An Extrusional Approach to *p/-w- Variation in Sino-Tibetan

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There are a surprisingly large number of Tibeto-Burman [TB] and Sino-Tibetan [ST] roots that show interchange between a labial stop and the labial semivowel /w/. These are not regular correspondences, where a given language consistently has a stop, while another consistently has a w. Neither can the distribution of stop vs. semivowel reflexes be correlated very neatly with particular subgroups of TB. Certain subgroups, notably Qiangic and Kamarupan, are split down the middle, with stop and semivowel reflexes equally common and distributed randomly. Naxi, genetically quite close to Loloish, usually has stops, while Loloish itself favors semivowels. Some languages (e.g. Lepcha) have doublet formations, with both stop and semivowel allofams descending from the same etymon. This phenomenon has been one of the most vexatious in TB comparison, and it is clear that Benedict was never satisfied with any of the many ‘explanations’, often mutually contradictory, that are offered in the text and notes of STC. In this paper I try to sharpen the theoretical issues involved in choosing one line of explanation over another, opting eventually for an ‘extrusional’ analysis.

Key words: extrusional, Sino-Tibetan, labial stop, labial semivowel

1. Introduction

There are a surprisingly large number of Tibeto-Burman [TB] and Sino-Tibetan [ST] roots that show interchange between a labial stop and the labial semivowel /w/. These are not regular correspondences, where a given language consistently has a stop, while another consistently has a w. Neither can the distribution of stop vs. semivowel reflexes be correlated very neatly with particular subgroups of TB. While it is true in a general way, as suggested in Benedict 1972:23 (henceforth ‘STC’), that ‘the initial stop of these roots tends to be maintained in the northern languages and in Mikir, while replacement by w- is common elsewhere’ -- e.g. Himalayish\(^1\) often has stops in these

\(^1\) We must resolutely reject any 19th century-type explanation in terms of geography, i.e. that mountain-dwelling people, with their superior lung capacity, had no difficulty in producing aspirated stops, while the softer inhabitants of the plains preferred semivowels.
words, while Lolo-Burmese, Karenic, and Jingpho usually have semivowels—these are by no means ironclad rules, and certain subgroups, notably Qiangic and Kamarupan, are split down the middle, with stop and semivowel reflexes equally common and distributed randomly. Naxi, genetically quite close to Loloish, usually has stops, while Loloish itself favors semivowels. Some languages (e.g. Lepcha) have doublet formations, with both stop and semivowel allofams descending from the same etymon.

This phenomenon has been one of the most vexatious in TB comparison, and it is clear that Benedict was never satisfied with any of the many ‘explanations’, often mutually contradictory, that are offered in the text and notes of STC: (a) At first he was inclined to ascribe the variation to now-vanished prefixes: ‘Here we must suppose that prefixed elements, present or discarded, have exerted an influence on the initial’ (p.23). Thus, The Karen data here might be used as an argument for recognizing doublet roots for TB, e.g. *r-wat and *pat ‘leech’ (n.373, p.139; these are what I would call ‘proto-allofams’). (b) Sometimes he tried the gambit of setting up ‘doublet roots’ where one of the variants was a true consonant cluster of stop plus semivowel: e.g. BAMBOO *g-pa = *g-pwa. (c) When all else failed, he was inclined to have recourse to his favorite deus ex machina, accounting for the irregularities in terms of ‘borrowings from Austro-Tai’ (e.g. n.78, p.24). (d) Finally he seems to have hit upon what I consider to be the most productive approach to an explanation, though he did not pursue it in any detail: ‘The unusually large number of these labial stop + w initial clusters in ST suggests a relatively late origin from a simple labial stop...’ (ibid.). This viewpoint seems to lie behind the strange-looking revised reconstructions to be found in Appendix I of STC (esp. pp.205-6), where we find ‘equivalent reconstructions’ of the form *pa = pwa, *pak = pwak, etc.

In this paper I will try to sharpen the theoretical issues involved in choosing one line of explanation over another, opting eventually for an ‘extrusional’ analysis that provides a plausible phonetic underpinning for alternative (d). For now let us simply list in formulaic fashion all conceivable ways of looking at the problem (some not envisioned by Benedict). Taking the syllable pak as a hypothetical representative root, the perceived variation between reflexes of the types PAK and WAK may be explained by any of the following scenarios:

2 Thus, e.g., many Lahu words with initial v- are reflexes of etyma with labial stop involvement: BAMBOO vâ, FROST/HAIL vâ, HIDE vâ?, PIG vâ?, SNAKE vî, etc.
3 These reconstructions were later contradicted by new notes (nn.78, 374), where LEECH was revised to *r-pat, as opposed to BAMBOO, with a ‘true cluster’: *pwa.
4 These seem identical to a notation using parentheses, i.e. *(w)p, *(w)ak, etc.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

- allofamic proto-variation \( *\text{pak} \approx *\text{wak} \)
- sporadic lenition \( */\text{pak}/ \Rightarrow \text{pak} \sim \text{wak} \)
- unit phoneme simplification \( */\text{p}^\text{wa}k/ \Rightarrow \text{pak} \sim \text{wak} \)
- cluster simplification \( */\text{pwak}/ \Rightarrow \text{pak} \sim \text{wak} \)
- prefixal prototype \( */(\text{p})\text{-wak}/ \Rightarrow \text{pak} \text{(by preemption)} \sim \text{wak} \text{(by prefix loss)} \)
- metathesis of prefix and initial \( */\text{C-pak}/ \Rightarrow *\text{pCak} \sim *\text{pwak} \sim \text{pak} \sim \text{wak} \)
  /where C- is perhaps a resonant/approximant /r l w y/; this seems to be close to Benedict’s original view/
- extrusion of -w- from labial stop \( *\text{pak} \Rightarrow [\text{p wak}], \text{followed by phonologization, prefixization,}^5 \text{ and prefix loss:} \)
\[ */\text{pak}/ [\text{p}^\text{wa}k] \Rightarrow */\text{pwak}/ \Rightarrow */\text{pwak}/ \Rightarrow \text{pak} \sim \text{wak} \]
  /extrusion, subphonemic phonologization prefixation prefix loss /

The body of this paper (Sections 2 and 3) will present the evidence for p/w variation in over 30 cognate sets,\(^6\) first where the nuclear vowel is *-a- (§2; sets 1-22), then where it is not (§3; sets 23-31). Finally (§4), I will discuss the various alternative analyses in more detail, attempting to demonstrate why the ‘extrusional’ approach is by far the most satisfying.

2. *p/w sets where the nuclear vowel is *-a-

(1) AXE \( *\text{r-p}^\text{wa} \text{ or P-p}^\text{wa} \text{ where P -} = /r- m- k- s-/ \)

STC #441; pp.24, 109, 133, 174, 187. Reconstructed as ‘PTB *r-wa = *r-pwa’.
(The original reconstruction was *r-wa). See also ZMYYC #408

With unprefix ed labial stop

Kamarupan Sulong \( \text{ba}^{35} \); Darang Deng \( \text{pa}^{35} \); Lhoba (Idu) \( e^{55} \text{ pa}^{35} \)

Several putative cognates have -i vocalism (cf. Ergong \( \text{lvi} \), Pumi \( \text{spy} \), etc., below):

Qiangic Guiqiong \( \text{pi}^{55} \text{ zi}^{55} \); Shixing \( \text{bi}^{55} \text{ mi}^{33} \)
Naxi Naxi Yongning (Moso) \( \text{bi}^{31} \text{mi}^{13} \)

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\(^5\) For an excellent example of this phenomenon, cf. the dropping of the velar stop from the initial of DOG, below 4.4.3.B(2).

\(^6\) It should be emphasized that most of these examples were already noted in STC; it is merely Benedict’s analysis of this unquestioned data that is at issue here.
Chinese

‘axe’ 錘 錘 GSR 101e *piwə/pju* WHB 7 *p(ə)ja > pju Mand. fū
斧 GSR 102h,i *piwə/pju* WHB *p(ə)ja? > pjux Mand. fū

Loans from Chinese:

Bai (Dali, Jianchuan, Bijiang) puu 53 [loan or real cognate?]
Sino-Vietnamese bua

STC also mentions Proto-Indonesian *rimbat*, without comment (n.78, p.24). For more megalospeculations, including a putative pre-TB borrowing from PAT *gwal/qwal of the form *qrwa/l, see ATLC, pp.110, 223. Proto-Tai *buo and *fu are ‘perhaps backloans from Chinese’; see Haudricourt 1960 (Principes, p.226). Not in Li Fang Kuei HCT.

With prefixed labial stop

(a) Liquid prefix
Milang ra-pu (no doubt [ʁpu]; this language is badly recorded);
Gyarung ʂa-rpye (notice the secondary palatalization)
STC n.78, p.24: we can now reconstruct TB *r-pwa rather than *r-wa for this root on the basis (of this rGyalrong form) [from Chang Kun 1968]
rGyalrong (Zhuokeji/Suomo) ʂə rpa (ZMYYC #778)

(b) Sibilant prefix
Pumi Jinghua spy 55; Pumi Taoba za 55 pə 55

(c) Nasal prefix
Naxi Lijiang la 31 mbe 33

With labiodental fricative
PTani *fa? (J. Sun 1993:100)

With unprefixed labial semivowel

PTani *fa? (J. Sun 1993:100)

Lolo-Burmese Hpun (Northern) khàw wà (the final glottalization is probably subphonemic; see Henderson/Luce 1986); Achang wa 55 tsun 51 (how to explain the final glottal stop? ZMYYC #408 has

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7 Reconstructions marked ‘WHB’ are according to William H. Baxter (1992). Since that time Baxter has revised his system somewhat: most importantly his former OC medial *-j- has now been reinterpreted as a short vowel, so that all reconstructions without *-j- are now deemed to have a long vowel. Baxter puts his OC medial *-r- in parentheses in environments where the Middle Chinese reflexes of OC *-j- and *-rj- have merged, and there is no independent xièshe evidence for the *-r-. My thanks to Zev Handel for providing me with Baxter’s reconstructions for the etyma presented in this paper. (Where Baxter 1992 does not explicitly reconstruct an etymon, Handel has deduced it according to the Baxter system.)
An Extrusional Approach to *p/-w- Variation in Sino-Tibetan

$u^{31}tɕɔ̞ŋ^{31}$; Zaiwa $vɛ^{21}tsuŋ^{21}$; Langsu (Maru) $vɔ^{55}tsaŋ^{31}$; Nusu $vɛ^{55}$; Yi Xide $vɬ^{33}mo^{21}$

Kamarupan
Chang wo; Geman Deng $a^{31}wăi^{53}$

Nungish
Anong $vɑ^{55}$; Dulong $wɔ^{53}$ (with secondary rhotacism)

Qiangan
Muya $tʃi^{55}vɔ^{55}$; Ersu $v StringBuilder.valueOf(55)$shua$^{55}$

With prefixed labial semivowel
(a) Liquid prefix

Qiangan
Ergong $li^{1}/$other exs. of *-$a >$ Ergong -$i/?$

Bodo-Garo
Dimasa $roa$; Garo $rua$; Kokborok $rua$

Himalayish
Tshangla/Motuo Menba bench-ra (ZMYYC has bigra)

(b) Nasal prefix

Jingpho $ǹwā ~ nǐwā$
These forms can also be referred back to the PTB *r- prefix, which frequently becomes a syllabic nasal in Jingpho nouns (STC, p.109); the form with nǐ= illustrates the Jingpho propensity for secondary syllabification of its prefixes (‘dimidiation’).

(c) Velar prefix

Karenic
Pwo and Sgaw $kwa$

STC, p.133: ‘discordant with TB’; but why more ‘discordant’ than the other languages with non-liquid prefixes?

(d) Sibilant prefix

Karenic
Bwe cu $iɬ-θa$ (perhaps < *s-wa)

Unrelated roots: [STC pp.21-22]

*st-da

WT sta-(g)ri (also ste-po) ‘axe’; PLoloish *da$^1$ > Lahu á-tà ‘knife’, Akha dá

Loloish reflects proto-voicing; the WT initial apparently devoiced because of the s- prefix. Several Qiangan forms are probably loans < Tibetan: Qiang (Taoping) $χta^{31}$ $z_i^{55}$, (Mianchi) $tɛ$ $z_i$, (Longxi) $tɛ$ $ί$. Qiang Mawo st$^a$ shows typical monosyllabization of the compound *sta-(g)ri.

*st-ay

WT gri ‘knife’ (≈ sta-ri, sta-re ‘axe’), Jg. mɑɡri ‘brass, copper, tin’, WB krɛ ‘copper’.

To the forms in STC #39, add: Lahu $lɑ$ ‘copper’; Khoirao andri ‘knife’; Lushai hrei; Tiddim hei; Gallong egi; Pattani kɔrzi ~ mɑkuzi; Qiang (Taoping) $χa^{31}$ $z_i^{55}$, (Mianchi) $tɛ$ $z_i$, (Longxi) $tɛ$ $ί$

*st-yan

I have just established this root for ST: Lahu $ā-cɛ$, cɛ-cɛ ‘traditional pick-axe’ < PLB *jyan$^2$; this seems to go perfectly with ㄏ, 𠡢 OC *kjæn. [GSR 443a-d] / [WHB 59] OC *kj$^i$ın > MC kj$^i$ın > Mand. jǐn. This graph is the signific in 斧
GSR 102h-i  *pjwo. This word also appears in Tai: PTai *xwaan, Proto-Kam-Sui *kwan (HCT pp.240-1); in Northern Tai dialects the initial velar is dropped (e.g. Po-ai vaan). WB pu’-chin looks like a double loan, with the first syllable from *p"a (via Chinese?) and the 2nd syllable from Chinese *kían. (The WB tone of the second syllable [< *1] does not agree with Lahu cè [< *2]. Besides PLB *-in > Lh. -ê) Since WB preserves PTB *-wa as such, and since LB drops the stop in these *p" words, the first syllable has got to be a loan into WB.

(2) BAMBOO/CANE  *p"a

STC vacillates in its reconstructions of this etymon. In #44 (pp.23-4), it is set up as PTB *r-wa (but this is not listed in the Index p.209). This is revised to ‘*g-pa = *g-pwa’ in the Index on p.205. See pp.114, 115, 138, 139, 151, 188. See also ZMYYC #183, and DL, p.1319.

With unprefixed labial stop

Qiagic

Qiang Mianchi pù; Qiang Longxi pò ti

Lolo-Burmese

Hani Caiyuan (Biyue) s31 pu55; Hani Dazhai xa31 bo55;
Hani Shuikui (Haoni) x31 pu55

Chinese ‘bamboo’ 白

[GC 39c] OC *på  WHB *pra > pê > bā

#9 not in GSR 39

With prefixed labial stop

(a) With sibilant prefix

Written Tibetan spa~sba ‘cane’; Qiang Taoping

χpu55; Qiang Mawo şpu

(b) With velar prefix

Mikir kēpho

With w- or v- (unprefixed)

Lolo-Burmese

PLB *wa2  WB wā; Achang o31; Zaiwa va21; Langsu vo35; Lahu vā; Yi Nanjian va21, dz15; Nusu (Bijiang) vo55; Jinuo vo33

Kamarupan

Garo wa

Karenic

Pwo, Sgaw wa

STC p.138 call the initials in these Karen forms ‘secondary’, as opposed to the w’s in TOOTH and BLOOD. PKB proposes *hwa for the Proto-Karen reconstruction, because the word occurs in the HIGH tonal series (see the references to

8 GSR glosses ‘a kind of fragrant herb; flower’.
9 Guangyun glosses ‘type of bamboo with thorns’.
Haudricourt’s Proto-Karen reconstructions in notes 347, 369, 370). But by analogy with Loloish developments (see JAM 1972 [TSR] Class DD, pp.68-70), any hypothetical voiceless prefixal element would do as well to explain the tone (*k-wa, *s-wa, *p-wa, *t-wa...*)

With prefixed semivowel
(a) Velar prefix Jingpho kawá~wá
(b) Liquid prefix Lushai rua (< *r-wa)
(c) Sibilant prefix Motuo Menba so (? < *s-wa)
(d) Dental prefix Nung thɔwa (STC, p.115)
(e) Nasal

An interesting group of Qiangic forms seem to point to a doubly prefixed prototype *m-r-(w)a, with the *r- often fricativizing to Ω:
Pumi Jinghua mζ55, Ergong wζwu; Muya ŋ53 mbu25 tɔ53; rGyalrong Suomo nyjo

A number of other Qiangic and Loloish forms begin with m-, and could well be reflexes of a singly prefixed prototype *m-wa, where the prefix has preempted the root-initial, *m-[w]a:

Qiangic
Pumi Taoba me53; Queyu me53 Namuyi ma35; Shixing mie55; Guiqiong me53

Loloish
Naxi mu55; Yi Xide ma33; Yi Mojiang me55; Mile (Ahi) mo33 to33; Lisu ma44d33

A similar form is found in the so far unclassified Tujia language:
Tujia mu55

Abor-Miri has a bunch of puzzling forms with liquids, that are of doubtful relationship to our etymon. Could there have been a development *p"a > b'q?

Geman Deng māi35 b33 (1st. syll. ? < Tai; cf. Siamese máaj ‘tree, wood’); Lhoba (Idu) a31 b'35 l35; Lhoba (Bokar Adi) ja:
The second syllable of the Darang Deng form ta31 l33 is cognate to the last syllable of the Idu. Check Jackson’s dissertation; does he reconstruct this root for Proto-Tani?

(3) BELLY4 *p"am

Along with several other roots in this semantic area (to be presented en bloc below, #’s 23a-d), JAM 1978 (VSTB: pp.126-7) sets up a root *pam ≈ *wam:

With stop initial Jingpho pù-pham ‘stomach’, Tangkhul Naga ā-phur-ā-pham ‘belly’

With non-stop initial
James A. Matisoff

Lolo-Burmese  
WB wâm; Lahu go-pê (see note 54 for the initial); Zaiwa vâm; Maru wên (all ‘belly/stomach’) < PLB *wâm\(^2\)

(Kamarupan)  
Mikir vâm ‘waist, loin’; Lushai von-a-sôr ‘have diarrhea’; Lakher a-vy, pa-vy ‘stomach’ (-y is the regular Lakher reflex of *-am [VSTB n.170]); Tamulu hwum ‘belly’

(4) BIRD  
*bwa

STC sets up two separate roots:
(1) *bya \(\approx\) *bra (#177): This root shows semantic connections with BEE:
WT bya ‘bird, fowl’; PLB *bya\(^2\) ‘bee’
(2) *wa = (b)wa’ (#99): This etymon Shows semantic connections with FEATHER, and is the one that shows stop \(\approx\) semif vowel interplay, to the point where Benedict himself throws up his hands: ‘Roots reconstructed in initial *w- on the basis of evidence from southern TB languages alone...must be regarded as uncertain entities, especially when (as in #99) possible cognates with initial labial stop have been uncovered.’\(^{10}\)

(a) Reflecting a stop initial
Himalayish
Bahing ba
(STC p.35: ‘perhaps a borrowing from WT bya; puts us in doubt on the matter’)
Lepcha fo
(STC p.35: Says this Lepcha form is ‘not conclusive’; but then adds: ‘Lepcha has f- for ph- in a number of roots, as well as f-~ph- alternation’\(^{11}\))

(b) Reflecting a semivowel initial  
Kamarupan  
Lushai sa-va; Mikir vo; Ntenyi awa ‘bird’, aowa ‘id’ (< *awu-(a)wa), aowa-anu ‘feather’ (lit. ‘bird-mother’; Ao Mongsen towa ‘feather’)

Himalayish  
Chepang wa

Loloish  
Nyi wa

\(^{10}\) It is certainly possible that these two separate STC roots are related to each other: *bya < *bra. Come to think of it, maybe the root for FLY (v.) *byam is also allofamically related! Cf. rGyalrong (Zhuokeji) ka-bjam ‘bird’, WB pyam, Jg. pyên, Lahu pô ‘fly’ (ZMYYC #142). (Reconstructed incorrectly as *pyam in STC.)

\(^{11}\) E.g. Lp. far-~far ‘price’ \(\approx\) par ‘buy’ (WT phar ‘interest’, Kanauri be-par ‘trade’, Gyarong mphar ‘be for sale, Garo phal) (STC n.113).

\(^{12}\) For more discussion see JAM 1985 (‘Arm, hand, and wing...’, pp.444-5.)
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

Possible Chinese comparandum:
羽 ‘wing; feather’ [GSR 98a-b] *giwo; PKB (p.c.) reconstructs as *g-wa. [WHB:C805.10] *w(r)ja? > MC hjux > Mand. yǔ

We must also reconstruct a separate (though probably ultimately related) root *p’u EGG/BIRD [see (23) below].

(5) CHAFF PTB *p’ay

STC #170 sets up this root as *pway, with no alternant like **pay or **way suggested anywhere (STC pp.46, 140, 149, 150, 152.) Yet this root is no different from any of the others in terms of stop ≈ semivowel interplay. There are differences in terms of the distribution of the variants, however. In this case, Lolo-Burmese preserves the stop; the reflexes in v- or w- seem confined to Kamarupan (though many Kamarupan languages also preserve the stop). If the Jingpho forms with labial stops meaning ‘be blown; scattered’ are cognate (see below), this is also different from the usual w- reflex that Jingpho shows in the other *p’- etyma. See also ZMYYC #406; GEM p.130; GSTC #77.

(A) With labial stop plus -w- or -f-

Lolo-Burmese

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Meaning</th>
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</thead>
<tbody>
<tr>
<td>PLB</td>
<td>*pway²</td>
<td>‘chaff from paddy’; và?-phû ‘powdery chaff fed to pigs’;¹³ Achang oî³³³³³ phoi³̂êe³¹ (1st syll. is ‘pig’; cf. Lahu và̀-phû); Zaiwa phui²¹tip; Langsu (Maru) phoi³sê³¹; Nusu (Bijiang) phê³əî³¹; Mpi ko² phû²; Yi Nanjian pê³¹; Yi Nanhua pê³¹se³³; Lisu phû¹³se³³; Hani Shuikui phû¹³xà³³; Jinnuo pha⁵⁵xhû³¹phç³³xhà³¹ (is it the 1st or the 3rd syll. which is cognate?)</td>
</tr>
</tbody>
</table>

Kamarupan

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lushai</td>
<td>phuai</td>
<td>Pankhu phawai (note the overtly transcribed sesquisyllabicity); Sopvoma (Mao) u-pfai</td>
</tr>
<tr>
<td>Tujia</td>
<td>phê⁵⁵tha⁵⁵</td>
<td></td>
</tr>
</tbody>
</table>

(B) With plain labial stop

Kamarupan

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puiron</td>
<td>bai</td>
<td>Ntenyi phai; Maram a-peî; Mikir phe-ke; Zeme kepai (with velar prefix); Liangmai cha-phai; Khoirao mphi (with nasal prefix -- CHECK); Lakher paî ‘be scattered, ¹³ The vowel correspondence is irregular; PLB *-ay &gt; Lahu -e; apparently *-way &gt; Lh. -i, as in TOOTH (PLB *jway³¹) &gt; Lahu cì. See GSTC #77.</td>
</tr>
</tbody>
</table>
disperse; emigrate, migrate’; Tangkhul khapuy ‘fly in a group (bees), swarm; be scattered everywhere’

**Jingpho**
Jingpho pōi ‘be blown, airborne, as fine chaff; be carried away by the wind’ (cited in GSTC #77), ŝapōi~ŝapōi ‘let scatter; cause to float in air’ [Maran] (with causative prefix); for the semantics cf. the Lakher and Tangkhul forms, above.

**Qiангic**
Muya mbuí (with nasal prefix); Qiang Mawo pa; Namuyi phg33 da55 bo33

**Karenic**
Pwo, Sgaw phe

(C) With f-, w-, or v-

**Kamarupan**
Lotha o-fu; Tiddim vaį;14 Thado wai; Maring wai; Meithei way; Konyak wek;15 Chang ek

**Qi Nghic**
Guiqiong fu55[s]\[33

*With prefix:* Hallam (Falam) sā-vāi (LSI iii:195); Rangkhol ̄sēbai~śēvai (note the stop ≈ fricative alternation)

(6) FIRE/BURN/SHINE/BRIGHT/LIGHT

This ‘spectacular’ word-family was first presented in JAM 1997 (‘Laryngeals’). First of all, I am claiming that three sets reconstructed separately in STC16 (#220; #221; pp.172, 174) are all really allofamically related:

STC #220: *bar/*par, revised to *bwār ≈ *pwār

Nung hvar ‘burn, kindle’; Jingpho ṭwān, Moshang var, Garo waį ‘fire’; Chairel phal (< *par), id., and Written Tibetan ḅar-ba ‘burn, catch fire, sbo-r-ba ‘light, kindle’, Kanauri bar ‘burn’, Miri par ‘light (fire)’

STC #221: *hwa-t

For similar alternation between pw- and hw-, cf. WB phwak ≈ hwak ‘hide’.

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14 Chin reflexes like this motivate STC’s reconstruction of a long vowel.
15 French 1983 sets up Proto-Northern Naga *C-weg as the ancestor of the Konyak and Chang forms, postulating metanalysis of a compound like the Mikir form, above.
16 For a similar effort, see my paper, ‘Universal semantics and allofamic identification -- two Sino-Tibetan case-studies: STRAIGHT/FLAT/FULL and PROPERTY/LIVESTOCK/TALENT’ (1988), where I grouped into the same word family two other separate STC roots, both reconstructed *dyam (#227 ‘straight’ and #226 ‘full, fill’).
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

STC pp.172, 174: PTB *pwaɾ 'white'
Lushai var 'white'; Proto-Karen *ʔ(b)waɾ 'white'

To these we may then add a number of new supporting forms with laryngeal initials which point to slightly different but related prototypes:

*pwa: Apatani hú-tô ‘light (n.)’; Chepang haʔʔo ‘shine’; Kulung ha-me ‘shine’; Ntenyi wu-ghu
*pwa: Sangtam a-vi-sa ‘bright light’
*pwa: Damu (AMD) wat ‘glimmer’; Limbu oːtt-, oːts- ‘burn, give light, shine’; Manang wE¹
*pwa: Dumi hêt-nt ‘burn’, Bahing hêt- ‘id.’
*hant: Limbu hând- ‘light (lamp, cigarette)’
*yat: Chairel id ‘burn, catch fire’
*(h)wan: Tangkhul han ‘shine’; Lotha and Mao won ‘id.’; Milang a-un ‘bright, light’; Damu wun-pit-dung; Chang wan ‘fire’, Yacham-Tengsa wa-si ‘id.’
*hwan: Lepcha om, etc. [STC]; Chepang hyumʔ-sa ‘burn, scorch’
*(h)wən: WB wąp ‘yellow’; Tagin ong-ka-nam ‘shine’, hung ‘id.’; Konyak wang-ngai ‘bright light’
*yə: Bokar Adi a-jen, Bokar a-en ‘shine’
*(h)wəl: Thulung hal = ul ‘heat slightly’, wal ‘boil lightly’; Lushai hål ‘light, ignite’; Tiddim hæl ‘burn’; Tangsa (Yogli) wæl ‘fire’; Dimasa wai
*(h)wər: Tangkhul hor ‘shine’; Maring war ‘bright light’; Limbu haqr- burn, alight’; Limbu oʔʔ-u, oʔʔ-ma ‘fire’; Mikir ar-nu ‘roast, bake, grill’; Thakali ur ‘yellow’; Gurung (Ghachok) ur-gya: ‘id.’; Chepang yar-o ‘yellow’; Magari or-khe ‘id.’; Hayu ho ‘id.’ (Lushai var ‘white’ belongs here)
*yər: Ao (Chungli) yar ‘shine’; Khaling ehr-nya; Yimchungru yin ‘kindle’

We can summarize these relationships by constructing a ‘pan-allofamic formula’ (PAF), as follows:

\[
\begin{array}{cccc}
  h & w & N & t \\
  a & y & r \\
  p/b & l \\
\end{array}
\]

On the Chinese side, several promising comparanda are available.
(a) STC (pp.172, 174) already identified PTB *pwaɾ ‘white’ with:
(b) STC (p.172) identifies set #220 with two Chinese words:

<table>
<thead>
<tr>
<th>Chinese Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>火</td>
<td>*bwa'</td>
</tr>
<tr>
<td>燔</td>
<td>*b'jwå‘</td>
</tr>
</tbody>
</table>

Another good candidate for relationship (the two characters are graphic variants of each other):

<table>
<thead>
<tr>
<th>Chinese Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>燈</td>
<td>‘flame; bright(ness)’</td>
</tr>
<tr>
<td>輝</td>
<td>‘bright’</td>
</tr>
</tbody>
</table>

For the semantics, cf. PIE *bhel- ‘shine; flash; burn; shining white and various bright colors’ > Eng. black, blank, Blanch, bleak, bald, bleach, blue, blaze, Blind, blend, blond, blink, etc.18

Finally, I would like to include the Chinese word for ‘moon’, one of the ‘bright beings of the night’, in this word-family:19

<table>
<thead>
<tr>
<th>Chinese Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>月</td>
<td>‘moon’</td>
</tr>
</tbody>
</table>

(7) FLOWER | *bwar

This root is set up as *bwar in STC (p.24, n.78), and is strikingly confirmed by the Sulong form (below).

With stop initial

<table>
<thead>
<tr>
<th>Language</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kamarupan</td>
<td>Sulong (ZMYYC) mɔ33 buat53</td>
</tr>
<tr>
<td>Qiangic</td>
<td>rGyalrong (Chang 1968) tapat; Shixing bu33 bu33</td>
</tr>
<tr>
<td>Greater Lolo-Burmese</td>
<td>Naxi Lijiang ba31; Naxi Yongning (Moso) ba13; Jinuo a33 po33</td>
</tr>
</tbody>
</table>

With semivowel initial

<table>
<thead>
<tr>
<th>Language</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nungish</td>
<td>Trung ʂin54 ut44 (first syllable ‘tree’); Anong çun55 yen55 (with homorganic nasal final)</td>
</tr>
<tr>
<td>Proto-Lolo-Burmese</td>
<td>*sə-wat11</td>
</tr>
</tbody>
</table>

17 The Guangyun glosses the meaning of this character as ‘white-haired appearance of the elderly’. It has two readings, one the same as ‘grandmother’ and the other the same as ‘wave’.

18 What have I done! Now Greenberg has more ammunition for his Proto-World speculations.

19 Cf. Matisoff 1980. Admitting this word into the family would require adding ɲ- to the initial consonant slot of the PAF. Perhaps it is a ‘rhinoglottophiliac’ outgrowth of the original PST initial h-.. See Matisoff 1975.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

WB wat-cham ‘stamen, anther, and pollen of flower’; Lahu ši-vēʔ, š-vēʔ

Many similar Loloish forms are cited in TSR #185 and in ZMYYC #228. The *sa- prefix is a reduced form of PLB *sik < PTB *siŋ ‘tree’.

(8) FROST/SNOW  *s-p^w-a(l)

This root was first set up in JAM 1997, p.44.20

Qiangic (STOPS)  Pumi Jinghua sp yi55; Pumi Dayang²¹ φpî; Pumi Taoba pu⁵⁵; Qiang Taoping χpa²ⁱthu³³; Qiang Longxi pià-thò; Qiang Mianchi peî-thòù

Notice the secondary palatalization in Longxi pià; the *s- prefix is directly attested in Jinghua, Dayang, and Taoping.

Himalayish (STOPS = w)

Tibetan shows interdialectal variation among labial stops and w:

Written Tibetan ba-mo (why no final -l?); Lhasa Tibetan pha¹³-mo⁵³; Sde-ge (Khams) pa³¹-mo⁵³; Amdo val (ZMYYC: Xiahe (Bla-brang) and Zeku); also Motuo Monpa ba

But other Himalayish forms have only w-:

Chepang wer; Geman wal³⁵ (where from?)

Qiangic (STOPS = w) rGyalrong (Zhuokeji/Suomo) tri jpa (ZMYYC #379);

Tey-va  rGyalrong (Kyomkya) (Nagano 1998); Muya vur⁵⁵; Ersuž]⁵⁵ ‘frost’ (cognate? cf. Sulong kʰa³³ zuth⁵³ ‘snow’).

The following forms are apparently loans < Tibetan: Muya pa³⁵mu⁵⁵; Queyu pa³⁵mu⁵³; Shixing pe⁵⁵mu³³

The second syllables of the following forms are to be related to the Tibetan suffix -ba/-wa (cf. WT kha-ba): Ergong nkh eva; Queyu kha⁵⁵wa⁵⁵; Guiqiong kh³⁵wu⁵³

Nungish (w)

Dulong wâ³³ dzunj³⁵ ‘frost’, tur¹ wân³³ ‘snow’; Among thi³³ven³³ (the final -n is apparently the reflex of *-l)

Loloish (w or v or φ)

Hani φo³¹ (Gao Huanian 1955); Hani Shuikui x⁵¹; Hani Caiyuan c³¹; Lahu vâ-may ‘snow’; vâ-si ‘hailstone’; Yi Nanjiang mui⁵⁵fu³⁸ ‘frost’ va²¹ ‘snow’ (note this doublet!); Yi

²⁰ Another new root for FROST is *s-ŋar > e.g. rGyalrong (Zhuokeji) sŋa, Bengni ŋur-kam, Zaiwa ŋan³³phju³¹, Achang ŋan³⁸, Langsu ŋaŋ (with assimilation of final to initial), WB ŋnâŋ-khāi (with metathesis of the two nasals), Lahu a-ŋa.

²¹ This form is homophonous in Dayang with the word for AXE: φpî. See 4.1.
Xide vo\textsuperscript{33}; Yi Dafang vu\textsuperscript{33}; Yi Nanhua, Mojiang, and Mile (Axi) yo\textsuperscript{21}; Lisu u\textsuperscript{31}; Nusu va\textsuperscript{55}

Naxi (STOPS) Naxi Lijiang mbe\textsuperscript{33}; Naxi Yongning bi\textsuperscript{33}

Of doubtful but perhaps related affiliation (with -r- extrusion instead of -w-?):

\textit{Abor-Miri-Dafla} Lhoba (Idu) a\textsuperscript{31} p\textsubscript{35}u\textsuperscript{55}; Darang Deng ta\textsuperscript{33} p\textsubscript{35}u\textsuperscript{55}

(9) GRANDMOTHER\textsuperscript{1} *b\textsuperscript{wa}

STC pp.24, 100, 174, 187; see below (31) for a more detailed presentation.

\textit{With stops} WB ṭəphwā~?əbwā\textsuperscript{22}

Cf. Chinese 婆 [glossed ‘saunter; dance’ in GSR 25q] *b’wā

[WHB] OC *baj > MC ba > Mand. pó

\textit{With semivowel} Ersu a\textsuperscript{33} wā\textsuperscript{55} (ZMYYC #318)

(10) HALF *p\textsuperscript{wak}

Here STC sets up *pwak, with a true cluster (pp.24, 122).

\textit{With stops} Qiangic rGyalrong (Chang 1968) aph\textsubscript{22}k; rGyalrong (Zhuokeji/Suomo) wu ph\textsubscript{35}k; Pumi Taoba ph\textsubscript{35}a; Ergong a ph\textsubscript{35}a

Loloish Yi Dafang ph\textsubscript{35}a; Hani Caiyuan ph\textsubscript{35}a, Jinuo ph\textsubscript{35}a,

Baic Bai Dali/Jianchuan a\textsuperscript{33} po\textsuperscript{21}

\textit{With semivowel} WB wak ‘to halve’, əwak ‘a half’

Forms pointing to *k\textsuperscript{-wak} (Qiangic) Shixing d\textsuperscript{33}i33 qh\textsubscript{55}ue; Qiang Mawo kh\textsubscript{33}a qh\textsubscript{55}ue

We are still far from having figured out all the words for HALF. Probably representing an independent root are a couple of forms with liquid initials:

Tangkhul rak; Chepang hlak

(11) HIDE *s-p\textsuperscript{wak}

STC #46 (pp.24, 50); reconstructed as ‘*pak = *pwak’ (p.205). See also TSR #178, ZMYCC #668.

\textsuperscript{22} No other Lolo-Burmese cognates have yet been uncovered, though there are many LB reflexes of GRANDMOTHER\textsuperscript{2}.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

With labial stop

Himalayish
Written Tibetan phag ‘sthg hidden; concealment’

Lolo-Burmese
Written Burmese phwak ‘hide, conceal’ (v.t.)

This WB doublet reflects PLB *s-wak, with causative prefix. Both phwak and hwak are transitive; hwak is more literary.

With labial semivowel

Lolo-Burmese
PLB *wak > Lahu vâʔ (intransitive; Lahu also has a causative/transitive form fá < Proto-Loloish *wak < PLB *s-wak); 25 Akha zàq; Nasu vy55; Yi Dafang va13; Yi Mojiang yu33; Hani Caiyuan v55 ma1; Hani Dazhai g3; Hani Shuikui xe55 tju55; Jino va55; Zaiwa xat55; Langsu fj55

Kamarupan
Lakher vao; 26 Angami ʔke’veie (Weidert 1987), ke-va-le, ke-va-lice (Marrison); Chakru ʔkv3va; Lotha mpo-vat (the -t instead of -k is unexplained)

(12) HOOF *k/-s-p’a

This is a brand-new root, perhaps to be reconstructed something like *k-wa ≠ *s-pa. Most of the forms are from ZMYYC #175.

*k-wa

(Qiangic)
Pumi Taoba kua55; rGyalrong (Zhuokeji/Suomo) ta-ka; Ergong zko; Muya qu3shu3; Queyu nc55hê53; 27 Guiqiong ngu55; Ersu nkhu55; Namuyi qha55tse33; Shixing khe55

---

23 This form is mis-cited as phak in STC #46 (p.24), but is given correctly on p.50.
24 Although nearly all LB languages reflect a prototype with simple initial *w- for the intransitive verb ‘hide’ (see below), there is no WB form wak (contra STC, n.79, p.24; this erroneous form was later repeated in TSR #178 and DL p.1326!). Burmese uses a morphophonemically unrelated form pìn for the intransitive verb.
25 For the devoicing of the initial and the Lahu high-rising (instead of low-stopped) tone, see Matisoff 1970 (GD) and 1972 (TSR). There is also a Red Lahu variant with stop initial, phá. This is a perfect homophone of Lakher vao ‘pig’, just as Lahu vâʔ means both PIG and HIDE.
26 This is the first syllable of this Queyu form, of unknown meaning, undoubtedly reflects a morpheme that is the source of the syllabic nasals in Guiqiong, Ersu, and Anong.

James A. Matisoff

(Nungish)
Anong ɲ\textsuperscript{31}gpu\textsuperscript{31}n\textsuperscript{31}

(Lolo-Burmese)
WB khwa; Nusu khu\textsuperscript{35}; Yi Xide kha\textsuperscript{33}; Yi Dafang kho\textsuperscript{31}; Naxi Lijiang khu\textsuperscript{33}be\textsuperscript{31}

*s-pa

(Qiangic)
Pumi Jinghua spa\textsuperscript{55}; Pumi Dayang [JAM] φp̄

Much work remains to be done on words for HOOF. Several other distinct etyma are to be reconstructed here, including one like *krok <> *kroŋ: Jingpho likh\textsuperscript{3ū}ʔ; Dulong tci\textsuperscript{31}g\textsuperscript{55}; Darang Deng g\textsuperscript{35}tιŋ\textsuperscript{55}; Idu ka\textsuperscript{55}.

(13) LEECH  *k-r-pʷat

STC takes this root as an example of prefixal variability (p.103). See ZMYYC #167; STC #45 (pp.23-4), and pp.2, 20, 103, 109, 115, 121, 132, 138-9, 144.

With unprefixed labial stop

(A) Himalayish Written Tibetan srin-bu pad-ma (the unaspirated initial points to a lost prefix; \textit{also pad-pa?}), Tibetan (Amdo) nbо pe-pa (nba ‘bug’ (=WT ḡbu); Lepcha fot (with lenition))

There are several other examples of *p > Lp. f. STC p.35, n.113: ‘Lepcha has f- for ph- in a number of roots, as well as f-~p- alternation.’

Monpa Motuo pat-pa, Monpa Cuona pa\textsuperscript{55}

(B) Qiangic\textsuperscript{28} Pumi (Taoba) phie\textsuperscript{55}; Pumi (Jiulong) phε\textsuperscript{35} ‘water leech’, bo\textsuperscript{55} ‘land-leech’; Shixing be\textsuperscript{53};

(C) Other Naxi (Lijiang) py\textsuperscript{55}; Tuji phie\textsuperscript{55} la\textsuperscript{55}

With unprefixed labial stop plus resonant

Dulong (Nujiang) ne\textsuperscript{31} phrat\textsuperscript{55} (Sun Hongkai 1982, LaPolla 1987); Chepang pyaat

Prefixed

(A) With velar prefix

---

\textsuperscript{28} Several Qiangic forms have nasalized vowels: Queyu phã\textsuperscript{55}, Pumi (Jinghua) sphã\textsuperscript{31}, Pumi (Lamiping) fphã. These look as if they go with the WT form cited in TBL #364: dphã-po (where the a-chung ‘h’ represents nasalization). This form, however, is not to be found in Jäschke. These forms may represent an allofam with homorganic final nasal *pan.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

Jinuo ke³³pjo³³ (note palatal semivowel); 29 Darang Deng ka³¹pe⁵³, Idu ka³¹pi⁵³, Digaro kape

(B) With dental prefix

Miri ttpat; Bokar Idu ta pet; Nung daphat (also phaphat; see (C) below); Lakher tša (‘< *d-wat (the *d- prefix here is of relatively late origin)’; STC p.103)

(C) With nasal prefix

(a) Syllabic

Dulong (Dulonghe) mtr³¹pat⁵⁵ (Sun 1982, LaPolla 1987), Dulong (Nujiang) n³¹phrat⁵⁵ (ibid.); Meithei tin-phha; Mikir in-phat (‘< *mpat; STC p.103)

(b) Non-syllabic (Nungish) Nung phaphat (claimed to be < *mpat [STC p.143]; also daphat; see (B) above); (Qiangic) Namuyi mbi³³; rGyalrong (Zhuokeji) smon mbe kαlu (kαlu ‘insect’); Lusu mbi³³, (Loloish) Yi (Xide) mbi⁵⁵

With labial semivowel as the root-initial

Kamarupan Lushai van-vat; Chang wat

Jingpho-Nung Jingpho wot

Karenic Sgaw wa? ‘small black land-leech’ (STC pp.138-9); Pwo wa? ~ θwa?

Loloish PLB *k-r-wat > PLoLoish *wat⁴ [TSR #167]

Lahu vế?; Lisu ve³¹; Yi (Dafang) ve³¹; Yi (Mojiang) a²¹ vi²¹ Yi (Nanhuai) zi³³ ve²¹ (1st syll. means ‘water’); Yi (Weishan) yu⁵⁵ vi²¹ (id.) ; Yi (Mile) sα²¹ vi²¹; Sani se¹¹vi²; Nusu a³¹ fu⁵³

Three forms from Hani dialects require special comment:

Hani (Dazhai) a³¹ cê³¹; Hani (Shuikui) a³¹ cê³¹; Hani (Caiyuan) ji³¹ ts²³

The Dazhai and Shuikui forms with palatal sibilant initials might reflect a secondary prefix (*s-wat), which preempted the root-initial w-. This hypothetical prefix *s- might be derived from a morpheme reflected in the first syllables of the Mile and Sani forms. It would be attractive to guess that this means ‘animal’ (cf. PTB *syå), though the Mile word for ‘meat’ is not sα²¹, but rather xo²¹ [ZMYYC #399]. It is probably the first syllable of the Caiyuan form (ji³¹) which is derived

29 TBL (#364) cites Jinuo ko³³tho⁵⁵, where the 2nd syllable could conceivably come from *d-wat, though this is a mere guess.

30 TBL (#364) cites Lisu (Nujiang) bγ³¹lg³³, which resembles the equivocal Qiang Mawo form bulu. See n.32.
from *wat, since it has a constricted vowel ('j' stands for the semivowel [y] in the transcription), though the meaning of the 2nd syllable is unknown.31

With dental prefix (*d-wat \(\approx\) *s-wat)

Kamarupan Geman Deng t\(^{21}\)wat\(^{53}\)

Karenic Pa-O t\(^{2}\)wa?; Pwo \(\theta\)\(^{3}\)\(\text{wa?}\)\(\sim\)wa?; Sgaw \(\theta\)u? ‘land-leech’ (‘< *\(\text{\theta}\)\(\text{wo}\)’?': STC p.132)

Karenic (Sgaw, Pwo) shows variation between plain and prefixed reflexes of this etymon. It seems likely that all the Karenic forms with t- or \(\theta\)- onsets reflect prefixal *s-, similar to the Hani forms just cited. For a Karenic (Palaychi) form with liquid prefix, see below.

With velar prefix Sulong ko\(^{33}\)vat\(^{53}\)

With liquid prefix (*r-wat)

Himalayish Magari l\(^{\text{q}}\)wat

Kamarupan Garo ruat; Angami Naga reva; Rangkhol e-r\(^{\text{vot}}\) (with superadded vocalic prefix e-)

With both velar and liquid prefix *k-r-wat

Written Burmese krwat

/Hence the PLB reconstruction *k-r-wat in TSR #167./

With apparently a double liquid prefix *l-r-wat

Palaychi (Karen) l\(^{\text{r}}\)o

STC (p.132) derives the *s-wat in this form from *s-wat. If this is correct, it indicates that a second liquid prefix was superadded to the first: *l-r-wat.

With fricative initials

These look like loans from Chinese 蛞 (Mand. \(\text{zh}\)):
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

Bai (Jianchuan, Dali) ʨi^44; Bai (Bijiang) qa^55ʦi^55 (with velar prefix); Ersu tu^33ʦi^55 (with dental prefix); Naxi (Yongning) ʨi^13

(14) LEFTSIDE *b^w^ay

STC reconstructs as ‘*bay = *bway’ (#47); see also GSTC #80, ZMYYC #50.

With stop initial

Jingpho  pāi ‘left’, lāpāi ‘lefthanded, awkward’, ɔpāi ‘be awkward, speak with a brogue’

Himalayish  Thebor ba-e

Burman  WB bhai ‘left’

Baic  Bai Dali pi^55, Bai Jianchuan pi^55ev^33no^33

Certainly related is *pay < *bay LAME/LIMP/ASKEW [GSTC #124]; cf. e.g. Lushai bāi ‘limp, be lame; hop’, pāi ‘stagger, reel; have a foreign accent’

With semivowel initial

Lolo-Burmese  WB lak-wāi ‘left hand’, wāi ‘speak with a brogue’; Lisu lā^ręb^1 (Fraser), le^3yũ^55 (ZMYYC); Mpi la^2ʔo^2; Yi Xide la^4y^1^33, Nusu u^55a^53; Naxi Lijiang u^55cy^11; Naxi Yongning yu^a^33dz volcano^33; Jinuo la^33vu^33

Kamarupan  Tangkhu wui-šoŋ ‘left’ ~ phui kasing ‘lefthanded’ ~ yuy-paŋ ‘left hand’; Mikir ar-vi; Meitei ʒy; Lushai vei

Himalayish  Lepcha vi-m;

Qiangic  Pumi Taoba we^55tche^53; Pumi Jinghua ud^13

With velar prefix plus semivowel (*g-way)

Kamarupan  Geman Deng ku^31wāi^53; Darang Deng tu^31kiu^55

Qiangic  rGyalrong (Zhuokeji/Suomo) ka wi

Nungish  Dulong d^51gāi

(15) MAN/HUSBAND/FATHER/PERSON *p^wa

STC artificially sets up two separate roots, though they are certainly one and the same: STC #24 ‘father’: ‘*pa = *pwa’ (pp.19, 23, 58, 96, 100, 113, 118, 121-2, 134, 174, 187-189); STC #100 ‘man; husband’: ‘*wa = *(p)wa’ (pp.24, 35, 100, 132, 138, 174, 187). See also ZMYYC ‘father’ #319; ‘husband’ #337; ‘man’ #290; and TBL ‘father’ #218; ‘husband’ #247; ‘man’ #173. This root is very often preceded by the ‘kinship prefix’ a-/o-, originally of vocative meaning. See STC pp.121 ff.
With labial stop

Himalayish

WT pha, ða-pha

Kamarupan

Garo pha, ða; Lushai pa; Geman Deng pāñ; 33 Darang Deng a31-ða31; Lhoba (Idu) na-31ba35; Bokar Adi a-bo; Sulong a33-pa33

Lolo-Burmes

PLB *ba3 > WB bha’, ða-bha’; Achang a31-ðhɔ31; Langsu a31-ðho55; Lahu pa, ð-pa; 34 Yi Xide a21-bo33; Yi Dafang a31-ða31; Yi Nanhua a31-ðbo21, a31-ðho21; Yi Mile (Axi) a31-ðh21; Yi Mojiang a31-ðbp21; Lisu a31-ðb31; Naxi Lijiang a31-ðb33, 35 Hani Caiyuan a31-ðpa31, ðp53-pv33; Hani Shuihui a31-ðph33; Nusu iu55-ðb31, Jino a55-pu33; Nusu n55-ðb31 ‘husband’

Qiangic

rGyalrong Zhuokeji/Suomo t pe; Ergong a-ða; Queyu a-ða55; Ersu a31-ð55

Nungish

Anong a31-ðhyp31; Dulong a31-ðpā53

Baic

Bai Bijiang bo33

Tujia

Tujia a21-ða55

There are several excellent Chinese comparanda:

‘father’  

父 *b’iwo [GSR 102a-e]  *b(r)ja > bjux > Mand. ðu [WHB C758.14]  

父 [not in GSR 39]  *ba > bax > Mand. bā36

‘man/husband’  

夫 *piwo [GSR 101a,b]  *p(r)ja > pju > Mand. ðu [WHB C757.21]

With labial semivowel

Jingpho-Nung

Jingpho ðwâ, ðwâ, k-wâ; Kadu ðwa

Kamarupan

Moshang wa

Himalayish

Bunam ðwa

Qiangic

Muya ve35 ve35

33 Cf. Geman a31-ðwâ33 ‘husband’.

34 Other related Black Lahu morphemes include phâ ‘fellow; guy’ (< PLB *pa2) and pā ‘male’ (< PLB *ða2). Cf. also Lahu ð-phâ ‘husband’, apparently from a distinct root, perhaps PLB *paj2 or *paw2. Several of these LB forms for ‘father’ with aspirated initials (Achang, Langsu, Hani Shuihui, Yi Nanhua, Nusu) are perhaps to be grouped with Lahu phâ or phâ, rather than with Lahu pa.

35 Note that Naxi Yongning (Moso) a31-ðv55 (below) has a non-stop initial.

36 This character is not attested in early texts. That means the phonetic was chosen at a later stage of Chinese phonology, casting the correct OC reconstruction in some doubt. Handel reconstructs it here under the assumption that the phonetic was chosen according to OC pronunciation.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

Lolo-Burmese-Naxi
Zaiwa a\textsuperscript{55} va\textsuperscript{21}, i\textsuperscript{55} va\textsuperscript{21}; Naxi Yongning (Moso) o\textsuperscript{33} v\textsuperscript{55}

[the following forms mean 'husband', 'man', 'person']

Jingpho-Nung
Jingpho wā 'human being; man', mātu\textsuperscript{31} wa\textsuperscript{33} 'husband'

Himalayish
Lepcha ovo 'husband'; Dhimal wa-dzan 'boy', wa-val 'man'

Kamarupan
Lakher owa-pa 'husband'; Haka, Taungtha va 'id.'; Geman Deng o\textsuperscript{33}wōl\textsuperscript{53} 'id.' (note the Geman doublet pāi\textsuperscript{55} 'father', cited above); Darang Deng ma\textsuperscript{31} wa\textsuperscript{35} 'husband'; Sulong a\textsuperscript{31}ve\textsuperscript{31}

Karenic
PKarenic *wa 'husband' \textless{} *khwa 'male' [STC p.132]; Pwo, Sgaw, Bwe wa 'husband'

Lolo-Burmese
Yellow Lahu và (free morpheme); Black Lahu và
In Black Lahu this is not a free morpheme, but a bound member of elaborate expressions, where it appears as the couplet of cho 'person', e.g. cho-qa-vá-qa 'human beings', cho-yá-vá-ya ‘humanity'; see DL p.1323.

(16) PALM/SOLE and LEAF *r-p\textsuperscript{\textsuperscript{a-k}}

STC discusses this root in several places (pp.24, 100, 174, 187, 188-9), hesitating as to its proper reconstruction. In set #418 it is reconstructed *pa, but with a note (n.287): 'This root is now reconstructed *pwa, but *b-wa is an alternative (and perhaps better) possibility.' In the Index (p.205) it is given as PTB 'pa = *pwa'. No words with this gloss are given in ZMYYC or TBL. For extended discussion see JAM 1985 'Arm, hand, and wing', pp.430-1 and 447-8.

This etymon seems certainly to have been confused with a root meaning LEAF/FLAT OBJECT, originally reconstructed in STC #40 as *pak 'leaf', later revised to *r-pak on the basis of an allofamic analysis of the WB forms phak and rwak.\textsuperscript{37} But in the Index to STC (p.216), the reconstruction is given as 'pak = pwwak', possibly due to a typo. STC does not identify sets #40 (LEAF) and #418 (PALM) as allofamically related. As admitted in JAM 1985 (p.446), 'the last word has yet to be said on this complex problem.' For now we set up PTB *r-p\textsuperscript{\textsuperscript{a-k}}.

Several forms have a prefixed lateral, which is certainly a reduction of *lak 'hand'.

Forms with no evidence for a final stop
With labial stop initial

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\textsuperscript{37} See the forms cited in TSR #29, where I set up PLB *V-pak\textsuperscript{4} 'leaf'. The low-stopped tone could be due to a now lost *r- prefix, rather than a vocalic prefix 'V-', so perhaps a better PLB reconstruction in TSR terms would be *C-pak (where C- is a cover symbol for a voiced prefixal element).
Qiangic  

rGyalrong Kyomkyo ta-yuk **pa** (**ta-yuk** ‘hand’); Tangut (Sofronov) **pá**

Jingpo-Nung  

Jingpo **lóphan** (**la**- ‘hand; limb’; with -**n** dual suffix? [STC p.100]); Nung ur-**pha**

Lolo-Burmese  

Red Lahu là’-to-**po** ‘palm’, khi-**to-po** ‘sole’ (cognacy uncertain; the regular Black Lahu reflex of ***-wa*** is -**u**)

Kamarupan  

Idu (Lhoba) lapo; Miri lak-**po** ‘palm’, le-**po** ‘sole’; Garo džak-**pha** ‘palm’; dža-**pha** ‘sole’

Himalayish  

Pattani **páltá** (a peculiar form; perhaps not cognate)

**With prefix plus initial w-**

Lolo-Burmese  

Written Burmese phawá ~ bhawá (note the sesquisyllabicity); Phunoi lówoá**, lóvoá** ‘palm’, po**11** wóad **33** lak**h**o**11** ‘sole’; Bisu là-wá ‘palm’, là-khí pháwa ‘sole’

The prefixed morpheme for HAND occurs before either the labial stop (Jingpo, Ugong [see below], Idu, Miri) or the labial semivowel (Phunoi, Bisu), or even perhaps before another prefix (see the Mpi form below).

**With labial stop plus non-labial semivowel or fricative** **38**

Kamarupan  

Moyon kik-**bajá**; Lakher ku-**paza** ‘palm’, phei-**paza** ‘sole’; Tangkhul pān-**mayá** ‘palm’ (with assimilation of labial stop to final nasal of 1st syllable)

Lolo-Burmese  

Ugong là?-**phyé**

Himalayish  

Gurung yo-**plá**; Sunwar tä-**plá**; Magari huT-**pyá****39**

Several good Chinese comparanda are available:

巴 [GSR 39a] **pá** ‘snake; place name’, but also glossed ‘palm’ in Karlgren 1923 (AD); WHB **pra** > **pe** > **bā**

把 [GSR 39b] **pá** ‘grasp in the hand; handful’

抉 [GSR 101f ] **b’jwo** ‘support; assist’ / WHB **b(r)ja** > **bju** > **fú**

STC (p.174, n.463) gives OC **pijwo**, glossed ‘breadth of four fingers’; Chou Fa-kao (1972:204) repeats this gloss, but gives the reconstruction **p’jwo**

Cf. also Proto-Tai **fáa** (B1/C1) [HCT pp.77-8] > Siamese **fáa** (B1) ≈ Lungchow pháa (C1), Dioi oua (C1). See also ATLC p.350.

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**38** Cf. the problematic forms for PIG with non-labial resonants, below.

**39** Cf. also Limbu **tûpe** ‘palm’ (with secondary gemination), huk-**pe** ‘hand’.
Forms with evidence of a final stop

**Lolo-Burmese**

All these LB forms mean LEAF:

WB phak ?*w? rwak 40 (< *p"ak ?*w? *r-wak); Lahu á-pháʔ; Akha á-pāq; Ahi phiʔ44 ~ phieʔ44 (Yuan Jiahua 1953); Sani phiʔ22; Hani xaʔ22pha21 (Gao Huanian 1955); Bisu phà; Luquan p‘a55, Nasu p‘aʔ44,

But cf. Mpi laʔ kwēʔ2 ‘palm’ (? < *lak-ko-wak), paʔ2 ?oʔ2 ‘sole’ (check analysis)

**Kamarupan**

Lushai kut-phaʔ ‘palm’, ke-phaʔ ‘sole’; Mikir ri-pak ~ ri-pek ‘palm’, ken-pak ‘sole’

(17) PIG *p"ak


With unprefixed labial stop  *pak  ≈  *bak

(A) Himalayish

Written Tibetan (WT) phag-pa, Lhasa Tibetan phak53-pa53, Kham Tibetan pháʔ53, Amdo Tibetan hak (with lenition); Monpa Motuo phak-pa (prob. loan < Tib.), Monpa Cuona phaʔ53, Newari (Kathmandu) pha, Newari (Dolakha) pha; Limbu phak, Bahing pok-, Hayu pok, Dumi poʔo ‘pig’ (with echo-vowel? cf. Lotha Naga, Bodo-Garo), pok-soe ‘piglet’; Kulung bo ‘pig’ (cf. bok-khoŋ ‘pig trough’), Chamling bo-khOr ‘pigsty’, Thulung boa

Most of these forms have voiceless stops; but Chamling, Kulung, and Thulung have voiced ones, and Amdo Tibetan shows lenition (cf. Japanese). The Thulung form looks superficially as though it implies a stop-plus-w antecedent (*bwak). See also the Rengma form, below.

(B) Kamarupan

Mikir phak, Puiron bok, Yimchungru a-po (with vocalic prefix); Idu bi55 li55 (for the 2nd syllable, see below), Darang Deng (=Taraon) bu31 liu35 (for the 2nd syllable, see below)

(C) Qiangic

rGyalrong pak, Guiqiong pha53, Taoping Qiang pa53; Mawo Qiang pi, Ch’iang (Chiu Tzu Ying) pje (Wen Yu 1950; cited in TSR #168), Mianchi Qiang pià (Evans 1998); Shixing bie35, Pumi Jinghua ph3a31

40 If these forms are indeed allofams, we must call the compound phak-rwak ‘incestuous’, i.e. composed of two members of the same word-family. For the first use of this term, see VSTB. An analogous English formation is house-husband.
Several forms seem to point to a palatal glide at the Proto-Qiangic stage, including several Qiang dialects, Shixing, and Pumi Jinghua.

(D) Naxi

Naxi Lijiang bu⁴¹, Naxi Yongning bu¹³

With labial semivowel *wak

(A) Lolo-Burmese

PLB *wak¹ (TSR #168) > (Burmish) Written Burmese (WB) wak, Burmese (Rangoon) weʔ, Achang (Luxi) waʔ⁵¹, Achang (Longchuan) oʔ⁵⁵, Langsu voʔ⁵¹, Zaiwa vaʔ²¹;

(Loloish) Ahi vie⁴⁴, Akha (Hansson) à-záq, Bisu wà, Gazhuo wa⁵³, Hani Caityuan va⁵¹, Hani Dazhai a³¹ ya³¹, Hani (Kao 1955) ba²¹, Hani Shuikui a³¹ ja³¹, Jinuo va⁴² i⁴⁴, Lahu vâʔ, Lisu a⁵⁵ ve²¹, Lisu (Northern) a⁵⁵ vaʔ²¹, Luquan aʔ⁵⁵, Nasu vaʔ⁵⁵, Nusu va⁵³, Sani ve²², Yi Dafang va¹³, Yi Mile/Yi Mojiang ve²¹, Yi Nanhua ve²¹, Yi Nanjian a⁵⁵ yi²¹, Yi Xide vo⁵⁵

This is a paradigm set for fate of PLB *-ak rhyme, as well as for the LOW STOPPED tone category. Initial reflexes include w, v, Ø, j, z, y. Several Loloish forms have a vocalic prefix.

(B) Kamarupan

Ao ak, a-ok, Chang/Phom ok, Garo wak, Kezhama e-vo, Khoirao wok, Kokborok wauʔ, Konyak ak, Lai Chin vok, Lakhier vao, Lotha woko,¹ Lushai (=Mizo) vok, Mao o-vo, Maram a-wak, Maming hoyk, Meithei ok, Meluri a-vu, Ntencyi a-vü, Nocte/Tangs/Wancho vak, Sema a-wo, Tangkhul hoyk, Yacham-Tengsa ak

The *w- is reduced to a voiceless vowel (i.e. h-) in Maring and Tangkhul, and to zero-initial in several other languages. Many languages have a vocalic prefix.

(C) Jingpho/Nung (=Kachinic)

Jingpho wâʔ, Dulong waʔ⁵⁵, Nung wa, Anong òu⁵⁵

(D) Qiangic

Ergong va, Ersu ve⁵⁵, Muya bé, Namuyi va³³, Queyu we⁵⁵

With velar prefix

Kamarupan

* k-bak ≠ *k-wak

Empeo (=Zeme) gábak (STC #43), kebak (GEM); Liangmei kabak; Mzieme hebak; Rongmei (=Nruangmei=Kabui) gowàk (JAM 1978)

¹¹ Note the echo-vowel.
With dental prefix

(A) Himalayish  PTGTM\textsuperscript{42} *d\textipa{wa} > Tamang Risiangku/Taglung \textipa{wa}, Manang ta:/ /Weidert 1987 cites Tamang \textipa{ba}/.

(B) Kamarupan  Chokri \textipa{pu}; \textsuperscript{43} Rengma \textipa{twa}

The root syllable of the Rengma form, like Thulung \textipa{boa} (above), seems to point to a stop-plus-semivowel sequence.

Sulong mo\textsuperscript{33} du\textsuperscript{33}

This Sulong form could have arisen through preemption of the root initial by the dental prefix; but the aberrant and obscure Sulong language is still virtually unstudied, so one can hardly be sure.

(C) Kachinic  Jili \textipa{tawak} (STC \#43)

(D) Burmish  Hpun (Northern) \textipa{ta}, \textipa{tawu} (Henderson/Luce 1986), Phên \textipa{to} (STC \#43)

(E) Karenic  Proto-Karen *tha? (Jones 1961)

STC n.365, p.133: Karen *tha? is derived tentatively from *t-wak by ‘a process closely analogous to that proposed for the root for DOG, with the initial *p-interpreted as a prefix.’

(F) Baic  Bai Bijiang, Bai Dali, Bai Jianchuan te\textsuperscript{42}

Widely scattered forms in different subgroups, including the two most aberrant, Baic and Karen. Cf. STC (pp.114-7) on the sporadicity of the dental prefix.

Chinese comparanda

STC, n.487, pp.188-9: There are two mistakes in characters at the bottom of the page (188y, 189c0; corrected in Chou Fa-kao 1972, p.204). No less than five possible comparanda may be suggested: one with a labial, three with velars, and one with a dental:

\begin{itemize}
  \item [GSR 39d] \textipa{pa} ‘sow; pig’ / [WHB C746.5] *pra > pæ > bā
  \item [GSR 33f] \textipa{kā} ‘male pig, boar’ (STC: ‘from *kwa’) / [WHB] *kra > kæ > jia
  \item [GSR 258h] \textipa{g\’wān} ‘a kind of pig’ (STC: ‘with collective suffix -n’) / [WHB] OC *g\’an or *wan > MC hwan > Mand. huan
  \item [GSR 803a-b] \textipa{g\’wag} ‘kind of boar’ (STC: ‘probably from *gwa-gwa’) / [WHB] OC *g(r)ja(ks) > MC gio(\textipa{t}) > Mand. [qū]
  \item [GSR 1218a] \textipa{t\’i.uk} ‘hobbled pig (Shuowen ; but no textual attestations) ?\textsubscript{<} *T-wak.
\end{itemize}

\textsuperscript{42} Proto-Tamang-Gurung-Thaka-li-Manang (see Mazaudon 1978).

\textsuperscript{43} Closely related Angami Naga has \textipa{thero}, which looks superficially like the forms with glide initials in 2.17. See the discussion of Angami prefixal \textipa{the}- in JAM 1982 (‘Sprachgefühl’).
James A. Matisoff

(For perhaps similar preemption, cf. the Sulong form, above.)

[WHB] OC  *thrjok > MC  trhjowk > Mand.  chû

See also Benedict’s speculations about connections with ‘Proto-Austro-Tai’

*mbayumbûgu. ATLC (pp.253-4) has *(m)ba(m)buy!

**Problematic forms**

(a) *With fricate initials  (* ‘fricate’ = fricative or affricate)

These forms may point to a non-labial glide after the stop. See (b) below.

Muya  zyi 35; Pumi Taoba  tçye 35 (cf. Pumi Jinghua  ph3a, Tujia  tsi 53)

(b) *With non-labial resonant initials  yak  =  *rak


(A) *With palatal semivowel

Bokar  a-jak, Damu  ?a-jak; Milang  yek, a-yek; Gallong  yek-po  =  rek-po;

E-yek  =  e-rek

Note the internal y-  =  r- variation in Gallong.

(B) *With r-

Miri  e-rek. Tagin  a-ruk, Bengni  tu-rjuk, Gallong /see (A) above/

Cf also Gallong also  rep-ny  ‘sow’, with assimilation to the nasal initial of the 2nd syllable;  -n- ny  ‘female; mother’. Angami  therò  probably does not belong here (see note 43).

Perhaps different in status are a group of forms with initial lateral and front vowels:

Geman Deng  li 35; Apatani  a-li  ‘pig’,  lji(-po  ‘boar’; PBI  i-li-a-ri (analysis of compound?); Idu  bi 55  li  35, Darang Deng  bur 41  liâi 35

These forms with  l- reflect a separate root from  *pʷak, if the first syllables of the Idu and Darang Deng binomes are taken to come from the latter.

Apparent isolates: Prakaa  1  sukur; Sangtam  shûka; Nruanghmei  cûkou, goklu; Dimasa  haono; Woni  ma = 33

(18) SOW/WINNOW/CAST, THROW  *bwar

Cf. STC pp.172-3, 174, 191 (PTB  *bwar).44

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44 Benedict sets up a contrast between PTB/PST medial  *-a- and  *-â- (see STC n.488, pp.189-91), but the conditioning of the reflexes is so complex and ad hoc that it is not convincing.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

With stop initial

WT ḱhor-ba ‘throw, cast, fling; leave, forsake’
Chinese 撲 *pwâr ‘sow; winnow’ [GSR 195p]
[WHB] OC *pajs > MC paH > Mand. [bô]
播*pwa ‘winnowing fan; winnow’ [GSR 25n; AD p.222]45
[WHB 656] OC *paj/s > MC pax ~ paH > Mand. bô ~ bô

With semivowel initial

Bahing war ‘throw away, squander, abandon’; Chepang wa:r ‘sow’; Mikir var ‘sow, cast, fling’; Lushai ʔvor ‘scatter, throw up, toss’

(19) SPINDLE *pwaŋ

STC #48 cites forms from three languages with stops (WT, Thebor, Jingpho), and one with w- (Burmese), and reconstructs the root as *paŋ = *pwaŋ. To these we may add many more related forms in TB, as well as a solid Chinese cognate.

With plain stop initial
Written Tibetan phaŋ, ḷphaŋ; Thebor phaŋ

With velar prefix plus stop
Jingpho ḷabãŋ

With dental prefix plus stop
Bokar ta-poŋ; Apatani ta-po; Bengni ta-po;

With initial semivowel
Written Burmese waŋ ‘swing around; spin’ (< PLB Tone *3) = ʔwaŋ ‘spindleful of thread’ (< PLB Tone *1), waŋ-ru ‘spindle’ (2nd. syll. ‘bone; handle’); Lahu ḷa ~ ḷa ‘spin, whirl; be dizzy’ (< Tone *1 or *3) = ḷa ~ ḷa ‘id.’ (< PLB Tone *2)

Note the tonal variability of this etymon in Lolo-Burmese. The Lahu forms also reflect variation between earlier *w- (> Lh. ʍ-) and *r- (> Lh. ʔ-).


Cf. also perhaps 网, 網 ‘net; web’: [GSR 742L, 742a] OC *mi̯wɑŋ
[WHB C794.4] OC *mjang? > MC mjangX > Mand. wāŋ

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45 Karlgren says these two characters represent ‘the same word’ (AD Set #721, p.222).
46 This comparison was not made in STC, but is to be found in Coblin 1986 (p.138), as well as in Gong Hwang-cherng 1995, set #238.
(20) STRENGTH  **d-b"aŋ**

This root is set up in passing in STC n.325 (p.117) on the basis of two forms: WT *dbaŋ* and WB *ʔaŋ*. Despite its meager support (no further TB cognates have been unearthed so far), it is convincing, since the initial WT/WB correspondence is paralleled in HEAD (WT *dbu*, WB *ʔ0*; see below.

(21) UNCLE/SENIOR MALE RELATIVE  **b"aŋ ≈ p"aŋ**

With initial stop

WT *ʔa-baŋ, baŋ-po* ‘father’s or mother’s sister’s husband’
Chepang *paŋ*, Limbu am-pan-a, Vayu *paŋ-pon* ‘father’s brother’

With initial semivowel

Nung a- *waŋ* ‘father’s brother’
Lashi *vaŋ-mo* ‘father’s older sister’s husband, husband’s father’; Lisu a- *wo* ‘f.b.’
Garo a- *waŋ* ‘father’s y. bro.’

To the above forms (< STC pp.23, 174, 189]), we may add a number of Qiangic, LB, and other forms from ZMYYC #321:

With initial stop

Tujia  Tujia *pue*35 *pue*35
Kamarupan  Geman Deng *pop*35; Bokar Adi a *paŋ*
Qiangic  Qiang Taoping *pe*33 *pe*33; Pumi Taoba a*55* *po*55
Lolo-Burmese  Yi Nanhua A33 *bo*21 *ze*21; Naxi Yongning ò33 *bu*33 *d1*55

With initial semivowel or spirant

Qiangic  Shixing ò55 *Bu*55, Namuyi a55 *yo*55
Lolo-Burmese  Zaiwa a55 *va*21 *mo*55; Yi Xide pha55 *vu*33; Yi Dafang a33 *ve*55;
Lisu oo55 *phu*31; Lahu o55 *phu*31; Lahu o55 *phu*31; Lahu o55 *phu*31

This gratifying Lahu cognate, just identified, has a variety of related meanings:

1. older brother of a girl 2. a girl’s mother’s brother 3. wife’s brother 4. man’s brother-in-law. The basic meaning is ‘guardian of a young girl’; the office of guardian is filled by an older brother, if the girl has one, otherwise by a maternal uncle or other older male relative; correlative of *nù-ma* ‘female ward of elder brother or maternal uncle’ (DL, p.135).

47 This finally allows us to establish that the regular Lahu reflex of the PLB *-waŋ* rhyme is *-u*, since there is an excellent parallel example: WELL (for water): WB re-twāŋ, Lahu ʔi-tū < PLB *ray1-dwaŋ* (the first element means ‘water’). See STC #169 and DL p.613.
A couple of Chinese comparanda have been suggested:

- 'uncle' 兄 *xiwāŋ [GSR 765a-e] 'elder brother'
  [WHB 388, C798.17] *hwrjang > xjwæŋ > xiōng
  /problematic initial correspondence/

- 伯 *pāk [GSR 782i] 'eldest brother; eldest; father’s elder brother'
  [WHB 780, C748.12] *prak > pæk > bó
  (STC p.174: ‘perhaps from *pwāŋ’)

(22) PATCH/SEW *p(“)a

This is the only root in STC where a root beginning in *pa- does not have some reflexes in w-:48 only two forms are cited (p.122):

WB pha ‘patch’; Nung ṣpha ‘adhere’, ḍopha ‘adhere, patch, affix, transplant’. However, with more data (from ZMYYC #653, TBL #1161),49 we see that some reflexes point to *pa while others point to *pu, perhaps suggesting a prototype *p’wā; furthermore, a couple of forms have zero-initial (Shixing) or f (Naxi), showing that even in this root the tendency to lenition to a w has existed:

Shixing Ṫ; Naxi f Ṫ

While some of the ZMYYC forms with -u- vocalism may be loans from Chinese 補 (Mand. bū), this Chinese word is itself an excellent candidate for cognacy with the TB root (it is not cited in STC):

補 [ GSR 102c’ ] *pwo ‘mend; patch’ [WHB] OC *pa? > MC pux > Mand. bū

3. Sets with nuclear vowels other than *-a (-)

The above p ≠ w sets are all reconstructed with the nuclear vowel *-a-. The next group of such etyma to be considered have back rounded vowels, *-u- or *-o-.

(23) BELLY (1, 2, 3, 4)

It is quite striking that several different roots in the semantic area of BELLY/GUTS all show labial stop ≠ semivowel interchange. There are at least three separate roots here, perhaps four. There is a detailed discussion in VSTB, pp.124-130.

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48 For another *pa- root where no evidence of ‘lenition’ has yet turned up, cf. PLoloish *ʔpa (Akha pá, Lisu pa³, Lahu pa) ‘exchange, trade, barter; trade’ [DL p.801-2].
49 Qiangic gives evidence for the *s- prefix with this root: Mawo ṣpa, Taoping ṫpe³ < *s-pwa.
Additional forms are to be found in ZMYYC #260 dùzi; #269 wèi; #271 chángzi. The nuclear vowels of these belly-roots occupy the three points of the ‘vowel triangle’: BELLY¹ has -u- (plus final -k); BELLY² (allofamically related to BELLY¹) has -i- (plus final -k);⁵⁰ BELLY³ also has -u- (but with no final consonant); and BELLY⁴ (already introduced above) has -a-, like most of the etyma discussed in this paper.

(23) a. BELLY¹

This root, with semantic connections to CONCAVITY/CAVE, is set up as *pu±k ≠ *buk in STC (#358 and note 237).

With stop initial


The WT forms show variation between voiced and voiceless initials, as do the solid Chinese cognates:

<table>
<thead>
<tr>
<th></th>
<th>OC *pjôk</th>
<th>WHB [1620, C758.18] *p(r)juk &gt; pjuwk &gt; fû</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘belly’</td>
<td>腹</td>
<td></td>
</tr>
<tr>
<td>‘cave’</td>
<td>窟</td>
<td></td>
</tr>
</tbody>
</table>

With non-stop initial

Three of the forms cited in STC #358 have non-stop initials, though Benedict passes this over without raising it as a problem: Lepcha tâfuk ‘belly’.⁵² Maring uk, Garo ok. To these we may add a key form from Tangkhul Naga, wuk; as well as some Karenic forms that perhaps reflect a prefixed variant *r-wuk: Moulmein Pho yêu?, Pa-O hó?, Palaychi hù? (VSTB pp.125, 258).

(23) b. BELLY²

With stop initial

The etymon *pîk ‘bowels’ is set up in STC #35 on the basis of two forms, Mikir phek and Garo bibik. As explained in VSTB (pp.125, 258), these are definitely to be grouped with the -i- allofams of a WT verb (cited without comment in STC,

⁵⁰ Variation between the high vowels -i- and -u- (especially in the environment of a preceding or following labial) is one of the best attested variational patterns in TB. See Wolfenden 1929, pp.114-5; STC, pp.80-84, VSTB, pp.41-42.

⁵¹ Several forms reflect a variant with homorganic final nasal, *pô : Bisu pô±-ba, Pyen pawng-pawng. Idu khulî pô³⁸, Bokar Adi ki:pô (last two forms from ZMYYC #260).

⁵² There are variants within Lepcha with stop initial: tâbak ~ tâbok ‘belly’.
An Extrusional Approach to *p-/w- Variation in Sino-Tibetan

n.237), p'ig-pa (~ p'ug-pa) ≈ ḡbig(s)-pa (~ ḡbug(s)-pa) 'make a hole; pierce', implying a semantic development as follows:
CAVERN/CAVITY/HOLE → BELLY/STOMACH → GUTS.

From ZMYYC add the following: Shixing ƅy55, Guiqiong pître53, Qiang Taoping pžʒ33, Pumi Jinghua pʒi55 ‘intestines’.

With non-stop initial
A well-attested Proto-Loloish root *ʔwik ‘stomach’ is set up in TSR #176, on the basis of Lahu ç$-fÆ@-qo#, Sani hI-ma, and Lisu h’i₄-hchi₆. Additional cognates are to be found in ZMYYC #269, including Yi Xide hi₅₅, Yi Nanhua he₅₅mo₃₃, Yi Mile (Axi) xi₂¹mo₃₃, Naxi Lijiang xu₅₅, Naxi Yongning (Moso) xo₁₀mi₃₃.

The PL glottal prefix *ʔ- is conclusively established by the high-rising tone in Lahu ç$-fÆ@-qo#, as well as by its initial f-, the regular Lahu reflex of PLB *ʔw- and *ʔhw- (as opposed to plain *w > Lahu v-). This glottal element is further supported at the PTB level by the WT h₈- (the co-called ‘a-chung prefix’) in ḡbig(s)-pa (~ ḡbug(s)-pa), above.

Karenic also has non-stop reflexes of the initial of this etymon: Moulmein Sgaw ƅy, Bassein Sgaw ƅy.

(23) c. BELLY³
This root (absent from STC), with meanings extending from BELLY to INTESTINES, is reconstructed in VSTB (p.126) as PTB *(s)-pu ≈ *(s-)bu, with a ‘lenited’ variant *wu.

With stop initial
Limbu sapu ‘belly’ (= sapok; see above); WT p’o-ba ‘stomach’; Naxi Lijiang bv₃₃, Jingpho pù ‘bowels’, lûŋ-pû ‘cave’; Garo bi-bú ‘guts’.

There is a Chinese cognate, which reflects alternation in initial voicing:

腑 OC *pju (Tone B) ‘the bowels’ / [WHB] OC *p(r)jo > MC pjux > Mand. ｆ우
/This character does not appear in GSR #136, but is to be found in Karlgren’s Analytic Dictionary, Character Group #45./

肏 OC *b’yu (Tone C) ‘intestines’ / [WHB] OC *b(r)jos > MC bjuH > Mand. ｆǔ
/This character is glossed ‘foot’ in GS 136o, but as ‘intestines’ in Pan Wuyun’s Chinese translation of GSR, p.70./

53 The Taoping and Jinghua forms show what is apparently secondary (‘extrusional’) affrication.
With non-stop initial
Proto-Loloish *wu

More cognates, both intra- and extra-Loloish are to be found in ZMYYC #271 (INTESTINES):

(Qiangic) Muya vɯ33tcha35, Ersu ve55ŋo55, Namuyi vɯ33ŋi55

(Lolo-Burmese) Yi Xide vɯ33, Yi Dafang/Nanjian/Mojiang vɯ21, Yi Nanhua vɯ33, Hani Caiyuan/Shuikui ɔ31v55, Jinuo a33vɯ33, Achang ɔ31u55, Zaiwa u35, Langsu a-u31, Nusu u35a55

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Finally, VSTB (pp.126-7) sets up a root *pam <> *wam:

With stop initial
Jingpho pũ-pham ‘stomach’, Tangkhul Naga a-phur-ā-pham ‘belly’

With non-stop initial
Lolo-Burmese WB wâm; Lahu ŋ- hè (see note 54 for the initial); Zaiwa väm; Maru wên (all ‘belly/stomach’) < PLB *wam

(Kamarupan) Mikir vam ‘waist, loin’; Lushai von-a-šor ‘have diarrhea’; Lakher a-vy, pa-vy ‘stomach’ (-y is the regular Lakher reflex of *-am); Tamlu hwum ‘belly’

It must be emphasized that detailed knowledge is needed to distinguish the reflexes of these semantically interconnected etyma. Offhand one can’t tell exactly where to assign forms like Hani Shuikui pu33mo33, Hani Caiyuan vɔ55mo33, Jinuo vɯ31mo33 ‘stomach’ -- are they from *pu/wu (BELLY3) or *pam/wam (BELLY4)? Or take Pumi Taoba pi35 and Pumi Jinghua spi55 ‘belly’; do these go with *pik (BELLY2), or rather with *pu (BELLY3), in view of Qiang Taoping pu33 and Queyu bu35? To which roots are we to assign Bai Jianchuan fû44 ‘belly’ (ZMYYC #260), as opposed to v42 ‘stomach’ (ZMYYC #269)?

Egg *p̥w

This (along with the next set, INCUBATE) is a prime example of p ≈ w interchange before a back vowel:

54 As explained in VSTB (n.168), although *w- regularly becomes Lahu v-, since the syllables vu and vo do not exist in modern Lahu, the reflex of *w has merged with that of *r to become /ŋ/ before modern back rounded vowels.
55 Cf. the note on the various Lahu reflexes in VSTB n.169, p.259.
56 Extensive support for this etymon is provided in Volume I, Fascicle 1 of STEDT (submitted for publication, Nov. 1997), where it is broken down into two sub-roots, *wu (1.1) and *pu (1.2).
With stop initial

Kamarupan
Proto-Tani * пу > Apatani пу ‘lay an egg’, पा пу ‘egg’;

Himalayish
Sunwar бо-фу

With semivowel initial

Lolo-Burmese
PLB *у (=*у) ‘egg’ > WB у; Lahu у ‘lay an egg’, ы-у у ‘egg’, м-ш-у ‘testicle’;
Lisu fu ‘egg’, е fu ‘lay an egg’, etc.

Kamarupan
Tangsa (Moshang) вu ‘bird’, (Yogli) вu ‘bird’, wu-rong ‘wing’;
Khoirao awu ‘feather’; Wancho ao ‘bird’ (< *а-у);
Ntenyi aowa ‘bird’.57 Chang ao ‘bird’, auwi ‘feather’; also
perhaps Monpa oi-lom ‘wing’

Jingpho-Nung
Jingpho у ‘bird; fowl’; Kadu у-di ‘egg’

Qiаngic
Qiang Mawо wu-stа, Qiang Yadu wа-s

Bаic
Bai Bijiang uс⁴⁴, Bai Dali/Jianchuan vu⁴⁴

(25) EGG/INCUBATE/SIT ON EGGS

*пʷ.um

With stop initial

Kamrupan
Hill Mirи pуп ‘egg’; Liangmei marui-bum; Zeme nrui-bum

Himalayish
Kaike kápum; Manang pум, Tamang Ɂpum; Kham
pум-nya ‘brood (hens)’, Sunwar pуп-ca ‘id’

Jingpho-Nung
Jingphо phдm ‘hatch’, Anong бум⁵⁵ ‘id.’

Lolo-Burmese
WB phдm ‘cover up’, Lahu phег ‘hatch’

With non-stop initial

Himalayish
Chepang ум ‘egg’

(26) GRANDFATHER

*пʷ.аw

The general PTB reconstruction is clearly *п.аw (STC #23).

With stop initial

Kamarupan
Garo bu, Lushai pu, Mikir phu, Meitheи ipu

Himalayish
WT phu-bo ‘elder brother’

57 For the second syllable of this form, see the possibly related etymon *b”а BIRD/FEATHER,
above (4).
Jingpho phu ‘elder brother’

**Qiangic**

Pumi Taoba a₅₃pu₆₅, Ersu a₃₃pu₆₅, Guiqiong a₅₅pu₅₃, Shixing a₃₃be₅₅, Jinuo a₃₃phu₃₃, Bai Bijiang a₅₅pu₅₅, Tujia pha¹phu₅₅ (ZMYYC #317)

**Lolo-Burmese**

PLB *ʔbəw² > WB ʔəphû; Lahu ʔ-phû

The glottalized initial in LB is from the kin-prefix *ʔa-; cf. the glottalization in Jingpho kinterms. Many other Loloish cognates are to be found in ZMYYC #317.

### With semivowel initial

But a few Qiangic languages have forms with lenited initials:

**Qiangic**

rGyalrong (Zhuokeji/Suomo) ta wu; Muya ve₃₃wu₅₃; Namuyi e₅₅wu₅₅

(27) HEAD *d-bʷu

STC briefly mentions this etymon in a note (n.325), reconstructing it as *(d-)bu on the basis of three forms: WT *dbu; WB ʔdû; Anong u. Many more cognates with w-/v- type initials are to be found in Lolo-Burmese (see ZMYYC #323), including Lahu ʔu- = ʔu- = ʔu- (as in ʔu-.mdl ‘turban’, ʔu-gê ‘pillow’, ʔu-qô ‘head’), Yi Nanhua u₅₃kui₃₃, Zaiwa ʔu₂¹lu₂¹ = m₂¹, Jinuo vu₃₃khe₃₃, etc. < PLB *wu².

Reflexes with labial stop initials are harder to come by. Among the possibilities are Jingpho bo₅₈, and two Baic forms which look very like WT, with initial dental element: Bai Jianchuan tu₂¹po₂¹, Bai Dali tu₃¹po₃¹. In other Loloish head-related compounds where the second element has a labial stop, the morpheme is probably to be referred to a separate morpheme meaning ‘tuber; bulbous object’: Lahu ʔu-phu ‘head’; Nusu u₃¹phu₅₅: 'id.'

STC (pp.166, 184) offers a Chinese comparandum with dental stop initial to this root, implying that the dental prefix exemplified in WT has preempted the semivowel root-initial, i.e. PST *(d-bu) > Pre-OC *(d-wu) > OC *du:

‘head’ 頭 *d’u [GSR #118 e] (WHB) *do > duw > têu

However, there is another root for HEAD of the shape *dʉ to be found in many Loloish languages, which is an equally good cognate for candidacy with the Chinese form, e.g. Yi Nanjian u₃¹dy₅₅; Lisu o₃₃du₃₃; Hani Dazhai u₃¹du₃¹; Hani Shuikui v₃¹tv₃¹; Red Lahu ʔa-tû-kû. The first syllables of the Bai forms cited above (along with Bai Bijiang to₃¹qa₄⁵) might also belong here.

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58 STC has nothing definite to say about the sources of Jingpho -o (pp.58-9), but the examples offered (some of them doubtful) have Jg.-o/WT -o/WB-au.
(28) MONKEY *(b)woy

Most of the reflexes of this root (STC #314) have non-stop initials:

Reflecting simple *w-
Jingpho and Northern Naga Jingpho wōi ~ wē; Moshang vi-sil; Shangge yok-vi;59 Muklom Tangsa hui; Nocte ui (these last two forms are from Marrison 1967)

Reflecting a prefix plus w
Nungish-Luish Jili tawe (< *t-woy); Kadu kwe (< *k-woy); Trung a-koi (< *k-woy)

Reflecting a labial stop
A couple of forms with stop initials are tentatively (STC n.213) included in this etymon:
Kamarupan Mikir ki-pi; Miri si-be (to these add Bokar Adi ča-be [ZMYYC #128])

Not mentioned in STC are WT spre ≠ spra, which look suspiciously like the Mikir, Miri, and Adi forms.

STC (ibid.) suggests a ‘possible Chinese cognate’, 猕 [GSR 256c] *gjwan (‘with suffixed -n’), but says this points to ST initial *w-; this agrees with WHB’s reconstruction (OC *wjyan > MC hjwom > Mand. yuan), but is contra to Benedict’s interpretation of GSR’s *giwo ‘feather’ (see #4 above), which he said was < PST *g-wa. Strikingly resemblant to GSR’s reconstruction is Tujia yeue53 (ZMYYC #128). Also perhaps worthy of consideration is another Chinese word for MONKEY: 猕 [GSR 113g] *g’u / [WHB] OC *g(r)o > MC huw > Mand. hou60

(29) POISON *p’u

This new root is reconstructed as *p-wu in JAM (‘Laryngeals’: 1997:44), on the basis of four forms, one of which has a labial stop initial, while the other three have lenited onsets:

Northern Naga
Konyak wu
Kamarupan Puiron hu; Meithei hu; Maram a-phu

59 For the first syllable cf. PLB *myok [TSR #133]; see also Chepang yuk, where the m- was treated as a prefix; cf. Bhramu payuk.
60 See Baxter 1992 section 10.2.10 (pp.500-501) for an explanation of *(r) in this word.
This immensely complicated and interesting etymon may be reconstructed as an original compound *(sya)-b-rul > PTB *s-b-rul > *s-m-rul > PLB *m-r-way > Proto-Loloish *way. Although some reflexes have labial stops while others have w-type initials, this etymon is different from most of the others discussed in this paper, in that the root-initial seems to originally have been *r-, while the *b- appears to have been prefixal, deriving ultimately from a separate morpheme *baw ‘insect; snake’ (see note 10). The w-type initials or medials that appear in Lolo-Burmese are quite secondary, having arisen from the rhyme *ul.

Himalayish

WT sbrul; Thebor brul; Cuona Menba bre; Magar bul

Kamarupan

Mikir phurul ~ phurui; Lushai rul; Meithei lil; Sema eyü; Tangkhul phora; Ao per (with reduction of the root-syllable); N. Khami pawi; S. Khami magui; Tiddim Chin gul; Geman Deng muj

The following forms from Abor-Miri-Dafla are probably to be assigned to *b-rul rather than to *baw: Darang Deng ta bu (vs. ta pum ‘insect’); Idu (Lhoba) ja bu (vs. a pu ton po ‘insect’); Bokar Adi ta bu (vs. ta pum ‘insect’) On the other hand, the following form for ‘snake’ from the obscure Sulong language is clearly from *baw: Sulong puh (cf. puh ca ‘insect’)

Qiangic

rGyalrong (Zhuokeji) kha bre; Ergong mphşi (evidently with a secondary m-prefix); Queyu bru; Muya zo; Gujqiong tsu

In the following Qiangic forms, the first syllables with labial stop initials have not been reduced to a prefix; these syllables are fully tonal, and are obviously reflexes of PTB *baw ‘insect; snake’:

Ersu be33 r 55 (cf. be dz 55 ‘insect’); Qiang Taoping bo gu 24 (cf. ba dz ‘insect’);

Pumi Taoba bu re 55; Pumi Jinghua be zo 55; Shixing ba ro 55 (vs. be ly ‘insect’)

61 The first syllable means ‘animal; flesh’ (STC #181), reduced in many TB languages to the *s- ‘animal prefix’ (see STC p.107). It appears clearly in WT sbrul. The second element -b- seems to be a reduction of the widespread etymon *baw ‘insect; snake; vermin’ (STC #27), though this is not suggested in STC. Among the numerous cognates cited in STC #27: WT hbu ‘worm, insect’, ḫhu-riŋ ‘snake’; WB pūi ‘insect’; Jingpho lphū ‘snake’.

In the following Qiangic forms it is the second syllable of the compound *bawrul that has been reduced to a suffix: Namuyi baw53; Qiang Mawo baw (with sigmatization of the *r-)

**Burmish**
Proto-Burmish *mrway1 > WB mrwe;63 Achang mzu55; Zaiwa lan51 mui51; Langsu l53 mui31

**Loloish**
Proto-Loloish *way1 > Lahu vi; Lisu fu44; Hani Caiyuan y55lu55; Hani Dazhai o55lo55; Hani Shuikui yu55lu55; Jinuo yu42

In several other Loloish languages, the first syllable of the word for ‘snake’ is identical (except perhaps for a tonal difference) with the morpheme for ‘insect’ (< PLB *baw):

* Yi Xide bu33ß (cf. bu21di33 ‘insect’); Yi Dafang bu33so33 (cf. bu33 ‘insect’)

**Karenic**
Proto-Karen *wayA > Bwe wi; Sgaw yu; Pwo yu;

**Tujia**
Tujia wo53

For extensive discussion of the Chinese comparanda to this etymon, 阿 and 婆 see Handel 1997 and Lin Ying-chin 1998.

(31) GRANDMOTHER1 and GRANDMOTHER2

(31) a. *bw’a [repeated from (9) above]

**With stops**
WB ?ophwā~?obhwā64

Cf. Chinese 阿 [glossed ‘saunter; dance’ in GSR 25q] *b’wā65

[WHB] OC *baj > MC ba > Mand. pó

**With semivowel**
Ersu a33 wa55 (ZMYYC #318)

(31) b. *pw’ay

This root is reconstructed as *pay in STC #36.

**Himalayish**
WT ?a-phyi; Kanauri a-pi; Bahing/Vayu pi-pi

**Kamarupan**
Mikir phl, Lushai pi, Garo a(m)bi

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63 There are several other examples of PTB *-ul > WB -we, including SILVER and HAIR (STC, notes 54, 55).
64 No other Lolo-Burmese cognates for GRANDMOTHER1 (31c) have yet been uncovered, though there are many LB reflexes of GRANDMOTHER2 (31b).
65 Glossed ‘old woman; grandmother (vocative)’ in STC, p.174. See Benedict 1942.
Nungish  Dulong a\textsuperscript{31} pi\textsuperscript{55}
Lolo-Burmese
Lahu a-pi 'grandmother' and WB ?ophē-ma' 'great-grandmother' point to a PLB *glottalized initial; but the Lahu rhyme reflex of *-ay should be -a. Maybe the Lahu descends from an alternant *?pey. Many other Loloish cognates are to be found in ZMYYC #318.

Here too we can find scattered forms with semivowel initial:
\begin{itemize}
  \item rGyalrong (Zhuokeji/Suomo) ta-wi;
  \item Zaiwa a\textsuperscript{55} voi\textsuperscript{55};
  \item Jingpho kāwoi\textsuperscript{33}
\end{itemize}

I now think we should combine this root with *pwi(y) FEMALE (STC #171), especially since *-iy and *-ay are equivalent PTB reconstructions in Benedict's system. Besides the supporting forms given in STC #171 (Lushai and general Kuki pui 'feminine affix'; Jingpho wi = yi 'feminine affix', ʂɔwɪl~ʂɔyɪl 'female'), we may add a number of other forms, including Lahu -ma-pə 'female of certain animals' (for discussion see JAM 1991 'Mother of all morphemes').

STC offers two Chinese comparanda, one to Set #36 and one to Set #171. They both look valid, i.e. allofamically related to each other as well as to this newly expanded TB etymon (30b):

\begin{itemize}
  \item *pjär [GSR 566n-o] 'deceased mother or ancestress'; compared to PTB *pay 'grandmother'
  \item *b'jan = *b'jär [GSR 566j] 'female of animal'; compared to PTB *pwi(y) 'female'
\end{itemize}

4. Analysis and conclusions

Let us look a bit more closely at the alternative lines of explanation for the observable inter- (and even intra-) lingual variation between labial stop and semivowel in ST:

4.1 Lenition and fortition

I used the term 'lenition' in this connection as far back as VSTB (JAM 1978:56-7), in a section entitled 'Resonantal alternation in root-initial position: lenition of labial stops':

172
...In several important TB roots (FATHER, PIG, BAMBOO, LEECH, HIDE, LEFT SIDE, SOLE, FLOWER) the modern languages show variations between an initial labial stop and the labial semivowel *w-. Benedict formerly felt this...was due to prefixial influence (STC p.23), but has now taken the position that it reflects PST clusters like *pw- and *bw- (STC, n.78). I have adopted the term lenition from Celtic linguistics to characterize the appearance of an initial semivowel in a word-family that also contains members with the homorganic stop...If we accept Benedict’s proto-cluster explanation, this ‘lenition’ is really nothing more than the metanalysis of the original stop-component of the cluster as a prefix, which was then free to drop...

While this passage at least clarifies to some extent the shifting positions taken by Benedict, it is obvious that to call this phenomenon ‘lenition’ (literally softening) is not an explanation, but merely a description referring to something like ‘a loss of firmness of occlusion’. My colleague, the distinguished phonetician John J. Ohala, observes (p.c. 1998) that ‘lenition is a cover term for a heterogeneous set of processes.’ One can imagine various paths of ‘softening’ that a voiceless labial stop might follow, ending up as a voiceless labial fricative, a labial semivowel, or even as zero (perhaps via *h-). It would be misleading to express this geometrically by a straight line (e.g. *pak > *fak > *fak > wak > hak > ak), since several different directions of change are equally well attested in the world’s languages. A slightly better representation would be radial:

\[
\begin{array}{c}
\hat{p} \\
\hat{w} \\
\hat{f} \\
\emptyset \\
\hat{h}
\end{array}
\]

Familiar examples of these developments abound. Proto-Indo-European *p- became Proto-Germanic *f- by Grimm’s Law, and evolved into Armenian *h- and Irish *θ- (e.g. PIE *pater ‘father’ > Gothic fadar, Arm. hair, Irish aθir); Old Japanese *p- > Mod. Jse. h-; in Modern Hebrew there is still a process of lenition that still affects the voiceless stops /p k/, which often become [f x] postvocally;66 different North Indic

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66 Classical Hebrew had a much more pervasive lenitive process affecting all 6 stops /p t k b d g/, usually written ‘ph th kh bh dh gh’ in their lenited (spirantal) form. These spirants only had
dialects produced the allofamic forms *Nepali and *Newari (etymologically the same, though one is an Indo-Aryan language and the other is TB). But in all these cases the loss of occlusion follows regular sound laws, quite unlike the situation in TB/ST. 67

The opposite process, fortition (defined as ‘an increase in firmness of occlusion’), certainly occurs abundantly as well, though one could argue that it is somewhat rarer than lenition in the world’s languages. Random examples include the development of Proto-Tai *f- > ph- in Shan, Ahom, and many Central Tai languages (F. K. Li 1977:77-8), or the pronunciation ‘Filipino’ acquired by the Spanish-derived name ‘Filipino’ in most of the indigenous languages of those islands. 68 In fact, however, the terms ‘lenition’ and ‘fortition’ can hardly be used meaningfully to describe all the various types of consonantal mutations that involve fricatives or semivowels. Is the regular development of Proto-Lolo-Burmese (PLB) */w/ > Lahu f to be called ‘fortition’? Or is PLB */l/ > Lahu h to be called ‘lenition’?

What we can perhaps say, is that on universal grounds p- is likely to be more frequent than w- as an initial consonant. Stops are optimally contrastive consonants; semivowels are the opposite, being the most vowel-like, and thus vulnerable to absorption both by neighboring vowels and neighboring consonants. In terms of our present problem, that is an argument against setting up two co-allofams of equal status at the proto-level, one with a stop and one with a spirant (e.g. *pak < *wak). A fortiori, it is an argument against assuming a fortitional development of the type *wak > pak.

4.2 Prefix preemption

An analysis in terms of prefix preemption 69 would have to interpret the original root-initial to have been the semivowel, so that the labial stop was a prefix. While the reflexes with simple labial stop would then be the result of prefix preemption (e.g. *p-wak > pak), those with semivowel initial would have arisen through prefix loss. This was the view I expressed recently in JAM 1997 (‘Laryngeals’: n.14, p.33) in allophonic status until various phonemic mergers interfered with their patterns of complementary distribution with the stops.

67 The late Middle Chinese phenomenon of ‘dentilabialization’, whereby certain labial consonant clusters like *p(j)w- became labiodental fricatives, might also be considered a kind of lenition.

68 Another example would be the claimed development of Middle Chinese d from Old Chinese l (e.g. Pulleyblank 1961-2).

69 This term was first introduced in JAM 1972, ‘Tangkhul Naga and comparative TB.’ It refers to the phenomenon of a prefix displacing a ‘weak’ root-initial consonant (i.e. a semivowel, nasal, or liquid).
connection with EGG/INCUBATE (see above, sets 24 and 25): “This...illustrates a widespread variational pattern in TB, between initial labial stops and w-, which affects at least a dozen other excellent etyma...which I now reconstruct with prefixal p- plus w-root-initial, e.g. *p-wak ‘pig’.”

I am now pleased to retract this analysis! In the first place, as we have just noted (4.1), to assume that such a large number of roots began with *w- is improbable on universal grounds. Furthermore, there is no obvious meaning to this putative prefix *p-. Not that something always has to have a precise meaning to be called a ‘prefix’ -- the term ‘formative’ would perhaps be better to sidestep this issue. Still, the semantic heterogeneity of the words showing p~w (including animals, body parts, artifacts, plants, kinship terms, verbs, etc.) certainly does not particularly favor a prefixal interpretation. There is no plausible morpheme that could have occurred as the first syllable of hypothetical compounds with all these words, so that they would have reduced (been ‘prefixized’) to a labial stop.71

A preemptional explanation does sometimes work with respect to reflexes of SNAKE (set 30, above), where one can plausibly suggest a binomial prototype *b̥aw-rul (*b̥aw ‘insect; vermin’), yielding preemptional reflexes like Magar bul.

4.3 Cluster simplification

From this point of view, we would assume there were original PTB/PST intrinsic clusters */pw- *bw-/, with no morpheme boundary between the stop and the semivowel. These could then have simplified in either of two ways: by losing the stop (*pwak > wak), or by losing the -w- (*pwak > pak). This is one possible interpretation of Benedict’s intent, when he writes the -w- on the line as an alternative reconstruction, e.g. ‘*pak=*pwak’. In STC (n.78, pp.23-24) he explicitly invokes the cluster explanation: “The Chinese evidence (nn.463, 487) unmistakably points to initial labial stop + w clusters in several ST (and TB) roots, including those for ‘father’ and ‘bamboo’...” Yet, wanting to have his cake and eat it too, at the end of the note he makes it clear that he feels these ‘clusters’ to have ultimately arisen from something else: ‘The unusually large number of these labial stop + w initial clusters in ST suggests a relatively late origin from a simple labial stop...’

70 One might say that this position would lead one to claim that the initial in EGG was *w ab ovo, as it were.

71 An example of a morpheme of this sort is PTai *hmaak ‘fruit’ that appears as mą in so many Siamese plant names, e.g. mąmāṇ ‘mango’, makhṃa ‘eggplant’, manaaw ‘lemon’, maphràaw ‘coconut’. See F. K. Li 1977:75-6.
A serious problem with the intrinsic cluster scenario is that true clusters of labial stops plus -w- are typologically/areally/perceptually unlikely. There is little salience to a contrast between /p-/ and /pw-/ in initial position, especially before non-front vowels. (Even before front vowels such a contrast is excessively rare in TB.) There are virtually no contrasts in TB between *pa-/*ba- and *pwa-/*bwa. If there had truly been such contrasts, one would expect the examples of non-variant [pa- ba-] to be much more numerous than the examples of p/b~w interchange.

4.3.1 Prefix vs. cluster

It is no idle exercise to draw a distinction between *prefix-plus-root-initial on the one hand and *intrinsic cluster on the other. Under favorable circumstances this difference can be utterly clear:

- ‘weave’ PLB *rak Lahu gı̊ʔ? (LOW stopped tone)
- ‘crossbow’ PLB *krak Lahu khâʔ? (*velar-plus-r clusters yield Lahu front velars)
- ‘chicken’ PLB *k-rak Lahu gı̊ʔ? (HIGH stopped tone)

4.3.2 Influence of a ‘prefixal’ element (X-) coming before the labial stop

This seems to have been Benedict’s first hypothesis (see above §1), symbolizable by formulae like /*X + pak/> X + wak. In a way this is a version of the LENITION scenario, but it purports to explain the loss of occlusion in terms of a mysterious prefixal element for which there is no independent evidence. Benedict does not suggest a phonetic mechanism for this lenition -- e.g. is it that a stop prefix forces a stop initial to lenite in order to avoid an unpronounceable sequence of two stops? One way to explain it would be to assume something like the following:

\[ X + pak > Xə̂bak > Xə̂wak > Xə̂wak > wak. \]

That is, a vowel, probably schwa, that accompanied this prefixal element must have put the labial stop root-initial into an intervocalic position, which could have led first to its voicing, then to its frication and eventual reduction to a semivowel. It is to be noted that we find secondary prefixes before both stop and semivowel initials, e.g. for PIG reflexes like kəbək and kəwək are both attested.

Another gambit would be to invoke metathesis of the prefix and the root-initial. Thus we could envision a scenario where the original prefixal element was *s-, which then assimilated to the root initial in point of articulation (this is exactly what has

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72 Contrast, e.g. ‘expensive; at its peak’ PLB *kak > Lahu qhâʔ (simple *velars yield Lahu back velars). See JAM 1972 (TSR), #’s 192, 9, 184.
happened to *s- in Pumi Dāyang [JAM 1998]), and later metathesized with the initial,\(^{73}\) thus:

\[ *s\text{-}p\text{ak} \rightarrow \dot{\phi}\text{pak} \rightarrow p\phi\text{ak} \rightarrow pwak \]

\[ \text{assimilation} \quad \text{metathesis} \quad \text{lenition (here = defrication) of } \phi \text{ to } w \]

4.4 The extrusional hypothesis  \(*\text{pa} \rightarrow p^w\text{a}*

4.4.1 What is extrusion?

By ‘extrusion’ I mean the perseverance of a phonetic feature to the point where it oversteps the bounds of a single segment, so that it creates a second segment to which it imparts a portion of its phonetic substance. At this point we should make a careful distinction (or ‘repartition’) between extrusion and epenthesis. I would like to reserve the term ‘epenthesis’ for cases where there is the insertion of a phonetic element \textit{ex nihilo}. Familiar examples of epenthesis would include phenomena like the appearance of a meaningless -\textit{t} in French third-person interrogatives, where the subject and verb are transposed from the declarative order, e.g. \textit{y a-t-il ‘is/are there?’} < \textit{il y a ‘there is/are’}; \textit{parle-t-elle ‘does she speak?’} < \textit{elle parle ‘she speaks’}. English examples include derivations like \textit{Shavian} from \textit{Shaw}, \textit{tobacconist} < \textit{tobacco}, \textit{Ciceronian} < \textit{Cicero}, etc. The -\textit{t}, -\textit{v}, and -\textit{n} in these examples are not directly derived from any neighboring segment, but are inserted ‘from outside’ as it were. On the other hand examples like English \textit{[warmp] ‘warmth’} or French \textit{chambre} < \textit{Latin camera} illustrate what I am calling ‘extrusion’: the \[-p\] and the \[-b\] here are natural perseverations of the labiality of the preceding phoneme \[-m\].

Clear cases of extrusion in Sino-Tibetan and other East Asian or European languages are not hard to find:

(a) In Lahu, the four labial phonemes /p ph b m/ are allophonically affricated before the vowel /u/, which is itself unrounded to [ɯ] in this environment:

/\text{pu, phu, bu, mu/} \rightarrow [p\text{f}u, \text{phfu, buu, mu̯u}]

(In the case of /mu/ the vowel often disappears entirely, yielding a syllabic labiodental nasal. See JAM 1973/82:3.)\(^{74}\)

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\(^{73}\) Metathesis is indeed an attractive explanation in other cases involving prefixes and root-initials. See Bodman’s (1969) derivation of Old Chinese (OC) dental affricates from the PST *s- prefix before dental stops; and more recently (1995) Gong’s analysis of OC *Cr- clusters as having arisen from PST prefixal *r-: *r-C > Cr.

\(^{74}\) A similar development has occurred in Angami Naga, where syllables of the type *\text{ka} typically develop into labial affricates, e.g. BITTER PTB *\text{ka} > Angami \text{phfa}. See Weidert 1981 and JAM 1982.
(b) Similarly, the Japanese phonemic syllable /tu/ is realized as [tsu].
(c) In the Mianchi dialect of Qiang, the aspirated and voiced labial stops (but not unaspirated p-) are allophonically affricated before /-i/ (Evans 1998, p.2):
/phi bi/ → [pci bzi]
(d) A particularly striking example is the Japanese treatment of loans from English with /kæ/-, which regularly develop an extrusional palatal glide -y- before the vowel:
cabaret kyábaree cabbage kyábetsu
cabin kyábín~kébin cabinet kyábine
caddei kyádei Cadillac kyáderákku
calico kyáráko camera kyáréma
camp kyámpu cancel kyánseru
candy kyándee canon kyánón
canvas kyánbasu cap kyáppu
capital kyápitaru captain kyáputen
caramel kyárámeru caravan kyáraban
carom kyáromu carburetor kyábu(rettaa)
cast (play) kyásuto casting vote kyásúchingu-bōto
catastrophe kyátasutorofui catch ball kyáchí-bōru
catcher kyácháa caviar kyábiya
character kyára(kutaa) [Kenkyūsha, pp.1005-7]

This also occasionally occurs with borrowings of English words with g- (e.g. gyaru < girl), but note that the extrusion does not happen with English words in /ka-/ or /kɑ/:
car kaa color karaa
collar kÁraa

Ohala (pers. comm.) accounts for this phenomenon in terms of the high f2 of the acute (=front) vowel, which is parsable as a palatal offglide by the Japanese speaker.

(e) A similar phenomenon is the palatalization of Gallo-Romance *ka- > Old French tša- (> Mod. Fr. ša-), e.g. Latin camera > Of chambre [šămbrə] (> Mod. Fr. [šōbř]).
(f) In the Dàyâng dialect of Pumi (Qiangic group of TB), the rhyme -o labializes any preceding consonant, e.g. /ró/ [ɾo] ‘chicken’, /gô/ [gɔ] ‘mountain’, /dô/ [dɔ] ‘back’, /ʃhô/ [ʃhɔ] ‘to pound’. Here it is obvious that it is the vowel that is acting ‘regressively’ on the preceding consonant, rather than vice versa. This automatic labialization is in fact the chief auditory clue for distinguishing /o/
from the otherwise very similar diphthong /ou/, before which the labialization does not occur. (See JAM 1998.)

g) Mandarin rhymes illustrate both types of extrusion:

1) Where a phonetic feature is squeezed out of a vowel: the rhyme /-o/ induces labialization of most preceding consonants, e.g. /po to sho lo/ → [pjo, tjo, shjo, ljo].

2) Where a phonetic feature is squeezed out of a final consonant: the final -n in the rhyme /-un/ causes a breaking of the vowel to [u̯], e.g. /tun dun lun kun/ → [tu̯n, du̯n, lu̯n, ku̯n].

4.4.2 The role of the following vowel

One might think a priori that the most favorable environment for the extrusion of [-w-] would be before a back rounded vowel. It is certainly true that several such examples can be found in TB (see the Lahu treatment of labials before -u (4.4.1(a), as well as sets 23-30, above), e.g.

EGG *pu > *pʰu > *(p)wu > *wu
BELLY¹ *puk > *pʰuk > *(p)wuk > *wuk

We can also find sporadic examples of labial extrusion before a high front vowel (e.g. BELLY² *pʰiK [23b, above]), though this is quite rare.⁷⁵ ⁷⁶

However, by far the most frequent vowel in TB/ST words showing stop/semivowel alternation is *-a(-). (In fact all sets in STC that are deemed to show this pattern have this nuclear vowel.) In part of course this reflects the fact that *-a is overwhelmingly the most common vowel in PST/PTB, both in open and closed syllables. Beyond this, however, there seems to be something about the ‘unmarked’ quality of [a], the vowel that is neither front nor back, and that is not in contrast with

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⁷⁵ One set reconstructed with a labial cluster that seems to have no reflexes with simple w- is: (32) BAMBOO RAT *bwayne (STC #173). All reflexes have bw-, bu-, by-, or simple labial stops, e.g.: WT byi-ba (WT has no bw- clusters), WB pwe, Lushai bui. There are, however, many irregularities in the Lolo-Burmese reflexes of this root: Lahu faʔ-puŋ has an irregular manner and vowel reflex, apparently reflecting *pwi or *pwey instead of *bwayne; we would expect -pʰu < *bwayne. Akha ho-puŋ reflects *ʔb or *ʔp. (The account in DL p.1307 does not correctly characterize the Akha form.)

⁷⁶ In this connection, I must reiterate my withdrawal of an extrusional explanation for the Lahu variational pattern between back vowels and ‘prelabialized’ front vowels of the same height: u ~wi, o~we, ɔ~we (JAM 1973:19). Instead of ‘labial extrusion’ this alternation reflects a palatal suffix which deprived the previous back vowel of syllabicity. See JAM 1995.
any other central vowel in PTB/PST open syllables, that makes it particularly vulnerable to the influence of neighboring consonants.77

4.4.3 The stages of the extrusional scenario

Our scenario (taking the syllable *pak as typical):

1 2 3 4 5
*pak > p\textsuperscript{\textregistered}ak > pwak > p\textsubscript{\textregistered}wak > wak

extrusion phonologization prefixation prefix loss
or cluster simplification

As we have observed, the very large number of examples (and the fact that most of them have something in common with respect to the rhyme of their syllables) makes p/w interaction look like a purely phonetic phenomenon. The post-extrusional process may be broken down into several stages:

(A) Phonologization of the exudate

Once the semivowel has been extruded from the stop (symbolized by a small superscript \textsuperscript{\textregistered}), it is available for phonologization; that is, it can achieve phonemic status, so that it is worthy of being written on the line, as /-w-/. (One could also call this ‘segmentalization’.) By a sort of shift in the center of gravity of the articulatory gesture, it passes from an extrusional excrescence to an autonomous phoneme; from a predictable offglide, it becomes an autonomous component of a consonant cluster.

(B) Sesquisyllabization and prefixization

The stage is now set for a further shift in the ‘articulatory center of gravity’. The semivowel can now be detached from the preceding stop by the insertion of an unstressed vowel, creating a morpheme that is ‘a syllable and a half’ long, i.e. a sesquisyllable.78 The unstressed ‘half-syllable’ (or ‘minor syllable’) can then be treated as a prefix (‘prefixized’), and is thenceforth subject to all the vagaries that can befall a prefix (especially loss or substitution).

77 Among such tendencies in other languages, we could mention the huge allophonic variation in the realization of the Arabic phoneme /a/, which ranges from mid front to central to mid back pronunciations according to the consonantal environment. Note also the backing of English /a/ to [ə] after w- (wall, wash, walk, water, etc.). This tendency has led to a merger in American pronunciation between the Mandarin and Cantonese pronunciations of the surname Wang (Mand. wang, Cant. wong).

78 This term was first introduced in JAM 1973 (‘Tonogenesis in Southeast Asia’).
An Extrusional Approach to \( *p-/w- \) Variation in Sino-Tibetan

There are at least three kinds of sesquisyllabization:

1. Due to reduction of a compound constituent:
   
   Familiar examples include:
   
   ‘son-in-law’ \(*za\-mak > WB \( *s_\text{mak} \) (\( *za \) ‘child; son’)\)
   ‘ant’ \(*b\-wawak > WB \( p\_\text{rwak} \)\)
   ‘snake’ \(*sa\-b\-waw\-rul > WT \( s\_\text{brul} \)\)

   \(*bo\-waw\-rul > *bo\-ray > *mo\-\( \text{r}^79 \)_\text{ry} > WB \( m\_\text{rwe} \) [m\text{rwe}]\)

   If the compound constituent that was destined to become a prefix was a closed syllable (i.e. if it was of the form \( *C_1 + V + C_2 \)), either the \( C_1 \) or the \( C_2 \) could become the new prefix. The schwa of the minor syllable may either be the remnant of the vowel of the former first syllable of the compound, or it may be epenthetic (especially if it is the \( C_2 \) which is the new prefix):
   
   (i) \( C_1 \) became the prefix: e.g. PTai \( *h\text{maak} \) ‘fruit’ \( > \) Siamese \( m\_\text{a} \) in fruit names (see note 69).
   
   (ii) \( C_2 \) became the prefix: e.g. Thai \( n\_\text{am-b\_\text{so}} \) ‘well’ \( > \) Mpi (Loloish) \( m\_\text{p\_\text{o}} \) (see JAM 1978:13-14).

2. Due to breaking up of an intrinsic cluster:

   A prime example of this phenomenon is the fate in the Chin languages of the intrinsic cluster \( *kw- \) in the PTB root \( *k\_\text{way} \) ‘dog’, where the velar stop was reinterpreted as a prefix \( (*k\_\text{way}) \) and then dropped, yielding forms like Lushai \( \text{ui} \), Lai Chin \( \text{uy} \). DOG is in fact a most interesting example, since its initial consonant group has been interpreted in different ways in the various subgroups of TB:
   
   • Tibetan changed the semivowel to \( -y- \): WT \( k\_\text{hi} \)
   
   • Loloish reanalyzed the initial as a unit phoneme, \( *k\_\text{w} \) \( (> \) Lahu \( \text{ph\_\text{hi}} \)\)
   
   • Karenic also reanalyzed the velar stop as a prefix, and then substituted another prefix for it: \( \text{thwi} \).\(^{80}\)

3. Due to phonologization of an extrusional phonetic feature:

   This is the type of sesquisyllabization in which we have been especially interested in this paper, e.g. ‘pig’ PLB \( *p\_\text{ak} > *p\_\text{a-wak} \).

(D) Prefixation at various points in the cycle

Note that the addition of a prefix can take place at several different points in our scenario, either before or after the extrusion of the labial semivowel. Where ‘\( X \)’ stands for any prefix, we may find any of the following outcomes:

\( ^{79} \) Perhaps the deocclusion of the prefix \( (*b > m-) \) is connected to the extrusional \( -\text{\_\text{w}}- \) that developed after the \( \text{r} \).

\( ^{80} \) Benedict clearly recognized this phenomenon with respect to Karen (STC, p.133).
(a) a prefix added to the bare bilabial stop (no extrusion): *pak > X-pak (e.g. kəpak, təpak);
(b) if there is an extrusion, once the original labial stop has been ‘prefixized’ (reinterpreted as a prefix), it can drop: *p(ʷ)ak > *p-wak > wak;
(c) after such a prefixized stop has dropped, the remainder of the syllable (now with initial semivowel) can be reprefixed by a new element (e.g. kəwak, təwak); cf. e.g. Karenic *tʰəʔ < *t-wak;
(d) a reprefixation can occur without displacing the earlier prefix, yielding forms with double prefixes:\n\[\text{e.g. WB kəwat 'leech' < *r-wat < *r(p)wat < *r-pwat < *r-p-ʷat < *r-pət.}\]

Note that my usual formulation of the PTB syllable canon gives the wrong impression with respect to the diachronic status of multiple prefixes:

\[(P^1) (P^2) \text{ Ci (G) V (Cf) (s)}\]

The numerals 1 and 2 have been intended merely in a synchronic linear sense, from left to right; but it is more meaningful to number them in diachronic order of antiquity (and I shall henceforth do so):

\[(P^2) (P^1) \text{ Ci (G) V (Cf) (s)}\]

4.5 Some remarks on Chinese reflexes of p/w etyma

We will not attempt here any detailed analysis of the putative Chinese cognates to the TB p/w etyma that have been offered in this paper, but will content ourselves with a few general remarks.

If we more or less accept Karlgren’s GSR reconstructions of these etyma (as Benedict does in STC; see especially n.463, p.174), most of the OC comparanda show a medial -w- after a labial stop (e.g. *piwə), or else a labial stop plus a reconstructed vowel *-ə that has affinities with such a medial glide. This suggests that the extrusion of the semivowel took place in Sino-Tibetan before the split-off of Proto-Chinese from PTB. However, the extrusional cycle we have outlined seems never to have further unfolded in Chinese to the point where the -w- drove out the preceding stop and became the new root-initial.

In other systems of reconstruction no -w- is posited for these roots; e.g. Karlgren’s rhyme *-ə, appearing in roots like BAMBOO, PALM, PIG, corresponds to Li Fang Kuei’s *-rag, -jiag, and to Baxter’s *-ra, -ja. (This is the rhyme category yú FISH, which appears in both Divisions II and III in the rhyme tables. The Div. II words are

81 Naturally it is the historically older prefix which is closer to the root. In Chinese terms we could call the ‘inner’ or more ancient prefix the nèiqiánzhu, and the ‘outer’ or younger prefix the wàiqiánzhu.
reconstructed by Baxter and Li with *-r-, and the Div. III words with *-j-; see Baxter 1992:478-83.) Is it not possible that at least some of the Division II words are really to be reconstructed with *-w- and not *-r-? In any case, one is forced to admit that variation between w and r is by no means rare in ST/TB, both at the level of reconstructed etyma and within a single synchronically observable language.82

4.6 Extrusion viewed in broader terms

For what we have been calling ‘extrusional’ phenomena, John Ohala has been using the term emergent. The concept of ‘emergence’, borrowed from evolutionary biology, refers to a ‘novel structuring of behavior from a reconfiguration of preexistent elements’. Familiar examples include the wings of insects and the feathers of birds, originally evolved for temperature regulation, later used for flying; the wings of bats (from earlier fingers); and closer to home, the secondary functions of the larynx in speech, as opposed to its primary biological functions (including protection of the esophagus, and creating a pressure differential to aid in defecation).

Ohala (pers. comm.) points out that grave (=non-front) vowels have a low f2, which favors their labialization83 -- i.e. the extrusion of a labial offglide -- just as acute (=front) vowels, with their high f2, favor the extrusion of a palatal offglide. That these offglides can sometimes achieve more salience than the segments from which they sprung should be no more surprising to us than the fact that we now use our larynges for other purposes than to expel our intestinal contents.

82 For a general discussion of variation between medial glides, see JAM 1978 (VSTB:33-36). I have devoted a whole article (JAM 1985) to the reconstruction of the ST copula, which has two equally well-attested allofams, *ray and *way. We have seen above (SPINDLE #19) how modern Lahu doublet forms (e.g. ʯ5 = ʯ3 ‘spin, whirl’) reflect earlier *w = *r variation.

83 Pharyngealization (which involves a lowering of f2) is therefore not likely with labials or velars, whose f2 is already low.
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An Extrusional Approach to *p/-w- Variation in Sino-Tibetan


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