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0. INTRODUCTION. In the past decade there has been a resurgence of interest in problems of Australian comparative linguistics.[1] This reawakening was stimulated by the pioneering work of Capell (1956), which was oriented toward the reconstruction of Common Australian stems and affixes. More recently, Hale has demonstrated conclusively that the languages of northern Cape York Peninsula, formerly thought to be non-Australian (Schmidt, 1919*a*; Kroeber, 1923), are not only Australian, but in fact are closely related to the bulk of Australian languages spoken to the south (Hale, 1964, 1966).

The present work is stimulated in part by the earlier work of Capell and Hale,[2] in part by the publication (by O'Grady, Voegelin and Voegelin) of a fascicle which contains a preliminary classification of Australian languages based on cognate densities calculated by Hale, O'Grady and Wurm, in which the authors make a plea for the future consideration of types of evidence additional to that of lexicostatistics, in order that a balanced perspective of Australian historical linguistics might be achieved.[3]

This paper, intended as a response to this plea, constitutes an independent test of a small part of the above-mentioned classification, and represents a first step in the detailed reconstruction of Proto-Nyungic, whose daughter languages are spoken in the southwestern third of Australia—that is, in the area which is geographically most remote from Cape York Peninsula, where the Paman[4] languages studied by Hale are found.

The present study focuses on ten communalects which comprise seven languages of the Ngayarda subgroup of the Nyungic Group of the Pama-Nyungan Family. The phonology of Proto-Ngayarda (PN) is attested in 378 reconstructed stems,[5] supported by a further 73 instances in which a stem which can be shown to be reconstructible for Proto-Nyungic or Proto-Pama-Nyungan is reflected in a single Ngayarda daughter language only (see 3.2.1.). For the immediate purpose of this paper—the treatment of phonological retention and innovation *within* the Ngayarda subgroup—the available data provide an abundance of exemplification, considering the relatively modest nature of the phonological changes involved (modest, that is, in contrast to such a dramatic series of sound shifts as that demonstrated by Hale for Northern Paman). But there was a further purpose in assembling the several hundred PN reconstructions: to provide a nucleus which, together with Capell's Common Australian and Hale's Proto-Paman stems, could be used for the purpose of further reconstructive work in Australian linguistics in general. Because of the apparently unusually rapid replacement of basic vocabulary in Australian languages (Voegelin, Voegelin, Wurm, O'Grady and Matsuda, 1963), the task of detailed reconstruction will need to start from a correspondingly broad base.[6] An indication of the applicability of the available list of PN stems to the demonstration of successively more remote relationships among Australian languages is set out on page 73.

The ongoing search for cognates among Australian languages is certain to result in a steady whittling away of the membership of categories 1 and 5 in favor of categories 2 and 3.[7] This expectable transfer is not likely, however, to add substantially to the fourteen items at present listed in category 4. In this regard, our findings completely bear out Hale's assertion that "the number of putative cognates shared by members of different phylic families . . . is exceedingly small and the possibility of tabulating regular sound correspondences is almost completely nil."[8]

It is thus evident that two realizable goals for Australian comparative linguistics are (a) as detailed as possible a reconstruction

CATEGORY OF RECONSTRUCTED STEMS	NUMBER OF INSTANCES	RELEVANT SECTION OF ATTESTATION
(1) Unique to PN.	137	3.1.1.
(2) PN; further reconstructibility to Proto-Nyungic relatively easy.	174	3.1.2.
(3) PN; reconstructibility to Proto-Pama-Nyungan feasible.	53	3.1.3.
(4) PN; putatively cognate with forms in other phylic families, but possibility of detailed reconstruction of Proto-Australian is zero.	14	3.1.4.
(5) Reconstructible for Proto-Nyungic or Proto-Pama-Nyungan, though not for PN.	73	3.2.1.
Total	451	

of the protoforms of well-defined groups such as Nyungic, and (b) the reconstruction of Proto-Pama-Nyungan.

Languages of the Ngayarda subgroup occupy a continuous territory in northwestern Australia extending over 400 miles from the mouth of the de Grey River almost to the head of Exmouth Gulf, and reaching 250 miles inland.[9] The ten sets of corpora on which this study is based represent seven languages, three of which are spoken in two dialects each (Kariera-Ngaluma, Bailko-Pandjima and Kurama-Jindjibandi); of the remaining four, Ngarla, Mardudunera and Noala are each recorded in a single dialect; only the first-named dialect of Nyamal-Widugari is drawn on.[10] At the present day, only Jindjibandi shows relative vitality, being spoken by children and adults alike, as well as by persons whose mother tongues were one of several other Ngayarda or Kanyara languages. Noala and Ngarla are almost extinct, and the four other languages are more or less moribund.

The Ngayarda subgroup was originally postulated solely on the basis of cognate densities. Although Ngarla and Noala, situated at geographical extremities of the Ngayarda-speaking area, share as cognates only 25 per cent of the items in the test list which was used, there is a chain of relationships linking all Ngayarda languages

such that no two languages or dialects which constitute neighboring links in the chain share less than 50 per cent. The northeastern boundary of Ngayarda presents a rather abrupt linguistic break, with Ngarla and Nyamal each sharing only 30 per cent of their basic vocabulary with Nyangumarda, their Marngu neighbor. The same low percentage is shared by Bailko with Wanman, a Wati language spoken to its east. Although Noala, the southwestern Ngayarda outlier, shares 46 per cent with Talandji, the Kanyara language to its south, comparisons between Noala and other Kanyara languages reveal much lower cognate densities. The clearest indication of mesh relationship between Ngayarda and another subgroup (in this case Kardu) is observed in the comparison of Bailko with Wadjeri, two geographically noncontiguous languages which share 46 per cent of the 100-item test list.

In the following paragraphs, evidence is marshalled from phonology, morphophonemics and morphosyntax to show that as far as the Ngayarda languages are concerned, the subgrouping arrived at on the basis of cognate densities can be supported independently on several counts.

Phonology. Two conspicuous phonological differences distinguish Ngayarda languages from members of the Marngu and Wati subgroups: (a) in conservative forms of Ngayarda, lamino-alveolars /c ñ l/ contrast with lamino-dentals /ṯ ṉ l̪/; this contrast is also attested in Kanyara and Kardu, but is not made in Marngu or Wati.[11] (b) The contrast made in Marngu and Wati between initial laminals /c ñ l̻ y/ and apicals /ṭ ṇ l̢ R/ is not found in Ngayarda (nor in Kanyara), in which laminals only are attested in this environment. Eight examples of this correspondence which are listed in ʒ. under various rubrics are assembled below. (The language names are identified at the end of this section.)

Nm yara *shield* : Ny l̻ara *small shield* (869).
Nm, Yi yanti 1. *log* 2. *winnowing dish* : Ny l̻anti *tree sp* (462).
Nl yuku *heel* : Ny l̻uku *metatarsus* : Ridarngo luku *foot* (873).
Nm, Yi, Ku yira : Ny Rira ~ yira : Nyiniñ l̻ira *tooth* (713).
Nl yuka.mara : Ny Ruka *afternoon* (471).
Nm, Yi ṯumpu *anus* : Ny l̻umpu *cavity, recess* (430).
Nm ṯaka- *to take, grasp* : Walbiri ṛaka *hand* : Wakaya ləkə- *to carry* (848).
Nu, Ma capu.ṭa *beard* : Ny ṭapu.rci *mustache* (602).

Examples in which initial laminals appear on both sides of the

comparison are considerably more numerous. Note, for example, the following:

Nm caṭa *old woman* (Pl, Pn caṭa *blind*) : Ny caṭa *cul-de-sac* : Yu caṭa *thicket* (306).
Pn, Yi ñaṇi : Ny ñaṇi *slow* (385).
Common Ngayarda yini : Ny, Yu yini *name* (468).

The above correspondences can be shown to result from the phonemic merger of Proto-Nyungic initial laminals and apicals in its daughter language, Proto-Ngayarda, in which both are reflected as laminals. The resultant strictures on the distribution of PN consonants are charted in 1. below.

Though the phonology of Proto-Kanyara can be shown to differ but little from that of Proto-Ngayarda, two of the daughter languages of the former, Buduna and Targari, have undergone considerable innovation in the reflection of nasals, absent in Ngayarda (see footnote 44).

Morphophonemics. Ngayarda languages preserve a type of alternation which can be reconstructed for Proto-Pama-Nyungan, but which does not occur in Marngu or Northern Wati (Wanman, Yulbaridja).[12] It is exemplified in Jindjibandi maRa-ŋku *with, by the hand* : waṭira-lu *by the woman* : ñinta-lu *by you,* in which the selection of alternants of the *agent-instrumental* suffix depends on the length of the stem, if it is a noun of the substantive subclass ending in a vowel (-ŋku with 2-mora stems; -lu with longer stems). The -lu alternant is also selected by the pronominal subclass of noun stems, irrespective of their mora count—witness ñinta *you sg,* above.[13]

In Linngithig, a Northern Pama language, Hale lists an *ergative-instrumental* suffix, of which two alternants are -l (selected by a handful of nouns, including ma *person* and ani *what*) and -ŋg (selected by other nouns having a final vowel—e.g., aða-ŋg *the crow, ergative;* animcu-ŋg *the snake, ergative*).[14]

An instance of alternation in Ngayarda which is not attested in other Australian languages is observed in the *locative* suffix when in sequence with 2-mora substantive nouns: in Ngaluma, the alternant -ka occurs if the noun contains a cluster consisting of a nasal and a stop: maṇṭa-ka *on the stone* (Jindjibandi maṇṭa-ˑ); in other instances of the above, -ŋka occurs: Ngaluma, Jin ŋura-ŋka *in the camp.*

Morphosyntax. Languages of the Ngayarda subgroup differ from

other Nyungic languages in several important structural respects.

1. A productive mechanism by which active verbs are transformed to passive is attested for the better-known languages of the subgroup (viz., Ngaluma and Jindjibandi).

2. The Proto-Pama-Nyungan (PPN) noun suffix *-lu ~ -ŋku, reflected in most daughter languages of the Family as a marker of the subject of a transitive *active* verb, is not attested in this usage in the Ngayarda daughter languages, with the exception of Bailko and Nyamal.

3. In the Ngayarda languages the PPN noun suffix *-ku ~ -yi is reflected with a shift in referent from the specialized meaning *indirect object* to the broader meaning *object* (noncommittally direct/indirect).

As far as our data permit us to say, the Ngayarda subgroup stands structurally alone among other Nyungic subgroups on each of the above three counts. But Kenneth Hale points out that Lardil, a language of the Tangkic Group of Pama-Nyungan which is spoken on Mornington Island in the Gulf of Carpentaria, shows agreement with Ngayarda on each count. This is the more remarkable in view of the fact that only 6 per cent of the Lardil basic vocabulary shows cognation with forms having the same referent in any Ngayarda language.

4. The PPN verb suffix *-lku ≈ has undergone a unique shift in referent in the Ngayarda languages from *future* (or *optative*) to *present.*

Exemplification of the above four points now follows. Jindjibandi: waḷu paˑ-ṇa wañca-yi# *snake bite-past dog-object,* i.e., *the snake bit the dog.* The passive transformation of this is wañca paˑ-ŋuli-ṇa waḷu-ŋku# *dog bite-passive-past snake-agent.* Ngaluma: yukuru kapuṇ-ku paca-ṇa# *dog skin-object eat-past,* with passive transformation kapuṇ paca-nŋali-ṇa yukuru-la# *skin eat-passive-past dog-agent/locative;* yukuru kapuṇ-ku paca-lku# *dog skin-object eat-present.* The last sentence is also acceptable as Kariera, but in this dialect the marking of a verb for *future* or *imperative* precludes the marking of the syntactically governed noun object for *object:* yukuru kapuṇ paca-Ru# *dog skin eat-future;* paca-nma mantu# *eat-imperative meat!*

Other conspicuous structural traits of the Ngayarda languages are shared with one or another outside subgroup.

5. Apart from Bailko, Ngayarda (and Kanyara) languages mark the category of *person* by the use of independent pronouns (constituting a subclass of nouns) only. In Kardu and Northern Wati,

person is marked by disjunctively suffixed person markers. In Marngu, the cognate suffixes occur in conjunctive sequence with verbs.[15]

6. In Ngayarda, Kanyara and Kardu, negativization of a verb is effected by the simple preposing of a negative particle, e.g., Jindjibandi ŋayi paṇi-ṉa# *I stay-past* : ŋayi miṭa paṇi-ṉa# *I not stay-past*. In Northern Wati and Marngu there is concomitant marking of a past-tense verb form for the *irrealis* mood, e.g., Nyangumarda (ŋacu) wani-ñi-ṇi# (*I*) *stay-nonfuture-I* : (ŋacu) munu wani-(Ø)-mi-ṇi# (*I*) *not stay-nonfuture-irrealis-I*.

7. Ngayarda, Northern Wati and Marngu person-marking mechanisms involve an obligatory contrast between *inclusive* and *exclusive* first person dual and plural forms. This contrast does not occur in Kanyara and Kardu.

8. Ngayarda and Kanyara languages entirely lack single-mora verb stems, unlike members of the Wati and Marngu subgroups (see footnotes 27 and 28 as well as the discussion of Ngayarda verb stem augmentation, to which they refer).

Sources of the Data and Other Acknowledgments. The collection of the data was begun at Wallal in 1951, when I elicited a short Nyamal vocabulary from Johnny (native name /waḷpa/), then about 30 years of age. During my visit to Port Hedland in 1954, the Nyamal data were added to, and word lists and sentences transcribed in Ngarla, Kariera, Ngaluma and Jindjibandi.[16] It was also possible to tape-record two conversational textlets which bear striking witness to the nature of the Australian culture of multilingualism:[17] in both textlets, Yibi, a Ngaluma woman, speaks her own language, and is answered unhesitatingly—in the one instance by Mick, her husband, in Nyangumarda; and in the other by Snowball (native name /ñirpaŋu/) in Jindjibandi.[18]

In 1957, as the beginning of an effort to fill in several of the "ghastly blanks" in the knowledge of aboriginal languages of Western Australia, I sent a questionnaire with an included 108-item lexical test list to about 100 likely addresses—mostly those of station owners or managers living in parts of the State which were then entirely unknown linguistically. Among the twenty which were filled in and returned were several which included Ngayarda data: those supplied by Mrs. Paterson (for Noala and Jindjibandi), Sharpe (for Mardudunera), Oakes (for Nyamal), Smith (for Ngarla), and an anonymous correspondent from Mundabullangana Station (for Kariera). These word lists, by bringing attention, for example, to languages with hitherto unsuspected types of phonological inno-

vation, were a valuable aid in mapping out the venue for further research.

In 1958, through the generous assistance of the University of Western Australia and of Professor Ronald M. Berndt in particular, my wife and I were enabled to carry out research in Bailko, Pandjima, Jindjibandi and Kurama (as well as in non-Ngayarda languages spoken farther south), and to re-elicit the test list in Noala and Mardudunera. In the following year, requests to four scholars for versions of the test list in specific languages met a generous response. Norman B. Tindale provided Talandji, T. G. H. Strehlow sent us Western Aranda and Kukatja, and Wilfrid H. Douglas filled in the list in the Warburton Ranges dialect of Wati; Mrs. Sandra Holmes obligingly tape-recorded further lexical data and illustrative sentences in Nyamal.

Professor W. R. Geddes was instrumental, in 1959, in securing a grant which enabled me to accompany Kenneth Hale on a joint field trip in the early part of 1960 to the Roebourne area, where he did intensive eliciting in Ngaluma, but also obtained valuable materials in Jindjibandi and Kurama, as well as some forms in Kariera and Ngarla. My own main effort was devoted to Nyangumarda, but I was also able to add further to the Kariera and Bailko corpora. My gratitude is due to Kenneth Hale on at least two counts: first, for the further insights into Australian languages which I gained from him during this trip (and since), and second, for his generosity in sharing his unpublished data with me. This paper is, in fact, greatly enriched as a result of his help and criticism.[19]

In 1964 Professor Alan Bryan, who acquired the library of the late Dr. D. S. Davidson, made available to me Dr. Davidson's vocabulary file for Western Australian languages recorded over 30 years ago, and including Ngaluma, Ngarla, Nyamal, Pandjima, Jindjibandi and Kurama. In the preparation of this paper, recourse has been had to the Davidson vocabularies, as well as to Moore (1884), for comparisons with Wadjuk; to Curr (1886), for Ngaluma, Ngarla and Widugari word lists; to Yabaroo (1899), Withnell (1901) and Clements (1903), for further Ngaluma vocabulary; to Radcliffe-Brown (1913), chiefly for kinship terms; and to Prichard (1929), for a glossary and song texts.

Validity of the Data. Many a modern linguist or dialectologist who works in such areas as aboriginal North America or Australia is faced with the following paradox: as models of linguistic description become increasingly sophisticated, and as the research tools of

the field linguist are correspondingly sharpened, so do dialect distinctions become levelled, and linguistic structures become increasingly blurred as the number of active speakers of formerly viable languages plunges toward zero.

In the case of the present study, this paradox is all too evident: of the ten Ngayarda communalects included in the comparative treatment, only Jindjibandi can still be described as "viable." For languages at the other end of the spectrum of vitality—Ngarla, for instance, which is surely destined to become extinct within a few more years—the comparison of the recently elicited data (as my 1954 word list for this language) with even small samples of vocabulary transcribed poorly, but transcribed in the nineteenth century (Curr, 1886), can be extremely valuable to the linguist in providing insight into the possible linguistic effects of the disruption of aboriginal local organization, and the decimation of whole tribes by smallpox or measles, subsequent to the imposition of Anglo-Australian culture. Specific instances are enumerated below.

1. The idiolect of Hale's principal Ngaluma informant, Bob Churnside, has remained virtually unaffected by intense contact over the years between the relatively few speakers of Ngaluma and the many speakers of Jindjibandi.

2. The idiolect of my Ngarla informant of 1954 had been profoundly modified by prolonged submergence in a Nyangumarda linguistic milieu.[20] Ironically enough, a perfect spectrogram of Ngarla [ŋɑ́ʲñdʸɑ] *ground,* as articulated in 1954, would give no hint whatever as to a possible contrast between lamino-dental /t̪ n̪ l̪/ and lamino-alveolar /c ñ l/; whereas the groping attempts of a linguistically untrained layman of the 1880's (in this case Charles Harper, Curr's correspondent from de Grey Station) to transcribe Ngarla lexemes provide us with convincing evidence for the existence of this very contrast in the language prior to its "nyangumardization."[21] Relevant examples of Mr. Harper's transcriptions are cited below, followed by my attempt at an inference as to their phonetic value.

⟨nguntha⟩	[ŋɑ́n̪d̪ɑ]	1. *ground* 2. *excrement*
⟨katha⟩	[kɑ́d̪ɑ]	*older brother*

It is highly plausible that the word-medial phones in the above were, in fact, lamino-dental; now note the following:

⟨badgan⟩	[pɑ́dʸɑn],	⟨bajilgo⟩	[pɑ́dʸilgu]	*eat*
⟨moojun⟩	[mú̜dʸɑn]			*drink*

in which the occurrence of intervocalic lamino-alveolars is indicated. The same contrast is not as directly attested word-initially. Note, however, Harper's two transcriptions of the lexeme for *snake:*

⟨thuro⟩ and ⟨dthooroo⟩ [ʈúřu].[22]

3. Phonemic merger of the two laminal series has also occurred in recent decades in the idiolects of some Kariera and Nyamal speakers who have been in continual contact with Nyangumarda.[23]

The above-mentioned parallel and recent developments in Ngarla, Kariera and Nyamal are manifested in several instances of apparent inconsistency in the reflection of PN laminals in these daughter languages (see 3. below).

4. The data for Pandjima, Jindjibandi and Kurama (as also for Ngaluma) are internally consistent to a degree which indicates relative phonological stability, at least in recent decades.

The apparently inconsistent reflection of PN *r in the idiolect of one of the Bailko informants as /r/ in some morphemes, /R/ in others, is quite possibly the result of his long association with speakers of English.[24] In Wirangu, a Nyungic language of western South Australia, I have recorded a parallel development.

The relative inconsistency in the Noala and Mardudunera data, manifested, for example, in apparently random instances of lenition of PN intervocalic non-apical stops, is a function of the closeness of these languages to extinction, as well as of the prolonged exposure of the few remaining speakers to Jindjibandi.[25]

Conventions Adopted. Hyphenation serves to identify (a) a synchronically justifiable morpheme boundary in a daughter language, and (b) a morpheme boundary reconstructed as productive in PN. Item 161 in the attestation exemplifies both possibilities. Verb stems, which were bound forms in PN and are reflected in the daughter languages likewise, are identified by appropriate hyphenation as occurring in obligatory sequence with tense-mood-aspect suffixes. Alternants of *past, present, future* and *imperative* morphemes are reconstructible in PN. The morphophonemic subclasses of verbs which are thus reconstructible in the proto-language are identified according to the scheme (V = verb stem) on page 81.

Of these subclasses, the first three remain productive in several daughter languages, including Ngaluma and Jindjibandi.[26] The last two are reflected as an augmentation of the stem. In Bailko and Pandjima, this increment is a reflex of an alternant of the PN *past* morpheme. In the other languages, apart from Ngarla and Nyamal, the increment reflects the PN *present* marker.[27] The boundary be-

SYMBOLIZATION OF SUBCLASS	PAST	PRESENT	FUTURE	IMPERATIVE	EXAMPLE
V-(L)-	*-ṇa	*-lku	*-Ru	*-nma	115
V-(R)-	*-ṇa	*-rku	*-ru	*-rma	647
V-	*-ṇa	*-ku	*-yi	*-ma	114
V-(N)-	*-ṇa	*-nku	—	—	702
V-(NG)-	*-ña	*-ŋku	—	—	714

tween a former single-mora stem and the increment is represented in the attestation by a period.[28]

Certain nouns are also attested in various Ngayarda daughter languages in suffixially augmented shape. The use of the symbol *period* (or *dot*) in the attestation is here intended to point up three subcategories of frozen morpheme boundaries which are detailed below.

1. The final -CV of numerous 3-mora noun stems (as well as the -CVCV of a few 4-mora stems) which are attested in modern Ngayarda languages cannot be reconstructed in PN. An example is item 364, where /mayaŋu/ is recorded for Kariera and /ma·ṭa/ for Jindjibandi, both with the referent *right hand.* The reconstruction for PN is **maya.[29] The non-reconstructible /-ŋu/ of the Kariera form and the /-ṭa/ of the Jindjibandi are identified as such by the convention of preposing a period: maya.ŋu, ma·.ṭa respectively.

2. Some 3-mora forms are reconstructible in PN, and all but the final -CV can be further reconstructed in Proto-Nyungic. See, for example, item 362, where the reflex of **markaRa in Jindjibandi is the expectable /mara·/; however, in Nyangumarda /markaṭu ~ marka/ is attested with the same included referent, *younger brother.* It seems reasonable, therefore, to focus attention on the history of the *-Ra of no. 362, as well as of its reflex in the daughter languages, by the use of a period both in the reconstruction and in the reflected forms.[30] This minor departure from the principal of reconstructing only back to PN is motivated by the necessity, in further reconstructive work in Australian linguistics, for recognizing the histories of final /-CV/ of most 3-mora stems as being separate from those of the preceding two morae.

3. In a few instances (for example, nos. 604, 701 and 858), attestation of postulated frozen morpheme boundaries is so far entirely lacking. In the case of no. 858, Ngaluma /wakaRi/ *fish* is cognate with Andakerebina (Arandic Group) /kiR/ *meat, animal.* In no Australian language is *waka, for instance, yet attested with a

comparable referent. Yet there are at least four good reasons for writing the Ngaluma form as waka.Ri in a comparative treatment of Australian languages. (a) In preliminary comparisons of representative Pama-Nyungan languages, I find 3-mora, or longer, stems to be very rarely reconstructible. (b) In the few cases where reconstruction of 3-mora stems is possible, there are stringent restrictions on the phonological shape of the final *CV; moreover, such shapes as *-ra and *-Ri recur with disproportionately high frequency.[31] (c) The same shapes, e.g., /-ra/ and /-Ri/, are elsewhere attested non-reconstructibly in the daughter languages. Note, for example, item 865. (d) It is highly desirable that in view of the impetus given to Australian linguistic research recently by the establishment of the Australian Institute of Aboriginal Studies, long-standing comparative problems such as that which is under consideration here should be brought into sharp focus.[32]

A further use of *dot* is to mark the boundaries of cranberry morphs. For example, the PN verb stem formative *-ma-(L)- is attested in sequence with certain morphs which do not otherwise occur in the data. Whereas a derivational mechanism is apparent in PN (unstarred) ṉuṇṭiₗ-ma-(L)-, item 834, reflected with the referent *to kill* (compare *ṉuṇṭiₗ, item 383, *dead*), the only clues to the identity of *-ma- in PN *paḻama-(L)-, item 163, *to rub* are (a) the fact that this stem constitutes three, not two, morae, (b) the membership of the stem in morphophonemic subclass L, and (c) the possible cognation of the first two morae to Proto-Wati *paḻa *good.* Hence I use the tentative notation *paḻa.ma- for item 163. Note also item 112, in which the two dots in *kaḻi.ñca.ri- *to return* are intended to point up the suggested ultimate etymology *kaḻi *boomerang* + *-ñca *nominalizing suffix* + *-ri- *verbalizing (inceptive) suffix.*

The remaining uses of *dot* are (a) to mark vowel length (when raised above the line) as in ṯa·-, the Jindjibandi reflex in item 193; and (b) to denote apico-domal articulation, when appearing under the symbols t, n, l, r.

In no. 123, *kuRu-kuRu, the reduplication is represented by hyphenation as having been productive in PN, though in terms of the respective corpora, the reflexes are frozen in each daughter language. ***kuRu (item 612) is also reconstructible in PN with a related referent, but in no daughter language are reflexes of *both* 123 and 612 attested.

The symbolization -(S)- refers to the postulation of an unspecified verb stem formative in PN in cases where only the element which

precedes it can be reconstructed. For examples, see nos. 142 and 427.

The convention (cf. . . .) refers to relevant forms in non-Ngayarda languages, or to forms in the Ngayarda daughter languages which are only partially accounted for. An example is item 339, in which the notation (cf. Ka ŋumpa) refers (a) to the apparent relevance of Kariera /ŋumpa/ *face* to the other evidence—e.g., Jindjibandi /kumpa/ *face,* but also (b) brings attention to the so far unaccountable ŋ- in the Kariera form.

The names of the Ngayarda daughter languages are abbreviated as follows: Nu (Noala), Ma (Mardudunera), Nm (Ngaluma), Ka (Kariera), Ng (Ngarla), Nl (Nyamal), Pl (Bailko), Pn (Pandjima), Yi (Jindjibandi) and Ku (Kurama).

The following additional abbreviations appear in sections 2-4: NN (Nyulnyul), Ty (Tjiwarliñ), Ki (Karadjeri), Ny (Nyangumarda), Wn (Wanman), Yu (Yulbaridja), WR (Warburton Ranges), An (Antakirinya), Ta (Talandji), Pu (Buduna), Tr (Targari), Wr (Warienga), Py (Bayungu), NY (Northern Inggarda), Na (Nanda), Wi (Wadjeri), Wk (Wadjuk) and EM (East Mirniñ).

1. PROTO-NGAYARDA SOUND SYSTEM. The Proto-Ngayarda consonants and vowels are charted below.[33]

	Bilabial	Lamino-dental	Apico-alveolar	Apico-domal	Lamino-alveolar	Dorso-velar
Stops	*p	*t̪	*t	*ṭ	*c	*k
Nasals	*m	*n̪	*n	*ṇ	*ñ	*ŋ
Laterals		*l̪	*l	*ḷ	*l̃	
Flap			*r			
Glides	*w			*R	*y	

	Front	Central	Back
High	*i		*u
Low		*a	

There is also a single rarely attested long vowel, *a·.[34]

In the chart, consonants which can be reconstructed in word-initial position are enclosed in solid lines. For examples of PN consonants occurring in the environment #—*a. . .—i.e., of */p ṯ c k m ṉ ñ ŋ w y/—see nos. 400, 426, 302, 313; 357, 381, 385, 393; 440, 463 respectively.[35]

Consonants which occurred word-finally in PN appear within dashed lines in the chart. Examples of final */n ṉ ñ l ḷ l̈ r/ are provided by nos. 143, 324, 711; 341, 463, 117; 402.

All consonants occurred intervocalically. Each of the twenty PN consonant phonemes is exemplified in the environment #*Ca—a(. . .) below. Stops: 448, 451, 120, 452, 313, 314. Nasals: 643, 837, 625, 357, 209, 238. Laterals: 440, 399, 200, 354. Flap: 381. Glides: 836, 703, 454.

Consonant clusters in reconstructions of PN occurred medially only and consisted of a resonant (nasal, lateral or flap) plus a stop. The most common of these were sequences of homorganic nasal and stop, viz., */mp ṉṯ nt ṇṭ ñc ŋk/, exemplified in nos. 609, 647, 705, 636, 210 and 649. There is also one instance of homorganic lateral plus stop, *l̈c (see no. 139). Other clusters consisted of heterorganic sequences of resonant and stop, viz., (1) */np nc nk ṉp ṇk ñk/, for which see nos. 175, 308, 606, 312, 628 and 130; (2) */lp lc lk ḷp ḷk/, represented in nos. 180, 351, 326, 337 and 316; (3) */rp rc rk/, as in nos. 325, 611 and 362.

A few additional clusters would surely appear if the corpus were enlarged.[36] Most of these, it can be predicted, would comprise several further possible combinations of resonant and stop, namely */ñp ṇc ḷp l̈k/. The remainder (if any) could be expected to include one of */n ṉ ñ l ḷ l̈ r/ as first member and one of */m ŋ/ as second.[37]

No vowels occurred initially in PN. All three short vowels appeared in medial and final position. The long vowel *a· was restricted to the first syllable of stems. Most reconstructible stems were disyllabic.

2. PHONOLOGICAL DEVELOPMENTS IN DAUGHTER LANGUAGES.

2.0. Jindjibandi-Kurama (Yi-Ku), located in the center of the Ngayarda speech area, shows conservative reflection of PN initial consonants, but conspicuous innovation in the descent of certain medials and finals. Most notable is an interchange in *manners* of articulation whereby, under certain conditions, laterals are reflected as stops, non-apical stops as glides or zero, and the glides *R and

*y as zero. Concomitantly, a series generating component of vowel length has emerged in this language.

Languages surrounding Yi-Ku on at least three sides show relative phonological conservatism. An appreciation of the nature of Ngayarda linguistic geography would be gained by an observer moving east-southeast from Roebourne (/yiramakaṭu/) through the phonologically conservative Ngaluma speech area, into the innovative Jindjibandi area, and finally back into a zone of conservatism comprising the territory of the Pandjima and Bailko; meanwhile, a steady decline in the percentage of cognates shared with Ngaluma would have been noted: Nm-Yi share 67 per cent, Nm-Pn 51 per cent and Nm-Pl 46 per cent.

2.1. *Reflection of PN Consonants.* Innovation in the *position* of articulation in the Ngayarda daughter languages is confined to the backing of lamino-dentals, which are reflected as lamino-alveolars in the idiolects of some present-day speakers of northeastern Ngayarda communalects (Kariera, Ngarla and Nyamal), which have been profoundly influenced by contact with Nyangumarda in recent decades.[38] See, for example, nos. 140, 149, 196, 197 and 229. The reflection of a PN lamino-dental at one or the other laminal positions of articulation in the attestation for Ng and Nl depends mainly on whether a given form is recorded only in Curr (1886), or only in my transcriptions of the 1950's, or both. In the latter event, I give precedence to the evidence provided by Curr's correspondents; note no. 158, in which Curr's transcription is phonemicized as /ŋaṉṯa/ in both Ng and Nl. In 1954 I recorded /ŋañca/ in Ng with the same referent, *ground.*

In Pl, which borders on dialects of Wati having only one series of laminals, there is free variation in some morphemes between lamino-dental and lamino-alveolar articulation. See nos. 196 and 395. Note also nos. 380 and 711, in which initial lamino-dentals *t̪ and *n̪ are reflected as lamino-alveolar /c/ and /ñ/ in Pl. In a few further cases, which are apparently the result of dialect mixture, the reflection of PN laminals gives the impression of a rather tangled skein. There are, however, some instances in which backing has apparently occurred in Nm, but not, for example, in Yi. See nos. 192, 613, 622, 629 and 646. Examples for other languages are nos. 313, 344 and 412-413. No. 154 involves free variation between l̪ and l in Nm. Note also the reflection of *t̪ as y, not y̪, in Yi in no. 108.[39]

2.1.1. Stops. PN initial stops are reflected in the daughter languages without change in *manner* of articulation.[40]

In most intervocalic environments in Yi-Ku, PN non-apical stops are lenited or lost. In 2-mora bound stems and in longer free stems, the first intervocalic non-apical stop is usually only lost in Yi and Ku if flanked by identical vowels (which coalesce into a long vowel). Examples of the loss of *p under these conditions are nos. 192 and 209; of *ṯ, nos. 451 (reflected in Yi in free variation, however, between zero and /y̰/) and 857; of *c, nos. 466 (in which *i precedes and *a follows) and 634; and of *k, nos. 162, 437 and 472. Note also 310 and 382, in which intervocalic *k is lost in Ku, though the stems are only of two morae and are free. Apart from the lenition of *c in no. 634 to /y/ in Ma, */p ṯ c k/ are reflected without change in the other daughter languages in the above examples.

One expectable result of innovation of the above type is the emergence in Yi of homophonous pairs of stems. Both no. 162, *paka-, and no. 634, ***paca-(L)-, descend in Yi as /pa··/, though membership in different morphophonemic subclasses is maintained. The above is also the expected reflex of no. 171, *paṯa-(R)-, in this language; but in fact /pay̰a-/ is attested.

Retention of intervocalic */p ṯ c k/—and also of *R (see 2.1.4.) —is attested in Yi where the original initial syllable contained (a) a long vowel followed immediately by the stop in question, or (b) a glide identical with that to which the intervocalic stop (or *R) would otherwise lenite in this language;[41] or where (c) the previous syllable in PN contained a non-apical stop following a vowel. Examples of the retention of *p in Yi under condition (b) are nos. 448 and 449, with which compare the retention of *R in no. 872. The retention of *ṯ under condition (c) is exemplified in no. 192; and of *k under condition (a) in no. 439.

In the remaining possible categories of intervocalic environment, */p k/ merge with *w in Yi-Ku, *c merges with *y, and *ṯ is reflected as a dental glide, /y̰/. Examples are: 159, 184, 324, 406 (in which *p > w); 331, 428, 639, 704 (*k > w); 110, 145, 161, 198 (*c > y); and 171, 188, 375-376, 613 (*ṯ > y̰).

As noted in the introduction, the reflection of intervocalic non-apical stops in Nu and Ma is apparently irregular: lenition is indicated, for example, in 324, 629 and 704, but not in 602, 613 (in Nu), or 638. A plausible hypothesis is that these languages were still phonologically conservative a century ago, but have been greatly influenced by Yi in the subsequent upheaval of aboriginal

local organization—perhaps to the extent where rather extensive borrowing from the latter has taken place. See footnote 25.

Intervocalically, the PN apical stops */t ṭ/ descend in the daughter languages with their phonemic alignment unchanged, except that in the solitary example (no. 349) of the reflection of *t in Ku in this environment, phonemic merger with *r is indicated; see also nos. 109, 196 and 348. *ṭ is reflected only with phonetic change in Nm, Yi and Ku, in which [ṛ], a retroflexed flap, replaces *[ḍ] intervocalically.[42] Examples are: 132-133, 172-173 and 189.

In all postconsonantal environments except after *r, PN stops descend without change in manner of articulation in all daughter languages, while preceding laterals are reflected with fortition or lenition, or merge with zero (see 2.1.3.). Examples of the reflection of stops following a homorganic nasal, additional to those cited in 1., are nos. 191, 307; 167, 318; 228, 303; 207, 359; 343, 652; 360, 392. Examples of the reflection of stops following a heterorganic nasal are nos. 206, 222 (*np); 355, 380 (*nk); 129, 446 (*n̪p); and 361, 445 (*n̪k).

The descent of stops following laterals is attested in nos. 165, 235 (*lc); 199, 624 (*lk); 114-115, 418 (*l̪p); and 128, 203 (*l̪k). There is only one example each of *lc and *lp—see 1.

In Yi-Ku, *p and *c which followed *r are lenited to /w y/ respectively. See nos. 414 and 426 as examples of the descent of *rp. In Ma, *rp is reflected as /rw/ in the two available examples, nos. 214 and 223. The single reconstruction involving *rc is no. 611.

The cluster *rk descends with loss of the *k in Yi-Ku. Examples are nos. 168 and 434.[43] In other daughter languages, the stop in */rp rc rk/ descends unchanged.

2.1.2. Nasals. In all environments, PN nasals are almost invariably reflected in the modern Ngayarda languages without change in manner of articulation.[44]

Examples of the descent of initial */m n̪ ñ ŋ/ may be noted by reference to the alphabetic key (see 3.0.). In two isolated instances, nos. 149 (Ma) and 367 (Nl), there is apparent fortition of an initial nasal to the homorganic stop. As noted in footnote 40, borrowing is suspected here. See also no. 339.

The descent of PN intervocalic nasals is exemplified in 1. Additional examples which are pertinent to the reflection of */m n̪ n ṇ ñ ŋ/ in this environment are nos. 121, 156; 140, 395; 205, 603; 141, 149; 321, 457; 236, 367.

The reflection of preconsonantal nasals is exemplified in 2.1.1. in the discussion of stops following nasals.

Final *ṉ is invariably reflected without change in the several available examples, including nos. 181 and 237. There is only one instance of final *ñ, no. 711, in which conservatism is evidenced. Of the two reconstructions of final *n, nos. 420 and 802, the former is reflected in Yi with free variation between /-n/ and /-t/, and in Ku with fortition to /-t/; the latter is not reflected in the data for either dialect.

2.1.3. Laterals. The PN laterals */l̡ l l̩ l̃/ are reflected with extensive innovation in Yi-Ku, in which the laminals merge unconditionally with the homorganic stops (see footnote 46). Intervocalically, the apical laterals descend unchanged in this language, but syllable-finally various reflexes appear: *l merges with *r, *t or zero in Yi and Ku, depending on the nature of the sub-environment. *l̩ merges with *R or *ṭ in Yi, and with *ṭ only in Ku.

The conservative reflection of intervocalic *l in Yi-Ku is attested in nos. 226 and 387, and of *l̩ in nos. 373 and 388.[45] Examples of the fortition of intervocalic *l̡ in the same language are nos. 154 and 619; and of *l̃, nos. 146 and 443.

The reflection of preconsonantal laterals is exemplified in 2.1.1., in which the focus was on the descent of the stops following them. In the four examples of the descent of a lateral preceding *c, *l̃ is apparently retained in Nl but lost in Pn and Yi.[46] In this environment *l is retained in Nm and undergoes fortition to /t/ in Yi and Ku (across the boundary between what the available data indicate is a cranberry morph, and the verb stem formative /-cari-/; see nos. 235 and 351). In no. 165, in which the cluster *lc is intramorphemic, Nl and Pn show loss of *l, while in Yi and Ku there is fortition of *l to /t/. Evidence for the other languages is lacking.

Before *p, *l undergoes fortition to /t/ (see nos. 180 and 805), and before *k, to /r/ (if a morpheme boundary does not immediately precede the *l—see nos. 199 and 624), in Yi and Ku; *lp and *lk are reflected without change in the other daughter languages, as also in Yi in no. 326, a noun compound. Following a productive morpheme boundary, the cluster *lk (in *-lku, the *present* tense alternant selected by V-(L)-), descends with loss of the *l in Yi and Ku, but with retention elsewhere. For example, PN *ʈaya-lku > Nm ʈaya-lku, but Yi, Ku ʈa˙-ku *send-pres.* (see no. 193); PN *paca-lku > NM paca-lku *eat-pres.*, Yi, Ku pa˙-ku *bite-pres.* (no. 634). Note also Yi ŋani-ma-ku (< *ŋani-ma-lku) ñinta# *what are you doing?* (ŋani-ma- *to do what?*—compare with no. 627). Note the different morphophonemics of the verb formative *-ma-(L)- and

of the independent stem ****ma-(N)-, no. 702, maintained in a bizarre fashion in most of the daughter languages (see o.).

In the clusters *l̥p and *l̥k, the lateral is lenited to /R/ in Yi, and becomes /ṭ/, by fortition, in Ku, but is reflected without change elsewhere. Examples of the descent of *l̥p are nos. 114-115, 411 and 418, and of *l̥k, nos. 128, 203 and 417. But note nos. 335-336.

Of the seven PN stem-final consonants, of which all except *n̥ are quite rare, the laterals */l l̥ l̻/ appear in this environment in a total of seven stems: final *l and *l̻ are each reconstructed twice, and *l̥ three times. There is regular fortition of all three final laterals to /t ṭ c/ respectively in Yi (in Ku, the same development is attested for *l and *l̥ only). In other Ngayarda languages for which data were available, final *l and *l̥ are reflected without change. See nos. 341 and 395 (for *l) and 434, 452 and 463 (for *l̥). In no. 117, the solitary starred reconstruction of *-l̻, conservatism is in evidence in Pn, and the expectable fortition occurs in Yi; in Nm, the lateral descends as a nasal. But note no. 815, in which an unstarred PN -l̻ is tentatively represented as descending without change in Nm.

2.1.4. Flap. The PN flap, *r, phonetically reflected in the conservative daughter languages as [ɾ̌] in most environments, descends with conspicuous, though subphonemic, fortition to [r̃], an apico-alveolar trill, in Yi-Ku. In most intervocalic environments *r descends phonemically unchanged in the modern Ngayarda languages. Scattered instances of the apparent lenition of *r to an apico-domal glide /R/ are possibly the result of contamination from English (compare the weakening of glottalization, for instance, in some Wakashan and Salishan languages in recent decades). Note the reflection of no. 109 in Ng and of no. 219 in Pl (the Yi evidence in the latter indicates, however, an alternative possibility: that the Nm form is a mistranscription of /waRamuRuŋka/). Note also the apparently varying reflection of *r as /R/, /r ~ R/, /y/ or /R ~ y/ in Pl and/or Pn in nos. 112, 393, 449, 451 and 618. Here a hypothesis of a continuum of lenition, whereby *r > *R > y, seems highly plausible. Phonemically conservative reflection of intervocalic *r is far more commonly attested, however, in the modern Ngayarda languages. See, for example, nos. 439, 450 and 455.

The reflection of preconsonantal *r is incidentally exemplified in 2.1.1. In these environments, *r normally descends with its phonemic status unchanged in all daughter languages, while the

following stop is lenited or lost in Yi-Ku. In the sole reconstruction containing the cluster *rc, no. 611, the *r is lost in Nu, Ka and Pl.

Final *r is reflected without phonemic change in the daughter languages in nos. 129, 355 and 402, but as /t/ in no. 211 in Pn, and as /r ~ Ø/ in no. 180 in Yi. In the latter example, the allomorph lacking /-r/ may reflect a dissimilative reaction against the development *pulpur > *putput (though the reflection of *-r as /-t/ is not attested in Yi). Since final consonants are so rarely reconstructible in PN, conclusions which are reached must perforce be tentative. See, however, footnote 41.

2.1.5. Glides. In initial position, the glides *w and *y are reflected without change.[47]

Intervocalically, *w descends unchanged in manner. See nos. 201, 350 and 423. Intervocalic *y is lost in Yi and Ku, but retained elsewhere, following an *a in the first syllable of a free stem of three morae, or a bound stem of two. See nos. 135, 193 and 394. Universal retention of *y in the remaining possible intervocalic subenvironments is exemplified in nos. 331, 387 and 709.

The apico-domal glide *R, which occurred only intervocalically in PN, is lenited to /y/ in Yi-Ku when preceding *i in the third syllable, or when flanked by two occurrences of *i in a 2-mora stem, unless *y be the initial. See nos. 157, 206 and 450 as examples of the former, and 368 of the latter. But note no. 872, with which comparison can be made to nos. 448-449, discussed in 2.1.1. In no. 332, where *i precedes the *R, lenition of *R to /y/ occurs in all daughter languages other than Nu. In no. 333, a byform of the same morpheme is reconstructed as a bound (verb) stem with *y, not *R.[48]

In Yi-Ku, loss of *R occurs in the final syllable of 3-mora stems (provided that *i is not contiguous) and of 4-mora sequences comprised of a stem and suffix, but not in 4-mora reduplications. Examples are nos. 170, 229, 362; 467. But note no. 123.[49]

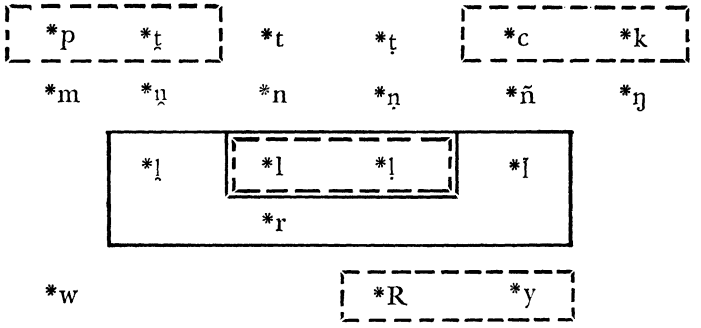
Retention of *R is attested in Yi-Ku in the remaining possible environments, viz., (a) reduplications (see 123, above); (b) in 2-mora stems other than *CiCi and *CaCa (see nos. 327, 363, 637; but note no. 368, in which *R > /y/ in Yi, and no. 644, in which *R > /y/ in Nm, /R ~ y/ in Pl and /R ~ Ø/ in Yi-Ku, with which compare no. 703); (c) in the second syllable of 3-mora stems (see no. 107); (d) in certain not fully explainable cases, viz., nos. 304 (with which contrast no. 332) and 336.

Below is appended a table in which the evolution of the PN consonant system into the modern Yi system is charted. Where multiple reflexes are listed for a given PN consonant, recourse should be had to the appropriate subsection of 2.1. in which the discussion of the conditioning subenvironment appears.

THE DISTRIBUTION AND REFLECTION OF PN CONSONANTS IN JINDJIBANDI

RECONSTRUCTED CONSONANT	ENVIRONMENT							
		INTERVOCALIC, REFLECTED IN				POST-CONSONANTAL	PRE-CONSONANTAL	FINAL
	INITIAL	RETENTION	LENITION	LOSS	FORTITION			
*p	p	p	w	Ø		p, w		
*ṯ	ṯ	ṯ	y, y	Ø		ṯ		
*t		t				t		
*ṭ		ṭ				ṭ		
*c	c	c	y	Ø		c, y		
*k	k	k	w	Ø		k, w, Ø		
*m	m	m					m	
*ṉ	ṉ	ṉ					ṉ	
*n		n					n	n, n ~ t
*ṇ		ṇ					ṇ	ṇ
*ñ	ñ	ñ					ñ	
*ŋ	ŋ	ŋ					ŋ	
*ḻ					ṯ			
*l		l					l, r, t, Ø	t
*ḷ		ḷ					R	ṭ
*ḽ					c		Ø	c
*r					r[r̃]		r	r, r ~ Ø
*w	w	w						
*R		R	y	Ø				
*y	y	y		Ø				

In the chart of PN consonants below, those subject to fortition in Yi are enclosed in solid lines; those which can be lenited or lost appear within dashed lines.



The Jindjibandi consonant inventory is charted hereunder. Consonants which occur initially and finally are identified according to the conventions followed in 1.[50]

	Bilabial	Lamino-dental	Apico-alveolar	Apico-domal	Lamino-alveolar	Dorso-velar
Stops	p	ṯ	t	ṭ	c	k
Nasals	m	ṉ	n	ṇ	ñ	ŋ
Laterals			l	l̤		
Trill			r			
Glides	w	y		R	y	

2.2. *Reflection of PN Vowels.* In the overwhelming majority of the reconstructions, PN vowels are reflected without change in those daughter languages in which loss of intervocalic */p ṯ c k R y/ has not occurred. In Yi-Ku, in the process of the loss of these consonants (in subenvironments specified in 2.1.1. and 2.1.5.), the original flanking short vowels have coalesced into long vowels in stems, though not in certain suffixes (see footnote 5). The reconstructible combinations of such flanking vowels are tabulated below, followed by the Yi reflexes and examples.

*i—a > a· (466)
*a—i > a· (135)
*a—a > a· (of the fourteen examples, note especially 193, 209, 329, 634)
*u—a > a· (169, 182)
*u—u > u· (123, 170, 186, 229)
*u—u > u (in the suffix *-ŋuRu—see no. 467)

The following generalization is possible: if either vowel of the original combination is low, the resultant Yi long vowel will also be low. Furthermore, it seems highly probable that all four of the remaining possible combinations of flanking vowels (*i—i, *i—u, *a—u and *u—i) in fact constitute environments which preclude the possibility of loss of the intervening consonant. See nos. 368, 704 and 843, and note also the apparently cognateless Yi form /yiriRi/ *sick*. The evidence of three of these forms provides a plausible explanation for the structural imbalance in the Yi system of long vowels, which comprises /a·/ and /u·/ only. Concerning the /R/ in Yi /yiriRi/, see the discussion of conditions which militate against intervocalic lenition (2.1.1.). Further, note the reflection of the intervocalic *p of nos. 113 and 202 as /w/, not zero, in Yi. In Ku, however, the internally reconstructible suffix *-piri, in combination with the stem **ñimi (no. 386), descends as /ñimi·ri/. Ku thus has *three* long vowels /i· a· u·/ matching the short vowels /i a u/.

Fronting of original *u to /i/ under the influence of neighboring laminals, plus dialect borrowing, perhaps explains the apparent doublet in Nm in no. 640. Note also no. 714. In Ku, the *u of the increment which was fused onto formerly single-mora verb stems descends as /i/. See nos. 624, 702, 704, 712 and 714. Additional instances of the fronting of *u, hinted at in nos. 138 and 705, will be better treated within the rubric of comparative Nyungic.

In three unexplained instances, Ng or Nl exhibit lowering of one or another high vowel to /a/; see nos. 349, 709 and 840. The Proto-Nyungic suffix *-ŋu, reflected without change in Nm as an alternant of *object* (e.g., in ŋana-ŋu *whom,* see no. 625), appears in Ng as /-ŋa/, a marker of *possessive,* as in ŋanu-ŋa *my.*

2.3. *Reduplication.* Reduplication is reconstructible as a morphological feature of PN, and has closely similar referents in various Ngayarda, and in fact Nyungic, languages. Compare, for instance, no. 183 with 184, and 612 with 123. Note Nyangumarda piḷi *hole not in the ground* (841) : piḷilpiḷil *full of holes—as clothing.* The pair 132-133 (cf. also Nm, Ny maṭa-r *red ocher*) shows the same referential relationship as Nl, Pn mici *blood* (366) : micimici *red,* or the Ny cognate piciri *blood* : piciripiciri *red.*

2.4. *Stem Augmentation.* In most of the Ngayarda daughter languages, an alternant of either the PN *past* or the PN *present* tense marker has lost earlier morphemic status and now constitutes part of several formerly monosyllabic verb stems. See the discussion of this development in o., and note especially footnote 28.

Numerous nouns likewise appear in various modern Ngayarda

languages, as well as in languages of neighboring Nyungic subgroups, in apparently augmented shape (see also o.). In some cases there is evidence of derivational mechanisms, some of which have been of limited productiveness during certain stretches of linguistic history. A case in point is the suffix /-r/, attested in the Nm and Ny forms for *red ocher* (cited in 2.3.), and in Nm kuRur *eyeball* in which, from a synchronic point of view, there is a question as to whether Nm kuRu *seed* can be morphemically equated to the first four segments, despite the occurrence of kuRu in numerous other Nyungic languages with the referent *eye*.[51] See also no. 628, where a final /-r/ is attested in Pl and Pn; in Ny pilur *doughy part of bread,* there is at least the form pilu *guts* with which to make comparison. But the referent range of the -r is nevertheless not immediately obvious.

In a few other instances a suffix, usually the third syllable of a trisyllabic stem, can be identified with a fair degree of confidence, as long as all available knowledge of Australian languages is drawn on. Thus the -ṇi of no. 905 is in all probability an old marker of the *elative* case. In nos. 306 and 371, the -n̪a denotes a human being having the characteristic referred to by the preceding morpheme. In nos. 141 and 399, -wara, -li and -mu are identifiable in the respective languages as having a temporal reference. The -kara which appears in no. 361 is an agent suffix. The fact that *cardinal points* (including *up* and *down*) constitute a morphophonemic subclass of nouns in many Pama-Nyungan languages is in evidence also: note -rka, which appears in the Nl forms in nos. 106 and 464; in the former, -yi, which is attested in the Nm and Ka forms, has a probable cognate in Pama-Maric languages. Compare also -cu in no. 227 and Ny -ci (as in yaliñci *north*). Another -yi which evidently has its source as a *vocative* marker is found in no. 331.

An increment -pa is extensively attested in the Wati and Kardu subgroups as a morphophonemic reaction against the occurrence of a final consonant, and in Nyangumarda (Marngu), phonemic material consisting of /p/ followed by a vowel intervenes in verb morphology where certain consonant clusters, such as *nl, would otherwise occur. The same increment is limited in the Ngayarda subgroup to reliably attested occurrence in Nl, Pl and Pn (as in nos. 106, 117, 452, 463 and 836); but in each of these communalects, forms with final consonants are also recorded—for example, nos. 310, 711 and 129.

Liberally scattered through the Ngayarda data are further instances which cannot conceivably be explained in terms of regular

phonological change or alternation; nor does a process of derivation seem to be recoverable in the majority of cases. In no. 364, the /ma··/ of the Yi form regularly reflects PN *maya, but the final /-ṭa/ is irreconcilable with the /-ŋu/ in Ka. In no. 440, the same problem is encountered, but at a more remove level of reconstruction. Note the following:

Nm waḻaṇ *lungs*
Pn waḻaṇ *leaf*
Yi, Ku waṯaṇ *leaf, lungs*
Bayungu (Kanyara) waḻaṭi *leaf*
Nyangumarda (Marngu) walaka *leaf*

< PN *waḻaṇ

The problem recurs in widely scattered languages of the Pama-Nyungan Phylic Family. Kenneth Hale reconstructs a stem *kuta in Proto-Pama-Maric, which descends regularly in Nggoth as /twa/ *dog;* but in Umpila the lexeme for *dog* is /kuʔaka/ (in which the glottal stop regularly reflects PPM *t); the /-ka/ is unexplained. The /-ka/ in the Nyangumarda lexeme for *leaf,* cited above, is equally a mystery.

Below are assembled, in order of decreasing size, exhaustive listings of occurrences in the Ngayarda data of proven or suspected suffixial increments to 2-mora noun stems.[52] In a few cases—notably where /-ra/ is the increment—a phonologically comparable and presumably underlying 2-mora form is also attested in the same, or at least in a closely related, language. Compare, for example, Nm /paṭura/ *turkey* (no. 173) with Nm /paṭu/ *wing feather* (172). Nu and Ma /maḻara/ *sick* (354) can likewise be compared to Nm /maḻil/ *tired* (351)—and further, to Ny /mañuḻa ~ mañuḻu/ *tired, lazy.* Note also the more complicated case of Ka /wakuṭu/ *armpit* (438) : Nm /wa·kura/ *crow* (439; see footnote 7). No matter how farfetched the implied semantic relationships may seem in other comparable cases, all available evidence for plausible underlying forms is included below in parentheses, following each example. In the light of our meager knowledge of the weltanschauung of Australian aborigines of the past, no assumptions about the plausibility of implied semantic connections can be made *a priori.* It is worth noting that a few of the increments listed can plausibly be regarded as surviving markers of former "noun classes" of the Bantu or North Australian type. One of these is -ṇa, apparently referring to *feathered vertebrates* (see below).[53] It seems also probable that some

pairs of increments, as in nos. 212 and 626, or in 131 and 135, are historically unrelated homophones.

1. -ra : *big* 104 (*elbow, upper arm* 103); *good* 128; *green/budgerigar* 164; *turkey* 173 (*wing feather* 172); *long* 205 (Ny wanal *root*); *sick* 354 (*tired* 351); *egg* 365 (Nl mica *egg/testicles,* Ny mica *newly-laid flies' eggs*); *clear space, plain* 401 (Ny paḷkara *plain, claypan,* paḷkan *clearing made for camp,* cucu paḷkan *bald-headed*); *white cockatoo* 415 (Ny piṭi *hole in the ground*); *crow* 439 (*armpit* 438, Ny wakuciṭi *upper arm and shoulder*—see no. 103); *spearthrower* 442 (*wind* 860); *woman* 453 (*man* 814); *moon* 455 (Ny wilara *new moon,* wiḷa- *to hit with the hand*); *left hand* 601 (Ng campu *left hand*); *east* 604 (Wirangu, Pangkala kaka; Nukuna kakaṭi *head.* See also 314: in aboriginal society, the mother's brother is, figuratively speaking, the "head" in more ways than one); *two* 701 (Antakirinya kucu *one* 821); *foot* 803 (Ny cuku 1. *base of tree* 2. *pubic hair,* cukaRa *lower half of body,* cukuṭu *boy of 6-12 years* (i.e., *boy at the 'foot' of adolescence*), cukuṭi *Milky Way,* cukaRi *man with deceased father's sister*—with which compare cinaṭu *father's sister* (see no. 603). Contrast no. 314, discussed above. The linguistic evidence for a Pan-Nyungic weltanschauung seems to suggest an early polarization of the concepts *mother's brother* and *father's sister*); *wind* 808; *sun* 868 (Balardong yo·k, EM yaka *woman,* Ny yaku *male cross-cousin*); *spider* 903 (Ny kanpa *base of penis*).

2. -Ra : *point of shoulder* 168 (*leaf* 408); *long time* 169 (*kneecap* 170); *ahead* 182 (Ny puḷu *recluse, 'loner'*); *yoke* 220 (Ny wiḷki *curved*); *rubbish* 301 (Bayungu caca, Balardong ṭa·c *meat*); *old woman* 304 (Ny caṇti *upright*); *cheek, jaw* 329; *ear* 332 (Wanman, Warburton Ras. kuli- *to hear*); *head hair* 336; *younger brother* 362 (Ny markaṭu ~ marka *younger sibling*); *dingo* 372 (Nu muyi *dog; to steal* 145; *cloud* 831); *star* 409 (Inggarda puṭa *star,* Warienga puṭa *eye*); *ground* 433 (Ny cuŋkaRi *grave;* Wailpi yuŋka *rotten*); *charcoal* 469; *blind* 635 (Walbiri pampa, Gobabingo pa·mpayi *blind in both eyes*); *alike* 652 (Umpila yiñcu *near*); *snake* 829; *cloud* 831 (Ny mucuŋu *cloud*; see 145, 372, 831); *hot* 839.

3. -piri : *eye* 109 (Ny cita-ŋka-ka- *to carry it on the head*—cf., cucu *head*; Mangala cita *head*); *kidney* 113 (Ny kaḷi *boomerang*); *vegetable food* 134 (Ny maṭu *depression, hollow*); *soft* 153 (Nm, Pn ñulu *soft*); *turtle* 159; *kangaroo rat* 198; *lightning* 202; *fat* 208 (Ng waṇṭu *fat*); *rib* 386 (Nu, Talandji ñimi *rib*); *armpit* 396 (Yi, Ku ŋuna *armpit;* Wangkanguru ŋuna *upper arm*); *emu* 461; afternoon 471 (Ny Ruka *late afternoon—5 to 6 p.m.*); *north* 807 (Ny kanimpiri *northeast,* kaniñ *down, at the coast;* Umpila kani *up, above*).

The application of methods of internal reconstruction, combined with the evidence of section 2., yields tentative rules which account for several of the variant shapes in which *-piri is reflected in the Ngayarda daughter languages. In several examples, progressive assimilation appears to be operating between the consonants of alternate syllables, such that in $*C_1V_1C_2V_2(C_3)$.piri,

if $*C_1$ is *m, or if both C_1 and C_2 are nasals, *p > /m/ (see nos. 134 and 396, but note nos. 109 and 471);
if $*C_1$ is *ŋ or *w, *p > /w/ (see nos. 198 and 208, but note no. 159);
if $*C_2$ is an apico-domal continuant, *r > /ṭ/ (see no. 202, but note no. 113). Further,
if $*C_3$ is a nasal, $*C_3$ > /m/ by regressive contiguous assimilation (see no. 807), and
if V_2 is a non-front vowel, the two vowels of *-piri are lowered to /a/ (see nos. 109, 198, 208, 396 and 471; but note nos. 134, 153 and 159); in all thirteen examples, the vowels, whether lowered or not, remain identical.

Two alternative explanations are possible for no. 109: (a) if the Nl form is a mishearing of /citamaRa/, then the reconstruction could be a compound of cita *head* + maRa *hand;* (b) otherwise, *-mara could well be a suffix (cf. Ny -mara *because of*) historically unrelated to *-piri.[54]

The low vowels in the Ng form in no. 807 are probably reflexes of PN *i (see 2.2.). The Ku reflex of no. 386 exemplifies expectable loss of intervocalic *p in this dialect.

4. -Ri : *fingernail* 144 (Nu mintu.ḷu *fingernail*); *liver* 155; *tobacco* 157 (Ny ŋama *breast, milk*; see 156); *native bee* 206 (Ny wanpa *liver*); *fly* 450 (Ny wara *rotten*); *white sand* 843; *grave* 855 (see 433 and -Ra, above); *fish* 858 (see 162); *head hair* 862; *sinew* 865 (Ny wici *sinew*); *sky* 870.

5. -ṭa : *eaglehawk* 213 (Western Aranda iric *eaglehawk;* Ny, Pintubi wari *cold*); *middle digit/middle sibling* 353 (*middle* 352); *right hand* 364 (Ka mayaŋu *right hand,* Yulbaridja maya *forceful*); *person* 394 (Ny ŋayaṭa *visible; I* 709); *heart* 416; *sweet food* 428 (Ny cukuṭa *sugar*); *beard* 602 (Ny ṭapurci *mustache,* Gobabingo ṭawarak *beard*); *spear* 611; *moon* 804.

6. -ri : *liver* 156 (Ny ŋama *breast, milk;* see 157); *red kangaroo* 165; *star* 176; *mother's mother* 318; *now* 350; *red* 413 (*vagina* 412).

7. -ŋka : *in late afternoon* 178; *flying fox* 219; *small* 429; *inside* 432 (Targari ʈuɳu *snake*); *in the afternoon* 471 (Ny Ruka *late afternoon*); *knee* 832 (Antakirinya muṭi *knee;* see 377).

8. -ḷa : *saliva* 224 (Pl, Ku wiṯa *saliva*); *heart* 422 (Pl, Pn, Ku puRi *heart*); *sandhill* 423; *elbow* 445 (Nu, Ma waɳku *elbow,* Ng waɳku *upper mill,* Ny waɳku *stone*); *up* 606 (Ny kanka *up, inland*); *dog* 810.

9. -ḷi : *wing* 131 (Pn mara *wing*); *father's father* 135; *father's mother* 322 (Ny kapaḷici *father's mother*); *butterfly* 323; *big* 369.

10. -ka : *root* 125 (Ku maṯa *root*); *ghost* 216 (Yi waru *black, night*); *small* 429 (Targari cupa *small*); *excrement* 610 (Nu, Ka . . . kuna *excrement*); *hand* 827.

11. -ŋu : *chest* 189 (Nl, Ku puṭu *chest*); *hungry* 317 (Pl kamu, Yulbaridja kama *hungry*); *right hand* 364 (see -ṭa); *sun* 868 (see -ra).

12. -ya : *honey* 127 (*lazy/tired* 126); *sea* 187 (*heart* 422); *we du excl* 387 (*we du incl* 708); *road* 653.

13. -Ru : *kneecap* 170 (*long time* 169); *hairstring* 186; *tongue* 229; *bone* 817 (Ny kuñca ~ wiñca *bone*).

14. -ṇa : *emu* 101; *pelican* 107; *crow* 212 (*to speak* 650); *we pl excl* 626 (Umpila ŋana *we excl*).

15. -ʈu : *kookaburra* 102; *armpit* 438 (see -ra); *eaglehawk* 441 (*egg* 859); *smoke* 806.

16. -la : *grasshopper* 175 (*to twinkle* 842); *big* 196; *south* 347 (Ny, EMkuRila *south;* see 612).

17. -ru : *by-and-by* 185; *north* 464 (*north* 463); *dog* 472; *kookaburra* 102; *armpit* 438 (see -ra).

18. -ḻu : *fingernail* 144 (Nm, Ka miɳṭiRi *fingernail*); *nose* 835 (Goa niŋku *nose*).

19. -nu : *one* 330; *long* 823 (*head* 822).

20-31. -kuḷa : *black* 215 (Nm waru *black*). -kaḷi : *thigh* 226 (Yi wulu *thigh*). -maṭa : *one* 234 (Nm yika *alone*). -ṭi : *three* 305 (Targari cargu *three*). -la : *dew* 344 (*small* 345). -ḻka : *ankle* 382 (Pl ɳuku *ankle bone*). -kaṭa : *bad* 443 (Pl wali *bad*). -rci : *sea breeze* 464 (Ma yapuru *north*). -lu : *west* 811 (Ny kaRa *west*). -ḷa : *asleep* 818 (EM kupaḷu *asleep*). -ʈuʈu : *magpie* 819 (Ngalea kurpaRu *magpie*). -ŋuru : *ebb tide* 821 (Antakirinya kucu *one,* Kaurna kucu *few, the rest,* Umpila kuṯu *some*).

3. ATTESTATION.

3.0. In the following presentation of Proto-Ngayarda reconstructions and their reflexes, the alphabetic arrangement used is as follows: /a c i k ḻ l ḷ l̈ m ɳ n ṇ ñ ŋ p r R ʂ t ṭ u w y/.

3.1. *Lists of PN Stems.*

3.1.1. In this section (centuries 100-200) are listed reconstructions which are unique to PN—i.e., reconstructions without known cognates in non-Ngayarda Australian languages.

101. *canku.ṇa > Nm, Yi canku.ṇa *emu.*
102. *caru > Ma caru.ru; Pn, Ku caru.ṭu *kookaburra.*
103. *ciḷi > Nl ciḷi *elbow;* Pn, Yi ciḷi *upper arm.*
104. *ciḷi.ra > Pn, Yi, Ku ciḷi.ra *big.*
105. *ciṇṭaṇ > Nm, Yi ciṇṭaṇ *dull, blunt.*
106. *ciŋka > Nm ciŋka.yi *east;* Ka ciŋka.yi *north;* Nl ciŋka.l.pa ~ ciŋka.rka *east.* See 463-464.
107. *ciRu.ṇa > Ma, Nm, Yi, Ku ciRu.ṇa *pelican.*
108. *ciṭari- > Nm ciṭari-; Yi ciyari- *to wait.*
109. *cita.mara > Ng cita.maRa; Nl cita.mara *eye.*
110. *cucu > Nm cucu; Ku cuyu *smoke.*
111. *culu > Nm, Yi culu *all.*

112. *kaḷi.ñca.ri- > NM, Ka, Yi kaḷi.ñca.ri-; Pn kaḷi.ñca.yi- (cf. Nl kaḷi.ñca-; Pl kaḷi.ña-; Ku waRiñca.ri-) *to return* (kaḷi *boomerang* is widely attested in non-Ngayarda languages).
113. *kaḷi.piri > Nm kaḷi.piri; Yi kaḷi.wiri *kidney.*
114. *kaḷpa- > Nm, Nl, Pl, Pn kaḷpa-; Yi kaRpa-; Ku kaṭpa- *to climb, rise.*
115. *kaḷpa-(L)- > Nm kaḷpa-; Yi kaRpa- *to carry.*
116. *kaṇṭi > Pl, Pn kaṇṭi *tree.*
117. *kaŋkaḷ > Nm kaŋkañ; Pn kaŋkaḷ.pa; Yi kaŋkac *loose—as post.*
118. *kaŋku > Ka, Ng, Nl, Pl, Pn kaŋku *knee.*
119. *kara > Nm, Yi kara *thicket.*
120. *kata.ma-(L)- > Pl, Pn kata.ma- *to hit with the hand.*
121. *kumiṇ > Nm, Ku kumiṇ *mosquito.*
122. *kuṇṭu$_1$ > Pn, Yi, Ku kuṇṭu *brain.*
123. *kuRu-kuRu > Pn kuRu.kuRu; Yi kuRu.Ru *round.* See 612.
124. *kuṭaḷa > Nl, Pl kuṭaḷa *star.*

125. *maḷa > Yi maṭa.ka; Ku maṭa (cf. Pn maṭa) *root.*
126. *maḷi > Pn, Yi maḷi *lazy, tired.*
127. *maḷi.ya > Nm, Yi, Ku maḷi.ya *honey.*
128. *maḷku.ra > Pl maḷku.Ra; Yi maRku.ra; Ku maṭku.ra *good.*
129. *maṇpur > Nu, Ma, Nm, Ka, Pn, Yi, Ku maṇpur *knee.*
130. *mañka > Nm, Ka, Yi mañka *son.*
131. *mara > Ma, Yi mara.ḷi; Pn mara *wing.*

132. *maṭa > Nu, Ma, Nm, Ka, Pl, Yi, Ku maṭa *blood.*
133. *maṭa-maṭa > Nm, Yi, Ku maṭa-maṭa *red.*
134. *maṭu.miri > Nu, Ka, Nl, Pl, Pn, Yi maṭu.miri *vegetable food.*
135. *mayi.l̤i > Nm, Ka mayi.l̤i; Yi ma·.l̤i *father's father.*
136. *mil̤i > Nm, Pn, Yi mil̤i *cadjeput (paperbark).*
137. *mil̤ka > Yi miRka *groin;* Ku mit̤ka *fork of tree.*
138. *mila-(L)- > Nm mila- *to lick;* Yi, Ku mica- *to drink* (cf. Ng muca- *to drink*).
139. *milcu > Nl milcu; Pn, Yi micu *fingernail, toenail.*
140. *miṇa > Ng, Nl miña; Pn, Ku miṇa *semen.*
141. *miṇa.wara > Nm miṇa.wara ~ miṇa; Yi, Ku miṇa.wara *by-and-by.*
142. *miṇṭil̤.(S)-(L)- > Nm miṇṭil̤.ka- *to hit with a missile, to shoot;* Yi miṇṭiñ.ma- *to shoot* is perhaps a reflex of pre-Yi *miṇṭil̤.ma-, by assimilation.
143. *miṇṭin > Nm, Yi miṇṭin *clitoris.*
144. *miṇṭu > Nu mintu.l̤u (possibly a mishearing of miṇṭu.l̤u); Nm, Ka miṇṭi.Ri *fingernail.*
145. *muca-(L)- > Nm muca-; Yi muya- *to steal.* See 831.
146. *muli > Nm mul̤i; Yi, Ku muci *cave.*
147. *muru > Nm, Ka, Pl, Pn, Yi muru *back (spine).*
148. *ŋaṇṭa-(L)- > Pl, Pn ŋaṇṭa- *to bite* (cf. Pl ŋaṇṭa- *to drink*).
149. *ŋaṇu > Nu, Nm, Pn, Yi ŋaṇu; Ka ñaṇu (cf. Ma ṯaṇu) *ground.*
150. *ŋañi > Ng, Nl ŋañi *pubic hair.* See 151.
151. *ñal̤u > Nm ñal̤u; Yi ñacu *pubic hair.*
152. *ñiya > Pl, Pn ñiya *this.*
153. *ñul̤u > Nm ñul̤u *soft—as flesh, tobacco;* Pn ñul̤u *soft;* Yi, Ku ñucu.wiri 1. *soft* 2. *loose—as tooth.*
154. *ŋal̤a-(L)- > Nm ŋal̤a- ~ ŋal̤a-; Ng, Pn ŋal̤a-; Yi, Ku ŋaṭa- *to copulate with.*
155. *ŋalka.Ri > Ma, Nl, Pl, Pn ŋalka.Ri *liver.*
156. *ŋama.ri > Nu, Ma, Nm, Ka, Ng, Yi, Ku ŋama.ri *liver.*
157. *ŋama.Ri > Nm, Pl, Pn ŋama.Ri; Yi ŋama.yi *tobacco.*
158. *ŋaṇṭa > Ng ŋaṇṭa 1. *ground* 2. *excrement;* Nl ŋaṇṭa *ground.*
159. *ŋaṭa.piri > Nm ŋaṭa.piri; Yi, Ku ŋaṭa.wiri *turtle.*
160. *ŋuku > Nm, Ka, Ng ŋuku *star.*
161. *paci-wana.ra > Pn paci-wana.ra; Yi payi-wana.ra *grey kangaroo* (see 398 and 205).
162. *paka- > Pn paka-; Yi pa·- *to break, come apart* (cf. Pn paka-

pi- *to break it*). Further comparative work may establish cognation with Proto-Wati *waka- and Proto-Pama-Maric *paka-, both reflected with the referent *to spear it* in daughter languages.

163. *paḻa.ma-(L)- > Pn paḻa.ma-; Yi paṯa.ma- *to rub it.*
164. *paḻa.ra > Nm paḻa.ra *green;* Ku paṯa.ra *budgerigar.*
165. *palca.ri > Nl, Pn paca.ri; Yi, Ku patca.ri *red kangaroo.*
166. *paḻin.paḻin ~ paḻi.paḻi > Pn paḻin.paḻin.pa; Yi paḻi.waḻi *winding, zigzag.*
167. *paṉṯa > Nm, Yi paṉṯa *creek bank;* Ng paṉṯa *sandhill;* Pl paṉṯa *red sandhill.*
168. *parka.Ra > Nu, Nm parka.Ra; Yi para.· *point of shoulder.*
169. *paru.Ra > Nm paru.Ra; Yi para.· *long time.*
170. *paru.Ru > Nm paru.Ru; Yi, Ku paru.· *kneecap, pestle.*
171. *paṯa-(R)- > Nm paṯa- 1. *to hit with missile* 2. *to blow—of wind;* Pn paṯa-; Yi paɣa- *to blow—of wind.*
172. *paṭu$_1$ > Nm, Pn, Ku paṭu *wing feather.*
173. *paṭu.ra > Nm, Pn, Yi, Ku paṭu.ra *turkey.*
174. *piḻu > Pn piḻu; Yi, Ku piṯu *green.*
175. *pinpi.la > Nm, Pn, Yi, Ku pinpi.la *grasshopper.*
176. *piṇṭi.ri > Nm, Yi piṇṭi.ri *star.*
177. *piṇṭu > Nm, Yi piṇṭu *vegetable food.*
178. *piri.ŋka > Ng, Yi piri.ŋka *in the late afternoon.*
179. *piya > Pn, Yi piya *thirsty.*
180. *pulpur > Pn pulpur; Yi putpur ~ putpu *stone ax.*
181. *puḻkuṇ > Nm puḻkuṇ; Yi puRkuṇ *smoke.*
182. *puḻu.Ra > Nm puḻu.Ra; Pn puḻa.Ra; Yi puḻa.· *ahead, first.*
183. *puṇṭa > Nm, Pl, Yi, Ku puṇṭa *hole in the ground, deep.*
184. *puṇṭa-puṇṭa > Nm puṇṭa-puṇṭa; Yi puṇṭa-wuṇṭa *full of holes —of ground.*
185. *purpa > Pl purpa ~ pupa; Pn purpa.ru *by-and-by.*
186. *puru.Ru > Nm, Pn puru.Ru; Yi, Ku puru.· *hairstring.*
187. *puRi.ya > Nm, Pn, Ku puRi.ya *sea.*
188. *puṯa > Pn puṯa; Yi, Ku puɣa *head.*
189. *puṭu > Ka puṭu.ŋu; Ng puṭu.ṇ.puṭu.ṇ; Nl, Ku puṭu; Yi puṭu.ŋu ~ puṭu *chest.*

190. *ṯa-(L)- > Nu, Ma, Ka ṯa.ni-; Nm, Ng ṯa.lku- *to hit.*
191. *ṯampi > Nm, Ka, Yi ṯampi *rib.*
192. *ṯapaṯa > Nm capaca; Pl, Pn ṯapaṯa *vegetable food* (cf. Yi ṯa·ṯa.maṇṭa *greedy*).
193. *ṯaya-(L)- > NM ṯaya-; Yi, Ku ṯa·- (Cf. Pn ṯa·-) *to send it.*

194. *ʈukuʈa-(L)- > Nm ʈukuʈa-; Yi ʈuwayi- (ʈuwaɣi-?) (cf. Nl ʈuwa-) *to spear it.*
195. *ʈuRu > Pl ʈuRu; Tjuroro cuRu (cf. Ka yuRu) *head.*
196. *ʈuta > Nl cuta; Pl ʈuta.la ~ cuta *big.*
197. *ʈuʈa > Nm, Ng ʈuʈa; Nl cuʈa (cf. Ka ʈuḷa(?)) *wind.*

198. *wacu.wara > Nm wacu.wara; Yi, Ku wayu.wara *kangaroo rat.*
199. *walki > Pn walki; Yi, Ku warki (cf. Ma warki) *opossum.*
200. *waḷa$_1$ > Nm, Pn, Yi, Ku waḷa *heel.*
201. *waḷa.waŋka- > Pn, Yi, Ku waḷa.waŋka- *to lie, prevaricate.*
202. *waḷi.piʈi > Nm waḷi.piʈi; Yi waḷi.wiʈi *lightning.*
203. *waḷka > Pn waḷka; Yi waRka; Ku waʈka *womb.*
204. *waḷu > Nu, Nm, Ka, Pn, Yi, Ku waḷu *snake.*
205. *wana.ra > Pn, Yi, Ku wana.ra *long.*
206. *wanpa.Ri > Pn wanpa.Ri; Yi wanpa.yi *native bee.*
207. *waṇʈa > Ma, Nm, Ka, Ng, Nl, Yi waṇʈa *tree.*
208. *waṇʈu ~ ŋaṇʈu > Ng waṇʈu; Nl waṇʈu ~ ŋaṇʈu.wara *fat, grease.*
209. *wañapa.ri- > Nm, Ka wañapa.ri-; Yi waña·.ri- *to hear.*
210. *wañca > Nm, Yi wañca *dog.*
211. *waŋkar > Ka waŋkar.waŋkar; Pl, Yi waŋkar (cf. Pn waŋkat) *throat.*
212. *waŋki.ṇa > Ma, Nm, Pn waŋki.ṇa *crow.*
213. *wari.ʈa > Yi, Ku wari.ʈa *eaglehawk.*
214. *warpa > Nm, Ka, Pn warpa; Yi warwa (cf. Ma warwa) *far.*
215. *waru > Nm, Ng, Pl, Pn, Ku waru *black;* Yi waru *black, night;* Nl waru.kuḷa *black.*
216. *waru.ka > Nm waru.ka *ghost, demon;* Ku waru.wa *ghost, spirit.*
217. *waru-kaʈi > Ng, Nl waru-kaʈi; Pn waru-kaʈa (cf. Ku waru-ŋka) *night.*
218. *waru-ŋka-mu > Pn, Yi, Ku waru-ŋka-mu *tomorrow, morning.*
219. *waRa.muru.ŋka > Nm waRa.muru.ŋka; Pl waRa.muRu.ɲka; Yi waRa.mu·.ŋka *flying fox.*
220. *wiḷka.Ra > Nm wiḷka.Ra; Yi wiRka.· *yoke—of shoulder.*
221. *wiɳʈa > Pl wiɳʈa (cf. Nl wiñca ~ wiɳʈu) *many.*
222. *winpa- > Ka, Pl, Pn winpa- *to run.*
223. *wirpi > Pn wirpi; Yi, Ku wirwi (cf. Ma wirwi) *wind.*
224. *wiʈa > Nm, Ka wiʈa.ḷa; Pl wiʈa (cf. Ku wiʈa); Yi wiɣa *saliva.*
225. *wiya-(L)- > Nl, Pl, Pn wiya- *to see.*
226. *wulu > Yi wulu; Nm, Ka, Pl wulu.kaḷi *thigh.*

227. *wuḻu.cu > Ka wuḻu.cu *south;* Pl wuḻu.ʈu; Pn wuḻu.cu *west* (cf. Nm wulu.cu; Nl wuḻu.yu *south*).
228. *wuntu > Pn, Yi, Ku wuntu *river.*
229. *yaḻu.Ru > Nu, Nm, Pl, Pn yaḻu.Ru; Ka, Nl yaḻu.Ru; Yi, Ku yaʈu. *tongue.*
230. *yaḻu-ɳʈa-(L)- > Pn yaḻu-ɳʈa-; Yi yaʈu-ɳʈa- *to lick.*
231. *yalu.yalu > Pn, Yi yalu.yalu *weak.*
232. *yaɳʈa > Nu, Ma, Nm, Ka, Nl yaɳʈa *sun.*
233. *yarka > Ng, Nl yarka *far.*
234. *yika > Nm yika *alone;* Nl, Pl yika.maʈa (cf. Pn yika.maʈa ~ yika.maɳʈa) *one.*
235. *yimil.cari- > Nm yimil.cari-; Ku yimit.cari- *to itch.*
236. *yuŋu > Nm, Yi yuŋu *rain.*
237. *yurkuɳ > Pn yurkuɳ; Yi yuruɳ *head hair.*
238. *maŋa > Nm, Ka, Yi maŋa *woman* (addendum).

3.1.2. This and the following sections are organized in such a way as to anticipate and facilitate the task of further linguistic reconstruction which is beyond the scope of this paper. PN stems which could, with further work, be integrated into a reconstruction of Proto-Nyungic are listed below (centuries 300-500). While no attempt at an exhaustive listing of the implied non-Ngayarda cognates is made, representative Nyungic subgroups for which such probable cognates are attested are listed by small roman letter according to the following scheme: b (Kanyara), d (Kardu), e (Nyunga), f (Mirniny), g (Wati), h (Marngu), i (Ngarga), k (Nangga), l (Yura). The frequency with which a given subgroup is thus specified below is not necessarily a function of the closeness of its relationship to Ngayarda, but may reflect unevenness in the amount of data available for various Nyungic languages.

301. **caḻa > Nm caḻa *rubbish, remains—as skeletal;* Yi, Ku caca (cf. Pl ʈaḻu.Ra) *rubbish* (b, e).
302. **campa > Yi, Ku campa *soon* (b, d, h).
303. **canta > Nm, Yi, Ku canta *lame* (cf. Ng ʈunta *thigh*) (h).
304. **caɳṭi.Ra > Nm, Yi, Ku caɳṭi.Ra *old woman* (b, d).
305. **carku.ṭi > Yi, Ku carwu.ṭi *three* (b).
306. **caʈa > Nm caʈa *old woman;* Pl, Pn, Ku caʈa *blind* (cf. Pn caʈa-ɳa *old woman*) (h).
307. **cimpu > Ma, Nm, Ka, Ng, Pl, Pn, Yi, Ku cimpu *egg* (h).
308. **cinci > Nu, Ma, Nm, Ka, Nl, Pl, Pn, Yi, Ku cinci *fat, grease* (h).

309. **ciri.ciri > Yi, Ku ciri.ciri (cf. Nl cinti.cinti, Pl citi.citi) *Willy Wagtail* (g, h).
310. **cukuṇ > Pn cukuṇ; Ku cu·ṇ (cf. Nl yukuṇ) *smoke* (h).
311. **culu > Nu culu; Yi, Ku cucu (cf. Ma, Ka, Pl, Pn cucu) *old man* (b).
312. **cuṇpa > Ka, Ng, Nl cuṇpa *ashes* (g, h).

313. **kaca > Nu, Nm, Ka kaca; Yi, Ku kaya (cf. Ma kaya, Ng kaṭa) *older brother* (b).
314. **kaka > Nm, Ka kaka (cf. Yi kaka) *mother's brother* (h, k, l).
315. **kaḷa > Ma, Pl, Pn kaḷa *fire;* Ku kaḷa *fire, tree* (b, d, e, k, l).
316. **kaḷka > Pn kaḷka 1. *creek* 2. *root;* Yi kaRka *creek* (h).
317. **kamu > Nu, Ma, Nm, Ka, Pn, Yi, Ku kamu.ŋu; Pl kamu *hungry, empty* (g).
318. **kaṉṭa.ri > Nm, Yi kaṉṭa.ri; Ka, Nl kañca.ri *mother's mother* (h).
319. **kaṇṭa- > Nu, Ma kaṇṭa- *to cry* (cf. Yi kaṇṭa *tears*) (b).
320. **kaṇu > Nl, Pn kaṇu *skin* (h).
321. **kañi-(L)- > Nm kañi.ṇi- *to hold;* Nl kañi- *to have, keep* (b, g).
322. **kapa.ḷi > Nl kapa.ḷi; Yi kawa.ḷi *father's mother* (h).
323. **kapa.ḷi.pa.ḷi > Nm, Pn kapa.ḷi.pa.ḷi; Yi kawa.ḷi.wa.ḷi *butterfly* (h).
324. **kapuṇ > Nm, Ka kapuṇ; Yi, Ku kawuṇ (cf. Nu kawiṇ; Ma kawa; Pl kawuṇ) *skin* (h).
325. **karpu > Pl, Pn karpu; Ku karwu *sun;* Nl karpu *summer* (h).
326. **karu.palkan > Ng karu.palkan; Yi karu.walkan (cf. Pn karu.walkan.pa) *kookaburra* (h).
327. **kaRi > Nm, Pn, Yi kaRi 1. *salt, bitter* 2. *liquor* (h).
328. **kaṭa-(L)- > Pn, Yi kaṭa- *to pierce* (g).
329. **kaṭa.Ra > Nm kaṭa.Ra *temple;* Pl kaṭa.Ra *cheek;* Yi, Ku kaṭa. *cheek, jaw* (h).
330. **kaya.nu > Nu, Ma kaya.nu *one* (b, f).
331. **kuka.yi > Nu, Nm, Ng, Pn kuka.yi; Yi kuwa.yi (cf. Pl kuka) *come here!* (b). Nyangumarda (h) kapu ~ kapu-kapu is likewise an uninflectable form and has the same referent, but cannot yet be regarded as a proven cognate of the Ngayarda forms.
332. **kuli.Ra > Nu kuli.Ra; Ma, Ka, Ng, Nl, Pl kuli.ya *ear* (b, g).

333. **kuli.ya-(L)- > Nu kuli.ya-ni-; Ma, Nl, Pl, Pn kuli.ya- *to hear* (b, g).
334. **kulu > Nm, Pn, Yi, Ku kulu *louse* (b).
335. **kuḷka > Nm, Ka, Ng, Pl, Pn kuḷka; Yi kuRka; Ku kuṭka ~ kuḷka *ear* (b, d, h).
336. **kuḷku.Ra > Nu, Ma, Nm, Ka, Ng, Nl, Ku kuḷku.Ra *head hair* (h).
337. **kuḷpaṇ > Nm, Pn kuḷpaṇ (cf. Yi kuṭpaṇ, probably a borrowing from Ku) *narrow* (h). Of probable relevance to the reconstruction of Proto-Pama-Nyungan are Nanda (d) wuR²a *stone;* Umpila kul²a, Linngithig pRæ² *stone.*
338. **kuḷu > Pn, Yi kuḷu *hot, summer* (h).
339. **kumpa > Nl, Pn, Yi, Ku kumpa (cf. Ka ŋumpa) *face* (b, h).
340. **kuṇku > Ka, Ng, Nl kuṇku *smoke* (d).
341. **kuṇṭal > Nm kuṇṭal; Yi kuṇṭat *daughter* (b, d, g, h).
342. **kuṇṭu$_2$ > Nm, Yi kuṇṭu *milk* (b, e, f).
343. **kuñci > Nm, Yi, Ku kuñci.ri; Ka kuñci.mu *one* (h).
344. **kupi.ḻa > Nm kupi.ḻa; Yi kuwi.ca (cf. Pn kupi.ḻa) *dew* (h).
345. **kupu > Ma kupu.ca, Pn kupi.ña (cf. Yi, Ku kupi.ca) *small* (b).
346. **kuri.kuri > Nm kuri.kuri; Yi kuri.wuri *Pleiades* (h).
347. **kuRi.la > Pl, Pn kuRi.la *south* (f, h).
348. **kuta > Nm, Ka, Pn, Yi kuta *short* (h).
349. **kutu > Ng, Nl kuta; Pl, Pn kutu (cf. Ku kuru) *dead* (h).
350. **kuwa.ri > Ma, Pl kuwa.ri; Pn kuwa.ri ~ kuwa.ri.mpa (cf. Nu kuwa.ṭi; Nl kuya.ri) *now, today* (b, d, g, h).

351. **maḻil.cari- > Nm maḻil-cari-; Yi maṯit.cari- *to become tired, weak* (cf. Nm maḻil *tired*) (h). See 354.
352. **maḻu > Nm, Pn maḻu; Yi maṯu *middle* (h).
353. **maḻu.ṭa > Nm maḻu.ṭa (cf. Yi maɣu.ṭa, an apparent borrowing from Nm or Pn) 1. *middle digit* 2. *middle sibling* (h).
354. **maḻa.ra > Nu, Ma maḻa.ra; Ku maca.ra ~ maca.ra.ṭi *sick* (b). See 351.
355. **mankar > Pn, Yi, Ku mankar *hard* (h).
356. **mantu > Nu, Ka, Ng, Nl, Pl, Pn mantu *meat* (g).
357. **maṇa > Nm maṇa *excrement;* Ng, Nl, Pl maṇa *buttocks* (g, h).
358. **maṇi > Nm, Pn maṇi *mark, markings* (h).
359. **maṇṭa > Nm, Ka, Ng, Nl, Pl, Pn, Yi, Ku maṇṭa *stone* (f, k).
360. **maŋka > Nm, Pn, Yi maŋka *nest* (e, g, h: note Wadjuk maŋka *nest,* maŋka.ra *hair;* Warburton Ranges and Kukatja

maŋka *head hair;* Nyangumarda maŋka *circle of bushes built for concealment in hunting*).

361. **mapaṇ.kara > Nm mapaṇ-kara; Yi mawaṇ.kara *doctor* (h). See 828.
362. **marka.Ra > Nm, Pl marka.Ra; Yi mara.· *younger brother* (b, h).
363. **maRu > Ma, Nm, Ka, Yi, Ku maRu *many* (h).
364. **maya > Ka maya.ŋu; Yi ma·.ṭa *right hand* (g, h).
365. **mica > Nu mica.ra; Pl mica.Ra *egg;* Nl mica 1. *egg* 2. *testicles* (h).
366. **mici > Ng, Nl, Pn mici *blood* (h).
367. **miŋa > Pn, Ku miŋa (cf. Nl piŋa) *black ant* (h).
368. **miRi > Nm, Pn miRi; Yi miyi *branch—of tree* (b, h).
369. **mita.ḷi > Nu, Ma mita.ḷi *big* (b).
370. **miṭa > Ma, Nm, Ka, Ng, Pn, Yi, Ku miṭa *no, not* (b).
371. **miṭa.n̪a > Nm, Ng miṭa.n̪a; Nl miṭa.ña *old man* (h).
372. **muci > Pn muci.Ra *dingo* (cf. Nu muyi *dog;* Yi muci.Ra *dingo*) (h).
373. **muḷa > Ma, Nm, Yi, Ku muḷa *meat;* Ng muḷa *dead* (d, g, h: note Inggarda muḷa *dead;* Wanman muḷa *excrement;* Nyangumarda muḷa *ripe, cooked*). See 444.
374. **muḷku > Pn muḷku; Yi muRku *pregnant woman* (h).
375. **muṯu > Ka, Pn muṯu; Yi muẏu (cf. Ma muyu) *cold, winter* (b).
376. **muṯu-muṯu > Nm muṯu.muṯu; Yi muẏu-muẏu *evening, cool* (b).
377. **muṭi- >Nm muṭi.yaŋka-; Ng, Pn muṭi-; Nl muṭi.ŋa- *to run* (h). See 832.
378. **n̪a· > Nl ña·; Yi n̪a· *this* (b).
379. **n̪aka > Nl ñaka; Pl, Pn n̪aka *cold* (e).
380. **n̪anka > Nm, Ka, Yi, Ku n̪anka; Pl ñanka *nape* (g).
381. **n̪ara > Ng n̪ara; Nl ñara *mouth* (b, g: note Targari n̪ara- *to bite,* ñara.ñara *vegetable food;* Wanman ñara- *to eat*).
382. **n̪uku > Nm, Pn n̪uku.ḷka; Ku n̪u·.ṭka ~ n̪u· *ankle;* Pl n̪uku *ankle bone;* Ka ñuku.Ru *elbow* (e, g).
383. **n̪uṇṭiₗ > Ma, Yi, Ku n̪uṇṭi; Nm, Ka ñuṇṭi *dead* (b).
384. **n̪uṭu ~ n̪uṇu > Nm n̪uṭu; Ku n̪uṇu *this* (b).
385. **ñaṇi > Pn, Yi, Ku ñaṇi *slow* (h).
386. **ñimi > Nu ñimi; Ku ñimi.·ri *rib* (b).
387. **ŋali.ya > Nm, Ka, Ng, Nl, Pl, Pn, Yi, Ku ŋali.ya *we dual exclusive* (h).

388. **ŋaḷu > Nm, Ka, Ng, Nl, Pl, Pn, Yi, Ku ŋaḷu (cf. Ma ŋaṭu) *belly* (h).
389. **ŋali > Pn ŋali; Yi ŋaci *neck* (h).
390. **ŋaṇṭa > Yi, Ku ŋaṇṭa *a sore* (f, g).
391. **ŋañcu > Nl ŋañcu.la; Ng ŋañca.ra (cf. Pl ŋañu.la) *we plural inclusive* (b, d, h).
392. **ŋaŋka > Nm, Ka, Yi ŋaŋka *mother* (e).
393. **ŋari- ~ ŋarpi- > Nm, Ka, Ng, Nl, Pn, Yi ŋari-; Pl ŋayi-; Ku ŋarwi- *to lie, be prone* (g, k).
394. **ŋaya.ṭa > Ka, Nl, Pn ŋaya.ṭa; Yi ŋa·.ṭa (cf. Ng ŋaṭa) *person* (h).
395. **ŋuṉa ~ ŋuṉal ~ ŋuṉu > Nm, Yi ŋuṉu; Ka ŋuñu; Nl ŋuña; Pl ŋuña ~ ŋuṉa; Pn ŋuṉa; Ku ŋuṉat (cf. Ng ŋuñi) *he; that (subject), rather distant* (cf. also Nm ŋuṉṯal *that, distant*) (b).
396. **ŋuna > Nu, Nm, Ka ŋuna.mara; Yi, Ku ŋuna *armpit* (l).
397. **ŋuṇa > Nm, Ka ŋuṇa *him; that (object), mid-distant* (b).
398. **paci > Ng, Nl, Pl, Pn paci; Yi payi *lower arm* (h).
399. **pala > Ka pala.li; Yi pala.mu ~ pata.mu *formerly* (h).
400. **palu ~ paṇu- > Nm, Ka palu *he; that (subject), mid-distant;* paṇu-mpaŋu *him; that (object), mid-distant* (e, g, h).
401. **paḷka.ra > Nm paḷka.ra, Yi paRka.ra *clear space, plain* (h).
402. **paḷpar > Nm, Ka, Ng, Nl paḷpar; Yi paRpar *sky* (h).
403. **paḷu > Nm paḷu *cliff;* Yi paḷu *creek bank* (cf. Nu, Ma paḷa *stone*) (d).
404. **panti- > Pl, Pn panti- *to sit, stay* (cf. Nl panta- *to sit*) (h).
405. **paṇi- > Nm, Ka, Ng, Yi, Ku paṇi- *to sit* (h).
406. **papa > Nm, Ka, Ng, Nl, Pl, Pn papa; Yi, Ku pawa (cf. Nu pawa; Ma papa ~ pawa) *water* (b, d).
407. **para.para.ri- > Nm para.para.ri-; Yi para.wara.ri- *to shiver* (h).
408. **parka > Ma, Nm, Ka, Nl, Pl parka; Ku para *leaf* (g, h).
409. **paṭa.Ra > Nu paṭa.Ra.ṇ; Ma paṭa.Ra (cf. Ku paṭa.Ra) *star* (b).
410. **picu > Nm picu *dry* (cf. Nm picu-waṇi- *to get dry*); Nl piṯu *river;* Yi piyi-waṇi- *to get dry* (h).
411. **piḷpu > Nm piḷpu; Ku piṯpu *marrow* (h).
412. **pila > Nl, Pn pila *vagina*; Yi pica *clitoris* (h).
413. **pila.ri > Ng pila.ra; Nl piḷa.ri *red* (h).
414. **pirpi-(L)- > Nm pirpi- *to scrape, saw (with fire saw), strike (a match);* Ku pirwi- *to strike (a match)* (h).

415. **piṭi.ra > Ng, Pn, Yi, Ku piṭi.ra *white cockatoo* (h).
416. **pula.ṭa > Nm, Ka, Yi, Ku pula.ṭa *heart* (b).
417. **puḻku > Nm puḻku; Yi puRku; Ku puṭku *plug of tobacco carried behind ear* (h).
418. **puḻpi > Nm, Pl, Pn puḻpi; Yi puRpi; Ku puṭpi *desirous* (h).
419. **puni- > Nu, Ma puni- *to go* (b, k, l).
420. **puñcan > Yi puñcan ~ puñcat *rainbow seen in fog;* Ku puñcat *dew* (h).
421. **purku > Nm purku *four;* Ng, Nl purku *three* (g).
422. **puRi > Pl, Pn, Ku puRi (cf. Nu puRu.ḻa) *heart* (b).
423. **puwa.ḻa > Ma, Yi, Ku puwa.ḻa *sandhill* (b).
424. **ʈalu > Nm ʈalu *totem;* Pn ʈalu *pet;* Yi ʈalu *tame* (b). It is probable that the varying glosses merely reflect different degrees of acculturation to Anglo-Australian culture.
425. **ʈa.nuwa > Ma, Ku ʈa.nuwa *vegetable food* (b).
426. **ʈarpa- > Nm ʈarpa-; Nl ʈarpa- ~ ʈarpi-; Yi ʈarwa- 1. *to enter* 2. *to set—of heavenly body* (g).
427. **ʈaṭa.(S)-(L)- > Nm ʈaṭa-ci-; Pn ʈaṭa.ma- *to bury* (cf. Nm ʈaṭa *closed*) (h).
428. **ʈuku.ṭa > Nm, Pn ʈuku.ṭa; Yi, Ku ʈuwa.ṭa *sweet food, fruit* (h).
429. **ʈumpa > Nl ʈumpa.ka ~ ʈumpa.kuta; Pl ʈumpa.ŋka ~ ʈumpa.kuṭa *small* (b).
430. **ʈumpu > Nm, Yi, Ku ʈumpu *anus* (b, h: note Nyangumarda ḻumpu *cavity, recess*).
431. **ʈuṇi- > Pn, Yi, Ku ʈuṇi- *to laugh* (b, d).
432. **ʈuṇu.ŋka > Yi, Ku ʈuṇu.ŋka *down, inside* (b).
433. **ʈuŋka > Nu, Ma ʈuŋka.Ra; Yi, Ku ʈuŋka *ground* (b, d, h, l). See 855.
434. **ʈurkuḻ > Nm ʈurkuḻ *correct, straight, honest;* Pn ʈurkuḻ.pa; Yi, Ku ʈuruṭ *straight, true, truth* (g).
435. **ʈuru > Ng ʈuru; Nl curu *snake* (d, f, h).
436. **ʈuṭu > Ma, Nm, Ka, Pn, Yi, Ku ʈuṭu *older sister* (g).
437. **waka.ṭa.ri- > Nm waka.ṭa.ri- *to turn round (intrans.);* Yi wa'.ṭa.ri- *to return* (b).
438. **waku > Ka waku.ṭu; Yi wawu.ru *armpit, armpit hair* (d).
439. **wa'ku.ra > Nm, Ng, Nl, Pn, Yi, Ku wa'ku.ra *crow* (b, h).
440. **waḻaṇ > Nm waḻaṇ *lungs;* Pn waḻaṇ *leaf;* Yi, Ku waʈaṇ *leaf, lungs* (b, h).
441. **waḻa.ṭu > Ma, Nl, Pl, Pn, Yi, Ku waḻa.ṭu *eaglehawk* (b).
442. **waḻpa.ra > Nm walpa.ra (cf. Yi waḻpa.ra) *spearthrower* (h).

443. **wali > Pl wali; Pn wali.kaṭa; Yi, Ku waci (cf. Ma waci) *bad* (d, f, g, h).
444. **wanka > Pn, Yi, Ku wanka 1. *alive* 2. *raw, uncooked* (cf. Pn wanka-ṇmara- *to be half-cooked*) (b, d, e, f, g, h: note Targari warga 1. *alive* 2. *raw;* N. Inggarda wanka *alive;* Nyangumarda wanka *half-cooked, half-ripe;* Ny wanka.ñu *alive;* Ny kunka *raw, uncooked*). See 373.
445. **waṇku > Nu, Ma, Pl, Pn, Ku waṇku; Nm, Yi waṇku.ḷa *elbow;* Ng waṇku *upper mill* (b, d, h).
446. **waṇpi-(L)- > Yi, Ku waṇpi- *to hit* (b).
447. **waṇṭi > Nm, Ka, Ng, Nl, Pl, Pn waṇṭi *tail, penis;* Yi, Ku waṇṭi *penis* (cf. Nu, Ma, Yi, Ku kaṇṭi *tail*) (h).
448. **wapa > Nm, Pn, Yi wapa *well, healthy* (e).
449. **warapa > Nm, Yi warapa; Pl waRapa *grass* (b).
450. **wara.Ri > Nu, Ma, Ka, Ng, Nl, Pl, Pn wara.Ri; Yi, Ku wara.yi *fly* (b, d, h).
451. **waṭa.ri- > Nm waṭa.ri-; Pl waṭa.Ri-~ waṭa.yi-; Pn waṭa.ri-~ waṭa.Ri-; Yi waɣa.ri- ~ wa'.ri- *to look for* (b, d).
452. **waṭaḷ > Nl waṭaḷ.pa *north;* Pl, Pn waṭaḷ *north;* Yi waṭaṭ *north;* Ku waṭaṭ *east* (cf. Nu, Ma waṭantu *east*) (b, d).
453. **waṭi.ra > Nu, Ma, Yi, Ku waṭi.ra *woman* (b).
454. **waya.(S)-(L)- > Nm waya.ka-; Yi wa'-ma- *to frighten* (cf. also Yi wa'-ri- *to get frightened*) (e).
455. **wila.ra > Ma, Nm, Ka, Ng, Nl, Pl, Pn, Yi, Ku wila.ra *moon* (b, d, g).
456. **wiṇṭa-(L)- > Nm, Pl, Pn, Yi, Ku wiṇṭa- *to cut* (b, d).
457. **wiña > Nm, Pn, Yi, Ku wiña *full* (h).
458. **wiri.(S)- > Pn wiri-yayi-; Yi wiri-mari-; Ku wiri-waṇi- *to play* (h).
459. **wiṭa- > Nu, Ma wiṭa-; Ka, Yi wiṭi.ri- *to climb* (g).
460. **wuṇṭa > Ma, Nm, Pl, Yi wuṇṭa *shield* (d, e).
461. **yali.piri > Ma, Nm, Nl, Pl yali.piri *emu* (d).
462. **yanti > Nm, Yi yanti 1. *log* 2. *yandying (winnowing) dish* (h).
463. **yapuḷ > Nl yapuḷ.pa *west;* Yi yawuṭ *west;* Ku yawuṭ *north* (b, d, e, h).
464. **yapu.ru > Ma yapu.ru *north;* Nm, Ka yapu.ru *west;* Nl yapu.ru-kuRa *westwards* (cf. Nl yapu.rka north). Note Nl yapu.rci; Yi yawu.rci *sea breeze from northwest* (b, d, e, h). See 106.
465. **yaṭi > Ng, Nl yaṭi *by-and-by* (h).

466. **yica-la > Nm, Ka yica-la; Yi, Ku ya·-la (cf. Ma yiya-la) *now, today* (h).
467. **yica-ŋuRu > Nm yica-ŋu; Pn yica-ŋuRu; Yi yiya-ŋu *new* (h).
468. **yini > yini *name* (universal in Ngayarda languages) (b, d, g, h).
469. **yinka > Ng yinka; Nl yinka.Ra (cf. Pl yiŋa.Ra) *charcoal* (h).
470. **yipa > Nm, Nl yipa; Yi, Ku yiwa (cf. Nu, Ma yiwa; Pn cipa) *ashes* (g).
471. **yuka > Nl yuka.mara *afternoon;* Pl yuka.ŋka *in the afternoon* (h).
472. **yuku.ru > Nm, Ka, Ng, Nl, Pl, Pn yuku.ru; Ku yu·.ru *dog* (b, h).
473. **yuḷu > Nl yuḷu *ground, camp;* Pl, Pn yuḷu *camp* (d).
474. **yura > Ng yura *noon;* Yi yura *sun* (h: note Nyangumarda yura.ŋa *summer*).

3.1.3. PN stems having cognates in at least one of the thirty-two other groups of the Pama-Nyungan Phylic Family are listed within century 600.[55] In the specification of such groups, Pama-Maric merits relatively frequent mention because of the appearance in recent years of a series of excellent published treatments, both descriptive and comparative, of languages of this group.[56] In particular, Kenneth Hale's work on the reconstruction of Proto-Paman is of great interest. In cases where he lists a Paman reconstruction which is of direct relevance to the present study, a citation is made below.

Particular attention has also been devoted to Capell's pioneering effort at reconstructing Common Australian (CA) stems. Of his forty-five starred forms, thirty-three have attested reflexes in at least one Ngayarda daughter language.

The listing of representative groups of Pama-Nyungan below is in accordance with the lettering scheme used by O'Grady, Voegelin and Voegelin: B (Warumungic), C (Wakayic), E (Arandic), L (Arabanic), M (Dieric), N (Darling), AA (Wiradjuric), AC (Pama-Maric), AF (Murngic), AG (Mabuiagic). Available materials on Pama-Nyungan languages would permit much richer attestation, given a computerized approach to the twin tasks of (a) handling the large mass of data involved, and (b) searching for cognates.

601. ***campu > Ng campu; Yi campu.ra *left hand* (B).
602. ***capu.ṭa > Nu, Ma capu.ṭa; Yi, Ku cawu.ṭa *beard* (AF).
603. ***cina > cina *foot* (universal in Ngayarda) (C, L, M, AC).

604. ***kaka.ra > Pl, Pn kaka.ra *east* (E).
605. ***kampa- > Nu, Ma, Nm, Ka, Pl, Pn, Yi, Ku, Tjuroro kampa- *to be burning* (E, AC).
606. ***kanka > Nm kanka.Ra ~ kanka.la-; Nl, Pn, Yi, Ku kanka.ḷa *up, above* (C).
607. ***kapi > Yi, Ku kawi *fish* (AF).
608. ***kari- > Nm, Ka, Yi kari- *to be standing* (C).
609. ***kumpu > Nm, Ka, Ng, Nl, Pl, Pn kumpu *urine* (E; AC *kumpu).
610. ***kuna > Nu, Ka, Ng, Nl, Pl, Pn, Yi, Ku kuna; Ma kuna.ka *excrement* (E, L, M; AC *kuna; AG).
611. ***kurca.ṭa > Ma, Nm, Nl, Pn kurca.ṭa; Yi, Ku kurya.ṭa (cf. Nu, Ka, Pl kuca.ṭa) *spear* (E).
612. ***kuRu > Ma kuRu *eye;* Nm kuRu *seed* (AC). See 123, 820.
613. ***kuṯi > Nu kuṯi; Nm, Ka, Ng, Nl, Pl, Pn kuci; Yi, Ku kuẏi (cf. Ma kuyi) *bone.*

614. ***mama > Ma, Nm, Ka, Nl, Pl, Pn, Yi mama *father* (Kulinic).
615. ***mila > Nm mila *buttocks;* Yi mila *hipbone* (AA).
616. ***minta > Ng, Nl minta *nose* (N).
617. ***mi.ṇu (< Proto-Nyungic *miRa.ṇu) > Pl, Yi, Ku mi.ṇu *knowing, clever* (AC).
618. ***miru > Pl miRu; Pn, Ku miru *spearthrower* (E).
619. ***muḷa > Nu, Ma, Nm, Ka, Pl, Pn muḷa; Nl muḻa; Yi, Ku muṯa *nose;* Ng muḷa *face* (E, L, M).
620. ***muŋka-(L)- > Nu, Ma muŋka- *to eat* (AC).
621. ***muŋku > Nm, Pn, Yi muŋku *anthill* (AC).

622. ***n̪upa > Nm, Ka, Ng, Nl, Pn ñupa; Yi, Ku n̪uwa *spouse* (M).

623. ***ñina- > Nu, Ma, Nl ñina- *to sit* (E, AC, AF).

624. ***ŋa-(L)- > Pl ŋa.na- *to eat;* Pn ŋa.ṇa- *to eat, drink;* Yi ŋa.rku-; Ku ŋa.rki- *to eat* (E).
625. ***ŋana > Nm, Ka, Pl, Pn, Yi, Ku ŋana *who;* Nl ŋana *what;* Pn ŋana-n̪a *what* (AA).
626. ***ŋana.ṇa > Nm, Nl, Pl ŋana.ṇa *we pl exclusive* (AC *ŋana).
627. ***ŋani > Ka, Yi, Ku ŋani *what;* Nl ŋani-ña *who;* Pl ŋani-ña *what* (AC *ŋa·ni).
628. ***ŋaṇka > Nm, Ka, Ng ŋaṇka; Nl ŋaṇka ~ ŋaṇka.n (cf. Pl, Pn ŋaṇku.r) *beard* (L, M).

629. ***ŋaṭi- > Nm, Ka, Pn ŋaci-; Yi, Ku ŋaɣi- (cf. Ma ŋayi-; Ng ŋacu-; Nl ŋacu.kari-) *to cry* (AF).
630. ***ŋaṭi > Nl, Pl, Pn ŋaṭi *mother* (M, AF).
631. ***ŋayi-(L)- > Nm, Pn ŋayi- *to throw* (AC).
632. ***ŋuca > Ng, Nl ŋuca *fire* (AF).
633. ***ŋura > Ma, Nm, Ng, Yi, Ku ŋura *camp* (M, AA, AC).

634. ***paca-(L)- > Nu paca- *to drink;* Nm, Ka, Nl paca- *to eat;* Ng paca- ~ paci- *to eat;* Yi, Ku pa·- *to bite* (cf. Ma paya- *to drink*) (AC).
635. ***pampu > Nu, Ma, Yi pampu.Ra; Nm, Ka, Ng, Nl pampu.Ru *blind in both eyes* (cf. also Yi pampa-ŋari- *to sleep*—see 393) (AF).
636. ***paṇṭi-(L)- > Nm, Ka, Pl, Yi, Ku paṇṭi-; Nl paṇṭi.kari- *to smell it* (E).
637. ***paRu > Nm, Nl, Pn, Yi, Ku paRu *spinifex* (AC).
638. ***pipi > Nu, Ma pipi *mother;* Nm, Ka, Ng, Nl, Pl, Pn pipi *breast;* Yi, Ku piwi *breast* (cf. Nu pipa.ṇ *breast*) (AG).
639. ***puka > Nm, Ka, Pl, Pn puka; Yi, Ku puwa *rotten;* Nl puka *bad* (cf. Ka puka.ra *fire*) (AC).
640. ***puṇṭa-(L)- > Nm puṇṭa- *to swim;* Ng puṇṭa-; Nl puñca- *to drink* (cf. also Nm, Ka piñca- *to drink*) (E, L).
641. ***puŋka- > Nu, Ma, Nm, Ka, Ng, Yi, Ku puŋka- *to fall* (AC).
642. ***puri-(L)- > Nm, Pn, Yi puri- *to pull* (AC).

643. ***ʈama > Nm, Yi ʈama *fire* (AC *cuma).
644. ***ʈaRa > Pn ʈaRa; Pl ʈaRa ~ ʈaya; Yi, Ku ʈaRa ~ ʈa· (cf. Nu ʈa·; Nm ʈaya) *mouth* (AF).
645. ***ʈuḷa > Nu, Ma, Nm, Ka, Pl, Pn, Yi, Ku ʈuḷa; Nl cuḷa *eye* (E).

646. ***waṇʈa > Ma, Ng waṇʈa; Nm wañci.la; Ka wañca; Yi, Ku waṇʈi.la (cf. Pl ʈa.ṇi ~ ca.ṇi; Pn ʈa.ṇa ~ ʈa.ni-) *where* (C, E, AC, AF).
647. ***waṇʈa-(R)- > Nm, Pn, Yi waṇʈa-; Ka wañca- *to leave it, to put it* (E).
648. ***waṇi- > Nl, Pl, Pn waṇi- *to fall* (E).
649. ***waŋka > waŋka *language* (universal in Ngayarda) (E).
650. ***waŋka- > waŋka- *to speak* (universal in Ngayarda) (E).
651. ***yacu > Ka yacu; Yi yayu (cf. Ng yicu) *east* (AC).
652. ***yiñca.Ra > Nm, Pn yiñca.Ra; Yi yiñca.· *alike* (AC).
653. ***yiṭi.ya > Nm, Pl, Pn, Yi yiṭi.ya *path, road* (E).

3.1.4. PN stems which have putative cognates in at least one of the twenty-eight other phylic families of the Australian Macrophylum are listed below in century 700. Phylic families other than Pama-Nyungan are identified as follows: 2 (Iwaidjan), 3 (Kakaduan), 7 (Gunwingguan), 8 (Bureran), 9 (Nunggubuyan), 11 (Maran), 13 (Yanyulan), 16 (Karwan), 20 (Garaman), 25 (Djeragan), 27 (Wororan), 28 (Nyulnyulan). As in the two previous sections, the listing is to be taken as merely representative.

701. ****kuṯa.ra > Nm, Ka, Ng, Nl, Pl, Pn kuṯa.ra; Yi, Ku kuɣa.ra (~ kuṯa.ra) (cf. Nu kuya.ra; Ma kuṯa.ra ~ kuwa.ra) *two* (28).

702. ****ma-(N)- > Ng ma-; Ka, Yi ma.nku-; Pl ma.na-; Pn ma.ṇa-; Ku ma.nki- *to take it, to pick it up* (7, 9, 13, 27).

703. ****maRa > Ma, Nm, Ka, Ng, Nl, Pl, Pn maRa; Yi, Ku maRa ~ ma· *hand* (9, 25, 27).

704. ****ṉa.ku- > Nm, Ka ṉa.ku-; Yi ṉa.wu-; Ku ṉa.wi- ~ ṉa.wu- (cf. Nu ṉa.wi-; Ma ṉa.wu-) *to see* (7, 9, 13).

705. ****ñin.ta > Nu, Ma, Nm, Ka, Pl, Pn, Yi, Ku ñin.ta (cf. Ng ñin.pa; Nl ñun.ta) *you sg* (13).

706. ****ñu.palu ~ ñum.palu > Ng, Nl ñum.palu; Pl ñu.palu (cf. Pn ṉu.palu) *you du* (13).

707. ****ñu.ra > Ng ñu.ra; Nl ñu.ra.lu *you pl* (13, 27).

708. ****ŋa.li > Nm, Ka, Ng, Nl, Pl, Pn, Yi, Ku ŋa.li *we du inclusive* (13).

709. ****ŋa.yi ~ ŋa.ṯa > Ma, Pl, Pn ŋa.ṯa; Nm, Ka, Yi, Ku ŋa.yi (cf. Ng ŋa.ya ~ ŋa.yi; Nl ŋa.ṯa ~ ŋa.ca) *I* (20, 27, 28).

710. ****pu-(NG)- > Ng, Nl pu.ŋa- *to hit* (2, 3, 27).

711. ****ṯa.lañ > Ma ṯa.lañ ~ ṯa.lañ.pa; Pl ca.lañ (cf. Ng ṯaya.li) *tongue* (7, 9, 11, 16).

712. ****ya-(N)- > Ng, Pl ya.na-; Nl ya.na- ~ ya.ra-; Pn ya.ṇa-; Ku ya.nki- *to go* (9, 27).

713. ****yira > Nu, Nm, Ka, Nl, Pl, Pn, Yi, Ku yira *tooth;* Ma yira *tooth, mouth* (7, 8).

714. ****yu-(NG)- > Nu, Ma, Nm, Yi yu.ŋku-; Ku yu.ŋki- (cf. Pl, Pn yi.ña-) *to give* (2, 3, 7, 8).

3.2. *Residue.*

3.2.1. Our data include seventy-three instances of the occurrence in a single Ngayarda daughter language of a form which has an apparent cognate in at least one other Australian language. Thus Nm kuma *together* lacks attested cognates in other Ngayarda languages, but within the framework of the proposed reconstruction of Proto-Nyungic, its cognation with Wirangu kuma *one* and the initial elements of Kuyani kuMa.ṉa and Wailpi uMa.ṉa.ka *one* seems assured. Sixty-three of the instances listed herein fall within this framework; the remaining ten (811, 813, 814, 821, 827, 835, 848, 850, 858, 873) belong in the still wider context of the reconstruction of Proto-Pama-Nyungan. In the list below (century 800), the inferred—and thus unstarred—PN reconstruction appears first, followed by relevant attestation for Ngayarda and non-Ngayarda languages respectively. Subgroup and group names are identified by letter as in 3.1.2. and 3.1.3.

801. ciṇṭu : Pl ciṇṭu; Py (b) ciṇṭal; An (g) ciṇṭu *sun.*
802. ciṭan : Nu ciṭan; Ta (b) citan *nape.*
803. cuka.ra : Ma cuka.ra; Ta (b) cuka.ra *foot.*
804. curki.ṭa : Nu curki.ṭa; Ta (b) curki.ṭa *moon.*

805. kacalpu : Ku kayatpu; Ta, Py (b) kacalpu *emu.*
806. kacu : Ma kayu.ṭu ~ kayu; Ta (b) kacu.ṭu *smoke.*
807. kanim.para : Ng kanim.para *north;* Ny (h) kanim.piri *northeast.*
808. kaṇa.ra : Nu kaṇa.ra; NY (d) kaṇa.ra *wind.*
809. kaṇpi : Yi kaṇpi; NY (d) kaṇpi *wrinkle.*
810. kapa.ḷa : Nu kapa.ḷa; Ta, Py (b) kapa.ḷa *dog.*
811. kaRa : Ma kaRa.lu; Ny (h) kaRa; Wakaya (C) kiḷi·-l *west.*
812. kaRar : Nm kaRar *hard,* Nm kaRar-wañca.ri- *to slip;* Ny (h) kaRir.ka- *to slip.*
813. kaṭa : Pl kaṭa ~ kaca; Ny (h) kaca; Umpila (AC) kaci *far.*
814. kaṭu : Ma kaṭu; NY (d) kaṭu *man;* Na (d) aṭu ~ aRu *wife;* Wailpi (l) aṭu *woman;* Andakerebina (E) aṭw *person.*
815. kukuḷ : Nm kukuḷ *testicles;* Wirangu (k) ŋukuṇ *egg;* Pintubi (g) ŋuka.ṭu *egg.*
816. kuma : Nm kuma *together;* Wir (k) kuma *one;* Wai (l) uMaṉaka *one.*
817. kuñca : Nl kuñca.Ru; Ny (h) kuñca ~ wiñca *bone.*
818. kupa.ḷa : Nl kupa.ḷa; EM (f) kupa.ḷu *asleep.*
819. kurpa.ṭuṭu : Pl kurpa.ṭuṭu; Balardong (e) kulpa.li; Ngalea (g) kurpa.Ru *magpie.*

820. kuRu.r : Nm kuRu.r *eyeball;* Ny (h) kuRu.r *pupil (of eye).* See 123, 612.
821. kuṯu.ŋuru : Ka kuṯu.ŋuru *ebb tide;* Ny (h) kucu.ŋuru *sea* (cf. Ny kucu.l *alone, lonely*); An (g) kucu *one.* Ump (AC) kuṯu *some* is probably also cognate.
822. maka : Ma maka; NY, Malgana, Wi (d) maka *head.*
823. maka.nu : Ng maka.nu; Ny (h) maka.nu *long.*
824. malu : Nm malu; Na (d) malu *shade.*
825. maḷa.ki- : Pl maḷa.ki-; WR (g) maḷa-ku-pica- *to return.*
826. maḷpa : Pl maḷpa *person;* Kalarko (f) maḷpa *man.*
827. mañar.ka : Nu mañar.ka *hand* (cf. Nl mańa- *to give*); Pu (b) mañar.ka; Wongkanguru (L) mañar.pa *hand.*
828. mapaṇ : Nm mapaṇ; Ny (h) mapaṇ *sacred stones.* See 361.
829. miḻu.Ra : Pl miḻu.Ra; NY (d) miḻu.Ra *snake.*
830. mirpu : Pl mirpu *chest.* Possibly cognate with Ny (h) minpi *chest* (but see 839).
831. mucu : Ng mucu.Ra *cloud;* Ny (h) mucu.ŋu *cloud,* mucu *mislaid over a period.* See 145.
832. muṭi : Pl muṭi.ŋka; NY (d) muṭi.ñka.ci; An (g) muṭi; Ny (h) muṭi.ŋi ~ muṭi.ŋa *knee.* See 377.
833. ṉuṇṭi$_2$: Ma ṉuṇṭi; Py (b) ñuṇṭi; NY, Wi (d) ñuṇṭi *tail.*
834. ṉuṇṭi$_1$-ma-(L)- : Yi ṉuṇṭi-ma-; Ta (b) ṉuṇṭi-ma- *to kill.*
835. ñiŋku.ḷu : Ma ñiŋku.ḷu; Py (b) ñiŋku.lu; Goa (AC) niŋku *nose.*
836. ŋawaṇ : Pl ŋawaṇ.pa; Yu (g) kawaṇ.kawaṇ; Ny (h) ŋawu *heedless, crazy.* Note also Yi ŋawa.ra.ri- *to forget.*
837. paṇa-(L)-: Pn paṇa- *to shine—of moon;* Wn, Yu (g) pañal *moon.*
838. paṇa : Nu paṇa; Ta, Pu, Tr (b) paṇa *head;* Ny (h) paṇañ *reef.*
839. parpa : Pl parpa.Ra; Ny (h) parpa *hot—of weather.*
840. paṭu$_2$: Ng paṭa *one* (cf. Nl paṭa *other*); Wn (g) paṭu *one.*
841. piḻi : Pn piḻi *cave;* Yu (g) puḻi; Walbiri (i) piḻi *stone, mountain;* Ny (h) piḻi *hole not in the ground;* Wai (l) puʎi *star.*
842. pinpa- : Yi pinpa- *to twinkle—of stars;* Ny (h) pirpa- *to shine.*
843. piṇṭi.Ri : Yi piṇṭi.Ri; Ny (h) wiṇṭi.Ri *white sand, beach.*
844. pita : Pn pita; Ny (h) pita *a sore.*
845. piṭa : Pn piṭa; NY (d) puṭa *star;* Wr (Mantharda subgroup) puṭa *eye.*
846. pupa- : Pl pupa-; Ny (h) pupu.ku.cari- *to bend, stoop.*
847. puyu : Pl puyu; Kal (f) puya; Yu (g) puyu *smoke;* Ny (h) puya *dense, high spinifex.*

848. ʈaka-(L)- : Nm ʈaka- *to take, grasp;* Wal (i) ɽaka *hand;* Wak (C) ləkə- *to carry.*
849. ʈami : Yi ʈami; Ta (b) ʈami; Ny (h) camu.ci *mother's father.*
850. ʈana : Nl ʈana.lu; Ny (h) cana; Mabuiag (AG) tana *they pl.*
851. ʈankaɳ.ki.ci- : Pn ʈankaɳ.ki.yi-; Ny (h) canŋaɳ.ka.pi- *to tremble.*
852. ʈaɳa : Ku ʈaɳa *far;* Pu, Tr (b) ʈaɳa.ʈi; NY (d) ʈaɳa.ʈi *sea.*
853. ʈaɳa- : Nm ʈaɳa.ŋka kalpa- *to carry it (as baby) on the back* (cf. Nm muru *back,* item 147); Ny (h) caɳa.ŋa-ka- *to carry on the back* (cf. Ny piɳtil *back*); Kukatja (g) caɳa *back.*
854. ʈu-(N)- : Pl ʈu.na- ~ cu.na- *to put;* Yu (g) cu- *to put, leave it;* Ny (h) -ci- alternant of *causative* suffix, e.g., ŋalpa-ci- *to cause to enter.*
855. ʈuŋka.Ri : Nm ʈuŋka.Ri; Ny (h) cuŋka.Ri *grave.* See 433.
856. ʈuʈu : Ma ʈuʈu; Wi (d) ʈuʈu; Na (d) uʈu; Kal (f) cucu *dog.*
857. ʈuʈu-(L)- : Yi ʈu·-; Ny (h) cuci- *to push.*

858. waka.Ri : Nm waka.Ri *fish;* Tr (b) waka.Ri *meat;* Na (d) waka.ʔi; Wadjuk (e) waka.l (waka.ļ ʔ) *snake;* And (E) ki.R *meat, animal.*
859. wala$_2$: Ma wala; Mal, Na (d) wala *egg.*
860. walpa : Pl walpa; Wn, Kuk, Yu (g) walpa *wind.*
861. waɳkaɳ : Nu waɳkaɳ; Ta (b) waɳkaɳ; Tr (b) waɖgaɳ *chest.*
862. warka.Ri : Ma warka.Ri; Ta (b) warka.Ri *head hair.*
863. waʈa : Nu waʈa; Ta (b) waʈa; NY (d) waʈa *forehead.* EM (f) waʈu *eye* is a probable cognate.
864. waya : Pl waya *nothing;* Ngalea, Yu (g) wiya *no, not.*
865. wici : Pl wici.Ri; Ny (h) wici *sinew, string.*
866. wiɳʈu : Ma wiɳʈu; NY, Wi (d) wiɳʈu *wind.*
867. wula : Ng wula *water;* Py (b) wula- *to drink.*

868. yaka.ra.ŋu : Ma yaka.ra.ŋu; Ta (b) yaka.ra.ŋu; Pu (b) ya·.ra.ŋu *sun;* EM (f) yaka *woman.*
869. yara : Nm yara *shield;* Ny (h) ļara *small shield.*
870. yilka.Ri : Pl yilka.Ri; An (g) ilka.Ri *sky.*
871. yiļku : Ng yiļku; Ny (h) yuļku *elbow.*
872. yiRi : Yi yiRi *sharp—of point* (cf. Pn yiRi.pi- *to sharpen it*); An (g) iRi *sharp;* Ny (h) yiRi *sharp point,* yiRiñ-pi- *to sharpen it.*
873. yuku : Nl yuku *heel;* Ny (h) ļuku *metatarsus;* Ridarngo (AF) luku *foot.*

3.2.2. In the context of the ongoing nature of Australian linguistic research, it seems appropriate to draw attention to stems

attested in one or another Ngayarda language for which the discovery of cognates in other languages would be especially desirable from the point of view of comparative phonology. In Yi, for example, contrast between lamino-dental and lamino-alveolar articulation is attested in the minimal pair ţaṇku *bull ant* : caṇku (reflexive morpheme). The same contrast is less directly attested in numerous other Australian languages. A selection of phonologically relevant forms is given below in century 900.

901. Yi caṇku (reflexive morpheme).
902. Yi culu *flower*. See 111.

903. Yi kanpa.ra *spider*.
904. Yi kaţa *testicles*.

905. Yi muri.ṇi *behind, last*. See 147.

906. Yi ñiṇţit *waist*.

907. Yi paca *thin*.
908. Yi pacu.wacu *wrinkled*.
909. Yi pitka *vulva*.

910. Yi ţaṇku *bull ant*.
911. Yi ţatpi *wide*.

912. Yi, Ku yiṇţi *forehead*.
913. Yi, Ku yirka *fingernail*.

3.3. *Index*. above 606; afternoon 178, 471; ahead 182; alike 652; alive 444; all 111; alone 234, 821; animal 858; ankle 382; ant, black 367; anthill 621; anus 430; arm, lower 398; arm, upper 103; armpit 396, 438; ashes 312, 470; asleep 818; ax 180.

back 147, 853; bad 443, 639; beach 843; beard 602, 628; bee 206; behind 905; belly 388; bend 846; big 104, 196, 369; bite 148, 634; bitter 327; black 215; blind 306, 635; blood 132, 366; blow 171; blunt 105; bone 613, 817; brain 122; branch 368; break 162; breast 638; brother, older 313; brother, younger 362; budgerigar 164; bull ant 910; burn 605; bury 427; butterfly 323; buttocks 357, 615; by-and-by 141, 185, 465.

camp 473, 633; carry 115, 848; carry on the back 853; cave 146, 841; charcoal 469; cheek 329; chest 189, 830, 861; clear space 401; clever 617; cliff 403; climb 114, 459; clitoris 143, 412; closed 427; cloud 831; cockatoo, white 415; cold 375, 379; come apart 162; come here! 331; cooked 373; cool 376; copulate with 154; correct

375; woman 453, 814, 868; womb 203; wrinkle 809; wrinkled 908. yandying dish 462; yoke 220; you 705; you du 706; you pl 707. zigzag 166.

4. COGNATE DENSITY MATRIX. The percentages of cognates in a 100-item test list which are shared by the 351 pairs in a comparison involving 27 Western Australian communalects are presented below in a cognate density matrix. The central portion of the matrix gives a preliminary indication of the nature of internal relationships among the Ngayarda languages (except Ma) which are included in this study. The lower part reflects external relationships between languages of the Ngayarda subgroup and of the Kanyara, Kardu, Mantharda, Nyunga and Mirniny subgroups, located farther to the south and southeast. The upper part shows cognate percentages shared with Wati, Marngu and Ngumbin languages spoken to the east and northeast. In addition, the results of comparisons with Nyulnyul, a non Pama-Nyungan language spoken in the Kimberley District of Western Australia, are included by way of pointing up the extreme dearth of cognates (or rather, putative cognates) shared between languages of different phylic families of the postulated Australian Macro-phylum. In fact, almost the only convincing cognate in many such comparisons turns out to be the first person singular pronoun, with initial syllable /ŋa-/ in the vast majority of Australian languages. Failure to identify several instances of borrowing is probably the explanation of the inflated percentage cited in the Nyulnyul-Karadjeri comparison; speakers of these languages have been in prolonged contact in the Roebuck Bay area, especially since the inauguration of the pearling industry in the 1860's. A more realistic index of cognate sharing between the two phylic families in question is arrived at by a comparison between Nyulnyul and, say, Jindjibandi: these two languages share only 2 per cent of the items of the test list as cognate!

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NOTES

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1 For the results of work done in an earlier era see, for example, Curr (1886), Schmidt (1919*a*,*b*) and Kroeber (1923).

2 It is my hope that other scholars will, in turn, be encouraged to build on the findings of the present paper. Among problems to be re-

Western Australian cognate density matrix

NN																									
6	Ty																								
10	30	Ki																							
8	29	57	Ny																						
7	31	32	38	Wn																					
7	38	26	29	46	Yu																				
2	26	16	21	28	52	WR																			
4	25	17	22	28	49	66	An																		
7	19	22	30	21	21	17	18	Ng																	
5	21	17	30	25	31	26	25	65	Nl																
2	26	24	33	30	36	31	36	34	58	Pl															
2	23	24	34	27	31	24	26	37	57	79	Pn														
2	19	27	31	25	29	23	26	40	42	55	65	Ku													
2	18	25	26	22	28	24	23	38	43	52	66	78	Yi												
4	20	20	26	21	27	21	21	53	57	53	53	60	69	Ka											
2	18	22	23	20	23	21	20	41	47	46	51	61	67	79	Nm										
3	13	13	19	19	24	23	20	25	38	42	44	50	47	51	43	Nu									
2	13	13	18	18	27	23	23	21	28	36	34	38	33	29	26	46	Ta								
3	14	14	19	15	24	24	24	19	29	32	30	30	26	24	21	36	79	Pu							
2	13	12	17	19	23	20	22	19	23	35	30	33	28	29	25	25	43	46	Tr						
7	21	14	16	18	27	20	20	16	23	29	28	31	22	21	22	26	31	36	45	Wr					
4	14	12	17	16	24	21	24	21	25	30	28	28	26	22	23	31	63	59	35	37	Py				
2	15	15	17	20	25	23	26	17	21	32	26	26	20	21	22	20	36	36	36	33	51	NY			
4	23	17	21	22	33	27	31	25	27	32	28	29	27	26	23	19	25	20	31	25	25	33	Na		
6	23	16	20	26	37	39	39	27	34	46	39	33	30	29	27	26	26	29	31	33	28	33	42	Wi	
4	20	17	14	17	24	24	29	17	18	27	24	22	18	18	18	18	20	19	18	24	21	20	31	32	Wk
3	18	14	18	15	28	27	28	16	18	27	19	19	18	18	14	17	19	20	20	25	22	21	31	29	29	EM

solved is that of the number of linear distinctions to be reconstructed for Proto-Pama-Nyungan stops and nasals.

[3] See O'Grady, Voegelin and Voegelin (1966), pp. 21-22. The Australian linguistic classification appears separately in the form of a map in O'Grady, Wurm and Hale (1966).

[4] Or, in the terminology of the 1966 classification, Pama-Maric. So also, Hale's 'Northern Paman' appears in the classification as 'Northern Pama'. In this paper, as in the 1966 linguistic classification map, the group name 'Southwest' is replaced by 'Nyungic'.

[5] The reconstruction of affixes is planned as part of a future work on Proto-Nyungic.

[6] With this end in mind, I am currently compiling a series of six successively larger lists of lexical cues, to aggregate 2,000 items in all, and designed for the rapid eliciting in Australian languages of stems most likely to have far-flung cognates, especially in languages for which relatively sizeable dictionaries are already available. An end result of this project could be that the work of Teichelmann and Schürmann (1840), to cite just one example, could come to have greatly enhanced value in Australian comparative linguistics.

[7] For example, subsequent to the organization of the attestation section (3.), I discovered evidence which would justify the transfer of item 147 *muru from category 1 to category 3: Tjapukai mutu *back (spine)*, a form for which I am indebted to Kenneth Hale. Targari (Kanyara subgroup) muru *morning, tomorrow* is probably also cognate, with the implied shift in referent from *back* to *(temporally) 'behind'*, i.e., *tomorrow.* A further example: Ngaluma ŋarka *face* (not in the attestation) is an apparent cognate of Walmanba (Ngarga subgroup) ŋarka *man.* A hypothesis of borrowing has not necessarily to be invoked here, since many Pama-Nyungan languages evidently have histories of very great phonological conservatism. In fact, comparisons of Hale's reconstructions for Proto-Pama(n) with my own for PN also show instances of complete identity in form and referent (so far as the latter has been determined). For example, see 609 ***kumpu, 610 ***kuna (3.1.3.) and 708 ****ŋa.li (3.1.4.). The second is not listed in Hale (1964, 1966), but does appear in his longer, unpublished list of Proto-Pama(n) stems. The corresponding form reconstructed for Common Australian by Capell (1956) is *gunaŋ (i.e., ***kunaŋ in terms of the present work), where the -ŋ is added because of the evidence of Brabralung (a Kurnic language of Victoria). It is also possible that -ŋ in Kurnic and other southeast Australian languages is historically a suffixed element having reference to a particular 'noun class' of the Bantu or North Australian type. Compare, for example, the -ŋu which appears in Kariera /mayaŋu/ *right hand,* where only *maya is reconstructible in PN, and in turn, in Proto-Nyungic. This example (item 364) and comparable forms are discussed in 2.4.

The initial ku- in item 609 is quite possibly ultimately related in some way to the ku- of 610, perhaps through analogical reshaping. Likewise,

the formal resemblance between item 438 **waku, reflected with the referent *armpit,* and 439 **wa·ku.ra, with reflexes glossed as *crow,* is quite possibly not fortuitous: Umpila (Pama-Maric) wa·ṯa has the referents *armpit* and *crow.*

[8] See Hale (1964), p. 250.

[9] See O'Grady, Wurm and Hale (1966).

[10] A minuscule sample of Tjuroro obtained from a Kurama informant led to the tentative classification of this communalect, together with its northwestern neighbor, Binigura, as a member of the Ngayarda subgroup. Subsequent to the period of my fieldwork, C. G. von Brandenstein has succeeded in finding speakers of both Tjuroro and Binigura, and his findings may well throw important new light on the nature of the proposed subgroup. See the Report of the Australian Institute of Aboriginal Studies for the period July 1, 1965 through June 30, 1966, pp. 13-14.

[11] The qualification "in conservative forms" is necessary because in Jindjibandi, for example, PN laminal laterals are reflected as stops, and PN laminal stops descend as glides under certain conditions, so that in this language the corresponding contrast is between lamino-alveolars /c ñ y/ and lamino-dentals /ṯ ṉ y̰/.

[12] For a treatment of Nyangumarda morphophonemics, see O'Grady (1964).

[13] Grammar sketches of Wanman, Yulbaridja, Jindjibandi and several other Ngayarda languages are assembled in O'Grady, Voegelin and Voegelin (1966).

[14] See pp. 189-191 of the above-mentioned publication for Hale's discussion of these and other aspects of the rather complex morphophonemics associated with this Linngithig suffix.

[15] Contrast, for example, Yulbaridja waRu-ṇa ña-ŋu# *fire-I see-past, I saw the fire,* with Nyangumarda wika yiri-ṇi-ṇi# *fire see-nonfuture-I.*

[16] Phonemicizations of language names are given in O'Grady, Voegelin and Voegelin (1966), beginning on p. 80. A note on nomenclature: the convention of naming Australian linguistic subgroups by a local word for *person* or *man* originated in a note by Radcliffe-Brown in Schmidt (1919*a*). Kenneth Hale, following this convention, coined the term Pama-Nyungan from the words for *man* used in the northeastern and southwestern extremities of Australia.

[17] See Voegelin, Voegelin, Wurm, O'Grady and Matsuda (1963), p. 25.

[18] Ngaluma and Nyangumarda share as cognates only 23 per cent of the items of the test list.

[19] Hale and I have compiled 108-item test lists in 142 Australian communalects. For some of the more moribund of these, up to a dozen or so meanings proved impossible to elicit, or to excerpt from available sources. Communalects for which Hale provided some or all of the data, and which are represented in the attestation of this paper, are Andakerebina, Jindjibandi, Linngithig, Nanda, Ngaluma, Tjapukai, Wakaya and Wanman.

[20] See O'Grady, Voegelin and Voegelin (1966), p. 81.

[21] With this phenomenon can be compared the phonological anglicization of the idiolects of many European immigrants to North America.

[22] See Curr (1886), Vol. I, pp. 292-293.

[23] The intensity of this contact increased sharply after the strike by aborigines in 1946.

[24] This informant, George Abung (native name /citiḻi/), born at Ethel Creek in 1910, moved to Meekatharra in 1927 and to Carnarvon in 1943. Despite this, he was still a fluent speaker of Bailko when interviewed in 1958.

[25] Despite this inconsistency, it seemed desirable to include the data from these two languages in the present study. Fortunately, C. G. von Brandenstein has been able to record further data for both. Should his informants turn out to have histories of markedly less contact with Jindjibandi, his data may become crucial to the precise determination of pre-contact Noala and Mardudunera interphonemic specification.

[26] For exemplification see, for instance, O'Grady, Voegelin and Voegelin (1966), pp. 88-89, 92-93 and 98.

[27] Alternants of *future* and *imperative* are not reconstructible in PN in sequence with V-(N)- or V-(NG)-, hence the four lacunae in the chart. The reconstruction of the four morphs in question will, however, be possible in Proto-Nyungic.

In Ngarla and Nyamal, a relatively high percentage of stems lacks known cognates in other Australian languages; these two Ngayarda languages also stand alone in showing reflection of the putatively Proto-Australian stem ****pu- (as /puŋa-/ *to hit,* item 710). The evidence of the Wati (Western Desert) dialects makes it seem plausible, though not actually demonstrable, that Ngarla, Nyamal puŋa- reflects PN *pu- plus the accretion to the stem of part or all of a former tense or aspect marker; hence the notation pu.ŋa-. For the remainder of the skimpy evidence for these two languages, see nos. 702 and 712. Douglas (1958) provides exhaustive data on the relevant morphophonemics of Warburton Ranges verb suffixes.

[28] For example, in PN *ma-(N)- > Jindjibandi ma.nku- *to take it.* PN verb stems which are reflected in augmented shape are nos. 190, 624, 702, 710, 712, 714 and 854. Item 704 cannot be reconstructed in PN as *ŋa- because the needed attestation in Bailko or Pandjima is not forthcoming (in each, wiya-, item 225, occurs with the referent *to see*). It is quite probable that PN *kañi-(L)-, no. 321, also involves augmentation of Proto-Nyungic *ka-. Compare with the Ngaluma and Nyamal reflexes of the former the following Nyangumarda verb stems: ka- *to carry,* and *kalku-* 1. *to have, keep, care for* 2. *to wear (clothes).*

Insight into the nature of the universal augmentation of PN single-mora verb stems can be gained through comparison, for example, between Jindjibandi ŋarku- (i.e., ŋa.rku-) *to eat* and Nyangumarda ŋa-lku- *eat-optative;* between Kariera and Jin ma.nku- *to take it* and Nyang. ma-nku- *take-optative;* between Ngaluma and Jin yu.ŋku- *to give* and

Nyang. yu-ŋku- *give-optative;* and between Ngaluma and Kariera ɲa.ku- *to see* and Wanman ña-ku- *see-future.* In Bailko and Pandjima, there is cognation, for example, between the increment which is attested in these dialects and the Nyang. suffix which includes *past* among its referents. Exemplification is provided by Pandjima ma.ɳa- *to take it* and Nyang. ma-ɳa- *took it;* by Pandjima ŋa.ɳa- *to eat, drink* and Nyang. ŋa-ɳa- *ate;* and by Bailko, Pandjima yi.ña- *to give* and Nyang. yi-ña- *gave.* See O'Grady (1964), pp. 45-46.

PN *ʈa-(L)-, no. 190, shows augmentation (either .ni- or .lku-) invariably; but the distribution of the two possible increments among the daughter languages is largely noncoordinate with that which was exemplified in the preceding paragraph. Nyang. -ca-, in pani-ca- *to poke him in the eye,* is quite possibly cognate with this stem.

[29] For an explanation of the convention of the multiple starring of certain PN reconstructions, see 3.1.2. and subsequent sections of the attestation. A cognate of PN **maya is Yulbaridja maya, the core meaning of which is *forceful.* Note also Nyang. marca *forceful, energetic* and marca.ñu *right hand.*

[30] Note, in the attestation, the placement of the two dots in Jindjibandi mara.ː; the first refers to the ultimately reconstructible, but synchronically frozen, morpheme boundary. The second, raised, dot marks length in the final vowel.

[31] Despite the evident antiquity of item 701, ****kuʈa.ra, it is conceivable that this form is a composite of ****kuʈu and a suffix marking *dual* number. See no. 821. Note also, however, PN *-kuʈa *dual,* e.g., in *ŋaya.ʈa-kuʈa, reflected without change in Pandjima, but as ŋaː.ʈa-wuʏa in Jindjibandi, with the referent *two persons.*

[32] See footnote 10.

[33] The presentation is modeled in part on Hale's treatment of Proto-Paman (*op. cit.,* p. 255), to which reference should be made, especially with regard to the striking similarity between the distribution of Proto-Paman and PN phonemes.

[34] See no. 439.

[35] These and other examples given below are selected as having relatively numerous cognates in other Nyungic languages.

[36] Though *lk, for example, is not reconstructible on the basis of the available data, there are scattered instances of this cluster in the daughter languages. Note, moreover, the tribal name Bailko /palku/.

[37] This judgment is partly based on the evidence of Kenneth Hale's large Ngaluma corpus, which includes such clusters as /rm/; however, the needed cognate is not attested in any other language of the subgroup. The existence in Nyangumarda of rarely recurring clusters such as /lŋ/, for example in /malŋamalŋa/ *flat* (as tire), raises the question of what the cognate sequence (or unit phoneme) in PN would be. So far, evidence is entirely lacking.

[38] See footnotes 20 and 21.

[39] One of the most knotty problems of comparative Nyungic will be the reconstruction of laminals. Contrast between two series of tongue-blade consonants is widely attested in Nyungic languages—mainly those occupying the periphery of the vast Nyungic speech-area. Note, for example, Bayungu (Kanyara subgroup) n̪aṭu *what* : ñaṭu *left hand.* See Hale (1964), p. 255, where he reconstructs only one series of laminals for Proto-Paman, though several Paman daughter languages show contrast between two, perhaps as a result of complex patterns of dialect borrowing; e.g., Umpila (Middle Pama subgroup) paṯa- *to bite* : paca *grass* : maṯa *sea grass.*

[40] For examples, see under the appropriate initial consonant in ʒ. Two apparent exceptions are nos. 195 and 310 (cf. also 470), in which initial laminal stops which preceded *u seem to have lenited to /y/ in north-eastern Ngayarda. But counter-examples are more numerous, e.g., nos. 196, 197, 312, 429 and 645. Note also nos. 149, 339 and 367 as clues to a possible correspondence between initial stops in Nyangumarda and initial nasals in other languages. It is quite probable that Nl piṇa *black ant* (no. 367) is a Nyang. loan.

[41] The retention of *c, and perhaps also of *R, in no. 372 is probably the result of a similar dissimilative reaction in the language. Nos. 314 and 345 are likely instances of borrowing by Yi from non-leniting languages.

[42] I owe this information to Kenneth Hale. Since [r̪] is in complementary distribution in these languages with [d̪], which still occurs after [n̪], the continued use of the symbolization /ṭ/ is justified.

[43] In no. 305, where *rk is flanked by *a and *u, this cluster descends as /rw/. A methodological note: strictly speaking, there is no justification in the Ngayarda data *per se* for reconstructing *rk rather than *rp here. In this single instance, it seemed reasonable to admit the Kanyara evidence, namely Talandji /carkuṭi/, Targari /cargu/ *three,* as being criterial in the reconstruction of *rk in PN.

[44] In a parallel treatment of Proto-Kanyara (PK) phonology which is in preparation, I will demonstrate that Buduna and Targari, the less conservative Kanyara languages, reflect PK consonantism with conspicuous innovation in the descent of nasals: in cluster with following homorganic stops, PK nasals have merged with zero in these languages; in other pre-consonantal environments, and prepausally, PK nasals are reflected as stops.

[45] In the last example, fortition of *l̪ to /ṭ/ is indicated in Ma. In no. 399, *l is reflected in Yi in free variation between /l/ and /t/. No. 112 seems to reflect lenition, in Ku, of *l̪ to /R/; possibly the conditioning factor is the unusual length of this stem.

[46] See no. 139. Contrast between /lc/ and /l̈c/ is attested in many an Australian language—e.g., Nyangumarda. Whether this is so also in Nl is not clear from Davidson's slips, the source for no. 139, which needs re-checking in the field. Two questions arise: (a) Is the Nl form /mil̈cu/ or

/milcu/? (b) Are the Pn and/or Yi forms /micu/ or /mitcu/, or even /miccu/?

[47] In no. 447, an unexplained initial /k/ is attested in some languages, while /w/ appears in others. See footnote 40.

[48] It is a conspicuous feature of Australian languages that in morphemes having both nominal and verbal byforms, phonological innovation affects the latter first. Compare, for example, Yulbaridja maRa *hand* and ma- *to take it* (but note Wirangu maRa *hand* : maRa- *to take it*). Note also the reflection of Proto-Paman *p as /ʔ/ in the last of the following Umpila triplet of examples: yampa *ear* : yampa- *to think* : yamʔaṯi- *to forget.*

[49] This example, together with others such as no. 192, makes it necessary to posit a hierarchical ordering of lenition in Yi. In $*C_1VC_2VC_3V(C_4)$, where $C_{2\text{-}4}$ are all lenitable consonants, i.e., members of */p ṯ c k R y/, it is possible tentatively to identify priorities in lenition, such that (a) in 3-mora stems, C_2 is lenited and C_3 retained, and (b) in reduplications of 2-mora stems, C_3 is lenited and C_2 and C_4 retained (cf. no. 209). More data are needed.

[50] Dashes are replaced by a dotted line around /ñ/ by way of tentatively including this consonant among the word-finals, even though actual attestation is lacking. The chart of Yi consonants differs in two respects from that which appeared in O'Grady, Voegelin and Voegelin (1966), p. 91: (a) Since the apico-domal stop and flap are in complementary distribution, only one symbol is needed (see footnote 42); (b) the phoneme symbolized in the Fascicle as /ð/, and whose most conspicuous allophone is a dental glide (with some laterality in some idiolects) is now restructured as a glide, /y̰/. The lack of a long high front vowel in the Yi data was not spelled out in the Fascicle: the Yi vowels are /i a u a· u·/. The Ku consonant inventory is identical with that listed for Yi, bu Ku has three short and three long vowels (see 2.2.). In Ng and Nl as spoken in the late nineteenth century and in the remaining daughter languages, the PN consonant and vowel systems are reflected without change.

[51] Concerning the semantic aspects of this problem, note Nyang. pani 1. *eye* 2. *seed* 3. *drop of moisture.* Kenneth Hale advises in a personal communication that Walbiri (Ngarga subgroup) milpa has the same three discontinuous referents.

[52] As pointed out in o., there are very good reasons for suspecting that in almost all cases where a 3-mora stem is attested in a Pama-Nyungan language, the final syllable has, *ipso facto,* a history which is ultimately noncoordinate with that of the preceding original stem.

[53] It is worth noting, however, that in most Australian aboriginal folk taxonomies with which he is familiar, Kenneth Hale has found that emus do not belong within the category denoted in Nyangumarda, for example, as wiru-caṭiñ *wing-haver.*

[54] A plausible Nyang. cognate of *-piri is /-pinti/, a complementive suffix, exemplified in O'Grady (1960). Compare also no. 309 and Nyang. /cintir-cintir/ *Willy Wagtail.*

[55] See O'Grady, Voegelin and Voegelin (1966).

[56] Interest in the Paman languages was first stimulated by Capell's monograph of 1956. See also the works of the Oateses, the Hershbergers, and of Sayers and Godfrey (1964); of Pittman and Kerr (eds.) (1964); and of Hale (1964, 1966).

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