

## On the Track of Austric Part II. Consonant Mutation in Early Austroasiatic

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### 1. Introduction

*1.1. Background.* The 1906 proposal by Wilhelm Schmidt that the Austroasiatic (AA) and Austronesian (AN) language families be recognized as genetically related and subgrouped under a new Austric superstock has failed to become generally accepted for one primary reason, lack of sufficiently convincing lexical evidence.<sup>1</sup> As F.B.J. Kuiper (1948:380) put it so succinctly, “the relatively small number of words which Austronesian has in common with Austroasiatic is not, accordingly, sufficient proof in itself to assume that both branches have sprung from one parent language.” In contrast, the phonological and morphological evidence adduced by Schmidt in support of his Austric hypothesis was and remains, I think most would agree, sufficiently convincing for the proposed relationship to be acknowledged as a viable taxonomic proposition.

In Part I of this series (Hayes 1992), it was agreed that a lexical evidence problem does exist in any effort to demonstrate the validity of the Austric hypothesis, as well as in any attempt to reconstruct Proto-Austroasiatic, but also argued that the problem does not arise because comparable lexical data do not exist or cannot be found. Instead, the inability of all comers to find such data can be attributed to a lack of insight to the historical dynamics of Austroasiatic. In that context, historical dynamics was intended to mean all the forces which have played a causal role in any of the diachronic changes that have affected and altered the PAA linguistic system, including specifically those which have contributed to obscuring the lexical connection between Austroasiatic and Austronesian.

In this presentation, some of those diachronic changes and their effects will be discussed, and it will be shown how consonant mutation occurring early in the history of the AA languages has contributed to creation of the lexical evidence problem encountered in studies of both Schmidt's Austric and AA groupings.

*1.2. Purpose and Objectives.* This paper purports to describe and evidenciate a series of phonological changes which took place at an early date in the history of the AA language family and caused massive mutation in the consonant system.

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1. Abbreviations used here are AA (Austroasiatic), AJ (Austro-Japanese), AK (Austro-Kadai), AN (Austronesian), AT (Austro-Tai), CF (composition form), CN (Central Nicobar), E (East), FO (Formosan), KY (Khmu' Yuan), MK (Mon-Khmer), MM (Middle Mon), MP (Malayo-Polynesian), MUK (Mường Khến), NK (Nyah Kur), OM (Old Mon), P (Proto-), PM (Proto-Mon), PMN (Proto-Mnong), PNB (Proto-North Bahnaric), POC (Proto-Oceanic), PVM (Proto-Viet-Muong), PW (Proto-Waic), W (Western), VN (Vietnamese).

Since the effects of this mutation have served to obscure and conceal the linkage between a number of ancient consonants and their modern reflexes, this demonstration has the additional objective of serving to clarify and explain some of the difficulties all researchers have encountered in finding the long-missing lexical evidence needed to verify the Austriac hypothesis.

## 2. Preliminary Discussion

2.1. *The PAA Consonant System.* As shown in Austriac I (Hayes 1992:163), the PAA consonant system is provisionally reconstructed as follows:

*/p	t	c	k	q	ʔ
b	d	j	g	G	
	s		x		h
	z		ɣ	R	
	l		!		
	r				
w		y			
m	n	ñ	ŋ	[N]	/

Note that \*R has been reclassified as a voiced postvelar spirant. In Austriac I, the PAustriac, PAA and PAT phoneme tables (Hayes 1992:163, 172) listed \*R as a velar liquid, erroneously in the case of Austro-Tai, for Benedict (1975:154) had reconstructed \*R as a voiced postvelar spirant. The description of PAustriac and PAA \*R as a velar liquid was based on the fact that its primary AA reflexes appear to be \*/l, r/; the reasons for the reclassification are discussed in section 4.2.5.

Proto-Austroasiatic and its two primary descendants, Proto-Mon-Khmer and Proto-Munda, also had an indeterminate number of consonant clusters, including a full set of nasal-oral clusters. Some of the latter, such as \*mp and \*mb, may have been unitary phonemes. Most of these clusters are beyond the scope of discussion of this paper; those which are relevant are introduced in section 3.2.3.

The consonant system of Proto-Mon-Khmer appears to have been quite similar to the PAA system, principal differences being that the voiced velar spirant \*ɣ had disappeared and the palatal sibilants \*/s̺, z̺/ had been added to the sound inventory. The status of the voiceless velar spirant \*x, velar lateral \*/l, and postvelar series \*/q, G, R, [N]/ is not completely clear, but these phonemes may have still been retained at the PMK level. The consonant system of Proto-Munda may have been quite similar to the PMK system, with possibly the addition of a new retroflex series, \*/t̺, d̺, r̺, n̺/, borrowed from or modeled after the Dravidian or Indic languages, cf. Pinnow 1959:427.

2.2. *The Development of Spirants.* This presentation is a sequel to and logical extension of the writer's article, "Another Look at Final Spirants in Mon-Khmer" (Hayes 1996). The diachronic changes affecting the PAA spirants discussed in that paper will be reviewed in this subsection, and related developments in Munda and Nicobar, which were not covered in Hayes 1996, will be discussed. The voiced postvelar spirant \*R was not discussed in the paper and is omitted here for that

reason; its development will be introduced in section 3.1. Data on Munda and especially Nicobar available to the writer are less substantial than those on Mon-Khmer; hence, the observations and conclusions offered below must be regarded as very tentative.

2.2.1. *Review of Developments in Mon-Khmer.* In Hayes 1996, it was shown that between the PAA and PMK stages, the PAA spirants \*/s, z, x, γ, h/ were affected by two phonological changes which were termed in that article the palatalization and assibilation shifts. A third change which apparently occurred at the PMK stage, the final devoicing shift, was also discussed. As a result of those changes, the spirant inventory was first enlarged to \*/ç, ʝ, s, z, ś, ź, h/, then reduced to \*/s, z, ś, ź, h/ by the PMK era, and finally in the pre-modern era to \*/s, ś, h/ except in Vietic where \*/s, z, ś, ź, h/ were retained due to the influence of Middle Chinese.

This transformation of the PAA spirants may be depicted as in Table 1. The primary set of MK reflexes comprises those consonant reflexes which were not affected by the above-cited phonological shifts. The secondary set consists of reflexes manifesting shift effects. It is further subdivided into reflexes having undergone one or more of the cited phonological shifts (righthand subcolumn) and those which were first palatalized, but then despirantized.

**Table 1. Development of the PAA Spirants in Mon-Khmer**

PAA	Phonological Shifts			MK Reflexes		
	Palatalization	Assibilation	Final Devoicing	Primary	Secondary	
*s	*ś		} *ś	*s	*ś	
*z	*ź			*s, *d	*ś	
*x	*ç	*ś		*[ʔ, h, s, 0]	*[ç]	*[ś]
*γ	*ʝ	*ź		*r, *g	*j	*ś
*h	*[ś]			*h		*[ś]

2.2.2. *Munda.* The Munda languages generally possess two spirants, /s, h/, except that Sora (South Munda) lacks the laryngeal, cf. Pinnow 1959:29-47. A few languages possess others, to include z and the palato-alveolars /ʃ, ʒ/, but with the exception of Parengi z [(d)z], a reflex of the palatal stop \*j, all are allophones of other phonemes. None of these spirants occur in word-final position except very rarely, and no Munda language appears to possess a final sibilant except in loanwords. However, the sibilant does appear in syllable-final position, probably indicating that sibilants could once occur in word-final position. Such distributional gaps make it extremely difficult to determine the history of final spirants in Munda, and this fact may well have influenced Heinz-Jürgen Pinnow to reach his otherwise unusual conclusion that Proto-Austroasiatic originally had no spirants whatsoever.<sup>2</sup>

The exemplary lexical sets cited in Table 2 indicate that Proto-Munda retained PAA \*s and \*z, which merged as \*s at an early date. This \*s apparently then

2. Pinnow (1959:427) proposed a single sibilant \*/j, derived from PAA \*ç, for the oldest stage of Proto-Munda and \*/s, ʃ/ for a later stage existing just prior to the origin of the Munda dialects.

merged finally with *\*h*, which subsequently disappeared or shifted to a glottal stop in certain dialects. In some dialects, this merger has also taken place in non-final environments. In Sora, *\*s* was lost entirely, non-final *\*c* then shifting to *s*.

It would appear that Proto-Munda also possessed the palatal sibilants *\*/ś, ź/*, which merged non-finally as *\*ś*, the latter then merging with *\*s* and evolving word finally to *θ, h, or ?* as described just above, but this conclusion must be viewed with caution since it is based on a single unambiguous example, cf. Santali *laslasa* in Table 2. Another set, the ‘root’ etymology, suggests that word finally *\*ś* and *\*ź* > *\*ź* > *\*d* > (*’*)*d* or (*’*)*d*. This development would not be unexpected in view of the indicated merger of final voiceless stops with their voiced counterparts in early Munda. However, if Pareng (K156) *se:r* ‘root’ reflects metathesized *\*re:s*, then the dental finals of Santali *rʰeʰd*, Birhor *rehed* and Mundari *re:d* ‘root’ are

**Table 2. Development of the PAA Spirants in Munda**

PAA	Munda	Munda/MK Comparison	PAA
<i>*s</i>	<i>*s</i> > 0	Kharia (V181) <i>gərə</i> , Semelai <i>gəris</i> ‘liver’	<i>*g[ɔ]r[ɔ]s(i)</i> <sup>3</sup>
	<i>*s</i> > h	Kurku (V279) <i>jumu</i> , PW <i>*mis</i> ‘name’	<i>*(n)jam[u]s</i>
	<i>*ś</i> > [s]	Juang (V180) <i>goneh</i> ‘tooth’, PM <i>*gnis</i> ‘canine tooth’	<i>*g[a]nis</i>
<i>*z</i>	<i>*z</i> > 0	Pareng (K156) ( <i>*re:s</i> >) <i>se:r</i> , Jeh riayh, Jehai <i>jəʔis</i> ‘root’	<i>*ɣiqas(i)</i> , <i>*ɣeqas(i)</i> <sup>4</sup>
	<i>*z</i> > d	Bonda <i>əm-</i> ‘hatch egg’, Pearic <i>pəsu:m</i> ‘nest’	<i>*(n)zəm</i>
		Santali <i>dakal dakal</i> ‘body movements of Santali girls when dancing’, CN <i>śəkəl-hətə</i> ‘to dart (snake)’	<i>*(n)zəkə[R]</i>
<i>*x</i>	<i>*x</i> > h, g	Bonda <i>əm-</i> , Sora <i>dum-dum</i> ‘hatch egg’	<i>*(n)zəm</i>
		Sora (V303) <i>miñam</i> , Kharia <i>ɛŋgam</i> , Temoq <i>maham</i> ‘blood’	<i>*(m)(i,a)(n)xam</i>
<i>*ɣ</i>	<i>*r</i>	Sora (K482) <i>lɑ:r</i> ‘spread’, Santali <i>laslasa</i> ‘spread out’, PM <i>*laas</i> ‘lay (out, open)’	<i>*(layi)lay(i)</i>
	<i>*j</i> > j	Bonda <i>laygər</i> ‘hot’, PW <i>*saʔɣr</i> ‘warm’	<i>*(sa)(n)q[e]ɣ</i>
	<i>*j</i> > ś	Mundari (V65) <i>kaji</i> ‘say, tell’, Pacoh <i>ticár</i> ‘to crow’ <sup>5</sup>	<i>*(n)qay(i)</i>
<i>*h</i>	<i>*h</i> > 0	Sora <i>bəti</i> , PM <i>*ptis</i> ‘mushroom’	<i>*[bə](n)teɣ(i)</i> <sup>6</sup>
		Sora <i>lɑ:r</i> ‘spread’, Santali <i>laslasa</i> ‘spread out’	<i>*(layi)lay(i)</i>
	<i>*h</i> > 0	Gutob (K175) <i>e</i> , Mon <i>eh</i> ‘oh!’	<i>*eh</i>

3. Replaces *\*g[ɔ]r[ɔ]s(i)* cited in Hayes 1996:60.

4. See footnote 14.

5. G. V. Ramamurti (1986:133) identified Mundari *kaji* and Sora *kay* ‘say, tell’ with Sanskrit *kath idem* via Prakrit, cf. Bengali *kay idem*. But Sora *kañ*, a variant of *kay*, suggests that PAA *\*nqanyi* > *\*kañji* > *kañ*, whence *kay*, and Sora *kərka:* ‘cry (as birds)’, ostensibly a reflex of PAA *\*nqay* or *\*nqayqay*, would confirm that the root *\*qay* was retained in Munda.

6. Replaces *\*bitiɣ(i)* cited in Hayes 1996:61. Bahnar *dīk-dīr* ‘type of mushroom’ does not evidence palatalization; hence, the stem vowels could not have been *\*i* at the PAA level.

probably explainable in terms of sibilant loss and suffixation.<sup>7</sup> If so, then the merger of \*ś and \*ž as \*ś and the latter's merger with \*s were probably global.

2.2.3. *Nicobarese*. Central Nicobar (cf. Schmidt 1906:85-9) possesses two spirants, /h, ś/, which occur in initial, medial and final positions. It appears from the available data that PMK \*s and \*z merged as \*s, which then merged with h word finally and in presyllables, cf. CN *həru: ə-yənde* 'take care', Khmer *sruol* 'easy-going, comfortable'. It also appears that PMK \*ś and \*ž merged as \*ś after the denti-alveolar sibilant merger, with \*ś later shifting word finally to *ih* in some cases. The remaining \*s reflexes then apparently merged with \*ś, cf. CN *śok* 'split open', Khmer *sak* /sə:k/ 'take peel off'. The latter change appears to distinguish Central Nicobar from all other MK dialects where non-final \*ś merged with \*s at an early date, except in Vietic where the contrast was maintained.

**Table 3. Development of the PAA Spirants in Central Nicobar**

PAA	CN	CN/MK Comparison	PAA
*s	*s > h	CN <i>yīəh</i> , Jeh <i>riayh</i> 'root' CN <i>iko:əh-həŋə</i> 'scratch (oneself)', Brou <i>cūah</i> 'scratch', Bahnar <i>kuaih</i> 'dig up, scratch around for'	* <i>yeqas(i)</i> * <i>kuas(i)</i>
	*s > ś	CN <i>ito:ś-hətə</i> , Bahnar <i>toh</i> 'pull out' CN <i>həkōś</i> 'smooth, plane', Khmer <i>kos</i> 'scrape', <i>kos rūś</i> 'plane' CN <i>həro:əs</i> 'melt (metal)', Khmer <i>bruas</i> 'spit onto'	* <i>t[u]s(i)</i> * <i>k[ə]si</i> * <i>buyas(i)</i> <sup>8</sup>
*z	*z > ś	CN <i>śəkəl-hətə</i> 'to dart (snake)', Santali <i>dakal dakal</i> 'body movements of Santali girls when dancing'	* <i>(n)zəkə[R]</i>
*x	*x > h	CN <i>məha:m</i> 'menstruation', Sora <i>miñam</i> , Chrau <i>nham</i> [nha:m] 'blood'	* <i>(m)(i,a)(n)xam</i>
*γ	*r > y, e <sup>9</sup>	CN <i>o:e</i> 'lukewarm', PW * <i>sʔər</i> 'warm'	* <i>(sa)(n)q[e]γ</i>
*h	h	CN <i>yīəh</i> , Semai <i>rəʔis</i> 'root' CN <i>amīh</i> , PMN * <i>mih</i> 'rain'	* <i>γiqas(i)</i> * <i>[qɑ]mih</i>

2.3. *Reconstruction Notes*. In reconstructed forms cited in this study, slashes mark suspected morphological juncture, parentheses set off optional elements, and brackets denote uncertain or unattested reconstructions. Otherwise, slashes denote phonemic, brackets phonetic, representations of sounds.

7. Pinnow's lexical comparisons are denoted by his set numbers, V specifying those in the section on vowels, K those in the section on consonants.

8. This comparison, first signaled by Schmidt (1906:87, Item 142), is the only clear CN example of the change, PAA \*-s > \*-ś, and it may be erroneous, cf. AN \**labur* 'liquefy, melt'. Even if it is a false comparison, \**buras(i)* 'melt' would have to be proposed as the antecedent of CN *həro:əs*, and this form apparently developed and evolved in identical manner to \**buyas(i)*.

9. \*r- > y- and \*-r > -e are regular changes in Central Nicobar.

The AA proto-forms presented here should be regarded as very provisional and subject to future change. This is particularly true of vowel reconstructions. Cited proto-forms often contain optional elements, which consist primarily of affixes, but to conserve space, suspected morphological boundaries are usually not denoted.

In the ‘pungent’ etymology, for example, the antecedent of Sengoi *pejet* ‘hot, spicy’ could be written *\*(p/i/n)xet* (cf. Hayes 1992:167ff., 1996:57). Since the Rengao correspondent, *het* ‘salty’, evidences no phonological trace or influence of the *\*p/i/n/* prefix complex, which is visible in the Sengoi etymon, the AA proto-form is reconstructed as *\*(pin)xet* to reflect the assumed optional usage of the prefix complex. *\*ca(n)qayus* or *\*c/a(n)qay/]/u/s* ‘stream’ is a more complicated example, where the root morpheme may have been *\*qay(u)* or *\*qayu* ‘to flow’.<sup>10</sup>

To conserve space, the AA lexical data have been generally limited to two or three forms per exemplary set. The cited forms were selected according to their ability to demonstrate as completely as possible the phonological basis on which the cited AA proto-forms and diachronic developments were reconstructed.

In some sets, however, it may not be clear to the reader on what grounds some of the proto-phonemes were established. This lack of clarity may arise, for example, because a proto-phoneme is not directly attested in the modern data, its presence has been inferred from circumstantial evidence, and its reconstruction is based on that unseen evidence. In the ‘pestle/mortar’ etymology, for example, no modern form has been found in which a reflex of a final *\*u* occurs, but the back vowel of Kharia *sol* ‘mortar for pounding paddy’ appears to reflect assimilation of the central vowel evidenced by Katu *saal* ‘pound rice’ to a back vowel such as *\*u*; hence, it is inferred that *\*u* probably occurred in the AA proto-form which is reconstructed on that basis as *\*sa[lu]*, cf. AT *\*(q)[s]ahu* ‘pestle, mortar’. Other possible reflexes of the *\*c(i,a)(n)qayus* reconstruction discussed above, Hill Kharia (K498) *jor* ‘river’ and Khmer *jor* ‘to flood, flow’, appear to exhibit the same assimilation pattern seen in Kharia *sol* and thus to corroborate the above-described inference and reconstruction.

Similarly, in the ‘dark’ etymology, no corresponding AA form has been found to corroborate reconstruction of an optional nasal prefix, but it is known from other cognate sets that *\*z > d* in the *\*nz* cluster; hence, PAA *\*(n)zəm* can be reconstructed on that basis, with subsequent developments inferred as *\*zəm > PW \*som* ‘night’ and *\*nzəm > \*ndəm > VN đăm* ‘dark’.

### 3. Consonant Mutation in Early Austroasiatic

3.1. *Overview.* Comparison of AA and AT lexical data indicates that three important phonological shifts took place in early Austroasiatic and caused mutation of most of the denti-alveolar, palatal, velar and postvelar consonants. Comparison internal to Austroasiatic does not contradict that indication. These mutations will be

10. Cited as *\*jaqayus* in Hayes 1996:57. Initial voicing variation in some reflexes is unexplained; hence, *\*jaqayus* and *\*ca(n)qayus* are assumed to have been dialectal variants.

referred to here as the palatalization, spirantization, and assibilation shifts. A fourth change, the voicing shift, also affected some of the mutated consonant reflexes. Voicing shift is used in lieu of final devoicing, the term employed in Hayes 1996, because devoicing did not occur in all AA dialects.

The structural effect of those shifts was a binary split in 17 of the AA proto-consonants and subsequent merger of their phonetically non-identical reflexes with other phonemes. Only four new phonemes, \*/ś/, ʒ, ɕ, j/, were created in the process, and these eventually merged as the voiceless palatal spirant \*ś.

At present, the occurrence of those shifts can be only relatively dated. Since palatalized reflexes can be found in both of the AA subfamilies, it can be assumed that the palatalization shift took place during the timespan of the historical stage called here Proto-Austroasiatic, if not prior to that stage. The voicing shift has been realized in different ways in the AA subfamilies; hence, it can be assumed that this shift occurred after Proto-Austroasiatic had disintegrated into the dialects which became those subfamilies. The spirantization and assibilation shifts took place between the other two, probably towards the end of the PAA stage, but further study may show that they are older than presently surmised.

The diachronic effect of the four shifts on the PAA consonants is depicted in Table 4. In the table, the shifts are identified as I (palatalization), II (spirantization), III (assibilation), and IV (voicing).

**Table 4. Diachronic Effects of the Four Consonant Shifts**

PAA	Spirants					PAA	Non-Spirants			
	I	II	III	IV			I	II	III	IV
*s	*ś				} *ś	*t	*c			
*x	*ɕ		*ś			*c	*c	*ɕ	*ś	
*z	*ž					*q	*c			
*γ	*j		*ž			*d	*j			
*R	*j		*ž			*j	*j	*j	*ž	
*h	*[ś]					*G	*j			
						*l				
						*l̥				
						*ŋ				

3.2. *The Palatalization Shift*

3.2.1. *General.* Consonantal palatalization has occurred at recent times in the AA evolution, as in the ‘wind’ etymology, cf. OM *kyāl*, Khmer (written) *khya’l*, Jeh *koyal* on the one hand, Mon (Spoken) *ca*, Khmer (spoken) *khcɔl*, Pearic *čyal* on the other. Such recent phonetic changes are not the focus of this presentation or the basis for proposal of phonological developments or reconstruction of proto-forms, and they have been excluded from the discussion insofar as possible. In

some cases, however, it is difficult to date palatalization in specific lexical forms.

The focus here is on the occurrence of very ancient palatalization, and two types of this palatalization can be distinguished. The more general and frequent type is environmentally conditioned (discussed under subsection 3.2.2). The other type involved coalescence of certain classes of consonant clusters (see 3.2.3).

*3.2.2. Environmentally Conditioned Palatalization.* In this shift, certain consonants appear to have been palatalized when contiguous to the high front vowel \**i* and in some cases the palatal glide \**y*. The consonants thus affected were the denti-alveolar, velar and postvelar stops, the denti-alveolar sibilants, the velar and postvelar spirants, the laterals, and the velar nasal. This shift can be proposed on the basis of the consonantal alternation seen in such examples as the following. Note that in these and further citations of lexical data, \**s*- > *h*- generally in Proto-Waic and in many presyllables and before other consonants in Bahnar; \**ʃ*- and \**ʒ*- > *th*- in Vietnamese and Mường Khến; and the final *h* of Khasi and *k* of Sengoi represent a glottal stop.

Alternation	Modern AA	PAA	AT
* <i>s</i> ~ * <i>ʃ</i>	Chrau vruh 'squirt, spit', Khmer bruas 'spit onto'	*buyas(i)	AT *[t]abury, AN *buRah 'spray'
* <i>z</i> ~ * <i>ʒ</i>	PW *som 'night', VN thâm 'be black'	*(i)zəm	AT *q[o](n)zəm, AN *DeDem 'dark, black'
* <i>x</i> ~ * <i>ç</i>	Rengao het 'salty', Sengoi pejet 'hot, spicy'	*(pin)xet	AT *p[a]xet 'pungent, sal- ty', AN *pahit 'bitter'
* <i>ɣ</i> ~ * <i>j</i>	Pacoh ticar 'to crow', Munda kaji 'say, tell'	*(n)qay(i)	AT *(N)qay 'speak, crow', AN *kaRi 'talk, language'
* <i>R</i> ~ * <i>j</i>	Sora (K188) tʔa:r 'shine', Riang Lang -as 'glitter'	*[ʔ]aR(i) <sup>11</sup>	AT *[(n)da]maR 'burn, light', AN *damaR 'light, torch'
* <i>t</i> ~ * <i>c</i>	Khmu' tuuñ 'to light', PM *cəŋ 'set light to'	*(i,u)tuŋ(i)	AN *[t,T]u[t,T]uŋ 'burn'
* <i>k</i> ~ * <i>c</i>	VN lác [lak <sup>3</sup> ] 'perceive', OM ñac 'see'	*(i)lak(i)	AT *[t]iʎiak, AN *tilik 'look at'
* <i>q</i> ~ * <i>c</i>	Katu ntôq 'fall', Chrau tatoch 'drip'	*(n)tuq(i)	AT *dz[a]toq 'fall', AN *za[t]uq 'drop, fall (down)'
* <i>d</i> ~ * <i>j</i>	Kharia (V142) u'd 'drink, suck', Chrau huch 'drink'	*(q)ud(s)	AT *(q)ud 'suck, smoke, drink', AN hudud 'smoke tobacco'
* <i>g</i> ~ * <i>j</i>	VN luoç [luək <sup>4</sup> ] 'boil', Khasi khluid [k <sup>h</sup> lu:c] 'scald'	*lu[w]ag(i)	AJ *luwag, AN *[l,ʎ]uwag 'boil, bubble'

11. In the AA/AT comparison, it is fairly common to find a monosyllabic AA word corresponding to a phonologically more complex AN form. Presumably, the AN lexeme was also morphologically complex, at least in origin (i.e. at the Pre-AN or earlier level). Thus, AN \**damaR* appears to be morphologically analyzable as \**d/a/m/aR* or \**dam/aR*. Also cf. Sengoi *der* 'burn, flame up', Rengao *mǎ* 'early in the morning', Bonda *səmɔ* 'flame to rise', which appear to reflect \**d/aR* and \**s/[u]/m/aR* or perhaps \**n/z/aR* and \**z/[u]/m/aR*.



*G ~ *j	Pacoh pláh ‘leaf’, Sengoi palas ‘small fan palm’	*palaG(i)	AT *paGpaG ‘leaf’, AN *lapah ‘leaf sheath’
*y ~ *ś	Pearic puy ‘tinder’, Katu mpoiḥ ‘fire’	*(m)puy(s)	AK *śa(m)puy, AN *hapuy ‘fire’
*l ~ *ñ	Katu loṛp ‘sink, drown’, Chrau nháp daq ‘submerge’	*(i)ləb	AT *ləbləb ‘submerge, bury’, AN *lebleb ‘inundate, submerge’
*l̥ ~ *ñ	VN lác ‘perceive’, OM ñác ‘see’	*(i)lak(i)	AT *t̥liak, AN *tilik ‘look at’
*ŋ ~ *ñ	Pacoh lánq ‘to love’, Khmer sralāñ ‘love, like’	*[l̥]əŋ(i)	AT *k[ə]l̥[a]ŋ ‘desire’, AN *kələŋ ‘affection, desire’

Where palatalized reflexes of ancient non-palatal consonants occur, but no high front vowel or palatal glide is reflected in the modern form, it is inferred that an \*i or \*y once existed contiguously to the ancient segment, but has been subsequently transformed to another vowel or lost for whatever reason. In many cases, the ancient high vowel was probably an affix.

In CiC syllables, it appears frequently that only one of the consonants (C) could be palatalized, but this phonotactic rule may have been dialect specific and not applicable to Proto-Austroasiatic as a whole.

### 3.2.3. Palatalization of Consonant Clusters

3.2.3.1. *Sibilant-Liquid Clusters*. Coalescence of sibilant-liquid clusters into palatal sibilants was mentioned in Hayes 1992:173 and 1996:58, but few examples were cited. To be sure, the available exemplary sets are not numerous, but they do clearly indicate that such coalescence occurred in early Austroasiatic. This type of change has also occurred in more recent times, cf. Boriwen *siraŋ*, Sapuan *saŋ*, Salang *c<sup>h</sup>iŋ* ‘dry’, but the focus here is on sibilant-liquid coalescence occurring in the distant past.

PAA	Modern AA	AT	
*sl	*(s)lay	Bonda laïbu ‘kind of insect’, Kontu lê ‘ant’, PM *saay ‘bee’	AJ *[q,ʔ]aləy ‘ant/termite’, AN *anay ‘termite’
*sl̥	*s[l̥]əŋu <sup>12</sup>	OM sñow, Bahnar hongó, VN thông ‘pine tree’	AN *saləŋ, Proto-Tsouic *saləŋə ‘pine tree’
	*(s)ləŋ	Sora le:ŋ-le:ŋ ‘be damp, dripping’, MUK thanh ‘stream’	AT *[i]liŋ ‘pour’, AN *hiliŋ ‘pour (out)’
	*(s)lay	Rengao boŋri ‘dirty’, MUK	AT *(N)q[al]ay ‘dirty’, POC

12. Also cf. VN ngo ‘pine’. The differences in locus of ancient stress and loss of the ancient final vowel between *ngo* and similar MK forms and VN *thông* may be a result of contamination. Although *thông* is not identified in the dictionaries as being of Chinese origin, Sino-Vietnamese has *tông* and *tùng* ‘pine’, presumably from Middle Chinese \*zuŋ. It is thus possible that after \*s[l̥]əŋu > \*səŋu in Mon-Khmer with final stress, \*səŋu was then remodeled in Vietic after the Chinese form to \*səŋ, whence VN *thông*. Note that Proto-Tsouic also possesses a final vowel as in Mon-Khmer, but that this vowel has not been reconstructed for Proto-Austronesian.

*sr	*sirat	tháy ‘ear wax’ <sup>13</sup> Bahnar kohret ‘tie securely’, Pacoh xât ‘tie in a bundle’	*ŋkele ‘dirt(y), black’ AT *(ts)[i]rat ‘bind, tie’, AN *si[r]at ‘tie (together/up/on)’
	*srut	Bahnar hrot ‘pull out lice from hair’, Pacoh xot ‘pick rice by stripping head into basket’, VN thụt ‘draw back’	AT *[s]urut ‘pull lengthwise’, AN *hurut ‘stroke’
	*s(ə)rom	Sora sərUM-dəm ‘sweet, fra- grant’, VN thom ‘be fragrant, smell good’	AT *s[a][r]om ‘smell, fra- grant’, AN *qa[r]um ‘aroma, scent’

In the following examples, it is not clear whether \*s and the voiced velar and postvelar spirants or their primary reflexes, \*l or \*r in the case of \*R, \*r in the case of \*ɣ, coalesced as \*s:

*sR	*(s)Rəm	PW *[lim] ‘pus’, VN rəm ‘con- junctivitis’, PM *ksaam ‘epi- demic’	AJ *gušam, AN *guham ‘rash (skin)’
*sy	*s(u)ɣ[o]d	Sora um-rud-bud-ən ‘a kind of bee’, Bahnar sut ‘bee’	PWMP *seRed ‘stinger of an insect’
	*(s)ɣaw	Bahnar ’bro ‘hoarse’, Mon so ‘preserve by drying’, MUK tháo ‘dry’	AT *[p]ayaw ‘dry, hoarse’, AN *paRaw ‘hoarse’
	*(s)yon	VN rùn ‘pull back’, Pacoh carxun ‘take a step back’	AT *t[o]yon ‘recede, de- scend’, AN *tuRun ‘descend’
	*sayat(s)	Khasi pharait ‘spatter’, PM *saac ‘bail (water)’	AT *suyats, AN *huRas ‘wash’

3.2.3.2. *Stop-Sibilant Clusters.* Coalescence of stop-sibilant clusters into palatal stops also occurred in early Austroasiatic, as the following examples reveal.

Cluster	Modern AA	PAA	AT
*ts	Kharia (V339) røkɛ’ɖ, Sora lakij ‘sand’, Jeh pøkayh ‘hard’	*(la)kat(si),	AJ *makatś, AN *makas ‘hard’
*ds	Kharia ud ‘owl’, Chrau sũm och ‘sparrow’	*[?]jud(s)	AN *baluj ‘dove species’

These clusters differ from the dental affricates \*/ts, dz/ reconstructed for Austro-Tai (Benedict 1975:154) and AustriC (Hayes 1992:172) in that they were apparently formed via juxtapositioning of denti-alveolar stops and sibilants due to suffixation by \*s, the morphosyntactic function of which is not yet clear. To distinguish the morphological juncture, these stop-sibilant clusters (and optional suffixation by \*i) could also be written \*t/s(i) and \*d/s(i). As a result of such morphological processes, it may be anticipated that other consonant clusters, such as \*ks(i) and \*gs(i), etc., also occurred finally in early Austroasiatic and participated

13. The root was apparently \*qay, whence \*tanqay > Katu tagai ‘dirty’, \*banqalay > Rengao bogri idem, \*saqalay > \*[qa]sɣay > \*sáy > MUK tháy, VN ráy ‘ear wax’.

in the palatalization and other shifts.

The cluster coalescence into palatals described just above and the environmentally conditioned palatalization discussed in subsection 3.2.2 produced identical results; hence, the question arises as to how one can determine whether alternation of reflexes of the PAA denti-alveolar stops *\*t, d/* with reflexes of *\*c, \*s,* and *\*s'* is evidence of conditioned palatalization in *\*/ti, di, it, id/* sequences or of stop-sibilant cluster coalescence. The answer is that there appears to be no simple way of making such a determination on the basis of evidence internal to Austroasiatic. Hence, the external evidence of Austro-Tai is crucial to essaying a determination, but the matter is hardly straightforward, for Austro-Tai also evidences considerable alternation of stops, affricates, and sibilants, especially word-finally.

As a general rule, a stop-sibilant cluster may be proposed for Austroasiatic only when a member of the cognate set has a denti-alveolar stop in correspondence with an AT dental affricate, palatal stop, or sibilant.

In a few comparisons, an AA final sibilant corresponds to an AT final dental affricate (or its AN reflex *\*s*) or vice versa. In such sets, both finals were probably in most cases suffixes, *\*/s* in Austroasiatic, *\*/t/s* in Austro-Tai, or vice versa, but in some cases, the stem final may have been *\*s* and the *\*t* suffix was prepositioned to it in order to avoid the apparently unnatural final sequence *\*st*.

Katu (High) parah ‘sides of body’, Stieng ting rpas ‘ribs’	<i>*paras(i)</i>	AN <i>*paras</i> ‘appearance, face’
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3.2.3.3. *Other Clusters.* It appears that other clusters, such as those cited below, could be transphonologized into palatals, but the examples are too rare at present to propose any general rules of change.

Rengao grang ‘basket’, Chrau njang ‘frame for carrying baskets’	<i>*(n)g[ɭ]aŋ</i>	AN <i>*ka[r]aŋzaŋ</i> ‘wicker basket’
Jeh rüp ‘catch, seize’, PMN ñüp ‘grasp’	<i>*(n)[r]op</i>	AN (Blust 1973) <i>*qaNup,</i> (Wolff 1993) <i>*qañüp</i> ‘hunt’

3.3. *The Spirantization Shift.* In this mutation, palatal stops of whatever origin appear to have been spirantized when contiguous to *\*i* (and perhaps *\*y*), in effect merging with *\*ç* and *\*j*, the palatalized reflexes of the old velar and postvelar spirants. However, since some reflexes of the non-palatal stops which had been palatalized in the previous shift did not participate in this change, interim loss or phonetic shift of the *\*i* (or *\*y*) once contiguous to them apparently could preclude such spirantization. In similar fashion and probably in the same time frame, some palatalized reflexes of the old velar and postvelar spirants were apparently despirantized to *\*c, j/* upon loss or change of the conditioning *\*i* (or *\*y*).

The spirantization phase is initially much less visible than the palatalization shift and hence more difficult to detect, but in one extraordinary case, the ancient environment appears to have been sufficiently well retained such that its occurrence and causes can be inferred, cf. Pearic *phasi*: ‘snake’, which appears to reflect the

evolutionary sequence, *\*pac* > *\*pac/i* > *\*paɕi* > *\*paśi* > *\*paɕi* > *phɕi*; the conditioning suffix apparently preserved due to shift of stress to the final syllable at some interim point in the change sequence, cf. Hayes 1992:158f.

PAA	Shift II	Modern AA	PAA	AT
*t > *c	*ɕ	Bonda ntəp' 'lay egg', Chrau chăp 'egg', Pacoh xáp 'nest'	*(i)tab	AT *( ) (n)tab, AN *tabtab 'beat'
*c	*ɕ	Katu kabach, Pearic phəsi: 'snake'	*(um)pac(i)	PMP *upas 'poison- ous, as a snake'
*k > *c	*ɕ	PW *prok 'ribs', Sengoi ceres 'rib'	*(cu)ɣok(i)	AN *Rusuk 'rib'
*q > *c	*ɕ	Pacoh tráh 'split', Kharia (V304) lə'j 'slice', Khmer -la's 'separate'	*laq(i)	AT *(m)b[a]laq(b[a]laq), AN *belaq 'split'
*d > *j	*j	PW *siʔ 'pain, disease', Katu tasə, PNB *jiq 'sick'	*ziq, *ndiq	AN *pe[d,D]iq 'hurt, smart, sting'
*j	*j	Thavung buuc 'make bub- bles in water', Riang bus 'foam'	*buj(i)	AN *buj[a]q, PMP *busa 'foam'
*g > *j	*j	Kharia ulug 'boil', Khasi khluid [kʰlu:c] 'scald', Pacoh cluih 'of fizzing up'	*lu[w]ag(i)	AJ *luwag, AN *[l,ɿ]uwag 'boil, bub- ble'
*G > *j	*j	Rengao pǎ hɔgah 'out- side', Katu luðih 'go outside'	*lu(n)qaG(i)	AT *(qm)lu(w)ag, AN *luwar, *luqar, *luqaq 'outside'
*ɣ > *j	*j	Bahnar kräm, VN (*ji:m >) chīm 'sink', Katu siim 'sink, drown'	*(i)ɣəm	AT *( ) k[a]ɣəm 'sink into, sunken', AN *kaRem 'sink'

3.4. *The Assibilation Shift.* In this phase, the spirantized palatal stop reflexes *\*/ɕ, j/* of whatever source appear to have merged with *\*/ś, ź/*, respectively, in all environments. This shift was apparently a general or unconditioned change.

3.5. *The Voicing Shift.* In early Mon-Khmer and Munda, apparently unrelated general mergers of final stops occurred, voiced with voiceless in the former subfamily and voiceless with voiced in the latter. It is unclear whether the sibilants participated in these shifts; in any case, the voiced sibilants *\*z* and *\*ź* appear to have merged at an early, perhaps contemporaneous date with *\*s* and *\*ś*, respectively, in all environments, not just finally, in both subfamilies. The sole exception was Vietic, as mentioned earlier; however, it is not clear whether or not Vietic also maintained the sibilant voicing contrast in final position.

#### 4. Modern Reflexes of the PAA Consonants

4.1. *The Dual Sets of Reflexes.* As a result of the diachronic changes associated with the four phonological shifts discussed in section 3, the MK reflexes of the PAA consonants which underwent the described mutation can be divided into two

sets, as shown in Table 5.

The set distinguished as primary comprises those reflexes which exhibit only voicing (Shift IV) changes (if pertinent). The set captioned as secondary consists of two subsets, the left subcolumn reflecting only palatalization (Shift I) (and de-spirantization and voicing shift if pertinent), the right subcolumn palatalization (Shift I), spirantization (Shift II), and/or assibilation (Shift III) (and voicing shift if pertinent). The lists are by no means exhaustive since they show the cited phonemes prior to their various subsequent changes in the modern languages. AT and AN correspondents are also shown for reference and comparison.

Dual sets of reflexes can also be detected in Munda and Nicobar, and some of the correspondences tabulated below are doubtlessly valid for both AA subgroups. However, due to the problems with lack of lexical data and analysis of final sibilants mentioned in section 2, no effort has been made to tabulate or identify the Munda and Nicobar reflexes separately.

**Table 5. Reflexes of the Mutated PAA Consonants**

AA	MK		AT	AN
	Primary Reflexes	Secondary Reflexes		
<b>Spirants</b>				
*s	*s		*ś	*s > *h
*z	*s, *d		*[ś]	*D
*x	*[?,h,s,0]	*[c]	*ś	*?
*γ	*r, *g	*j	*ś	*R
*R	*l, *r	*j	*ś	*R
*h	*h		*[ś]	*0
<b>Non-Spirants</b>				
*t	*t	*c	*ś	*t, *T, *C
*c	*c		*ś	*s, *S
*k	*k	*c	*ś	*k
*q	*?, *k, *h, *0	*c	*ś	*q
*d	*d	*j	*ś	*d
*j	*j		*ś	*z, *Z, *-j
*g	*g	*j	*[ś]	*g
*G	*h, *g	*j	*ś	*r, *?
*l	*l	*ñ		*l, *n
*l̥	*l, *r	*ñ		*l
*ŋ	*ŋ	*ñ		*ŋ

In the examples shown in the following subsections, an effort has been made to cite forms possessing unmutated and mutated reflexes of the respective AA proto-phonemes. In some cases, the mutation has apparently been general in a given etymology, and no forms with unmutated reflexes have been found thus far.

*4.2. Reflexes of the PAA Spirants*

*4.2.1. AA \*s.* In most of the following sets, \*s is clearly a stem segment, but in a few, it appears to have been a suffix. Where \*-si appears, the high front vowel

was probably also a suffix in most cases.

Modern AA	PAA	AT
Jeh riayh, Khmer r̄as, Semai rəʔis 'root'	*ɣeqasi, *ɣaqis, *[q̄i]ɣasi <sup>14</sup>	AT *biyaq 'arum, taro, yam', AN *biRah 'alocasia (species)', FO *buɣasi 'sweet potato'
Mundari (K537) rowa, Sengoi ruai 'soul, spirit', VN (*[h]wa:ś >) v̄ai 'ancestor'	*r(a,u)wa(s)(i)	AT *(o)(m)ñ[a]w[a] 'belly, soul', AN *ñawah 'spirit, soul'
Santali (V214) joha 'cheek', Khmer thñās 'forehead'	*j(a,u)(n)qas(i)	AT *(qn)dza[q]ai[s], EFO *dzaqais 'face, forehead', AN *Dahey 'forehead'
Kharia ḡəɾ, Semelai ḡəris 'liver', PM *gris 'liver, heart, central part'	*g[o]r[o]s(i)	AN *pejuh 'gall'
Katu takóh 'grown, old man or woman', Khmer cā's 'be old, grown up'	*tunqas, *tiqasi <sup>15</sup>	AT *[(n)tu]qas, AN *tuqah 'old'
Jehai kəlangis 'liver', Semelai gnəs, PMN *nus 'heart'	*g[o]si, *ganosi	AN *sa(ŋ)guh 'pith, sago'
Brou cūah 'scratch', Bahnar kuaih 'dig up, scratch around for'	*kuas(i)	AT *[kas]ka[s], *(ŋ)kus(kus), AN *kaskas, *ku[C,t]ku[C,t] 'scratch'
CN həkōś 'smooth, plane', Khmer kos, Jeh koih 'scrape'	*k[ə]si	AT *kəs(kəs), FO (Ami) *mikəskəy 'scratch'
Chrau vruh 'squirt, spit', Khmer bruas 'spit onto'	*buyas(i)	AT *[t]abuy 'spray, scatter', AN *buRah 'spray, sprinkle'
Juang goneh 'tooth', PM *gnis 'canine tooth'	*g[a]nis	AJ *[t,C]agi, AN *gigih 'tooth'
PM *kn' duh 'tortoise', PW *ris 'turtle'	*(n)[l,r]rus(i)	AN *peñuh 'turtle'
Pacoh ngeaih 'count', OM nus, Lamet ŋəəs 'price'	*(i,u)ŋkasi	AN *zaŋkah 'unit of measure'
PW *pes, Katu (*piś > *piyh >) piih 'sweep'	*(tam)pis	AT *[ta](m)pi((m)pi) 'winnow, sweep', AN *ta(m)pih 'winnow'

In the following sets, a final \*(t)s(i) sequence is indicated in either Austroasiatic or Austro-Tai.

Katu (High) parah 'sides of body', Stieng ting r̄pas 'ribs'	*paras(i)	AN *paras 'appearance, face'
Sengoi berkah 'break', Khmer	*(n)ka(t)s(i)	AN *gas 'broken in two'

14. Cited as \*ɣ[q]asi in Hayes 1996:60. Modern reflexes exhibit both palatalized and non-palatalized reflexes of \*ɣ, cf. Jehai jəʔis and Semai rəʔis 'root' in Northern and Central Asian, respectively, only non-palatalized reflexes elsewhere in Mon-Khmer and in Munda. This divergence is plausibly explained by dialectal variants such as those reconstructed above.

15. This cannot be a Chamic loan, cf. Proto-Chamic \*tuha 'old'.

kāc 'break off', Pacoh ticayh 'broken'		
Katu patoh, Chrau ntöh, Khmer phduh 'explode'	*(n)tus	PWMP *betus 'burst open'
Jeh pah, Bahnar pëch 'cut (wood)', MUK bách 'cut to a point'	*(m)pa(t)s	AT *[t]a(m)pats 'cut off/up', AN *[C,t,T]a(η)pas 'cut (off)'
Bahnar 'mach 'chicken lice', Mah Meri (Besisi A.I., T123 <sup>16</sup> ) amāit 'tick'	*qam[b]ats	AT *pru(m)baś 'louse, flea', AN *tumah '(body) louse'
Che' Wong kikəc 'scratch', Kharia (V382) kəj 'peel off'	*kuts(i)	AT *(η)kus(kus) 'scratch, claw', AN *kukuh 'claw'
Sora jəro:-n 'slender stream', PM *jroh 'chasm, gully', Khmer jroh 'mountain stream'	*cinqayus <sup>17</sup>	AT *qayus, *qayuts, AN *qaRus 'stream, current'

4.2.2. AA \*z

PW *som 'night', VN thâm 'be black', đăm, đặm 'dark'	*(in)zəm	AT *q[o](n)zəm, AN *DeDem 'dark'
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4.2.3. AA \*x

Rengao het 'salty', Sengoi pejet 'hot, spicy'	*(pin)xet	AT *p[a]xet 'pungent, bitter, piquant, salty', AN *pahit 'bitter'
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4.2.4. AA \*γ

Khmer pramā, Jeh jima, Souei kñeem 'porcupine'	*(in)γ[ə]ma	AN *qaRem '(scaly) anteater'
Bahnar dīk-dīr 'type of mushroom', Semai btees, PM *ptis 'mushroom'	*[bə](n)teγ(i)	AN *butiR 'bud'
Rengao 'lur 'roast in ashes', Katu oih, Sengoi os 'fire'	*[ʔu]luγ, *[ʔ]uγ(i)	AN *[s]u[n]uR 'burn'
Sora sənar (CF sar) 'comb', VN chái, Chrau saih 'to comb'	*caγ(i)	AT *tsitsi[r,γ], AN *sisi[r] 'comb'
OM lbir, VN bẻ 'sea', So (Cammon) mbi 'river'	*(m)biγ	AT *(n)[t,C]u(m)biγ 'deep, sea', AN *[t]ubiR 'deep water'
Pacoh trum 'a black dye', VN (*ja:m >) chàm 'indigo, dark blue', Pacoh dyrm 'to dye'	*(tin)γom	AN *tayum 'indigo'

16. Names in parentheses with alphanumeric designations following citations from the Aslian languages denote data cited in Skeat and Blagden 1906. The language name correlations are those cited in Benjamin 1976:127-8.

17. The proposed proto-form is most faithfully retained in Měntěra (Stevens, R148) *chaharu* 'source of river', which reflects the non-palatalized variant \*caqayus[*s*]. Měntěra is (or was) a dialect of the Jakun group of southern Malaysia, cf. Skeat and Blagden 1906:411, 498.

Bahnar 'brê, Sora (V396) jʔe: 'red'	*(bi)ɣa(q) <sup>18</sup>	AT *iɣa(?), AN *iRaɣ 'red'
Mundari (V383) jɔjɔ, Khasi ba jew, Katu kadyuôq 'sour'	*ɣiw(aq)	AN *baRiw 'rotten, soured'
Bahnar kräm, VN chîm 'sink', Katu siim 'sink, drown'	*(i)ɣəm	AT *(i)k[a]ɣəm 'sink into, sunken', AN *kaRem 'sink'
Pacoh ticâr 'to crow', Mundari kaji 'say, tell'	*nqayi	AT *(N)qayi 'speak, language', AN *kaRi 'talk, language'
PM *cas 'ten', Pearic chu:s 'hundred'	*caquyi or *cuqayi	FO *tsaquy 'ten thousand'

In the following examples, some AA words reflect the unconditioned shift of the voiced velar spirant to \*r, while others reflect palatalization and/or assibilation of the spirant. Note that all of the AT examples exhibit \*-j. It would appear that either the AT forms were borrowed from Austroasiatic or the final segmental sequence \*ɣi was palatalized to \*j in Austro-Tai.

PM *plaar 'horsefly', Lawa (Bo Luang) laih 'fly'	*[l]ay(i)	AN *lalej '(house)fly'
Sora olda, NK khəluer 'mar- row', Temiar lenʔos 'fat'	*(lun)[ʔ]əɣ(i)	AN *unej 'marrow', PMP *qunej 'soft core, pith'
VN (*[p]ra:s >) sâi, Jeh plaih, Pearic mēlas 'armspan'	*paɣayi	AN *palaj 'palm'
Sengoi lur 'crawl, creep', VN lâi 'tapeworm', Semang (Buk. Max., M103) lālus 'millipede'	*u[l]əɣ(i)	AJ *[q,ʔ]oɣ 'snake', AN *hulej 'larva, maggot, worm'
Sora l̄:r, VN rāi 'spread', PM *laas 'lay (out, open)'	*(ba)ɣay(i)	AK *(m)biɣaj 'spread', AN *belaj 'extend'

4.2.5. AA \*R. Benedict (1975:154) proposed the voiced postvelar spirant \*R for AT, but bracketted it as an uncertain reconstruction. Since the corresponding AA sounds appear to be / and r, PAA \*R was reconstructed as a velar liquid in Austrie I (Hayes 1992:163, 172). The following exemplary sets indicate, however, that \*R could also be palatalized and the results, a voiced palatal stop in one case, \*s in the others, suggest that \*R was not a liquid, but a voiced postvelar spirant like the proposed PAT phoneme. In the third and fourth sets, \*R may be incorrect and \*ɣ should be reconstructed instead.

Santali (V144) ul 'mango', VN ôï 'guava'	*uR(i)	PMP *kuluR 'breadfruit'
Sora (K188) tʔɑ:r, OM yās 'shine', Riàng Lang as 'glitter'	*(i,a)[ʔ]aRi, *ta[ʔ]aR	AT *[(n)da]maR 'burn, light', AN *damaR 'light, torch'
Chrau bla 'tusk', Ruc pāljà 'elephant tusk'	*baRa, *[biN]Ra	AT *[ba][R]a(N)qan 'jaw, chin, tooth (molar)', AN *(ba)Raʔan 'molar(s)'
Bahnar plêr-plar 'shine brightly', *(p)ilaR(i)		AK *[ts,tʃ]ilaR, AN *sinaR

18. Sora jʔe: presumably evolved as \*iɣaq > \*ijaq > \*jaʔ (resuffixation) > \*jeʔe > jʔe:, cf. also Bonda siye 'red', which may reflect assibilation of the voiced palatal spirant.



Pacoh ilayh ‘morning’		‘light, shine’
Nicobar wi:əl ‘turn’, Rengao wâr ‘stir’, Jeh (*weś > *weyh >) weh ‘turn (right or left)’	*weR(i)	POC *wiri ‘revolve, twist(ed)’

4.2.6. AA \*h. This laryngeal spirant has been retained in most of the AA languages, though frequently lost in medial and final positions, but it is often difficult to ascertain, especially given the usual loss of \*-h in AT, whether it is a reflex of AA\*h or other sounds, such as \*s, \*z, \*x, \*q, and \*G, which have partially merged with \*h. Although \*h > \*/s/ is postulated in the table of reflexes cited in subsection 4.1, no unambiguous example has been found thus far.

Bahnar tuh ‘lay eggs, give birth’, Khmer tuh ‘grow, sprout’	*(n)tuh	AT *[ba]tu ‘appear, arrive, be born, lay eggs’, AN *betu ‘appear’
Palaung kərbəh ‘airborne dust’, Pacoh abəh, Chrau vuh ‘ash(es)’	*[qa]buh	AT *qa[b]u ‘ashes, dust’, AN *habuh ‘ash(es)’
PMN *mih, CN amih, Bahnar ‘mi ‘rain’	*[qa]mih	AN *qamih ‘north/northwest wind’
Bonda kəndi ‘small earthen pot’, Brou adəh ‘pot’, Khmu’ sndeh ‘dish, plate’	*(kən)[z]eh <sup>19</sup>	AN *kenD[ih] ‘pitcher, water jar’

### 4.3. Reflexes of the PAA Stops

#### 4.3.1. AA \*t

Bonda ntəp ‘lay egg’, Chrau chăp ‘egg’, Pacoh xəp ‘nest’	*(i)tab <sup>20</sup>	AT *(n)tab, AN *tabtab ‘beat’
Sora taʔal ‘spleen’, Thavung khaʔal ‘belly’, Pacoh acheal ‘heart’	*(t)(i,a)ʔal	AN *[t]iyan ‘belly’
Katu dyiich, Chrau chhe nič ‘belt’	*(n)dit	AN *genDit ‘belt, girdle’
Katu tam ‘black’, Sora süm (*c- > s-) ‘grope in the dark’	*(i)təm	AN *hi(n)tem ‘black’
Kharia kad ‘to comb’, Riang kəs <sup>2</sup> ‘comb (wet) hair’, Sengoi gaas ‘comb hair by fingers’	*(n)kat(i)	AN *sikat ‘brush, comb’
Khmu’ tuuñ ‘to light’, PM *cəŋ ‘set light to’, *đuun ‘cook’	*u(n)təŋ(i), *itəŋ	AN *[t,T]u[t,T]əŋ ‘burn’
VN dĩ ‘scrotum’, Souei cəl dəl	*(in)te[!]	AN *i(ŋ)[C,t,T]il ‘clitoris’

19. \*z is bracketed as an uncertain reconstruction due to absence of a cognate form possessing a sibilant reflex, but one may be concealed in Mon *ceh* ‘small jar of demijohn shape’, i.e. via \*zeh > \*kseh > *ceh*. This etymology, which is found in both AA subfamilies, is not borrowed from Chamic, which lacks the final laryngeal, cf. WCham *kadi* ‘teapot’.

20. Cognate forms meaning ‘beat’ are also found in both AA subfamilies, but only those denoting ‘egg’ and the like evidence the consonantal mutation under discussion here.

‘clitoris’		
Sora <i>tare:l-ən</i> (CF <i>tɑ:r-ən</i> ) ‘string, thread’, Stiang <i>njar</i> ‘counter of strings, ropes’	* <i>(in)tal</i>	AN * <i>talih</i> ‘cord/rope/string’
Bahnar <i>tat</i> ‘be accurate, true’, Jeh <i>tai</i> ‘right, correct’, Katu <i>tapat lóóm</i> ‘good person’	* <i>tat(i)</i> , * <i>tapat</i>	AN * <i>[t]epat</i> ‘correct, right’
PM * <i>kntaam</i> , PW * <i>ktam</i> , Chrau <i>cham</i> ‘crab’	* <i>k(i,a)(n)tam</i>	AN * <i>keTem</i> ‘kind of crab’
Katu <i>goot</i> ‘cut hair’, Kharia (V307) <i>tagəj</i> ‘chew’	* <i>(ta)gut(i)</i>	AN * <i>gugut</i> ‘gnaw off, nibble off’
OM <i>cau</i> ‘title of nobility’, Bahnar <i>pojâu</i> ‘shaman’	* <i>pi(n)təw</i> <sup>21</sup>	AJ * <i>da[t,C]u</i> ‘head (of lineage)/ father’, AN * <i>[d,D]atu</i> ‘chief(tain), clan leader’
Sora (V22) <i>tara:ŋ-di:-n</i> ‘mid- dle’, Sedang <i>tung</i> , Chrau <i>sŋng</i> ‘in’	* <i>(i)təŋ</i> , * <i>təŋ</i>	AT * <i>[ŋ]ntəŋ</i> , AN * <i>teleŋ</i> ‘middle’
Bonda <i>itip</i> ’, Sora <i>sib</i> (* <i>c- &gt;</i> <i>s-</i> ), Hre <i>kačip</i> ‘to pinch’	* <i>tep</i> , * <i>(n)tip</i> <sup>22</sup>	AT * <i>(N)q[u](n)tip</i> ‘pinch’, AN * <i>ke[t,T]ip</i> ‘pinch off’
Chrau <i>tām</i> , OM <i>ptām</i> , PW * <i>-səm</i> ‘to plant’	* <i>(i)təm</i>	AT * <i>(q)(n)t[a]ləm</i> , AN * <i>tanem</i> ‘plant, bury’
Jeh <i>põt</i> ‘pull up’, Katu <i>poch</i> ‘pull out stalks’	* <i>(m)put(i)</i>	AN * <i>putput</i> ‘pluck out, pull out’
Pacoh <i>bõt</i> ‘strip off a branch of fruit or stalk of grain’, Bahnar <i>büch</i> ‘pull out weeds, hair, etc.’	* <i>but(i)</i>	AN * <i>butbut</i> ‘pluck out, pull out’
Katu <i>karóót</i> ‘pull’, Sora (V381) <i>ruj</i> ‘pluck, pull out’, Bahnar <i>hrüch</i> ‘pull on to break’	* <i>(s)(u)rut(i)</i>	AT * <i>[s]urut</i> ‘pull lengthwise’, AN * <i>hurut</i> ‘stroke’
Pearic <i>kətiʔt</i> ‘narrow’, Bahnar <i>trüt</i> , Pacoh <i>röiq</i> ‘shrink’	* <i>tot ~ *trot</i> , * <i>t[a]rot(i)</i>	AT * <i>[p][i]trot</i> ‘shrink, contract’, AN * <i>piʔut</i> ‘to contract, narrow’
Santali (V62) <i>etaŋ</i> , Pacoh <i>cardyéng</i> , Ruc <i>ksän</i> ‘thin’	* <i>(in)t[e]ŋ</i>	AN * <i>gəntiŋ</i> ‘slim, thin’
Mon <i>dut</i> ‘tail of bird’, Katu <i>kaduöch</i> ‘bottom of spine’, Chrau <i>sindwäch</i> ‘anus’	* <i>(u)ntot(i)</i>	AT * <i>[(m)b]u(n)ut</i> ‘tail, anus’ AN * <i>buntut</i> ‘tail’

In the following sets, the final sequence \**t(s)(i)* is suspect in Austroasiatic and/or Austro-Tai.

21. Harry L. Shorto (1971:97) identifies OM *c[āw]/cau* as a Thai loan, cf. Thai *cāw* ‘lord’. Benedict reconstructs AT \**[a]cāw* ‘chief, master, rule(r)’ (1975:250) and AJ \**da[t,C]u* ‘head (of lineage)/father’ (1990:207). Knowledge of the early AA palatalization shift permits us to combine these etymologies and identify \**təw* as an Austric root, whence \**datəw* > AN \**datu* (AT \**təw* > AN \**u* is regular per Benedict 1975:179) and AA \**pi(n)təw*, whence \**pə(n)cəw*. Thai probably borrowed the latter term from Austroasiatic, even if the OM word is a backloan from Thai.

22. Bonda *itip*’ evidences curiously no palatalization, while Sora *sib* does. Dialectal variation of the root vowel is presumably the cause of this divergence.

Brou cupet, Pacoh capeat 'louse', Semang (Pa. Max., C193) hipit 'cockroach'	*pet	AN *hipes 'cockroach (species)'
Kharia rəkə'd, Sora lakij 'sand', Jeh pəkayh 'hard'	*(l)akət(si)	AJ *makatś, AN *makas 'hard'
Sora god 'strike a match', Jeh goh 'ignite', Chrau gūch 'kin- dle', Khmer gus 'strike (match)'	*(n)kə(t)(s)(i)	AN *deket 'ignite, kindle, light, set fire to/set alight'
MUK rōch, Stieng prooch, PM *kruuc 'intestines'	*γuts	AN *peRut 'intestines'
Kharia (V189) jə'd, Katu dyuut, Chrau jut 'wipe'	*jot	AN *hujus 'rub'
Sora (V61) ged, Mal kih, Sabum gis 'scratch'	*(n)ket(si)	AN *kiskis 'scrape'
Palaung rət, Khmer sroc 'sprinkle', MUK rōch 'pour'	*γot(s)	AT *[di]γots 'sprinkle, bathe', AN *diRus 'spray, sprinkle'
Riang Lang rat 'sprinkle', PM *saac 'bail (water)', Chrau jraih 'sprinkle ceremonially'	*sayat(si)	AT *suyats, *(n)suyas, AN *huRas 'wash'
Khasi syrpuđ, White Striped Riang puas 'stroke'	*pu(a)t(si)	AN *qapus 'wipe'

4.3.2. AA \*c. The AA voiceless palatal stop is the primary correspondent to the voiceless dental affricate \*ts reconstructed by Paul K. Benedict (1990:90ff) for Austro-Tai. On that basis, \*ts is tentatively reconstructed as the Austric antecedent of AA \*c and AN \*s. Benedict now reconstructs a palatal affricate \*tś and an alveolopalatal affricate \*tś for Austro-Tai, but their AA correspondents thus far do not differ in any appreciable way from other AA reflexes of Austric \*ts and are also reconstructed as \*c.

Khmer t̄a'c, Chrau daih 'break'	*(n)tac(i)	AN *ge(n)tas 'break'
Pearic los 'roe deer', Khmer jhlūs 'mouse deer'	*j[a]Ro[c]i	PMP *Rusa 'deer'
PW *hōc 'finished', Temoq kəbōs 'die'	*qoc, *nqo(m)bo(c)i	AT *(q)obots 'ended', AN *hubus 'finished'
Pearic cu(:)c, Bahnar sēch, Rengao (*srneś >) hō'nih 'meat'	*c(i,ə)ci <sup>23</sup>	AJ *śətśi, AN *he(n)si 'flesh, meat'
Souei laay? 'plain', Pacoh paraih 'river bottom', Sengoi jeres 'the jungle'	*(n)lac(i)	AK *[q,?]a]ats, AN *halas 'forest'
Jeh pēh 'pound rice', OM pis 'pound, reduce to powder'	*(m)pic	AN *pipis 'grind to powder'
Kensiu ñus, Chrau sēch 'tooth'	*nguci[q]	AN *gus[iq] 'gums'
Pearic təkīəm 'beard', Khmer mamis 'pubic hair'	*nq[o]m[b]ic	AK *(N)qo(m)bitś 'hair', AN *kumis 'beard'
Katu kabach, Jeh bayh, Khmer	*(um)pac(i)	PMP *upas 'poisonous, as a

23. Also cf. VN (\*ñśc >) thj̄t 'meat, flesh' and Kensiu f̄ec 'flesh'. The Kensiu initial may indicate that non-final PMK \*ś did not merge with \*s in some of the Aslian dialects.

ba's 'snake'		snake'
PW *[ŋkos], Pacoh ncôih,	*(n)koci	AN *tikus 'rat'
Sengoi kus 'porcupine'		
Sengoi suit (*-c > -it) 'wash,	*(n)zoc(i)	AN *kaDus 'rub, scratch'
clean', Pearic dus skip 'rub',		
Chrau đuyh 'rub vigorously',		
Jehai mpøj, Semnam ʔəmpɔj,	*qa(m)puc(i) <sup>24</sup>	AN *[t,T]imus, PMP *timus
Kuy pos 'salt'		'salt'
MUK pây, päch, Semang (Pa.	*(m)pac(i)	AN *kupas 'scale off'
Max., S36) kělĭpeh 'fish		
scales', Katu mpeh 'scabies'		
Mendriq kac, Thavung akayh	*(qa)kac(i)	AT *kats(kats), AN *kaskas
'scratch'		'scratch'
Chrau camvĭh, Khmer kəmbis,	*ka(m)pic	AJ *kapi[ts,tś,tš] 'shell', PWMP
Pearic kəpit 'shrimp'		*kapis 'kind of shell'
Pacoh capiaih 'brush off', PM	*t(i,a)paci	AT *[ta]pə(t)s, *[ta]pats(pats)
*twas 'sweep', Sengoi tapes		'sweep, shake', AN *paspas
'shake'		'shake'

#### 4.3.3. AA \*k

Pacoh xưc 'butt, gore', Katu	*(n)zok(i)	AN *[t]un[D]uk 'bow, bend
pajuk 'lower head to butt',		down/over'
Kharia (V108) đư'j 'bend'		
VN cháo 'rice gruel', MM	*(n)kiwaq	AT *[ ]ku[w][aq] 'broth, soup',
cwa /cwaʔ/ 'dish eaten as		AN *ku[w]aq 'broth, gravy,
accompaniment to rice, curry',		sauce'
Sora jɑ:u: 'prepare porridge'		
Kharia kađ, Khasi sád, PW	*(in)kat(i)	AN *sikat 'brush, comb'
*sat 'to comb'		
MUK hóch, Cua gahooch,	*(ga)[h]uki	AN *siyuk 'cheep, peep,
PM *khɔc 'to whistle'		whistle'
Rengao kǎ, PM *caaʔ, CN	*(i)ka(q)	AT *(ma)kaʔən, AN *kaʔ 'eat'
śa:-ləre 'eat'		
Stieng ooc [ʔɔ:k] 'eat', Katu	*(mum)uk(i)	AN *camuk 'eat carefully'
mamuuch 'eat little by little'		
VN vưọc 'dolphin', NK káaʔ	*(u)ʔak,	AJ *[q,ʔ]iwak <sup>25</sup> , AN *[h]iwak
kəʔáak 'black shark', Pacoh	*[ŋi]ʔaki	'fish'
nhoaiq 'a kind of fish'		
Khasi kong heh 'brother-in-	*(in)koŋ	AN *eŋkuŋ 'grandfather/grand-
law', VN chồŋg 'husband'		mother'

24. Other plausibly related MK forms, such as Jeh *boh* and Lamet *plu:h* 'salt', suggest a postvelar final in the variants \*(m)puq and \*puluq. Hence, the PAA final may not have been \*c, but \*qi or \*qs(i).

25. Also cf. AT \*[ma]ŋ[w]ak 'shark, crocodile' (Benedict 1975:376). Under the form cited in the list, Benedict (1990:193) observes that it is highly likely that AK \*(m)ba(ŋ)ʔwak is the basic etymon. The VN and Pacoh forms could reflect \*(ŋ)wak(i), also cf. VN *nưọc* and Mon *kaʔ wəiʔ* 'shark'; however, the NK form makes clear that the root was at least partially \*ʔak.

Kharia (V366) <i>kaɓb</i> 'bark of a tree', Pearic <i>čhap</i> 'peel, husk'	*k[ə]lab,	AT *k[ə]lab(i) 'husk, scale',
PM *p[ɲ]kap, VN <i>cháp</i> , Kharia (V11) <i>jaʔb</i> 'join'	*ikab	AN *hunap '(fish) scale'
Khmer <i>tiək</i> 'lead (animals or cart)', MUK <i>tách</i> 'lead by hand'	*(in)kap	AT *[r]a(n)kap, AN *rankap 'join'
Palangiv <i>ive</i> , MUK <i>chiêu</i> , PM *jwii? 'left (side)'	*tək(i)	AN *[t]aki 'to lead'
Rengao <i>blêk mat</i> 'open eyes', OM <i>nác</i> , Jah Hut <i>lêh</i> 'see'	*(k)iwa(q)	AT *[ki]wa, AN *kiwah 'left (hand/side)'
Rengao <i>bük</i> 'soft, rotted', Khmer <i>buk</i> 'rotten', NK <i>rəmbúuc</i> 'decayed, rotten'	*(bi)lak(i)	AT *[t]iliak, AN *tilik 'look (at)'
Thavung <i>møyh 'fly'</i> , Souei <i>məəh</i> , Khmer <i>mūs</i> 'mosquito'	*bok(i)	AT *(q)(m)buk(buk) 'mold(y), decay(ed)', AN *bukbuk 'rotten wood'
Pacoh <i>achít</i> 'stick, pierce, stab', Jeh <i>kojět</i> 'cram, stuff'	*muki <sup>26</sup>	AN *lamuk, *namuk 'mosquito'
PW *lik, Khmer <i>jrūk</i> 'pig', Katu <i>baləch</i> 'large male pig'	*(n)kit	AT *(n)tsu(ŋ)kit 'pierce, poke (with stick)', AN *su(ŋ)kit 'poke'
Khmer <i>ca'k</i> 'pierce, stab', PM *cac 'prick, sting'	*(bə)Rək(i)	AN *beRək 'pig (domesticated)'
PW *prok, Sengoi <i>ceres</i> 'rib(s)', PM *cruus 'chest'	*cak(i)	AT *tsak(tsak), AN *saksak 'prick, pierce'
Rengao <i>tolak</i> , Pearic <i>ras</i> 'itch, scabies'	*(cu)ɣok(i)	AN *Rusuk 'rib'
Pacoh <i>cop</i> 'catch, grab', Thavung <i>juṗ</i> 'seize with the fingertips'	*lak(i)	AN *pil[e,a]k 'scab'
Khmer <i>tic</i> 'a little, not much', Katu <i>katiriq</i> 'small', Kharia (V94) <i>kaŋj</i> 'some, a little'	*(in)kəp,	AT *kəp(kəp), *(ŋ)kup(ŋ)kup 'seize, hold', AN *kepkep, *kupkup 'grasp, hold'
Katu <i>machuririq</i> 'short time, one hour', Pearic <i>ke:č</i> 'small', NK <i>ndəɛc</i> 'tiny, small'	*(in)kup	AT *(q)(n)tlek 'small, short', AN *[h]iTiək 'small, little'
NK <i>hnii?</i> <i>púk</i> 'field rat', Katu <i>sóng boiq</i> 'rat'	*tek(i)	
	*(n)zekiq	AN *Dikiq 'small, little'
	*(m)puk(i)	AT *(m)puk[ɲ]tu 'squirrel, rat', Thai *buk 'large field rat'

#### 4.3.4. AA \*q

Katu (High) <i>baluh</i> 'small bamboo', Juang <i>bo oj</i> 'bamboo shoot', Jah Hut <i>bulus</i> 'spear'	*bo[ɲ]oq(i)	AT *(m)bo oq 'bamboo, spear', AN *buluq 'bamboo (species)'
Bahnar <i>homrè</i> 'red pepper', Khmer <i>mrec</i> 'pepper'	*[ci]mriq	AN *siriq 'betel pepper'
Bahnar <i>kǝng</i> 'spleen', Pacoh <i>ching</i> 'glands -- lymph', Katu	*(n)[q]iŋ	AN *kiCiŋ 'body part', Tai *ʔ[e,i]n <sup>A</sup> , *n̄[e,i]n <sup>A</sup> 'tendon,

26. Replaces \*g[ɲ]a[muk] cited in Hayes 1992:164.

chóong 'gall'		sinew'
Chrau piq 'pick (fruit)', Khmer	*(m)piq	AN *[C,t,T]ebi(q) 'break off a piece, divide, split'
pic 'nip', Kharia (V66) pi' 'break'		
Riang Lang kəmchas, Jeh	*kacaqi	AN *kesaq 'breathe loudly'
chayh, Sengoi gecas 'sneeze'		
Katu maq 'prechew food',	*maq(i)	AT *[ma]maq 'chew (soft/prepared foods)', AN *mamah 'chew (up)'
Khmu' mah 'eat', Sora māj		
'taste, lick, experience'		
PW *ras, Pacoh rôih, Semai	*[u]laqi	AT *[p]i laq, AN *piliq 'choose'
(Serau, C120A) chenlas 'choose'		
Souei ?ε? 'to love', OM mic	*qeq(i),	AN *Dehi[h] 'desire/ desiderative marker'
'desire', Stieng êch 'want, like'	*qemeqi	
Katu drooq 'very sick', Katu	*p[o]roq(i)	AN *pu[r]uh 'disease, infection of skin'
(High) (ka)drurč 'sick', VN		
(*[p]rə:ś >)sói 'measles'		
Chrau viq, Katu bâch 'lie down, sleep'	*(m)pe(qi)	AT *[ś]u(m)pi(an), AN *[h]i(m)pih 'dream'
Khasi pyrshah 'adverse', OM	*caq(i)	AT *[mu](ŋ)tsak, AN *mesaq 'enemy'
cas 'go against', Khmer cās 'contrary'		
Katu ntôq, Kensiu katoh 'fall',	*(n)tuq(i)	AT *dz[a]toq 'fall', AN *za[t]uq 'drop, fall (down)'
Chrau tatoch 'drip'		
Souei li? 'inundate', Khmer	*(ba)[R]eq(i)	AN *buri[h] 'flow'
phlic 'immerse', Mon baluik (*c > -k) 'flood, immerse'		
Bahnar jrôu 'make stew',	*juyoq(i)	AJ *džyuyq 'fluid/sap/broth', AN *ZuRuq 'juice, sap'
Katu jaruôq 'mix meat with salt/rice to store', Khmer jra'k (*c > -k) 'name of a stew'		
Mundari (V387) muhu, PM	*muq(i,u)	POC *muqa 'front, tip'
*[cə]moh, PW *mis 'nose'		
Jeh oō, Katu kadok 'squash',	*uq, *oq,	AN *baluq 'gourd, pumpkin'
Chrau tôq 'gourd', Katu	*(p,b)[l]uq(i)	
kadóoiq 'squash plant'		
Rengao trah 'chop under- brush', Katu (High) sraach 'chop down tree'	*(ta)γaq(i)	AT *(ta)γ[γ]aq 'hew, chop, plane', AN *[t]aRaQ 'chop, plane'
Jeh klak (*c > -k) 'intestines',	*laqi, *[?]aqi	AN *tinaqih 'intestine(s)'
Che' Wong ?ac, Kharia (K282)		
la'j 'belly'		
Khasi jliah 'lick', Thavung	*(di)laq(i) <sup>27</sup>	AT *[b]li[d]aq 'lick, tongue', AN *dilah 'tongue'
layh, Brou liaih 'tongue'		
Katu takoh 'grown', Khmer	*tunqas,	AT *[ (n)tu]qas, AN *tuqah 'old'
cā's 'be old, grown up'	*tiqasi	
Riang vwās 'to open', Semai	*wa[qi]	AN *wawaq 'opening'

27. Replaces \*jila[s] and \*(i)la[si] cited in Hayes 1992:170.

waas ‘branch out’		
Kharia tug [tuʔ], VN đụ,	* (n)toq(i)	AJ *bo[t,C]oq, AN *bu[t,C]uq
Pearic kəntus ‘copulate’		‘penis, vulva’
Thavung buh ‘pus’, Khmer	*[ʔ]u(m)poq(i)	AK *ʔumuq, AN *ʔumuq ‘pus’
pūs ‘boil’		
Pacoh cháq ‘root’, Pearic čha:k	*caq(i),	AT *b[i]nsaq, AN *beniq ‘seed’
‘seed, grain’, Bahnar hədrəch	*c[i]nraqi	
‘seed rice, ancestral line’		
Khmer kap ‘bite’, PW *gap	*(in)qap	AT *[t]aNqap, *[t]a(N)Gap
‘hold in jaw’, Pearic čap ‘catch’		‘seize, hold, close (mouth),
		AN *taŋkap, *taŋgap ‘seize’
		AN *karaq ‘shell’
Cua karaq, Katu (a)gruəh	*karaq(i),	
‘crab’, Khmer krās ‘turtle shell’	*guraq	
Bonda gřak ‘shame’, PW	*g(i,a)haq(i)	PMP *ma-hiaq ‘shy, ashamed’
*[gac] ‘ashamed, shy’, Stieg		
haas ‘feel ashamed, bashful’		
Katu machuriiq ‘short time,	*(n)zekiq	AN *Dikiq ‘small, little’
one hour’, Pearic ke:č ‘small’		
Mundari (V304) laʔ ‘pare wood	*laq(i)	AT *(m)b[a]laq(b[a]laq) ‘split’,
with an adze’, Khmu ‘laac ‘strip’,		AN *belaq ‘cleave, crack, split’
Khmer -la’s ‘separate, detach’		
Souei threʔ ‘torn’, Santali	*req(i)	AN *[r,R]i[q,S,0] ‘split length-
(V152) arəj ‘tear, rend’, MUK		wise, tear lengthwise’
rəch ‘be torn’		

4.3.5. AA \*d

Kharia ud ‘owl’, Jeh ut ‘quail’,	*(qa)[ʔ]ud(s),	AN *baluj ‘dove species’
Chrau sūm och ‘sparrow’		
Kharia (V237) u’đ, Sora (CF)	*[q]ud(s),	AN *hu(m)bu[d,j] ‘heart of
píd, Thavung bəoc ‘mushroom’	*[qa]pud(s)	palm, leaf bud/shoot’
Bonda siʔ ‘fever, pain’, PNB	*ziq,	AN *pe[d,D]iq ‘hurt, smart,
*jiq ‘sick’, PW *siʔ ‘pain’	*ndiq <sup>28</sup>	sting’
Khasi jliah ‘lick’, Thavung	*(di)laq(i)	AT *[b]li[d]aq ‘lick, tongue’,
layh, Brou liaih ‘tongue’		AN *dilāh ‘tongue’
MUK cóch, Ruc künuc ‘heel’,	*kuds,	PMP *kukud ‘shank or hoof of
PW *[ʔloc] ‘back of heel’	*ku(l,n)uds	animals’
Kharia u’đ ‘drink, suck’,	*(q)ud(s)	AT *(q)ud ‘suck, smoke, drink’,
Pacoh huiq ‘drink water off		AN hudud ‘smoke tobacco’
soup’, Chrau huch ‘drink’		

4.3.6. AA \*j. The AA voiced palatal stop is the primary reflex of the Austric voiced dental affricate \*dz. Although Benedict now posits a voiced palatal affricate \*dz̥ for AT, AA has thus far only \*j in correspondence to it. In AT, \*dz

28. The earliest AA form was apparently \*ziq, whence \*z̥iq > \*s̥iq > \*si(ʔ). Its prefixed variant \*nziq evidently shifted to \*ndiq prior to the palatalization shift, whence then \*ñjiq. The vowel must also have changed, for assibilation did not occur for some as yet unclear reason, cf. further PM \*ñjəy ‘be sick, in pain’ and Sengoi nyi ‘ill, sick’.

(and apparently also *\*dʒ*) did not occur as a final, but Benedict reconstructed *\*j* which did. The AA/AT comparison suggests, however, that the AT *\*-j* developed at least in part in a manner similar to AA shifts, *\*-ds* and *\*-ɣi* > *\*-j* (see examples under the *\*ɣ* and *\*d* reflexes). It is not known whether there was a constraint on the final occurrence of AA *\*j* < *\*dz*; in any event, this proto-phoneme became a final due to redistribution resulting from stem split, as in PAA *\*rajay* > *\*raj* > Pacoh *raiŋ* ‘sharpen to a point’, cf. AT *\*r[a]dʒay* ‘sharp’.

VN bọt ( <i>*-j</i> > <i>*-c</i> > <i>-t</i> ), Riang bus ‘foam’	<i>*buj(i)</i> <sup>29</sup>	AN <i>*buja</i> [q], PMP <i>*busa</i> ‘foam’
Khmer ja'r ‘sap, resin’, p̄hsār ‘join with glue’, Bahnar jār ‘pitch of tree’	<i>*(pi)jər</i>	AN <i>*pizer</i> ‘to stick’

#### 4.3.7. AA *\*g*

Sora kəŋiŋ ‘porcupine’, Ruc kãñiŋ ‘hedhog’	<i>*king</i> [e]ŋ	AN <i>*taŋgiliŋ</i> ‘(scaly) anteater’
Kharia ulug, VN luộc ‘boil’, Khasi khluid ‘scald’	<i>*luwag(i)</i>	AJ <i>*luwag</i> , AN <i>*[l,ɭ]uwag</i> ‘boil, bubble’

#### 4.3.8. AA *\*G*

Santali (V50) palha ‘leaf’, Pacoh pláh ‘sheet, leaf’, Sengoi palas ‘small fan palm’	<i>*palaG(i,a)</i>	AT <i>*paGpaG</i> ‘leaf’, AN <i>*lapah</i> ‘leaf sheath’
Katu gluh, luòih ‘go outside’, Bahnar ’ngaih, ’nguaih ‘outside’	<i>*lu(n)qaG(i)</i>	AT <i>*(qm)lu(w)aG</i> , AN <i>*luwar</i> , <i>*luqar</i> , <i>*luqaq</i> ‘outside’

### 4.4. Reflexes of the PAA Palatal Glide

Kontu lê, Sengoi las ‘ant’, Pearic krəlas ‘termite’	<i>*lay(s)</i>	AJ <i>*[q,ʔ]aləy</i> ‘ant/termite’, AN <i>*hanay</i> ‘termite’
Pearic puy ‘tinder’, Katu mpoih ‘fire’	<i>*[sa](m)puy(s)</i>	AK <i>*sa(m)puy</i> , AN <i>*hapuy</i> ‘fire’
Jeh piayh ‘orange, custard apple’, VN bưởi ‘pomelo’	<i>*(p,b)i[ʔ]ays</i>	AK, AN <i>*(m)buway</i> ‘fruit/seed’
Pacoh bê ‘side, direction’, VN bãi ‘flat expanse, field’, bãi bể ‘shore, beach’	<i>*bay(s)</i>	AT <i>*baybay</i> ‘side, shore, bank’, AN <i>*(q)a(ŋ)bay</i> ‘side by side’

### 4.5 Reflexes of the PAA Laterals

#### 4.5.1. AA *\*l*

Rengao ’lur ‘roast in ashes’,	<i>*[ʔu]luy</i> ,	AN <i>*[s]u[n]uR</i> ‘burn’
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29. Some MK correspondents indicate *\*bos* or *\*bus*, cf. Khmer *babuh* ‘foam’, and may be borrowed from Austronesian.



Pacoh nnhur ‘smell of burning hair and flesh’	*iluy	
Nha Heun plĭp, Thavung kñiip, Bahnar ‘nhĭp ‘close eyes’	*(i)ləp	AT *iləp ‘close eyes, sleep’, AN *hinep ‘dream, lie (down), sleep’
Pacoh đunh, Bahnar đunh ‘long time’	*d[əwi]	AT *a(n)daw[il] ‘far, long’, Tsouic *(m)a[d]awil ‘far’
Jeh lək ‘wasp’, Pacoh anhoq ‘gnat (like fruit fly)’	*(i)lək <sup>30</sup>	PMP *neknek, *ñikñik ‘gnat, sandfly’
Riang pli- ‘grandchild’, Khasi kñi ‘mother’s eldest brother’, Pacoh anhi ‘uncle, man’	*(qa)li <sup>31</sup>	AT *(q)lil[i] ‘grandchild (great-), grandparent (great-), AN *nin[i]’ ‘ancestor, descendant, grandchild, grandparent’
Kharia (V259) jələ’d ‘slip’, VN lət ‘slip into’, Pacoh kinhut ‘slide something’	*(i)lut	AT *(q)lutsluts, AN *luslus ‘slip off/away’
Pearic pəpħlip ‘submerge’, Katu ləəp ‘sink, drown’, Chrau nhâp daq ‘submerge’	*(i)ləb	AT *ləbləb ‘submerge, bury’, AN *lebleb ‘inundate, submerge’
Katu klóm ‘urinate’, Sora ñum-ən, Palaung hñu:m ‘urine’	*(zi)lom	AT *(n)zalom, AN *[d,D]anum ‘water’, *hinum ‘drink’

## 4.5.2. AA \*/

Pacoh cǎl ‘roll up, coil’, Kharia kuñ ‘fold (a mat)’	*ku[ɿ](i)	AN *pikul ‘bend, turn (round)’
Sora tæ:ɿl-ən (CF tæ:r-ən) ‘string, thread’, VN nhợ ‘rope’	*(in)taɿ(iq)	AN *talih ‘cord/rope/string’
Mendriq tol ‘mountain’, Sre dor ‘forest’, Rengao dordǎn (*-ñ > -n) ‘hill’	*(n)t[aɿ](i)	AT *[q]u(n)tal, AN *qu[t]an ‘forest’
Katu gor ‘knife handle’, VN cán (*-ñ > -n) ‘straight handle’	*(n)kaɿ(i)	AT *[ts]a(ŋ)kal, *[tsa]ŋgal, AN *saŋkal ‘handle’
KY kraas ‘laugh’, PW *kñas ‘smile’, Semai krñeh ‘grin’	*k(i,a)[ɿ]as	AN *gelih ‘inclined to laugh, laugh’
VN gheo ‘tease, bother’, Kurku (K58) gew ‘mock, deride’, VN nhạo ‘laugh at, mock, ridicule’	*(n)q[a]w, *qiɿaw	AT *(N)qiɿaw, Proto-Chamic *klau, Thai *xrua ‘laugh’
VN lác ‘perceive’, Jah Hut ləh, OM ñac ‘see’	*(i)lak(i)	AT *tiɿiak, AN *tilik ‘look at’
Pearic law ‘many’, VN nhìều	*(i)[ɿ]aw	AT *liaw, Paiwanic *liaw,

30. This may be a case of cluster coalescence, i.e. \*nl > \*ñ ~ \*n, cf. also Katu *nanok* ‘gnat’, instead of \*i-associated palatalization. Since Chamic apparently possesses no reflexes of this PMP word, parallel development in Austroasiatic and Proto-Malayo-Polynesian rather than borrowing by one from the other must be suspected.

31. The Riang form apparently reflects a variant with a different vowel. A large number of variants appear to belong to this etymology, both in Austroasiatic and Austro-Tai, cf. further Brao *kelää* ‘grandfather’ and AT \*(q)lal[a] ‘grandchild (great-), grandparent (great-)’.

'much, many'			Ong-Be liao 'many'
Palaung jur 'buy', Souei cual	*ju[ʔ]a!̄(i)		AT *dzu(w)a!̄ 'sell, buy', AN
'pay a salary', Khmer juañ 'do			*juhal 'sell'
business'			
Kurku (K512) bumli 'navel',	*sul̄iq		AN *sul̄iq 'shoot, sucker'
Bonda sari 'placenta', PVM			
*psuñ? 'navel'			
Katu pran, MUK (*kra.ñ >)	*pra[!̄]i		AT *(m)p[r,l]a!̄i 'tuber (edible)',
khánh 'manioc'			EFO *(n)ta!̄i 'taro, sweet
			potato'

4.6. *Reflexes of the PAA Nasals.* Three examples of palatalization of \*n have been detected, all involving coalescence with \*y. The nasal was apparently not affected by contiguity of the palatalization conditioning high front vowel.

Su' ʔyon, Jeh 'nhung, Stieng	*qa(n)yon		AN *layon 'dusk, shade,
nhông 'black'			shadow, twilight'
Kharia (K312) ỹʔ? 'eat', VN	* (n)yaq		AN *ku(ŋ)yaq 'chew, chew up'
nhà 'chew'			
Pearic ɛyu(:)n, Pacoh parnhân	* (n)yon		AT *[a]yon 'swing, shake', AN
'shake', VN nhún vai 'shrug			*hayun 'rock, swing'
one's shoulders'			

The remaining examples involve the velar nasal \*ŋ, which did undergo the palatalization shift.

Katu chatong, PM *duuñ	*(bun)tuŋ(i)		AN *be[t,T]uŋ 'bamboo'
'bamboo'			
VN bên 'side', Jeh meng 'side	*(m)piŋ or		AN *tə(m)biŋ 'bank (of river),
of face', Chrau mǐnh 'mouth'	*(m)biŋ		edge'
Katu karoong 'large basket',	*(ka)ruŋ(i)		AT *k[a]roŋ 'basket, sack', AN
Sora mǝrǝñ 'big basket'			*karuŋ 'bag, sack'
Bahnar brông 'large river bird',	*(p,b)(a)ruŋ(i)		AT *[bu]ruŋ, AN *buruŋ 'bird'
Khmer duñ 'pelican', Katu			
atunh 'chicken'			
Khmu' tuuñ 'to light', PM *cɔŋ	*(un)tuŋ(i),		AN *[t,T]u[t,T]uŋ 'burn'
'set light to', *đuun 'cook'	*ituŋ		
Pearic a:ŋ 'hornet', PW *ʔañ	*[ʔ]əŋ(i)		PPH eŋeŋ 'buzzing, drone'
'wasp'			
Khmu' taŋ 'from (.to)',	*(n)təŋ(i)		AT *da(n)təŋ 'come, arrive',
Rengao kǝdang 'go past', MUK			AN *dateŋ 'come'
tênh 'arrive (at), come (to)'			
Pacoh láng 'to love', Khmer	*(s)(i,a)[!̄]əŋ(i)		AT *k[ə!̄][a]ŋ 'desire', AN
sralāñ 'love, like'			*keleŋ 'affection, desire, inclina-
			tion'
Mal qɔŋg 'husband', VN ông	*[ʔ]əŋ(i)		AN *eŋkuŋ 'grandfather/grand-
'grandfather', Pearic u:ñ 'father'			mother'
Khasi kong heh 'brother-in-	*koŋ(i)		AN *eŋkuŋ 'grandfather/grand-
law', Pearic kuñ 'father'			mother'
Khmer jhlœñ 'leech', Jeh klan	*(ja)leŋ(i)		AT *(o)(m)b[!̄]liŋ 'leech', Thai

(*-ñ > -n) ‘water leech’		plij ‘(water) leech’
NK hnúuy mliiñ ‘langur’,	*[e]ŋ(i)	AT *bliŋ, Thai *liŋ ‘monkey’
Katu jaróónh ‘gibbon’		
MUK mông, Jeh tòmun, PW	*moŋ(i)	AN *mu[n,N]uŋ ‘mouth’
*mœñ ‘mouth’		
PVM *cmrañ, Brou bran,	*baRaŋi	AJ *baRaŋ, AN *baRaŋ ‘rib(s)’
Kuy briañ ‘rib(s)’		
Chrau jun ‘deer’, Pacoh	*(n)jəŋ(i)	AN *sala[d,D,j]əŋ ‘wild rumi-
adyóñh ‘barking deer’, NK		nant’, Malay kijang ‘roe deer’
khəñóŋ ‘mouse deer’,		
Katu ranguôq ‘unhappy’, Jeh	*[l]uŋʔaw,	AT *[i]ŋaw ‘sad, stunned,
hnhö, Bahnar sənhoi ‘sad’	*[l]iŋʔaw(i)	quiet’, AN *liŋaw ‘calm, quiet’
Pearic cəŋet, Katu kanheet	*ŋet, *ŋit	AN *saŋit ‘scorch/singe’
‘dark’, Bahnar ‘nhek ‘soot’		
Pacoh taŋang ‘cheek’, PM	*ta(m)baŋ(i)	AT *[t][a](m)baŋ ‘side’, AN
*trmbaŋ ‘rim, edge, lips’		*tambaŋ ‘side, other side’
Palaung ple:ŋ, Bahnar plěnh,	*(p,b)leŋ(i)	AT *[ndu]laŋ[it], AN *laŋit
Semnam baliŋ ‘sky’		‘sky’
VN lang ‘spot, herpes’, Chrau	*(bu)laŋ(i)	AT *(q)(m)b[a]laŋ, AN *belan
vrwanh ‘striped’		‘spotted’

**5. Conclusion**

The four shifts described in the preceding pages have clearly had a significant impact on the AA consonant system. As a consequence of the phonological changes produced by those diachronic mutations, reflexes of as many as 14 PAA consonants apparently merged into a single new consonant, \*ś, while reflexes of three others merged with another single consonant, \*ñ. Along the way, an unknown number and type of consonant clusters were reduced to single phonemes, some of which also merged with \*ś and \*ñ, and a number of other new consonantal reflexes were created, but without merger with \*ś and \*ñ. In turn, the voiceless palatal sibilant and the palatal nasal have undergone in more recent times many other transformations in the dialects of the AA subfamilies.

The described changes have obviously introduced a considerable degree of complexity and difficulty into the task of ascertaining consonant correspondences and historical relationships, both within AA comparative studies and in any comparison of AA and AT lexical data. As those relationships begin to become clear as a result of the revelations presented above, one begins to understand why discovering the lexical connection between the AA languages and between them and their AT cousins has been so problematic over the past 90 years.

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