

Suprasegmentals in Southeast Asia

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'If you can't explain something, you've gotta reconstruct it'
I. D₁yen/D₂yen/D₃yen/D₄yen

'Here anything can happen to anything - and often does'
P. K. Benedict

'Mother Soup'
W. L. Ballard

'In this field you have to be a little crazy'
J. A. Matisoff

1. A Short History of SEA Suprasegmentalism

In the early 20th century, scholars agreed that tonal and non-tonal languages don't go together but were puzzled by Chinese, which seems to be a 'broken down' relative of Tibetan - and Classical Tibetan, a high-status language in those days, has all sorts of prefixes and suffixes - and no tones! Chinese scholars had long accepted their tones as a linguistic way of life, even including in that category (sheng) forms with stop finals, and were not inclined to give them up, even though their Western colleagues kept insisting that they simply must be considered secondary in some way in view of the Tibetan evidence. Maspero helped out by showing that a pair of tones in Vietnamese (hỏi, ngã) are the reflexes of Mon-Khmer final *-s ~ *-h.

In the mid 20th century, Haudricourt expanded on the work of Maspero by trying to show that another pair of Vietnamese tones (sắc, nặng) are reflexes of Mon-Khmer final *-ʔ. The MK data then available were hardly adequate for the proof, as both Benedict and Gage pointed out, but Haudricourt's keen linguistic intuition eventually bore fruit

when Diffloth was able to connect these tones (partially creaky accents) with a creaky accent reconstructed for PMK/PAA.

Haudricourt has to be credited with a (delayed) hit here but he struck out a little later. No sinologist, he suggested that the three tones of Chinese (excluding final stop forms) originated in a manner parallel to those of Vietnamese: ping sheng (level tone) from plain (unmarked) prototypes, shang sheng (rising tone) from final **-ʔ* and qu sheng (departing tone) from final **-h* (< PST **-s*). His sinological brethren, notably Pulleyblank, seized upon this explanation and expanded it in a linguistic feeding frenzy. Of late Sagart has suggested modifying the **-h* to a creaky accent. Gedney and others, caught up in the spirit of the times, suggested a parallel explanation for Tai tones. Benedict had long before connected Tai with Austronesian, explaining the tonal system as a 'whole cloth' loan from the Chinese, and had later expanded this to include Miao-Yao and its tonal system as well, but has been unable to come up with a scheme for tonal assignment (recently Sagart has suggested P-Tai tone **B* < final **-s*). On the Sino-Tibetan front, Benedict has reconstructed a two-tone **A* vs. **B* system for PST, based on fairly regular PTK/Chinese correspondences, but many linguists have remained skeptical, continuing to point to (Classical) Tibetan and other non-tonal TB languages in the West.

The field remains divided at the present time. Benedict keeps pointing out (see esp. his Karen studies) that PST **-s* yielded final *-t* in Chinese, not Haudricourt's **-s* > *-h*. Bodman has attempted to support Haudricourt's **-ʔ* by setting up the same feature for PTB but few have followed him here. Ballard, given to free expression, has pronounced it all a big mess ('Mother Soup'). Matisoff, given to diplomacy, has introduced the term 'Tonogenesis' and declared a draw all around, with it all going through cycles. Hardly anyone fully agrees with him, it seems, nor with anyone else, really. It's not a field for the faint of heart. Definitely!

2. Suprasegmental = accent

Phonation type (voice quality)

(clear~breathy~murmured~creaky~glottalized~lax~tense)

Tone

(pitch/direction of pitch)

Duration (length)

(including short~long vowels; also [Mon-Khmer: Lai and Formosan: Kanakanabu]~extra-long)

Stress

Accent

refers to any of the above parameters

Prosody

refers to any given bundle of the above, e.g. that of Burmese auk-myi is 'creaky/high-falling/short'

	<u>ST</u>	<u>AA</u>	<u>AT</u>
syllables ¹	1	1~2	2(~3)
finals include:	-p/t/k/s	-h	-p/t/k/s -h -b/d/g/z
vowel length ² (duration)	<u>short~</u> long	short~ <u>long</u>	[lacking]
accents :type (other)	tonal: falling ~rising	phonation: clear ~creaky	pitch-accent: low+low ~low+high ~high+low ~high+high
:domain ³	restricted (voiced finals)	restricted (voiced finals)	unrestricted

-Accents are

depleted/shuffled (to other accents)/segmentalized.

-Segmentals become

accentuated thru transphonologization.

-Switching involves either

segmentalization or accentuation.

-Checked coda intrusion (CCI): the effect upon accents within the (voiced finals) domain of features developed outside that domain (before surd stop finals); cf. the Cantonese development:

Cantonese tonal reflexes in the 'high' (< *surd initials) series:

	*A	*B	*C(<*sandhi)*D(<*final stops)
'standard' (Norman)	53	35	33 55 (short vowels) 33 (long vowels)
'early 40's' (Benedict)	55	(pinyam = 'changed tone'; serves to nominalize)	
	53	(regular tone, including verbal forms)	
'present' (Bauer)	/53/	largely~completely replaced by /55/	

3. Morphophonemics

Accents do not ordinarily play a morphophonemic role but may do so on occasion, e.g. in Burmese the creaky auk-myit (see note 9) signals subordination: ṇa 'I', ṇá 'mine'. Duration is rarely involved here but in Rawang (Nungish) vowel length (:) is a phoneme of 'transitive action.' In the Burmese-Yipho group, micro-analyzed by Matisoff, Atsi shows a split in reflexes for PBY tone *2 (< PTK *B), one for verbs and another for nouns, while Mpi has six tones, all from splitting of the three PBY tones, with all three 'verbal tones' having an extra contour feature, apparently thru incorporation of verbal/adjectival enclitics.⁴

The role of sandhi with tonal/phonation accents displays extreme variation throughout the region, both in degree and in kind, ranging from /none/ to /overwhelming/ and from sandhi-on-the-left (SL) = 'regressive type' (Ballard), with changes on that side, to sandhi-on-the-right (SR) = 'progressive type' (Ballard). The latter, which is atypical for the region, is a hallmark of the Wu dialects of Chinese (lower Yangtze drainage), linked (substratum) by Ballard to that shown by Miao, with the further suggestion that a language with pitch-accent underlay it all (it did: the ancestral JR - see below).

Of considerable historical interest, finally, there is clear evidence at the PTK level, at least, of a distinction between tone *A = 'stative/intransitive' and *B = 'causative/transitive', e.g.:

- PTK *(-)nam^A 'smell' (intr.) ~ *(-)nam^B 'smell' (tr.).
 *na^A 'rest' ~ *na^B 'rest something on' (Nepal: Gurung)
 'alight' (Burmese)
 *dzya^A 'food' --> 'rice' ~ *dzya^B 'eat' (PBY *dza¹ ~ *dza²)

On occasion this takes an unaccustomed turn, e.g.

- PST *(s-)ma^B 'mother' > 'thumb'~'big/chief/principal'
 (Lepcha, Garo, Mru; Chinese)
 *ma^A 'be a mother' (Nepal: Chepang)
 *pa^B ~ *ba^B 'father' --> 'thumb' (Nepal: Tamang)
 (~'big?')
 *pa^A 'have a father' (Nepal: Chepang)

In the patripotestal Chepang society, one can stativize a mother but in the case of a father it's the child that gets stativized! But note English: one can 'mother' (intr.) but not 'father'!

4. SEA Proto-accent developments

4.1 Depletion (duration)

- ST Widespread: Exc. some in West (KN) and in Nepal (<-- Indic?)
 AA Limited: Waic and sporadic other (esp. high vowels)

4.2 Shuffling (duration)

- ST -->tone: Only before CC (see Cantonese, above):
 sporadic
 AA -->tone: Before CC; also in open syllables
 (Angkuic: Hu, U)⁵

4.3 Segmentalization (duration)

- ST -->vocalic differentiation: Sporadic in TK; freq. in Sinitic

-->final stop retention vs. loss: Sporadic (mainly
with *-k)

AA -->vocalic differentiation: Freq. with register

-->final stop retention vs. loss: Sporadic

4.4 Depletion (other accents)

ST (tone) Rare exc. in West (<-- Indic) (Tib., Lepcha, et al.)⁶; periph. East (subst. Shanghai dial.) (<-- traders?) and NW (NW Mand. dials. <-- Altaic); central area only Yi.⁷

AA (phonation) Widespread in West (<-- Indic?) and central area; exc. only SE periphery: Vietic, Katuic, Pearic

AT (pitch-accent) Widespread; exc. only Jp/Ryukyuan⁸

4.5 Shuffling (other accents)

ST tone --> phonation: Nepal langs. (<--Indic); poss.
Burmese (<--Mon)⁹

tone *B --> glottal: Chepang, Garo, et al.¹⁰

tone --> pitch-accent: Meitei, Bawm Chin, Khezha, et al. (<-- Indic)¹¹

AA phonation --> tone: Lai; Vn.¹²; Thavung (Ferlus record.)

AT pitch-accent --> tone:¹³ KD and MY (<--Chinese, both as systems)

--> duration (with stress): Philippine; Kabalan (Form.)

--> stress: Tsouic (Formosan)

4.6 Segmentalization (other accents)

ST tone --> vocalic differentiation: Rare: Chang; poss. Chinese dials.¹⁴

--> contrasting initial consonant effects: Poss.

Chinese dialects.¹⁵

AA/AT Under investigation

5. SEA devoicing

ST Widespread

Si Exc. some Chinese dials. (mainly Wu group)

TK Exc. some northern/western langs; Bwe Karen

--> tones: Widespread, typically with doubling of tonal contrasts

--> phonations: Nepal langs., Jinghpaw (dial.), sporadic other

AA Widespread

Exc. Stieng, Brao, Lowen, Lawa, et al.

--> tones: Lai¹⁶; Vn.; N. Khmu; Rieng, Samtau, et al. (all <-- ST)

Khmer: Tatey dial.¹⁷

--> phonations:

--> register¹⁸ Kuy, Chaobon, Chong, Bru; Mon, et al.

--> restructured Cambodian (Mod. Khmer)

AT Widespread in part

AN Mostly peripheral (Oceanic/Polynesian)

Sporadic other (incl. Form: Tsouic; Thao)

JR Early (Old Jp.)

KD Unless preglottalized/prenasalized

MY Exc. Shi-men-kan Miao (complete)

Shui-wei Miao (unless prenasalized)

--> tones: AN

Peripheral: New Caledonia langs., et al.

Mainland: Eastern Cham (<-- Vn. <-- Chinese ~ KD)

Hainan: Huihui (<-- Vn. <-- Chinese ~ KD ~ Hlai)¹⁹

--> phonations:

Mainland: Western Cham (<-- Khmer, et al.)

(tones in all recorded KD, MY languages [<-- Chinese, as systems])

The influences (<--) are often multiple. E.g. Lai (<-- ST) but came from the West, has early loans from TB²⁰ and is now surrounded by KD and Chinese. Huihui was first under Vietnamese influence, but later in Hainan came under both Hlai (KD) and Chinese (mostly Min group) influence.

Question: can the devoicing be explained simply via /less effort/ --> delete marking (voicing)? In SEA more syllables seems to have meant less devoicing in general. Also, unlike AT, both ST and AA restrict the domain of accent; even AA, as a result of its sesqui-syllabism, ends up with restricted accent domain on monosyllables. Is the devoicing a kind of assimilation related to accent: type /gak/ --> /kak/? In any event, could it have arisen in some ST or AA center and diffused from there throughout the region, even to AT (Chamic)?

Question: how to explain Son and Kengtung Wa? These two Palaungic languages, at the very heart of MK territory = the postulated homeland, surrounded by devoicing and/or tonalizing and/or phonationizing languages, did something entirely different: they flip-flopped *p ~ *b, etc., rather like the tonal flipflops encountered elsewhere in the region. One very simple thing has not been done by any of the regional languages: voicing (without flipflopping). Why?

6. AT pattern of splits in syllabic reduction

The basic AT pattern of splits in syllabic reduction is well illustrated by the root for 'eye' (unaffected by morphology):

PAT *ma^L pra^H 'eye'

Jp. me^{3a} < OJ mē < *mai

PAN *ma^L Ca^H -->

P-Phil. *mäta

P-Tsouic *macá

Kabalan ma:ta

PMY *may^C

PKD *(m)pra^A

PAT/PAN prefixed *ma- 'stative' vs. *pa- 'causative' is illustrated in the 'die'~'kill' root, with frequent lapsing of function (as illustrated by Jp., Toba-Batak and Kabalan; cf. Ami (Paiwanic) ma-pa-tay).

The *L/H accent pattern for this pair of AN roots is suggested by its existence in the prefixed 'die'~'kill.' It yielded Jp. /3a/ pattern (accent not recorded for /hate-/), one of four disyllabic patterns reconstructed by Martin for PJR, as

well as PMY *C and PKD *A, the latter pair apparently unaffected by the morphology):

PAT *(ma-)L play^H 'die'

Jp. -

PAN *ma^L - Cay^H --> P-Phil. *mătay
(T-Batak mate 'dead') P-Tsouic *macáyi

PMY *day^C

PKD *play^A

PAT *pa^L - play^H 'kill' (~'die'~'end')

Jp. hate -[] 'end; die'

PAN *pa^L - Cay^H P-Phil. *pătay
(T-Batak pate 'end') Kabalan pa:tay 'die'

PMY *tay^C

PKD *-play[A]

See Benedict, Forthcoming for the *pr vs. *pl clusters; both Jp. and MY have /i,y/ for *pr, /t/ for *pl. PAN *C is a cover symbol (Dyen), usually a reflex for prototypical clusters. PMY *day^C 'die' is from the unprefix root, with the (secondary) /t/ showing the regular initial voicing of this stop in PMY (see ATLC: 156).

Canonical-reduction-on-the-right (CRR)

Jp. (see JAT: 23 ff.); MY (ATLC: 152)

Canonical-reduction-on-the left (CRL)

KD (see ATLC: 151-52)

Sandhi-on-the-right (SR)

Miao (~Jp.) (substratum) --> Wu dials.

Sandhi-on-the-left (SL)

KD (<--MK) (substratum)

Yao (<-- KD ~ MK)

Someone has said: 'The Tai got their tones from the Chinese, their vowels from the Mon-Khmer and their consonants from the French (Maspero, Haudricourt).' It fits.

PAT	L	H	L	(NI = (n) is AT hall-mark nasal increment)	
				'two'	
*dra	*d	wa	sa	> *dawasa (PAN)	(accent? - form class)
	a	w	a	> *traw ^B (P-Hlai)	(regular initial devoicing)
	a	w		> waza ² (Jp.)	[duplicity =]trick/act'
-	-	w	z	> *hwan ^{B/C}	> von ^{3/5} (Be)
-	-	w	a	> *hwa ^B	> hou ³ (Lakkia)
		w	a	> *hwa ^A	> wa ¹
					'two' (MY: Pa Hng group)
					'twin' (KS: Mak)
*dra-			sa	> *sa ^A (Buyang; Laha, Pubia, Lati, Gelao)	
d	a-	d	(sa)	> dalawa (AN: Tagalog)	(typical AT partial reduplication)
a	d	a	w	> *draaw ^A (Tai)	[2 x 10] = '20' (with VT)

PAT	*(?i-)	(?i-)	a	(n)	T' (with pronominal markers and NI)	
					k u	
	*(?i-)	(?i-)	a		> *(?i-) (?u-)aku (PAN)	(accent? - form class)
		(u-)	a	n	> *(u-)anu (PJR)	(reg. *ŋk > /n/)
						(Jp. cliticized wa- ~ a-)
?i			a		> ?ya ^{A/B} ~*kou ^B (P-Yao)	(reg. *u > /ou/)
i			a		> *yaw ^A (PKS)	(cf. Form: Sai. yako'-ya'o')
			a		> *kaw ^A (P-Tai; Hlai: Jiamao)	(thru VT)
					> *ku ^A (P-Tai; Buyang)	
?i			a		> ?ya ^{B/C} (Be)	(reg. *y > /z/)

7. A case of accent shuffling and devoicing: the development of tone in Lai (Austroasiatic)

Lai Tones:

/1/ high-level; /2/ mid-level; /3/ low-level; /4/ high-falling; /5/ low-falling; /6/ low-rising (lacking † stop finals).

<u>Lai</u>	<u>VNese</u>	<u>Chong</u>	<u>Comments</u>
<u>From *Clear:</u>			
--From *plain initials (= tone 1)			
child	qo:n ¹	con	kheen
arm/hand	ti ¹	tay	tii
			†irregular (taking Lai as regular)
ear	lɔ ³ tsya:i ¹	tai	
eat (1)	tsɔ ¹	-	chaa
this	ni ¹	nì/nây	-
rain	SKY+mɔ ¹	mɯa	†ma?
wing	qaŋ ¹	†cánh	-
			Pearic *ske:ŋ
--From *aspirated initials (= tone 6)			
year	nam ⁶	năm	nǎm
hear	mɔŋ ⁶	-	mɔðŋ
			'watch'
			Mon hnam
			Waic *hmɔŋ
			S. Khmu hmá:r
			'hear/listen'
salt	mya:n ⁶	muôi	
--From *voiced initials (=tone 2)			
thigh	lou ²	-	phlùu
deep	ɣau ²	sâu	-
buffalo	vo ²	-	(kə)paaw
no (2)	ʔo ²	-	-
			Pearic *hɔ:
<u>From *Creaky:</u>			
--From *plain initials (= tone 4)			
dog	tsu ⁴	chó	†chɔɔ
fish	qɔ ⁴	cá	-
leaf (3)	lɔ ³ ʔɔ ⁴	lá	la?
fruit	mi ³ ʔa:i ⁴	trái	phlii ʔuut [p ^h li:ʔ]
blood	sa:m ⁴	-	†məhaam

	<u>Lai</u>	<u>VNese</u>	<u>Chong</u>	Comments
mother	mɔ̌ ⁴	má	-	

--From *aspirated initials (= tone 3)

stone	mau ³	dá	(kə)mɔ̌ ²	Pearic *tmo ²
far	ŋai ³	ŋái	-	Waic *sgay
seed	mɔ̌ ³	má	-	Waic smal/r

--From *voiced initials (=tone 5)

belly	puŋ ⁵ ši ⁴	bụŋ	-	Pear pouŋ
shoulder	phiu ⁶ ve ⁵	†vai	-	Waic *lmpal/r
tongue	lɔ̌ ³ li:m ⁵	liém 'lick'	-	
weep	ža:m ⁵	-	†yaàm	

Numerals		[Chong numeral 'form class']		
one	ma:i ⁵	-	muu ² y	
two	bi ¹	-	†paa ² y	PMK*bi ² a:r (Shorto)
three	pai:1	ba	phee ² w	Tavưŋ pal ¹
four	pu:n ⁴	bón	phoo ² n	
six	piu ⁴	sáu	-	Pong prau, Tv. phalu ²¹
seven	pai ¹	bay	-	Pong pal, Tv. pih ¹
eight	sa:m ⁴	taŋ	-	Pong sam, Tv. saam ³
nine	šan ⁴	chin	-	Pong chin, Tv. ciin ¹

(1) Also ɔ̌⁴ tsɔ̌¹ 'food'; tshɔ̌⁶ 'feed'; (cf. PTB *dzya^B 'eat' and *ʔa- 'nominalizing prefix') Cf. Tamang *tsa^B 'eat', tsha^B 'graze'

(2) /h/ loss thru use as enclitic:

mɔ̌² < *ma² 'come' (< Kadai *ma^A)

(< *creaky) change:

mau⁵ 'not come'

(3) app. for *lɔ̌² < *lɔ̌² (cf. Garo, supra), with metanalysis (?) of lɔ̌³ as pre-syllable (cf. 'ear' and 'tongue')

Notes

1. MK has been called 'sesquisyllabic' (Matisoff) in view of the fact that disyllabic roots typically begin with an unstressed minor syllable, or 'presyllable,' but the disyllabic roots of the parent PAA may well have included some with equally stressed syllables (Munda evidence). The canonical syllable number for AT as well as for AN clearly is /2/, with rare, atypical monosyllables but a sizeable number of trisyllables (see 'two,' below).

2. In ST long vowels play a modest role and depletion of this accent is widespread; in AA, on the contrary, long vowels are prominent and depletion less frequent, notably in Waic and some in Khasi and Vietic.

Kanakanabu (Formosan: Tsouic) has an 'extra-long' (::), a morphophonemic end-product. Lai (MK) has a 'half-long' (:): mat² 'fire' (cf. Mon pumat), ma-t² 'eye' < PMK *mat (typical Lai secondary lengthening) and ma:t² 'socks' (loan < Chinese); also pai¹ '7,' pa: i¹ 'we' (excl.) and pa:i¹ '3'; the pronoun has perhaps been derived from '[we] three' thru vowel shortening; cf. Chiengrai Yao /pua/ < *pua^A '3,' /bua/ < *mpua^A 'we'; White Hmong /pe/ (<*A) '3'~'we,' yet a proto-level *puay is phonologically indicated; cf. Old Mon /poy/ 'we', paralleling Lai ma:i⁵ 'one', Old Mon /moy/ < PMK *mua:y[?] (see table on Lai correspondences).

3. In ST (TK: P-Tamang) as well as in AA (MK: Lai; Pearic: Chong) there is some evidence for tone/phonation domain before surd stops but it seems likely that secondary factors are involved.

4. She (MY) presents an unusual case of tonal 'phoneme switching': PMY *pley^A '4' and *pra^A '5' were both destined to yield She pi²², an awkward situation resolved by shifting the tone of '4' to /35/, the regular CC reflex ('5' given preference as a numeral unit?).

5. A rare example of an extreme effect of CCI; Hu shows simple replacement of short vowels by high tone, long vowels by low tone. U displays a complex variety of this, with short vowels --> denasalization.

Other MK languages appear to be on the 'Hu/U path,' so to speak; Sre shows regular correlation of vowel length with intonation, so that either could well be interpreted as basic (Smalley).

6. Recent tone loss, dismissed by many linguists as a myth, has occurred in the Ghandrung dialect of Gurung, which has maintained the Gurung phonation contrast (< initial voicing) but has lost the tonal contrast.

7. Yi (Northern BY), in the very heart of the ST homeland, has the same mid-level tone for BPY *1 (< PTK *A) and *2 (< PTK *B) but a separate low-falling tone for the secondary *3, to be reconstructed as a glottalized phonation (still this in Burmese; see note 9), hence exhibiting shuffling as well as depletion.

8. Some depletion has occurred in Japanese, however, of two kinds and in two widely separated areas: 'one accent type' (ikkei), in South-Central Kyushu, and 'no accent type' (mukei), in S. Tohoku, north of Tokyo.

9. Bradley describes the PBY *1 and *2 tones as having been shuffled in Burmese to /clear/ vs. /breathy/ phonation, contrasting with the /creaky/ auk-myit, representing the innovative (largely < prefixed *s-) PBY tone *3; the Northern dialect recorded by the writer, from an area largely free of Mon influence, showed rather a /low/ vs. /high/ distinction, without discernible phonation differences.

10. Tone *B reflexes, in Chinese as well as TK, are frequently creaky to some degree or even glottalized, e.g. in Nocte and Tangsa ('N. Naga') Mikir; Lotha and Yimchinger (KN), leading perhaps to segmentalization /ʔ/ in both Chepang and Garo, with creaky/glottal phonation an alternative possibility for both. This marking of *B appears to be related to the findings of Ohala and Ewan ('Speed of pitch change', J. Acoust. Soc. of America 53: 345, 1973) that a rising pitch involves more 'effort' than a falling pitch. The key role played here by the RISING factor is shown especially by Mandarin Chinese, which has developed a rising tone from 'low' PST *A (xia ping sheng), recorded by the writer in N. China as

having glottal closure (ʔ) and in Kunming (Yunnan) as heavily glottal.

The KD tonal system, an early loan from the Chinese, provides further data here: in Be (Hainan) the low-rising tone from 'high' *A has a 'very conspicuous laryngeal constriction' (Hashimoto) whereas the high-level tone from *B does not; in Tai, as often pointed out, tone *B is associated with creakiness but only in the center of distribution of the family, not in Northern Tai nor in the southern (peninsular) dialects of Thai, clearly indicating that it is innovative (cf. the similar picture presented by Japanese accents, where Ramsey has shown that the central Kyoto accent is innovative, the peripheral Tokyo conservative).

The marked nature of RISING extends even to semantics: Thai has this tone on only three Eng. loans ké 'gay', bóy 'boy', cík-kó, 'gigolo.'

11. An intermediate stage in the tone --> pitch-accent shuffle is found in Nepal languages like Kham, in which the disyllabic word rather than the individual syllable is the domain of tone, with frequent neutralization of the *A~*B contrast in compounds.

12. It appears that Vietnamese originally maintained the PMK /creak/, with later tonal replacement in the 'high' /sắc/ tone in Northern (standard) Vn. and in the 'low' /nặng/ tone in Central Vietnam.

13. Both the KD and the MY borrowings here are considered shuffles because no segmental (or vowel length) basis for the tonal assignments as a whole can be worked out. This very circumstance serves, in fact, to support the view that PAT had a suprasegmental system of some kind, which early on was shuffled to tonal systems in KD and MY; see below for the contrasting kinds of development in Chamic.

14. Chang ('N. Naga') has -o(u) < PTB *-a^A vs. -au < PTB *-a^B. In some Chinese dialects (Min: Foochow, Ningte; Mandarin: Omei) tones derived from PST *A and *B have opposing vocalic effects, e.g. Foochow has two sets of vowels: e, i, u, y with high or non-rising tones (incl. *A and 'high' *B) and a, ei, ou, øy with low or rising tones (incl.

'low' *B) but it is not clear whether any of these contrasts have achieved phonemicity.

15. In Chinese dialects both voicing and aspiration tend to be better maintained in tone *A than tone *B derivatives but the phonemic implications remain undetermined. Parallels exist in TK and present similar problems, e.g. in Sani (Nyi) and Ahi (Northern BY) devoicing of initial stops has taken place with BPY tone *1 (< PTK *A) but not with BPY *2 (< PTK *B) yet the tonal distinction remains intact, hence complete segmentalization does not obtain here.

16. See table on Lai correspondences for details on the Lai system.

17. Unexpected (!) but rivaled by another Khmer dialect: Phnom Penh, which has managed to get a tonal contrast from a simple /r/: cf. ci:əŋ (low tone) < ce:əŋ 'artisan' vs. ci:əŋ (high tone) < *cri:əŋ 'sing.' Who told the Khmer about tones, anyway? Traveling Chinese traders?

18. /register/ defined as 'phonemic vowel register; retention of sub-phonemic differentiation in initial stops vis-à-vis register'; /restructured/ as 'loss of register thru restructuring of vowel system, with complete consonant merger' (ap. Huffman).

19. Huihui has developed a 'neat' tonal system: /mid/ < *unmarked (general), /high/ < *-h final; low tone < *voiced stops; also two /contour/ tones < *stop finals. This is not very much like any of the tonal systems of the area although it does resemble Vietnamese in having a special tone for *-h, which went to /high/ rather than the /low/ that some phoneticians might have predicted. The language got the idea of having tones from its neighbors, probably even before arriving in Hainan, but went about it on its own. Kroeber called this *stimulus diffusion*, to be distinguished from the *direct diffusion* represented by the tonal systems of KD and MY, early borrowings as such from Chinese, with the tones traveling with early loan words and then assigned to native AT forms by rules that remain to be determined - a shuffle from an existing (we think) pitch-accent system, not an accentuation.

20. These loans, almost without exception, could pass for PTK roots and make up an intriguing package, indeed. Apart from a few 'culture words', a 'respectful' kin term or two and perhaps 'run', they consist *entirely* of SKY, HEAD, FLESH and EAT (see table on Lai correspondences). The early neighbors of the Lai were the HEAD-hunting Wa; did the ancestral Lai not only collect HEADS but also EAT the FLESH of their victims?! While making a ritual of it all, perhaps, as head-hunting cannibals are wont to do, with an offering, say, to the SKY-god? None of this sounds very sensible but, then, neither does the Lai language!

21. Additional Lai cfs. to Forthcoming:

lu⁵ 'deer,' PW *(k-) lo:s 'kind of deer'; Khmer jhlus > clu:h;

ba:i⁴ 'body'; PW *bvy 'person';

khə⁶ 'thin'; PW *rga⁷ 'get thin';

phye⁵ 'clothes,' PW *r(m)be²; cf. also ɬet¹ 'die,' Vn. chét;

ɬet³ 'kill,' Vn. giết < PMY *(k-) ceet (infixd *-l-?):

*c-l-et > *š-l-et > ɬet

A1 reflexes:

*k- > q-; *ts- > ts- (eat, dog), *c- > š- (nine)

*pl- > ɬ- vs. *bl- > l- (cf. ɬu⁶ 'silver' < Burmese-Yipho
*plu^A)

*-a > -ɔ; (generally) low-mid > mid, high-mid > high

Addenda

(from the First SEALS Conference, Wayne State University, May 1991)

1. Eric Schiller commented that his own work with Khmer indicates that the minimal contrast cited in note 17 above is basically non-tonal. This obviates the need to invoke traveling Chinese traders, it appears, yet one would like to see further exploration here.

2. Norman Zide presented evidence for setting up a glottal (or equivalent) accent at the Proto-Munda level but indicated that the limited PAA-level cognate sets presently available hardly suffice for a similar reconstruction at that early level.

3. Annie Jaisser's presentation of the tones of White Hmong shows that accentuation has played a key developmental role in this language, with markedly /breathy/ phonation serving as the main marker, it would appear, for tone -g (< 'low' *C), pitch-wise 42, as opposed to tone -j (< 'low' *A), pitch-wise /52/. Elsewhere in MY, the Houei Sai dialect of Mun (Yao) also has at least one tone of a similar phonation type, the reflex of PMY-level initial aspirates, but the phonation appears to play only a subsidiary role here.

(from the Sixth Austronesian Conference, Honolulu, May 1991)

1. Malcolm Ross reported a failure (a repetition of that noted in JAT: 115) in attempting to link up the accentual P-Phil. (stress/length) and Tsouic (Formosan) (stress) systems. He also reported, however, the discovery of a highly significant tie between the P-Phil. system and the stress system of the Budai dialect of Rukai (Formosan), in disyllabic roots ending in an underlying final consonant, with P-Phil. paroxytone regularly corresponding to Budai paroxytone while the P-Phil. oxytone has both oxytone (eight cognate sets) and paroxytone (seven sets) correspondences in Budai. Ross reconstructs simply PAN *paroxytone vs. *oxytone stress, following the P-Phil. reflexes, while attributing the Budai discrepancy in the latter to a 'stress shift'. He offers no basis for this preference for P-Phil. over Budai, however, and in fact it can be argued that the 'split' in Budai reflects one-half of a PAN-level *H vs. *L in a basic pitch-accent system, with merging in the other half. The importance of this discovery by Ross can hardly be overestimated, whatever the interpretation of the findings, since it appears to establish an accent system (of /stress/, /length/ or other type) at the PAN level, supporting the views of Zorc and Dahl vs. Dyen, et al. It is only a beginning, to be sure, but it can be expected to lead to an intensive search for additional evidence along these lines, with an eventual goal the linking up of a PAN accent system with the Japanese/Ryukyuan pitch-accent system.

2. Kenneth Rehg reported on Proto-Micronesian (PMC) prosody, which apparently involved /stress/ on the penult along with /high pitch/ on the antepenult, all highly suggestive of a prototypical pitch-accent system. He further pointed out that PMC showed final vowel lenition, yielding (in mainland

terms) CRR rather than CRL. Further evidence along these lines was provided in a paper by A. C. van der Leeden on Ga'le, a tone language of the Raja Ampat Islands, West Papua (Irian), which contrasts sa¹¹ 'one' (cf. PAN *itsa ~ *ətsa) with sa¹³ 'sweep' < *saya, sa⁵⁵ 'climb' < *sa[?], both cited as regional reconstructions; for the latter, cf. PMP *tsakay. This AN evidence lends further support to that cited earlier (JAT: 22) from new Caledonia (Canala) to the effect that the posited pitch-accent system of PAN was more likely to yield CRR than CRL, thus also supporting the reconstruction of the same prosody at the earlier PAT level; both Japanese and Miao-Yao followed this 'natural' line of development whereas Kadai, under the influence of the substratal sesquisyllabic Mon-Khmer languages, with canonical /[~] + ^ˈ/ prosodies, innovated CRL. For the writer, who began it all with Kadai, first the Miao-Yao and later the Japanese CRR looked 'weird'; it is now clear that it was Kadai that deviated from the ancestral AT line of development with its innovative CRL.