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Merlan

A Grammar of Wardaman

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A Language of the Northern Territory of Australia

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Abbreviations

ABL	Ablative	INT	Interjection
ABS	Absolutive	IRR	Irrealis
ADV	Adverbial	ITER	Iterative
ALL	Allative	KR	Kriol
ART	Article suffix	LOC	Locative
AUX	Auxiliary	NAR	Narrative suffixes -ya, -yawu
CAUS	Causative	NEG	Negative, negator
CF	Confirmatory (<i>bago</i>)	NOM	Nominalizing or nominal suffix
CMP	Completive	NSG	Non-singular
DAT	Dative	ORIG	Originative
DF	Defocusser	PL	Plural
DISS	Dissociative	PNEG	Particle negator
DU	Dual	POT	Potential
DY	Dyadic	PRES	Present
EMPH	Emphatic	PRO	Pronoun
EMPHQ	Emphatic question suffix - <i>gula</i>	PS	Particle suffix
ERG	Ergative case	PST	Past
EX	Exclusive	Q	Question suffix - <i>gan</i>
FP	Focal member of pair	QQ	Emphatic question suffix - <i>warda</i>
FUT	Future	rdp	Reduplicative form
GEN	Genitive	RR	Reflexive-reciprocal
HAB	Habitual	SG	Singular
HT	Hortative	SOU	Source
IMP	Imperative	SSPEC	Spatial specifier
IN	Inclusive	ss	Subsection, 'skin'
INCH	Inchoative	TAGQ	Tag question
INST	instrumental		

Symbols used in grammar and texts: the usual kin abbreviations, e.g. M = mother, F = father, Z = sister, B = brother, C = child, e = elder, y = younger etc.

! obligatory degemination

~ optional (degemination), alternative form

\$ syllable boundary

word boundary

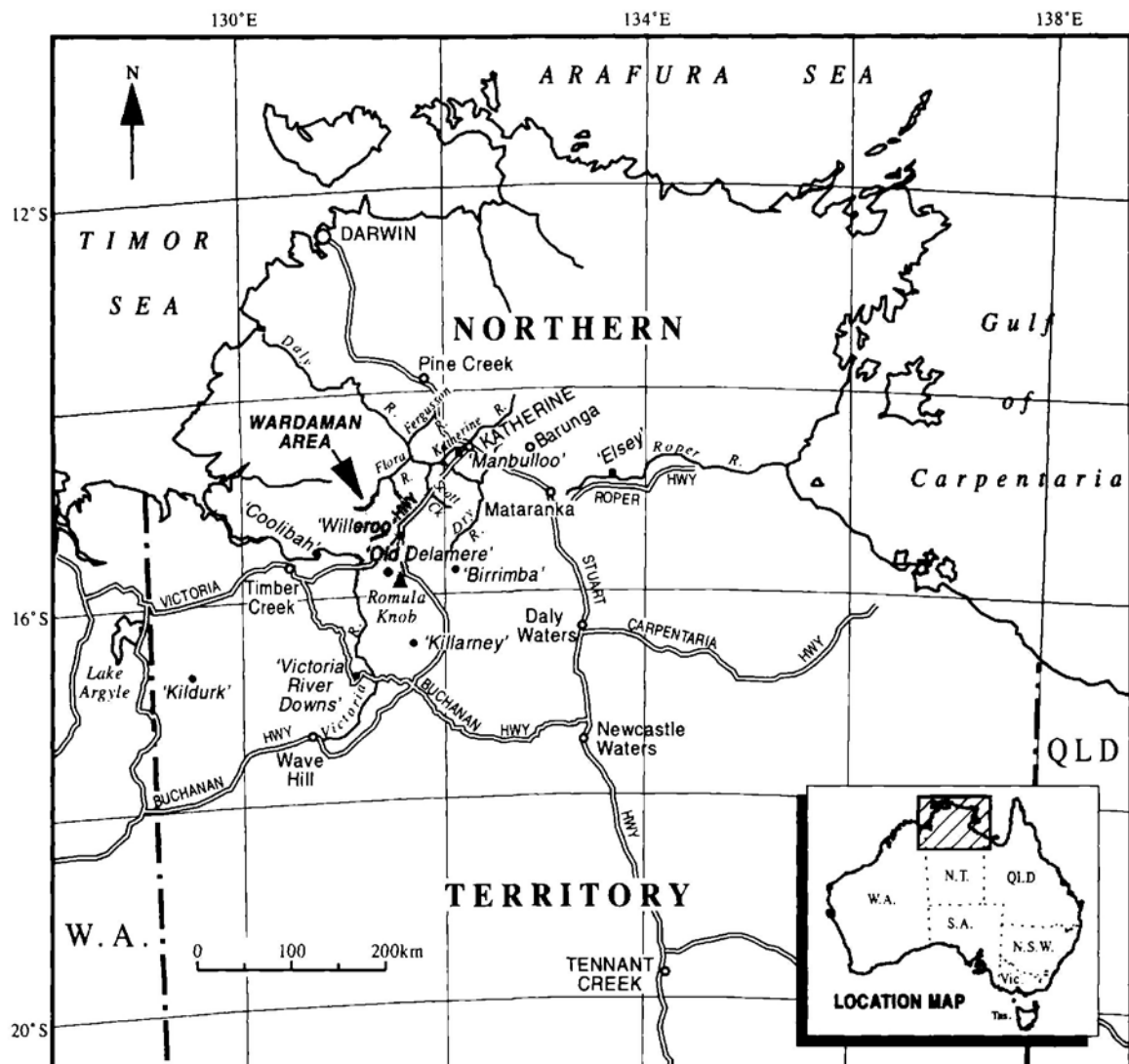
:(:::) in texts = vowel length

[.....] in grammar = clarification by author

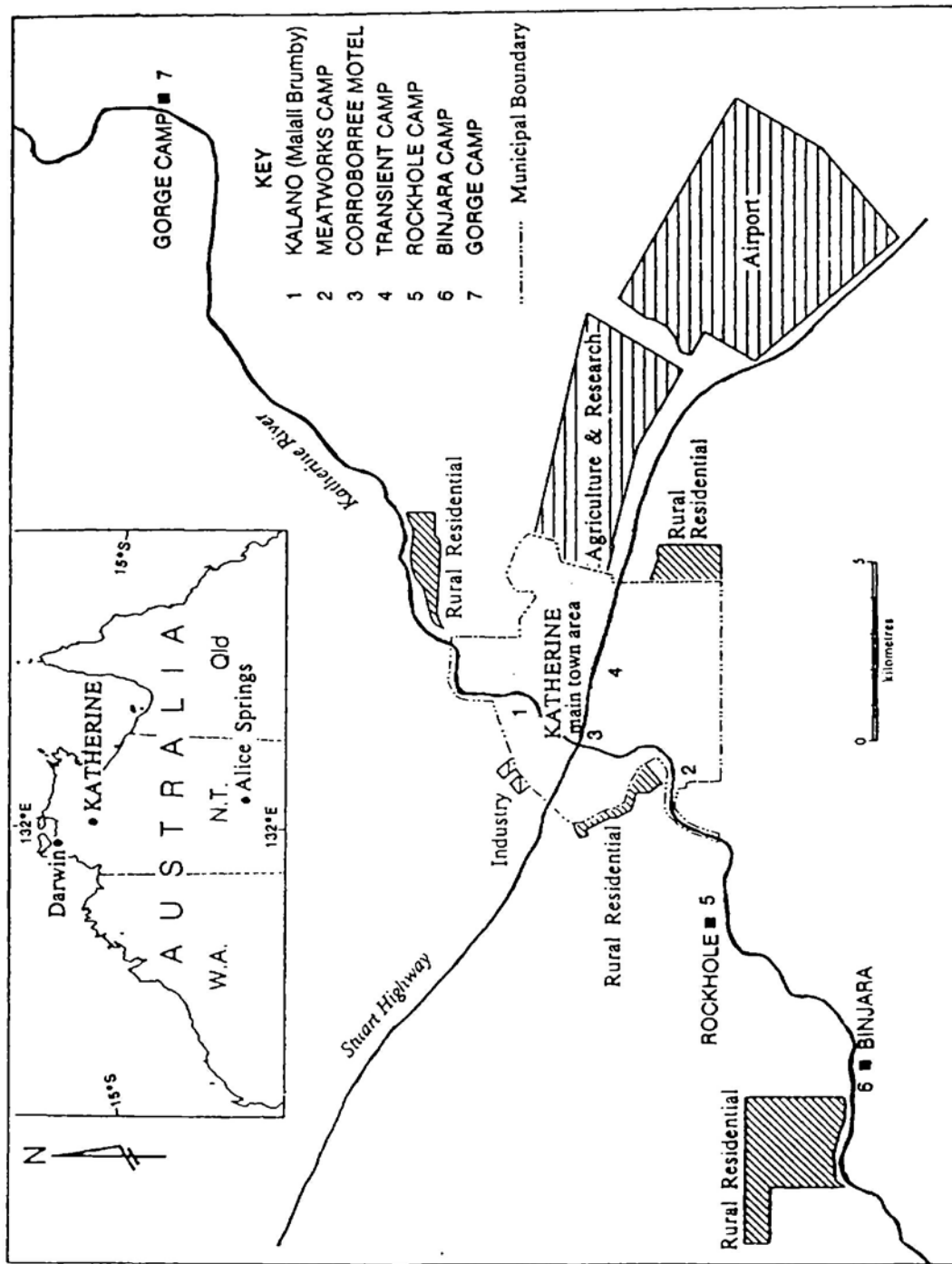
[.....] in texts = later addition by speaker

(.....) in grammatical examples = optional

INTERJECTION = break in text narration on tape



Map 1. Approximate Wardaman area in relation to "Top End" of the Northern Territory



Map 3. Katherine town camps

WARDAMAN GRAMMAR

Chapter 1

Introduction

1.1. Wardaman today: The language and its speakers

Wardaman is a non-Pama Nyungan language of the upper, inland Northern Territory of Australia. It is now one of the most widely spoken Aboriginal languages of Katherine, a rapidly-growing¹ town of about 8000 people located on the Stuart Highway in the upper third of the Northern Territory (Map 1). Though Wardaman is more widely known than some of the other languages of the general Katherine area, the number of active speakers is relatively small. I estimate there are 30 people aged 40 and above who live in and around Katherine, and regularly speak Wardaman in some of their interactions with each other. They do not speak only Wardaman to each other and to other Aboriginal people with whom they live, but also use north Australian Kriol (see Sandefur 1979) and other Aboriginal languages.

Additionally, there is a much larger number of people – possibly numbering as many as two hundred – with and around whom those active speakers live, and in many cases, have lived for a long period of time, who understand Wardaman and consider hearing it spoken around them a regular feature of their lives. Many of these additional people are close family of the “core” speakers, children, grandchildren, and others. Some others, however, tend to be more distantly related “countrymen” of the Wardaman – people who identify with tribal groupings of Victoria and Daly Rivers and the larger region west and south of Katherine, contiguous with what the Wardaman regard as their traditional territory. These countrymen include people who are identified as Jaminjung, Yangman and Mudbura, among other tribal groupings. Many of these people have been in the Katherine area for a long time, and some are married to Wardaman. Additional countrymen from the Victoria River hinterland, who identify with tribal groupings including Ngarinyman, Nungali and Ngaliwurru, often visit the Katherine camps and houses where Wardaman people live when they come in to town. (See Map 2 showing approximate territorial association of the tribal groupings mentioned). Some of the older countrymen not only understand Wardaman, but can speak it, even if they do not do so as often as the Wardaman core speakers.

Younger Wardaman people – in my observation, including at least everyone born after the Second World War – do not speak the language actively, but use at most the occasional word and phrase. Varying with family, however, some of these younger people have a good understanding of the language. Due to the particular circumstances

1. The town had continued to grow steadily but slowly until 1986, when the recommissioning of a RAAF base east of the town, Tindal, was the impetus for the rapid near-doubling of the town's population. Under these conditions, and despite considerable Aboriginal movement into the town in the 1960s, 1970s, and 1980s, there has been diminution of the proportion of the town's people who are Aborigines.

under which many Wardaman have lived for the last few decades (see 1.4.), many younger people of certain families have had a great deal of influential exposure to Wardaman, and have a rather full, passive knowledge of the language which apparently might, under some conditions, be convertible into active speakership.

Thus active use of Wardaman is more closely associated with age among Victoria River and allied “countrymen” than it is simply with social identification as Wardaman. Tendency to use the language, however, seems to be strongly correlated both with age and with recognition of Wardaman as one’s “own” language (see Sutton 1978).

Wardaman people now mainly live around and in Katherine town, although some people who either identify themselves as Wardaman, or consider that identity a major component of their family background, live on stations and in other places in the Victoria River region (including Killarney, Kildurk, and Bulla Stations, Wave Hill, and Yarralin).

Wardaman are concentrated at two camps outside of Katherine, to the south and west, towards their traditional country. These are Binjara (*Bunjarri*), a community on Manbulloo Station about 12 kms. from Katherine on the Victoria Highway; and The Rockhole, about 10 kms outside of town on the Florina Road (see Map 3). Increasingly, some Wardaman people occupy houses in the town, and some people move back and forth between the camps outside of town, and relatives’ houses in town, with one or the other locale being the normal residence and the other a place where they may spend shorter periods, a day or perhaps a few days at a time. Wardaman is spoken at Binjara, Rockhole, and in the town at Wardaman-occupied houses and in the course of activity (e.g., shopping) in town. Given the close proximity of the two major camps, one or (usually) more vehicles will commute between them and the town, once or (often) more times per day. Visiting among Wardaman in and around town is very frequent, and a major daily activity for many.

1.2. Close linguistic relationships

Wardaman is a close congener of Yangman and Dagoman (see 1.3., also Map 2). From available information, the three may apparently be considered dialects of a single language. They were of such a degree of structural and lexical similarity as to be mutually intelligible.

Dagoman is no longer spoken in the Katherine region. There were formerly speakers at Manbulloo Station and in Katherine town camps, and a few others at Pine Creek. The writer did a small amount of work on Dagoman in the late 1970s with a reputed “last” speaker at Pine Creek, Mrs. Martha Hart, who, after long infirmity, passed away in 1982. The amount of information I succeeded in collecting is small. There is a short word list, and paradigmatic information (with gaps) on the system of nominal case and derivational suffixation, tense-aspect in the verb, independent pronouns, and demonstratives. In the data are also intransitive and some transitive pronominal combinations which are prefixed to the verb, but the speaker was unable to recall all of them. The data are sufficient to establish beyond doubt that Dagoman was a close congener of both Wardaman and Yangman.

Yangman is no longer actively used. Yangman had been most widely spoken at Elsey Station and the neighbouring town of Mataranka, but the numbers of active speakers among these people and their descendants have dwindled. Among those with the best knowledge of the language are now a number of Mangarrayi people at the excision community, Jilkminggan [*Jilgmirn.gan*], on Elsey Station, and a small number of people at Barunga, a settlement to the north of the Roper River. The Mangarrayi have lived and intermarried with the Yangman at least since the building of Elsey Station on the Roper River in the early years of this century (see Merlan 1978).

Though I have collected Yangman material from Mangarrayi people; I consider my most significant data to have come from Mr. Jimmy Daniels, who was widely regarded around Mataranka in the early 1980s as a (if not the) senior Yangman person, and the only remaining person for whom Yangman was not only his “own” and “proper” language, but also his first language. He passed away in 1986 after prolonged and chronic illness. Though Mr. Daniels consented to work with me on different occasions, his personal preference was not to use or even think about Yangman much, as he told me. Having spent quite a number of years as a highly regarded grounds worker on a station in the region, he seemed to find the illness-ridden, less structured existence of his “retirement” years somewhat dissipating and frustrating.

I am grateful for the information he provided, which includes about 500 lexical items, fuller paradigmatic information than I could gather for Dagoman, and a couple of short stories. From these data it is possible to be certain of the close genetic relation of Yangman to Wardaman. Work with him also provided some measure of the extent to which first-language Mangarrayi speakers with whom I did work on Yangman, were interpolating Mangarrayi vocabulary. Most showed a tendency to use some words which Mr Daniels rejected as not Yangman. I can only assume they are probably more prone to do this now than the same people would have been twenty or thirty years ago, when there were some Yangman people around who, because of their identity and use of the language, kept it more current in the local communities among second-language speakers.

Finally, though Wardaman and its congeners appear to share considerable vocabulary and many typological features with Wakiman to the north (see Cook 1987), it cannot presently be stated with certainty what the nature of the relationship is, although my own view is that Wakiman is closely related to Wardaman–Yangman, and has diverged from them partly due to influence from neighbouring Arnhem-area languages.

In certain basic ways, such as phonemic inventory, Wakiman differs significantly from its presumed close congeners, Wardaman and Yangman: it has two stop series intervocalically (e.g., a contrast between bilabials *b* and *p*, apicals *d* and *t*, etc.); there is no phonemic distinction between alveolar and retroflex apical stops, which is fundamental in all the other languages; it has glottal stop, which is not even phonetically of any significant occurrence in Wardaman, Yangman, or Dagoman, and so on. However, when one considers the possible diffusional influences of neighbouring Arnhem-area languages on Wakiman in some of these matters, it still seems quite possible that its closest congeners may be the Wardaman–Yangman–Dagoman grouping. Typologically, in certain very significant ways, such as the syntactic deployment of what I call verbal

“particles” (see Chapter 9) and Cook calls “participles”, Wakiman is very like Wardaman and Yangman, and all of them taken together differ dramatically not only from regional Arnhem languages like Jawoyn which do not rely on such verbal particles to any significant extent, but also from languages like Mangarrayi which do. In Mangarrayi (see Merlan 1982) the syntactic deployment of verb particles is very different from the possibilities in Wakiman and Wardaman etc., and rather limited in comparison with the latter grouping of languages.

1.3. Linguistic type

Wardaman is both prefixing and suffixing. It has relatively complex nominal and verbal morphology. There are three overt nominal class markers (*yi-*, *ma-* and *wu-*), at least the first two of which are used to designate fairly unified sets of denotata. Most noun stems occur only with prefix of one particular class (e.g., *yi-biyan* ‘man, person, Aborigine’); but some may occur with more than one, producing lexical difference (*yi-mum* ‘eye’, *wu-mum* ‘nipple’). As well, there are many nouns which occur without prefix (i.e., with 0- prefix), but with which modifiers (adjectival nouns) may exhibit overt concord.

Number and case are marked by suffixes, and the syntactic case system tends to be fairly strongly Ergative-Absolutive. However, there is wide use of a clause type with actor subject (not generally Ergatively-marked if represented by an independent nominal), and objective complement marked by Dative case. As well, there are various one-place (fully intransitive) clause types. Overt suffix categories include Ergative/Instrumental, Dative/ Genitive, local cases Allative, Locative and Ablative, and the semantically most restricted local category, Originative. In addition, there are two morphologically composite case categories, historically built on the Dative. The first, an historical composite of Dative plus Locative, is termed Dissociative, and usually expresses the meaning “from” or “away from” of an animate participant, or “on account of” of a wider range of participant types. The second, historical composite of Dative and Ablative, expresses a range of notions including source and cause, and is labelled Source.

Participants are obligatorily marked by pronominal prefixes in the verb, and secondarily by independent pronouns. A maximum of two participants are indicated in the verb by transitive prefix forms that tend to be portmanteaux, i.e., not neatly segmentable into parts representing each person/number that enters into the combination.

In the expression of verbal meanings, there is a basic distinction between inflecting verbs and what I have called free verb “particles”. It is common in linguistic descriptions for the word “particle” to be used to designate non-inflecting parts of speech. In Wardaman what I call “particles” can take some inflections. The term “particle” in this sense, however, has had currency in Australianist studies for some time (see Dixon ed. 1976), and I retain it, but place emphasis on describing the possibilities of inflection, and the important syntactic functions of these elements. “Verb particles” are semantically full, and occur in combination with a small number of high-frequency inflecting roots (including a number of significant ones of shape CV). Where such particle and verb combinations are highly regular in a specific verbal meaning, the construction is generally labelled that of Particle plus AUXiliary in this description. However, it is

significant that here, seemingly more than in some other regional languages which have this general construction type (e.g., Mangarrayi), the “AUX” often transparently has some clear semantic commonality with the particle, and thus cannot be regarded simply as a formal mechanism or bearer of inflections. For example, with the particle *gayardung* ‘run’, most common are the motion verbs *ya-* ‘go’ and *nyanga-* ‘come’. These of course partly function as grammatical “auxiliaries”, in that they bear person and verbal categorial inflections; but transparently, they are semantically integral with the particle. The clear kind of semantic integration in this case contrasts with that, say, between the particle *wululu* and its usual “AUX” *we-*, which may occur by itself in the meaning ‘fall, be born’. However, together, the combination *wululu we-* means ‘enter, go inside’ (not “fall in” or the like). That is, there is no clear semantic “transparency” of the AUX in the latter case, and thus a greater idiomaticity to the combination than to those with *gayardung*. Thus, the label Particle plus AUX is applied to combinations which may differ considerably in their internal semantic relations. The diverse nature of combinations within this construction type is clearly of comparative interest, and this labelling should not by any means disguise the fact that, as noted above, “AUX” is a semantically and functionally flexible, diverse and problematic category.

Particles have a wide syntactic range. They may be inflected for nominal categories (case), and occur in non-predicative construction types as nominals, and as modifiers. Paradigms of inflecting verbs tend to be highly regular: there is a very limited amount of suffixal allomorphy for tense/aspect/mood categories. The one thoroughly irregular paradigm is that of the verb “to go”.

Suffixal categories of the verb include Present, Past, Future, and Potential, that is, express tense and in some instances, tense/mood meanings. An Admonitive (“lest”) construction is generally built on a zero-stem form, or is built on the Future stem in the few verbs where this is a formally distinct (and obviously historically moribund) category. Further tense/aspect meanings (e.g., iterative) are expressed by additional suffixation to verb forms inflected for tense/aspect, and in some instances (Habitual) by special prefix forms.

A basic mood distinction between Realis and Irrealis categories is expressed by verbal prefixation, in combination (in some instances) with differences in the bound pronominal forms which express person/number as between the two mood categories.

Weak subordination of one predication to another is a common means of constructing discourse linkage in Wardaman. There are two sets of subordinators, one expressing non-past, the other past, temporal reference. Another important mechanism of textual cohesion is “de-focusing” of overtly occurring NPs, i.e., marking of them as recoverable and thus cohesive with surrounding linguistic context.

Three deictic “degrees” are distinguished in the demonstrative system, with some irregularity in the paradigms. The spatially intermediate category (not “this” and not “yonder”, but proximate “that”) also serves to indicate textual recoverability, and is thus most closely comparable to the English definite article.

There are five main points of articulation of parallel stop-nasal series: labial, apico-alveolar, apico-domal or retroflex, lamino-palatal, and velar. There are laterals at three of these points of articulation, apico-alveolar, apico-domal, and lamino-palatal. The

lamino-palatal lateral has a very limited distribution. There are retroflex glide and tap alveolar rhotics. While there are five vowels *i, e, u, o* and *a*, the mid-vowels do not occur in any of the inflectional morphology, except as the result of low-level assimilatory processes. The mid-vowels do, however, occur in a small number of important derivational morphemes, and they occur freely in the wider lexicon.

There are no vowel clusters in Wardaman, and no vowel-initial morphemes besides the tag-question particle *ale* ‘isn’t that so?’.

There appears to be little intra-language variation, but minor differences in a few lexical items were noted among speakers.

Like Warlmanpa to the south (see Nash 1990), Wardaman speak of different territorial sub-groupings, to which recruitment is normatively in the male line, as having different *madin* ‘languages’, or ‘words’. Each such identifiable grouping is said to have minimally one, sometimes more, special words that are “their” language. Typically, these are said to be either the sound made by, or the language spoken by, principal mythological figures saliently associated with given Wardaman sub-territories. For example, an important mythological association with the sub-country just west of Willeroo Station homestead running westerly to Garnawala (Mount Hogarth) is *gulirrida* ‘peewees’, which are abundantly represented in some of the spectacular rock paintings in this area. The “language” or “word” of the peewees, and therefore of the grouping of people patrilineally to this area, is said to be *mamundajgani*, a form for which no etymology can be given. A few of the “words” for particular sub-groupings may have etymologies in other languages of the Victoria River area. At least one is clearly onomatopoeic (e.g., standardization of a bird cry). Knowledge of this kind of relation among people, territory and salient “word” or “words” is limited to older people. The *madin* ‘words’ about which there appeared to be wide agreement were: *mamundajgani*, cited above; *ngagandoroj*, the “word” of *menngen* ‘white cockatoo’, a major dreaming around the Innesvale Station homestead area; *yidabu* and *wamanga*, words associated with *warrija* ‘crocodile’ dreaming, localized at Mt. Gregory; and *nenene*, a “word” (imitative of a bird cry) of *bulyan* ‘eagle’, associated with Jalad, or Price’s Creek, area. The words associated with “crocodile” are interesting, and either have etymologies in other Victoria River languages, or apparently in any case connote the meanings “beef, meat” and “hit, strike” (Wardaman *deb* ‘hit, belt’ was used to gloss *wamanga*), both principal elements of the myth associated with Mt. Gregory, the principal characters of which, Warrura and Barnangga, fought over a catch of crocodile. In addition, a *dilygun* ‘possum’ dreaming associated with the high country along Mathison Creek is characterized by a particular style of speaking, with stopped nasal segments similar to the speech of a person trying to talk with a blocked nose. Thus, possum says *dadadi* instead of *danani* ‘this one’. Asked about these “languages” or “words”, people will emphasize that they are all “one”, the “same Wardaman”, that is, are socio-territorial distinctions made by people who share a common language in the linguist’s usual sense.

Among other systems of social relationship, Wardaman people recognize several (equatable) sets of subsection (or “eight-class”) terms, but identify only one of these as “proper” Wardaman. That set is given in 5.13. They also recognize matrilineally transmitted recruitment to groupings commonly called *ngurlu* across the Victoria River

region. These groupings are not localized. Among my Wardaman informants, most belonged to one or other of the *ngurlu*: *goyin* 'sugarbag', *ganben* 'flying fox', *warrag* 'catfish', *yiburu* 'black rain', and *yiwaganga* 'rain'. While some of these are specifically Wardaman words (e.g., *goyin*), certain of the names (e.g., *yiburu*) have wider currency across the region, and cannot be considered only Wardaman.

1.4. Territory and neighbours

Wardaman people whom I have consulted (see Merlan 1989b, c) identify the larger Wardaman territory as a rough trapezoid with Scott Creek (Aboriginal name, Wugimadgun) as an approximate northern boundary, the junction of Scott Creek and the Katherine River (Mululeyn) as the north-western extent,² Romula Knob as an approximate south-easterly extent, the road crossing of the Victoria River (Langgay) a south-westerly one, and the rough country rising to the Dry River plateau an approximate eastern side (see Map 1). Within this larger area they identify a number of Wardaman territorial "estates". Eleven of these appear to be recognized as within the larger Wardaman country. Yangman country lies to the east and north, on the Dry River and running back north along major waterways to present Mataranka. The area north of the junction of Scott Creek and the Katherine River, east to the King River, and north towards the Ferguson River and Pine Creek, is identified by Katherine Aborigines as Dagoman tribal territory. The northerly extent of Dagoman country is now difficult to establish, such has been the disruption of European pastoral and later settlement (see e.g., Powell 1988: 98 on the early founding of Springvale Station 1876–1879 on the Katherine River near the present town site, also Maff n.d.), and the accompanying diminution of numbers and the salience of "Dagoman" as a socio-territorial identity. Though older Wardaman, at least, clearly recognize that Manbulloo Station (just outside Katherine to the south-west) is in Dagoman country, such has been their length of association with the area and with other Aborigines living there, that they have a strong sense of attachment to it.

Despite the linguistic closeness of Wardaman and Yangman, it would seem that in the post-contact period, most Yangman had more to do with the Mangarrayi in the vicinity of Elsey Station, than with the Wardaman. The Wardaman apparently associated more than the Yangman in post-European times with Victoria River peoples, who came north and worked on Delamere, Willeroo and Manbulloo Stations. Except for a small number of Wardaman who worked at Victoria River Downs and southern stations, these three properties have had a crucial role in the particular contact history of the Wardaman.

Willeroo had been taken up early as a pastoral property, but the homestead was temporarily abandoned when the first manager, Scott, was killed by Aborigines (Maff n.d., p. 20). Soon after the lease was bought by Tom Pearce (see Spencer 1914), formerly a publican in Katherine, and the station was developed as a cattle property. This was in

2. According to Ngamunugarri and Elsie Raymond, there is a second site of the same name on Mathison Creek, i.e. two sites are similarly named as what they regard as approximate western and eastern extents of Wardaman country.

a period of considerable development of stations to the south and west: Wave Hill and Victoria River Downs. Delamere had been taken up early (1893) by a developer, Browne, who also owned the Springvale lease near Katherine (the latter was passed in after failure to successfully establish stock and particularly sheep there, in 1896). With the growth of a cattle station at Manbulloo, and its purchase together with Willeroo and Delamere by Vesteys Northern Properties, the stage was set for these three properties to be a constellation among which Wardaman were shifted around by management, depending on season and the work to be done. So it happens that many Wardaman today have great familiarity with Willeroo and Manbulloo. Many people, especially older ones, also spent periods of time at Delamere. Most Wardaman men until recently grew up learning to work cattle, and most women grew up doing domestic work for the station and living in the Aboriginal camps associated with all of these properties.

The early period of initial “contact” with Europeans, here as in the Victoria River District generally, had been one of considerable violence. An atmosphere had been created, and persisted, in which the Aborigines could not be at all confident of the benevolence of Europeans. For their part, the European station personnel seem to have been mainly concerned with the Aborigines as workers (and to some extent, with the women as sexual partners). They made little attempt to create comfortable conditions in the Aboriginal camps — indeed, living conditions in the camp at Willeroo were very poor through the 1970s, the last period during which Aborigines lived there in numbers and for extended periods. While there, Aborigines were dependent on European transport to town.

Overall, the Wardaman at Willeroo, and possibly also at Delamere, seem to have been living to a great extent on their own social resources, though they were dependent upon the stations for subsistence. There appears to have been close and intense camp life at the station, and considerable walk-about over the station during periods of stand-down from work. Both forms of life were characterized by persistent use of the Wardaman language. Those who came in to work, and/or married in, from elsewhere, tended to be from Victoria River or other neighbouring peoples (such as Mudbura), and either spoke, or learned to speak, Wardaman.

These seem to have been the conditions which at least partly account for the persistence of active speakership by older people, and the rather full knowledge on the part of some younger people, of Wardaman today. Though the effects of the town context in which most now live are not entirely clear, it seems very likely that, overall, life between the camps and town does not offer the same sustained intensity and kinds of interaction with a manageable number of well-known others, which seems to have been significant in language retention throughout the station period.

Most Wardaman now live in and around Katherine. A few men continue to do seasonal stockwork, mostly in the Victoria River District, but also in the Roper River region. Some families continue to attend religious ceremony, again mainly in the Victoria River area; but there has also been some effort on the part of town-dwelling Wardaman to conduct young men’s initiations near Katherine town, and thus to establish it as a ceremonial destination for the countrymen of the Victoria River region, and other parts of the Katherine hinterland.

1.5. Research on the language, fieldwork and informants

There is only a small amount of published linguistic material on Wardaman. There are also some earlier, unpublished sources.

Gerhard Laves (MS) worked with Wardaman speakers in Darwin, and the resulting material is now lodged in a larger file of his field notes at the Australian Institute of Aboriginal Studies, Canberra (now the Australian Institute of Aboriginal and Torres Strait Islander Studies)³.

Capell (1962) published a paradigm of the Wardaman transitive prefix combinations as part of his work on “pronominalization” in Australian languages. A very large number of the prefix forms given by Capell are inaccurate. Though it is pointless to run through a catalogue of discrepancies here, an important thing to note is that in some of Capell’s forms, what I shall call the “accusative” marker *-n-* is inaccurately reported. For example, he cites the transitive combination 2SG/3SG as *yin-*. It should actually be *yi-*, with quite different implications for the structure of the system than if the first form were correct.

Before I began field work in 1976, Kenneth Hale made available to me some pages of field notes he recorded in 1959 in the Alice Springs area, where he worked with an informant who had some knowledge of Wardaman. This preliminary information was very useful, and I am grateful for his generosity in making it available to me.

I initially did fieldwork on Wardaman in 1976, from March to November, and for periods in 1978. Fieldwork was conducted mainly in Katherine town around the fringe camps, for though there were still some Wardaman people living at Willeroo in 1976, station management was hostile to my living there or even visiting at the station camp. I worked with some Wardaman people living in what were then called the “New Homes”, the first housing within the town itself to be explicitly made available to Aboriginal families (from 1970). In particular, I came regularly to the New Homes to work with Elsie Raymond (Nonomarran), who overall has been a principal informant for my research, and some of her relatives, including her own mother Maggie Sing (Birriwalngali, who has since passed away), Maggie’s husband Tarpot Ngamunugarri, Elsie’s close “second” mother Ruby Allison (Gomnyang) who passed away in 1991, and the latter’s husband, also deceased. Other main informants during this early period were two old men, both of whom have since passed away, who variously lived at Manbulloo Station and at the “High Level” town camp on the northern fringe of Katherine. These were Jabiru (Luwungmirr), and Old Gregory (Darlunggag). Neither man considered himself “full” Wardaman, but both were fluent speakers of the language. Especially the latter was considered by Wardaman people to have rich knowledge of matters relating to country, mythology, and contact history. He was probably born around 1906, and spent a large part of his working life at Manbulloo Station, apparently carrying over from Dagoman people there information concerning their early contact history in the immediate Katherine area which is no longer widely known. In this initial period I also did research on other Aboriginal languages of the Katherine area.

3. I am grateful to David Nash for having brought the Laves material to my attention and supplied photocopies of the Wardaman sheets.

During 1977 I mainly worked around Mataranka and at the Aboriginal community on Elsey Station, which was then called Djembere (now Jilkminggan, /jilgmirn.gan/), collecting material on both Yangman and Mangarrayi (Merlan 1982). By early 1977 I had written a preliminary draft of a Wardaman grammar, with appended 57 pages of text. This remained unpublished, however, lodged in the library at the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.

It was not until 1988 and 1989 that I did some further intensive work on Wardaman, in short periods each year. One of the principal results of this work was the addition of a considerable amount of text material, concentrating on the mythology of sites on Willeroo Station (that we were then able to visit owing to a change in station management), on people's accounts of their lives and experiences, and oral history of the early pastoral period. I was also able to do systematic checking of compiled grammatical and lexical material.

From 1988 I have also done more work with certain Wardaman people I knew from the earlier period, but with whom I had not previously worked, or with whom I had only worked occasionally. In the latter category are Lily Gin.gina and her mother Daisy Gimiyn, on whom I relied increasingly for text material and some lexical checking. In the former category is Claude Manbulloo (Yirdirdiman), who previously was absent from Katherine for long periods on station work. In the last couple of years he has supplied interesting material, textual and other, particularly on the area of Wardaman country to which he is patrilineated, around Willeroo homestead. Over the years I got assistance in language elicitation and in much else from his aunt, Nayda (Waramburr), who passed away in 1991.

I owe a particular debt to Elsie Raymond. Among the Wardaman, she has always been the most prolific story-teller and recounter of history, genealogy, mythology, and all sorts of information relating to past and present, that I have worked with. From her I have gathered my most extensive textual material, and from her also I have constantly gotten new lexical information as she has thought about our language work and made mental notes of new things to tell me. She has also always encouraged her other relatives to help with certain aspects of the work: in particular, she always enlisted both her mothers and her father to help me with 'stories' and information of all sorts. Though her personality and mentality are quicksilver, and therefore I think at times she has found it trying to persist through elicitation and checking of grammatical forms, she has done so, sometimes for hours on end, and sat with me to encourage others to do so. Over the last couple of years I have gotten much help from her eldest son Oliver Raymond in text transcription, and increasingly also, I was assisted in transcription by her second mother Ruby Allison, and also Philomena (Ngelgerrej), Ruby's mother's brother's daughter and Elsie's uncle's mother's brother's daughter.

At various times in the early 1980s, Bill Harney (Yidumduma) made time and special effort to help me locate sites on Manbulloo Station. He has been helpful in many ways in the recent periods of my work as well.

This description is written in gratitude for the help I have gotten from all these people, and is for them and their families.

Chapter 2

Segmental phonology

2.1. Phonemes and their realization

A practical orthography is used throughout this description. So far as I know, Wardaman has not been written and no other practical spelling system has ever been devised for it.

The phonemes of Wardaman are displayed in Table 1.

Table 1. Phonemes of Wardaman

	Bilabial	Apico-Alveolar	Apico-Domal	Lamino-Palatal	Velar
Stops	b	d	rd	j	g
Nasals	m	n	rn	ny	ng
Laterals		l	rl	ly	
Rhotics		rr	r		
Semivowels	w			y	
Vowels	i	u			
	e	o			
		a			

For each stop, there is a corresponding nasal. There are five stop-nasal series (as in neighbouring Mangarrayi, Merlan 1982; and Wardaman's congeners Yangman and Dagoman, but unlike Wakiman to the north which, as noted in Chapter 1, has only four points of articulation, and lacks the distinction between apico-alveolar and apico-domal series, Cook 1987: 24).

The orthography is convenient in that it requires no special diacritics. However, the digraph *ng* representing the velar nasal needs to be distinguished from the sequence apical nasal plus velar stop, as in the word /dongo/ 'in a line'. In order to eliminate this ambiguity, that combination is written with full stop separating the two segments: *don.go*. This is not done at morpheme boundary, however, where the presence of hyphen is sufficient to indicate that two distinct segments of different morphemes are involved, e.g., *yibiwan-gu* 'man, person' (Dative).

Word-finally, the palatal digraphs are inverted (*ly* is written as *yl*, and *ny* as *yn*), because this seems to make it easier for those who already read English to approximate the correct pronunciation.

In Wardaman, the bilabial series involves true bilabial occlusion.

In the apico-alveolar series, the active articulator is the tip of the tongue making contact with the alveolar ridge. For the apico-domal or retroflex consonants, the active articulator is the apex making contact in the pre-palatal region. It can be difficult to distinguish phonetically between members of the two apical series, especially intervocalically. Here, even what turn out, upon close investigation, to be plain apical consonants, may occasionally have a hint of retroflex vocoid on-glide. Also, what turn out to be retroflex segments are often realized with relatively little phonetic retroflexion, and this appears to be true in any position. Thus the apical series, across their realizations, tend to be more similar to each other than in some other languages of the region. Despite the problems sometimes posed by identification of the difference between corresponding members of the two series, and even despite a certain tendency towards harmonic phonetic “spread” of retroflexion to other apical consonants in the word following a retroflex one (perhaps similar to a phenomenon identified in Wakiman by Cook 1987: 26–29, see 3.7.3.), there can be no doubt of the phonological status of the distinction in Wardaman.

For the production of lamino-palatals, the tongue is laterally spread, with the tip of the tongue touching the back of the lower teeth, the blade the alveo-palatal region. Lateral spread of the tongue is particularly noticeable in the (rather rare) realizations of the lamino-palatal lateral *ly* before peripheral stops and glides. All three laterals are voiced bilateral approximants.

The velar series is dorso-palatal.

Of the two rhotics, the apico-alveolar */rr/* is a tap, never a trill. The glide */r/* is a post-alveolar approximant. There is no question of the phonemic distinctness or positional neutralization of the rhotic contrast in Wardaman, Yangman, and Dagoman. But here again a signal difference with Wakiman must be noted: there, the rhotic contrast minimally distinguishes few forms, and the tap rhotic in that language has a variant which is phonetically indistinguishable from the post-alveolar glide (Cook 1987: 29).

/w/ is a voiced bilabial frictionless continuant, with rounding noticeable before */u/* and */o/*. However, before */u/* in the noun class prefix */wu/*, there may be very little to no noticeable lip-rounding or protrusion, such that the realization of this sequence is *[u]*. Likewise, the voiced vocoid */y/*, normally produced with considerable lateral tongue spread and approximation of blade and mid-tongue to palate, may exhibit a minimal degree of these articulatory features word-initially before the high front */i/*. This is frequently the case in the realization of the higher animate noun class prefix */yi/*, as *[i]*, but much less so of pre-*/i/* realizations elsewhere (e.g., in such words as *yilgbayi* ‘all right, enough’). The correct generalization seems to be that where the conditions are met for higher and tenser realization of */i/*, there may be minimal realization of the semivowel. Where, however, (as in *yilgbayi*, with its closed first syllable), there is *[ɪ]* realization of the vowel, there tends to be fuller realization of the semivowel. And it is precisely in its morpho-phonological occurrences as noun class prefix that the former conditions (for

higher and tenser realization of the vowel, see below on vowel allophony) are most often met. Since there is no other compelling evidence for a contrast between /yi/ and /i/ morpheme-initially, nor, indeed, any independent evidence for vowel-initial morphemes (save one *a*-initial one) in the language, this can apparently be treated as a specialization in the noun class morphemes.

The vowel /i/ is realized as a high, front, maximally tense [i] in open syllables, and particularly before the palatal segments /j/, /ny/, /ly/, both semivowels, and also the rhotic /rr/, as in the following examples (in some, more than one condition is met):

['warrija]	'alligator'
['lidi]	'long-horned grasshopper'
[li'warrga]	'ground sugar bag'
['girrgilang]	'galah'
['ginyang]	catfish species
['ginydan]	'stone spear point'

In the last form above, the high and tense vowel quality is the main auditory cue signalling the palatal articulation of the following nasal, which before the stop normally evidences no palatal off-glide.

The /i/ vowel is realized as slightly lower and less tense in closed syllables:

['munIn]	'rock cod'
['mardIrd]	'whistling kite'
[yllg'bayi]	'OK, enough'

There are morphemes with phonetic long [i:], sometimes also realized as a diphthong [iI]. This appears to be best regarded as the sequence /iyi/, which can be shown to contrast with /i/ in an otherwise very similar environment. The following two forms illustrate this contrast between such a long vowel, and a fairly high, tense but short /i/:

[ji:la]	'well'	/jiyila/
[jila]	originative suffix	/jila/

There are other examples for which no minimally or sub-minimally distinct form can be cited, e.g., [bi:marla], /biyimarla/ 'inflate'.

There is a parallel to the above in the length of the vowel, and syllable reduction, in the verb particle [du:], also realized as [duU] 'to raise' (with auxiliary *bu-*), in the noun [lu:n] 'cave', in the noun [ngu:n] 'faeces', in the particle [buUdba] 'cook under ashes', the noun stem [muUdban] 'wet soil'. In all cases we must recognize the combination of /uwu/ in accounting for the phonetic length of the vowel: /duwu/, /luwun/, /nguwun/, /buwud-ba/, /mu-wudban/ (the latter apparently with nominal class marker showing fixed assimilation to the first stem vowel).

In contrast with the above V₁ + homorganic glide + V₁ sequences, combinations with vowel and heterorganic glide, [iwi] and [uyu], tend to remain clearly syllabified, or may be only slightly reduced ([yi-ngawuyu] 'wife', [miwinin] 'camp, sleep').

/e/ is realized as a mid front unrounded, and fairly lax vowel [ɛ] in closed syllables, except before palatal segments, where it tends to be at its highest and tensest. It may be slightly higher and tenser in open syllables, including word-finally, but not cardinal [e]:

[ʔbɛdbɔg]	‘honey eater’
[ʔmɛnjɛn]	‘cheeky’
[gɛj]	‘ask’ (particle)
[ʔmɛnyjɛ]	‘to feel, hold, grasp’
[mɛʔgɛrrman]	<i>Dioscorea</i> sp.
[yɛngɛʔwɛ]	‘I might fall’
[jɛmbɛ]	‘death adder’

In almost all environments /o/ is realized as a mid to slightly lower rounded vowel [ɔ]. It is slightly higher than mid in the environment of /w/, but is nowhere cardinal [o].

[mɔʔgɔrlgɔrl]	<i>Anpelocissus</i> sp.
[ʔnyɔbɔ]	‘marsupial mouse’
[ʔngɔrrɔgɔrrɔ]	‘afternoon’
[ʔnɔnɔʔnarran]	personal name
[ʔnɔnggɔ]	‘too, also’ (cf. [nungguru] ‘hand’)

The distinction between realizations of /o/ and /u/ can be difficult to identify, but clearly bears a considerable functional load in lexical stems.

The usual realization of /u/ is [U], in closed syllables. It is slightly higher and tenser in open syllables, including word-finally, and before palatal segments:

[wiʔliwuga]	‘stone curlew’
[ʔbUlyan]	‘eagle’
[nɔrruʔjUnman]	‘sand frog’
[ʔnaribu]	‘freshwater mussel’

Under primary stress in open syllables, /a/ is realized as maximally open, [a.]; in other open syllables it is regularly realized as slightly more centered [â], and this is approximately its ‘elsewhere’ realization, except before apicals, where it is slightly fronted, somewhere between [a] and [æ]:

[guʔlirridâ]	‘peewee’
[ʔga.lâwârrâ]	‘plumed pigeon’
[liʔrra.wIn]	‘black cockatoo’
[jâʔmardbâ]	‘rainbow fish’

2.2. Distributional restrictions: Vowels

Vowels do not occur morpheme-initially in Wardaman, except in the tag-question particle *ale* (this is one of the few Wardaman words often produced with an audible, final glottal constriction, indicative of the intensity of the tag question syntagm ‘is that so?’). It was noted above that the noun class prefixes /wu/ and /yi/, i.e., with homorganic semivowel and vowel, are commonly realized as [u] and [i]. In other such word-initial combinations, the glide tends to remain unreduced, or somewhat less so; and the semivowel is not reduced in initial combination with non-homorganic vowel:

['wurrɛn]	‘child’
['wUjbIn]	‘greedy’
[yu'gUrmi]	‘more, again’

However, there is some variation, and there are some words, like /wuja/ ‘fire, wood’, which appear to be commonly realized in both ways. In that word, it is likely the /wu/ is etymologically the noun class prefix, synchronically however to be analyzed as part of the root. Leaving aside the matter of the noun class prefixes, and other instances of word-initial /wu/ and /yi/ which may vary somewhat in degree of realization of the semivowel, there is, as noted in 2.1., no cause to recognize vowel-initial morphemes in Wardaman. The difference between morpheme-initial glide plus homorganic vowel, and vowel alone, is environmentally limited (i.e., most common in the nominal class markers), and never minimally distinctive. The absence or infrequency of vowel-initial morphemes is also characteristic of a number of neighbouring languages, including Mangarrayi, Yangman, and Jawoyn. Slightly further east, we find a very limited range of *a*-initial morphemes in Alawa (Sharpe 1972) and Ngalakan (Merlan 1983: 11). In Wardaman, there are a few inflectional morphemes that have the shape C (e.g., present tense suffix *-n*, but none consists only of V, or has initial V.

As noted in 1.3., the mid-vowels do not occur in any of the inflectional morphology, which exhibits a three-vowel system, *a*, *i*, and *u*. There is, however, no lack of surface mid-vowels in inflectional morphs, due to phonetic processes of assimilation (3.7.3.). Among derivational morphemes and lexical suffixes, too, the mid-vowels are rare, but there are instances, such as adverbial /beng/, expressing location or place where. The mid-vowels are widely distributed over lexemes, and there is no particular evidence of “defective” distribution with respect to any word class. Though /a/, /i/ and /u/ are more common finally than the mid-vowels, there are nonetheless quite a number of examples of /e/ and /o/ finally, e.g.: *borle* ‘across’; *ngajamberle*, proper name; *lowe*, toponym; *bogo* ‘lend’, *jewe* ‘close, near’, *wume* ‘sky’, *modborrongo*, proper name; and inflectional forms of quite a number of verbs.

Examples of minimal and sub-minimal vowel contrasts are:

<i>jin</i> (ma)	‘blame’
<i>jen</i> (ma)	‘cut into pieces’
<i>juny</i> (ma)	‘set’ (of sun, celestial body)
<i>jongma-</i>	‘to kiss’
<i>jangma-</i>	‘to defecate’

There are no vowel clusters.

See 3.7.3. for further remarks on distribution of the mid-vowels.

2.3. Distributional restrictions: Consonants

Word-initially there is no distinctive contrast between consonants of the two apical series. Where no vowel immediately precedes, in ordinary speech the word-initial realization of initial apicals tends to be alveolar rather than retroflex. However, when a vowel (of another word, or of a vowel-final inflectional prefix) immediately precedes, the stem-initial norm tends to be quite strongly retroflex (but in terms of auditory impression, not quite so much so as in some languages of the region, for example, Ngalakan). For example:

['na.rri]	'he saw it'
[yi'rna.rri]	'you [SG] saw it'
['dimana]	'horse'
[yi'rdirdiman]	proper name, YI- class marker

Though there is no reason to recognize a word-initial contrast between the two stop-nasal series, the question remains how to represent the morpheme-initial norm, as plain alveolar, or as retroflex, or perhaps some other way which shows that there is no clear auditory contrast except post-vocally, and following non-nasal sonorants.

This situation, or something similar, presents itself in a number of the local languages that have two apical series (see e.g., Merlan 1983: 9–10); that is, there is no, or in some languages scarcely any, direct contrast between morpheme-initial alveolar and retroflex apicals. Though the situation might be descriptively treated in a number of ways, my preference is to regard morphemes as retroflex initial. Phonetically, the retroflex series is relatively marked, the plain alveolar unmarked. In light of this, it is theoretically more satisfactory to explain the lack of phonetic contrast word-initially by a neutralization in favour of realization by the less marked series, than to treat the situation as one in which retroflexion adds a feature to some kind of archiphonemic segment in the post-vocalic environment (following a vowel-final prefix).

However, a practical cost is associated with the decision to treat morphemes as retroflex initial. Usage in most of this description, as is otherwise common, is to represent retroflex segments in practical orthography by a digraph consisting of *r* plus a letter designating the rest of the segment (e.g., *rd* for the apical stop, etc.). It is daunting to write the *r* morpheme initially, a procedure which results in forms like *rdagbarla* 'keep it', and *rnarri* 'he/she saw it'. Therefore in practical transcription, lexeme-initial apicals will be represented without initial *r*. This practice is extended to phonetic environments in which retroflexion is quite pronounced, as after vowel-final prefixes (e.g., *nga-narri* 'I saw it'). This makes it necessary for anyone reading this transcription to keep in mind that, following vowel-final prefixes and elsewhere post-vocally, the pronunciation of initial apical consonants of lexical stems is with a significant degree of retroflexion.

The contrast between apical series is amply illustrated elsewhere, morpheme- and word-medially and finally. In word-final position note the contrasts between members of each series:

/gulid/	'green plum'	vs.	/mardird/	'whistling kite'
/menjen/	'dangerous'	vs.	/mejern/	'belly'
		vs.	/yingelemben/	'collarbone'
/jurrul/	'saltwater turtle'	vs.	/nyurl/	'be/get angry'

There are additionally numerous examples of minimal and sub-minimal contrasts medially between the two series: e.g., *wu-walu* 'ring finger' vs. *wu-warli* 'arm, creek, tributary'; *yirrgulun* 'river' vs. *yigurliyn* 'first rain'; *ngone* 'hooked spear' vs. *wurne* 'bone'; *yi-welen* 'jealous person' vs. *yi-werlen* 'lazy person'; *bidij* 'twist' vs. *birdij* 'find' (particles); *gelelen* 'cold' vs. *gerle-* 'to taste'; *guda* 'where' vs. *bigurda*, a kind of plat potato; *gadi* 'lily' vs. *gardirrg* 'gnash teeth' (particle), and so on.

The above generalization does not apply to the rhotics, since /r/ has not been found initially in lexical stems, and only two instances of /r/ have been noted to date: the bird term *rewrew* 'dollar bird', and a toponym (referring to a creek near Willeroo Station homestead in the Wardaman heartland, and seemingly not a foreign form), *Relwuyugun*. Besides the fact that the bird term is onomatopoeic, it should also be noted that very similar terms for this bird occur in neighbouring languages. It is likely that there are complex diffusional relations among them. However, in Jawoyn the form of the word is *dewdew*, and beyond the surmise that the diffusional source is not from Jawoyn, it is not clear why Wardaman should have a form with an initial segment that does not otherwise occur in that position in the language.

/rr/ does occur initially in inflectional morphemes which can never be word-initial, e.g., in the past tense allomorph *-rri*. /r/ is (so far) not attested in stem-final position, indicating at the least that it is quite uncommon there, if indeed it may occur at all. The apical /rr/ however is common finally, e.g., /barnarr/ *Owenia vernicosa*, 'marble tree', /geremerr/ 'headband', and so on.

Medially, the contrast between the two rhotics distinguishes a considerable number of forms, and there is no reason to regard the contrast as marginal (cf. Cook 1987: 29 on Wakiman). Exemplifying by comparing the sequences *-ara-* and *-arra-*, we may list the contrasting forms, among others: *waray* 'ask', *baraj* 'far', *garab* 'spider', *wumara* 'heavy stone', *jamaram* 'lid, door', *garnamara* 'walking stick', *jabara* 'putrid, stinking', *barangan* 'rift, gap', *darab* 'bog', and *-garang* ~ *-warang* 'having'; vs. *barlarra* 'hide', *barragarl* 'spear', *buwarraja* 'dreaming', *lawarra* 'riflefish', *warrala* 'lie, be spread-legged', *warrama* 'sugar glider', *-barra* ~ *-warra* adverbial suffix, among others.

Some consideration needs to be given to the statement of the distributions of the two palatal sonorants *ly* and *ny*. We will consider the lamino-palatal lateral first, since its distribution, however analyzed, is especially restricted. Then we will return to questions of the statement of distribution that apply to both lateral and nasal palatal segments.

The lamino-palatal lateral (unlike the nasal) never occurs in stem- or word-initial position, and its occurrence medially (excluding, for the moment, intervocalically) and

finally is quite restricted, both lexically and positionally. The following includes all instances of medial (save intervocalic) and final *ly* found in a list of approximately 2000 (mostly lexical) roots (excluding names of all sorts, personal, toponymic and other):

<i>bedelybedeyl</i>	'hit all over, flog'
<i>bilyb(a)</i>	'switch, swish long object over' (esp. in curing)
<i>bilybanbilyban</i>	'devil dog' (etym. related to above)
<i>dilygba</i>	'wait'
<i>dilygun</i>	'possum'
<i>dilyma</i>	'light, burn'
<i>ganyjayl</i>	'annoy, bother, disturb'
<i>gilywaj</i>	'trample'
<i>jalybug</i>	'pound, crush up, mince'
<i>jilyma</i>	'wring out, squeeze (juices) out of'
<i>milygbilygba</i>	'beat, thump, "heart-crack" [Kr.], be shocked'
<i>wilyma</i>	'stretch'
<i>wilyma</i>	'whistle' (different AUX from above)
<i>yarrbayl</i>	'bother, annoy'

This list demonstrates that about half the instances of the lamino-palatal lateral are final in verb particles (which often have the additional morph *-ma*, see 11.1.2.). Otherwise, the lateral occurs only before peripheral segments (mainly stops *b* and *g*, but note one instance before *w*). Overall, the lateral shows a nearly-complete lexical restriction to verb particles (with the exception of *dilygun* 'possum', and the derivate *bilybanbilyban*).

There are comparable distributional restrictions on the lamino-palatal lateral in Yangman, as far as the more limited data indicate. Also, there is in Mangarrayi a small handful of *ly*-final verb particles (four have been found). And though all of these appear to also occur in Yangman, and evidently represent an historical diffusion from that language, inquiry indicates they are now regarded by speakers as Mangarrayi words, and not as recognizable borrowings. The restricted distribution of this lateral can, on the basis of the evidence, be seen as an areal phenomenon in which Mangarrayi participates marginally.

In Wardaman, there seems to be little plausibility to the suggestion that these instances may be viewed (historically) as combinations of *l* plus a high vowel /i/ phonetically realized as palatalization. There are enough cases of stem-final *li* (e.g., *mangali* 'girl, female') to make it clear that such palatalization is not, in any event, a synchronic process. And there are attestations of word-final *lyi*, as in /malyi/, toponym. In contrast with the lateral, the palatal nasal is much more common stem-finally, and is distributed over different parts of speech (e.g., *juyn* 'to set' (of sun, particle), *jirrangaliyn* 'mud swallow'). It, too, contrasts directly with final *nyi* (as in *mobonyi* 'night time').

There is, however, some question about analysis of both palatal sonorants intervocalically, simply because in that position there is no clear or convincing basis for a contrast between *ly* versus a combination *l+* *y*, or between *ny* versus *n+* *y*, as there

is finally. This is true, for example, of a word for a catfish species, which could alternatively be /gin^yang/ or /ginyang/, or the word for ‘echidna’ which might alternatively be represented phonemically as /gawal^yan or /gawalyan/.

The question of a two-segment versus single-segment analysis may simply be said to be irrelevant in those medial environments. There is no phonetic difference that can be established between the two possibilities. We can show this by observing inter-morphemic combinations of *n* + *y* and *l* + *y*, where the *y* is the initial segment of an inflectional suffix (e.g., *YI-buruwun-yi* ‘killer’, ERG). In the text transcriptions in practical orthography, morphemic combination is always distinguished from intra-morphemic *ny* and *ly* by a hyphen at morpheme boundary.

In summary concerning word- and morpheme-final position, we note that all stops and nasals, all the laterals, the glides /y/ and /w/, and apical /rr/ are attested, while /r/ is not. A few examples attest to final contrast between each glide, and the combination of glide and homorganic vowel, for example:

<i>dawu</i>	‘that way’	vs.	<i>daw</i>	‘sound sleep’,
			also <i>maw</i>	‘take off’
<i>waray</i>	‘ask’	vs.	<i>gunduyi-ma</i>	‘give hiding, belt’

The set of final nasal contrasts is illustrated by:

<i>yi-mum</i>	‘eye’
<i>gunbilin</i>	‘(native) doctor’
<i>mejern</i>	‘stomach’
<i>garnbayn</i>	‘type of cabbage palm’
<i>gayardung</i>	‘run’

The contrast among laterals finally is exemplified by:

<i>jil-ma</i>	‘company, keep company’ (particle)
<i>jily-ma</i>	‘wring, squeeze’ (particle)
<i>mirlirl-ma</i>	‘rise’ (of sun)

The final contrast among stops is illustrated by:

<i>bardab</i>	‘look around’
<i>dulwad</i>	‘count, enumerate’
<i>mardird</i>	‘kite’
<i>garnbij</i>	‘clapstick’
<i>gandawag</i>	‘moon’

2.4. Phonotactics: Consonant clusters

There are no morpheme-initial consonant clusters except for the very rare combination *gl*, so far attested in only two forms: *-gle* ‘putrid, rotten’, and medially in the (obligatorily reduplicative) particle *lowaglowa* ‘play’. *gle-* has never been found to occur

word-initially, but rather is always preceded by one of the noun class prefixes (*yi-gle*, *wu-gle*). There is also a place name *wugleni* 'Johnstone Hole', which might be related etymologically to the root *-gle*. There is at least one instance, in a bird name, of a particularly minimal and indistinct, if indeed organic, vocalic segment between *b* and *rl*. This occurs in the word [*jujurijbIlrlan*] 'friar bird'. However, there are no other instances suggesting the possibility of a cluster *bl*.

Within morphemes, combinations of apical nasal plus apical stop contrast as between the two apical series: *nd* vs. *rnd*. As in neighbouring languages, there are no such combinations in which the nasal and stop differ in place. The same is true for the (rare) combinations of lateral plus apical stop (e.g., *ld*, which only occur at reduplicative boundaries). The transcriptional practice adopted for the retroflex combinations is to write the indicator of retroflexion only once, thus: *rnd*, *rld*.

Table 2. Word-internal intervocalic biconsonantal clusters

	b	d	rd	j	g	m	n	m	ny	ng	l	rl	l ^y	rr	r	w	y
b	B	R		R		B			bny		R						R
d	db			dj	dg	R										dw	
rd	rdb			B/R	rdg												
j	jb				jg	B											
g	gb	gd		gj	B	gm				gng	gl					R	B
m	mb	R		mj	mg		mn		mny	B							my
n	nb	nd		nj	ng	nm				R	B						
m	mb		mrd	mj	mg	mm				mng						mw	my
ny	nyb	nyd		nyj	nyg	nym				nyng						B	
ng	ngb	ngd		ngj	ngg	ngm	ngn		B		B					ngw	ngy
l	lb	ld		lj	lg	lm				lng						lw	ly
rl	rlb		rl d	rlj	rlg	rlm				lng						rlw	rly
l ^y	l ^y b				l ^y g											l ^y w	
rr	rrb			rrj	rrg	rrm				mg						rrw	rry
r					rg	B?										rw	
w						B											
y				yj	yg	B											

The set of possible clusters of two segments is indicated in Table 2. A difference is noted between two sorts. There are those which may occur morpheme-internally (e.g., word-medially, or finally), and those found at morpheme boundaries. Some clusters may occur in both kinds of environments; but some occur only across morpheme boundaries (as, for instance, where a consonant-initial suffix follows a consonant-final stem). A sub-case of morpheme boundary is reduplicative boundary (either fixed or "live"), where a

set of cluster combinations occur that are not found elsewhere. Where a cluster is attested only across a grammatical boundary, that combination is marked B on the Table. Where a combination is attested only across a reduplicative boundary, it is marked R. These are: *md*, *by*, *gw*, *dm*, *nng*, *bd*, *bj*, *bl*. Otherwise, finally-occurring clusters are a sub-set of medially-occurring ones, and attested clusters are shown on the Table.

The following examples illustrate the possible word-final combinations by type.

Non-nasal sonorant plus stop

<i>lg</i>	<i>birilg</i>	'to be flat' (particle)
<i>rrg</i>	<i>berrg</i>	'pass' (particle)
<i>rlg</i>	<i>ngarlg</i>	'pick up' (particle)
<i>rrb</i>	<i>yurrb</i>	'stand up' (particle)
<i>rlb</i>	<i>warlb</i>	'toilet, excrement'
<i>ld</i>	<i>daldal</i>	'pound' (R)
<i>rld</i>	<i>derlderlma</i>	'burn severely' (R)
<i>lyb</i>	<i>bilyb</i>	'switch'
<i>lyg</i>	<i>dilygun</i>	'possum'

Lateral or rhotic plus nasal

<i>rlng</i>	<i>warlng-ma</i>	'open' (particle)
<i>rng</i>	<i>gerrng(-ma)</i>	'cry' (particle)

The following illustrate the much larger set of possible clusters medially. Examples are also given to illustrate the combinations labelled "B" in Table 2.

Stop plus stop

<i>b-b</i>	<i>jub-ba</i>	'shut' + PS
<i>bd</i>	<i>dibdiba</i>	toponym, Monday Yard
<i>bj</i>	<i>jibjiba</i>	'itch'
<i>db</i>	<i>yi-jimidba</i>	'young goanna'
<i>rd</i>	<i>jamardba</i>	'rainbow fish'
<i>dj</i>	<i>gilidji</i>	'grindstone'
<i>jb</i>	<i>mijbijin</i>	'small black ant'
<i>gb</i>	<i>jegban</i>	'bustard'
<i>gd</i>	<i>dagdagin</i>	<i>Brachychiton diversifolium</i>
<i>gj</i>	<i>jarrgjarrgin</i>	<i>Crinum</i> sp., 'wild onion'
<i>jg</i>	<i>malbardajgu</i>	'male river goanna'
<i>rdg</i>	<i>yingurdguda</i>	'brisket'
<i>dg</i>	<i>modgo</i>	'half-dead'
<i>rdj</i>	<i>jordjordin</i>	'mad, crazy'

Stop plus sonorant

<i>bm</i>	<i>bardabmarla</i>	'look around'
<i>dm</i>	<i>madnad</i>	'shut, block, make close'
<i>dw</i>	<i>wirridwirrid</i>	'rainbow bird'
<i>jm</i>	<i>wu-mirrijmirrijban</i>	'curly'
<i>bny</i>	<i>nyabnyab</i>	'be sticky' (particle) (R)
<i>bl</i>	<i>lublub</i>	'grab' (particle) (R)
<i>by</i>	<i>yubyub</i>	'scuttle' (particle)
<i>gl</i>	<i>lowaglowa</i>	'play'
<i>gw</i>	<i>wagwag</i>	'crow'
<i>bng</i>	<i>ngabngab</i>	'wobble about'
<i>rdn</i>	<i>nordnord</i>	'heap up'
<i>gm</i>	<i>nugmug</i>	'owl'
<i>gng</i>	<i>ngegng</i>	'extinguish'
<i>gy</i>	<i>yirrbagyirrbag-(g)ujban</i>	'one who keeps coming back'

Note that almost all of the above are reduplicative. Some of the particles may be considered productive reduplications (e.g., *nord* or *nordnord*), but e.g., the form for "rainbow bird" always occurs in reduplicative form.

Nasal plus nasal

<i>nng</i>	<i>menngen</i>	'white cockatoo'
<i>rnng</i>	<i>barnngamarla</i>	'beetle'
<i>nyng</i>	<i>nuninynga</i>	<i>Piliostigma malabaricum</i>
<i>rnm</i>	<i>garumarnmalin</i>	toxic yam species
<i>nym</i>	<i>manymayn</i>	'diarrhoea'
<i>nn</i>	<i>nunnuma</i>	'beat, tap'
<i>mny</i>	<i>yininnyo</i>	'last child, cadet'
<i>ngm</i>	<i>bengmarla</i>	'snap, break'
<i>nym</i>	<i>juny-ma</i>	'set' (of sun)
<i>ngm</i>	<i>jang-ma</i>	'defecate'
<i>nng</i>	<i>yibam-nganjan</i>	'milk gut'
<i>ngn</i>	<i>nangnang-ma</i>	'beat, clap'
<i>ngny</i>	<i>garlbang-nyi</i>	'stone axe' INST

Nasal plus stop

<i>mb</i>	<i>jembe</i>	'death adder'
<i>md</i>	<i>damdarn</i>	'to have sores'
<i>nj</i>	<i>ninji</i>	toponym
<i>nb</i>	<i>yarrimanbu</i>	'King Brown'
<i>rnb</i>	<i>jarnbaljarnbal</i>	'whimbrel' (identification uncertain)

<i>nyb</i>	<i>winybarr</i>	toponym
<i>ngb</i>	<i>bangbun</i>	'woman'
<i>mg</i>	<i>bamgun</i>	'woman' (variant, poss. a borrowing)
<i>nd</i>	<i>bowondol</i>	'secretive snake'
<i>rnd</i>	<i>marndarradji</i>	'two-lined dragon'
<i>nyd</i>	<i>ginydan</i>	'stone spear point'
<i>nyg</i>	<i>mamarranygu</i>	<i>Pandanus spiralis</i>
<i>n.g</i>	<i>bin.gan</i>	'bream'
<i>ngg</i>	<i>marninggani</i>	'sun'
<i>nyj</i>	<i>ngenyje</i>	'choke'
<i>nj</i>	<i>walanja</i>	<i>Varanus gouldii</i> , 'goanna' (lizard)
<i>ngd</i>	<i>ma-dengdeng</i>	fig species

Non-nasal sonorant plus stop

<i>lb</i>	<i>wu-diwlba</i>	'index finger'
<i>rlb</i>	<i>jorlborrhman</i>	'kookaburra'
<i>rrb</i>	<i>gurrbijinman</i>	'desert snake'
<i>lyg</i>	<i>dilygun</i>	'possum'
<i>lg</i>	<i>dalgan</i>	'forenoon', 'daytime'
<i>rrg</i>	<i>wurrguru</i>	'devil'
<i>lj</i>	<i>jaljurra</i>	'giant perchlet'
<i>rlj</i>	<i>warljub</i>	'inside'
<i>rrj</i>	<i>barrjarra</i>	'needlefoot'

Lateral/rhotic plus nasal

<i>lng</i>	<i>yalnga</i>	'bluetongue'
<i>rlng</i>	<i>marlnga</i>	'cloud'
<i>rrng</i>	<i>girrngonggirrngong</i>	'pig'
<i>rrm</i>	<i>wurrmug</i>	'pull down' (particle)
<i>lm</i>	<i>lilmulilmu</i>	'firefly'
<i>rlm</i>	<i>wirlmurr</i>	'wire spear'

Nasal plus lateral

<i>ngl</i>	<i>yiyang-lan</i>	'to the east'
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Sonorant plus semivowel

<i>ly</i>	<i>gawalyan</i>	'echidna'
<i>rry</i>	<i>gurryu</i>	'jump' (particle)
<i>ngy</i>	<i>yingyi</i>	'name'
<i>rrw</i>	<i>barrwunin</i>	'white'
<i>rrw</i>	<i>gardarr-wi</i>	'all night'
<i>rlw</i>	<i>berlwun</i>	<i>Eugenia armstrongii</i>

<i>lw</i>	<i>yididilwan</i>	'double bar finch'
<i>nyw</i>	<i>widinywidinyma</i>	'wag tail'
<i>ngw</i>	<i>yiwangwal</i>	'lung'
<i>lyw</i>	<i>gilywaj</i>	'trample'
<i>rly</i>	<i>barragarl-yi</i>	'bamboo spear' INST

Semivowel plus nasal/stop

<i>wm</i>	<i>new-ma</i>	'grab'
<i>yg</i>	<i>gayg-ba</i>	'sing out'

With one possible exception, triple clusters only occur across morpheme boundaries. The possible exception is *yilgbayi*, where it may be that *-ba-* is to be identified with the particle final *-ma ~ -ba* (see 11.1.2.). Synchronically, however, it is certainly inseparable. The other triple cluster types found across morpheme boundaries are illustrated by: *rrg-b*, *gilbirrg-ba* 'squeeze' (particle); *rlg-b gurlg-ba* 'swell up, tumor'; *rlb-g warlb-gu* 'toilet' DAT; *-yg-b gayg-barla-* 'shout out to'; *rrb-l lerrblerrb-a* 'tap, beat'; *rrng-m jorrerrngman* 'kingfisher'; *rrng-b burrngburrng-ma* 'boil' (particle). These combinations may be summarized as: non-nasal sonorant plus stop plus stop; non-nasal sonorant plus stop plus non-nasal sonorant; non-nasal sonorant plus nasal plus nasal; and non-nasal sonorant plus nasal plus stop.

Some of the above combinations occur across lexical derivational boundaries, e.g., note the recurrent nominal formative suffix *-man* in *jorrerrngman* 'kingfisher', *jornman* 'freckled duck', etc. These are not productive derivations, however.

2.5. Syllable and word shape

Syllable shapes CV and CVC(C) are the most common, the full form of the latter found, for example, in words such as those illustrated above with a triple cluster across morpheme boundary, where the syllable boundary occurs between CVCC and following C, *gayg\$barla*. The syllable shape V is found only in the sole vowel-initial word, tag-question particle *ale*, and phonetically, where the initial glide of nominal class markers is reduced (see 2.1.). The syllable shape CCV is found in *gle* (occurring forms syllabified e.g., *yi\$gle* 'putrid flesh'), and *lo\$wa\$glo\$wa* 'play' (often with some reduction of the glides).

A phonological word in Wardaman may consist of one syllable, closed or open (CVC or CV), though so far no nominal stems of the latter shape have been found. Verb roots of shape CV are common, and some paradigmatic forms of such roots (imperative) have this shape. Disyllabic words, aside from the single particle *ale*, may be described by the options CV(C)CV(C). Lexical stems of five syllables, based on the repetition of syllable types as given, are common. There are some over five syllables, but in such, a lexical derivational element of some kind (whether productive or not) can be recognized.

Chapter 3

Process phonology

3.1. Introduction

Among the major phonological processes are: a pervasive but variable final syllable reduction in nominal stems before non-zero affixes; alternations among stops, glides and nasals in a number of affixes, mainly suffixes marking case, number, and a few other derivational and inflectional categories; alternations which apply within pronominal prefixes to the verb, and at the boundary between those prefixes and the initial segment of the following verb root. Some low-level assimilatory processes apply to consonants and vowels. Many of the latter are regressive and progressive effects of mid-vowels /e/ and /o/ on /a/ occurring in verbal pronominal prefixes, tense/mood suffixes, and a small number of other suffixes. Some automatic aspects of segmental surface realizations, such as the regular loss of initial retroflexion in some environments (see 2.2.), need to be briefly discussed.

Rather less predictably, some nasal segments are found in verbal morphology where they cannot be accounted for by any regular phonological process. One instance involves forms of the highly irregular verb “to go”. All of these occurrences of nasals can only be described as morpho-phonological irregularities (3.10.).

Finally, there are some interesting and quite general reduplicative processes.

This chapter includes brief discussion of word-level stress patterns.

3.2. De-retroflexion and loss of retroflex consonants

In 2.3. it was observed that there is no distinctive contrast between consonants of the two apical series word- or morpheme-initially. For reasons given there, the morpheme-initial norm was recognized as retroflex. A consequence of this is that we need to specify that stems which are underlyingly retroflex-initial are realized as plain alveolar in some environments. De-retroflexion occurs when the initial retroflex consonant is preceded by a non-vocalic segment of another word, or by silence, i.e., when there is no preceding segmental environment.

However, an initial retroflex segment is generally realized with considerable retroflexion when immediately preceded by a vowel as a result of the positioning of words syntagmatically, rather than as a feature of process on the morpho-phonological level. Under that condition, the preceding vowel serves as an environment in which retroflexion is maintained. In this sense, this environment is analogous to that in which the consonant is preceded by a prefix ending in a vowel within the verbal word. That is, the environment in normal speech constituted by e.g., *walanja na-rri* ‘he saw the goanna’, is similar to that constituted by the presence of a vowel-final prefix before the consonant in an inflected verb form, e.g., *nga-narri* ‘I saw him/her/it’. Out of silence, however, that is

after pause, the initial apical consonant in the verb of our examples, “to see”, makes the auditory impression of being plain alveolar: # [narri].

Secondly, word-internally within a verb form, any initial retroflex consonant of a verb root is realized as plain alveolar when preceded by a nasal as the last segment of a prefix. Otherwise stated, the post-nasal environment is one in which the contrast between the apical series does not occur; it is an environment of neutralization. The matter may be put in this general way because there are no instances of nasal followed by apical stop which contrast with nasal followed by homorganic apical stop of the other series. This matter was partly covered in 2.4., where it was mentioned that there are no contrasting combinations of *nd* versus *rn-d* or *n-rd*; there are only the possibilities *nd* vs. *rnd*. No nasal segment which may occur within verb prefixes is retroflex. Thus, following any nasal which may occur in the prefix complex, the initial apical stop of the verb root is realized as non-retroflex. The post-nasal environment is one of neutralization of the apical contrast. Given this, we can say that the de-retroflexion of stem-initial apicals in verbs following nasal-final prefixes is not a specialized word-level phonological process, but part of a general phonotactic limitation.

Examples of the relevant environment within verbs are: *nga-wun-dagbarla-n* ‘I keep them’, *ngang-dagbarla-n* ‘I am keeping, looking after you (SG)’. In 3.4.1., some related processes are discussed.

A rule which covers cases of de-retroflexion of basically retroflex consonants as discussed so far may be stated as follows:

$$\text{P-1} \quad [+ \text{ Retro}] \longrightarrow [- \text{ Retro}] / \begin{cases} \{ \text{N} ______ \\ \{ ______ \\ \{ \# ______ \end{cases}$$

Here, as noted, # is to be understood not simply as word boundary, but as such a boundary following noticeable pause.

In 3.5.1., other processes are described which occur at the boundary between pronominal prefix complex and verb stem.

3.3. Degemination

Wherever geminate clusters of homorganic stops or nasals arise as the result of morpheme combination, the cluster is usually simplified to a single segment. However, degemination is facultative (though usual) in one morpho-phonologically “outer” environment, and obligatory only in more internal ones, as in some processes at the boundary between pronominal prefix and verb stem (see 3.5.1.).

It might be claimed that no underlying clusters of homorganic consonants occur in Wardaman; or, more conservatively, that there are no lexical stems with such underlying clusters. Below, this section, a small number of homorganic apical nasal plus nasal clusters are suggested to be underlying structurally in pronominal prefix combinations to the verb, a proposal in keeping with a way of envisioning basic patterning; hence the alternative statement of the claim.

Though there are no geminate clusters in lexical stems, common processes of morpheme combination result in geminate clusters across boundaries. One of those boundaries is that between verb particle, and the particle suffix of shape *-ma* or *-ba* (11.1.2.). Following stops, hardening accounts for the stop-initial shape *-ba*. Where this follows a particle ending in *-b*, the cluster *b-b* arises (*lub-ba* 'grab'). Where the particle-suffix follows a particle ending in *m*, the cluster *m-m* arises (*lom-ma* 'peel'). This boundary may be considered morpho-phonologically more external than certain others (see 3.5.1.), partly on the basis that degemination is facultative, though usual, here: instances where degemination does not occur are found throughout my data. Failure to occur was recognizable in one of two ways: as a distinction between two articulations, or (more commonly) not completely distinct articulations but slightly greater length in the holding of the articulatory position, e.g., [*jub:a*] 'shut', a particle which is alternatively realized as [*juba*] (or *jub*, without suffix).

The combination *g-g* across morpheme boundaries arises from certain frequent morpheme combinations: the suffixation to stem ending in *-g* (see 3.4.) of the post-stop dative allomorph *-gu*, dissociative allomorph *-gunya*, of "having" suffixal allomorph *-garang*, of allative allomorph *-garr*, and so on (e.g., allative-suffixed form of stem *goyog* 'bitter, salty' is *goyog-garr*, normally simplified to *goyogarr*). This boundary must be considered different from that discussed above between particle and suffix, in that geminate clusters are not found here.

Degemination may be stated informally: that wherever a cluster of two identical stops or nasals occurs, it tends to be reduced, but is not necessarily reduced at the particle-suffix boundary. As mentioned, in 3.5.1., it will be seen that the cluster *dd* invariably reduces, at the boundary between pronominal prefix and verb root; and that clusters of *jj* which may arise at nominal stem and suffix boundary also reduce. Clusters of both kinds arise from other processes which remain to be discussed; relevant to the rise of *jj* clusters is the process of final syllable reduction in nominal stems (3.4.), which may leave *j* stem-final. So far, the evidence suggests that only two boundary types are needed to account for invariable versus facultative degemination. These will be represented, wherever it is useful to distinguish them, as ~ (where degemination is facultative) and ! (invariant degemination).

Now let us return to the question of underlying sequences of *nn* in the pronominal prefix forms to the verb.

In a small number of prefixes, it appears plausible and formally justifiable, by analogy with other forms, to posit an underlying prefix structure which contains instances of *n-n*, where the first is an accusative marker within the prefix paradigm, the second, the initial sonorant of a small number of *n*-initial pronominal prefixes which may occur following the accusative marker. In all these forms, only a single *n* is realized, and so we may assume a process of reduction. Examples of such forms are: 2SG —→ 1NSG (second person singular acting on first person nonsingular, see 6.6.2) /*yi-n-gu-n-ni-*/, to be analyzed as 1EXclusive marker, accusative, plural marker, accusative, 2SG; surface form *yin.gini-*; 2NSG —→ 1NSG /*yi-n-gu-n-nu-*/ (1EX, accusative, plural marker, accusative, 2 person), with actual form *yunggunu-*. This posited degemination is

restricted to the pronominal prefixes; for as we shall see (3.4.1.), where prefix-final *n* precedes verb stem initial *n*, a different set of phonological processes occurs.

3.4. Final syllable reduction in nominal stems

There is a pervasive process of final syllable reduction in nominal stems before non-zero suffix. However, one finds that to some of the same stems that are often reduced, on other occasions speakers will add case and other endings without reduction. That is, the process of reduction appears at least partly facultative. Elicitation concerning this matter reveals an extensive speaker willingness to accept either particular reduced forms as described below, or unreduced stem forms (with a few exceptions where speakers will only accept the unreduced form as inflecting stem, e.g., with *banggin* ‘back’). In general, then, we are not dealing with a matter of strict grammaticality. Despite the apparent speaker flexibility, one finds from both elicitation and text materials that a certain stem form, either reduced or unreduced, is the most common for a particular noun, when the speaker is asked to use the noun in some context, rather than to concentrate on the acceptability of one or another stem form. There are only a few nouns for which the reduction process seems to be truly optional in a statistical sense. Therefore, I will include some comments below about the most common forms for particular nouns.

Cook (1987: 80–83) describes a generally similar process in Wakiman, but the details differ considerably for each language. Wardaman and Yangman are much more similar to each other in respect of this process than either is to Wakiman.

In Wardaman, a significant number of nominals (nouns and adjectival nouns) end in final syllable *-CVn*. However, it seems for purposes of describing the reduction process we should distinguish between final *-Cin* syllables, for some of which (depending partly on the identity of *C*) there is often reduction up to and including the entire syllable; and final *-CVn*, by which here we understand *V* to be any vowel besides *i*. In the latter type, reduction is simply of the final *-n*, which may therefore be identified synchronically as an Absolutive suffix for large numbers of nominals, and historically as that, and/or as some sort of nominal derivational suffix. (It is also the latter synchronically, see 11.1.4.).

Taking the simplest case first, that of *-CVn* in the sense identified above, we may exemplify loss of final *-n* before non-zero ending with *luwun* ‘cave’, *borndoyorron* ‘pandanus’, *gangman* ‘kangaroo’ and *wurren* ‘child’. Usual case forms for such nouns are, e.g., Locative *luwu-ya* ‘in the cave’, Allative *luwu-warr* ‘into the cave’, and Ablative *luwu-wa* ‘from the cave’; Locative *borndoyorro-ya* ‘in the pandanus’, *borndoyorro-warr* ‘to the pandanus’, and *borndoyorro-wa* ‘from the pandanus’; Ergative *gangma-yi* ‘kangaroo’, Dative *gangma-wu*; Ergative *wurre-yi* ‘child’, Dative *wurre-wu*, Dual Absolutive *wurre-wuya*, Plural Absolutive *wurre-mulu*, and so on.

Adjectival nouns like the word Wardaman itself commonly undergo reduction. For example, from that stem may be created a form meaning explicitly “Wardaman language”, with class prefix *wu-*. Usually (but not invariably) reduced and inflected with an adverbial suffix, this expression is commonly used to mean “by means of the Wardaman language, in Wardaman”: *wu-wardama-warra* (one also finds simply

wardama-warra, and also *wardaman-barra* is acceptable though appears to be less common in actual usage when attention is not focused on the reduction process).

For all *-CVn* nominals with minimally bisyllabic root (i.e., excluding such nouns as *wu-bin* 'thumb', to which the process does not apply) reduction is far more common before non-zero affix than is retention of *-n*.

There is at least one high-frequency nominal to which *-n* is commonly added to create an inflecting (Ergative) stem-form, where the *-n* does not appear in the Absolutive. This is *lege* 'one', which has alternative (and approximately equally used) Ergative forms *lege-yi* and *lege-n-yi*. Other cases are built on the zero stem.

There is greater variability in patterning among nominals with final syllable *-Cin*, and it seems we ought to distinguish at least three sub-types here, though most of them exhibit some internal variability. These are: nominals with final syllable *-Nin*, where N is a nasal; of final syllable *-L/R/Y* where L is a lateral, R a rhotic, Y the semivowel; and of type *-Sin*, where S is a stop (and here, the most variable sub-set of this sort has final syllable *-gin*; variation is linked to the segment which precedes this final syllable).

Nominals with final *-Nin* are the least variable. The inflecting stem is formed by reduction of *-in*. Examples are: Absolutive *linin* 'snake', ERG *lin-yi*, DAT *lin-gu*; Absolutive *yumin* 'tree, wood', INST *yum-nyi* (see 3.5.4. for the assimilatory process here), LOC *yum-nya*, DAT *yum-gu*, Adverbial *yum-barra*; ABS *langganin* 'billabong', LOC *langgan-nya*, etc. However, there is some variation in longer stems of this description as to whether they reduce or not; e.g., Absolutive *marranyin* 'sand, sugar', has alternative inflected forms Ablative *marranyin-ba* or *marrany-ba*, 'having' forms *marranyin-garang* or *marrany-garang*, and so on. In my data the reduced forms are more common than unreduced for trisyllabic *-Nin* stems.

However, it is important to mention that some nouns with final nasal segment, where this was preceded by another consonant (i.e., there would have remained a cluster after syllable reduction), were found not to conform to the *-Nin* pattern described above, but rather reduced only *-n*, or not at all. An example of this kind is *warlŋin* 'fly', which had usual and acceptable case-inflected forms of the sort *warlŋi-yi* or *warlŋin-yi* (ERG). Below it becomes clear that the presence of stem-final clusters is a factor relevant to reduction where other segments types are involved.

The second sub-type is *-L/R/Yin*, where the syllable margin is a non-nasal sonorant. Here the most common pattern seems to be for final syllable to lose *-in*, but loss of just *-n* is attested in some nouns, and (perhaps relevant) particularly commonly with certain kinds of suffixes. There are also in the class two high-frequency nouns *layin* 'game, meat', and *mayin* 'vegetable food', and besides conforming to the minority pattern in that both typically lose only *-n*, the former is idiosyncratic in its possible stem-forms.

The most general pattern for this sub-type, loss of *-in*, can be illustrated by the common nouns, Absolutive forms of which are *jerrin* 'ground oven', *warrarin* 'fat', and *bulilin* 'blood': Locative *jerr-ya*, Ablative *jerr-wa*, DAT *jerr-wu*; DAT *warrar-wu*, 'having' *warrar-warang*; 'having' *bulil-warang* ('menstruating'). However, non-reduced alternatives are accepted for most such nouns (e.g., LOC *jerrin-nya*), though they are not in fact as commonly used.

One problem with saying that reduction of *-in* is the most common pattern is that, for nouns of the *-LRYin* sub-type, those that, because of the nature of their referents, most typically occur in Ergative case-form, have been found to show reduction of only *-n* in that form. Examples are: ABS *garlirlin* ‘mosquito’, ERG *garlirli-yi*; ABS *juwarin* ‘Long Tom’, ERG *juwari-yi*; ABS *geyirrin* ‘dew, frost’, ERG *geyirri-yi*; ABS *murrurin* ‘mud-dauber’, ERG *murruri-yi*. However, some of the same nouns have other common inflectional or derivational forms which show loss of *-in*, e.g., *geyirr-warang* ‘dewy, frosty’. While informants readily accept *geyirrin-garang*, they do not accept *geyirri-warang*. For any of the above nouns, informants will produce and readily accept unreduced forms, e.g., *geyirrin-yi* ‘dew’ (ERG), or *garlirlin-yi* ‘mosquito’ (ERG). This set of facts is evidence of some specialization of the reduction process by suffix type, seemingly not very far advanced, however, in the context of general variability in final syllable reduction.

The two common nouns of this sub-type mentioned above show different tendencies. *Mayin* ‘vegetable food’ tends to exhibit inflecting stem *mayi-*, i.e., with reduction of *-n* only: DAT *mayi-wu*, ‘having’ *mayi-warang*, etc. However, both accepted and used is the unreduced stem *mayin*, e.g., DAT *mayin-gu*. This seems to be of higher frequency with Dissociative and Source suffixes, *mayin-gunya*, *mayin-gunba*, seemingly an indication of the overall somewhat more clitic-like morpho-syntactic status of these case-endings compared to the elementary or non-composite cases (see Chapter 5). On the other hand, *layin* exhibits with about equal frequency the Dative forms *layi-wu* and *lany-gu*. In other cases the latter appears to be most common, e.g., ABL *lany-ba*. (There is no corresponding stem **many-* for *mayin*). Informants found the Ergative form **layi-yi* unusual/unacceptable, both *layin-yi* and *lany-nyi* common and acceptable. Instances of the latter noun in Ergative case are not infrequent, especially since *layin* clearly can have the general sense ‘game animal’. This appears to be linked to the fact that, in that sense (as distinct from the sense “game meat”), the word is often found in construction with a specific term designating a kind of animal, e.g., *layin gangman* ‘kangaroo (game)’ (see 10.5.). Thus, specific animal terms commonly exhibited Ergative marking, and so may *layin*, which as illustrated has at least in part a kind of classifier-like occurrence and identificational textual function: *ngamanda-yi lany-nyi yimbu-larri* ‘what kind of [*ngamanda*, ‘what’, ERG] animal bit you?’

There is, again, considerable variability among the nominals grouped under the sub-type *-Sin*, but some generalizations do emerge from the variability. For nominals ending in *-bin*, there were two common patterns: reduction of *-in*, or failure to reduce where reduction would leave a stem-final cluster (e.g., ABS *lalbin* ‘narrow place’, LOC *wu-lalbi-ya* ‘in the crack’; ABS ‘greedy (person)’ *wujbin*, ERG *wujbin-yi*, PL ABS *wujbin-mulu*. For nominals with apical stop (*d*, *rd*) as final syllable margin, the most common pattern (for all kinds of non-zero endings) was again reduction of *-in*. Examples are: ABS *madin* ‘language, word’, DAT *mad-gu*, ADV *mad-barra*; ABS *minyardin* ‘charcoal’, LOC *minyard-ja*; ABS *jordjordin* ‘crazy, mad’, PL ABS *yi-jordjord-mulu* ‘mad ones’; ABS *yordin* ‘ashes’, DAT *yord-gu*. It seems, however, that words with homorganic apical nasal-stop cluster across the syllable margin ought not be included in this subtype, because they appear to commonly lose only *-n*, or alternatively fail to

reduce. An example is ABS *barndin* 'sore', DAT *barndi-wu*, 'having' forms *barndi-warang*, *barndin-garang*. Consideration of nominals with final *-gin* shows that the presence of homorganic nasal-stop cluster is relevant to the form of reduction there too.

Nominals ending in *-jin* seem also to preferentially lose *-in*, thus clustering with nominals ending in *-b/d/rdin*. Examples are ABS *wu-jerrijin* 'cold weather', ADV *wujerrij-barra*; ABS *berngijin* 'black soil', LOC *berngij-a*, ABL *berngij-ba* etc. ('Black soil' and a few other nouns are sometimes treated as collectives, and have special number- marked stems, see 5.6.3.)

Nominals ending in *-gin* also preferentially lose *-in*, except where this would leave a stem-final cluster. Where the latter would occur, trisyllabic (or longer) stems with *ngg* across syllable margin may reduce the entire final syllable to zero, adding endings directly to the remaining *ng*. Examples of the first sort are ABS *nuragin* 'shade', LOC *nurag-ja*; *belgin* 'mud', LOC *belg-ja*; ABS *yi-goyogin* 'salt water', ALL *yi-goyog-arr*, LOC *yi-goyog-ja*; *marrgbarrgin* 'cramp', ERG *marrgbarrg-ji*; ABS *larrglarrgin* 'light (not dense) shade', LOC *wu-larrglarrg-ja*; ABS *dulgin* 'urine', DAT *dulg-u*; ABS *wu-nurlgin* 'hot ashes, live coals', LOC *wu-nurlg-ja*.

Despite the relative acceptability of forms such as *belg-ja* here, that there is some issue of remaining stem-final clusters is shown by the fact that, while both *belg-ja* and *belgin-nya* 'in the mud' were considered usual and acceptable (and the former is in fact more frequent), informants refused to accept *warlg-ja* 'in bed, in the swag', and instead allowed only *warlgin-nya*.

Four nominals in which zeroing of the entire final syllable seems to account for the usual inflecting stem-form are *luyunggin* 'smoke', *guyanggin* 'woomera', *warranggin* 'corroboree', and *balanggin* 'new'. Most common case-forms for the former were, e.g., ABL *luyung-ba*, ALL *luyung-garr*; for 'woomera', LOC *guyang-nya*, ABL *guyang-ba*; for 'corroboree', DAT *warrang-gu*. Alternative forms for all these nominals were unreduced. As noted far above, the noun *banggin* 'back' was never found to reduce (thus, **bang-nya* LOC, was unacceptable). The factor relevant to failure to reduce is evidently presence of the homorganic nasal-stop cluster, in a bisyllabic stem where such reduction would remove the homorganic stop. Commonest patterns for different final-syllable types may be summarized:

-CV <i>n</i> (where <i>V</i> is not <i>i</i>)	reduce - <i>n</i>
-C <i>n</i>	
-N <i>n</i>	reduce - <i>in</i>
-L/R/Y <i>n</i>	reduce - <i>in</i> , also - <i>n</i>
-S <i>n</i> (S =stop)	reduce - <i>in</i>
-g <i>n</i>	as above but may zero syllable where preceding segment is <i>ng</i> in trisyllabic stems

At least one word, *bornorron* 'brolga', which undergoes reduction *bornorro-yi* ERG, compares with *bornorrong* (velar nasal – final) in some other languages of the region, e.g., Jawoyn, Ngalkbon.

3.5. Fortition and related processes

Wardaman exhibits surface alternations, some of which must be considered to result from fortition, or “hardening”, a process by which a basic sonorant is realized as a stop. There are several distinguishable, productive processes of this sort; that is, which are environmentally conditioned, live alternations. An expository problem is that certain of these, with which this section begins, are closely linked to other processes which operate at the same boundary — that between pronominal prefix and verb stem — but have different effects (degemination, deletion, etc.). There are other important fortition processes of quite different character, which operate elsewhere. My preference is to treat together the set of processes which operate at boundary between prefix and verb stem, rather than artificially attempting to group all fortition processes together.

3.5.1. Fortitions and linked processes at prefix-verb stem boundary

Where a final *rr*, *n* or other nasal of a pronominal prefixal element precedes certain initial segments (*n*, *ny*, *j*) of a following verb stem, slightly variable fortition processes occur, depending on the identity of the segments which come together.

Where *rr* occurs in this environment, it is the non-singular formative. Instances of *n* and *ng* before the verb stem are, respectively, the accusative marker in the pronominal prefix, and segments of other person/number-marking prefixes.

Where nonsingular marker *rr* occurs before the retroflex nasal, we find the following sorts of differences between attributable morphological segmentation (involving verb stems *na* ‘see’ and *ni* ‘bring’), and actual forms:

Phonological Form	Realization	Gloss
<i>nga-rr-na-n</i>	<i>ngadan</i>	‘we 1INPL see it’
<i>yi-rr-na-n</i>	<i>yidan</i>	‘we 1EXNSG see it’
<i>ya-wu-rr-na-n</i>	<i>yawudan</i>	‘they see it’
<i>nga-rr-ni-n</i>	<i>ngadin</i>	‘we 1INPL bring it’
<i>ya-wu-rr-ni-n</i>	<i>yawudin</i>	‘they bring it’

These examples show that what may be morphologically identified as two segments (*rr* + *n*) result not only in stopping (to *d*), but at the same time reduction of two segments to one. The hardening process applies in only one instance when *rr* precedes verb-stem initial *ny*, in the important and high-frequency *nyanga*- ‘come’. Interestingly, this process does not apply to other *ny*-initial stems, e.g., *nyogba*- ‘howl’ (suggesting perhaps a distinctive historical status of the palatal nasal in “come”). Though isolated, this example is important in that it provides evidence concerning how the fortition and related processes ought to be formulated.

Illustrative forms of the verb “come” are:

Phonological form	Realization	Gloss
<i>nga-rr-nyanga-n</i>	<i>ngadjangan</i>	‘we INPL come’
<i>yi-rr-nyanga-n</i>	<i>yidjangan</i>	‘we EXNSG come’
<i>ya-wu-rr-nyanga-n</i>	<i>yawudjangan</i>	‘they come’
<i>wu-rr-nyanga-ndi</i>	<i>wudjangandi</i>	‘they came’

These forms show that two processes are involved: stopping of the palatal nasal, and stopping of the rhotic. Before basic *j*-initial stems, such as /*jingi*/ ‘sit’, *rr*-stopping also occurs:

<i>ya-wu-rr-jingi-n</i>	<i>yawudjingin</i>	‘they sit’
<i>yi-rr-jingi-n</i>	<i>yidjingin</i>	‘we EXNSG sit’

The stopping of *rr* here sheds light on the formulation of process involving the sequence *rr* before *n*, discussed above. In addition to seeing the process as involving the stopping of *n*, it may also be supposed to involve the stopping of /*rr*/ to *d*. The fact that we do not have e.g., [*ngaddan*] ‘we INPL see’ must be attributed to degemination, which inferentially is obligatory at this boundary.

However, processes affecting nonsingular *rr* cannot be viewed this way in all environments; in some, we clearly have *rr*-deletion.

Before *l*- or *d*-initial verb stems, the nonsingular formative *-rr-* is not realized: it is zeroed. It leaves a mark of its morpho-phonological presence in that it conditions de-retroflexion of the stem-initial *l* or *d*. In order to see the operation of these processes, we may compare a number of forms of the verb *lu* ‘to cry’. Where the pronominal prefix before the stem is vowel-final, the *l* is realized as retroflex. However, where the *rr* is present structurally, it is realized as alveolar:

Phonological Form	Realization	Gloss
<i>nga-lu-n</i>	<i>nga-rlun</i>	‘I cry’
<i>yi-lu-n</i>	<i>yi-rlun</i>	‘you (SG) cry’
<i>ya-0-lu-n</i>	<i>ya-rlun</i>	‘he/she cries’
<i>nga-rr-lu-n</i>	<i>nga-lun</i>	‘we INPL cry’
<i>ya-wu-rr-lu-n</i>	<i>yawu-lun</i>	‘they cry’

Thus, there remains a phonetic difference between such forms as “I cry” in the retroflexion of initial /*l*/ vs. ‘we INPL cry’, and so on. Table 2 shows that no rhotic plus lateral clusters are permissible, so we may think of the process involved here as zeroing in conformity with that constraint.

A similar situation obtains in stems with initial *d* (that is, morpheme initial /*rd*/, e.g., [*nga-rdagbarlan*] ‘I have it’, [*nga-dagbarlan*] ‘we INPL have it’, [*yawu-dagbarlan*] ‘they have it’. Here, however, we may envision the processes as stopping of /*rr*/ to *d*, followed by reduction of the geminate cluster *dd*.

The above situations involving *rr* before stem-initial *l*/*rl*/and *d* /*rd*/ yield impermissible cluster types (*rrrl*, *rrrd*), and in fact these are not realized as such. The loss of retroflexion that occurs here is apparently environmentally different from anything accounted for by P-1. We may describe this loss of retroflexion:

P-2 De-retroflexion at prefix-stem boundary

[+ retro] → [-retro] /*rr* ____

In short, the presence of *rr* before any possible initial apical segment results in the reduction of differences among three underlying clusters (*rrm*, *rrrl*, *rrrd*) to two occurring segments, *d* and *l*.

Where nasal-final prefixes occur before *n*-initial verb stems, there is hardening of the stem-initial nasal to the homorganic stop, and the preceding nasal remains. Examples with *na* 'see' are:

Phonological Form	Realization	Gloss
<i>nga-n-na-n</i>	<i>ngandan</i>	'he/she sees me'
<i>nga-ng-na-n</i>	<i>ngangdan</i>	'I see you (SG)'
<i>nga-wu-n-na-n</i>	<i>ngawundan</i>	'I see them'

The above facts suggest that we may formulate a process of fortition or hardening which accounts both for situations with *rr* and *n* before verb stem-initial *n*, and the isolated instance of *nyanga*- 'come'; and then, that the other processes we have seen, of degemination on the one hand and *rr*-deletion on the other, apply to the output of this rule, which may be stated informally:

P-3 Fortition of verb-stem initial nasal segments

/*n*/ → *d* / {*rr*, *N*} ____

/*ny*/ → *j* / *rr* ____

Although the rule is apparently stated as a general, phonological one, its environmental specificity has been indicated, particularly the limited application of the second part.

We may now state the environment for stopping of *rr* as follows:

P-4 *rr*-Stopping

/*rr*/ → *d*/ ____ + [+ Stop, -labial, -velar]

Conditions: where + is the boundary between pronominal prefixes and verb stem. Some applications of P-4 arise from P-3.

Now we may account for those environments in which *d* arising from /*rr*/ is deleted as follows. Where there are instances of verb stem-initial *d* which have been created by P-3, as well as those where /*d*/ is basic (as in *dagbarla*- 'have' (see examples above), combinations of *d* + *d* are simplified to *d*. We may additionally indicate that in terms of degemination, this is a boundary of the ! (obligatory application) sort.

Additionally, we must account for the deletion of *rr* before *l*-initial verb stems. First, however, it is relevant to note a related paradigmatic irregularity: before /*l*/-initial stems,

the accusative marker *-n* does not appear, it is zeroed. The lateral is realized as alveolar rather than retroflex, so that minimal differentiation among certain forms is not maintained. Compare the morpho-phonological string to the actually occurring transitive combination 3SG → 1SG 'he/she/it bit me', and below, the string 'we INPL bit it' with its realization:

<i>ngan-la-rr</i>	<i>ngalarri</i>	'he bit me'
3SG → 1SG-bite-PST		
<i>nga-rr-la-rr</i>	<i>ngalarri -</i>	'we bit him'
1INPL-bite-PST		

The above may be compared with the usual realization *ngan-* of the 3SG → 1SG combination, *ngan-darri* 'he saw me', *ngan-bundi* 'he hit me', *ngan-mendi* 'he took me', etc.

No clusters of *n* plus lateral occur, so we may put this together with loss of *rr* before stem-initial */l/* as instances of the zeroing of impermissible clusters.

P-5 *rr-* and *n-* deletion before */l/*

/rr/, /n/ → *0/* _____ [+ apical, -stop, -nasal]

Condition: *rr* is the nonsingular formative, + the boundary before verb stem.

3.5.2. Fortition of */w/*

Fortition applies to two important instances of basic */w/* which are stopped to *b* after nasals, as well as to one morphologically minor one. Elsewhere these instances are realized as *w*. The suffixes concerned are future tense */wa/*, third person nonsingular pronominal prefix */wu/*, and a nominal derivational suffix */widi/*.

Because of stem structure and the details of tense formation, future tense suffix */wa/* may only occur in two morpho-phonological environments: following a vowel, or following the reflexive-reciprocal marker. Ordinarily, the shape of this marker is */yi/*: *ya-wu-rr-bu-yi-n* 'they are hitting each other, fighting with each other'. However, before the future tense suffix, all forms which have the reflexive or reciprocal marker are characterized by the presence of *-ng-* after it, i.e., the sequence *-yi-ng-*. Following this nasal, and because of assimilation of the suffix vowel to the previous */i/*, the shape of the future tense marker is *-be*. Thus: *ya-wu-rr-bu-yi-ng-be* 'they are going to hit each other, fight'. This illustrates fortition in the post-nasal environment.

An alternative way of describing the facts would be to simply list two allomorphs of the future suffix as post-vocalic *-wa* and as *-ngbe* in the environment of the reflexive-reciprocal marker, that is, treating the latter as a morphological irregularity rather than as a phonological process. There seems to be little to recommend one description over the other, except that the second affix, to be described, may be seen as similarly undergoing fortition following a nasal.

The second hardening of */w/* to *b* involves the prefixal element nonsingular third person */wu/*. Because of its possible positioning within the prefix complex, */wu/* either occurs in a post-vocalic environment, occurs initially, or follows the accusative-marking

element *-n-*. In the former two environments it is realized as *wu*; in the latter, the initial semivowel is hardened in the realization *bu*. An example of this process is in the morphophonological form 3NSG $\longrightarrow$ 1SG */nga-n-wu-rr/* (1SG, accusative, 3NSG, plural), which is realized as *nganburr-*. The third instance is that of a rather rare suffix */widi/* (9.8.), which is found, for example, to create a nominal *yarrbaly-widi* from a particle *yarrbaly* ‘make a nuisance’. Following a nasal-final particle such as *jangan* ‘persist in saying to, asking’, we find *jangan-bidi* ‘persistent’.

The question may be raised whether it is reasonable to take the semivowel-initial forms of the morphemes under discussion as basic. Could the processes be alternatively viewed as lenition? This seems counterintuitive first, in the case of nonsingular */wu/* because it is realized in that shape word-initially, where there is no argument for treating this as a leniting environment; and in the case of future */wa/*, because that is the “elsewhere” realization apart from the environment following unpredictable *-ng-* after the reflexive-reciprocal marker. Below (3.7.) are discussed two other processes which have realizations as *w*, but which must be described as differently conditioned from the instances we have just seen. For this reason the basic segment in the suffixes described here is treated as */w/*, which undergoes stopping to *b* after nasals.

P-6 */w/-Fortition*

/w/ $\longrightarrow$ *b* / [+ Nasal] _____

Conditions: morphemes to which this applies are future suffix */wa/*, 3NSG */wu/*, and */widi/*. Conditioning nasals in the first two instances are *-ng-* following the reflexive-reciprocal, and *-n-* accusative marker.

3.5.3. Fortition of */m/*

An alternation of basic */m/* with *b* is found in four different suffixes. One is the particle suffix (11.1.2.) which has the shape *ma* following all sonorants, *ba* following stops. Examples after sonorants are: *burrngburrng-ma* ‘boil’, *ngurluguy-ma* ‘mutter, hum’; *geleng-ma* ‘dislike’; *many-ma* ‘aim at’.

The second morpheme is the iterative, inchoative (and in fact functionally somewhat diversified) suffix */marla/* (see 8.13.). Here good evidence that the nasal-initial form is properly taken as basic comes from the existence of an independent adverb *marla-yi* ‘again, repeatedly’ (where *-yi* is an adverbial suffix, 5.2.1.).

The third morpheme is the plural noun suffix *-mulu*, where generally, the *m*-initial form occurs after all sonorants, *-bulu* after stops (e.g., *wurre-mulu* ‘children’, *yirrug-bulu* 1EXNSG pronoun). (Some cases are attested of *-mulu* after stops, see 5.6.3.)

The fourth is the noun-forming suffix with allomorphs *-man* and *-ban* (see 9.3.).

It is important to note that in all these suffixes, post-nasal realization is with *m*. In alternations where stops are regarded as basic and semivowel realizations as the result of lenition (3.7.), the stop-initial allomorph occurs following nasals. This difference indicates that we do indeed require two different sorts of processes, fortition and lenition, to describe alternations in the language.

P-7 /m/-Fortition

/m/ → b / [+ Stop] _____

Conditions: affects particle suffix /ma/, iterative /marla/, plural /mulu/, noun-forming /man/.

3.5.4. Assimilation in ergative and locative case suffixes

Assimilatory processes — fortition and nasal assimilation — affect the ergative/instrumental marker /yi/, and the locative case marker /ya/, in each instance hardening the semivowel to the corresponding stop *j* following a stem-final stop, and making it the corresponding nasal *ny* after stem-final nasal. Here we have morpho-phonological effects that are more assimilatory than fortition, which might be seen as (at least partly) dissimilatory.

As noted in 3.4., final syllable reduction applies to many nominal stems to expose a stem-final segment relevant to the processes under discussion here. Examples of relevant environments for the assimilations described, and occurring forms, are:

Absolutive	Case-marked	Gloss
<i>minyardin</i>	<i>minyard-ja</i>	'coals' LOC
<i>minyardin</i>	<i>minyard-ji</i>	'coals' ERG
<i>yumin</i>	<i>yum-nya</i>	'tree' LOC
<i>yumin</i>	<i>yum-nyi</i>	'tree' ERG
<i>belgin</i>	<i>belg-ji</i>	'mud' ERG
<i>belgin</i>	<i>belg-ja</i>	'mud' LOC

For nouns with inflecting stem ending in *-n*, no difference can be detected between the semivowel-initial form of the suffix versus any secondarily nasalized one (e.g., there is no perceptible difference corresponding to the hypothetical one between *jerrin-ya* 'ground oven' LOC, and *jerrin-nya*, though the usual form here is in fact one which shows reduction, *jerr-ya*). As noted in 2.3., no distinction can be detected between medial palatal consonants versus a bi-segmental analysis of consonant + *y*. Regarding the process under discussion here, we may also note that no difference can be detected that would cause us to distinguish *ny-y* and *ny-ny* across morpheme boundaries.

P-8 Semivowel assimilation

/y/ → { [j]/ [ny]/ } [Stop] + _____
[Nasal] + _____

Condition: + is the boundary between noun stem and inflectional suffix.

3.6. Lenition processes

There are three processes of lenition, by which what are regarded as underlying stops become surface semivowels.

The first involves surface alternants *g* and *w*, considered to be relatable to an underlying segment /*g*/. The forms in which this alternation is found are: Genitive-Dative case /*gu*/ and historically related, composite case forms, Dissociative /*gunya*/ and Source /*gunba*/; focal member of pair suffix /*garra*/ (5.6.1.); dual suffix /*guya*/ (5.6.2.); causative suffix /*gurne*/; ‘having’ suffix /*garang*/ (5.2.); and verb particle negator /*gay*/. In all these morphemes, *g* occurs after stem-final stops and nasals, *w* elsewhere.

Examples of these alternations are: *mayi-wu* ‘vegetable food, DAT’ vs. *yibiyan-gu* ‘man, Aborigine, DAT’; *wurre-wunya* ‘child, DISS’ vs. *ngawun-gunya* ‘nothing, DISS’; *wurre-wuya* ‘child, DU’ vs. *yibiyan-guya* ‘man, DU’; *wu-melema-wurne* ‘black, CAUS’ vs. *yi-jordjordin-gurne* ‘crazy, CAUS’ (also, *yi-jordjord-gurne*).

Evidence that /*g*/ rather than /*w*/ is basic in these morphemes is of two kinds. First, the *g*-initial allomorphs occur following both nasals and stops, whereas for morphemes in which /*w*/ is considered basic (3.5.4.), hardened allomorphs are more limited environmentally, occurring only after stops. In other words, the distribution of stop-initial allomorphs of “leniting” morphemes is wider compared to the distribution of other morphs which have partly overlapping realizations.

Secondly, the related forms of independent dative and dissociative pronouns all exhibit word-initial *g*, e.g., *gunya* ‘from him, her, DISS’; *gunga* ‘his, hers, DAT’. Also, we find the word for “two” is etymologically related to the dual suffix, and is stop-initial: *guyamin*. This also amounts to an argument for /*g*/ as synchronically basic on the basis of certain facts of distribution of the stop-initial variant compared to the semivowel-initial one.

The second lenition is one whereby what is regarded as basic /*b*/ has alternate as *w* after all non-nasal sonorants, and *b* after stops and nasals. This alternation is found in: ablative case suffix /*ba*/, article suffix /*bi*/ (5.7.), perfective passive adjectival suffix /*bari*/ (9.2.), pronominal and adverbial suffix /*baywa*/ (6.5.), adverbial suffix /*barra*/ (5.4.), and derivational adjectival suffixes /*barrin*/ ‘unable, not prone to (do) X’, and /*berreng*/ ‘inclined (unfortunately) to do X’.

Examples of alternate forms are: *lagla-wa* ‘camp, ABL’ vs. *yum-ba* ‘tree, ABL’; *wudu-wi* ‘little, ART’ vs. *yi-bam-bi* ‘head, ART’; *guyamin-barra nungguru-warra* ‘with two hands’, the phrase illustrating both forms; *gayardung-berreng* ‘one who might run (away)’, vs. *derrema-werreng* ‘one who might crawl’.

The third lenition has the same conditioning, but involves different segments. It applies to a (mainly) nominal suffix (5.11.) which means ‘actual, real, proper, full’, which has stop-initial form *junuyn* after stops and nasals, semivowel-initial form *yunuyn* elsewhere: *garnin-junuyn* ‘real spear’ vs. *yingyi-yunuyn* ‘real name’; and *gungan.gin-junuyn* ‘really his/hers’ vs. *wurruguru-yunuyn* ‘real devil dog’. (Note that this ending seems to have a somewhat more clitic-like status than, for example, case endings, as shown by the tendency for final syllable reduction not to occur, as with *garnin* ‘spear’.)

Since the three lenition processes are identically conditioned, they may be described in the same statement.

P-9 Lenition

$$\begin{array}{l} /g/ \longrightarrow w \\ /b/ \longrightarrow w \\ /j/ \longrightarrow y \end{array} \quad / \quad \left\{ \begin{array}{l} [+ \text{ son}] \\ [- \text{ nas}] \end{array} \right. \longrightarrow$$

It emerges from consideration of fortition and lenition processes that surface *w*s are attributable to four morpho-phonological sources: basic lexical /*w*/ which does not alternate, as in the verb stem /*waja*/ 'leave'; basic suffixal /*w*/ which has most frequent realization *w* and post-nasally, *b*; suffixal /*g*/ which has alternate realizations *g* after stops and nasals and *w* elsewhere; suffixal basic /*b*/ which has alternate realizations *b* after stops and nasals and *w* elsewhere. The arguments for treating /*g*/ of the third set as basic synchronically seem to me compelling; but it is not obvious, despite the identical conditioning factors, that that has clear-cut implications for how the alternations of the last set (*b* and *w*) should be treated, given the rather different (and diverse) nature of the suffixes concerned in the last group. Nevertheless, the identity of conditioning environments of three different alternating pairs of segments for which stop is considered basic (*g/w*; *b/w*, and *j/y*), is suggestive.

3.7. Minor assimilations

Minor assimilatory processes affect the semivowels in certain environments. There are also pervasive, minor assimilations which affect the realizations of vowels.

3.7.1. Semivowels

Articulation of the semivowels tends to be less distinct, up to and including zeroing, in certain environments where each is followed by its homorganic vowel.

Both verb-stem initial /*y*/ and /*w*/ are often reduced or zeroed when each is preceded by /*rr*/ of the prefixal nonsingular element, and followed by its homorganic vowel. Such reduction may also affect /*w*/ of the third person nonsingular prefixal element /*wu*/. This reduction may occur even where there is primary stress on the syllable of which the semivowel is the margin.

For example, certain future forms of the verb "go" exhibit stems *yi-ng-be* (presumed stem *yi* or *ying* plus future allomorph *be*; also a reduplicative variant *yijing-be*). Examples of the reduction of the semivowel are:

Phonological form	Realization	Gloss
<i>nga-rr-ying-be</i>	<i>nga'rringbe</i>	'we INPL will go'
<i>yi-rr-ying-be</i>	<i>yi'rringbe</i>	'we EXNSG will go'
<i>nga-rr-yijing-be</i>	<i>ngarri'jingbe</i>	'we INPL will go'

Reduction of /w/ often applies in third nonsingular *wu* following *rr* nonsingular element, as in:

/nga-rr-wu-n-waja/ ngarrunwaja ‘we INPL leave them’

Verb stem-initial /w/ may likewise show some reduction following *rr*, e.g. /yi-rr-wudba/ ‘we EXPL throw it’ is generally realized as [yirrudba].

A morphological process of nominalizing verb particles involves the element *-yi-* following the particle and particle-final suffix. These elements may be followed by a complementizer, e.g., one of the case suffixes. (See 11.3. for discussion of the syntax of such constructions). Examples of these combinations are: /jornog-ba-yi-warr/ ‘to be full up’ (with Allative *-warr* as complementizer; /jabul-ma-yi-warr/ ‘smoking’. Such endings are usually realized as [biwarr] and [miwarr]. That is, the *a* of the particle-final suffix and the semivowel are zeroed.

3.7.2. Lateral to nasal assimilation

The directional suffix /lan/ (7.4.) is frequently preceded by stems which end in velar nasal. Although request for careful pronunciation always elicits lateral-initial *-lan* in this environment (thus producing the cluster *ngl* found only at boundary, as indicated in Table 2), nevertheless in ordinary speech this lateral is often assimilated to the nasal of the same place of articulation, yielding [gorrong-nan] ‘towards the south’ rather than *[gorrong-lan], [galung-nan] ‘upwards’ instead of careful [galung-lan], etc.

3.7.3. Vowel assimilation

The processes in question are low-level assimilations of certain prefixal and suffixal vowels to the quality of adjacent vowels in noun and verb stems. Assimilations affecting prefixes are regressive from the first stem-vowel “backwards” to the prefix, those affecting verb suffixes are progressive from the final stem-vowel “forwards” to the suffixal vowel.

Regressive assimilation from the verb stem applies to certain pronominal prefixes, all and only those in which the sole vowel is *a*: 1SG *nga-*, 1INPL *ngarr-*, and third singular nonpast conjugation marker (8.2.) *ya-*; transitive combination 1SG → 2SG *ngang-*, and 3SG → 1SG combination *ngan-*. Though it usually has the opportunity to apply to only one vowel leftwards of the conditioning stem vowel, in the case of the habitual mood prefix *ma-* followed by a person element in which the sole vowel is *a* (i.e., the 1SG element *nga-*, it applies to both elements in sequence, *ma-nga-* (see 6.6.4.). It applies (optionally, but usually) just where the adjacent stem vowel is a mid-vowel, *o* or *e*. The *a* of the prefix tends to assimilate to the quality of the mid- vowel. Thus, the relevant forms of the verb *wo* ‘give’ usually (but in careful pronunciation do not necessarily) become: from /nga-won/ ‘I give it’, *ngowon*; from /ngarr-won/ ‘we INPL give it’, *ngorrwon*; from /ya-won/ ‘he gives it’, *yowon*; from /ngang-wo-n/ ‘I give it to you SG.’, *ngongwon*; from /ngan-wo-n/ ‘he gives it to me’, *ngonwon*. Similarly, in a verb with

front mid stem-vowel, we find such forms as: from /nga-we-n/ 'I fall' *ngewen*; from /nga-rr-we-n/ 'we Incl fall' *ngerrwen*; from /ya-we-n/ 'he falls', *yewen*, and so on.

There is a third person irrealis prefix combination *yayi-* (see 6.6.3.) in which *a*, being minimally one vowel removed from the first stem-vowel (i.e., other person-number elements may follow before the stem), does not assimilate.

An example of a verb with more than one stem vowel is the following: /nga-gomarla-n/ 'I follow him', generally realized as *ngo-gomarkan*. Where the prefix is bi- or multi-syllabic, thus separating the *a* vowel from the stem, the assimilation does not occur: /nga-rr-wu-n-gomarla-n/ 'we INPL follow them', *ngarrun.gomarkan*.

The noun class prefix /ma/ also commonly shows the effects of regressive assimilation before a stem with "next-over" mid-vowel. Because nouns show much less paradigmatic variation than verbs — i.e., inflect with a lesser number of elements, and most noun stems tend to occur with only one class prefix — some nouns quite invariably show this kind of assimilation. The overall result has evidently been a tendency towards long-term change, through vowel assimilation and fusion of the erstwhile prefix with the stem, creating a lexical unit. Examples of this kind are: *mogorlgorl* 'Ampelocissus'; *mordon* 'creeper', *megerrman* 'long yam'. In all these cases, initial *mV* must now be considered part of the stem, but historically, is transparently the class prefix /ma/ which has vegetable foods central among the nouns to which it is usually prefixed. The assimilatory process is also synchronically active, as in *me-dengdeng* 'fig' (species), or *me-dewoman yi-mum-gu* 'white of the eye, sclera', where /ma/ becomes *me-* before the mid-vowel. The stem 'white' may be prefixed with the other noun class markers, in which instances no assimilation occurs, e.g., *wu-dewoman* 'white', WU-class. Variation may be observed in realization of *ma-* before stems with mid-vowel, e.g., both *ma-jern* and *me-jern* 'stomach', occur.

My transcription practice (in the texts and examples) is to write the basic vowel of the pronominal prefixes, e.g., invariably 1SG *nga-* no matter what its realization. However, with the noun class prefix /ma/ the assimilation is indicated in the transcription, since this does not seem to impede intelligibility or easy identification, given that a single morpheme is involved. Where (as in *megerrman* 'long yam') the prefix has become fused to the stem and there is no alternation of prefix, no morpheme boundary is indicated.

Progressive assimilation affects the realization of the future tense suffix /wa/, the directional suffix /lan/ (sometimes, also, potential -*yan*). These processes, however, are not identical, and will be discussed in turn.

Assimilation of the future suffixal vowel *a* occurs only to *e*, after a final stem-vowel *e* or *i*; no change occurs where the final stem-vowel is *o*. Thus the realization of /nga-we-wa/ 'I will fall' is *ngewewe*, where the stem mid-vowel determines assimilation to it of both 1SG prefix and future suffix; also /nga-jingi-wa/ 'I will sit', *ngajingiwe*; but *ngongwowa* 'I will give it to you', not *ngongwowo*.

Often, the relevant stem-final vowel conditioning progressive assimilation is *i* of the reflexive-reciprocal marker -*yi-*. As already noted in 3.4.2. above, and further discussed in 3.9. below, following this morpheme and before the future tense suffix is a nasal -*ng-*, but this does not block the assimilation. Thus, /ya-wu-r-bu-yi-ng-wa/ 'they will fight' is realized as *yawurrbuyingbe*.