6

Wik Subgroup[1] lexical history

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Abstract

Patterns of lexical replacement (or vocabulary change) in the Paman languages of Cape York Peninsula provide evidence in support of the proposition that the Wik languages, and the Wik-speaking peoples, have been associated with the geographic area with which they are presently associated for a period greatly in excess of that separating 1788 from the present. Detailed evidence will be presented in support of the following two statements, which, in turn, support the general proposition. The first statement (i) deals with the relationship between the Wik languages and the larger linguistic entities to which they belong—namely, Middle Paman, and the much larger grouping termed Paman, to which most, if not all, Cape York languages belong. The second (ii) deals with the internal relationships within the Middle Paman branch, to which the Wik languages most immediately belong, and then with relations internal to the Wik group itself. Each statement includes an assessment (the most conservative estimate) of the time period that must be attributed to Wik residence in the region at issue.

1 Note: in this chapter and the next, Ken's use of the term 'Wik group' or 'Wik languages' refers to members of what elsewhere here I refer to as members of the Wik Subgroup: PS.

2 This chapter was written in 1997: PS.

i. The Wik languages are related to their Paman neighbours in a consistent manner. As a group, they show a stable and consistent pattern of lexical sharing with their fellow Middle Paman languages, with Northern Paman, and with the south. The stability of this relationship is of a character that could only exist if the ancestors of the Wik-speaking peoples developed their present linguistic traditions, with its own internal diversity, in situ, in a region corresponding essentially to that which they occupy at present.[3] They represent a piece in the linguistic mosaic of Cape York Peninsula that has developed over a period greatly exceeding a millennium. The Wik linguistic tradition, as an integral part of this mosaic, cannot in any linguistically understandable sense, be viewed as an intrusion of outsiders at any point within the millennium we now occupy.

ii. The lexical diversity of the Wik sub-branch of Middle Paman reveals two levels of linguistic differentiation the least of which is extensive enough to require at least 300 years to achieve; the greater of the two levels of differentiation, that which distinguishes the pair Nr-Nn (Wik-Ngatharr and Wik-Ngathan) from its Wik relatives, represents a degree of lexical differentiation requiring a period of time approaching a millennium. On the reasonable assumption that simplicity is to be preferred over complexity in hypotheses about migration, the internal diversity of the Wik language group must have developed in the area where the Wik-speaking peoples are now residing. Their residence in that region must exceed 300 years, at the very least.

Introduction

In this essay, linguistic evidence will be presented in support of the proposition that the Wik-speaking peoples of Cape York Peninsula have resided in their present location for a period of time greatly exceeding that separating the present from the year 1788. I will take the Wik group to consist of the clans and communities so identified in Sutton (1978) and in references cited there. For the purposes of the present discussion, I will make use of linguistic material from a representative sample of the Wik languages, including the following:

3 This statement by Ken is not vitiated by the fact that, as Appendices 1 and 2 at the end of this book reveal, there have been some language shifts by some clans in recent centuries. See Clans 4, 29, 33, 35, 36, 76 and 105: PS.

Mn: Wik-Mungkan(h)
Me: Wik Me'nh, Wik Ep
Mm: Kugu Muminh
Nr: Wik-Ngatharr, Wik A(a)lkan(h)
Nn: Wik-Ngathan(h)

The abbreviations given here follow the usage of Sutton (1978). As the list indicates, members of the Wik group, properly conceived, differ in their use of the Paman terms for 'language', and accordingly in the name given to the speech-form with which they are associated—some use the term derived from **wika*, others use that derived from **kuuku*. Both are legitimate forms descending from a Paman ancestor language and, as such, are genuine elements of the Cape York Peninsula linguistic heritage. For the sake of simplicity, we will refer to the groups that are of interest here as Wik, following established tradition in the anthropological and linguistic literature.

The five speech-forms listed above have been chosen because they represent reasonably well the extent of linguistic diversity within the Wik group as a whole; and, to some extent, they represent as well the linguistic characteristics of three discernible Wik subgroups: (i) Mn-Me, (ii) Nr-Nn, and (iii) the Kugu Nganhcarra subgroup (Smith and Johnson 1985, 1986; Smith 1986) represented here by Mm. In addition to linguistic materials from these Wik groups, we will make reference to materials from other members of the Middle Paman branch of the Paman (or Pama-Maric) language family, and to materials from Paman languages outside the Middle Paman branch. All of this is relevant to the question of the long-term residence of the Wik peoples in Western Cape York Peninsula.

The Wik languages belong to the Middle Paman branch of Paman (cf. Hale 1976c). Other Middle Paman languages include Kuuk Thaayorre (Ta) to the south and the Kaanju-Ya'u-Umpila (Ka, Ya) language to the east.[4] Material from these languages will be involved in our discussions, to some

4 One of the manuscript readers for our publisher considers this inclusion of Thaayorre in Middle Paman to be wrong: '(a) the phylogenetic affinity of Kuuk Thaayorre is not with Wik but rather with languages to the south: Yir Yoront, Koko Pera, Uw-Oykangand & Uw-Olkol ("Kunjen"), and languages down the coast to Normanton: Alpher 1972, on the basis of grammatical correspondences; Alpher and Nash 1999). (b) importantly, this fact does not interfere with Hale's argument, since it is the rank ordering of the shared vocabulary figures that matters here': PS.

extent, as will material from Pakanh (Pa), a southern extension of Wik. Linguistic data from Middle Paman languages are taken from sources indicated below:

Wik

Mn: Hale notes (1960); Kilham et al. (1986).

Me: Hale notes (1960).

Mm: Hale notes (1960); Johnson (English-Nganhcara glossary, 1989, received 1995); Smith and Johnson (1985, 1986); Smith (1986).

Nr: Hale notes (1960).

Nn: Sutton (1995a).

Pa: Hamilton and Yam (1994).

Non-Wik (South)

Ta: Hale notes (1960).

Non-Wik (East)

Ka: Hale notes (1960).

Ya: Harris and O'Grady (1976); Thompson (1976).

The lexical data that will be referred to in this discussion are given in Appendix A within this chapter. That collection includes not only material from the Wik and other Middle Paman languages, but also material from Paman languages outside the Middle Paman branch; specifically, it includes lexical data from 13 Northern Paman languages (cf. Hale 1976a) and from some dozen languages spoken south of the Middle Paman region—these latter will be referred to informally as Southern Paman, though, unlike Northern Paman, they do not constitute a single branch within the Paman family. Northern and Southern Paman are important here, as they help to locate Middle Paman and the Wik languages in the overall Cape York linguistic picture.

Appendix A of this chapter consists of 100 lexical items from the areas of vocabulary generally considered 'basic' and therefore most resistant to replacement, i.e. most conservative. The use of basic vocabulary here is

in keeping with a long and established tradition in the study of linguistic diversity and language groupings. Though there are notable exceptions (e.g. Bergsland and Vogt 1962), replacement of basic vocabulary is in general slow and quite trustworthy in determining relative time-depth in the development of observed linguistic diversity among the members of language families and stocks.

The construction of a reliable list of basic items is not a simple matter, since the determination of what is basic and what is not basic is never clear. The list given in Appendix A attempts to represent vocabulary that is not culturally or regionally dependent (hence, avoiding kinship terms, material culture, and local zoological terminology). It includes 25 body parts, 1 bodily condition, 23 verbs, 10 adjectives, 9 determiners (pronouns, demonstratives, etc.), 2 terms referring to humans, 4 animal-related terms, 3 plant-related terms, 2 time adverbs, 3 quantifiers, 8 location terms, 11 natural features. Although no list is entirely successful, some measure of the conservative nature of this list can be gained by considering the percentage of Proto-Paman lexical items, which remain today in at least one language of each of the modern Paman branches. The following table lists (by number assigned in Appendix A of this chapter) the Proto-Paman reconstructions of items occurring in all modern Paman branches:

Table 6.1: Proto-Paman lexical items (from 100-word test list) occurring in all modern Paman branches

6 *pina ‘ear’; 7 *THaa’a ‘mouth’; 12 *THulpi ‘stomach’
16 *ma’a ‘hand’; 18 *pungku ‘knee’; 20 *THaru ‘foot’
26 *maaTHin ‘hungry’; 33 *THana- ‘stand’; 34 *Ñina- ‘sit’
40 *wanta- ‘leave’; 44 *paTHa- ‘bite’; 48 *THarngka- ‘laugh’
49 *mini ‘good’; 50 *warra ‘bad’; 51 *pama ‘person’
65 *panTHi- ‘burn’; 66 miÑa ‘meat’; 69 *kuta(ka) ‘dog’
70 *yuku ‘tree’; 72 *mayi ‘veg-food’; 73 *kaaway ‘east’
76 *yiiparr ‘south’; 78 *pakay ‘down’; 80 *ngula ‘bye and bye’
82 *kuuTHima ‘two’; 89 *Cuungku ‘long’; 93 *ngaani ‘what’
94 *waari ‘who’; 95 *wantu ‘where’; 96 *ngayu~ ‘I’
97 *Ñuntu~ ‘you’; 98 *Ñulu~ ‘he’; 99 ngali ‘1incl’
100 Ñupula~ ‘2du’

This is testimony, so to speak, to the longevity of these items in Paman and, correspondingly, a measure of the general conservative quality of the list from which they are drawn. These items represent descendent forms that, resisting replacement, have persisted in all of the modern Paman branches since the time of the Paman ancestral language. The time of ancestral Paman is clearly in the distant past, judging from the diversity of the Paman languages now spoken on Cape York Peninsula. Since this persistent vocabulary represents a third of the test list, we can be relatively certain that the list as a whole functions properly as basic in the required sense. A list of comparable length drawn from non-basic vocabulary would have few items traceable to Proto-Paman.

In Appendix A of this chapter, the lexical material is arranged so as to reveal the cognation judgements that have been made. Each item is given a number and an English gloss. The modern Paman forms are then listed by language. Each language is assigned a number, as indicated in the paragraph preceding the list. Where modern forms are shared by more than one language, they are grouped into 'cognate sets', each assigned a letter (a, b, c, etc.); where a modern form is not shared by another language, it is placed in a list labelled UR (for 'unrelated').

The linguistic position of Wik in Cape York Peninsula[5]

The Wik languages belong squarely and solidly to the linguistic legacy of Cape York Peninsula. They are members of the Middle Paman branch of Paman, and as such they share a number of linguistic features with their close neighbours to the south (Ta) and east (Ka, Ya), also members of the Middle Paman branch. Table 6.2 sets out the percentages of cognates shared by five Wik languages, with one another and with their Middle Paman neighbours, including Pa (Pakanh), a southern extension of Wik:

5 Recall that this refers to the Wik Subgroup only: PS.

Table 6.2: Wik languages and Middle Paman neighbours south and east

	Me	Mm	Nr	Nn	Pa	Ta	Ka	Ya
Mn	69	63	40	45	69	41	41	39
Me		59	49	48	56	40	36	34
Mm			41	40	59	42	36	37
Nr				86	40	32	29	31
Nn					43	33	32	34
Pa						40	46	(46)
Ta							26	25
Ka								70

It is obvious from Table 6.2 that the relationships within the Middle Paman branch vary in relation to the amount of cognate vocabulary shared. For example, Nr and Nn are extremely close, almost identical, lexically speaking, showing a figure of 86 per cent. By contrast, when these are compared to other Middle Paman languages, they show (jointly) a much lower percentage, an average slightly in excess of only 38 per cent; when these two are compared with other Wik languages, however, the figure rises to an average of 44, unsurprisingly, given the relative linguistic integrity of the Wik group. It is customary to use the terms 'dialect' and 'language' to characterise the relative distance among linguistic relationships within a linguistic branch or family. These terms have no precise scientific validity. They are nonetheless traditional, and no harm is done, surely, in declaring that Nr and Nn are a single language. Apart from this, however, the designation 'one language' is somewhat arbitrary in the Middle Paman situation. We might, for example, set the language boundary at 70 per cent plus/minus two or so (a figure somewhat lower than that suggested, for example, in the literature on glottochronology, cf. Gudschinsky [1956] and Swadesh [1954]). That would define Mn and Me as dialects of one language, and it would make Mn and Pa one language as well. The relation between Pa and Me in this triangle is paradoxical, of course, since these two share a much lower percentage of cognates (according to my count, at least). This situation is quite representative of efforts to use comparative materials to determine exact linguistic groupings. In general, however, it is possible to see the relevant features of the relationships within a linguistic branch such as this.

The picture that emerges here is the following, for the five core Wik languages: (i) Nr and Nn are clearly a unit, justifiably termed a single language;[6] (ii) Mn, Me, and Pa form a somewhat looser unit, greater than a single language, but a recognisable unit nonetheless; (iii) Mm belongs to another recognised unit, Kugu Nganhcarra, closely related to, and probably part of the sub-group containing Mn-Me-Pa—in any event, Mm is more distantly related to Nr-Nn. This agrees in the essential respects with the Wik-internal relationships delineated in Sutton (1978:176–81), though further research will be needed eventually to determine the details of the relationships between the Nganhcarra languages as a group (represented here by Mm, but see also below within this chapter Appendix B.5–6) and Mn on the one hand and Me on the other. Our purpose here is not to settle that issue, however, but rather to gain an appreciation of the relative degrees of separation among the Wik languages and their fellow Middle Paman cousins. From the perspective of shared lexicon, it is reasonably clear that there are at least three degrees of separation within the Wik group. The closest relationships are the dialect-level relationship between Nr and Nn (with 86 per cent of the test list shared between them) and the similarly close relationship internal to Nganhcarra (see Appendix B.5–6; Smith and Johnson 1986; Sutton 1978). The next closest relationship is that between Mn, Me, and Mm (sharing an average of 64 per cent); and the most distant relationship is that holding between the pair Nr–Nn and the rest of the Wik group (at an average of 44 per cent shared items).

Setting aside the extremely close Nr–Nn relationship, the Wik family can be said to reflect a reasonable amount of lexical diversity. The figures 44 per cent and 64 per cent are not high. They are the figures that are to be expected of languages whose genetic relationship is obvious by inspection; but they are figures that show, nonetheless, that the languages are not extremely close either. These figures are those of a language family whose members began to differentiate at a time relatively remote from the present. We will return presently to the question of how long ago this time must have been. Now, however, I will turn to the relationship between Wik (or Middle Paman generally) and its linguistic relatives to the north and south, with the purpose of revealing the integrity of the Paman family as a whole and of the linguistic position of Middle Paman within it. This will constitute part of the evidence for long-term residence of the Wik peoples in the area with which they are presently identified.

6 This relative unity underlies the single study of demonstratives in Wik-Ngathan and Wik-Alken (aka Wik-Ngatharr) by Louise Ashmore (2017): PS.

The languages to the north of the Wik Region are evidently related to the Wik languages, though the relationship is initially obscured by the radical sound changes that characterise Northern Paman (cf. Hale 1976a). Once these changes are understood, it is possible to recognise with considerable precision the lexical items that are shared between Northern and Middle Paman. In the following table, five Wik languages (plus two other Middle Paman languages) are compared with three selected Northern Paman languages: Li (Linngithig[h]), Ur (Uradhi), and Ar (Arritinngithig[h]).

Table 6.3: Wik languages (+) and three Northern Paman languages

	Li	Ur	Ar
Mn	29	28	30
Me	27	25	28
Mm	29	28	29
Nr	25	25	27
Nn	27	26	30
Ta	21	23	23
Ka	29	28	33

As expected, the figures here are lower than those internal to the Wik group, and they are on the average lower than the figures obtained for comparisons internal to Middle Paman in general. This simply reflects the evident fact that Middle and Northern Paman constitute distinct branches, or subfamilies, within the larger Paman linguistic family. The most important property that these figures have, however, is their consistency. With one minor exception, they fall within the range between 20 and 30 per cent. This is remarkable, particularly in relation to the comparisons involving the Wik group itself—in general, what is true of one Wik language is true of the others; the differences are minor and of no real significance, giving testimony to the integrity both of Wik and of Northern Paman. While only three Northern Paman are involved in the comparisons tabulated in Table 6.3, the picture remains the same when all 13 Northern Paman languages represented in Appendix A of this chapter are involved. In Table 6.4, I give the average shared by each of six Middle Paman languages with the Northern Paman languages jointly (figures rounded), and then the average shared by the Middle Paman languages (as a group) with Northern Paman (as a group):

Table 6.4: Middle Paman and Northern Paman comparisons

(a)	Average %, six Middle Paman languages compared (individually) to 13 Northern Paman languages: Mn 29; Me 27; Mm 29; Nr 26; Ta 22; Ka 26.
(b)	Average of averages, six Middle Paman (MP) and 13 Northern Paman (NP): MP–NP 26.

These figures reaffirm the range noted above, being between 20 and 30, with the general average, 26, approximately in the middle of the range.

I appeal to averages here in order to mitigate the effects of two antagonistic factors that must be recognised in using shared vocabulary to determine relative distance between groups of related languages: (i) geographic proximity and (ii) the natural process of lexical replacement. In general, in situations like that found in Cape York Peninsula, where the members of small linguistically related groups regularly interact with their close neighbours, geographic proximity is reflected in the density of shared vocabulary, even between groups belonging to distinct (though related) linguistic branches. The observable effect of this is that geographically contiguous, or nearly contiguous, linguistic groups will share items not found in more distant communities—as a result, of course, of the linguistic contact, often entailing bi- or multilingualism. This has the effect of raising the figure obtained in using a test list (like that in Appendix A) to assess linguistic relationships. Conversely, relatively greater geographic distance between linguistic communities (resulting in little or no contact) will be reflected in relatively more depressed test-list figures. Thus, geographic proximity, and the attendant rate of social contact, has a distorting effect on the normal process of vocabulary change and replacement. So, for example, if Ta (Thaayorre) is indeed a Middle Paman language, and if, as appears to be the case, it constitutes its own sub-branch within Middle Paman, then it should (*a priori*) share that same amount of vocabulary with each of the other Middle Paman languages. But it does not, as is clear from a superficial glance at Table 6.2. It shares much more with Mm (Muminh) than it does with Ka-Ya (Kaanju and Ya'u-Umpila), a reflection of the difference in geographic separation. Similarly, were it not for the distorting effect under discussion, Ta would be expected to share the same average percentage of test-list vocabulary with Northern Paman as do the other Middle Paman languages. Again, this is not the case; its more removed southern location is reflected in its relatively depressed average of 22 per cent shared test-list vocabulary in relation to the Northern Paman block—compared, for example, to the average of 26 for Middle and Northern Paman generally.

The upshot of the preceding discussion is that geography (in particular, sociocultural geography reflecting greater or lesser social interaction among peoples occupying a region) must be taken into consideration when assessing linguistic relationships. Cognation figures cannot be understood in complete isolation from geography in this sense, a fact that was well understood in the earliest work on Indo-European and has informed work of this sort throughout the history of comparative linguistics. Let us now look at relationships between Middle Paman and communities to the south and south-east, an area of considerably more internal diversity than that represented by Northern Paman. Table 6.5 gives the figures for Wik (plus two other Middle Paman) comparisons with Kp (Koko Pera, a southern neighbour of Ta and Yir-Yoront), Ym (Guugu Yimidhirr, the language of Cooktown and adjacent coast and inland regions north of Cooktown), and Og (Ogo-Njan, Ogonjan, an 'initial-dropping language' spoken south of the Mitchell River).

Table 6.5: Wik languages (+) and three noncontiguous Paman languages south and east

	Kp	Ym	Og
Mn	24	20	22
Me	23	17	20
Mm	24	22	22
Nr	25	14	20
Nn	24	14	19
Ta	30	21	20
Ka	20	18	18

Here again, the figures are in general lower than for comparisons internal to Wik or internal to Middle Paman as a whole. They are similar to the figures obtained in the comparison of Middle Paman to Northern Paman (cf. Table 6.4)—they are, however, somewhat lower on the average, reflecting, perhaps, the fact that two of the languages belong to quite distinct Southern Paman groups at some geographic remove from the Middle Paman region. The effect of geographic proximity and contact is clearly evident here in the relatively higher figures for Kp (Koko Pera). The averages (rounded) are set out in Table 6.6:

Table 6.6: Middle and Southern Paman languages compared

(a)	Average %, six Middle Paman languages compared (individually) to nine Southern Paman languages: Mn 19; Me 18; Mm 20; Nr 15; Ta 21; Ka 15.
(b)	Average of averages, six Middle Paman (MP) compared with nine Southern Paman (SP): MP-SP 18.

Although the MP–SP comparisons reveal somewhat lower averages of shared test-list vocabulary than do the MP–NP comparisons, there is an important similarity. They are relatively consistent, reinforcing the impression of stability in the relationships within the Cape York Peninsula region as a whole. In these more distant relationships, there are no erratic deviations suggesting recent major movements of populations.

To complete the picture of wider Cape York Peninsula linguistic relations, as reflected in shared vocabulary, let us now consider figures for Northern Paman in relation to Southern Paman. Average percentages are as follows (see Appendix A of this chapter for abbreviations):

- Average per cent, 13 Northern Paman languages compared (individually) to nine Southern Paman languages: Ur–SP 18; Mp–SP 16; Lu–SP 15; Yi–SP 16; Ty–SP 16; Ma–SP 16; Nrw–SP 16; Nd–SP 17; Al–SP 15; Li–SP 15; Ngg–SP 15; Ar–SP 15; Mb–SP 13.
- Average of averages, 13 Northern Paman (MP) and nine Southern Paman (SP): NP–SP 16.

These figures show the same consistency as that found in the other intergroup comparisons. In general, for all of these comparisons, no language deviates greatly from the shared average of the group to which it belongs. The average is generally close to the middle of the range, reflecting stability for the region. Individual extremes are not great, but they are interesting. Ta shows a low average figure in Table 6.4 but a high individual figure in Table 6.5. These are probably related phenomena; its contacts to the south can be expected to result in higher figures locally and, assuming that these contacts are important and strong, they will tend to lower the figures for the north—the more test-list items shared to the south, the fewer will be shared to the north, assuming that the southern items are distinct from the corresponding northern ones. This is not always true, however, since geographically separated languages can, of course, independently retain a relatively large inventory of the common lexical heritage, particularly in the absence of strong and persistent external influences (cf. the Icelandic-Old Norse example of Bergsland and

Vogt 1962). It is possible, for example, that the slightly higher figure for Ur (Uradhig) above reflects a circumstance of this sort. However, these deviations are minor and of little or no significance for the problem at hand; the overall picture is one of great consistency and stability.

The averages shared by Northern Paman, Middle Paman, and Southern Paman are reassembled in Table 6.7:

Table 6.7: Average shared vocabulary, the Paman family of CYP

	MP	SP
NP	26	16
SP	18	

As expected, given the geographic separation, the NP–SP comparison shows a figure that is lower, albeit only slightly lower, than that for NP–MP. Interestingly, however, the pair NP–MP evidently forms a block in relation to our nine-language SP sample—NP and MP agree in sharing a figure with SP that is 8 to 10 per cent lower than that shared by NP and MP with each other. This might, ultimately, permit us to group NP and MP into a single 'Upper Paman' subfamily, as opposed to the southern languages. But such a move is premature at this time, since our sample of southern languages is too meagre and scattered to reflect accurately the full and true genetic subgrouping of them.

Within NP, the average shared test-list vocabulary is 46 per cent, an average that is 20 per cent higher than the closest relationship outside NP, i.e. that with MP. Within MP, the average is 41 (or 44 if close, intra-language, percentages are included, raising the figure artificially); and the percentage within the Wik group itself is 48 (raising by almost 10 per cent, artificially, if close intra-language percentages are included). Within SP, as represented by the nine samples included in Appendix A, the figure is a low 22 per cent, an unsurprising reflection of the internal diversity and scattered nature of the sample.

The overall lexical and geographic integrity of the Paman family is rather clear, in outline at least, from the figures that we now have. In Figure 6.1, the linguistic groups are arrayed from north to south. For each group, the average percentage of shared test-list vocabulary is given, following the colon, and each group is connected to the others by a line indicating the average percentage shared by the pair.

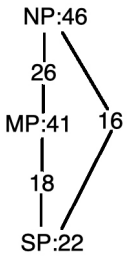

Figure 6.1: Paman languages, lexical sharing and geographic distribution

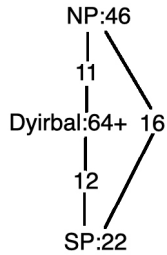

Figure 6.2: Lexical sharing under fictitious Dyirbalngan[7] intrusion into Middle Paman area

This pattern of sharing and geographic distribution suggests extraordinary stability; a typical pattern among related language groups, developing over a long period of time. From south to north, or north to south, there is a cline—the greater the remove, the greater the lexical separation, and, conversely, adjacent groups share more than separated groups. Northern Paman and Middle Paman reveal their integrity as groups by showing a higher average of shared test-list vocabulary internally than externally.

There is no indication of any significant recent migration into the Wik and general Middle Paman areas. If the Wik peoples did indeed represent an intrusion into the area, this would necessarily have been an intrusion in concert with the people constituting the Middle Paman group as a whole, and it would be so far in the past as to be virtually impossible to separate from the very earliest movements into the area.

A true and recent intrusion into the Wik and general Middle Paman region would be obvious. Suppose, for example, that speakers of the Dyirbal dialects—represented in Appendix A by Ji (Jirrbal) and Gi (Giramay)—had moved from their rainforest homeland some two or three centuries ago and settled in the present Middle Paman region, displacing the people now there. The lexical figures would reflect this clearly, and the relationships to the north and south would be different from what appears in example (8) in Chapter 7. On the average, these Dyirbal dialects share 11 per cent of test-list items with the 13 NP languages sampled, and they share 12 per cent with the nine languages of our SP sample. Figure 6.2 depicts the north–south pattern of lexical sharing in this imagined scenario, assuming absence of the present-day Middle Paman people.

7 Dyirbalngan are the people who own the Dyirbal language (Dixon 1972:23): PS.

The hypothetical Dyirbal intrusion produces a dip in lexical sharing proceeding from NP to SP, so that the extremes, NP and SP, share more than either does with the intrusive tradition. It is clear that the Wik peoples and their Middle Paman cousins do not fit this pattern. If the Middle Paman groups had been represented here, and, say, the imagined Dyirbal intrusion had split the MP-speaking population into two groups, the dip in lexical sharing would have been more dramatic, since sharing across the divide would, naturally, be greater than in Figure 6.2; the same would be true, though to a somewhat lesser degree, if the intrusion were to the north or south of present-day MP, separating it geographically from NP or SP. In any event, the pattern of sharing would not be as it in fact is. The facts evidently support Figure 6.1, not Figure 6.2, suggesting that Wik cannot be an intrusive group.

A final point in relation to the question of intrusion from outside the area. If speakers of Dyirbal dialects moved to the Middle Paman region, they would almost certainly leave a residual population behind in the homeland, this being the usual pattern in migration (in the absence of extreme conditions requiring wholesale migration). And they would therefore be most closely related linguistically to those who stayed behind. If the Wik peoples were an intrusive population, we would expect them to have relatives outside the area, relatives linguistically *closer* to them than their recently acquired neighbours. In fact, however, the Wik languages are closer to their neighbours, including both their Middle Paman relatives and their more distant Northern Paman relatives, than they are to any known linguistic group outside the area. That is to say, there is no plausible location outside the area that can be identified as a homeland from which an intrusive Wik-speaking people could have come. To be sure, the Wik languages are related to languages all over Australia, but their *closest* relatives are near at hand.

It is relevant to our general theme here to consider the question of 'time-depth' in relation to the patterns of lexical sharing observed in the Paman family of Cape York Peninsula—as represented schematically in Figure 6.1 and, in somewhat finer detail, in the various comparisons cited in the text leading to the conclusions summarised in Figure 6.1. Assuming that the observed patterns represent a relatively stable situation, how long has it taken for that situation to develop? That is to say, taking it for granted that the Paman languages are all related and therefore descend from a common ancestor, how long has it taken for the single common ancestor (i) to subdivide as it has into the present branches and sub-branches and (ii) to achieve its present distribution in Cape York Peninsula.

To address this question, we must entertain the widely accepted proposition articulated by Sapir in his renowned 'time perspectives' monograph to the effect that 'the greater the degree of linguistic differentiation within a stock the greater the period of time that must be assumed for the development of such differentiation' (Sapir 1916). We assume here that lexical replacement represents one kind of linguistic differentiation and that, like other kinds, it takes time—the greater the replacement, the greater the time involved.

It is possible to gain some appreciation of the time-depth involved in the Paman family (and in subregions of the Paman area) by comparing the patterns of lexical sharing observed there with those observed in other areas of the world that are to some extent comparable and where we have some reasonable estimate of the dates of separation.

The Northern Athabaskan[8] communities of western Canada and interior Alaska exhibit a relatively stable relationship to the lands they occupy, and they have differentiated over time into a number of recognisable branches (called substocks by Hoijer 1956). Although linguistic differentiation within Athabaskan is certainly less than what we have observed for Paman, it is nonetheless instructive to compare the two families—their situations are not altogether dissimilar. It is reasonably certain that the maximum time-depth in Northern Athabaskan is around a millennium. The time-depth for the family as a whole is somewhat more than this if the geographically separate Southern and Pacific Athabaskan languages are taken into consideration. Within the northern group, the comparison showing the lowest percentage of shared lexical items is that between Kutchin and Sarcee, at 63 per cent (based on a 100-word lexicostatistic test list; Hoijer 1956). In general, Sarcee and Galice (both somewhat separate geographically from the other northern languages) show the lowest percentages (both languages averaging 71 in comparisons with the other six Northern Athabaskan languages examined by Hoijer). These percentages are, of course, much higher than the lowest observed within Paman; and they are higher than the lowest figures within each of NP, MP, and SP as well.

8 One of our publisher's manuscript readers pointed out that there have been significant developments in research on Athabaskan since 1997: PS.

If the lexical figures for Athabaskan correspond to a maximum time-depth of a thousand years, then, if this is a comparable situation in any sense, the time-depth within Paman is much greater. To what extent is it comparable? First, the time-depth of a millennium is generally accepted on independent grounds as corresponding to the time when Athabaskan peoples began to move south, eventually settling in the region occupied by the present-day Apacheans (D. Gunnerson 1974; J. Gunnerson 1979; Gunnerson and Gunnerson 1971). The Apachean–Northern Athabaskan lexical comparisons yield percentages that are comparable to those for Sarcee and Galice in relation to the rest of the north. Thus, we have a correlation between shared lexicon and known time-depth.

But, to what extent can we use this to assess time-depth in Cape York Peninsula? We know that lexical comparisons between individual languages do not yield percentages that can be relied on to estimate anything like the 'date of separation'. The rate of lexical replacement in a language is simply not regular or constant, a fact that is dramatically brought out in the work of Bergsland and Vogt (1962). However, this has not, and should not, entirely discourage the use of the lexicon in reaching some estimation of time-depth through comparison with like situations in which the *actual* time-depth is known.

An individual language may, and usually does, show irregular and even erratic rates of vocabulary replacement at different times in its history, being subject to a range of varying pressures, influences and forces. But two languages will seldom be subject to the same pressures and influences at the same time; three even less, and so on (see Lees 1953, for some discussion of the 'independence assumption' in lexical decay). Accordingly, separate languages should not be expected to, nor do they, replace all the same items. This is why one observes that paradoxical comparisons 'wash out', so to speak, when the set of comparisons is enlarged. The Mn–Me–Pa comparison is paradoxical (Mn–Me 69; Mn–Pa 69; Me–Pa 56), but the relation of each of these languages to the rest of Middle Paman is unproblematic (with averages, including close relationships in the tally, as follows: Mn 51, Me 49, Pa 50).

It should be pointed out, of course, that in some areas of the world, including Australia, lexical replacement is institutionalised, typically in relation to mourning observances and respect relationships. This can, to some extent, elevate the rate of replacement above the ordinary, as illustrated, for example, in the rather spectacular lexical relationships

observed by Bergsland for West Greenlandic and East Greenlandic (Bergsland and Vogt 1962). But here again, the use of a larger sample of languages—in the Eskimo case addition of Inuit materials from Canada and Alaska, and Yupik materials from Alaska and Siberia—would rather quickly correct the picture (were it not already obvious, as it was to Bergsland in the Greenlandic case). It is, nonetheless, worth considering the possibility that institutionalised lexical change could be accommodated in devising measures of lexical diversity for language groups. Of course, *recognised* institutionalised lexical replacements (as in the East Greenlandic case) must be taken into account; but for the most part, it is not possible to identify such replacements with certainty, just as it is not always possible to recognise borrowings (part of the 'geographic proximity factor'), especially when closely related languages are involved. To cite a concrete example, is the Middle Paman word *kooter* 'head'—recorded by Sutton for Nn and by Kilham et al. for Mn—a true shared retention in Mn and Nn? I assumed not, and rather that it was basically Nn, but I cannot be absolutely certain—work of this sort is fraught with questions of this kind. In the absence of direct and absolute identification of institutionalised replacements and spurious resemblances due to borrowing, the most one can do is refrain from taking particular shared-vocabulary figures too literally—i.e. to have in mind instead a range of flexibility, much in the spirit of the correctives discussed in the literature on lexicostatistics (reviewed, for example, in Hymes 1960, and explicated in detail in Gudschinsky 1956). In any event, it is not at all clear that a general corrective formula can be devised for use here, and I will assume that the best that can be done is to work with the gross figures obtained and to bear in mind that some flexibility must be allowed in interpreting them.

Taking all of this into consideration, I believe that it is legitimate to compare the Athabaskan and Paman situations and to maintain that the generally low figures internal to Paman reflect far greater time-depth for Paman than for Athabaskan. And, therefore, given the reasonably certain time period involved in Athabaskan, the time-depth represented by Paman is far in excess of a millennium, perhaps several millennia.

This conclusion is reinforced by a number of established correlations between time-depth and lexical replacement, including the following from Lees (1953), in which the percentages represent the test-list vocabulary retained by the modern language from an early sample associated with a date that is reasonably well-attested historiographically: (1) Old English of

900–1000 / Modern English: 76.6; (2) Plautine Latin of 200 BCE / Early Modern Spanish of 1600: 62.5; (3) Plautine Latin / Molière's French of 1650: 62.5; (4) Old High German of 800–900 / Modern German: 84.2; (5) Middle Egyptian of 2100–1700 BCE / Coptic of 300 BCE: 53.0; (6) Koine Greek of 250 BCE / Modern Athenian Greek: 69.0; (7) Koine Greek / Modern Cypriote: 67.8; (8) Ancient Classical Chinese of 950 CE / Modern Mandarin: 79.6; (9) Old Norse of 800–1050 CE / Modern Swedish: 85.0; (10) Classical Latin of 200 BCE / Modern Tuscan: 68.6; (11) Classical Latin / Modern Portuguese: 62.9; (12) Classical Latin / Modern Rumanian: 56.0; (13) Classical Latin / Modern Catalan: 60.6. To these can be added Hattori's per-millennium figures for Japanese, from Old Japanese of the eighth century: Kyoto 78.4; Kameyama 79.0; Tokyo 80.4 (Hattori 1953), and Satterthwaite's figures for Qoranic Arabic [645–650 CE] and Modern Meccan Arabic: 82.3 (Satterthwaite 1960). The percentages here are not directly comparable to those we have considered heretofore, since they correspond to the figures obtained when comparing an ancestral language. Since, to a degree (cf. Lees 1953), individual languages proceed independently in the matter of vocabulary replacement, the vocabulary retained in common by two related languages will, in general, be lower than that retained by either one of them from their common ancestor.

While a single language may retain from its ancestor 80 out of 100 test-list items over a period of a millennium, two languages descending from that ancestor may share only 65, or so, of those items after that same period of time. Thus, distorting influences aside, figures for shared retentions are lower than those of a single language in relation to its ancestor. Taking this into consideration, the figures for lexical sharing within Paman and, in particular, the relatively stable NP–MP 'block', includes figures well below many of those seen in the 15 comparisons just cited, for which a time-depth can be asserted with relative certainty. Again, it is clear that the Paman family shows respectable time-depth, even if very liberal error-factors are admitted in the calculations given. The maximum time-depth greatly exceeds a millennium as does that in the NP–MP region.

The conclusion, in relation to the Wik peoples, seems to me to be the following:

The Wik languages are related to their Paman neighbours in a consistent manner. As a group, they show a stable and consistent pattern of lexical sharing with their fellow Middle Paman languages, with Northern Paman,

and with the south. The stability of this relationship is of a character that could only exist if the ancestors of the Wik-speaking peoples developed their present linguistic traditions, with its own internal diversity, in situ, in a region corresponding essentially to that which they occupy at present. They represent a piece in the linguistic mosaic of Cape York Peninsula, which has developed over a period greatly exceeding a millennium. The Wik linguistic tradition, as an integral part of this mosaic, cannot in any linguistically understandable sense, be viewed as an intrusion of outsiders at any point within the millennium we now occupy.

The internal relations of the Wik language group

The Wik languages form an integral part of the Middle Paman branch within the Paman family and, as such, share with other languages of that branch lexical material that is more or less exclusive to it. Some items of this tradition are given in reconstruction below, in which numbers correspond to those used to identify items in the test-list of Appendix A (items numbered above 100 are from an extension of that list):[9]

> 5 *kaa'a 'nose'; *14 *punTHa 'upper arm'; 9 *THalpi 'tongue'; 19 *yangkar 'shin'; 24 *parin 'skin'(?); 30 *nga(a)THi- 'hear'; 41 *THaa'i- 'throw'; 45 *umpi- 'cut'; 56 *punga 'sun'; 60 *ngaka 'water'; 62 *THuma 'fire'; 81 *thono- 'one'; 91 *THarran 'hard'; 114 *piña 'FaSi'; 118 wuñi- 'frightened'; 119 *nhaaNHi 'fly'; 133 *wuynpa- 'put'; 136 *wiipa 'shade'; 140 *NHuuma-~ 'smell'; 144 *THuli 'spearthrower'; 145 *puunha 'soft'; 162 *kacin 'yamstick'. [22 reconstructions]

These items represent part of a distinctive Middle Paman lexical heritage, of which the Wik languages partake, identifying them with a particular sub-tradition within the Paman family as a whole.

The percentages of test-list items shared by the Middle Paman languages are presented in Table 6.2, and some discussion of those figures is given there in the associated text. Our interest now is in the Wik group itself.

9 As an indication that these items are 'more or less exclusive' to Middle Paman, I must point out that 9 *THalpi 'tongue' has reflexes elsewhere, e.g. Djabugay jalbarr 'flame', Yalarnnga thalpirri 'beard', and 60 *ngaka 'water' has the reflex ngaka 'water' in Wangkumada and Pirriya, languages of south-west Queensland: PS.

We can see that, while Wik is closely related to the southernmost (Ta) and easternmost (Ka, Ya) Middle Paman languages, on an average, the Wik languages appear to form a group slightly separate from them. Thus, while the general average of shared test-list material is 41 per cent for Middle Paman as a whole, this figure rises to 48 when the Wik languages alone are considered. (These are the averages obtained when especially close intra-language percentages are eliminated; when these close relationships are included in the averages, the figures are 44 and 57, respectively. These higher figures are, however, artificial.)

Assuming that the Wik languages are in fact a genuine subgroup within the Middle Paman branch, is it possible to say anything about its internal structure? We have in fact suggested that there is a Wik-internal classification of languages (cf. Sutton 1978, and our discussion in the early paragraphs of Chapter 7 this volume), specifically, one that identifies the pair Nr–Nn as representing the greatest degree of separation within the group. These languages share an average of 43 or 44 per cent with the other Wik languages, while Mn–Me–Pa–Mm share an average of 50 or slightly more with other Wik languages, and an average of 62 among these four alone, excluding Nr and Nn. This asymmetry is also reflected concretely in the fact that there is a body of test-list vocabulary shared by these four languages, to the exclusion of Nr–Nn. These items are listed as follows:

> 2 *ngulV 'forehead'; 6 *kona 'ear'; 11 *yuwVn 'armpit'; 17 *kuman 'thigh'; 27 *mungka- 'eat'; 32 *THawa- 'speak; 39 *ma- 'take'; 43 * pii(yi)ku- 'hit'; 55 *raaku 'ground';[10] 63 *THoko 'smoke';[11] 74 *kuwa 'west'; 77 *kani 'up'; 87 *kaci 'far'; 88 *THinTHu 'near'; 92 *i- 'this'; *104 *paapa 'breast';[12] *105 *wuña 'OBro'; 116 *ma'a^eka 'fingernail'; 117 *pupi 'firestick'; 134 *engkV^thaa'a 'rib'; 139 *yapa 'OSi'; 147 *atu 'sugarbag'; 154 *pangku 'wallaby'. [23 reconstructions]

In short, the greatest lexical diversity within the Wik sub-branch is that represented by the separation of Nr–Nn from its fellow Wik languages, at an average somewhere between 43 and 44 per cent.

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10 Hale's Nr Informant had given *nhath* for 'ground', but that dialect, as does Nn, also has *aak* <*raaku for 'place, ground, country etc.': PS.

11 Note that Wik-Ngatharr does have *thok* 'bushfire': PS.

12 Nn does have *peepeth* 'female' (*-th* is a comitative suffix) presumably from *paapa + comitative; Nn also has *paap* 'two-stick frame for weaving bags'; in Nn the bottom corners of the bags, which begin on the tops of the sticks, are *yuunh kuyeng* 'bag breasts': PS.

Assuming the usual simplicity metric in postulating migrations, in the absence of strong counter-evidence, we will maintain that any significant linguistic division, resulting in distinct languages or subfamilies, represents a *local* development; any other assumption would require separate migrations into the area in which the linguistic diversity is found. Accordingly, in the absence of counter-evidence, we must assume that the internal diversity of the Wik group developed in the region where the Wik languages are now found. If we can estimate a time-depth for this diversity, then we will have an estimate of the minimum period of residence of Wik-speaking peoples in the area.

The figures we have are 44 per cent, or so, for the greatest division within the sub-branch, and 62, or so, for the next major division. These figures, on the face of it, and assuming the Old World comparisons are appropriate, already suggest an antiquity for the Wik sub-branch approaching a millennium and, certainly, exceeding half a millennium (cf. Lees 1953). If Wik differentiation began in situ, as the simplicity-of-migrations argument would suggest, then the Wik languages have been in their present location from a time long before 1788.

Before concluding this discussion, I would like to consider the question from the viewpoint of the more recent period, directly relevant to the issue at hand, looking back to a time between 200 and 300 years ago (i.e. the seventeenth century, approximately). How much lexical diversity can we expect to have developed within that period? To address this question, I will again compare situations that are, to some extent, similar—in this case, situations involving indigenous languages recorded or cited in the colonial period. Where forms of speech known in the colonial period to be dialects of a single language are now spoken by distinct and separate populations, the question will be, how much lexical replacement (as represented by shared cognate percentages) has taken place since unity? In some cases, the data have to do rather with replacement within one tradition over time. The cases are presented below.

Case I

Arizona Tewa and Río Grande Tewa. The Arizona Tewa moved to the Hopi community in 1695 to escape Spanish oppression (Dozier 1966). Percentage of shared test-list items, based on vocabularies in Dozier and Hale (1965) and O'Grady (1961): 92, 98 (with variation reflecting uncertainty in judgements).

Case II

(a) Southern Sumu (Ulwa) and Northern Sumu (Panamahka). These groups were as territorially distinct though related entities in 1600; Sumu unity and territorial contiguity was effectively destroyed during the Miskitu raids of the eighteenth century (Helms 1971). Shared cognates from 100-word list in modern Ulwa and Panamahka: 62 per cent to 72 per cent (the latter when compounds are admitted, one part of which is cognate, from Hale and Lacayo 1988). (b) Modern Twahka and Panamahka, closely related dialects of Northern Sumu and so recognised in 1600; now living in separate villages in interior Eastern Nicaragua. Percentage shared cognates: 90 (based on material assembled by Hale and Melendez 1994).

Case III

Pima of Ónavas, of Sonora, Mexico, and O'odham (Pima-Papago) of Northern Sonora and Southern Arizona. These were recognised as parts of a contiguous dialect chain in 1647, when Padre Baltasar de Loaysa was assigned as Jesuit priest to Ónavas, where, quite possibly, he wrote the Névome grammar (of Ónavas Pima) attributed to him; the linguistic integrity of the Pimería Alta was disrupted in the nineteenth century. Percentage of shared cognates: 96 (based on materials in Hale, Cox, et al. 1977, and Saxton et al. 1983).

Case IV

Apachean (Southern Athabaskan). Fray Alonso de Benavides's comment in 1630 that, although the 'huge Apache nation' had one language, which 'since it is so extensive it does not fail to vary somewhat in some bands (rancherías), but not such that it cannot be very well understood'. The percentages shared by the modern Apachean languages are set out in Table 6.8 (based on Hoijer 1956); the abbreviations are for Chiricahua, Navajo, San Carlos, Jicarilla, and Lipan:

Table 6.8: Lexical percentages shared by the modern Apachean languages

	Nav	Chir	SC	Jic
Chir	94			
SC	89	91		
Jic	89	92	87	
Lip	87	91	84	91

Case V

Modern Carib and the ancestral Dominican Carib of 1650 CE. Cognates remaining amount to 93.5 per cent (cited in Lees 1953).

Case VI

Yucatec Mayan. Modern Yucatec retains 95.8 per cent of 212 lexical items recorded by missionaries in 1540–1700 (Lees 1953).

These examples demonstrate repeatedly that the extent of lexical replacement occurring since the seventeenth century is extremely small. The percentages are high, only that for the Ulwa–Panamahka comparison (which really does not belong here) reaches a respectably low point, equalling the lower average of 62 of the Wik-internal comparisons. This relatively low percentage is certainly due to the circumstance that Ulwa (Southern Sumu) has been distinct from Twahka-Panamahka (Northern Sumu) for a long time, a fact that is reflected in certain rather dramatic morphological changes as well. Setting this figure aside, the percentages involved in the 'case studies' I–VI above represent a range to which the *closest* Wik-internal relationship belongs—i.e. that of Nr and Nn.

Assuming that it is appropriate to employ these cases in assessing Wik time-depth, their implication is clear. The lexical diversity that exists within the Wik sub-branch is much in excess of that which has occurred in the comparison cases I–VI, representing lexical change occurring at least since the seventeenth century. Putting aside the closest Wik-internal relationships, there are two primary levels of lexical differentiation, the greater being represented by the average of 41 per cent shared test-list vocabulary, the lesser by the average of 62 per cent. Even the higher average is significantly lower than the percentages involved in cases I–VI. Assuming the validity of the comparison, the conclusion is almost unavoidable that Wik-internal linguistic differentiation, as represented by lexical change, is greater than that which could have taken place in the past 300 years.

In summary, the lexical diversity of the Wik sub-branch of Middle Paman reveals two levels of linguistic differentiation, the least of which is extensive enough to require at least 300 years to achieve; the greater of the two levels of differentiation, that which distinguishes the pair Nr–Nn (Wik-Ngatharr and Wik-Ngathan) from its Wik relatives, represents a degree of lexical differentiation requiring a period of time approaching

a millennium. On the assumption that simplicity is to be preferred over complexity in hypotheses about migration, the internal diversity of the Wik language group must have developed in the area where the Wik-speaking peoples are now residing. Their residence in that region must exceed 300 years.

Appendix A: Comparative Paman Vocabularies[13]

1. Language abbreviations

(1) Ur: Uradhi; (2) Mp: Mpalicanh; (3) Lu: Luthigh; (4) Yin: Yinwum; (5) Ty: Thyanhngayth; (6) Mam: Mamngayth; (7) Nrw: Ndrwa'angayth; (8) Nd: Ndra'angith; (9) Al: Alngith; (10) Li: Linngithigh; (11) Nk: Nggoth; (12) Ar: Arrithinngithigh; (13) Mb: Mbaywom; (14) Mn: Wik Mungkanh; (15) Me: Wik Me'anh, Wik 'Ep; (16) Mm: Wik (properly Kugu) Muminh; (17) Nr: Wik Ngatharr, Wik Alkanh; (17') Nn: Wik-Ngathan; (18) Ta: Kuuk Thaayorre; (19) Kp: Koko Pera; (20) Kr: Kungkara; (21) Og: Ogonjan; (22) Ag: Agu Tharrnggele; (23) Ym: Kuku Yimijirr; (24) Ml: Muluriji; (25) CC: China Camp Muluruji; (26) Ja: Japukay; (27) Yd: Yidin; (28) Ji: Jirrbal (dialect of Dyirbal); (29) Gi: Giramay (dialect of Dyirbal); (30) Ka: Kaanju; (30') Ya: Kuuku Ya'u-Umpila.[14]

2. Vocabularies and cognation judgements

Numbers followed by a period represent the items of the test-list; numbers without period correspond to the numbers assigned to the languages listed above; assumed cognates are collected in sets assigned a letter of the alphabet:

1. head: (a) 2, 3 walap; 4 welap. (b) 5, 6 trwak. (c) 7–10 aran. (d) 15 kölp; 17 kolp; 17' kulp. UR: 1 wapʊn; 11 yan; 12 irwa; 13 with; 14 kùcek; 16 pìntheka; 17' kooter, puun; 18 paant; 19 cekóont; 20 gathal; 21 olkol; 22 əlkiwrə; 23 ngapay; 24 tangu; 25 tukul; 26 pata; 27 tunku; 28 tingkal; 29 mukal; 30 mumpalu.

13 As these vocabularies were typically collected during short-term one-off field work there are bound to be minor errors here and there. I have left Ken's text intact: PS.

14 17 and 17' (17 prime) are sister dialects of the same language.

2. forehead: (a) 2 nggala; 3 nggay; 4 nggal. (b) 5, 7, 9, 11 pay. (c) 6, 8 pathan. (d) 10, 12 with. (e) 14, 16 ngul-ngangka; 15 ngula; 24, 26 ngulu. (f) 17 uka, 17' uuk. UR: 1 yapi; 13 onto; 18 kòrirkr; 19 cilkokóorr; 20 lirrpirr; 21 iNjər; 22 əkwəənə; 23 piti; 25 muncu; 27 ngumparr; 28 puyin; 29 nguun; 30 yangku.

3. nape: (a) 1 wukan; 2 kwana; 3, 5–7 kwan; 8 kan; 9 kwan. (b) 17 in; 17' inm. (c) 21 oroolng; 22 ərəwlngə. (d) 24, 25 cakay. (e) 26 tukul; 27 cukul. (f) 28, 29 tara. UR: 4 mbut-ngkuun; 10 mbru'um; 11 thwandək; 12 ndyac; 13 notok; 14 monkən-taa'a; 15 mìcaa'a; 16 muci-dhaa; 19 man-kuur; 20 mpuwic; 23 currcurr; 30 kuyka.

4. eye: (a) 2 ndyaga; 3 ndyag. (b) 5–7, 12 ndhwa; 8 ndha; 9 thwa; 10 tha. (c) 14, 15 mee'a; 18 meer. (d) 16 thantha-dhuka; 17 thanth, 17' thant. (e) 19 ceel; 20 iil; 26, 27 cili. (f) 23, 25 miyil. (g) 28, 29 kayka. UR: 1 ipan; 4 awunj; 11 nggwi; 13 müü; 21 iMən; 22 əlpiyələ; 24 ngayma; 30 mii'i (< 14–15), ku'un, tuntu.

5. nose: (a) 2 kwakanha; 3, 5, 11 kwakanh. (b) 4 iyi; 6–10, 13 iri; 30 nhiiyi. (c) 14, 15 kaa'a; 16 kaa'-guthu; 17–17' kaa'. (d) 18 koow; 19 kow; 20 uuw; 26, 28 kuwu. (e) 23 puciil; 24, 25 pucil. UR: 1 mugnhu; 12 pwanj; 21 ilNgər; 22 muu; 27 tikir; 29 wutu; 30 kaanci.

6. ear: (a) 2 maminhu; 3 maminh; 4 map. (b) 5–7, 9 wa'. (c) 8, 10 iwug. (d) 12 alo; 18 kaal; 30 kaalu. (e) 14, 15 kona; 16 kon-mangka, (f) 17–17' pin; 19 pin-thakéel; 21 iNa-ngəl; 22 ənyə; 26, 27 pina. (g) 23–25 milka. UR: 1 ukʉci; 11 inheminh; 13 anta; 20 ringkarr; 28 manga, walu; 29 karupa; 30 yampa.

7. mouth: (a) 1 nangga; 2 angka; 3 aka; 5–8 ngga; 9–10 ka. (b) 4 lin; 11 lyan. (c) 14–15, 17–17' thaa'; 16 thaa'-'aku; 30 tha'a. (d) 18–19 thaaw; 20 aag. (e) 28–29 ngangku. UR: 12 ari; 17' thaanth; 21 ekənh; 22 əbi-tənə; 23 parkaa; 24 canga; 25 ñumpul, ngantal; 26 piñi; wari.

8. tooth: (a) 1 ngambu; 2 ampu; 3 apu; 5–7 mbaw; 17–17' ngamp. (b) 8, 10 lidh; 9 lwidh; 22 liyə; 23 muliir. (c) 11 udhapuñ; 13 adhapunh. (d) 14–15 koonh. (e) 24–29 tirra. UR: 4 inañ; 12 thiyig; 16 kanu; 18 kiin; 19 kulng; 20 yaak; 21 anggul; 30 kanca.

9. tongue: (a) 1 lalan; 3 ələn; 5–10, 12 lan; (b) 4 lin-atra; 11 lyan. (c) 14 thaa'-nganth; 16 thaa'-ngantha; 20 nciir; 21 endhaawər; 23 ngancaar. (d) 15 thaʉp; 17–17' thalp; 18 man-theepər; 30 thaapi. (e) 19 nheelper; 22 ələpiinhə. (f) 24–25 ñapil; 26 ñawil. (g) 28–29 calngkulay. UR: 2 pundhanhu; 13 lip.

10. shoulder: (a) 2 anggala; 3 anggay; 28 pangkal. (b) 5–12 thol. (c) 15 ’ingk; 16, 30 ’ingki. (d) 17 milpir; 17’ milpər; 18 meper. (e) 20 rrakil; 21 arraagəl. (f) 24–26 pinta. UR: 1 agaw; 4 ithag; 12 kwunduñ; 13 both; 14 pìcem; 19 rrapakóow; 22 əkwilə; 23 ngaku; 27 wukul; 29 tikil.

11. armpit: (a) 1 adhərrəmbinhu; 2 ntharrambinha. (b)3 amog; 5–7 mawg; 8, 10–12 amog; 9 mog; 17–17’ ngam; 21 amur; 28–29 ngaamur. (c) 1 wadhu; 4, 12–13 athu; 30 waathu. (d) 14–15 yuwən; 16 yuwən-anci. (e) 18 kaap; 24–25 kapari. (f) 19 ngaméerr; 20 maarrg. (g) 26–27 kancarr. UR: 22 maawnə; 23 kaamurr; 30 maapu.

12. liver: (a) 1 lipa; 2 ipa; 4 pya; 12 pa; 13 pe; 18 thiip; 20 yiib; 23–26 cipa; 28–29 kipa; 30 yipa. (b) 3 thandak; 6, 8 tharrak; 9–20 thandrag. (c) 5 kuyc; 7 kuc. (d) 14–15 woongkəñ. (e) 17–17’ maak; (f) 21 eethə; 22 əthu. UR: 16 wanha; 17’ kookem; 19 pokóol; 24 culpi (? cf. stomach); 25 kuñu, wapa; 26 kalmpara; 27 kumpukara.

13. stomach: (a) 1 lʉtpi; 14 thip; 15 thüp; 17 thilp; 17’ thölp; 24–25 culpi; 30 yul’i. (b) 2 abidha; 3 abidh. (c) 4, 13 amay. (d) 3 arya; 5–10 ara. (e) 11 pya; 24 cipa. (f) 16 kuna-waya; 18 kun-thir. UR: 12 othin; 19 kumaarrp; 20 wuurrg; 21 orəl; 22 ərəwmə; 23 kampur; 26 palku; 27 tupurr; 28 pampa; 29 cucu; 30 ngangka.

14. upper arm: (a) 1 winda; 2–3 indya; 5–7 ndrya; 8–10 ndræ; 11 ndya. (b) 14–15, 17–17’, 18 punth; 16, 30 puntha. (c) 24–25 wakuy. (d) 19 theerr; 26–27 cirri. (e) 28–29 karakal. UR: 4 irranh; 12 kwunduñ; 13 ütük; 17 miy’; 20 malwur; 21 orrəl; 22 aarru; 23 ngakuur; 26 kungka.

15. elbow: (a) 1 yutu; 24–27 curru. (b) 3 igugurr; 13 ogorr. (c) 4 pat; 6–7, 9 pa’y. (d) 5 ’awndh; 10 ’ondh. (e) 8 ’aran; 10 a’aran. (f) 14 yuungk; 30 yuungka. (g) 15, 17–17’ kucənt. (h) 16 punti; 18 punt. (i) 28–29 puru. UR: 2 kuthiñu; 11 pay (borrowed from 6–7, 9); 12 thambrog; 19 punth; 20 puul; 21 əteekər; 22 ərəwlə; 23 yurngkal.

16. hand: (a) 1 mata; 2 atya; 3, 8, 10 a’a; 4 ntra; 5–7, 9 ’a; 11 tra’ 12–13 ta; 14–15, 17’ ma’; 16, 30 ma’a; 17 ma’-pungk; 19–20 maar; 21 aarə; 22 əri; 24–26 mara, (b) 28–29 mala. UR: 12 abinjin; 18 yuur; 23 mangal; 25 carkumu; 27 manti.

17. thigh: (a) 1–2 ithina; 3, 5–11 thin. (b) 12 mwan; 13 muun; 14–15, 18 kumən; 16 kumən-’ucənda; 21 uMon; 23, 30 kuman. (c) 19 cərriic; 20 dhaarr; 26–28 carra. (d) 24–25 malpin. (e) 17–17’ thatəl. UR: 4 nggoy; 22 ngurry-anəwngə; 29 ngaka.

18. knee: (a) 1 wunggu; 2 unggu; 3, 11 nggu; 4, 8, 10 nggo; 5–7, 9 nggwu; 12 nggwung; 13 ngguu; 14–15, 17–17', 18 pungk; 16 pungku-bindha; 20 ngkuyil; 23–30 pungku. (b) 21 ilndəl; 22 pay-ndələ. UR: 19 pekəcíic.

19. shin: (a) 2 untyuugu; 3 u'ug; 4 ontro; 13 ontok. (b) 5–7, 9 thu'; 8, 10 tho'; 11–12 thot. (c) 14–15, 17 yangk; 16 yengka; 18 yangkar. (d) 24–25 ngarri. UR: 1 acpaw; 17' yoompənh; 19 thuur; 20 muuk; 21 akəl; 22 amaadhə; 23 pipaar; 26 pala; 27 wulu; 28 wurrmpurr; 29 wayal; 30 thumpa.

20. foot: (a) 1 nukaw; 3, 9 kway; 5–7 kwe; 8 ke; 10 kay. (b) 2 atyuu; 4, 12 tyu; 11 tro; 13 twi; 14–15, 17–17' tha'; 16, 30 tha'u. (c) 18 thaamər; 19 thəméel; 21 iMəl; 22 maalə; 23 camal. (d) 24–29 cina. UR: 20 niimp.

21. blood: (a) 2 kucaka; 3 kucak. (b) 4 kumpali; 13 kumpli. (c) 5–7 trelim; 8 tralim. (d) 9 kumbwinh; 10 kombwinh. (e) 16 kamu; 18 kam; 30 kamu. (f) 17 köy'; 17' köö;[15] (g) 24–25 mula. UR: 1 ʉcʉc; 11 piwirr; 12 ipwur; 14 caapəra; 15 wukəlpa, ngoolpənga; 19 purrméen; 20 gaanh; 21 olñil; 22 əgwiləm; 23 karrmpi; 26 kalpal; 27 kawarr; 28 wakuli; 29 wirrañ.

22. fat: (a) 2 aniyarra; 3–4 aniyarr. (b) 5, 7–10 ki'. (c) 11, 13 lewinj; (d) 15 piintəñ; 17' piinth(h)əyn. (e) 24–25 wantul. (f) 26–27 kilmparr. (g) 28–29 cami. UR: 1 ukətanganhu; 6 mbawlwamanh; 12 anhon; 14 thanth; 15 pinəm; 16 yi'i; 17 nguyin; 18 rithərr; 19 piirr; 20 dhaamp; 21 ungə; 22 nuwədə; 23 mampa; 30 ku'i.

23. bone: (a) 2 akwuyu; 3 akwuy. (b) 1 apʉdha; 4 piiy; 5–8 pwi; 9–12 puy. (c) 15 'eengk; 16 'angge. (d) 17–17' minc. (e) 23 paciipay; 24–25 pacipay. (f) 26–27 tatakal. (g) 28–29 wurrmpurr. UR: 13 ilkuth; 14 kaanca; 18 piinth; 19 thuur; 20 muuk; 21 errndin; 22 əkə; 30 yinkin.

24. skin: (a) 1 akʉc; 2 akugu; 3 akug; 4 kuw; 5–7 kawg; 8–9, 12 kog; 16 'aku. (b) 11–12 awanmanh. (c) 14–15, 17' pe'ən; 18 peetn; 22 ətiinə. (d) 21 anggər; 24 pangkarr. (e) 24–25 yulpan. (f) 28–29 kuka. UR: 10 iwin; 13 awu; 17 'uwal; 19 picéelngk; 20 muurrg; 23 ngarraa; 26 tumpul; 27 wurra; 30 pi'i.

15 This should be köö': P.S.

25. headhair: (a) 2 undhandha; 3 ndhandh; 4, 11 ndhwandh. (b) 5, 7, 9 ’ya; 8 i’ya; 10 in’a; 12 itya. (c) 6, 11, 13 nga. (d) 14 yangəna; 16 yengan; 18 yaangən; 30 yangan. (e) 15, 17–17’ muyən. (f) 21 alən; 22 lanə. (g) 24–25 mungka. (h) 27, 29 murray. UR: 1 ampinhambi; 19 cəkóorr-məngóorr; 20 iic; 23 muuri; 26 kulmpi, cipi; 28 wumpu.

26. hungry: (a) 2 andhima; 3 andhim; 5–7 adhaymr; 8, 10 adhim; 9 adhaym; 14–15, 17–17’ meec; 16 maayin (?). (b) 11–13 iwam. (c) 24–25 takuy. (d) 26 taliir; 27 talii. (e) 28 ngamir; 29 ngamirpin. UR: 1 wʉrama; 4 imbyum; 18 punkurtharr; 19 thakathaali; 20 ilpiingincin; 21 orrmbir; 22 ərəwm-əlbüürə; 23 tingkacirr; 30 uuli.

27. to eat: (a) 2–3 kwa-; 5–7 nggwa-; 8 ngga-; 14–15 mungk-; 16 mungka-; 18 mungk. (b) 4 atha- ~; 19 pəthé-; 22 thəy-. (c) 9–10 cim (FUT) ~. (d) 11 lya-; 12 la- ~. (e) 17–17’ thic-. (f) 24–25 nuka-. (g) 26–27 puka-. UR: 1 ʉña–; 13 twe-; 20 -ilk (FUT) ~; 21 unja-; 23 puta-; 28 cangka-; 29 nanpa-; 30 yangku-.

28. to die: (a) 1 alga-; 22 əlkəy-. (b) 4 adha-; 11 andha-’ 12–13 adha-. (c) 5–7 bwi-; 8 obi-; 21 elbi-. (d) 9 igö-; 10 igo-. (e) 14 ’uthəm-; 16 ’uthəma-. (f) 17 wayingk-; 17’ wayngkan-. (g) 24–27 wula-. (h) 28–29 kuyipi-. UR: 2 mpama-; 3 aya-; 15 mula (N); 18 wonpər; 19 pumáa-; 20 ruci-; 23 piini-; 30 maka-.

29. to see: (a) 1 aci-; 2–3, 5–11 ci-; 4 nci-; 16 nhaawa-; 18 nhaa-; 19 nhaakal, nhacerr; 20 a- ~; 23 ñaa-; 24 ñaci-; 25 ña- ~ ñaci-. (b) 14–15 thath-; 30 yathu-. (c) 17 ngaac-; 17’ ngeyc-. (d) 21 ata-; 22 əta-. (e) 28–29 pura-. UR: 12 olwa-; 13 we-; 26 ngunta-; 27 wawa-.

30. to hear: (a) 1–2 ami-; 3 mi-; 5–7, 9 may-; 8 mi-; 30 ngami-. (b) 4, 11–13 pwa-. (c) 14 ngey-; 15 ngeyy-; 16 ngêe-; 17 ngeec-; 17’ ngeeth-; 18 ngayarr (C). (d) 19 pinəngk-nháakal; 21 aNa-ata-; 26 pina-ngunta-; 27 pinaa-. (e) 20 a-; 25 ña- ~ ñaci-. (f) 23 milkaa-ña-; 24 milka-cana-, (g) 28–29 ngampa-. UR: 10 ngañ a-; 22 rəy-.

31. black: (a) 2 unggu; 3 ngguu; 4 ngge; 10 nggo-dhro; 30 thuungku ~ thungkuthungku. (b) 5–7 arow; 8 aro; 9 aru. (c) 11 ngul; 13 nguul. (d) 14–15, 18 ngotn. (e) 17–17’ mak; (f) 19 ngolthóorr; 20 lthuurg. (g) 21 ocər; 22 əlcuurə. (h) 24 ngumpu; 25 ngumpunngumpun. (i) 26–27 pukal. UR: 1 unma; 12 ithiyin; 16 ngunca; 23 muñi; 28 kucu; 29 kinkin; 30 wumpi.

32. to speak: (a) 1 əca- ~ ica-; 2–4, 8, 10–12 ca-; 5–7, 9 cụa-; 13 cii-. (b) 14–15 thaw-; 16 thawa-. (c) 17 wiik-; 17' wiiyk-; 18 yiik; 19 yikyá-. (d) 21 og-irrka-; 22 ərkyə-; 23 yirrka-; 5 kuku-yirrka-. (e) 28–29 wurrpa-. UR: 20 ku- 24 palkawa-; 26 puwalpuka-; 27 ñangkaci-; 30 inga-.

33. to stand: (a) 1 anja (PRES) ~ anyi-; 2 njapa ~ ña-; 3 ña-; 4 njir ~ ngiri (IM); 8 nja ~ ni-; 9 njar ~ niri-; 10 njay ~ ni-; 12 ñag ~ ña-; 30 yaañi-. (b) 5–6 nhalam ~ nhalma-. (c) 14–15, 17 can-; 16, 18, 24–29 cana-; 17' than-; 22 əNaay-. UR: 7 mbawm ~ mbamu-; 11 ngang ~ nganga-; 13 nithdha- ; 19 thərré-; 20 nan (FUT); 21 erni-; 23 yuuli-.

34. to sit: (a) 1 inja (PRES) ~ ina-; 2 ingkapa ~ ina-; 3, 13, 20 ina-; 4 nggal ~ ina-; 5–7 nggewr ~ (e)ne-; 8 ngga ~ ina-; 9 kya ~ ina-; 10 nggay ~ ina-; 11 nya-; 12 injа- ~ ina-; 14 ñin- ~ ñiin-; 15, 17–17' nhiin-; 16, 30 nhiina-; 18 nhini-; 19 ñiné-; 26–29 ñina-. (b) 21 in.gya-; 22 ən.gyə-; 23 ñinka- [NOTE: (b) is probably cognate with (a), ultimately]. (c) 24–25 punta-. UR: 30 pa'aka-.

35. to go: (a) 1 ana-; 2–3 nya (PRES); 18 yaan; 22 nəy; 28 yana-; 29 yanu-. (b) 4 lini (PRES) ~; 8, 10 li-; 9 lay-; 19 kalé-; 21 eli-; 26–27 kali-. (c) 5–7 ang (PRES) ~ angi-. (d) 13 me-; 16 mumi-. (e) 17–17' iinc-. (f) 24–25 tunga-. UR: 11 mbi-; 12 arring ~ arri-; 14 iy-; 15 me'-; 20 -ip ~ -ik; 23 cata-; 30 waatha- ~ yuta-.

36. to run: (a) 1 wili-; 2–3. 9–10 lili-; 4 lyand (PRES). (b) 5–8 ca'aci-. (c) 17–17' maawk-; (d) 24–25 (± cinpal-)warri-. (e) 26–27 (± cinpal-) cungka-. (f) 24–27 cinpal. UR: 11 mbimb (PRES); 12 arritik (PRES); 13 mele-; 14 mo'-; 15 nhünp-; 16 nhunka-; 18 riricər; 19 kunce-; 20 wura-; 21 arrnggori-; 22 mbilərəy-; 23 tuta-; 28 cingkali-; 29 puyici-; 30 yiiyimpi-.

37. to fall: (a) 1 alga-; 4 akii-; 12 ika-; 13 alka-; 14 keek-; 22 əlkyə-. (b) 2 unjii-; 3, 11 njii-; 5–7 njü-; 8–10 nji-. (c) 15 'enc-; 16 'ance-. (d) 17 uulnt-; 17' ulntan-. (e) 18 wontər; 19 wantáa-' 26–27 wanta-. (f) 28–29 paci-. UR: 20 wulpa-; 21 intha-; 23 puli-; 24 kungkuci-; 25 tara-; 30 alngki-.

38. to climb: (a) 1 anbəñi-; 2–3, 5–10 mbani-; 4, 11 mbaa-; 12–13 mba-. (b) 14 mat-; 16, 23 mata-. (c) 17–17' wump-. (d) 18 thaangk; 19 thakangk (FUT). (e) 24–25 taka-. (f) 26 maka-; 27 maki-. (g) 28–29 wayinci-. UR: 15 waangk-; 20 nci-; 21 alti-; 22 əray-; 30 piyingka-.

39. to take: (a) 1 apə-; 3 pya-; 5–7 pra-; 8 præ-; 9–10 ræ-. (b) 2 inja-; 12 anja-. (c) 14 mam-, maay-; 15 maay-; 16 maa-; 20 ma- ~; 23 ma-; 25 mani-. (d) 17–17' kaar-; 18 kal. (e) 26–27 tuka-. (f) 28–29 puti-. UR: 4 one; 11 mbe-; 13 mu-; 19 wicirr-; 21 ingka-; 22 ərrmba-; 24 wunti; 30 yawa.

40. to leave it be: (a) 1 andə-; 2–3 ndya-; 4–11 ndra-; 12–13 nda-; 14–15, 17–17' want-; 16 wanta-; 18 want (?); 19 waa- ~ want (PAST); 30 wana. (b) 21 onggi-; 22 nggwi. (c) 24–25 pawa. (d) 28–29 kalka. UR: 20 gi-; 23 tupi-; 26 wampa-, paraa-; 27 paca.

41. to throw: (a) 2 apu; 3, 5–7 pu-; 8–10 po-; 13 polpo-. (b) 4 mbyambi-; 11 mbya-; 12 mba-; 23 campa-; 30 yampa. (c) 14–15, 17–17' thee'-; 16 thîi-. (d) 21 eembi; 22 mbwi-. (e) 28–29 mata-. UR: 1 rathi-; 18 thunp; 19 reenga; 20 ra-; 24 wanta- 25 yilpa-; 26 tapa-; 27 kilpi.

42. to give: (a) 1 uthi (IM), ukaw (PAST) ~; 20 wukələ-; 21 uka- ~ uko; 23 wu- ~ wuci-; 28–29 wuka-. (b) 2–3 aya-; 6–7 ya-. (c) 5 pu-; 8–10, 13 po-. (d) 4 mbii-; 11 mbya-; 12 mba-. (e) 15 pal-wunp-; 17 wuñp-. (f) 14, 17' thee'-. (g) 16 waa(wa)-; 19 wa-; 26 waa-. (h) 24 taci-; 25 taya-. UR: 17' nhiinang-; 18 rek; 22 nggwi-; 27 wiwi-; 30 ngungka-.

43. to hit: (a) 2, 4 ngka-; 11 ka-; 12 nja-. (b) 9–10 ca-. (c) 5–7 irringi-; 8 irringa-. (d) 14 piiyək-; 15 peyyək-; 16 piigu-. (e) 17 pal(k)-; 17' palk-; 28–29 palka-. (f) 13 ne-; 19 ku- ~ kunt (PAST); 23 kunta-; 24–25 kuni-. (g) 21 ito- ~ ita-; 22 ətuə-. UR: 1 arʊ=; 3 thæ-; 18 theerng; 20 riga-; 26 tuka- ~ tuu-; 27 punca-; 30 kanci-.

44. to bite: (a) 1 watha-; 2–13 tha-; 14–15, 17–17', 18 path-; 16, 30 patha-; 19 pəthé-; 21 eethə-; 22 thəy-; 26 paya-; 27–29 paca-. (b) 24–25 payka-. UR: 20 lidha-; 21 errca-; 23 cinta-.

45. to cut: (a) 1 utə-; 2 utwa-; 3 u'a-; 5–7 'wa-; 8 o'a-. (b) 9–11 ndro-; 12 ndo-. (c) 14 ump-; 15, 17–17' ömp-; 16 umpi-. (d) 18 yak; 19 yəkée-; 21 eekə-; 22 əka-; 24–25 yaka-. (e) 26 kuni-; 27 kunta-. (f) 28–29 kunpa-. UR: 4 iror (IM); 13 katlo-; 20 ñi-; 23 waki-; 30 muunga-.

46. to spear: (a) 1 anggya-; 2 nggii-; 11 nggi-. (b) 2–3 igu-; 4 ige-; 5–7 gyu-. (c) 8–10 nji-. (d) 12 ndya-; 30 yina-. (e) 17 waarrp-; 17; warrp-. (f) 21 eema-; 22 əməy-; 23 taama-; 24-25 tama-. (g) 26–27 paka-. (h) 28–29 currka-. UR: 13 pee-; 14 pung-; 15 münhp-; 16 ye(n)ta-; 18 ko'orr; 19 thana-; 20 ri-.

47. to cry: (a) 1 rungga (PRES); 4 nggwa-; 12 nggwala-; 13 nggula-; 28–29 tungkarra-. (b) 2 pudhi-; 3 pugdhi-. (c) 5-7 gwimr-ne-. (d) 8, 10–12 imamca-. (e) 14–15 peey-; 18 pawarr; 19 perrə-. (f) 21 adhi-; 22 ədhii-; 23 paaci- ~ paca-. (g) 24–25 pati-; 26 parri-; 27 pati-. UR: 9 rulcwa-; 16 paabi-; 17 iik- ; 20 rula-; 17' ööth-; 30 uuci-.

48. to laugh: (a) 1 anggərri (PRES); 2 nggarrak-unjii-; 3 nggayk-unjii-; 4 nggitaw-adha-; 5–7 ngga'y-ma; 8 ngga'ak-owa-; 9 ngga'æ-go-; 10 ngga'ma-; 11 nggata-; 12–13 njat-dha-; 14 thengk-; 15 theyngk-; 16 thangkanggi-; 18 thangkar; 21 nggəra-. (b) 17 köp-kee'-; 17' köp- ~ köyp-. (c) 26–27 mangka-. (d) 28–29 miyanta-. UR: 19 mukónə-; 20 mpathirra-; 22 njalnggwu-; 23 tinga-; 24 puncay-warri-; 25 yacarri-; 30 ngaacilangka-.

49. good: (a) 2 uyungambithig; 11 oyongmbwith. (b) 3 cay; 5–7 nje; 8 njæ; 13 nja. (c) 4 ne; 12 ni; 14–15, 17–17', 18 min; 16, 30 mini. (d) 9–10 adhar. (e) 24–25 ngulkurr. (f) 26–27 kurri. (g) 28 cikil; 29 cikal. UR: 1 ikənma; 11 mææg; 19 watáarr; 20 wiingk; 21 almuy ~ alMuy; 22 nuwədə; 23 tapaar; 30 wanthi.

50. bad: (a) 2 mbwucaka; 3 mbyug; 4 mpyucek; 9 mbwug; 13 mbwinthrra. (b) nggarpr; 8 nggorpr. (c) 10, 12 bræ; 11 mbræ. (d) 14–15, 17–17' way; 16 waya; 18 warr; 19 wet; 23 warra; 26 warray. (e) 21 ee-ndhing; 22 ndhi. (f) 24–25 puyun. UR: 1 gatha, w¬cpu; 20 mukwarr; 27 cankan; 28 walkay; wiiki; 30 wii'u. (NOTE: There is a notation saying that 17 *way* is borrowed from 14–16. I don't recall the evidence for this.)

51. person: (a) 1–2 ama; 3–9, 11, 13 ma; 10, 12 m·a; 14–15, 17–17', 18 pam; 19 pam (?); 16, 23–27, 30 pama; 20 aam; 21 aaMə; 22 məy. (b) 28–29 yara.

52. woman: (a) 1 undawa; 5–7 ndrwarm; 8, 10 ndram; 9 ndrwam; 11 ndwa. (b) 2 upugu; 3 puug. (c) 17–17' pu'əth. (d) 24–25 calpu. UR: 4 mbemandh; 12 irrwa; 13 taca; 14 wanc; 15 köw; 16 kudhe; 18 paanth; 19 pakacáalu; 20 wacwac; 21 urrujal; 22 ndhiindhəmə; 23 ngaancu; 26 pancilcarray ~ pancil; 27 puuña; 28 yipi; 29 kumpul; 30 ukulngkumu.

53. to dig: (a) 1 angə-; 3, 5–7 nga-; 8 anga-. (b) 2 ti-; 4 te-; 9 'ay-; 10 i'i-; 11 tre-; 12 iti- ~ ti-; 13 tii-; 14 we'-; 16, 30 wa'i-. (c) 17–17' muc-. (d) 23–25 paka-. (e) 28–29 tiku-. UR: 15 thüüc-; 18 raw; 19 purəmpu-; 20 wupa-; 21 enu-; 22 aləɥ-.

54. stone: (a) 1 athambu (in ERG case) ~; 2 thambaga; 3 thambag. (b) 4, 12 kandkand; 5, 8–9 kandhak; 6–7 kanj; 11 kand. (c) 17 kupəñəm; 17' kupiynm. (d) 26–27 walpa. UR: 4 kupum; 10 præ'; 12 ipwa; 13 kalng; 14 muka; 15 ngaythəpinh; 16 pi'i; 18 therrep; 19 ngoliñ; 20 rriimp; 21 olcing; 22 əlguunhə; 23 nampal; 24 cangka; 25 kulci; 28 tipan; 29 nangkay; 30 kul'a.

55. ground: (a) 2 udhadha; 3 udhadh; 4 odhadh. (b) 5–6, 8–10 nja. (c) 14–15 'aak; 16 'agu; 18 raak; 21 agur; 22 əgaɥrə. (d) 17 nath; 17' nhath. (e) 23–25 pupu. (f) 28–29 cikay. UR: 1 nani; 7 mbri; 11 ngga; 12 abi; 13 ilpi; 19 paath; 20 lthuuw; 26 pulngan ~ purrngan; 28 capu; 30 ngaaci.

56. sun: (a) 1 wunga; 5–7, 11–12 ngwa; 8, 10 nga; 9 onga; 14–15, 17–17', 18 pung; 16 punga; 19 puung; 24, 26–27 pungan; 25 wungar. (b) 2 ntha-langgwanjig; 3 tha-mburrig; 4 ntha-wuy. (c) 28–29 karri. UR: 13 mbwa; 14 kinc; 20 ñaan; 21 errnding; 22 aathyə; 23 ngalan; 30 kampala.

57. moon: (a) 1 acana; 2 ncana; 3 acan; 9–10 canam. (b) 5–6 'andhik; 7 'ayndhik; 8 a'endhik. (c) 14 kep; 16 kapi; 18 kapir. (d) 19 kakéer; 28–29 kakara. (e) 21 othərrək; 22 tharəkən. (f) 24–25 kica. (g) 26–27 kintaan. UR: 4 ipiw; 11 nhandh; 12 athac; 13 olwit; 15 kongəma; 17 ngaykəl; 17' wööthəc; 20 lkiin; 23 waarikan; 30 piithi, taaway.

58. star: (a) 1 unggunggu; 2 nggwulumpangga; 3 nggwupangg. (b) 5 dhwim; 7 ndhwim, (c) 8–10. ongarr. (d) 11, 13 kaktin. (e) 14 thunpa; 15 thönp; 30 thunpi. (f) 17–17' pungər. (g) 23 tawaar; 24–25 tawar. (h) 26–27 kaway. UR: 4 kandkand; 6 ngungkwig; 12 thath; 16 nguca; 18 mer-pork; 19 pathaali; 20 rampirr; 21 oroongətong; 22 arrngəɥlə; 28 kayirra; 29 yirrkincara.

59. wind: (a) 1 alba; 2 aba; 12 alpa; 16 theba. (b) 5–7 yenj; 8 uyanj. (c) 9–10 mburmbwinh. (d) 14 thuun; 15 thöön. (e) 24 muray; 25 muyar. (f) 17–17' muyk. (g) 28 kimpin; 29 kimpirr. UR: 3 aya'; 4 awu; 11 mol; 13 twalt; 18 pun (H and O); 19 makéerr; 20 wiciric; 21 ondhongondh; 22 adhiwngə; 23 kuluwurr; 26 kuyurru; 27 yiway; 30 wunta.

60. water: (a) 1–3 ipi; 5 pi; 30 pi'i. (b) 4, 13 kok. (c) 6–7 pwa'. (d) 8–10, 12 ngog; 11 ngok; 21 oongə; 22 nguw. (e) 14–15, 17–17' ngak; 16 ngaka; 18 ngok. (f) 24–28 pana. UR: 12 awi; 19 yingkáay; 20 waal; 23 puuray; 24 wata (<Eng); 29 kamu.

61. creek: (a) 2 irranhu; 3–4, 8–13 irranh; 5–7 ryanh. (b) 14, 17' punth; 30 puntha. (c) 16 wa'awa; 26 warapa. (d) 28–29 karakal. UR: 1 yati; 4 othakañ (tributary); 15 wo'; 17 ngamp; 16 wa'ap (cog. 16?); 19 manngélp; 20 mantharr; 21 opriganh; 22 ndyə; 23 pirri; 24 patapata; 25 wawupaca; 26 canku; 27 ngancarr.

62. fire: (a) 1 uma; 5–8 mwa; 9–10 mæ; 11 mya; 14, 17–17' thum; 16 thuma; 21 iiMə; 22 mwə; 30 yuma. (b) 2 wukanhu; 3–4, 13 wukanh. (c) 19 peer; 20 wiir; 26 piri; 27 puri. (d) 12 kwu; 23, 29 yuku. UR: 15 wekəñ; 18 paat; 24 wuncu; 24–25 paya (<Eng.); 28 puni.

63. smoke: (a) 1 ucuw; 2 nculu. (b) 3–4 ama. (c) 5–7 bör; 8 ibor; 9 ibör; 10 ibor. (d) 11, 13 wel. (e) 14–15 thok; 16 thoko. (f) 19 peer-kathərr; 20 thirrg. (g) 24–25 kupu. UR: 12 mwunh; 17 kiikəl (?); 17' thiikəl; 18 tomp (C); 21 errkonh; 22 arrju; 23 puluur; 26 cukay; 27 wuncu; 28 karran; 29 punu; 30 nguka.

64. ashes: (a) 2 imp(g)i; 5–7 bi; 8–10, 12 ibi. (b) 15 wekəñ-kayyalp; 17 kayalp. (c) 26–27 kapu. UR: 1 anju; 3 irrinj; 4 ipuun; 11 amamay; 13 ngambay; 14 thum-kurrk; 16 puca; 13 paat-runc (C); 17' thaa'əl; 19 peer-kangkár; 20 riic; 21 onthoogər; 22 ərryəbər; 23 tuuliyar; 24 punci; 25 nulu; 28 cilin; 29 pumpa; 30 purrka.

65. to be burning: (a) 1 wandhyaw (PRES) ~ wandhi-; 2 njinjina (PRES); 3 cici-; 5–7 adhaynd (PRES) ~ adhay-; 8 adhi-; 9 adhayndhi-; 10 nji-; 11 ndhayndh (PRES); 13 njiri-; 14–15 penc-; 16 panci-; 17 pinth-; 17' pec- (TR); 19 pincé-; 20 nca-; 21 ndhi-; 22 ndhiindhənə (PRES). (b) 23 yaaci-; 30 aaci-. (c) 24–25 wacuci-. (d) 26, 28–29 kanta-. UR: 4 iricay (PRES); 12 yicing (PRES); 18 tintarr (C); 27 kupa-; 30 wunta-.

66. meat animal, game: (a) 1, 16 minha; 2 inha; 3 nha; 4, 9–10, 12 ña; 5–7 nhya; 8 ñæ; 14–15, 17–17', 18 minh; 19 miñ; 20 iiñ; 21 inhə; 22 nhyə; 23–27, 30 miña. UR: 11 moth; 13 cipi; 28 calkur; 29 ñalmur.

67. tail: (a) 2 caga; 3, 5–13 cag; 4 thangg. (b) 14–15 mut. (c) 17 thith; 17' thöth. (d) 16 mulu; 18 mul. (e) 28–29 wana. UR: 1 wupu; 11 ulundhak; 19 theen; 20 dhuun; 21 oming; 22 caawnə; 23 yawurriñ; 24 tuki; 25 pici; 26 pulnga, kulal; 27 kampil; 30 pulpan.

68. egg: (a) 2 iwuyu; 3 iwuy. (b) 5–9 paw; 21 apugər. (c) 10–12 ngambay; 13 ngambya. (d) 14 nhepən; 17’ nhepən; 18 nhapən. (e) 15 thuk; 16, 30 thuka; 17 thöyk. (f) 24–25 tipurr. (g) 26–27 tingal. (h) 28–29 pampu. UR: 1 unggyini; 4 omarrgandh, mac; 19 miñ-kethém; 20 wuuth; 22 pwəncə; 23 kuntil.

69. dog: (a) 1 utaga; 2 utwa; 3 u’a; 4, 11 twa; 5–7 ’wa; 8 0’a; 13 two; 14, 17–17’ ku’; 16 ku’a; 18, 23, 28–29 kuta; 19 kutéew; 20 rrwaak; 22 ətwə; 26 kurraa; 27 kutaka; 30 ku’aka. (b) 9 maynd; 10 omindh. (c) 24–23 kaya. UR: 12 atal. 15 ngaakən; 21 iñor.

70. tree: (a) 1 yuku; 2–3 uku; 4 ke; 5–8, 22 ku; 12 kwu; 14–15, 17–17’, 18 yuk; 16, 23, 28–30 yuku; 19 yoko; 21 eekə; 24 cuku; 27 cukii. (b) 9–10 kil. (c) 11 cu; 13 cü. (d) 25–26 culpi. UR: 20 lwaanh.

71. leaf: (a) 1 yamba; 11 ambamba. (b) 2 alala; 3–4 alal. (c) 5–7, 9 thundh; 8, 10 thondh. (d) 14 kangk; 30 kangka. (e) 15 thaaləñ; 17 yuk-thaaləñ; 17’ thaaləyn. (f) 16 ’engk-kona; 18 ringk-kaal, (g) 19 piirr; 23–25 pirra. (h) 27–28 kupu. UR: 12 ithuy; 13 mbiw; 20 lngkurrg; 21 acuc; 22 əriinggəl; 26 pirrk; 29 marra.

72. vegetable food: (a) 1, 16, 24–25, 27, 30 mayi; 2–4, 8–10, 12–13 ayi; 5–7 ay; 11 nji; 14–15, 17–17’, 18 may; 19–20 maay; 21 aayə; 22 əyi; 26 maa. UR: 23 kuntil; 28 wucu; 29 mankun.

73. east: (a) 1 awac; 2–3 awæ; 4, 8–10 awar; 5–7 ar; 11 away; 12 awandow; 13 awam; 14–15, 17’ kaaw; 16 kawa; 18 irr-kaw; 20 gathing; 30 kaawa. (b) 19 lá-nakay; 21 akan; 22 ka; 23, 27 naka. (c) 28–29 kuliñ. UR: 17 kaampəlk; 26 nuu.

74. west: (a) 1 apɯñə ~; 2 puñunu; 3 piñun; 4, 12 ipuñ; 11 poñ. (b) 5–7 nhingthang; 8 inhingthæng; 9 nhinhingthængan. (c) 14–15 kuw; 16, 23–27 kuwa; 18 irr-kuw; 21 uwan; 22 əwwə. (d) 13 icolm; 17–17’ iithəl. UR: 10 kar; 19 lá-walpi; 20 lung; 28 kampil; 29 tayu; 30 aacula.

75. north: (a) 1 unggidhu; 2 nggwadhu; 3, 9 nggwadh; 4–7 nggwath; 8 nggath; 10 nggadh; 11 nggwithu; 12 nggwandow; 13 nggwim; 14–15 kungk; 16 kungke; 17–17’ kungkiy; 18 irr-ungkarr; 19 lá-kungkurri; 20 nggwarriyang; 21 unggan; 22 nggwərə; 23 kungkaarr; 24–25, 27 kungkarr; 26, 28–29 kungkarri; 30 kungkay. UR: 28 yirrkanci (ALT.).

76. south: (a) 1 ibidhu; 2 ibadhu; 3 3, 9–10 ibadh; 4 ipyath; 5–7 beth; 11 ibithu; 12 ipandow; 13 ipim; 14–15 yiip; 16 yibe; 17–17' thiipiy; 18 irr-iparr; 19 lá-yipərri; 20 piyiying; 21 ipan; 22 pyərə; 23–25 ciparr; 26 ciwarri; 30 yiipay. UR: 27 ngara; 28 kuñil; 29 kuyngkurru.

77. up: (a) 1 ambya; 2 ambi; 3 mbii; 4 mber; 5, 9, 12 mbayr; 6–7 mbayring; 8, 10 mbir; 11 mbay; 13 mbe; 17–17' kempiy. (b) 14 ken; 15 keynəy; 16 kanyi; 18 irr-kan; 19 lá-kani; 30 kani. (c) 20 ngkariy; 23 wangkaangkar; 24–25 wangawangkar; 26 wangkar; 27 wangkii. (d) 28 kiña-taykala; 29 yalu-taykala. UR: 21 awur; 22 əbayrə.

78. down: (a) 2 akæ; 3 kæ; 4–5, 8–10 kar; 6–7 karang; 11 kay; 12 kandow; 13 ka; 14 pek; 15, 17' pak; 16 pake; 17 pak-mancək; 30 pakay. (b) 23 pata; 24–25 patapata. (c) 26–27 cilngku. UR: 1 umənja; 18 irr-kop; 19 lá-yakarri; 20 kulcilang; 21 errmon; 22 ərrwitə; 28 kiña-payici; 29 yalu-kali.

79. tomorrow: (a) 5–9 wangthim; 10 wangdhim; 11 owangap. (b) 17 nguultham; 17' ngooltham; 18 ngul; 19 nguláw; 21 olor; 29 ngulka; 30 ngulkuma. (c) 23 wunkuuñ; 24–25 wunkuñ. UR: 1 rpugunma; 2 nthathim; 3 withim; 4 nggetam; 12 ikum; 13 cinom; 14 ngaathəm əngaa'thəm}; 15 ngutampən; 16 yumu; 20 murrangk; 22 əlpungəw; 26 nguma; 27 ngaca; 28 parrayarran.

80. bye and bye: (a) 1 uta; 9 'wa; (b) 2–4, 12 lwa; 13 lwinj; 14–15, 17–17' ngul; 19 ngeel; 21 olə; 22 lwə; 30 ngula. (c) 5–7 kay. (d) 16 yupa; 18 yuup. (e) 24–25 cuma. (f) 26–27 karru. (g) 28–29 kilu. UR: 8 kithi'; 10 ithig; 11 ica; 20 ñingk; 23 karrku.

81. one: (a) 1 nhipima; 2 ipima; 3, 5–7, 10 pim; 4 mpi; 8–9, 11 piman; 30 ñi'ilama. (b) 14–15 thonəm; 16 thonolu; 17–17' thönönəm; 18 thono; 19 thəningkəl. (c) 23 nupuun; 24–25 ñupun. (d) 28–29 yungkul. UR: 4 iñungg; 12 nogol; 13 niyumam; 20 niib; 21 opol; 22 nhawngkənh; 26 ñiwul; 27 kuman.

82. two: (a) 1 ¬dhyama; 2 udhima; 3 udhim; 4 ociim; 5, 8–9 odhith; 6–7 dhwith; 8–9 odhith; 10 odhithig; 11 ithaym; 13 ocim; 14 kucəm; 15 kööcəm; 16 kucele; 18 kuthirr; 23 kuciirra. (b) 12 lwal; 17 pulnəm; 17' pul(ə)nham; 28–29 pulayi. (c) 21 irrmbə; 22 ərrmyə. (d) 24–25 campul; 27 campuul. UR: 19 kuléntirr; 20 mpaak; 26 mulu; 30 pa'amu.

83. three: (a) 1 wucuma; 2 ucumu; 4 com; 5–11 cum. (b) 14–15 ko'ələm; 16 ko'ele. (c) 3 lwapudhim; 17 pulən-thun; 17' pulənh-thun. (d) 26 tawul; 27 takul. (e) 28–29 karpu. UR: 12 marmam; 13 dom; 18 pinələm; 19 kənówərr; 20 twaaring; 21 əNjər; 22 ərrawngkə; 23 kuntu; 24 mamarra; 25 kulur; 30 kulntu.

84. many: (a) 1 wucuma; 3 cum. (b) 2 unhirringanhu; 4 onhirringañ. (c) 5 rrwi; 7 rrwi-mcayc; 8–12 orri; 12 orrimcath (ALT.). (d) 14–15, 17' yot; 17 yotəm. (e) 16 uyu; 17' uy. (f) 26–27 ngapi. UR: 6 dhawrind; 13 golt; 18 mong; 19 kaari; 20 kurr; 21 amool; 22 ərrbaanjə; 23 kakuwarr; 24 wuupul; 25 narmpa; 28 yunkarr; 29 mungarrmpara; 30 yali.

85. big: (a) 2 wayiga ~ wayima; 3, 10 wayig; 5–9 weg. (b) 15, 17–17' aw. (c) 24–25 yalpay. UR: 1 aməñma; 4 ikwali; 11 mway; 12 makwu; 13 ndyak; 14 tha'iy; 16 pi'an; 18 ngamal; 19 thaapəl; 20 ñaamil; 21 awocorr; 22 ku–ngarə; 23 warrkaay; 26 pangkal; 27 ngalal; 28 pulkan; 29 cuki; 30 thu'un.

86. small: (a) 5, 8 pwidh; 6–7 pwidhpwa. (b) 9–10 abog. (c) 17–17' eelən [eedn]; (d) 24 pupay; 25 pupan. UR: 1 acimbətha; 2 abuunggwana; 3 awumbyug; 4 ciw; 11 kic; 12 lög; 13 thith; 14 mañ; 15 pök; 16 mapan; 18 mant; 19 tikipíir; 20 ciikir; 21 ñiñəm; 22 ndəylbaw; 23 pica; 26 pipuy; 27 kitilakay; 28 miti; 29 wurraycakan; 30 cu'ucu'u.

87. far: (a) 1 wanhʉngu; 12 nhong. (b) 2 unggunu; 4 owol; 5–7 guun; 8, 10 ogon; 9, 13 ogol; 11 onggol; 17–17' uungk. (c) 14 kac; 15 kayc; 16, 27, 30 kaci. (d) 23, 25 kalakalpay; 24 kalalakalpay. UR: 18 raak-thorkorr; 19 kaca-kapée; 20 rwaay; 21 aguwal; 22 ərrcu; 26 kakay; 28 tawulu; 29 wampa.

88. near: (a) 2 ipala; 3 ipay; 4, 11 pyal; 5–7 pe; 8 pe-mam; 9–10 pæy-mam; 12 pal-mam; 13 pæl-mam. (b) 14 thinthinth; 15 thinth; 16 thinthu; 30 yincu. (c) 17–17' piim; (d) 23 yupaayku; 24–25 yupaku. (e) 26 pitir ~ pirri; 27 piti. UR: 1 unggµcma; 18 tongken (H and O); 19 kaca-kéyirr; 20 paarrik; 21 alpə; 22 nəwpə; 28 kiña-taa; 29 puurrin.

89. long: (a) 2 unggumu; 3 ungguum; 4 owom; 5–7 gu'uk; 8 ogo'ok; 8–10, 12–13 ogom; 11 onggom; 14–15, 17' uungk; 16 unggu; 30 uungku. (b) 19 kalkárang; 23 kalpaayku; 24 kalpali; 25 kalkakalpay; 26 kalkalay. UR: 1 rukudhi; 17 engkəc; 18 thorkorr; 20 girrilpinh; 21 ompər; 22 əlbwənə; 27 kurran; 28 calngkay; 29 curina.

90. short: (a) 2 umpama; 4 mpwam. (b) 3 ipuul; 5 mbül; 6–7 mbül-pwa; 8 mböl. (c) 9, 11 pwan; 10 ka-pan (ka extremity); 30 kupan. (d) 16 kocin; 21 ocin.gəg; 23 kucin; 30 kucin (?). (e) 13 ilkom; 24–25, 27 kulka. (f) 17–17' murrkən. UR: 1 mangga; 12 oryal; 14 otəng; 15 kalkanh; 18 kon; 19 teekəpəl; 20 withan; 22 tə¶nə; 26 wanti; 28 kuntun; 29 cutu.

91. hard: (a) 2 pwuthaka; 3–5, 8–13 pwuthak; 7 pwuthuk. (b) 14 yantəmp; 30 yantapa. (c) 15 thayən; 16 thayan; 17–17' tharrən; 18 tharrn. (d) 24–25 tanti. (e) 28–29 kakal. UR: 1 rapan; 6 watrak; 19 kurrcáar; 20 lmbaam; 21 aNhən; 22 ərrciwyə; 23 purrpurr; 26 takil; 27 puyal.

92. this: (a) 5–7 ndrwa'; 8 ndra'. (b) 9 layn; 10 lin. (c) 14–15 in; 16 irr; 18 inh (/i-/ prox, as opposed to /a-/ dist). (d) 17 anth; 17' anh-, nhaanth. (e) 21 unə; 22 nwə. (f) 23–24 yi; 25 yiña; 27 yingu. (g) 28 kiña ~; 29 ngiña ~, UR: 1 urra; 2 tyang; 3 lunh; 4 yin; 11 nggo; 12 iyi, nggit; 13 ana; 19 laa; 20 kul; 26 kulu; 30 ngi'i.

93. what: (a) 1–5, 8–13 ani; 6–7 anay; 14–15, 17–17' ngeen; 16 ngaari; 18 ngaan; 19 ngəntí; 20 ni; 21 anə; 22 nangənə; 23 ngana; 30 ngaani. (b) 24–25 wañu; 26 ñii; 27 wañii; 29 wańa. UR: 28 miña.

94. who: (a) 1 arri-dhu (ERG case) ~; 2 arrinha; 3 'inh; 4 ateń; 5–7, 9 'aynh; 8 a'enh; 10 a'inh; 11–12 atinh; 13 ati; 14–15 wee'; 17' wee'iy; 30 waa'i. (b) 16 wayi; 17 weey. (c) 18 waanh; 23 wañu; 24 wancu; 25, 28 wańa; 26 cuu; 27 wańaa; 29 wańuna. UR: 19 ngaaniń; 20 nggul; 21 anung ~ okol (ERG); 22 əmawngə.

95. where: (a) 1 andungu; 2 antulu; 3 tyun; 4 andut; 5, 8 ndron; 6–7 ndrong; 9 trongon; 10 tron; 11 tot; 12–13 ndot; 14 want-in; 15 want-inh; 16 wantu; 17 want-iń; 17' want-; 30 wantu. (b) 18 wanthan; 23 wancarra; 24 wancapurr; 25 wancapu; 26 caa; 27 wancaa; 28–29 wuncan. (c) 19 wárrəm; 21 arriin; 22 ərraymbə. UR: 20 thangkal.

96. I: (a) 1 aytuba; 2 ayunga; 3 ayung; 4 ayong; 5–7 awng; 8–10, 12–13 ayong; 11 njong; 14–15, 17–17', 18 ngay; 16 ngaya; 19 ngántu; 20 ngaay; 21 aayə; 22 yaw; 23–25, 27, 30 ngayu; 26 ngawu; 28 ngaca; 29 ngaca (ERG) ~ ngaypa (NOM).

97. you: (a) 1 andtuba; 2–3 tyu; 4 nti; 5–8 ndru; 9–10 tru; 11 ti; 12 ndyu; 13 ndwin; 14–15 nhint; 16 nhinta; 17–17', 18 nhunt; 19 yeen; 20 aant; 21 eenə; 22 niw; 23, 27 ñuntu; 24–25 yuntu; 26 ñurra; 28 nginta; 29 nginta (ERG) ~ nginpa (NOM); 30 nguna.

98. he: (a) 1 ulʉba; 2–3, 5–10, 12 lu; 4 lyu; 11, 13 li; 14–15 nhil; 16 nhila; 17-17', 18 nhul; 19 yélu; 20 lab; 21 eelə; 22 liw; 23 ñulu; 24 nulu; 25 yulu; 30 ngula. (b) 28 payi ~; 29 paympayi ~. UR: 26 kuci; 27 ngungu.

99. we dual inclusive: (a) 1 aliba; 2 lingg; 4 leli; 5–7 layngk; 8 lingk; 9 layng; 10 linggay; 11 layl; 12 lil; 13 lel; 14–15, 17–17', 18 ngal; 16 ngale; 19 ngel; 20 ngaal; 21 ali-; 22 laynə; 23–25, 27, 30 ngali; 28–29 ngalici. UR: 3 kwuy; 26 nganci.

100. you dual: (a) 1 ipula; 2 ipulu; 3 ipuy; 4 mpyul; 5–7 piy; 8, 10 poy; 9 pöy; 11, 13 pyul; 12 pol; 14–15, 18 nhip; 16 nhipa; 17–17' nhupəl; 19 yipéel; 20 wal; 21 ipaal; 22 pilə; 23 yupaal; 24–25 yupal; 28–29 ñupalaci; 30 ngu'ula pa'amu. UR: 26 ñurrampa (partially cognate); 27 ñuntumuku (partially cognate).

Appendix B: Other Lexical Materials

1. Umpila-Ya'u comparisons with other Middle Paman languages

This consists of 67 items of 100-word list extracted from Thompson (1976), O'Grady (1976), and Harris and O'Grady (1976); order of items is alphabetical by gloss; numbers followed by period correspond to numbers in Appendix A.

- 85. big mukana; 44. bite patha- 14, 15, 16, 17, 17', 18, 30; 31. black thungku 30; 65. burn 'unta-, aaci- (*tr*) 30; 38. climb piingka- 30; 61. creek 'atapa 16, 26 ((?));
- 47. cry 'ungka-; 45. cut muunga- 30; 28. die maka- 30; 53. dig wa'i- 14, 16, 30; 69. dog ku'aaka 14, 16, 17, 17', 18, 30; 78. down pakaya 14, 15, 16, 17', 30; 27. eat yangku- 30; 68. egg thun.ka, wuympa 15, 16, 17, 30 ((?)); 4. eye ku'un 30; 37. fall pungka-; 22. fat ku'i 30; 62. fire yuma 14, 16, 17, 17', 30; 42. give ngangka- 30;
- 35. go waatha- 30; 49. good miintha 14, 15, 16, 17, 17', 18 ((?)); 16. hand ma'a 14, 15, 16, 17, 17' 30; 98. he ngulu 14, 15, 16, 17, 17', 18, 30; 1. head pa'an;
- 30. hear ngami- 30; 43. hit tha'i-; 26. hungry 'uuli 30; 96. I ngayu 14, 15, 16, 17, 17', 18,30; 18. knee pungku 14, 15, 16, 17, 17', 18, 30; 48. laugh ngaaci- 30; 71. leaf kangka 14, 30; 40. leave wana- 14,

15, 16, 17, 17' 18, 30; 89. long 'uungku 14, 15, 16, 17', 30; 84. many kulima, yuthu, mukamukan; 66. meat miña 14, 15, 16, 17, 17', 18, 30; 7. mouth kaama; 88. near (y)iñcu, kaayina 14, 15, 16, 30; 5. nose nhiyi 30; 75. northeast kungkay 14, 15, 16, 17, 17', 18, 30; 81. one ñi'i- 30; 51. person pama 14, 15, 16, 17, 17', 18, 30; 36. run pintipinti(i)-; 29. see kiiki-, kuuca-; 34. sit nhiina- 14, 15, 17, 17', 18; 24. skin kulkul; 86. small cu'uci 30; 76. south yiipalu 17, 17', 30; 73. southeast kaaway 14, 15, 16, 17', 18, 30; 32. speak kuupatha-; 46. spear wuthaa-, yina- (*thatha*) 30; 33. stand paa'i-; 13. stomach thul'i 14, 15, 17, 17', 30;

- 54. stone kul'a 30; 67. tail pulpan 30; 39. take ala-; 92. his ngi'i 30; 83. three kukuthi; 41. throw waayi-; 70. tree yuku 14, 15, 16, 17, 17', 18, 30;
- 82. two pa'aamu 30; 77. up kani 14, 15, 16, 18, 30; 72. vegetable food mayi 14, 15, 16, 17, 17', 18, 30; 99. we (incl) ngampula [*ngali* not found]; 93. what ngaani 14, 15, 16, 17, 17', 18, 30; 95. where wantuna 14, 15, 16, 17, 17', 30; 52. woman wayimu;
- 97. you ngunu 14, 15, 16, 17, 17', 18, 30.

2. Cognation judgements

The number in parenthesis represents the language; numbers following that correspond to the Umpila-Ya'u items assumed to be cognate with the corresponding item in the language indicated; shared percentages are indicated in square brackets:

- (14): 44, 53, 69, 78, 62, 49, 16, 98, 96, 18, 71, 40, 89, 66, 88, 75, 51, 34, 73, 13, 70, 77, 72, 93, 95, 97. [26=.388]
- (15): 44, 78, 68, 49, 16, 98, 96, 18, 40, 89, 66, 88, 75, 51, 34, 73, 13, 70, 77, 72, 93, 95, 97. [23=.343]
- (16): 44, 61, 53, 69, 78, 68, 62, 49, 16, 98, 96, 18, 40, 89, 66, 88, 75, 51, 73, 70, 77, 72, 93, 95, 97. [25=.373]
- (17): 44, 69, 68, 62, 49, 16, 98, 96, 18, 40, 66, 75, 51, 34, 76, 13, 70, 72, 93, 95, 97. [21=.313]
- (17'): 44, 69, 78, 62, 49, 16, 98, 96, 18, 40, 89, 66, 75, 51, 34, 76, 73, 13, 70, 72, 93, 95, 97. [23=.343]
- (18): 44. 69, 49, 98, 96, 18, 40, 66, 75, 51, 34, 73, 70, 77, 72, 93, 97. [17=.254]

- (30): 44, 31, 65, 38, 45, 28, 53, 69, 78, 27, 68, 4, 22, 62, 42, 35, 16, 98, 30, 26, 96, 18, 48, 71, 40, 89, 66, 88, 5, 75, 81, 51, 86, 76, 73, 46, 13, 54, 67, 92, 70, 82, 77, 72, 93, 95, 97. [47=.701]

3. Pakanh vocabulary (L14') (from Hamilton and Yam 1994)

- 14. arm puntha; 11. armpit maapu; 64. ashes thuma-nhuuta; 50. bad waya;
- 85. big paapa; 44. bite athang; 31. black nhowantha; 21. blood cookarra; 23. bone yempe; 65. burn ana-pancan; 80. bye and bye ngula; 38. climb kani mathana;
- 61. creek piku; 47. cry paayin, payinga; 45. cut yeka; 28. die uthama;
- 53. dig wa'en; 69. dog ku'a; 6. ear thatu; 73. east kaawo; 27. eat ngolkana;
- 68. egg nhapi; 15. elbow yungka; 4. eye mee'a; 37. fall ancinga; 87. far ana-kaci;
- 22. fat yi'i; 62. fire thuma; 20. foot tha'u; 42. give mamanga; 35. go iyanga;
- 49. good mini; 55. ground aaku; 16. hand polama, ma'a-; 1. head weli; 30. hear ngayanga; 43. hit ingáypikung; 26. hungry maaci; 96. I ngaya; 18. knee pungku;
- 48. laugh thangkina; 71. leaf kangka; 40. leave be wumpa; 12. liver waana;
- 89. long oongko; 84. many yoto; 66. meat minha; 57. moon kapi; 7. mouth thaa;
- 3. nape muci; 88. near pala (hither?) [subtract]; 75. north kungke; 5. nose kaa-kuthu; 81. one thonam; 51. person pama; 29. see thathunga; 34. sit nhiinanga;
- 24. skin aku; 19. shin thuumpa, thumpa-yen.kan; 10. shoulder ingka;
- 86. small maña; 63. smoke thuma-nguka/thoko; 76. south (y)iipe; 32. speak waathinga; 33. stand thangana; 58. star kapi, othorro, thudnpi; 13. stomach ngangka, nhaapaci, thipa (guts); 54. stone muka; 56. sun kinca, punga;
- 67. tail mu(u)yu; 39. take kaalanga; 17. thigh pilu; 92. this ma'a (questionable) [subtract]; 83. three ko'alm; 41. throw thaa'inga; 79. tomorrow manga-nhaathama; 9. tongue thaa-ngantha, thaapa; 8. tooth kanca, kwaanga(?);

- 70. tree yuku; 82. two kucham; 77. up kani; 72. vegetable food mayi;
- 60. water wece; 74. west ku(u)wa, yongko; 93. what nganhi; 95. where wantu;
- 94. who inhu-waa'e; 59. wind wunta; 52. woman wancu.
- [Total viable comparisons: 87]

4. Pakanh comparisons with other Middle Paman

- (14–14'): 14, 50, 44(?), 65, 80, 38, 47, 28, 53, 69, 73, 68, 15, 4, 87, 62, 20, 35, 49, 55, 16, 30, 43, 26, 96, 18, 48, 71, 89, 84, 66, 57, 7, 75, 5, 81, 51, 29, 34, 19, 86, 63, 76, 33, 58, 13, 54, 56, 83, 41, 9, 70, 82, 77, 72, 74, 93, 95, 94, 52. [60=.689]
- (15–14'): 14, 50, 44(?), 65, 80, 47, 73, 4, 37, 87, 20, 49, 55, 16, 30, 43, 26, 96, 18, 48, 89, 84, 66, 7, 75, 5, 81, 51, 29, 34, 19, 10, 63, 76, 33, 58, 13, 56, 83, 41, 9, 70, 82, 77, 72, 74, 93, 95, 94. [49=.563]
- (16–14'): 14, 50, 44(?), 65, 38, 28, 53, 69, 73, 37, 87, 22, 62, 20, 49, 55, 16, 30, 43, 26(?), 96, 18, 48, 12, 89, 66, 57, 7, 3, 75, 5, 81, 51, 34, 24, 19, 10, 63, 76, 33, 56, 83, 41, 9, 70, 82, 77, 72, 74, 93, 95. [51=.586]
- (17–14'): 14, 50, 44(?), 65, 80, 69, 62, 20, 49, 16, 30, 26, 96, 18, 84, 66, 7, 75, 5, 81, 51, 34, 19, 76, 33, 13, 56, 39, 41, 9, 70, 72, 93, 95, 94. [35=.402]
- (17'–14'): 14, 50, 44(?), 65(?), 80, 69, 73, 68, 62, 20, 49, 16, 30, 26, 96, 18, 89, 84, 66, 7, 75, 5, 81, 51, 34, 76, 33, 13, 56, 39, 41, 9, 70, 72, 93, 95, 94. [37=.425]
- (18–14'): 14, 50, 44(?), 47, 45, 69, 73, 68, 4, 49, 55, 16, 30, 96, 18, 48, 66, 57, 75, 5, 81, 51, 34, 19, 76, 33, 56, 39, 9, 70, 82, 77, 72, 74, 93. [35=.402]
- (30–14'): 14, 11, 44(?), 80, 53, 69, 73, 15, 87, 62, 20, 49, 16, 30, 96, 18, 71, 89, 66, 7, 75, 5, 51, 29, 34, 19, 10, 63, 76, 58, 13, 9, 8, 70, 77, 72, 93, 95, 94, 59. [40=.459]

5. Nganhcara (Uwanh patrilect) vocabulary (L16') (from Ian Smith, pers. comm., 1985/1995)

- 2. forehead ngulu ngangka; 3. nape muci thaa; 4. eye thanta; 5. nose kaa kuthu;
- 6. ear kono; 7. mouth thaa; 8. tooth kanu; 9. tongue thaa ngantha;

- 10. shoulder ingki; 11. armpit yiwan; 12. liver kogom; 13. stomach ngangka, thupi; 14. arm puntha; 15. elbow punti; 16. hand ma'a; 17. thigh kuman;
- 18. knee pungku; 20. foot tha'u; 21. blood kamu; 22. fat yi'i, yoko; 24. skin aku;
- 25. headhair yengan; 26. hungry madhji; 27. eat mungga; 28. die uthuma;
- 29. see uwi; 30. hear ngii; 31. black ngunhca; 32. speak thawa; 33. stand thana;
- 34. sit nhiina/e; 35. go uwa; 36. run nunpa, mudba; 37. fall anhci; 38. climb mata; 39. take maa, mama, kalu; 40. leave wanta; 41. throw thii; 42. give waa, adha;
- 43. hit pigu; 44. bite patha; 45. cut umpi; 46. spear yenta; 47. cry paabi;
- 48. laugh thangkangki; 49. good mini; 50. bad waya; 51. person pama;
- 52. woman kuyu; 53. dig wa'i; 54. stone muka; 56. sun punga; 57. moon kapi;
- 59. wind theba; 60. water ngaka; 61. creek wa'awa; 62. fire thuma;
- 63. smoke thoko; 64. ashes puthca; 65. burn panci; 66. meat animal minha;
- 68. egg minha thuka; 69. dog ku'a; 70. tree yuku; 71. leaf enga; 72. veg food mayi;
- 73. east kawa; 74. west kuwa; 75. north kungke; 76. south yibe; 77. up kanhnyi;
- 78. down pake; 79. tomorrow puga; 81. one thono; 82. two kuce; 84. many uyu;
- 85. big yoko; 86. small mepen; 87. far kaci; 88. near thinthu; 89. long unggu;
- 90. short kaarin; 91. hard thayan; 92. this iiru; 93. what waari; 94. who wayi;
- 95. where wantu; 96. I ngaya; 97. you nhinta; 98. he nhila; 99. we du incl ngale; 100. you du nhipa. [92]

6. Uwanh comparisons with other Middle Paman

- (16'–14): 2, 5, 6, 7, 9, 11, 13, 14, 16, 17, 18, 20, 25, 26, 27, 28, 30, 32, 33, 34, 38, 39, 40, 41, 43, 44, 45, 48, 49, 50, 51, 53, 54, 56, 57, 60, 62, 63, 65, 66, 69, 70, 72, 73, 74, 75, 76, 77, 78, 81, 82, 87, 88, 89, 92, 93, 95, 96, 97, 98, 99, 100. [62=.673]
- (16'–15): 2, 5, 6, 7, 10, 11, 13, 14, 16, 17, 18, 20, 26, 27, 30, 32, 33, 34, 37, 39, 40, 41, 43, 44, 45, 48, 49, 50, 51, 56, 60, 63, 65, 66, 68, 70, 72, 73, 74, 75, 76, 77, 78, 81, 82, 87, 88, 89, 91, 92, 93, 95, 96, 97, 98, 99, 100. [57=.619]
- (16'–16): 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 20, 21, 22, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52(?), 53, 56, 57, 59, 60, 61, 62, 63, 64, 65, 66, 68, 69, 70, 71(?), 72, 73, 74, 75, 76, 77, 78, 81, 82, 84, 86, 87, 88, 89, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. [82=.89]
- (16'–17): 4, 5, 7, 13, 14, 16, 18, 20, 26, 30, 33, 34, 40, 41, 44, 45, 49, 50, 51, 56, 60, 62, 65, 66, 68, 69, 70, 72, 75, 76, 78, 81, 91, 93, 94, 95, 96, 97, 98, 99, 100. [41=.446]
- (16'–17'): 4, 5, 7, 12, 13, 14, 16, 18, 20, 26, 30, 33, 34, 40, 41, 44, 45, 49, 50, 51, 56, 60, 62, 66, 69, 70, 72, 73, 75, 76, 78, 81, 84, 91, 93, 95, 96, 97, 98, 99, 100. [41=.446]
- (16'–18): 14, 15, 17, 18, 21, 25, 27, 30, 33, 34, 40, 44, 48, 49, 50, 51, 56, 57, 60, 66, 69, 70, 71(?), 72, 73, 74, 75, 76, 77, 81, 82, 91, 92, 93, 96, 97, 98, 99, 100. [38=.413]
- (16'–30): 7, 10, 13, 14, 16, 17, 18, 20, 21, 25, 34, 40, 44, 49, 51, 53, 62, 66, 68, 69, 70, 72, 73, 75, 76, 30, 78, 87, 88, 89, 93, 95, 96, 97, 98, 99, 100. [37=.402]

Uwanh/Wik Averages: (i) Wik minus Muminh: .548; (ii) Mn and Me: .646.

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