga-*augment has systematically been extended to the NP1 and P1 of all verbs in this conjugation. The similar augment reconstructed for pGN occurs in only a few forms. The systematic use of the augment can therefore be viewed as shared innovation unique to Enindhilyakwa and Wubuy.

9.3.4.6   Incorporation of *nga-*augment into the stem

There are a number of stems in Enindhilyakwa that appear to have incorporated the *nga-*segment present in Wubuy. These are not stance verbs and they do not belong to conjugation 6. The Wubuy correspondences belong to one of the NGA classes:

(41)   Enindhilyakwa   Wubuy

  bite   *-anga-*   [4]   *-wa- ~ -ba-*   [NGA$_3$]
  jump   *-(bi)janga-*   [4]   *-lha-* 'stand' [NGA$_2$]
  singe   *-ye+nanga-*   [4]   *-yi+wu-* [MA$_1$], *-na-* 'burn' [NGA$_3$]
  bend   *-(b)arrngv-*   [1]   *-barra-*   [NGA$_1$]

The Wubuy verbs take an augment in some inflectional categories. This augment has been extended throughout the paradigm in Enindhilyakwa, as illustrated in Table 9.53 for *-anga-* 'bite'.

	Enindh. 4 *-anga-* 'bite'	**Wubuy NGA$_3$** *-wa- ~ -ba-* 'bite'	**Ngandi (irr.)** *-ba-* 'bite'
NP1	*-anga-Ø ~ -angi-ya*	*-wa-ng*	*-bi-yang*
NP2	*-angv-na*	*-wa-nga-na*	*-ba-nga-na*
P1	*-anga-Ø*	*-wa-ng*	*-ba-ng*
P2	*-anga-Ø*	*-wa-nga-a > -wa-ngaa*	*-ba-ri*

Table 9.53: Enindhilyakwa, Wubuy and Ngandi paradigms of 'bite'

In Wubuy and Ngandi there is synchronic evidence for a *nga-*augment, which appears in only certain categories. There is no synchronic evidence for this augment in Enindhilyakwa, as it has

been extended to all categories. The paradigms match: the Wubuy NGA classes take suffixes of class A₁ (Heath 1984: 412), which corresponds to Enindhilyakwa conjugation 4 (Table 9.41). After incorporation of the *nga*-augment the paradigms are almost identical (allowing for the usual generalisations).

9.3.5 Derivational suffixes: reflexive, reciprocal, and inchoative

Most GN languages have a set of derivational suffixes, falling into two classes (AEH p.341): (i) a suffix that derives REFLexive and/or RECiProcal verbs from transitive stems, and (ii) an INCHoative suffix that derives intransitive verbs from nominal stems. AEH note that in many GN languages REFL and RECP meanings are covered by the same suffix, except in Wubuy, Ngandi and Warray (p.342). Due to the great distance between Warray on the one hand, and Wubuy and Ngandi on the other, they argue, the distinctive REFL and RECP forms cannot be an innovation (p.342-3). The contrast between the two must therefore be archaic and they reconstruct REFL *-yi-* and RECP *-nji-*.

Like Wubuy and Ngandi, Enindhilyakwa has distinct REFL and RECP suffixes: REFL *-jungwV-* and RECP *-yi-* (section 5.4.1.2). Table 9.54 lists the paradigms of the REFL suffix.

	Enindh. 1A(iv) *-jungwV-* 'REFL'	**Wubuy I₁** *-i-* 'REFL'	**Ngandi 3a** *-(y)i-* 'REFL'	**pEGN** *-yi-* 'REFL'	**pGN** *-yi-* 'REFL'
NP1	*-jungu-Ø ~ -jungwa-Ø*	*-i-ny*	*-(y)i-ng*	?	*-yi-n*
NP2	*-jungu-na*	*-ii-na*	*-(y)i-na*	*-yi-na*	
P1	*-jungwa-Ø ~ -jungu-Ø*	*-i-ny*	*-(y)i-ny*	*-yi-ny*	*-yi-ny*
P2	*-jungu-nv*	*-ii-ni*	*-(y)i-ni*	*-yi-ni*	*-yi-n-iny*

Table 9.54: Enindhilyakwa, Wubuy, Ngandi and pGN reflexive

Table 9.55 lists the corresponding paradigms of the RECP suffix. The Enindhilyakwa RECP has a rare variant *-(n)ji-*, which links it to the forms in the other languages.

	Enindh. 1A(i) *-yi- ~ -(n)ji-* 'RECP'	**Wubuy I₂** *-nji-* 'RECP'	**Ngandi 3a** *-ydhi-* 'RECP'	**pEGN** *-nji- ~ *-ydhi-* 'RECP'	**pGN** *-nji- ~ *-ndhi* 'RECP'
NP1	*-yv-Ø ~ -(n)jv-Ø*	*-nja-ng*	*-ydhi-ng*	*-nji-ng ~ *-ydhi-ng*	*-nji-n ~ *-ndhi-n*
NP2	*-yi-na ~ -(n)ji-na*	*-njii-na*	*-ydhi-na*	*-nji-na ~ *-ydhi-na*	
P1	*-yv-Ø ~ -(n)jv-Ø*	*-nji-ny*	*-ydhi-ny*	*-nji-ny ~ *-ydhi-ny*	*-nji-ny ~ *-ndhi-ny*
P2	*-yi-nv ~ -(n)ji-nv*	*-njii-ni*	*-ydhi-ni*	*-nji-ni ~ *-ydhi-ni*	*-nji-n-iny ~ *-ndhi-n-iny*

Table 9.55: Enindhilyakwa, Wubuy, Ngandi and pGN reciprocal

AEH propose that the distinct RECP suffixes in Wubuy and Ngandi are cognate with each other, and with the combined RECP/REFL forms in other GN languages. This suggests that in those languages with only one RECP/REFL suffix, the original RECP has extended its range to replace the original REFL, which AEH believe is a plausible development cross-linguistically. The various GN realisations of the RECP/REFL suffix are derived from pGN *-nji- ~ *-ndhi- through a number of steps, including loss of the nasal and selection of either dental or palatal (see AEH Table 36). The Enindhilyakwa RECP form could then have derived from the pGN form in a similar way:

(42) RECP: *-nji- ~ *-ndhi- > -nji- (selection of palatal) > -ji- (loss of nasal) > yi- (lenition)

All stages in this development are synchronically attested: -akbvrrangee-yi- ~ -akbvrranga-ji- ~ -akbvrranga-nji- 'find-RECP', although the lenited version is by far the most common. It is cognate with the RECP -yi- in Jawoyn.

The reflexive suffix -jungwV- is more difficult to link to Wubuy -i- and Ngandi -(y)i-. It is possible that it is segmentable into -ji.ngwV-, where -ji- represents a hardened *-yi-. The vowel obtains its rounding from the rounded dorsal segment -ngwV-, and it may be this rounding that prevents the palatal from leniting:

(43) REFL: *-yi- > *-ji- (hardening) > *-ji-ngwV- (addition of ngwV segment) > -jungwV-

Note that the REFL suffix is homophonous with the verb root -jungwV- 'die' (see e.g. ex. [19] in section 5.4.1.2).

The distinct REFL and RECP suffixes are a shared retention of Enindhilyakwa, Wubuy and Ngandi.

AEH reconstruct two distinct INCH suffixes for pGN: *-me- and *-dhi- (p.344).[41] The latter has reflexes in five languages: Wubuy, Ngandi, Mangarayi, Jawoyn and Warray - and, I propose, Enindhilyakwa, where it continues as thematic +mv- ~ +bv- (Table 9.1). The productive Enindhilyakwa INCH is -dhv- (section 5.4.1.1). The paradigms are presented in Table 9.56.

	Enindh. 1A(i) -dhv- 'INCH'	**Wubuy I$_1$** -dhi- 'INCH'	**Ngandi 3** -dhi- 'INCH'	**pEGN** *-dhi- 'INCH'	**pGN** *-dhi- 'INCH'
NP1	-dhv-Ø	-dhi-ny	-dhi-ng	?	*-dhi-n
NP2	-dhv-na	-dhii-na	-dhi-na	*-dhi-na	
P1	-dhv-Ø	-dhi-ny	-dhi-ny	*-dhi-ny	*-dhi-ny
P2	-dhv-nv	-dhii-ni	-dhi-ni	*dhi-ni	*-dhi-n-iny

Table 9.56: Enindhilyakwa, Wubuy, Ngandi and pGN inchoative

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[41] Wubuy INCH -dhi- is very limited in productivity; -ma- is by far the most common INCH suffix (Heath 1984: 395).

The paradigms of Enindhilyakwa, Wubuy and Ngandi are almost identical, allowing for the usual correspondences of overt material in the Wubuy and Ngandi NP1 and P1, relating to -Ø in Enindhilyakwa. Another difference is weakening of the root-final vowel in Enindhilyakwa, which does not happen in Wubuy or Ngandi.

The Enindhilyakwa INCH suffix is proposed to be *-dhv-*, rather than *-dhi-* attested in the other languages, because the vowel in the suffix does not trigger vowel harmony in the preceding nominal root. For example, when the INCH attaches to the nominal *awinyamba* 'NEUT.anger' this yields *-awinyamba-dhv-* 'be/become angry' (not *-awinyambe-dhv-*).

9.4 Conclusion

Although preliminary in many ways, I have shown that Enindhilyakwa is not a family-level isolate, as was its hitherto assumed genetic status, but that it constitutes a subgroup with Wubuy, nested within another subgroup including Ngandi, in turn embedded within the large Gunwinyguan family. The evidence presented comes from several sources: lexical evidence is the substantial amount of vocabulary shared between Enindhilyakwa and Wubuy, including numerous core vocabulary items (32% on a conservative count, and 45% on a more liberal count that includes bound forms and forms that have undergone semantic change). Appendix O presents the Swadesh list on which these percentages are based, and Appendix P gives the full list of cognates that this study has revealed.

The phonological evidence comes from a number of shared phonological changes that differentiate Wubuy and Enindhilyakwa from the Gunwinyguan languages, most notably: **dh > lh* and **o > a*.

The morphosyntactic evidence presented in this chapter comes from verbal inflectional paradigms (in an important study summarised in Appendix L, Heath 1997 compares the pronominal prefix paradigms of Enindhilyakwa, Wubuy and Ngandi). Although Enindhilyakwa, Wubuy and Ngandi preserve the overall characteristics of the GN paradigm, the three languages have elaborated the pGN NP category by innovating the NP2. I reconstructed the inflectional paradigms of a number of verbs belonging to different conjugational classes. This alone meets the criterion of 'multidimensional paradigmaticity' that is sufficient to prove a genetic relationship according to Nichols (1996). I called the immediate ancestor of Enindhilyakwa, Wubuy and Ngandi 'proto-Eastern Gunwinyguan' (pEGN).

Of the three EGN languages, Ngandi appears to be closest to pGN (in its phonology and suffixal paradigms - Ngandi vocabulary was not addressed in this study). In other words, Enindhilyakwa shares more similarities with Wubuy than with Ngandi. However, Baker (2004) presents evidence that Wubuy and Ngandi form a subgroup that must have undergone separate

development for a considerable amount of time (this is based on shared irregular morphology in their verb paradigms, but he examined other categories than I did here, and he ignored Enindhilyakwa). Hence more work is needed to establish the various groupings and subgroupings in greater detail.

Recognising a common ancestor for Enindhilyakwa, Wubuy and the other GN languages has important ramifications for the timing of settlement of Groote Eylandt. The archipelago is estimated to have been cut off from the mainland at around 7000 BP by post-glacial rising sea-levels (section 1.1.4). This geographic isolation is likely to have been one of the reasons for the presumed isolate status of the language. But the linguistic evidence presented in this chapter tells us that this geographic isolation cannot have meant linguistic isolation. In other words, the Groote Eylandt archipelago must have been settled after 7000 BP, by people travelling from the mainland. One question then is, when did this happen?

Fred Rose (1961) entertains the idea that Enindhilyakwa is an offshoot from Wubuy, and that it was the Nunggubuyu who populated Groote Eylandt after the introduction of the dugout canoe by the Macassans - i.e., at most 300 years ago. However, the linguistic evidence does not support such a recent divergence (which is confirmed by the fact that linguists have failed for decades to establish the relatedness of these two languages). It is more plausible that people were able to cross the 43 km stretch of sea prior to the advent of the Macassans, perhaps by hopping via Bickerton Island and Connexion Island (see Map 1.2) in their bark canoes. Perhaps the population of Groote Eylandt was sparse in the beginning (Rose estimates it at a maximum of one hundred [1961: 528]), and contact with the Macassans triggered larger-scale population of the archipelago.

A less recent time depth is supported by the archaeological evidence presented in section 1.1.4: the oldest archaeological finding is little less than 3000 years old. We can furthermore calculate the timing of linguistic divergence with the decay formula provided by Crowley & Bowern (2010: 148), taking the conservative estimate of 32% shared vocabulary:

(44) $t = \log 32 / 2 \log 0.805 = 2.626$

where t stands for the number of thousands of years that two languages have been separated, and 0.805 is the constant rate of vocabulary change.

This time depth of 2626 years based on lexicostatistics and glottochronology is strikingly compatible with the archaeological record. Being spoken on an island, this allows us to associate archaeological dating with linguistic divergence times, and drive a time-peg into one node of the phylogeny of Australian languages (as Nicholas Evans pointed out to me): Enindhilyakwa may have split off from Wubuy around 3000 years ago.