

NOTES

REANALYZING REANALYSES IN KATUIC AND BAHNARIC

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In the following notes I shall offer alternative analyses of the morphology of some Katuic and Bahnaric languages. It will become apparent that a synchronic analysis of the data yields results very different from an internal reconstruction. Whilst I do not wish to question the descriptive validity of those earlier interpretations, those affix-systems that were hitherto recognized for Katuic and Bahnaric prove to be historically erroneous; for instance, current interpretations would include a *\*\*/tər-/* prefix for the 'reciprocal' when a diachronic analysis would lead to recognizing an *\*[-r-]* infix.

This problem is not confined to some of the Vietnam highland languages; in fact, the conflict between synchronic analysis and historical reconstruction is ever present in the study of Mon. Literary Mon has a syllabic prefix [l-] /lə-/ which corresponds to earlier infixes [-r-] or [-N-]; LM also has a syllabic prefix [t-] /t-/ which corresponds to the earlier prefix [-r-]:<sup>1</sup>

(01.1)	LM	ləʔa	<	OM	rənʔar	<	*r-N-ʔar ~ *ʔar
(01.2)	LM	lənat	<	OM	nərɲac	<	*ɲ-r-ɲac ~ *ɲac
(01.3)	LM	təsok	<	OM	sərsok	<	*s-r-sok ~ *sok

My alternative interpretations will suggest that (i) extracted infixation is more widespread in Mon-Khmer than hitherto recognized, and may even be reconstructed for PMK, and that (ii) reanalyses, or morphological back-formations through analogical levelling, proliferate.

Furthermore, there is increasing evidence that proto-Mon-Khmer had a verbal infix for the 'frequentative' ([-N-]) and a verbal infix for the 'reciprocal' ([-r-]). Evidence, however tenuous at first sight, does exist in Mon (02) and Khmer (03) for a reciprocal [-r-]:

(02.1)	MM	tit	/	dərtit	'to go out'	/	'to deliver'
(02.2)	OM	*klwɨ	/	kərlwɨ	'to pierce'	/	'to penetrate'
(02.2a)	SM	klɔɨ	/	kəlɔɨ	'to pierce'	/	'to penetrate'
(03.1)		mv:l	/	prəmə:l	'to look at'	/	'to contemplate'
(03.2)		mu:l	/	prəmə:l	'to be round'	/	'to gather'

(03.3) *baok* / *prəbaok* 'to strike' / 'to strike each other'

The Khmer forms in (03.1) - (03.2) can be reconstructed as *\*m-r-mv:l* and *\*m-r-mu:l* respectively or, alternatively, as *\*p-r-mv:l* and *\*p-r-mu:l* in which case we have a derivative incorporating both the causative prefix *\*p-* and the reciprocal infix *\*-r-*. In (03.3) the modern form can be interpreted as the reflex of an earlier *\*p-r-pok*. However, in view of the fact that it is initial voiceless alveolar and bilabial stops that underwent voicing and implosion (as early as pre-13th c.) it is more likely that (03.3) is a reanalyzed form, with the rhotacized initial /*prə-*/ having taken on the function of the 'reciprocal'.

### 1. Pakoh

I shall argue that in the first paradigm given below an infix [-*r-*] for the 'reciprocal' has to be recognized for (1.1) and (1.2) and that the derivative in (1.3) is a reciprocal form reanalyzed as a 'transitive/causative'; in the second paradigm the derivatives (2.1) and (2.2) contain masked infixes. I shall provide alternative analyses to Watson (1966).

(1.1) *ca:o* / *tərca:o* 'to threaten' / reciprocal [-*r-*]

(1.2) *suə* / *tərsuə* 'to look for' / reciprocal [-*r-*]

(1.3) *ca:* / *tərho:m* 'to have a bath' / transitive [-*r-*]

(2.1) *ca:* / *cica:* 'to eat' / causative [-*X-*]

(2.2) *ca:* / *taca:* 'to eat' / involuntary [-*X-*]

(2.3) *ca:* / *tana:* 'to eat' / 'food' [-*n-*]

(2.4) *ca:* / *paca:* 'to eat' / causative [*p-*]

(2.5) *ca:* / *pərca:* 'to eat' / caus.,rec. [*p-*], [-*r-*]

For the first paradigm Watson (1966:20) recognizes a [*tər-*] prefix attached to monosyllabic bases and its allomorph [-*r-*] occurring in disyllabic bases, as in

(3.1) *kiduh* / *kərduh* 'to bump' / reciprocal [-*r-*]

(3.2) *kacaŋ* / *kərcaŋ* 'to laugh' / reciprocal [-*r-*]

However, the presyllable /*tər-*/ attached to monosyllabic bases can be segmented into the affix /*-r-*/ with /*t-*/ being the result of dissimilation of the base-initials /*c-*/ (1.1) and /*s-*/ (1.2). Furthermore, we have to recognize extracted affixation; for the derivational pairs (1.1) and (1.2) we can reconstruct

(1.1\*) *ca:o* / *\*cərca:o* < *\*c-r-ca:o*

(1.2\*) *suə* / *\*sərsuə* < *\*s-r-suə*

in analogy to Mon /sərs-/ > /səs-/ > /dəs-/ > /təs-/ (corresponding in spoken Mon to /kəs-/), an innovation not yet seen in Pakoh and some varieties of Khmer following a parallel development), and Mon /cərc-/ > /cəc-/ > /dəc-/ (corresponding in spoken Mon to /həc-/). The fact that medial /-r-/ has been retained in Pakoh but lost in Mon (along with other infixes) may be due to a number of factors such as unfunctionality, continuous reanalyses and high productivity.<sup>2</sup>

To illustrate my way of arguing we would have to examine whether extracted infixation occurs in Pakoh; this is the case as shown in

- (4.1) ti:ʔ / terti:ʔ 'to obey' / reciprocal [-r-]  
 (4.2) to:ŋ / terto:ŋ 'to talk' / reciprocal [-r-]  
 (4.3) piʔ / pərpiʔ 'to dig' / frequentative [-r-]

Pakoh also has a causative prefix [p] which may be combined with the reciprocal infix [-r-]; in a form derived by extracted infixation the repeated base-initial is replaced by the prefix [p-], or one could choose a more elegant solution in regarding [-f-] infixation as a late derivational rule following [p-] prefixation. Such multiple affixed forms are attested in Pakoh (as they are in Mon):

- (5.1) cə:m / pərcə:m 'to know' / caus., rec.  
 (5.2) ca: / pərca: 'to eat' / caus., rec.  
 (5.3) dək / pərdək 'to be angry' / caus., rec.  
 (5.4) hō:m / pərhō:m 'to have a bath' / caus., rec.  
 (5.5) hē:ŋ / pərhē:ŋ 'to warm by fire' / caus., rec.

Additional forms are given by Watson (1966:23-24) interpreted as nominalized forms; no examples in sentence-contexts are given but the glosses suggest a function similar to Mon 'attributives'.<sup>3</sup>

- (6.1) ka:t / pərka:t 'to burn (food)'  
 (6.2) keat / pərkeat 'to cut around'  
 (6.3) bəʔan / pərbəʔan 'to pile up'  
 (6.3a) / pəbəʔan  
 (6.3b) / təbəʔan

(6.3a) and (6.3b) are variants which can be interpreted in a number of ways: (6.3a) can be either a reanalyzed form of a simple causative derivative or it may be due to mediocluster-reduction /rb-/ > /-b-/ and subsequent reanalysis. The variant (6.3b) is a more innovative form where /pəb-/ initial has been dissimilated to /təb-/, as attested in

(7.1) bo:n / tərbo:n 'to have' / 'to marry' (reciprocal)

although a case where /pərb-/ has been retained is attested

(7.2) bi? / pərbi? 'to lie down' / frequ. ~ attr.

Having established that Pakoh has extracted infixation, and that one of the extracted infixes is the 'reciprocal' [-r-] which may also be combined with the prefix [p-] for the 'causative' we would have to explain why a form such as (2.1) /cica/ occurs at all since we have claimed that /cəc-/ and /səs-/ initials shifted to /təd-/ and /təs-/ respectively.

Watson (1966:16) points out that Pakoh open presyllables may have three different vowels (again, like Old Mon) /a, i, u/ which are weakened to /ə/ in closed presyllables of the form /CvC-/. A further rule, not given by Watson but deducible from her data (and conform to Old Mon data), is that before labials the vowel of the minor syllable is /u/, whereas in all other contexts it is /i/, unless weakened to /a/.

The derivative in (2.1) /cica:/ is a strong form which has inhibited the shift /cəc-/ to /təc-/; the reason for it to be a strong form can only be the result of a mediocluster-reduction /cəCc-/ > /cəc-/, in which case the mediocluster must have contained an infix. This does, not, however, explain why we have two causative forms for 'to eat' in Pakoh, /cica:/ and /paca:/. I rather suspect the former to be an old frequentative in which case the masked infix may be [-N-].

The second problem is the origin of the 'involuntary' prefix [t-] /ta-/, as exemplified in (2.2). The list given in Watson (1966:23) shows a limited number of base-initials, restricted to palatals, both stops and nasals, /l-/ and /p-/. The former can be interpreted as \*cəCVC undergoing mediocluster-reduction (thus losing the infix) and subsequently shifting /cəc-/ to /təc-/, as above, the latter as reanalyses of shifted /tə-/ as a proper prefix.

Forms like

- (8.1) kap / tərkap 'to bite' / reciprocal  
 (8.2a) kəŋ / təkəŋ 'to wear on wrist' / causative  
 (8.2b) / pakəŋ / causative

can also be interpreted as reanalyses of phonologically conditioned /tər-/ initials (< \*cərc- ~ \*sərs-), in the case of (8.1), and as reanalyses of /təc-/ ~ /təŋ-/ initials (< \*cəc- < \*cəC- ~ \*ŋəŋ- < \*ŋəCŋ-), in the case of (8.2a).

Three further points in Watson's outline of Pakoh orthology warrant comments: (i) frequentative forms, (ii) vocalic infixes, and (iii) strengthening and affix-extraction, all three of them having parallel developments in Mon.

Watson (1966:27) posits the following forms as having a continuative reduplicated prefix"

- 9.1) ba:l / biba:l 'to illuminate' < \*b-m-ba:l  
 9.2) ca: / cica: 'to eat' < \*c-ŋ-ca:  
 9.3) pi: / papi: 'to talk' < \*p-m-pi:  
 9.4) kɾɔ:ŋ / kakɾɔ:ŋ 'to surround'

It is tempting to interpret these forms as having a masked infix or the 'frequentative' (likely to have been a nasal) with the exception of (9.4) which again is a reanalysed form. The reanalysis may have gone a step further in the case of the velar pseudo-prefix /ka-/ in (9.4) which was subsequently applied to verbs with velar stop initials confined to the semantic areas of cutting, breaking, plying, shaving.

The second point concerns vocalic infixes in Pakoh. These are easy to identify in her list (1966:24-25); two examples must suffice

- 10.1) kleaŋ / kaleaŋ 'to bar door' / 'door-bar' [-ə-]  
 10.2) krɯp / karɯp 'to cover' / 'cover' [-ə-]

These vocalic infixes are in complementary distribution with the nasal infix [-n-] for the 'instrumental', the former occurring in bases with complex initials CC-, the latter in bases with simple initials.

The third point is relevant to strengthening of presyllables and subsequent affix-extraction, that is, the separation of the affix from the derivative (or inflected form in the case of Mon, but not in Pakoh). Watson noticed that the causative prefix [p-] has two phonological realizations, a weak form /pa-/ and a strong form /pi-/, if the prefix is syllabified.<sup>4</sup>

- 11.1) ha:o / piha:o 'to spend' / causative  
 11.2) ŋɔ:t / pinɔ:t 'to be hungry' / causative  
 11.3a) pʌŋ / pipʌŋ 'to be full' / causative  
 11.3b) / tapʌŋ / causative  
 11.4) hɔ:k / pahɔ:k 'to learn' / causative  
 11.5) da:l / pada:i 'to wear' / causative

The strengthening of the presyllable has led, just like in Mon,

to the former causative prefix [p-] being separated from the derivative and being reinterpreted as a verbalizer of nouns, as in

- (12.1) pu:t / pipu:t 'stack of brush' / 'to stack brush'  
 (12.3) noh / panoh 'name' / 'to name'

## 2. Katu

Costello (1966:67) recognizes a vocalic infix in Katu, being an allomorph of the syllabic infix [-n-] for the 'instrumental'; the vocalic infix is the result of a mediocluster-reduction of the type /-nl-/ and /-nr-/ > /-l-/ ~ /-r-/, as in

- (13.1) pru:ŋ / pəru:ŋ 'to blow fire' / 'pipe'  
 (13.2) klΛŋ / kəlΛŋ 'to prop' / 'prop'

A morphophonemic rule can be deduced from the data given (1966:69) whereby /pəp-/ initial sequences are phonotactically impossible thus explaining the existence of an allomorph /tə-/ in such contexts where otherwise [p-] prefixed forms would appear:

- (14.1) paŋ / təpaŋ 'to shoot' / causative  
 (14.2) peh / təpeh 'to play (music)' / causative  
 (14.3) puah / təpuah 'to dry (in sun)' / causative  
 (14.4) ca / pəca 'to eat' / causative  
 (14.5) tɛc / pətɛc 'to chop tree' / causative  
 (14.6) hu / pəhu 'to wreck' / causative

The complementary distribution of [p-] and [t-] in different phonological contexts has led to reanalysis, and to cases where derivatives with both [t-] and [p-] prefixes can be found:

- (15.1) diar / pədiar 'to go backwards'  
 / tədiar  
 (15.2) ɡɔ:t / pəɡɔ:t 'to cut hair'  
 / təɡɔ:t

On the basis of the data provided no reciprocal infix [-r-] can be reconstructed internally, nor could we prove the existence of extracted infixation were it not for the evidence we find in Pakoh and Bahnar. Costello recognizes a reciprocal prefix /tə-/ which is attached to base-initials /k-, t-, p-, ŋ, l-/. The same prefix /tə-/ derives attributive verbs.

Similar variation occurs in the following case:

- (16a) cət / təcət 'to die' / attributive  
 (16b) / kəcət / attributive

A possible explanation is, again, reanalysis. Old Mon has a derivational pair /kɔt/ 'to die' and /kəcɔt/ 'to kill' (with the phonologically neutral vowel spelt u). Shorto lists in DMI a Kuy cognate, /kəcet/ 'to die' and /kəmcet/ 'to kill' where the infix [-m-], just like in Khmer, is an allomorph for the causative prefix [p-] when applied to complex base-initials (the same rule applies to Mon, only that the allomorph is the vocalic infix). Now, it may be that the Katu form /kəcet/ is a weak form of a former \*/kucet/ or a reduced form of an earlier \*/kəXcet/ (with an unspecified infix (possibly a nasal) as the causative allomorph of [p-] in other contexts). Co-existence of both strong and weak form \*/kucet/ and /kəcet/ may have led to the presyllable being interpreted as a lexical formative, and then being applied to phonologically conditioned initial sequences such as

- (17.1) su:h / kəsuh 'to poke' / attributive  
 (17.2) sir / kəsir 'to close' / frequentative  
 (17.3) sɔŋ / kəsɔŋ 'to hear' / frequentative

corresponding to earlier forms like \*təs- < \*səs- < \*səXs- (where X is an unspecified extracted infix). Other morphologically complex forms with initial sequences like /kət-/, /kək-/ and /kəg-/ given by Costello (1966:73) can be interpreted in such a way (especially when bearing in mind that semantically this set is restricted to 'frequentatives').

### 3. Bahnar

The Bahnar data as presented by Banker (1964) permit the reconstruction of extracted infixation. Consider the following three cases:

- (18.1) muih / bəmuih 'field' / 'field' [-X-]  
 (18.2) mat / bəmat 'to enter' / 'West' [-X-]  
 (18.3) ?dap / tə?nap 'to cover' / 'cover (n.)' [-n-]

Analogous cases exist in Mon where OM /məɾm-/ (containing the extracted infix [-r-]) shifts to MM /bəm-/ , SM /həm<sup>2</sup>/. Hence (18.1) and (18.2) can be reconstructed as \*m-X-mu<sup>2</sup>ih and \*m-X-mat. The derivative in (18.3) corresponds to an earlier \*d-n-?dap which subsequently underwent (i) devoicing \*tən?dap (unless it follows a morphophonemic rule attested in OM) and (ii) mediocluster-reduction \*-n?d- > /-?n-/.

Banker analyzes (18.1) and (18.2) as having a prefix /bə-/ , an allomorph of [-n-] when applied to nasal base-initials. Yet, the existence of a form like (18.3) makes extracted infixation an equally likely possibility, if not a more plausible one given the fact that the derivatives in (18.1) and (18.2) are not true 'instrumentals' or 'resultatives'. One could even speculate that we have a masked infix \*[-r-] if we remember that OM has [-r-] nominalizations, and that there the reconstruction of reciprocal [-r-] infixes is rather tenuous.

Causative prefixes [p-] /pə-/ and /tə-/ are in complementary distribution, /tə-/ being attached to labial base-initials, except /w-/ which shows variation.

A reciprocal prefix /tə-/ is recognized by Banker (1964:107-109) but the examples given do not permit any generalizations about phonotactic restrictions. The data presented include only bases with stop initials; an allomorph /kə-/ has not been recognized for base-initial /d-/:

- (19.1) kap / təkap 'to bite' / reciprocal  
 (19.2) to:n / tətə:n 'to hit' / reciprocal  
 (19.2) dah / kədəh 'to kick' / reciprocal

#### 4. Jeh

Jeh has vocalic infixes and vestiges of extracted infixation, neither of them recognized by Gradin (1976).

- (20) ?ot / rənot 'to saw' / 'saw (n.)'

follows the rule given in Bauer (1989). Vocalic infixes are exemplified in

- (21.1) klap / kəlap 'to cover' / 'lid'  
 (21.2) kle:m / kəle:m 'to patch' / 'patch (n.)'  
 (21.3) troh / təroh 'to pull away' / 'unimpeded'

[-ə-] is an allomorph for [-n-] and an unspecified verbal prefix attached to simple base-initials.

Gradin's analysis recognizes 'reciprocal' affixes, in this case /tə-/ (1976:35-36):

- (22.1) ta:p / tətə:p 'to slap' / reciprocal  
 (22.2) kap / təkap 'to bite' / reciprocal  
 (22.3) liem / təliem 'to be good' / reciprocal

He also notes that /tə-/ may alternate with a reduplicated (or



lengthened?) initial consonant as in

- (23.a) joh / tøjoh 'to peck' / reciprocal  
 (23.b) / j:oh / reciprocal

Gradin further recognizes a 'frequentative' function, to be assigned to the prefix /rə-/ in his analysis (1976:388-39):

- (24.1a) top / rətop 'to pounce on'  
 (24.1b) / tɔ:p  
 (24.2) ca / rəca 'to eat'  
 (24.3) ʔoih / rəʔoih 'to lie down'  
 (24.4) re:ŋ / rərə:ŋ 'to go searching'  
 (24.5) rien / rərien 'gnaw bone (n.)' / 'to grind teeth'  
 (24.6) kəŋok / rəŋok 'to jump up' / 'to jostle up and  
 down'

The contexts in which /rə-/ initials occur are very restricted (provided the data given in (1976) are exhaustive): These are confined to base-initials /l-, r-/, /ʔ-/ , /t-, c-/ , /ŋ-, ɲ-/ and CC- complex initials (which may be interpreted as later back-formations). As I have pointed out before (1989), if this is a parallel development to Mon, we can posit a morphophonemic rule whereby derivatives which are the result of extracted infixation do not repeat the base-initials /ʔ-, l-/ but replace them by initial /r-/ in which case we may reconstruct for

(24.3\*) \*rəXʔoih

In turn, (24.2) 'to wear down' may be interpreted as a reanalyzed form, or corresponding to an earlier \*c-r-ca > \*r-ca > /rəca/. Notice reduplication of initial in (23.b) and (24.1b); (23a) and (24.1a) may be back-formations, the former having a masked infix.

## 5. Chrau

Thomas (1969) recognizes separate prefixes, /tə-/ and /pəN-/; internal reconstruction shows that Chrau, like Khmer, has two distinct affixes, [p-] for the 'causative' and [-N-] for the 'frequentative'. A 'frequentative' function, however, is recognized by Thomas (1969:105)--called by her "resultant adjective", corresponding to "resultant nouns" of words also derived by the infix [-n-]--assigned to the simple infix [-n-], as in

- (25.1) kah / kənah 'to remember'  
 (25.2) voh / vənəh 'to know'  
 (25.3) paŋ / pənaŋ 'to shoot'

- (25.4) ko:ih / kəno:ih 'to whittle'  
 (25.5) chak / cinhak 'to be fierce' /  
 (25.6) khum / kənhum 'to steal' / synonymous forms  
 (25.7) kraʔ / kənrəʔ 'to be weedy' /

Evidence for extracted infixation is rather meagre but can be reconstructed internally, given a form like

- (26.a) ʔum / tənum 'to have a bath' / 'to bathe'  
 (26.b) / təʔum

and cases where a [p-] prefixed form contrasts with multiple affixed forms [p-] and [-N-], as in

- (27.1) gan / pəgan 'to go across' / 'crosswise'  
 (27.2) lɛ: / pəlɛ: 'to dodge' / 'to roll over'  
 (27.3) lo:m / pəlɔ:m 'to lure' / 'to mislead'  
 (28.1) də:p / pəndə:p 'to hand, give' / 'to reach, grab'  
 (28.2) wi:l / pəŋwi:l 'to mistake road' / 'to lead astray'  
 (28.3) je:ŋ / pinje:ŋ 'to become' / 'to beget, create'

The syllabification of /pə-/ prefixed forms derived from bases with base-initials /l-, r-/ warrants an explanation since Chrau permits /pr-, pl-/ clusters.

Problematic is also the fact that 'frequentatives' derived by [-n-] follow a rule of simple infixation and not extracted infixation.

## 6. Sedang

Sedang morphology as presented by Smith (1979:146-152) includes a causative prefix [p-] and its allomorph /mə-/ attached to bases with voiced stop initials. A reciprocal /tə-/ prefix is also recognized; the examples given, however, do not permit any generalization about the distribution of this prefix (base-initials are restricted to /k-, c- v-, hl-/): the presyllable /tə-/ is the least restricted in Sedang but Smith points out that only 30-40% of verbs found with the presyllable /tə-/ are reciprocals (1979:148). By contrast, infixation patterns yielded by derivations with [-n-] are regular (1979.150).

Some of the Proto-Mon-Khmer affixes discussed here and their reanalyzed reflexes in Katuic and Bahnaric are listed in Figure 1.

PMK	Pakoh	Katu	Bahnar	Jeh	Sedang	Chrau
*reciprocal	tər-		tə-, kə-	tə-, R-	tə-	
*frequentative	R-	kə-		rə-	pə-	
*causative	pə-, pi-	pə- tə-	pə-, tə-		pə-, mə-	p-
*caus., *rec.						
*caus., frequ.						pəN-
*instrumental	-n-	-n-	-n-	-n-	-n-	-n-
*						
			bə-			

Figure 1: Proto-Mon-Khmer affixes and their re-analyzed reflexes in Katuic and Bahnaric

## NOTES

\*I am grateful to David Thomas for comments and for checking and correcting my IPA retranscriptions of SIL orthographies.

1. The glosses are as follows: (01.1) 'to take away' / 'to go'; (01.2) 'sight' / 'to see'; (01.3) 'mane, body-hair' / 'hair'. Many of the affixes identified by Shorto in DSM (1962) are internally reconstructed. - In the following I have converted SIL orthographies in Quoc Ngu back into IPA; [V̥] refers to a tense vowel, [V̤] to a breathy vowel.

2. In Mon medioclusters of the form /-mC-/ were the last to be simplified.

3. Actually, the term 'nominalized forms' is partially correct here because 'attributives' can never be part of the predicate, at least not as they are analyzed in Mon.

4. Again, similar to what we witness in Mon.

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