

5 *Basic vocabulary of the Arandic languages: from classification to reconstruction*

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1. Introduction¹

Hale (1962) published the results of data collected during 1959–60 representing ten sites within the linguistic territory of the Arandic language group. The paper includes the responses for a “100-word test list . . . taken from a former 400-word survey list designed for use in Central Australia with particular attention to the Central Australian Domains” (Hale 1962:173). (A fuller word list (Hale n.d.) remains unpublished but has been widely available.)

Hale’s presentation divides the 100-word sets, each of which gives the translation equivalent of the same English word into each of the ten local varieties of Arandic, into three groups on the basis of whether the corresponding words are judged to be cognate between the different varieties of language. The first group includes all the words “shared as cognate by all the languages and dialects in the sample”; the second set gives those words “shared by all except Kaiditj”; the third set includes the remainder—words which are not cognate between all the varieties except Kaytetye (Hale 1962:173). The language names, their locations and abbreviations used by Hale are given on Table 1, along with corresponding modern language names plus the abbreviations used in this paper.

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Table 1: Language variety labels

Hale	Hale language name and location	modern label	this paper
Ka	Kaiditj (from Murray Downs)	Kaytetye	Kay
AAI	Alyawara (from Ammaroo)	Northern Alyawarr [Western Aly]	NAlly
MDAI	Alyawara (from MacDonalD Downs)	Southern Alyawarr [Eastern Aly]	SAlly
Ak	Akara-Akitjara (eastern Plenty River)	Antekerrepenh	Ak
PRAr	Aranda (from western Plenty River)	Northeastern Arrernte	PR
ASAr	Alice Springs Aranda	Mparntwe/Central Arrernte	AS
An	Anmatjara (from Napperby)	Western Anmatyerr	Anm
HgAr	Western Aranda (from Hermannsburg)	Western Arramta/Western Arrernte	WAr
HyAr	Southern Aranda (from Henbury)	Pertame/Southern Arrernte	SAr
LoAr	Lower Aranda (from Dalhousie)	Lower Arrernte	LAr
		Alyawarr	Aly
		Eastern-Central Arrernte	ECAr
		(proto-)Aranda	(p)Ar
		(proto-)Arandic	(p)Arc
		pre-Arandic	preArc
		(proto-)Pama-Nyungan	(p)PN

Hale then calculated percentages of cognates between all the varieties and drew conclusions regarding subgrouping and dialect chain within the whole Arandic group. His table of lexical percentages (amended to agree with his text) is reproduced here on Table 2.

Table 2: Percentages of cognates shared (Hale 1962:181)

	AAI	MDAI	Ak	PRAr	ASAr	An	HgAr	HyAr	LoAr
Ka	41	38	37	33	31	32	30	28	29
AAI		83	77	69	64	60	60	55	54
MDAI			83	72	67	59	60	58	57
Ak				79	70	60	62	62	64
PRAr					87	75	74	68	65
ASAr						83	86	70	67
An							82	70	54
HgAr								84	66
HyAr									65

Hale's interpretation of the historical relations revealed by these statistics is in terms of a subgroup differentiated firstly into Kaytetye vs. Aranda, then a further split into a Lower and an Upper Aranda language, and finally diversification of the latter into a chain or mesh of dialects whose mutual intelligibility depends on their relative geographical distance from one another. These relationships are diagrammed in Figure 1.

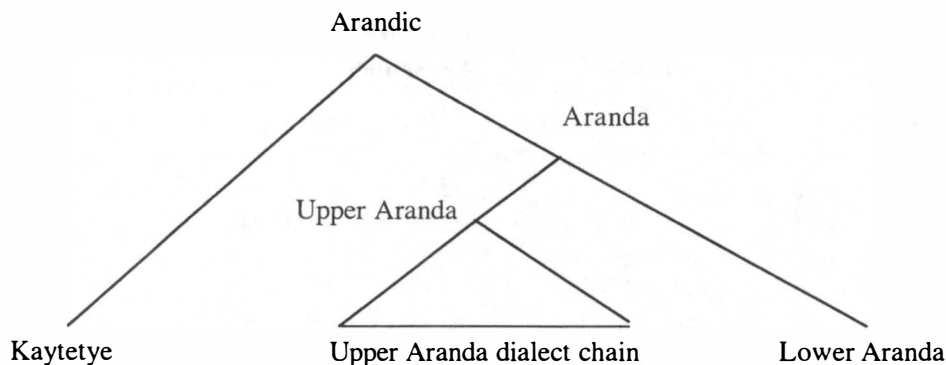


Figure 1: Arandic linguistic relationships according to Hale (1962)

In more recent linguistic work on Arrernte (Wilkins 1989:15, Henderson 1997:10–13), four separate languages are recognised within Hale’s Upper Aranda dialect chain: Alyawarr, Anmatyerr, Eastern and Central Arrernte (including Hale’s PRAr, and ASAr), and Western Arrernte (including Western and Southern Arrernte). Hale’s Ak is now thought by Gavan Breen (pers. comm.) to represent Antekerrepenh, whose separate status from ECAR and Aly remains to be demonstrated. The separate status of Lower Arrernte is supported by morphological data (Breen, pers. comm.). Figure 2 gives a schematic representation of the geographical distribution of the sites which Hale’s wordlists represent and shows the main linguistic divisions now recognised.²

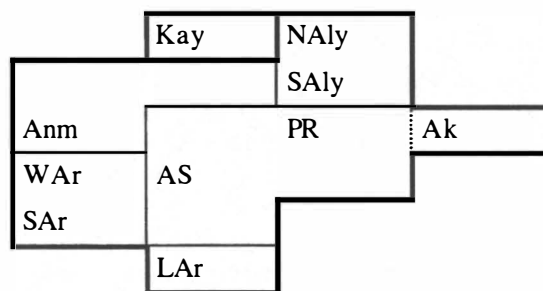


Figure 2: Geographical schema of Arandic language varieties

My aim in this paper is to focus not on the statistics of cognation but on the actual words. I intend to use the wordlist data for purposes of reconstruction rather than of classification. I wish to answer for each set of corresponding words the questions: (a) what was the proto-Arandic (pArc) word? and (b) what were the innovations which account for its replacement in the cases of nonuniformity? Each of Hale’s three word groups has a different significance and raises its own set of issues for historical reconstruction.

The first group, which I call ‘pan-Arandic words’, can be assumed to be descended from pArc. They are important witnesses to the genetic discreteness of the Arandic subgroup. Some of these are inherited from a putative proto-Pama-Nyungan (pPN) or lower-order ancestor. While shared inheritance by itself does not reveal the separateness of a linguistic subgroup,

² For modern dictionaries of Alyawarr, Eastern and Central Arrernte, and Western Arrernte, see respectively Green (1992), Henderson and Dobson (1994) and Breen and Pfitzner (2000).

those words that have cognates in other Australian languages support the establishment of phonological changes that characterise the development of the Arandic subgroup (see Koch 1997b). On the other hand, shared Arandic words that lack outside cognates constitute innovations common to Arandic that contributed to the separation of Arandic from other Australian languages. Each common linguistic innovation contributes to the definition of a separate language; lexical innovations, including the creation of new lexemes or semantic shifts, are important in this respect because there are potentially so many of them in a subgroup, compared to the number of possible phonological and grammatical changes, and most lexical changes are more arbitrary, less 'natural', than many phonological and grammatical changes. (The main outlines of Arandic historical phonology are presented in Koch (1997b), which can be read as a companion article to this one. Koch also presents references to the Pama-Nyungan (PN) antecedents for about 100 Arandic forms—but not the actual cognates.³)

The second group of words, which I call 'Aranda vs. Kaytetye words' raise a different issue. The existence of separate forms helps to establish the discrete status of the Aranda group of languages and dialects. But it is potentially a problem for the unity of Aranda and Kaytetye as a subgroup. However, if a common pArc is assumed, there are four ways in which the lexical disparity can be explained historically: (a) the pArc form has been preserved in Kay and Ar has innovated; (b) the pArc form has been preserved in Ar and Kay has innovated; (c) neither branch continues the pArc form, both having innovated; (d) both words continue pArc forms. In the last case the forms may have been synonyms in pArc, or one may have had a somewhat different sense which subsequently shifted.

The third, non-congruent or 'divergent' group of words, raises different issues. Each set reflects a lexical change in at least one of the language varieties that developed out of pAr. The historical problem is to sort out which of the variant words are most likely to be reflexes of the pAr (and even the pArc) representative of the given meaning. One method that is useful here is that of linguistic geography, whereby inferences about reconstruction are drawn from the areal distribution of forms (see Koch 1997a:37f.). Because of space limitations I discuss only a small sample of the 62 words in Hale's third group, with examples selected to illustrate the different configurations that occur.

I re-present the words from Hale's list in tables with cognates and other translation equivalents arranged into vertical sets. The words are spelled in terms of modern orthographical conventions for the Arandic languages, with some standardisation—in the interests of making the paper easier for non-Arandicists to follow. The vowels are taken to be *a*, *e* (shwa), *i*, and *u*. I will represent all words with a final *e*, contrary to the practice for modern Alyawarr and Anmatyerr, and use initial *i*, contrary to the practice for modern Kaytetye (where such vowels are interpreted as representing the shwa phoneme). For the diachronic interpretation of correspondences of *uCe-* and *iCwe-*, see Koch (1997b); for the synchronic phonological analysis of rounding, see Breen (this volume).

2. Pan-Arandic words

In Table 3 I list the 21 words of Hale's group 1, word sets which are shared by all Arandic varieties. The words are displayed in a vertical array topped by Hale's word number and

³ Sources for PN reconstructions are: Alpher (1991), Austin (1981, 1990), Capell (1956), Dixon (1970, 1980), Evans (1988), Hale (1982), O'Grady (1966, 1979), O'Grady and Tryon (1990), Sommer (1969).

gloss and followed by my proto-Arandic (pArc) and Pre-Arandic (preArc) reconstructions. The order of language varieties follows that of Hale. Any material that I judge to be non-cognate is put into square brackets. After presenting the lists I discuss briefly the etymology of each of the forms.

To account for the inner-Arandic history of the cognate sets in this group, it is sufficient to give the pArc form (the minor phonological differentiation between the forms will also have to be justified eventually). I will also give, where possible, the pre-Arandic form from which the pArc is descended. Also in cases where there is no established pPN etymology, I give some of the cognates on which I have based my reconstruction.

Table 3: Pan-Arandic cognates

No.	1	2	3	4	5	6	7
Gloss	bone	burn	ear	egg	excrement	fat	foot
Kay	ngkwerne	ampe-	iyłpe	kwarte	atne	antere	angke[tye]
NAly	ngkwerne	ampe-	iyłpe	kwarte	atne	antere	ingke[tye]
SAlly	ngkwerne	ampe-	iyłpe	kwarte	atne	antere	ingke[tye]
Ak	ngkwerne	mpe-	iyłpe	kwarte	atne	antere	ingke
PR	ngkwerne	mpe-	iyłpe	kwarte	atne	antere	ingke
AS	ngkwerne	ampe-	iyłpe	kwarte	atne	antere	ingke
Anm	ngkwerne	ampe-	iyłpe	kwarte	ane	antere	ingke
WAr	ngkwarne	(a)mpe-	iyłp[akerte]	kwarte	atne	ntere	ingke
SAr	ngkwarne	mpe-	iyłp[akerte]	kurte	atne	ntere	ingke
LAr	ngkwerne	mpe-	iyłpe	kwarte	atne	antere	ingke
pArc	*ungkerne	*ampe-	*iyłpe	*ukarte	*atne	*antere	*ingke
preArc	*nungkarn	*kaampa-		*muka..	*kuna	*CantOrV	*mingka ?

No.	8	9	10	11	12	13	14
Gloss	hand	head	hit with missile	liver	man	mouth	nose
Kay	iltye	ake	we-	aleme	artwe[ye]	arre	ilhe
NAly	iltye	ak[apwerte]	we-	aleme	artwe	arr[akerte]	alhe
SAlly	iltye	ak[apwerte]	we-	aleme	artwe	arr[akerte]	alhe
Ak	iltye	ak[apwerte]	we-	aleme	artwe	arr[akerte]	alhe
PR	iltye	k[aperte]	we-	aleme	artwe	arr[akerte]	alhe
AS	iltye	k[aperte]	we-	aleme	artwe	arr[akerte]	alhe
Anm	iltye	ak[apwerte]	[lte]we-	aleme	artwe	arr[akerte]	alhe
WAr	iltye	k[apwerte]	wa-	leme	artwe	rr[akerte]	alhe
SAr	iltye	k[uperte]	wa-	aleme	urte	arr[akerte]	alhe
LAr	iltye	ak[apwerte]	we-	aleme	urte	arr[akerte]	alhe
pArc	*iltye	*ake	*we-	*aleme	*urte	*arre	*i/alhe
preArc	*miltyV	*maka/*kaka	*Ruwa-	*malampV	*CurtO	*Rirra	*mulha

No.	15	16	17	18	19	20	21
Gloss	see	sit	speak	stand	tongue	two	urine
Kay	are-	ane-	angke-	atne-	alenyé	atherre	impwe
NAly	are-	ane-	angke-	itne-	alenyé	atherre	impwe
SAly	are-	ane-	angke-	itne-	alenyé	atherre	impwe
Ak	are-	ane-	ngke-	tne-	alenyé	therre	mpwe
PR	are-	ane-	ngke-	tne-	alenyé	therre	mpwe
AS	are-	ane-	angke-	tne-	alenyé	atherre	mpwe
Anm	are-	ane-	angke-	ine-	alenyé	therre	mpwe
WAr	re-	ne-	ngke-	itna-	lenyé	therre	umpe
SAr	re-	ne-	ngke-	tna-	alenyé	therre	umpe
LAr	re-	ane-	ngke-	itne-	alenyé	therr[ame]	mpwe
pArc	*(a)re-	*(a)ne-	*(a)ngke-	*(a)tne-	*(a)lenyé	*(a)therre	*umpe
preArc	*miira-	*nyiina-	*kangka-?	*thana-	*thalany	*kutharra	*kumpu

1 'bone': The preArc form is based on cognates in the Warluwarric family (for which see Carew 1993)—Wakaya *rnungkurt*, Bilarnu *nhukarni*, Injilanji *n(h)jungkardi* (Koch 1997a:30). There is some question about the place of articulation of the initial nasal. (Warlpiri and Warumungu *yungkurru* ('witch doctor' in the latter) represent loans from Arandic.)

2 'burn': The preArc **kaampa-* is reconstructed by Alpher (1991) on the basis of Hale's work for West-Central Pama-Nyungan; cognates are found in proto-Pama, and without the long vowel in Ngumpin-Yapa languages, Western Desert, pMantharta (Austin 1981), pNgayarta (O'Grady 1966:#605), pThura-Yura (J. Simpson, pers. comm.).

3 'ear': War and SAr extended the root by adding the HAVING suffix *-akerte*, as in 'mouth'. Hale gives *ilype* for all varieties except Aly. I am not recognising a distinction between a prepalatalised consonant (e.g. *yl*) and a palatal (e.g. *ly*) in the first member of clusters. Modern dictionaries give *irlpe* for ECAr and SAr/Pertame, which lack the prepalatalised phonemes. The etymology is uncertain; possible cognates include pCentral Karnic **tharlpa* 'ear, leaf', Yankunytjatjara *karlpi* 'broad leaf, feather', Western Desert *nyarlpi* 'broad leaf, feather'.

4 'egg': The preArc form is based on O'Grady's (1990:86) proto-(Nuclear-)Pama-Nyungan **muka*.

5 'excrement': A widespread Australian **kuna* has been recognised since Capell (1956:87).

6 'fat': No etymology is available. The preArc **O* vowel means *a* or *u*, not *i*, since there is no prepalatalisation. If we can trust the absence of prestopping in the *n* (which is unreliable in clusters) the initial C would be nasal.

7 'foot': Kay and Aly have added an increment *tye*. Kay has the term *ingke* (or *ikngke?*) in the meaning 'claw'. Both have another extended form *ingkelthele* 'finger-nail, toe-nail', which is found in ECAr in the meaning 'claw'. It would appear that (a) the original pArc meaning of *ingke* was 'claw, nail'; (b) an early derivative was *ingkelthele* 'nail, claw'; (c) pAr semantically shifted *ingke* from 'nail' to 'foot'; (d) Kay and Aly extended *ingke* by adding *-tye* to produce a meaning 'foot'. A plausible preArc form is **mingka*, if Pitta-Pitta *mingkara* 'finger-nail' is cognate.

8 'hand': The preArc form is based on the Western Desert cognate *miltji* 'nails, claws' and the extended *milja(r)n* 'fingernail' in Yapa-Ngumpin languages. The semantic shift to 'hand' is a distinctive Arandic innovation (see Wilkins 1996:283–5).

9 'head': All varieties of Aranda have extended the original *ake* by means of an element, either *aperte* or a reflex of **uperte/apwerte* (which may be the word for 'stone'). PreArc **maka* is supported by cognates in a number of Pilbara languages (O'Grady 1966:#822). The alternative **kaka* is reconstructible for pThura-Yura (J. Simpson, pers. comm.).

10 'hit with missile': Anm has combined the verb root with a preverbal element *lte*. The preArc is based on a pPN stem reconstructed as *RLDuwa-* by Evans (1988:104) and as **ruwa-* by Hendrie (in O'Grady and Tryon 1990:73).

11 'liver': The preArc form is based on Barkly regional forms such as Injilanji *malamba*, West Wakaya *melempa*, Wampaya *malampa*, Waanyi *malambi*, Warumungu *malimpa/irri*. (Warlpiri *yilima* and *nyilima* are interpreted as loanwords from Arc.)

12 'man': Kay has extended the inherited form with an increment *-ye*. The longer form *artweye* also occurs in Aly, Anm and ECAr in the compound *apmerek-artweye* 'landowner'. No etymology is yet available. (For **O* see comment at No.6.)

13 'mouth': All varieties of Aranda have extended the root by adding the HAVING suffix *-akerte*. The preArc form has long been recognised as Pama-Nyungan (Koch 1997b:298) in the meaning 'tooth'. A semantic shift to 'mouth' took place in Arc, as well as elsewhere.

14 'nose': The original vowel of pArc is uncertain; cognates further afield suggest **mulha* (Koch 1997b:296). O'Grady reconstructs **milya* (O'Grady and Tryon 1990:84).

15 'see': For preArc see O'Grady's (1990:85) pPN **miira-* 'see, watch, perceive', reflected in Western Desert *mira-* 'watch'. The semantic shift to the generic 'see' is diagnostic of the Arc subgroup.

16 'sit': PreArc **nyina-* (or **nyina-*) is a long established pPN root (Koch 1997b:297).

17 'speak': There are obvious cognates in the form of *wangka-* in most language subgroups in western PN—including Yapa (Warlpiri), Ngayarta, Kanyara-Mantharta, Western Desert and Thura-Yura. But the lack of rounding in a *wa-* word is an exception to Arc sound changes (Koch 1997b:283f.). A form *kangka-*, such as occurs in Bidjara 'call out', also in Lardil, would be a better source. Could there have been a change **k > w* in western PN?

18 'stand': The preArc form is based on the established pPN **tyana-* (Koch 1997b:298).

19 'tongue': The preArc form is based on a long established pPN form (Koch 1997b:298).

20 'two': LAr adds *-ame*; *atherrame* is found in other varieties as well (e.g. ECAr), beside *(a)therre*. The pPN form was proposed by Capell (1956:93) and Dixon (1970:90).

21 'urine': For pPN **kumpu* see Capell (1956:89), Dixon (1980:100).

Although all varieties have cognate terms for the group 1 words, we see a distinction between Kaytetye and Aranda in several places: (a) Aranda but not Kay has shifted *ingke* semantically from 'claw, nail' to 'foot' (set 7); (b) Aranda but not Kay has compounded *ake* with **uperte* to extend the term for 'head' (set 9); (c) Aranda but not Kay has extended **arre* 'mouth' by means of the HAVING suffix *-akerte* (set 13); (d) only Kay has extended **urte / artwe* 'man' (set 12) to *artweye*.

3. Aranda vs. Kaytetye words

Here I discuss Hale's group 2, items 22 through 42, words that are shared by all varieties of Aranda whereas Kay has a non-cognate word in the same meaning. I re-present in Table 4 the words in modern orthography, and include a reconstructed proto-Aranda (pAr) form, as well as a suggested proto-Arandic (pArc) form. The order here has been changed from that of Table 3; here I first give the forms for all the varieties of Aranda, followed by the pAr reconstruction, then follows the Kay form, and finally the pArc reconstruction. Following the table I discuss what the pArc form is likely to have been. This amounts to deciding which of the two branches of Arandic has innovated.

Table 4: Aranda vs. Kaytetye words

No.	22	23	24	25	26	27	28
Gloss	bird	cry	die	drink	eat	eye	fall down
NAly	uthipe	artne-	ule-	antywe-	arkwe-	atnng	aytne-
SAly	thipe	artne-	ule-	antywe-	arkwe-	atnng	aytne-
Ak	uthipe	artne-	ilwe-	antywe-	arkwe-	alkng	tnye-
PR	thipe	artne-	ilwe-	antywe-	arkwe-	alkng	tnye-
AS	thipe	artne-	ilwe-	antywe-	arkwe-	alkng	itnye-
Anm	thipe	irne-	ule-	ntywe-	irkwe-	anng	anye-
WAr	thipe	irtne-	ilwe-	ntywe-	irkwe-	alkng	tnye-
SAr	thipe	rtne-	ilwe-	ntywe-	urlke-	alkng	iytne-
LAr	uthipe	artne-	ilwe-	untye-	urlke-	alkng	iytne-
pAr	*uthipe	*artne-	*ule-	*untye-	*urlke-	*atnng	*aytne-
Kay	thangkerne	ake-	ampwarre-	kwathe-	ayne-	irlwe	atnthe-
pArc	*uthe		*ule-	*untye-	*ayne-	*alkng	*aytne-
preArc	*thuthu	*kaka-, *TarnO-	*pula-	*punta-	*ngarni	*miilngV	*warni-

No.	29	30	31	32	33	34	35
Gloss	food (veg.)	get/fetch	give	go	hear	lie	meat
NAly	amerne	ine-	anthe-	alhe-	awe-	aynte-	akere
SAly	amerne	ine-	anthe-	alhe-	awe-	aynte-	akere
Ak	merne	ine-	nthe-	lhe-	awe-	antye-	kere
PR	merne	ine-	nthe-	lhe-	awe-	inte-	kere
AS	amerne	ine-	anthe-	alhe-	awe-	inte-	kere
Anm	amerne	ine-	anthe-	alhe-	awe-	inte-	kere
WAr	merne	ine-	nthe-	lhe-	awe-	inte-	kere
SAr	merne	ine-	nthe-	lhe-	we-	inte-	kere
LAr	merne	ine-	nthe-	lhe-	we-	inte-	kere
pAr	*(a)merne	*ine-	*anthe-	*alhe-	*awe-	*aynte-	*(a)kere
Kay	etnye	iytle-	itnye-	ape-	ilpathe-	une-	weye
pArc	?	*iyne-	*itnye-	*ape-	*awe-	*une-	*akere, *uye
preArc	*NEmVrnV	*mani	*yinyV- < *nyunyV	*wapa-	*ngawi-	*nguna-	*wakari, *kuya

No.	36	37	38	39	40	41	42
Gloss	one	root	smoke	spear	stomach/ belly	strike/kill	water
NAly	anyente	arterkerre	kwerte	rnterne-	atnerte	atwe-	kwatye
SAly	anyente	arterkerre	kwerte	rnterne-	atnerte	atwe-	kwatye
Ak	nyente	arterkerre	kwerte	rnterne-	atnerte	atwe-	kwatye
PR	nyente	arterkerre	kwerte	rnterne-	atnerte	atwe-	kwatye
AS	anyente	arterkerre	kwerte	rnterne-	atnerte	atwe-	kwatye
Anm	nyente	irtekerre	kwerte	rnterne-	atnerte	atwe-	kwatye
WAr	nyente	irtekerre	kwarte	rntarne-	tnerte	twe-	kwatye
SAr	nyente	rtekerre	kwarte	rntarne-	atnerte	twe-	kwatye
LAr	nyente	arterkerre	kwerte	rnterne-	atnerte	ute-	kwatye
Kay	wenyerre	kartawarre	ilpalhe	aytne-	aleme	alarre-	arntwe
pAr	*(a)nyente	*arterkerre	*ukerte	*(r)nterne-	*atnerte	*ute-	*ukatye
pArc	*(a)we-	*arterkerre	*ukerte	*aytne-	*atnerte	*ute-	*uke
preArc	*CVwV-	*CartOkVrrV	*tyukurtu	*Ra-ni	*kunarti	*CutO-/*watO-	*nguku

22 'bird': pAR **uthipe* possibly is a combination of **uthe* + **ipe*. This would allow for the possibility that Kay form is also a compound, presumably **uthe* + *angkerne*, the latter possibly a derivative of *angke-* 'speak'. PreArc **thuthu* is suggested by Warumungu *juju* and Warluwarric *thuthu*.

23 'cry': The preform of Kay seems to be **kaka-*, which has cognates in Warumungu and the Warluwarric languages. No clear etymology is available for pAR **artne-*, whose preform should be **TarnO-*, where **T* is a non-nasal and **O* is vowel other than *i*. Perhaps pArc had both forms.

24 'die': Kay is formally *ampwe* + *arre-*, and has the structure of an inchoative, which suggests an earlier meaning 'become *ampwe*'. In Aly *ampwe* means either 'old' or 'thin, skinny', and the derived inchoative *ampwerre-* means either 'become old' or 'become thin, skinny'. It appears Kay has shifted the inchoative semantically, perhaps originally as a euphemistic expression, to 'die'. The word replaced is likely to have been **ule-*, which can then be reconstructed for pArc. A preform **pula-* is suggested by cognates in Queensland languages: Yanda *pula-*, *wula-* in pPama, Bidjara, Guwa.

25 'drink': Kay is from **uke* + **athe-* 'water eat' (Koch 1997b:295). If we assume that this collocation, which occurs in many other Australian languages, replaced a monomorphemic verb, this is likely to have been the form **untye-* which is found in all of Aranda. Evidence for the prior existence of this root in Kay comes from the term *nty(w)errele*, which means both 'thirsty' and 'potable liquid'. This reconstructs as **untyerrele*, which is presumably a derivative of **untye-* 'drink'. The preArc is based on cognates such as Warumungu *jala-punjjan*, Pitta-Pitta *puntha-* 'suck', pNgayarta **punhtha-* 'swim, drink' and pKanyara *punytya-* 'lick'.

26 'eat': pAr **urlke-* is cognate with a Karnic verb *yurlku-* (pKarnic 'swallow'; cf. *yurlku* 'throat' (Pitta-Pitta, Wangka-Yutjuru *yirlka*)). Kay *ayne-* reflects an earlier **ngarni-*, which is an inflected form of a very ancient root **nga-* 'eat' (Koch 1997b:296). *Nga-rni* occurs in Warlpiri as the nonpast tense form of *nga-*. One must assume that an inflected verb form was reanalysed as the root in Kay, presumably after a requirement came into force that all

Arandic verb roots must be disyllabic. I posit that Kay here continues pArc and that pAr has innovated by shifting a verb meaning 'swallow' to 'eat'.

27 'eye': The Kay form *irlwe* also occurs in ECar and other Aranda (spelled *urle*), but in the meaning of 'forehead'. A cognate of the Aranda term does occur in Kay; it is *a(t)nngē* but it means 'seed'. ECar also has *anngē* as 'seed' (beside *alkngē* 'eye!'). I reconstruct for pArc **urle* in the meaning 'forehead', from pPN **ngurlu* (Koch 1997b:297), and for 'eye' tentatively **alkngē*, possibly from preArc **miilngV*, an extension of pPN **miil* 'eye' (Koch 1997b:294, 296).

28 'fall down': PAr **aytne-* reconstructs to an earlier **Ta(r)ni-*, where *T indicates a non-nasal consonant. Plausible extra-Arandic cognates are *warni-* in pMantharta, pNgayarta, Watyarri, Wirangu, Nukunu *wartni-*, and WD *warni-* with shifted meaning 'throw'. Hence we can assume a preArc **warni-* > **aytne-*. The source of Kay *atthe-* is unknown, but the root recurs in the complex form *attheyayte-* 'climb', where the element *-ayte-* contributes the upward semantic component (cf. the verb root *ayte-* 'rise' < **parti-*).

29 'vegetable food': Since neither the Aranda nor the Kay terms has plausible external cognates, a judgement on the likely pArc form is impossible. PArc **(a)merne* presupposes **NEmVrnV*, where *N is any nasal and *E is a non-rounded vowel.

30 'get/fetch': Kay *iyle-* is presumably cognate with the denominative transitivity form that occurs as Kay *-ayle-*, Western Aly *-ele-*, Eastern Aly and ECar *-ile-* (and possibly ECar/Aly *ile-* 'tell'). PAr **ine-* has a likely cognate in Kay in the alternative denominative transitivity form *-eyne-*. Both transitivity forms have originated in compound constructions, with the second element a verb meaning 'get, take', etc. It is possible that two verbs were present in pArc. The pAr form **ine-* may reflect pArc **iyne-* and continue a preArc **mani-*, which would have been in origin an inflected form of the pPN verb **ma-* 'get, take' (Koch 1997b:296), reflexes of which form transitive compounds in many PN languages. Cognates are Arabana-Wangkangurru *mani-*, pWKarnic **mani-*, Kalkatungu *mani-*, Warlpiri *ma-ni* (a nonpast inflected form).

31 'give': The Ar forms descend from **wantha-*, which is attested in the meaning 'leave, put' in pNgayarta, pKanyara-Mantharta, and Mirminy. The meaning must have shifted to 'give' in pAr. This leaves the Kay form as the reflex of the inherited pPN 'give', **nyu-*. In preArc this root would have suffered the lenition of the initial nasal, derounding of the vowel, and extension by the absorption of an inflection; cf. the western forms Warlpiri *yinyi* nonpast, Walmajarri *yinya* past, pNgayarta (O'Grady 1966:#714) *yinya-*. I posit an Arc development *itnye-* < **yinyi/a* < pPN **nyunyV* (Koch 1997b:293, 297).

32 'go': The root *ape-* of Kay is found in Ar *petye-* 'come' (where *-tpe-* contributes the 'hither' direction) and probably in the frequentative affix *-pe-*, so it is clearly inherited from pArc. **alhe-* for 'go' appears to be an innovation of pAr. **ape-* has a clear cognate in Warumungu *api/a-*, but a possible cognation with a widespread PN root *wapa-* (Koch 1997b:293, 299) is problematic since one would expect **wa-* to have resulted in rounding of the consonant (cf. comments on no. 17 'speak').

33 'hear': Kay appears to be a compound of 'ear' plus an uncertain verb **athe-* (hardly *athe-* 'excrete', possibly the **athe-* < **patha-* 'bite, eat' found in *kwathe-* 'drink'). So the Ar form is likely to continue a pArc form **awe-*. A plausible cognate is the Karnic *ngawi-* found in Arabana, Wangkangurru, and Wangka-Yutjuru).

34 'lie': Kay is from pPN **nguna-* (Koch 1997b:293, 297). The Ar forms probably descend from an earlier **wanti-*, attested as 'lie' in the Thura-Yura languages (J. Simpson, pers. comm.) and as 'fall' in Warlpiri and so reconstructed for pPN by Alpher (1991:91). We can assume parallel semantic shifts 'fall' > 'lie' in pAr and Thura-Yura.

35 'meat': Kay *weye* is from **uye* < **kuya*, a widespread PN term meaning 'fish' or, in many western languages, 'animal' or 'meat' (Koch 1997b:296; McConvell 1997). The Kay form may have been borrowed from Warlpiri or Warumungu *kuyu* before Arandic initial dropping took place. The Ar form may be cognate with the word *wakari*, 'fish' in western Queensland (e.g. Kalkatungu) as well as Nyamal but 'meat' in Tharrkari and Pintupi (respect register). There is some doubt, since one would expect *wa-* to result in rounding of the *k*. If the first vowel were long, however, the *w* probably didn't round the *a*, so Ar **akere* could descend regularly from a preArc **waakari*. I don't know if there is any evidence from other languages of a long vowel in this word. It is possible that both words for 'meat' were present in pArc.

36 'one': The Ar forms reconstruct to **(a)nyente*, of which there is no trace in Kay. Kay *wenyerre*, *awenyerre* is often extended with the post-case suffix (or clitic) *-arte*, which occurs commonly on quantifiers. This stem is probably related within Kay to *wenhe* (oblique stem *wethe-*) 'same, aforementioned', which in turn is related to Northeastern Arrernte *wethe* 'you-know-who'. This suggests a pArc stem **(a)we-*, with a sense of 'same', etc., an extended form of which was adapted in Kay to the meaning of singularity. (Both *nyente* and *awenyerre* are used by language speakers to refer to synonymy or words that have similar meanings (M. Turpin, pers. comm.)) Whether pAr also had the form **(a)nyente* in the sense of 'one' is possible but not determinable. The Warlpiri and Warlmanpa *jinta* 'one', with cognates in the Ngumpin languages, is suspiciously similar to Ar *nyente* but cannot easily be related.

37 'root': Kay can hardly be unrelated to pAr **artekerre*, yet the initial *k*, the internal *w*, and especially the consistent low vowels cause difficulty. East Wakaya *irtikurru* appears to be a loan from Aranda, and Wangkangurru *nhartikira* may be too, with a prothetic consonant. The most likely candidate for pArc would be the same as pAr. The preArc is undetermined, except that the second vowel cannot have been *i*, since there is no prepalatalisation of the preceding consonant.

38 'smoke': The Kay form is isolated and in view of the internal *a* may be a compound in origin. The pAr **ukerte* is likely to have been the pArc form as well, since a plausible extra-Arandic cognate is reconstructible for pKanyara-Mantharta. (Forms similar to the Aranda ones, Wangka-Yutjurru *kutu*, Pitta-Pitta *kuthu*, and Warlmanpa *yukurtu*, are explicable as loans from Arc languages.)

39 'spear': The Kay form is plausibly cognate with Ngumpin forms such as Walmajarra *lani*, the past tense form of *la-*. The root is phonemically *rla-* in Ngumpin, from an earlier **ra-*. Because of these extra-Arandic cognates, the Kay form (as with 'eat' and 'give') must be inherited from pPN **Ra-* (Koch 1997b:293, 298; cf. Evans' (1988:104) **RLDa-* 'throw spear'). At some stage in the prehistory of Arandic all monosyllabic verb roots would have been reanalysed as disyllabic with the absorption of an inflectional suffix into the root (on absorption see Koch 1995 and 1996). The pAr form **(r)interne-* (the ECar dictionary gives variants with and without retroflexion) looks as if it could be an adaptation of Warlpiri *panti-rni*, the nonpast form of *panti-* 'spear'.

40 'stomach/belly': Kay represents a semantic expansion from the common Arc form *aleme* 'liver' (Turpin 1997). So in the sense of 'belly' the pAr may have also been the pArc form. This form appears to be a derivative of *atne* 'excrement, guts', parallel to similar lexical structures in Arabana *kudnarti*, Wangkangurru *kudnakarti*, and Warluwarra *kunapartu*. A plausible preArc form would be **kunarti*.

41 'strike/kill': The Kay form is apparently bimorphemic in origin, possibly a compound including *arre-* 'put'. Hence the Ar form is more likely to have been inherited from pArc. No plausible cognates have been found, however. According to the sound changes established in Koch (1997b), the pre-Arc form would have been either **CutO-* or **watO-*, with a second vowel other than *i*.

42 'water': The Ar forms descend from an **ukatye*, which represents some kind of extension of the pPN **nguku* (Koch 1997b:295), either a compounding of **uke + *atye* or the reflex of a trisyllabic form such as **ngukatyi* (although the preservation of the medial *a* is not understood). PArc **uke* is preserved in Kay *kwathe-* 'drink' (set 25 above) and *akwelye* 'rain'. The etymology of Kay *arnuwe* is unknown; by sound laws it continues **NurntO*, where **N* is a nasal and **O* is a vowel other than *i*.

4. Divergent words

Table 5: Non-congruent words

No.	43	46	47	48	49	50	51	98
Gloss	armpit	bark	big	bite	black	blood	breast	white
Kay	ilhenpe	rteympe	alkenhe	atnhe-	irrpwerle	arrknge	aylpatye	arltere
NAly	iykwe	irrtnye	alkenhe	utnhe-	irrpwerle	arrknge	aylpatye	arltere
SAlly	iykwe	arntape	ilkwe	utnhe-	irrpwerle	arrknge	werlatye	arltere
Ak	iykwe	arntape	anteke	ke-	urrperle	irrknge	werlatye	arltere
PR	iykwe	arntape	akngerrtye	ke-	irrpwerle	alhwe	werlatye	mperlkere
AS	lhenpe	irrkngelhe	akngerre	utnhe-	urrperle	alhwe	werlatye	mperlkere
Anm	lhenpe	irrkngelhe	ngerre	unhe-	irrpwerle	alhwe	ipaty	mperlkere
WAr	lhanpe	irrkngelhe	kngerre	utnhe-	irrpwerle	alhwe	ipaty	tyurlkere
SAr	lhanpe	irrkngelhe	kngerre	tnhe-	urrperle	ulhe	ipaty	tyurlkere
LAr	lyenpe	tayerre	narne	ke-	iltyere	irrknge	werlatye	arltere
pre- ⁴		*irrkngelhe		*(a)ke, *utnhe-		*ulhe		
pAr	*lhenpe		*Vkngerre	*utnhe-	*urrperle			*rltere
pArc	*ilhenpe	*arntape		*utnhe-	*urrperle	*irrknge	*atye	*arltere
preArc		*parntapi	*TEngVrr	*TunhV-	*wurrparla			*karl tara

In Table 5 I present a representative sample of eight words from Hale's group 3, word sets 43–100, which I call 'divergent words'. I discuss briefly their histories as an illustration of the problems that are posed by non-congruent word sets. To decide on the most likely proto-form for both pAr and pArc requires evaluating each of the variant forms in terms of their status as inherited vs. innovated. Criteria will include considerations of areal distribution, semantic

⁴ The forms indicated by 'pre-' in Table 5 indicate words which are reconstructable to a dialect area intermediate in time between Proto-Aranda and a particular group of modern dialects.

shift, word-formation, and borrowing from outside the subgroup. Here it is important to be aware of the geographical relations, as displayed on Figure 2. The areal distribution of four word sets is given in Figure 3.

The easiest case to interpret historically is where only one language variety, other than Kay, has a non-congruent form. This single aberrant form is taken to be an innovation, and the form represented by the remaining varieties is assumed to continue pAr. Thus for set 49 'black' all varieties except LAr have a reflex of **urrperle*, which must have been the pArc form. Pintupi *wurrapala* is a possible external cognate, although borrowing from Arandic cannot be totally excluded. (Wakirti Warlpiri *wurrpulu* 'black ochre' is possibly a loan from Arandic.)

A related situation obtains where each of several varieties has a unique term, in contrast to a uniform term for the remainder of the varieties. Here each of the unique terms is likely to represent an innovation. Thus for set 47 'big' the only widespread forms are reflexes of **kngerre* and **kngerrtye* (both likely extensions of an original form that ended in *rr*). This cognate set is even more widespread than appears from set 47, since *akngerre* 'many', 'important' (?) is given in the Aly dictionary, and an early wordlist from Charlotte Waters attests it in LAr: *agnirricha* 'great' (Christopher Giles in Taplin 1879:146). So **(a)kngerr-* is reconstructible at least as far back as pAr. According to Breen (pers. comm.), the isolated Ak *anteke* is actually a mistake as 'big'; it rather means 'wide'.

Where one term is confined to several varieties that form a contiguous geographical block, we can similarly conclude that this represents a local innovation and that the more widespread form continues the original. Thus in set 43 the geographic distribution favours the reconstruction of **(i)lhenpe* as pArc, since the other term **uylke* is restricted to the northeastern area. (Here Hale gives the Ak and PR forms with *lyk* rather than *ylk*; as noted for no. 3 'ear', I am uncertain whether this difference is phonologically significant; see Breen (this volume) for discussion.)

Where one term has a peripheral and discontinuous distribution, it is likely to continue the earliest form, since shared innovation is excluded by the geographical location of the varieties. Thus in set 98 'white', *arltere* occurs in the northern and southern varieties. Closer searching shows that it also occurs in ECar in the sense 'really white'. The other two words attest a pAr compounding form **rlkere*, which further recurs in ECar *arrerlkere* 'pale yellow or whitish colour'. pArc **arltere* has a plausible cognate in Western Desert *karltara* 'clear'. (Warlpiri *yarltiri* is interpreted as a loan from Arandic.)

Similarly, for set 50 'blood' the *a/irrkngne* forms show a discontinuous distribution in the north-eastern area and the extreme south, whereas *ulhelalhwe* occurs in a continuous block across the western and central area. This pattern suggests that the latter is an innovation and the former the pArc form.

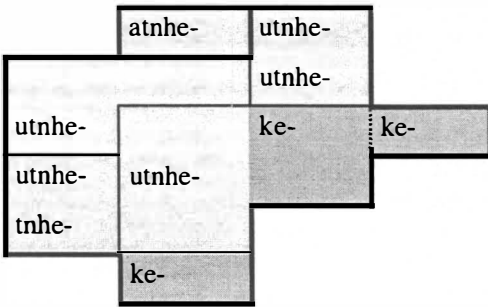
A case like set 48 'bite' is more complex. Over most of the territory we have reflexes of **uthne-*, with loss of rounding in Kay and SAR. The *ke-* form is confined to the east and south; but *(a)ke-* is also given in the ECar dictionary for the Alice Springs region alongside of *utnhe-*. This may indicate an areal innovation. Without the dictionary data from Alice Springs, we might rather treat the distribution of *ke-* as discontinuous. On the other hand, we may eventually have reason to conclude that LAr and the eastern varieties were not discontinuous but in contact around the fringes and even with the Simpson Desert. A pArc **utnhe-* form points to a preArc **TunhV-*, where **T* is a non-nasal.

In some cases, such as set 51 'breast', none of the words continues the original form. All words include an element *-atyē*, which is combined within three different first elements. Thus **atyē* is likely to have been a pArc form. The first elements show areal distributions: *aylp-* in

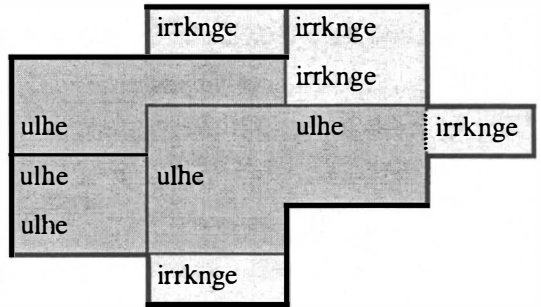
the north, *werl-* in the east and south, and *ip-* in the west. The last-mentioned is likely to be **ipe*, which on the basis of its spatial distribution may have been borrowed from the Western Desert word for 'breast', which is *(y)ipi*.

Finally, set 46 'bark' illustrates some of the complexities that await us. The form **arntape* has a further cognate in Kay *karntape*, with an unetymological *k-*, and occurs in modern ECAR in the meaning of 'hard but not dried bark'. It is clearly related to the Ngumpin-Yapa (e.g. Warlmanpa, Walmajarri) *parntapi*, although the preservation of medial *a* is so far unaccounted for by sound laws. The form *irrkngelhe* occurs in a compact central-western area, in ECAR in the sense 'dried bark'. This may represent an areal innovation or the reflex of a second 'bark' word in pArc, there being a need for terms for several kinds of bark. Kay *rlteympe* is a compound of **urlte* 'hollow tree' and **inpe* 'skin'. NAlY *irrtnye* is extended from 'skin'. LAr *tayerre* is isolated and unexplained.

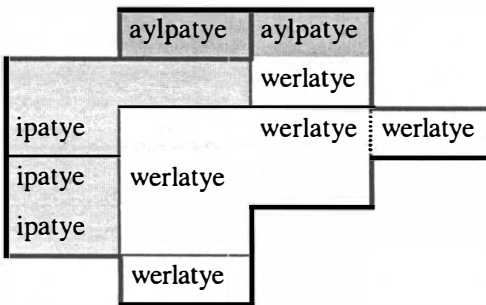
48 'bite'



50 'blood'



51 'breast'



98 'white'

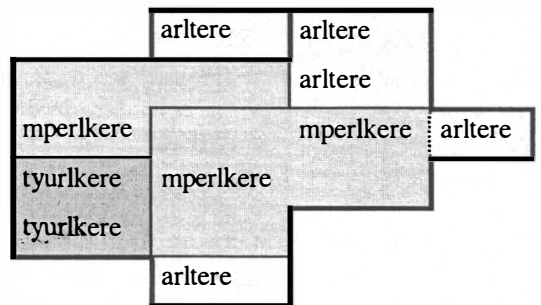


Figure 3: Areal distribution of four word sets

5. Summary and conclusions

We have examined the reconstruction of 50 of Hale's 100 items of basic Arandic vocabulary. Of the 21 forms shared by all 10 varieties of Arandic, 11 (nos. 2, 4, 5, 10, 13, 14, 16, 18, 19, 20, 21) have solid PN etymologies. Most of the others have plausible cognates in other PN languages. Only three (nos. 3, 6, 12) remain obscure. The forms provided with PN etymologies have formed the basis for establishing the Arandic sound changes, as expounded in the companion paper, Koch (1997b).

For the 21 words of the second group, where the two branches of Arandic show different forms, it was nevertheless possible to posit plausible pArc forms in most cases. For 11 sets (24, 25, 27, 28, 30, 33, 37, 38, 40, 41, 42) the Aranda form was judged to continue most closely the original pArc; for 6 sets it was the Kay (26, 31, 32, 34, 36, 39); for sets 35 and 23 it was suggested that both could be inherited; for set 22 both terms were interpreted as compounds with a pArc first element; only set 29 remained totally obscure. Judgements were made on the basis (a) that one branch had created a new word out of two elements (Kay 24, 25, 33, 41), (b) that one branch had experienced semantic shift (Kay 27, 40; Aranda 26, 31, 34), (c) that traces of one term were also found in the opposite branch (25, 27, 30, 32, 36, 42), (d) that external cognates justified the antiquity of one form (Kay 26, 31, 32, 34, 39; Aranda 28, 30, 38, 42). Sometimes several criteria reinforce one another. The weakest argument is (d), since it may eventually turn out that most of the (monomorphemic) words were present in pArc, albeit not necessarily with their present meanings.

For the third group, meanings for which the Aranda (non-Kaytetye) branch of Arandic presents alternative forms, we have seen that attention to the geographical distribution is of paramount importance in sorting out the historical stratification of the forms.

The results offered here should be regarded as tentative and illustrative of the methodology of reconstructing vocabulary. Some of the substantive conclusions may need to be altered in the light of further and more thorough study of all the available lexical data on the Arandic languages. Such study, which is now possible on the basis of the massive lexical documentation being done in the Central Australian Dictionaries Program of the Institute for Aboriginal Development (see Green & Turpin, this volume), can be expected to reveal the existence of words (or elements of words) with the same or slightly different meaning in varieties of Arandic other than those in which they are found in Hale's list, where the most readily available translation of the English is given as the only representative for a particular variety. Further refinement of the preArc forms may also become possible when further extra-Arandic cognates are found for terms given here.

Regardless of what future progress might be made in the study of Arandic etymology, it is encouraging to learn how much can be inferred about the historical development of Arandic vocabulary from a small but well-structured set of data—100 words from each of ten locales. For this we are in the debt of Ken Hale's brilliant and energetic fieldwork of 1959–60 and his prompt analysis and publication of the basic research results for this fascinating subgroup of Australian languages.

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