Stable Roots in Sino-Tibetan/Tibeto-Burman

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πάντα ῥεῖ[2]
(Herakleitos, fl. ca. 500 B.C.E.)

1. Basic vs. Stable Roots

In several recent talks, Martha Ratliff (2006a, 2006b) has developed the notion of "lexical stability", especially with respect to the Hmong-Mien (HM) family, contrasting it with the more familiar concept of "basic vocabulary". For her, *basic* words are those that speakers of all languages need to have, thus a *universal* concept; *stable* words, on the other hand, are those which "all languages in a particular family share", i.e. a *non-universal* subset of the lexicon (2000b: 1). This permits a four-way classification of words:

[-basic, -stable], [-basic, +stable], [+basic, -stable], [+basic, +stable].

In the HM context, Ratliff offers examples of each class (*ibid.*):

(a) [-basic, -stable]   BUTTERFLY; JOKE; OR; THUMB
(b) [-basic, +stable]   SILVER; HUNDRED; LIQUOR; TARO
(c) [+basic, -stable]   MOUNTAIN; HEAD; GIVE; NOT
(d) [+basic, +stable]   FLOWER; DIE; HAIR; FIRE

The first class, [-basic, -stable], is of limited historical interest. The second class, [-basic, +stable], is historically ambiguous: all four examples above are loanwords from Chinese into Proto-HM.[3] The fourth class, [+basic, +stable], is "of greatest value in evaluating competing claims for distant relationship" (*ibid.*).[4] As we shall see, it is the third class, [+basic, -stable] which is especially useful for establishing isoglosses among subgroups of a language family.

This interesting approach raises a large number of theoretical issues, which I propose to discuss from the ST/TB point of view, although not particularly with respect to competing claims of distant genetic relationship.

2. Theoretical Issues Concerning the Notion of Stability

2.1 Strict vs. Loose Definition of Stability

"*All* languages in a particular family" is perhaps too strict when applied to Tibeto-Burman, a family with many more languages and much greater time-depth than Hmong-Mien. Even if we use Paul K. Benedict's concept of the five criterial TB languages (Written Tibetan (WT), Written Burmese (WB), Jingpho (=Kachin), Lushai (=Mizo), and Garo),[5] the extremely pervasive etymon for BLOOD (pTB ***s-hywəy**) would have to be disqualified, because of WT **khrag**.[6] Absolute stability—i.e., attestation in every single subgroup and isolate in the family—is hard to find. I am here using a looser concept: a *continuum of stability*, or "stability quotient".[7]

2.2 Pervasiveness vs. Ultimate Genetic Affiliation

Just because an etymon is attested throughout a particular language family, this does not necessarily guarantee that it ultimately originated in that family (cf. the Hmong-Mien examples of [-basic, +stable] etyma above). With respect to ST, the root ***k-laŋ** 'eagle; hawk; vulture; bird of prey' is attested virtually everywhere in TB, as well as in Chinese, although it seems clearly to be a loan from Mon-Khmer (*STC* #333 and n. 225; *HPTB*: 263, 393, 521). Similarly

with ***kyaŋ** 'ginger', ultimately probably from Austronesian, thence into Chinese, then into TB; also ***dzyi ⪥ *gyi** 'ride an animal' (old loan from Chinese into TB), and many others.[8]

2.3 Stability Differences across Semantic Fields

It is a fundamental tenet of glottochronological theory that basic (i.e. universally necessary) vocabulary is the most resistant to replacement through time. This basic vocabulary consists mostly of nominals belonging to a relative handful of semantic fields, especially *body parts*, *numerals*, *pronouns*, *animals*, and *natural objects*, and (to a much lesser extent) *active* and *stative verbs/adjectives*. The famous 100- and 200-item Swadesh lists were compiled according to this idea; but they have been criticized by many linguists (including me) because of their typological and areal bias in favor of European-type languages.[9]

2.4 Stability Differences within the Same Semantic Field

While it is certainly true that basic vocabulary belongs overwhelmingly to the semantic fields just mentioned, there are great differences in stability even within the same "basic" field. Ratliff (2006b: 1) gives several examples from Hmong-Mien:

stable	*non-stable*		*stable*	*non-stable*
FRUIT	TREE		WAIST	NECK
TAIL	FOOT		CHICKEN	PIG
BODY LOUSE	HEAD LOUSE		SNAKE	RAT
WING	ARM		BOY	GIRL
HAIR	HEAD		RICE	MEAT

It is this unpredictability which motivates Ratliff's idea that lexical stability is family-specific, and thus of use in evaluating competing claims of remote relationship.

During the discussion period after Ratliff 2006b, the Austronesianist Malcolm Ross observed that the most stable word in Austronesian is NIT (i.e. louse-egg), doubtless because grooming is very important in AN culture.[10] By way of contrast, the pTB root ***s-row** 'nit' is relatively sparsely attested, so far identified only in Central and Western Tibetan **sro-ma**, Jingpho **tsíʔ-rù** 'nit' (**tsíʔ** 'louse'), as well as in Lushai (Mizo) **hrū**, and several rGyalrongic forms supplied by J. Sun (Puxi **ʃvə̄ʷ**, Caodeng **ndʒruʔ**, Muerzong **srəʔ**).[11]

In the pTB lexicon, as in every proto-language, some etyma in a given semantic field are vastly more widespread and stable than others. Thus, among body parts, the root ***s-mik ⪥ *s-myak** EYE is attested practically everywhere, without significant competition from other etyma with the same meaning; while a body part like SKIN has more than a dozen competing etyma, many of them quite widespread.[12]

There also seem to be family-specific differences in the richness of particular semantic fields. We would expect more words for different kinds of snow and ice in Nootka than in Arabic; and more words for the trappings of a camel in Arabic than in Nootka. The Austronesians, maritime folk and world-class celestial navigators, have highly developed vocabularies for species of **fish** and **stars**, neither one of which is a preoccupation of the TB lexicon.

2.5 Semantic Variation and Change

Should we downgrade a root's stability quotient if it has undergone significant semantic changes in various subgroups, even though its phonological cognacy is not in doubt?[13] In Chin languages the root ***m-luŋ** is well attested, but there is much vacillation between the meanings of HEART and LIVER, and both of these body parts are extensively used in *psycho-collocations*.[14]

2.6 Phonological Variation within an Etymon

Some roots show a great deal of allofamic variation, e.g. SUCK / KISS / BREAST (***dz(y)oːp ≍ *ts(y)oːp ≍ *dz(y)əw ≍ *dzip ≍ *dzup ≍ *dzyuk ≍ *dzyut**, etc.); FIRE / WHITE / SHINY (***bʷar ≍ *pʷar ≍ *hwal ≍ *hwar ≍ *war ≍ *ʔuːr**, etc.); TONGUE / LICK (***l(y)a ≍ *lay ≍ *ley ≍ *lyak ≍ lyam**); BODY HAIR / FUR / FEATHER (***mil ≍ *mul ≍ *myal**, etc.). For our purposes this should not affect stability judgments; i.e., as long ANY allofam of a particular etymon is present in a certain language or subgroup, the etymon as a whole is deemed to be attested there.

2.7 Phonological Disparities among Reflexes of the Same Etymon

Stability judgments, to be valid, presuppose that cognate identifications are correct, which is not always easy to determine by simple eyeballing, especially in the case of obscure and poorly documented languages. Forms in two languages which appear very similar on the surface might well descend from different etyma, or might be loans one from the other, or both might be loans from a common source. On the other hand, forms which look very different can sometimes be shown to be perfectly cognate on the basis of evidence from parallel examples, e.g. Latin **duo**, Armenian **erku** 'two' < PIE ***dwo-**; WT **bźi**, Lahu **ɔ̂** 'four' < pTB ***b-ləy**.

The phonological complexity of an etymon does not seem to play a role in its stability. Among the most stable roots in ST/TB we find ***ka** BITTER, a very simple CV syllable; as well as ***s-hywəy** BLOOD, a complex sesquisyllable.

How similar the various reflexes of a given etymon appear is partly a function of the fact that certain phonemes seem particularly prone to change through time, while others show much greater diachronic conservatism. The reflexes of the Indo-European etymon ***mūs-** 'mouse' are quite similar throughout the family, since nasals and /s/ seem particularly resistant to change in the IE family.[15]

2.8 Morphosemantic Types of Etyma in Sino-Tibetan/Tibeto-Burman

(a) Concepts for which there is an overwhelmingly pervasive single etymon: DIE, DOG, DREAM, EYE, NAME.

(b) Concepts for which there are several apparent roots, none of them very well attested: BAT, CAT, FONTANELLE, SEMEN.

(c) Concepts for which there are several well-attested competing etyma: CHICKEN, FEAR, HEAD, SKIN, WATER. It is roots of this type, roughly equivalent to Ratliff's [+basic, -stable] category, which are especially useful for establishing isoglosses, and thus for subgrouping.[16]

3. Prima Facie Candidates for High Degree of Stability, Sorted by Semantic Area

A preliminary scan of the Index of Roots reconstructed in *HPTB* (pp. 639–675) suggests a "long list" of 73 roots with the following meanings:

(A) Body parts (16)
　　BLOOD; BONE; BREAST/MILK/SUCK; EAR; EYE; GALL; HAIR (body); HAND; JOINT; LIVER; NOSE; SNOT; SPLEEN; TAIL; TONGUE; TOOTH
(B) Animals (9)
　　ANIMAL; BEAR; CATTLE; DOG; DOVE; FISH; LOUSE; PIG; SNAKE
(C) Numerals (9)
　　TWO; THREE; FOUR; FIVE; SIX; SEVEN; EIGHT; NINE; HUNDRED
(D) Natural objects and units of time (7)
　　DAY (of 24 hours)[17]; FIRE; MOON; SMOKE; SUN/DAY; WIND; YEAR
(E) People and habitation (7)
　　CHILD/SON; FATHER; GRANDFATHER; HOUSE; HUSBAND/MALE; HUMAN/PERSON; NAME
(F) Plants and ingestibles (5)
　　BAMBOO; FRUIT; GARLIC/ONION; MEDICINE; POISON
(G) Pronouns (3)
　　1st PERSON; 2nd PERSON; 3rd PERSON/WHO
(H) Verbs (14)
　　BENT/CROOKED; BITTER; DIE; DREAM; EAT; GIVE; ILL; KILL; KNOW; LICK; OPEN; POUR/SPILL; STAND; STEAL
(I) Abstract (3)
　　COPULA; NEGATIVE; NEGATIVE IMPERATIVE

3.1 Weeding Down the Long List to Get a "Short List"

Which etyma "make the cut"? I must confess I have cheated a bit here! Since I am comparing forms from 12 languages and proto-languages (see Section IV, below), I would like to avoid having to input $73 \times 12 = 976$ forms to do a proper calculation. I will thus "cut to the chase" and select what I guess would be the top 47 etyma. Just as in an academic personnel action, I do feel obliged to explain why the unsuccessful candidates have been dropped from the list:

3.1.1 Body parts (10)

BLOOD; BONE; EAR; EYE; HAIR (body)/FUR/FEATHER; HAND; NOSE; TAIL; TONGUE; TOOTH

　　Rejects:
　　BREAST/MILK/SUCK: too complicated; numerous allofams
　　GALL: not pervasive enough (henceforth "NPE")
　　JOINT: NPE
　　LIVER: much interchange with HEART and verbal roots like BITTER and SOUR.

SNOT: too much like NOSE
SPLEEN: NPE

3.1.2 Animals (5)
ANIMAL; DOG; FISH; PIG; SNAKE

Note that DOG and CAT are totally different in distribution. DOG is one of the most stable roots, but there is no widespread root for CAT at all (many of the forms seem imitative of the sound cats make).

Rejects:
BEAR: NPE
CATTLE: NPE; the principal etymon (***nwa ≍ *ŋwa**) is a Wanderwort
DOVE: NPE
LOUSE: there are two competing and phonologically similar roots, ***sar** and ***śrik**
PIG: NPE

3.1.3 Numerals (6)
THREE; FOUR; FIVE; SIX; EIGHT; HUNDRED

FOUR is one of the most stable numerals, despite the taboo against FOUR in the Sinosphere,[18] because of its phonological similarity to DIE. The most stable numerals in TB seem in fact to be FOUR and EIGHT. THREE, FIVE, SIX, NINE are also quite stable. In general, numerals are the most stable of all semantic fields (despite the fact that they are sometimes borrowed wholesale, as in Thai and Japanese). However, in order to avoid weighting my calculations too much in this direction, I am not including NINE in the short list.[19]

Rejects:
ONE and TEN: there are several competing roots for each. TEN is actually a classifier in many languages.[20]
SEVEN: this numeral (***s-nis**) seems to be a derivative of TWO (***g-nis**), pointing perhaps to an ancient quinquegesimal system (found to this day, e.g. in Khmer). WT has an aberrant form **bdun**.

3.1.4 Natural objects and units of time (5)
DAY (of 24 hours); FIRE; MOON; SMOKE; SUN/DAYTIME

Rejects:
WIND: NPE
YEAR: NPE

3.1.5 People and habitation (6)
CHILD/SON; GRANDFATHER/ELDER BROTHER; HOUSE; HUSBAND/MALE; MAN/PERSON; NAME

NAME is one of the most stable roots in TB/ST. One's name is often viewed almost as inti-

mately as the parts of one's body.[21]

Rejects:
FATHER and MOTHER are rejected on universal grounds: i.e. they tend to be similar in most human languages.

3.1.6 Plants and ingestibles (2)
MEDICINE/JUICE/PAINT; POISON

There is a moderately widespread root ***tsəy** for the concept of "efficacious substance", which covers a variety of thick substances that produce a dramatic or salutary effect (medicine, paint, ink, dye, cleaning fluid, lubricating oil, etc.).[22]

POISON (***duk ⪰ *tuk**) may also be considered a kind of ingestible, an "anti-food" as it were. The Lahu reflex **tɔ̀ʔ** sometimes means 'be revolted by food, as a pregnant woman'.[23] I've always been interested in the fact that 毒, the Chinese character for POISON, contains the element 母 MOTHER, though this is perhaps a rather late (post-Han) graphic variant.[24]

Rejects:
BAMBOO: NPE
FRUIT: NPE
GARLIC/ONION: NPE

3.1.7 Pronouns (2)
1st PERSON; 2nd PERSON

The roots for 1st (***ŋa-y**) and 2nd (***naŋ**) person pronouns are very widespread. Note that they both feature nasal phonemes, which are particularly well preserved in ST/TB, as perhaps universally in human languages.[25] In general, 1st and 2nd person pronouns are more conservative than 3rd, because the latter are often originally demonstrative, or mean things like 'other'.[26] There does exist a quite pervasive root ***su**, sometimes with the meaning 'remote 3rd person; others'; when prefixed it often means 'who'.

3.1.8 Verbs (8)
BITTER; DIE; DREAM; EAT; ILL; KILL; LICK; STEAL

Rejects:
There are excellent PTB/PST etyma meaning BENT/CROOKED, GIVE, KNOW, OPEN, POUR/SPILL, STAND, but they are not sufficiently pervasive to make the cut.

3.1.9 Abstract (3)
COPULA; NEGATIVE; NEGATIVE IMPERATIVE

These concepts are all accepted because of their grammatical importance, although roots with these meanings rank the lowest of all etyma in the short list.

4. Criterial Languages Used for Stability Judgments

Ideally one should use meso-reconstructions for the various well-established subgroups of TB when these are available, plus data from those languages which have not yet been definitely assigned to a subgroup. Yet several well-documented clusters of related languages lack reconstructed meso-languages (e.g. Proto-Rai,[27] Proto-rGyalrongic, Proto-Qiangic, Proto-Jingpho-Nungish, Proto-Baic[28]).

   A number of languages stand somewhat outside well-established subgroups: Lepcha and Newar(i) in the Himalayas; Meithei, Mikir, and Mru in the Kuki-Chin area and Arakan; Naxi and Jinuo[29] in the Lolo-Burmese area; the extinct Xixia (Tangut), now thought to be close to the Qiangic group; and the problematic Tujia and Sulung, spoken on opposite fringes of the vast TB area.

   As a practical matter, however, it has seemed best to constrain this study for the moment to a relatively small sample of twelve languages. First of all, I will rely on the five criterial TB languages used in *STC*,[30] with certain modifications:

   (1) Written Tibetan (WT)
   (2) Written Burmese (WB), but including cognates from Lahu (Central Loloish)
   (3) Jingpho (Jg.)
   (4) Proto-Kuki-Chin (VanBik 2006), instead of STC's Lushai (Mizo)
   (5) Proto-Northern Naga (French 1983), instead of STC's Garo[31]

   Three more meso-languages are included:

   (6) Proto-Tamangic (Tamang-Gurung-Thakali-Manang) (Mazaudon 1993–94)
   (7) Proto-Tani (J. Sun 1993a, 1993b)
   (8) Proto-Karenic (Jones 1961; banished by STC from TB proper)

   In addition to these, as a sort of control I will use data from three languages/subgroups that have seemed aberrant from the viewpoint of general TB:

   (9) Baic (largely ignored by STC, where it is referred to as "Minchia")
   (10) Tujia (not mentioned in STC; spoken in Hubei, Hunan, Sichuan, Guizhou)[32]
   (11) Sulung (not mentioned in STC; spoken in far NE India and adjacent areas of Tibet)

   Finally, in order to give this study a Sino-Tibetan dimension, one must certainly include:

   (12) Old Chinese[33]

5. Etyma Sets in the Criterial Languages[34]

5.1 Body Parts (10)
BLOOD; BONE; EAR; EYE; HAIR (body); HAND; NOSE; TAIL; TONGUE; TOOTH

	blood		*bone*
pTB	***s-hywəy**	pTB	***s-rus ≍ *m-rus ≍ *g-rus**
WT	**[khrag]**	WT	**rus-pa**
WB	**sw̥ʔ; Lh. šī̀**	WB	**rûi; Lh. ɣɔ̂**
Jg.	**sài**	Jg.	**ǹrút**
pKC	***thii**	pKC	***ruʔ**
pNN	***C-həːy**	pNN	**[*raːŋ]**
pKar	***swíq**	pKar	***xwíq** (pPwo); **xí** (pSgaw)
pTmc	**[*ᴮkaː]**	pTmc	(Tamang **-ru** in compounds)
pTani	***viː**	pTani	**[*loŋ]**
Bai	**suɑ⁴⁴** (D, B, J) ³⁵⁾	Bai	**kuɑ̠³³tiə⁴²** (J)
Tuj.	**[mie⁵³]**	Tuj.	**lu⁵⁵ka⁵⁵; kʰa²¹kɯ²¹**
Sul.	**hui⁵³**	Sul.	**a³¹zai⁵⁵**
OC	***xiwet** 血	OC	***kwət** 骨

	ear		*eye*
pTB	***r-na**	pTB	***s-mik ≍ *s-myak**
WT	**rna-ba**	WT	**mig**
WB	**nâ; Lh. *nā*-pɔ**	WB	**myak; Lh. mɛ̂ʔ**
Jg.	**nā**	Jg.	**myìʔ**
pKC	***na, *hna**	pKC	***mik**
pNN	***naː**	pNN	***meːk**
pKar	***ná'**	pKar	***meʔ** (Pho); ***mɛʔ** (Sgaw)
pTmc	***ᴬna; *ᴬnak**	pTmc	***ᴮʰmiː**
pTani	***ña-ruŋ**	pTani	***mik**
Bai	***nv³³*to⁴²**	Bai	**mi̠⁴²** (D, J)
Tuj.	**[tsã²¹pʊ]**	Tuj.	**[lo⁵⁵pu⁵⁵]**
Sul.	**[a³¹kui⁵³]**	Sul.	**[a³¹gɯk⁵⁵]**
OC	***ńiəg** 耳	OC	***mi̯ək** 目

	hair (body)/fur/feather		*hand*
pTB	***mil ≍ *mul**	pTB	***l(y)ak ≍ *dyak; [*k(r)ut ³⁶⁾]**
WT	**[spu]**	WT	**lag-pa**
WB	**mwê; Lh. mu**	WB	**lak; Lh. làʔ**
Jg.	**mūn**	Jg.	**lətáʔ**
pKC	***mul**, ***hmul**	pKC	**[*kut, *khut]**
pNN	***muil**	pNN	***glək**
pKar	**[*chrɔ́nq]**	pKar	**[*cùh]**
pTmc	***ᴮʰmwi**	pTmc	***ᴬʰjaː**
pTani	***mɯt**	pTani	***lak**
Bai	**mɑ²¹** (D, J), **mie²¹** (B)	Bai	**[sɯ³³** (D, J), **ʂɕi³³** (B)]
Tuj.	**[si³⁵ka⁵⁵]**	Tuj.	**[a²¹dʑe⁵⁵; tɕe³⁵]** ³⁷⁾
Sul.	**mun⁵⁵** ³⁸⁾	Sul.	**[git⁵⁵]**
OC	***mog** 毛 **≍ *mi̯ər** 眉 'eyebrow'	OC	***gi̯ək** 翼 **'wing'** ³⁹⁾

	tail		*tongue* [40]
pTB	*may ≍ *mey ≍ *mi	pTB	*l(y)a ≍ *lay ≍ *ley
WT	[rŋa-ma; mjug-ma]	WT	lče; [ljags]
WB	ʔəmrî; Lh. *mɛ̄*-tu	WB	hlya; Lh. *ha*-tɛ̄
Jg.	ǹmài	Jg.	šìŋ-lèt-šìŋ-*lài*
pKC	*may	pKC	*lay
pNN	*C-meːy	pNN	*C-ley
pKar	*mjɛ́ʼ	pKar	Pwo phle, Sgaw pəle
pTmc	*ᴬʰmeː	pTmc	*ᴮʰleː
pTani	*mjo ~ *me	pTani	*ryo
Bai	*mi⁴²*tu³⁵ (D); *ŋv³³*tṽ⁵⁵ (J)	Bai	*tse⁴²*phi³¹ (D, J), *ʈeˈ⁴²* (B)
Tuj.	[le²¹pʰū³⁵; lia³⁵tɯ⁵⁵]	Tuj.	zi³⁵la⁵⁵; dzi²¹la²¹ [41]
Sul.	a³¹*ɲiu³³* kuaŋ⁵⁵	Sul.	a³¹lye⁵⁵
OC	*mi̯wər 尾	OC	/see LICK/

	nose		*tooth*
pTB	*g-na	pTB	*swa; [*džway]
WT	sna; Lh. *nā*-qhɔ̂	WT	so
WB	hna	WB	swâ; [WB cway, Lahu cì]
Jg.	[lədî]	Jg.	wā
pKC	*hnaar	pKC	*haa
pNN	*na-kuːŋ	pNN	*swa
pKar	*nà (pP); *ná (pS)	pKar	Bassein Pho θwà
pTmc	*ᴬhnaː, ᴮhnaː	pTmc	*ᴬs(w)a
pTani	*ña-pum/-buŋ	pTani	*fiː
Bai	*ŋṽ²¹*-khv³³	Bai	*tɕo³³*paⁿ⁴⁴ (J); [*tsi³³*paⁿ⁴⁴ (D, B)]
Tuj.	[kʊ¹³tɕi⁵⁵dʊ³⁵]	Tuj.	si⁵⁵si⁵⁵; *si³³* ta³⁵
Sul.	[pauk³³vaŋ⁵⁵]	Sul.	[kɯ³¹tuaŋ]
OC	[*dzʼi̯əg 自 'self'] [42]	OC	[*ŋå 牙]

5.2 Animals (5)
ANIMAL; DOG; FISH; PIG; SNAKE

	animal/meat/flesh		*dog*
pTB	*sya-n	pTB	*kʷəy
WT	ša	WT	khyi
WB	sâ; Lh. šā	WB	khwê; Lh. phìʔ
Jg.	šàn 'meat'	Jg.	gùi
pKC	*sʰaa	pKC	*ʔuy
pNN	[*ŋam 'game'; *meːy 'meat']	pNN	*kuəy
pKar	[*njáq]	pKar	*thwíq
pTmc	*ᴬsja	pTmc	(Tamang ¹na*kʰi*)
pTani	[*dɯn 'meat']	pTani	kiː
Bai	[keˈ²¹ (D), kɛ²¹ (J), qɑ²¹ (B)]	Bai	khuɑ³³ (D); khuɑ̃³³ (J); qhõ³³ (B)

Tuj.	**si²¹**	Tuj.	**xa⁵⁵lie²²; tshe⁵⁵**
Sul.	-----	Sul.	**boh⁵³; bui⁵⁵ ⁴³⁾**
OC	***śjĕn** 身 'body'	OC	***k'iwən** 犬 ≍ ***ku** 狗

	fish		***pig***
pTB	***ŋ(y)a**	pTB	***pʷak**
WT	**nya**	WT	**phag**
WB	**ŋâ; Lh.ŋâ**	WB	**wak; Lh. và?**
Jg.	**ŋá**	Jg.	**wà?**
pKC	***ŋaa, *hŋaa**	pKC	***wok**
pNN	***ŋya**	pNN	***wak**
pKar	**jáq** (pPho); **ñá? (**pSgaw)	pKar	***tháu?; *thɔ?**
pTmc	(Tamang **²tarŋa**)	pTmc	***ᴮdwa**
pTani	***ŋo**	pTani	***rjek**
Bai	**ŋv⁵⁵** (D, J), **ŋu⁵⁵** (J)	Bai	[**te⁴²** (D, J, B)]
Tuj.	[**soŋ³⁵**]	Tuj.	[**tsi⁵⁵; dzi¹³**]
Sul.	[**ka³³fuaŋ⁵³**]	Sul.	[**mə³¹du⁵⁵**]
OC	***ŋi̯o** 魚	OC	***g'i̯wag** � 'kind of boar' ⁴⁴⁾

	snake/vermin
pTB	***s-b-ruːl**
WT	**sbrul**
WB	**mrwe; Lh. vì**
Jg.	**ləpū**
pKC	***ruul**
pNN	***?-bəw**
pKar	***rú'**
pTmc	(Tamang **rul** 'gros serpent')
pTani	***buu**
Bai	**khv³³** (D, J); **fv³³** (B)
Tuj.	**wo⁵⁵**
Sul.	**puh⁵³**
OC	[***d'i̯a** 蛇]

5.3 Numerals (6)
THREE; FOUR; FIVE; SIX; EIGHT; HUNDRED

	three		***four***
pTB	***g-sum**	pTB	***b-ləy**
WT	**gsum**	WT	**bźi**
WB	**sûm; Lh. šê?, šɛ̄**	WB	**lê; Lh. ɔ̂**
Jg.	**məsūm**	Jg.	**məlī**
pKC	***p-thum**	pKC	***p-lii**
pNN	***C-sum**	pNN	***bələy**

pKar	θɔ̀n (pPho); θɔ́ (pSgaw)	pKar	*lwíT
pTmc	*ᴮsom	pTmc	*ᴮbli
pTani	*ɦum	pTani	*pri
Bai	sɑ⁵⁵ (D), sɑ̃⁵⁵ (B, J) [< Chinese]	Bai	[ɕi⁴⁴ (D, J), si⁴⁴ (B)] < Chinese
Tuj.	so⁵⁵	Tuj.	zie⁵⁵
Sul.	[ɣɯk⁵⁵]	Sul.	vəˑi⁵⁵
OC	*səm 三	OC	*sjəd 四 (< *s-ləy JAM) ⁴⁵⁾

	five		*six*
pTB	*b-ŋa ≍ *l-ŋa	pTB	*d-k-ruk
WT	lŋa	WT	drug
WB	ŋâ; Lh. ŋâ	WB	khrauk; Lh. khɔ̀ʔ
Jg.	məŋā	Jg.	krúʔ
pKC	*ŋaa	pKC	*p-ruk
pNN	*C-ŋa	pNN	*d-ruk
pKar	*ŋáT	pKar	*xù (pPho); xý (pSgaw)
pTmc	*ᴬŋa(ː), *ᴮŋaː	pTmc	*ᴮɖu(ː), *ᴮɖuk
pTani	*ŋo	pTani	*krə
Bai	ŋv³³ (B, J), ŋo³³ (TBL)	Bai	fv⁴⁴ (D, B, J)
Tuj.	ŋɤ³³; oŋ⁵⁵	Tuj.	wo²¹; ʋ³⁵
Sul.	wu⁵⁵ (< Chinese)	Sul.	ŋəʔ⁵⁵
OC	*ŋo 五	OC	*ljôk 六

	eight		*hundred*
pTB	*b-r-gyat ≍ *b-g-ryat	pTB	*b-r-gya
WT	brgyad	WT	brgya
WB	hrac; Lh. hí	WB	ra; Lh. ha
Jg.	mətsát	Jg.	lətsā
pKC	*p-riat	pKC	*yaa
pNN	*C-gyat	pNN	*C-khya
pKar	*xɔ̀ʔ (pPho); xɔ̀ʔ (pSgaw)	pKar	*rjà'
pTmc	*ᴮbrat	pTmc	*ᴮbra
pTani	pri-ñi	pTani	[*lɯŋ]
Bai	tɕuɑ⁴⁴ (B)	Bai	[ɑ³¹peˑ⁴⁴ (D), ɑ³¹pɛ⁴⁴ (J), pɑ⁴⁴ (B)]
Tuj.	jie²¹, je²¹	Tuj.	tha⁵⁵; zi²¹
Sul.	la⁵⁵	Sul.	[ɬəŋ⁵⁵]
OC	*pwăt 八	OC	*păk 百 (< *băgrya PKB)

5.4 Natural Objects and Units of Time (5)

DAY (of 24 hours); FIRE; MOON/MONTH; SMOKE; SUN/DAYTIME

	day (24 hours)/spend the night		*fire*
pTB	*r(y)ak	pTB	*mey; [*bar ≍ *par]
WT	źag	WT	me

WB	**rak; Lh. há**	WB	**mî; Lh. à-mī**
Jg.	**yáʔ**	Jg.	*myìʔ*-**phràp**[46)]; [**ʔwàn**]
pKC	***riak**	pKC	***may**
pNN	***C-ya** 'night'	pNN	[***ʔ-waːr**]
pKar	-----	pKar	***míK**
pTmc	-----	pTmc	***ᴬʰmje**
pTani	***jo** 'night' [***lo** 'day']	pTani	***mə**
Bai	*jo⁵³*xɯ³ (D) 'night'	Bai	[**xui³³** (D, J), **fi³³** (B)] < Ch.
Tuj.	-----	Tuj.	**mi⁵⁵**
Sul.	[a³¹ɬi⁵³ 'day'; a³¹ɟet⁵³ 'night']	Sul.	**bæ⁵⁵**
OC	***si̯ok** 宿	OC	[**xwâr** 火][47)]

	moon/month		***smoke***
pTB	***s-la ≍ *g-la**	pTB	***kəw ≍ *kun ≍ *kut**
WT	**zla-ba**	WT	[**du-ba, dud-pa**][48)]
WB	**la'; Lh.** *ha*-**pa**	WB	**khûi; Lh. mû**-*qhɔ̂*
Jg.	**šətā**	Jg.	**khú** (v.); **ʔwàn**-*khút* (n.)
pKC	***khlaa**	pKC	***may**-*khuu*
pNN	***gla**	pNN	***khəw**
pKar	***là'** (pPho); **lá** (pSgaw)	pKar	***khúq**
pTmc	***ᴮʰla**	pTmc	(Tamang ²**mju***ku*)
pTani	***po-lo**	pTani	***mɯ**-*ku*
Bai	[**mi⁵⁵ŋuα⁴⁴** (J)]	Bai	[-**je⁵⁵** (D), -**ɕɛ̃⁵⁵** (J), -**je⁵⁵** (B)][49)]
Tuj.	**su²¹su²¹;** *lo³⁵*ɕi⁵⁵dʊ³⁵	Tuj.	*khue³⁵* **kha²¹;** *kɪe⁵⁵*sa²¹
Sul.	[**aŋ³³bo⁵⁵**]	Sul.	**bæ⁵⁵***kɯ⁵⁵*; [**du³³wa⁵³**]
OC	[**ŋi̯wat** 月]	OC	***xi̯wən** 熏 'be smoky'[50)]

	sun/daytime
pTB	***nəy**
WT	**nyi-ma**
WB	**ne 'sun' ≍ ne' 'day'; Lh. ni 'day', mû-ni 'sun'**
Jg.	**ní 'day', [jān 'sun']**
pKC	***nii**
pNN	***C-ni**
pKar	**nì'**
pTmc	(Tamang ⁴*niː*-**ra**)
pTani	***ñi 'sun'**
Bai	**n̠i⁴⁴** (D, B)
Tuj.	**n̠ie⁵⁵, ne³⁵**
Sul.	**kət³¹***ri⁵⁵* 'sun'
OC	***ńi̯ĕt** 日

5.5 People and habitation (6)

CHILD/SON; GRANDFATHER/ELDER BROTHER; HOUSE; HUSBAND/MALE; MAN/
PERSON; NAME

	child/son		*grandfather/elder brother*
pTB	*tsa ≍ *za	pTB	*bəw ≍ *pəw
WT	tsha-bo 'grandchild'	WT	phu-bo 'elder brother'
WB	sâ; Lh. yâ	WB	ʔəphûi; Lh. ɔ̀-pū 'grandfather'
Jg.	šà	Jg.	phû 'elder brother'
pKC	*θaa	pKC	*puu
pNN	*C-dza 'son'	pNN	*pəw
pKar	phóq-θàq (pPho; pSgaw)	pKar	*phùh
pTmc	*ᴬdza	pTmc	[Tamang ¹akhe]
pTani	*ɦo	pTani	[*to]
Bai	tsi⁴⁴n̩i²¹ (D), tsi³³ (J), tsi⁴⁴ (B)]	Bai	ɑ⁵⁵pu⁵⁵
Tuj.	sa³⁵be²¹; po⁵⁵li²¹	Tuj.	pha²¹phu⁵⁵
Sul.	a³¹dʑiaŋ⁵⁵	Sul.	[toŋ³³mat⁵³]
OC	*tsjəg ≍ *dzjəg 子	OC	-----

	house		*husband/male*
pTB	*k-yim ≍ *k-yum	pTB	*pʷa
WT	khyim	WT	pho
WB	ʔim; Lh. yɛ̀	WB	(YL và 'man; person')
Jg.	[ń-tâ]⁵¹⁾	Jg.	wā
pKC	*ʔim	pKC	*waa
pNN	*kium	pNN	[*la]
pKar	*ɣénq (pPho)	pKar	*khwàh
pTmc	*ᴮdim	pTmc	*ᴬpʰa;⁵²⁾ [*ᴮpjuŋ; *ᴬpʰop]
pTani	-----	pTani	-----
Bai	xo³¹ (D, B, J)	Bai	po³⁵n̩i²¹ (D), puɯ³³ (J)
Tuj.	tsho⁵⁵; tsha³³	Tuj.	[no⁵⁵pa⁵⁵; zu⁵⁵ŋɨ²¹]
Sul.	tɕauk⁵³	Sul.	a³¹fo⁵³ 'male'; a ³¹vei⁵⁵ 'husband'
OC	*kjôŋ 宮 'palace; temple'	OC	*pjwo 夫

	human/person		*name*
pTB	*r-mi(y)	pTB	*r-miŋ; [*s-braŋ] ⁵³⁾
WT	mi	WT	miŋ
WB	[lu]	WB	mañ, hmañ; Lh. mɛ̄
Jg.	[məšà]	Jg.	myīŋ
pKC	*mii	pKC	*(h)min, *(h)miŋ
pNN	*C-məy	pNN	*min
pKar	[*pɣa (pSgaw)]	pKar	*mèn'
pTmc	*ᴬmi(ː)	pTmc	*ᴬʰmin
pTani	*mi	pTani	*mɯn

Bai	***ɲi²¹keˈ¹³⁵** (D), **ɲi²¹qo⁵⁵** (B)*	Bai	**meˈ¹³⁵** (D); **n̥o⁵⁵** (B); **miɛ⁵⁵** (J)
Tuj.	[**lo⁵³; no⁵⁵**] ⁵⁴⁾	Tuj.	***niv³⁵** bo¹²; [**min²¹tsi²¹** < Ch.]*
Sul.	**bi⁵⁵**	Sul.	[**a³¹braŋ⁵³ ~ a³¹baˈ¹ŋ⁵**]³
OC	***mi̯ĕn** 民	OC	***mi̯əŋ** 名

5.6 Plants and Ingestibles (2)
MEDICINE; POISON

	medicine/paint/juice		*poison*
pTB	***tsəy**; [***s-man**]	pTB	***duk ≈ *tuk**
WT	**rtsi; [sman]**	WT	**dug**
WB	**chê; Lh. nâʔ-*chî***	WB	**tauk; Lh. tɔ̀ʔ**
Jg.	**tsì** 'medicine', **mətsì** 'yeast'	Jg.	[**túk, ǹ-túk, nìŋ-túk**]⁵⁵⁾
pKC	**(Lai sìi)**	pKC	[***tuur; *ruu**]
pNN	-----	pNN	-----
pKar	**kəθi, təθi** (Sgaw)	pKar	***cýq**
pTmc	[***ᴬʰman**]	pTmc	(Tamang **³pik**)
pTani	-----	pTani	***dɯk**; [***mro**]
Bai	[**jo⁴⁴** (< Chinese)]	Bai	[**tv⁵³ (D), dɯ³³ (B), tu⁵⁵ (J)**]⁵⁶⁾
Tuj.	**se²¹; se³⁵**	Tuj.	[**tu²¹; tu³⁵**] (< Chinese)
Sul.	***çi³³min⁵⁵***	Sul.	***də³³dək⁵⁵***
OC	***ts'i̯et** 漆 'varnish'	OC	***d'ôk** 毒

5.7 Pronouns (2)

	1st person		*2nd person*
pTB	***ŋa-y**; [***ka-y**]	pTB	***naŋ ≈ *na**
WT	**ŋa; ŋed**	WT	[**khyed; khyod; nyid**]
WB	**ŋa; Lh. ŋà**	WB	**naŋ; Lh. nɔ̀**
Jg.	**ŋāi**	Jg.	**nāŋ**
pKC	[***kay-maʔ**]	pKC	***naŋ**
pNN	***ŋa**	pNN	***na(ː)ŋ**
pKar	**jə̀'** (pPho); **jəʔ** (pSgaw)	pKar	***nə̀'** (pPho); **nà'** (pSgaw)
pTmc	***ᴬʰŋa**	pTmc	(***ᴮeː ≈ ᴮek**; **ᴬgi**(-C); ***ᴮʰŋai**)
pTani	***ŋo**	pTani	***no**
Bai	**ŋo³¹** (D, J), **ŋo⁴²** (B)	Bai	**no³¹** (D, J), **nɑ⁵⁵** (B)
Tuj.	**ŋa³⁵; ŋo³³**	Tuj.	**ni³⁵; ni³³**
Sul.	**goh⁵⁵**	Sul.	**na⁵⁵**
OC	***ŋâ** 我 ≈ ***ŋo** 吾	OC	***ni̯o** 汝

5.8 Verbs (8)
BITTER; DIE; DREAM; EAT; ILL; KILL; LICK; STEAL

	bitter		*die*
pTB	***ka-n**	pTB	***səy**
WT	**kha-ba**	WT	*śi*-**ba**
WB	**khâ; Lh. qhâ**	WB	**se; Lh. šɨ**
Jg.	**khá**	Jg.	**sī**
pKC	***khaa**	pKC	***thii**
pNN	***C-kha**	pNN	***səy**
pKar	***kháq**	pKar	***sìh**
pTmc	***ᴮkam**	pTmc	***ᴬsi, ᴮsi**
pTani	***kaː-**	pTani	***si**
Bai	[**khu³³** (D, J), **qhu³³** (B)]⁵⁷	Bai	**ɕi³³** (D, B, J)
Tuj.	**khɨ⁵⁵**; *khɨ³⁵***tsi³⁵tsi³⁵**	Tuj.	**se²¹; se³⁵**
Sul.	[**a³¹dʑiu⁵³**]	Sul.	**ji⁵⁵**
OC	***k'o** 'bitter' 苦 ≍ ***kân** 肝 'liver'	OC	***siər** 死

	*dream*⁵⁸⁾		*eat*
pTB	***r-maŋ**	pTB	***dzya**
WT	**rmaŋ-lam; rmi-lam**	WT	**za-ba**
WB	**ʔip-***mak***; Lh. yɨʔ-***mâʔ*	WB	**câ; Lh. câ**
Jg.	**ʔyúp-***māŋ*	Jg.	**šá**
pKC	***maŋ**	pKC	(**Lu. faʔ**) ⁵⁹
pNN	***maʔ**	pNN	***dza**
pKar	***mìmán'** (pPho); **mímɔ̀** (pSg)	pKar	[**ʔámq**]
pTmc	***ᴬmaŋ, ᴮmaŋ**	pTmc	***ᴬtsa(ː)**
pTani	***jup-***maŋ*	pTani	[***do**]
Bai	**muɯ⁵³** (D), **muɯ⁴²** (B); **muɯ³¹** (J)	Bai	**jɯ⁴⁴** (D, J), **ji⁵⁵** (B)
Tuj.	**mʋ³⁵**; *mu²¹***tsi²¹**	Tuj.	**ɣɪɛ³⁵; [ka³⁵]**
Sul.	**mə³¹bak⁵³**	Sul.	**tɕih⁵³**
OC	***mi̯uŋ** 夢	OC	***ɖi̯ək** 食⁶⁰

	ill		*kill*
pTB	***na ≍ *nan ≍ *nat**	pTB	***g-sat**
WT	**na-ba; nad-pa**	WT	**gsod-pa**, **bsad**
WB	**na, ʔəna; Lh. nà**	WB	**sat**
Jg.	**ʔənà**	Jg.	**sàt**
pKC	***naa; *nat**	pKC	***that**
pNN	[***C-daːk; *dzat**]	pNN	***ʔ-sot**
pKar	[***chàh**]	pKar	**maθì** (pPho); **màθí** (pSgaw)
pTmc	***ᴬna, *ᴬnak, *ᴬ/ᴮʰna(ː)**	pTmc	***ᴬsat**
pTani	[***ki**]	pTani	[***man**]
Bai	[**peɹ** (D), **sṽ³¹** (J), **sõ⁴²** (B)]	Bai	[**ɕɑ⁴⁴**] (< Chinese)
Tuj.	[**ti³⁵; dɨ²¹**]	Tuj.	[**pu³⁵; ʔɨ¹³**]
Sul.	[**ɣaŋ⁵⁵**]	Sul.	**waˈt**
OC	**nân** 難 'difficulty, suffering'	OC	***sat** 殺

	lick/tongue		*steal*
pTB	***m-lyak; *s-lyam**	pTB	***r-kəw**
WT	**ldag-pa** 'lick', **ljags** 'tongue'	WT	**rku-ba**
WB	**lyak; Lh. lɛ̀ʔ, lɛ́**	WB	**khûi; Lh. qhɔ̂**
Jg.	**mətáʔ**	Jg.	**ləgú (v.); ləgùt** 'thief'
pKC	***liak**	pKC	(Lai fîir-*khùu* 'thief')[61]
pNN	***C-glay**	pNN	***C-kəːw**
pKar	**léʔ (pSgaw); lénq (pPho)**	pKar	***-ɣúq (pPho); *ɣýʔ (pSgaw)**
pTmc	***ᴬlem**	pTmc	***ᴬkʰu; *ᴬ/ᴮkʰuk ≍ *kʰup ≍ *kʰut**
pTani	***ryak**	pTani	**[*pjoŋ]**
Bai	**tsi³³ (D, J), dʐɛ̃˧³³ji⁵⁵ (B)**	Bai	**[tɑ³¹ (D, J), die⁴² (B)]**
Tuj.	**lo²¹; la³⁵**	Tuj.	**ɣɪe³⁵; ʔe⁵⁵**
Sul.	**via⁵⁵; lau⁵⁵**	Sul.	**ɣah⁵⁵**
OC	***d̥i̯at** 舌 (< g'li̯ak)	OC	***k'u** 寇
	≍ ***g'i̯ak** 膠 'tongue'		

5.9 Abstract (3)
COPULA; NEGATIVE; NEGATIVE IMPERATIVE

	copula[62]		*negative*
pTB	***way ≍ *ray**	pTB	***ma**
WT	**red-pa**, **re-pa**	WT	**ma**, **mi**
WB	**kai ≍ rai; Lh. ve ≍ ɣì**	WB	**ma; Lh. mâ**
Jg.	**ʔai; rái**	Jg.	**ń-**
pKC	(Lu. **e ~ ve**)	pKC	[***law**]
pNN	***ley**	pNN	-----
pKar	**ʔɔ́q (pPho); *ʔóʔ (pSgaw)** [63]	pKar	[***ʔèʔ**(pPho)];***tǝʔ-báʔ** (pSgaw)]
pTmc	[Tamang **¹mu**; **²hin**]	pTmc	(Tamang **³a**)
pTani	-----	pTani	-----
Bai	[**tso³³ (D), tsɯ³³ (J), ɖõ³³ (B)**]	Bai	**mu³³ (D); jɑ³⁵, ɑ²¹ (J), ɑ⁴² (B)**
Tuj.	**siu³⁵; si¹³** [< Chinese]	Tuj.	**ma⁵⁵**
Sul.	**wi⁵⁵**	Sul.	**ba³¹**
OC	***di̯wər** [64] 惟維唯隹	OC	***mi̯wo,** etc.[65]

	negative imperative		
pTB	***ta ≍ *da** [66]	pTmc	(Tamang **⁴ta**)
WT	[**ma** + Vimp/Prt]	pTani	-----
WB	(Lahu **tâ**)	Bai	[**n̪o⁴⁴pɯ³¹ (D), miɑ⁴⁴ (J), ɑ⁴²n̪u⁴⁴ (B)**]
Jg.	[**khùm**]	Tuj.	**tha⁵⁵; ta²¹**
pKC	-----	Sul.	[**ba³¹ ... bo³³**] [67]
pNN	-----	OC	*/see note 65/*
pKar	-----		

6. Tabulation of Results

My original goal was to come up with two lists: a "short list" of the 10 most stable ST/TB roots, and a "long list" of the top 20. Yet there are serious methodological problems which make any such effort rather futile:

(a) According to my scoring system, a root gets one point for each language or language-group where it has a reflex, unless the form seems like a loan from a related language. Yet the 12 sources of data I have used are quite incommensurate, comprising six reconstructed proto-languages (pKC, pNN, pKar, pTmc, pTani, OC), 3 well-attested individual TB languages (WT, WB, Jg.), and 3 other TB languages that have seemed atypical and on which the data is much less abundant.

(b) Cognate identifications are not always certain, especially in the case of the latter three languages, but also as far as Chinese/TB comparisons are concerned.

(c) Roots may overlap and conflate with each other. In the present data-set, TONGUE and LICK are intertwined in a complex way that makes it preferable to treat the two items as one, perhaps inflating its/their ranking a bit.

However, as long as it is taken with a grain of salt, there seems no harm in listing the etyma which seem to have scored the highest:

CHILD/SON	***tsa ⋚ *za**	HUSBAND/MALE	***pʷa**
DIE	***səy**	NAME	***r-miŋ**
DOG	***kʷəy**	SIX	***d-k-ruk**
DREAM	***r-maŋ**	SNAKE	***s-b-rul**
EIGHT	***b-r-gyat**	TONGUE/LICK	***l(y)a ⋚ *lay ⋚ *ley ⋚ *m-lyak**
FIVE	***b/l-ŋa**	YOU	***naŋ**

The most widespread etyma of the above twelve, attested solidly in all of our criterial languages, are DIE, DREAM, and NAME. Perhaps contributing to the stability of DREAM and NAME is the fact that they both contain two nasals, a class of sounds that are typically conservative through time.

Yet it is hard to see what cultural conclusions can be drawn from all this, since about 25 of the other items on the long list have nearly identical scores with this group of twelve!

Even though a precise ranking of the most stable ST/TB roots seems to be a quixotic enterprise, there is no doubt that if most of the approximately 50 roots treated in this paper are found to have plausible reflexes in a given language, that language is certain to belong to the ST family.

7. Interesting Sulung Developments — Side Benefit of This Study

An examination of the Sulung data in Li Daqin (2004) has revealed some interesting facts:

(1) *Denasalization*: In 6 out of 9 cases so far noted, pTB *nasals > Sulung voiced stops.[68]

	pTB	*Sulung*
'fire'	***mey**	**bæ⁵⁵**
'person'	***r-mi(y)**	**bi⁵⁵**
'son-in-law'	***s-mak**	**a³¹bua⁵³**
'dream'	***r-maŋ** (PLB ***s-mak**)	**mə³¹bak**
'negative'	***ma**	**ba³¹**
'1st person'	***ŋa**	**goh⁵⁵**

Exceptions:

'corpse'	***s-maŋ**	**çə˩⁵⁵muaŋ⁵⁵**
'smell'	***m/s-nam**	**naŋ⁵⁵**
'cooked/ripe'	***s-min**	**a³¹min⁵⁵**

Note that in these exceptional cases, the root ends with a nasal as well as beginning with one. It is perhaps this extra nasal element which has blocked the denasalization of the initial. The Sulung form for DREAM evidently descends from the stop-final allofam that is also found in Lolo-Burmese (e.g., WB **ʔip-*mak***, Lahu **yɨʔ-*mâʔ***.

(2) *Brightening*
Sulung seems to show "brightening" of PTB ***-a** > **-i**, as is characteristic of the Qiangic languages, e.g., 'eat' Sul. **tɕih⁵³** < ***dzya**, though this is perhaps due to the influence of the medial palatal.[69]

(3) *Degree of "aberrancy"*
Due to the fact that several Sulung numerals (especially **çun⁵⁵** 'one', **ɣɯk⁵⁵** 'three', **lie⁵⁵** 'seven', **duaŋ³³ɻa˥³** 'nine') seem quite bizarre from the general TB viewpoint, I had previously viewed Sulung as a more aberrant language than it really is. In fact, in spite of Sulung's relatively poor score with respect to the "stable" vocabulary presented above, there are many clear Sulung reflexes of well-established TB roots, of all degrees of "basicness". It is perhaps worthwhile to list these as an *Appendix*, below.

8. Conclusion

Stable roots may have their uses for certain purposes, but you've got to look at entire vocabularies for nuanced judgments of linguistic relationships.

Abbreviations

AN	Austronesian
B.	Bijiang dialect of Bai
CALMSEA	Culturally Appropriate Lexicostatistical Model for Southeast Asia (VSTB 283–296)
Ch.	Chinese
D.	Dali dialect of Bai
GSR	Karlgren (1957)
HM	Hmong-Mien (=Miao-Yao)
HPTB	Matisoff (2003)
ICSTLL	International Conference on Sino-Tibetan Languages and Linguistics
IE	Indo-European
J.	Jianchuan dialect of Bai
Jg.	Jingpho (=Kachin)
LB	Lolo-Burmese
Lh.	Lahu
LTBA	*Linguistics of the Tibeto-Burman Area*
NPE	not pervasive enough
OC	Old Chinese (=Karlgren's Archaic Chinese)
pHM	Proto-Hmong-Mien
PIE	Proto-Indo-European
pKar	Proto-Karen (Jones 1961)
PKB	Paul K. Benedict
pKC	Proto-Kuki-Chin (VanBik 2006)
pNN	Proto-Northern Naga (French 1983)
pPho	Proto-Pho Karen (Jones 1961)
pSgaw	Proto-Sgaw Karen (Jones 1961)
pTani	Proto-Tani (J. T. Sun 1993)
pTmc	Proto-Tamangic (Mazaudon 1993–94)
pTB	Proto-Tibeto-Burman
RTQ	replacement tolerance quotient (VSTB 95ff.)
SAE	Standard Average European (Whorf 1956)
ST	Sino-Tibetan
STC	Benedict 1972
Sul.	Sulung
TB	Tibeto-Burman
TBL	Dai *et al.* (1992)
Tmc	Tamangic
Tuj.	Tujia
VSTB	Matisoff (1978)
WB	Written Burmese
WT	Written Tibetan
YL	Yellow Lahu

Appendix: *More Sulung Reflexes of Well-established PTB Roots*

	PTB	Sulung	Other
'arrow'	***m-da**	mi³³taʔ⁵⁵	WT **mda**
'axe'	***pʷa**	ba⁵³	Pumi **ɸpí**, OC ***pi̯wo** 斧
'bee'	***kwaːy ≍ *gwa:y**	kɯ³¹ŋuai⁵³	WB **kwâi**, Mizo **khuai**
'bent/crooked'	***guk ≍ *kuk**	a³¹gok⁵³	WB **kauk**, Lh. **qɔ̀ʔ**, OC **k'i̯uk** 曲
'bird'	***daw ≍ *dow**	pɯ³¹*tɯ*⁵⁵	Pwo/Sgaw **tho**, Garo **do**, Dimasa **dau**
'bow'	***d-ləy**	lei⁵³	Nung **thəli**, WB **lê**
'buy'	***ywar**	ve˩³⁵	Mizo **zuar**, Lh. **vì**
'cattle/livestock'	***dzay**	çi⁵⁵	Lh. *cê*-**cà**
	/HPTB: 209–211/		
'chew'	***m-gʷya**	we⁵⁵	Lisu **gua³¹**, **Lh. bê**, Naxi **ŋgɯ³³**
'child/nephew/ descendant'	***m-du ≍ *m-tu**	a³¹du⁵⁵	Lh. **dù**, WB **tu**, Nung **phədu**
'cloud'	***dim**	kə³¹*tɯ*⁵⁵	WB **tim**
'corpse'	***s-maŋ**	çə˩⁵⁵muaŋ⁵⁵	Chepang **hmaŋ**, Newar **si-mha**, Jg. **māŋ**
'fart'	***woy**	væ⁵³	rGyalrong **wu**, Lh. **vî**, Hakha Lai **vɔiʔ**
	/HPTB: 229/		
'fly'	***byam**	pie⁵⁵	Jg. **pyēn**, WB **pyam**, Lh. **pò**
'go/come/walk'	***s-wa**	wu⁵⁵	WB **swâ** 'go', Newari **wa** 'come'
'good/well/properly'	***m-d(y)ak ≍ *lyak/ŋ**	tak	Lh. **dàʔ**; WT **legs-pa ≍ lags-pa**
'head'	***m/s-gaw**	a³¹kau⁵³	WT **mgo**, Dimasa **sakau**
'heart'	***m-luŋ**	a³¹luk⁵⁵	Tangkhul **məluŋ**, Mizo **luŋ**
	/This root shows final nasal/stop variation; cf. 'roast'./		
'heavy'	***s-ləy**	a³¹lei⁵⁵	WT **ltśi-ba**, WB **lê**, Lh. **hɔ̂**
'knife-edge/sharpen/ whetstone'	***wi**	tçhe³³*vi*⁵³	**Lh. á-thɔ-*vî***
	/Not in STC or HPTB./		
'laugh'	***r(y)a(y)**	ɣue⁵⁵	WB **ray**, Lh. **ɣì**
'leech'	***k-r-wat**	kɯ³¹vat⁵³	WB **krwat**, Lh. **vèʔ**
'marrow'	***r-kliŋ**	a³¹ɬuəŋ⁵³	Mikir **ar-kleŋ**, Mizo **thliŋ**
'medicine'	***s-man**	çi³³min⁵⁵	WT **sman**, Pumi **'m̩í**
	/The Sulung form may be a loan from Tibetan./		
'mortar'	***t(s)um**	aŋ⁵⁵dzə˩³¹	Jg. **thùm**, WB **chum**, Lh. **chɛ**
'mountain'	***g(r)aŋ**	graŋ⁵³	WT **sgaŋ**, Lh. **qhɔ**, OC ***kâŋ** 岡
	/The medial **-r-** is not yet attested elsewhere./		
'navel'	***laːy ≍ *s-tay**	a³¹ɬui⁵⁵	Mizo **lai**, WT **lte-ba**, Jg. **šədāi**
'near'	***naːy ≍ *s-ney**	a³¹n̥ei⁵⁵	WT **nye-ba**, WB **nî**, Mizo **hnai**
'otter'	***sram ≍ *ram**	kua⁵⁵bə³¹*rai*⁵³	WT **sram**, Lh. **ɣì-*šo*-lo**
	/Sulung **kua**⁵⁵ and Lahu **ɣì** mean 'water'./		
'outer covering'	***kok ≍ *kwaːk**	(a³¹)kə³¹/⁵³/⁵⁵	Lh. **qú**, WB **khauk**
	'bark of tree'	hren³³kə³¹	Lh. **šîʔ-qú**
	'eggshell'	mɯ³¹ɬi⁵⁵a³¹kə⁵⁵	Lh. **u-qú**
	'rind of fruit'	a³¹vai⁵⁵kə⁵³	Lh. **í-šī-qú**
'owl/bird of prey'	***g-laŋ**	mɯ³¹laŋ⁵³ 'owl'	Jg. **gəlàŋ**, WB **lâŋ-ta'**, Garo **do-reŋ**

/This etymon is an old loan from Mon-Khmer into ST/TB; its original meaning seems to have been 'eagle; vulture; bird of prey'. The first Sulung syllable **mɯ³¹** might be related to PKC ***(h)muu** 'hawk; bird of prey'./

'pigeon/dove'	***m-krəw**	ok⁵⁵*mɯ³¹ko⁵⁵*	Khami **məkhru**, Lh. **gû**
'pine'	***raw ≽ *row**	ta³¹ru⁵³	Jg. **mərāu**, Nung **śəru**, WB **thâŋ-rû**
'prefix'	***ʔaŋ-**	aŋ³³-	Mikir **ang-**, Bisu **ʔaŋ-**, Phunoi **ʔɑ̃-**, Sangkong **aŋ³³-,** Rawang **aŋ-**, Lahu **ɔ̀-**
	'moon'	aŋ³³bo⁵⁵	
	'wind'	aŋ³³xɯɾ⁵⁵	

/See HPTB: 522./

'ripe/cooked'	***s-min**	a³¹min⁵⁵	WT **smin-pa**, Mizo **hmin**, WB **hm(y)añ'**, Lh. **mɛ**
'roast'	***gaːŋ ≽ *kaːŋ**	gak⁵⁵	WB **kaŋ**, Lh. **qɔ**, Mizo **kaːŋ**

/This root shows final nasal/stop variation./

'sew'	***krwi(y)**	khri⁵³	pKC ***khruy**

/This etymon was labeled "Kuki-Naga" in STC, despite its citation of Jg. **tšwi ~ tšəwi**./

'sharp'	***tak**	a³¹tua⁵³	WB **thak**, Lh. **thâʔ**

/STC (p. 87) considered this root to be restricted to Lolo-Burmese/

'short'	***g-dun**	a³¹tuŋ³³	Jg. **gədùn ≽ kədùn**

/Not in STC or HPTB./

'sit'	***duŋ/k ≽ *tuŋ/k**	toŋ⁵⁵	Jg. **dūŋ**, WB **thuiŋ,** WT **ḥtug**

/See HPTB: 288, where the Sulung form is cited./

'sky'	***r-məw**	kə³¹məŋ⁵³	WT **rmu-ba**, WB **mûi**, Lh. **mû**

/Sulung **-ŋ** might be due to allophonic nasalization of the vowel after the nasal initial./

'slowly'	***zya-zya**	dʑe⁵⁵dʑe⁵⁵	Lh. **a-yɛ́-yɛ́**, Lisu **a-zá-zá**, Phowa **z̄ɛ-z̄ɛ**

/Not in STC or HPTB./

'smell'	***m/s-nam**	naŋ⁵⁵	WT **mnam-pa** (v.i.) ≽ **snam-pa** (v.t.); WB **nam**, Lh. **nù**
'son-in-law'	***s-mak**	a³¹bua⁵³	WT **mag-pa**, WB **səmak,** Lh. **ɔ̀-má-pā**
'spider/spin/spindle'	***pʷaŋ**	woŋ⁵⁵ 'spider'	WT **phaŋ**, Jg. **kəbāŋ**, WB **wâŋ**, Lh. **vɔ̂ ~ ɣɔ̂**

/See STC #48, HPTB: 269./

'spleen'	***pay**	a³¹pie⁵³ 'liver'	Mpi **ʔoʔ²phe⁶**, Lh. **ɔ̀-pe**, Jg. **kūm-pāi**, OC ***b'jĕg** 脾

/For semantic interchange between the spleen and other internal organs, see VSTB, pp. 217ff./

'squirrel/rodent'	***rey ≽ *reŋ**	lui³⁵	WT **sre-mo(ŋ)**, Mikir **iŋ-ren**, WB **hrâñ**, Mizo **hlei**, Tangkhul **saŋ-ri**
'star'	***graːy**	ha³¹ɣai⁵³	WB **krai**, Lh. **mɔ̀ʔ-kə**

/HPTB: 212/

'strength'	***ra**	a³¹ha˩⁵³	WB **ʔâ**, Lh. **ɣâ**
'sweat'	***grwəy**	aŋ³¹tɕi⁵³	WB **khrwê**, Lh. **kɪ̄**, Mara **mathlai**, Angami **rükhru,** Qiang **χtʂuə⁵⁵**

	/See HPTB: 82, 102, 129, 195, 414./		
'urine'	***ts(y)i ⋉ *zəy**	ç*yai*[55]	WT **gtśi-ba**, Jg. **tśí**, WB **chî ⋉ sê**; Lh. **jî**
	/See HPTB: 187./		
'vagina'	***s-tu**	a[31]tuɨ[55]	WT **stu**, rGyalrong **təçtu**, Meithei **thù**, Lisu *tu*[55] **bi**[21]
'weave'	***rak ⋉ *t(r)ak**	ɣua[53]	WT **ħthag-pa**, Jg. **dàʔ**, WB **rak**, Lh. **ɣàʔ**, OC ***t'jək** 織
'winnow'	***ʔ-ra** (PLB)	ja?[53]	Lh. **ha,** Akha **zá**

Notes

1) A previous version of this paper was presented at the *39th International Conference on Sino-Tibetan Languages and Linguistics*, University of Washington (Sept. 2006).

2) "Everything is in flux."

3) According to Ratliff, at least 50% of the words in any modern HM language are loans from Chinese.

4) Yet even this [+basic, +stable] class of words may include items shared with other language families. Thus the pHM roots for SUN/DAY, MOON/MONTH, SIX, SEVEN seem to be of Tibeto-Burman (TB) origin. FISH looks like the Proto-Tai-Kadai (= Proto-Kra) form. THREE resembles the Proto-Mon-Khmer etymon. FRUIT, MAGGOT, FLOWER look like Proto-Austronesian. BIRD, DIE/KILL, EYE are shared by both Tai-Kadai and Austronesian, constituting some of the best examples supporting the "Austro-Tai-HM hypothesis" (Benedict 1975).

5) See Benedict (1972).

6) Bodman long ago convincingly suggested a relationship between this WT form and Chinese 赤 'red' (OC ***t'iăk**).

7) Cf. the "replacement tolerance quotient" (RTQ) discussed in Matisoff (1978) (VSTB: 95ff).

8) For many examples of Southeast Asian "Wanderwörter", see Benedict (1975: 35–133).

9) What Benjamin Lee Whorf (1956) referred to as "SAE" (Standard Average European) languages. An attempt to modify these lists to make them more suitable for languages of the East and Southeast Asian linguistic area was made in Matisoff (1978: 283–296), which contains an appendix called the "CALMSEA 200-word list" (an acronym for "Culturally Appropriate Lexicostatistical Model for Southeast Asia"), including words like MONKEY and BANANA, but excluding words like AT and SNOW. Some special problems that arise in attempting to apply the glottochronological approach to TB languages were discussed in Matisoff (2000).

10) Gérard Diffloth once mentioned to me that the roots for the extremely non-basic concepts for SCURF/DANDRUFF and SMEGMA were among the best attested of all words referring to the human body in the Aslian subgroup of Mon-Khmer.

11) See STC #278, where only the WT and Jg. forms are cited.

12) This is no doubt partly because the concept of SKIN impinges on other semantic fields, e.g. the outer coverings of objects like the bark of trees, peels of fruit, husks of maize. A graduate seminar I organized at Berkeley in the spring semester of 2007–08, called "Epidermal etymologies", was devoted to this very topic.

13) There is an extended discussion of this point in Matisoff (1978: 141ff).

14) See Matisoff (1986), VanBik (1998). Japanese has fewer psycho-collocations than Chin languages,

although they certainly exist, e.g. *kimo ga chiisai* 'be timid' ("liver is small").

15) See the remark under *Pronouns*, below.

16) Cf. Burling's "SAL languages" (1983), a suggested genetic grouping of Jingpho, Bodo-Garo, and Northern Naga, on the basis of shared idiosyncratic etyma, especially the root ***sal** SUN.

17) Reflexes of this etymon often have the verbal meaning of 'spend the night'.

18) It is important to avoid serving food items in groups of four, in favor of groups of three or five.

19) Probably for this same reason, the numerals from SIX to TEN are not included in the standard Swadesh lists.

20) See Matisoff (1997, sections 3.1–3.54).

21) I have heard that in some Amerindian languages which distinguish between alienable and inalienable possession, NAME is treated just as inalienably as body-parts.

22) See the definition of Lahu **nâʔ-*chî***, the second syllable of which is a reflex of this etymon (Matisoff 1988: 754).

23) The Lahu noun **ɔ̀-tɔ̀ʔ-ma** 'poison' adds a prefix and a suffix to this root.

24) See Cook (2003, p. 526 {ajy}, p. 1556 {niv}).

25) Greenberg's vast chimerical construct "Amerind" also predominantly has nasals in 1st and 2nd person morphemes, but one position of articulation further front than in TB/ST, with **n-** characteristic of the 1st person, and **m-** of the 2nd. See Matisoff (1990), and the sets for NAME and DREAM, below.

26) E.g., French *il* 'he' < Latin *ille* 'that'; Mandarin *tā* 他 '3rd person pronoun', originally 'other' (cf. Japanese *hoka* 'other', usually written with the same character).

27) Boyd Michailovsky has produced a valuable draft of such a study, still unpublished.

28) See Matisoff (2001).

29) Actually Jinuo is not such an atypical LB language as I had thought, as demonstrated by Hayashi (2008), who has solved such problems as the conditioning factors for Jinuo tonal developments.

30) Starostin and Peiros (1996) use four out of these five TB languages, omitting Garo.

31) We still lack compendious dictionaries of Barish languages, although R. Burling has been working on comparative Bodo-Garo since the late 1950's. See Burling (1959, 2004).

32) The autonym of this large group is **pi³⁵tsi⁵⁵kha²¹**. Although they number about 3 million (est. 1982), most of them now use Chinese as their dominant language; some even use Chinese characters to write Tujia. See Tian Desheng *et al.* (1986) and He Tianzhen (1987, 1994). The latter scholar believes Tujia to be close to the Qiangic group.

33) For present purposes I see no problem in using Karlgren's OC reconstructions. The numerous revisions to his system made by subsequent scholars will not significantly affect cognacy judgments for the very common roots in question.

34) In the following sets, forms in square brackets [ ] are deemed not to descend from the etymon in question, e.g., WT 'blood', Sulung 'tooth', Jingpho 'sun'. Words in parentheses ( ) are from individual languages rather than reconstructed proto-forms, e.g., Tamang 'dog', Yellow Lahu 'husband/male', Tamang 'smoke'.

35) These initials stand for the three Bai dialects for which copious data are available: D = Dali, B = Bijiang, J = Jianchuan. See Xu and Zhao (1984).

36) This root, which seems to underlie the pKC and Sulung forms, is reconstructed in Matisoff (1985b: 431–432) and in HPTB: 365.

37) Curiously, the Tujia form for LEG is **a³¹læ⁵³**, which looks like it might descend from ***lak**.

38) This morpheme occurs in **a³¹mun⁵⁵** 'beard', **gɯk³³mun⁵⁵** 'eyelash', and **pauk³³a³¹mun⁵⁵** 'nose hair'.

39) Benedict revised the GSR reconstruction to ***djək** because the character 趰 'sound of marching' occurs in the same phonetic series, and is reconstructed as ***t'i̯ək**; but this is really immaterial, since a velar prefix is also attested in TB.

40) See LICK, below.

41) It is not clear which syllable of these Tujia forms are reflexes of our etymon.

42) The cognacy of this Chinese form to PTB ***g-na** is doubtful. It was posited by Benedict largely on the basis of the graphic element 自 in the character 鼻 'nose' (STC p. 177, n. 471). *Shuo Wen* does define 自 as 鼻 (see Cook 2003, p. 780 {dpn}, p. 782 {dpz}. It is true that some E. Asians point to their nose when they mean 'myself'!

43) It is possible that Sulong **b-** is a reflex of PTB ***kʷ-** (cf. Lahu **phî**).

44) Other putative allofams of this root include ***kå** 豭 'male pig, boar'; ***g'wân** 豲 'kind of pig', and ***på** 豝 'sow, pig'.

45) STC derives the OC form from ***p-səy** (n. 436, p. 162), though this seems less plausible.

46) This form means 'lightning-flash'.

47) STC (pp. 164, 180) makes a rather tortured attempt to relate Chinese 烟 ***ʔien** to PTB ***mey**.

48) Jäschke (1958: 253) cites a Persian comparandum (in Arabic script) for these Tibetan words. Sulung **du³³wa⁵³** seems clearly to be a borrowing from Tibetan.

49) These forms (< Chinese) are the 2nd syllables of compounds whose first constituent is FIRE [q.v.].

50) A nasal-final allofam is attested not only in OC, but in forms like Sunwar **kun**, Newari **kɨn**.

51) This word is derived from the Jg. verb **tà** 'to build a house'.

52) This is not a respectful term. The Risiangku form is glossed as 'partenaire sexuel mâle d'un animal; mari' (Mazaudon 1994, Vol. II: 115).

53) This root is set up in STC (n. 99, p. 31) to accommodate Rawang **biŋ**, Trung **aŋ-prəŋ**, Lepcha **bryaŋ**; the Sulong form may now be added to these. This root does not appear as such in HPTB; but I have suggested long ago that it is connected to ***braŋ** 'give birth' (see STC, *ibid.*).

54) Cf. WB **lu** 'person'.

55) These Jg. forms are undoubtedly borrowings from Burmese, since PTB ***-k** regularly > Jg. **-ʔ** (STC n. 50, p. 14).

56) These forms are probably from Chinese.

57) These forms look like loans from Chinese.

58) The first syllables of the Lolo-Burmese, Jingpho, and pTani forms mean SLEEP.

59) This form means 'feed with the mouth'.

60) Other allofams of this etymon include ***dzi̯əg** 飤 'feed, give food to' and ***ts'ân** 餐 'food, meal, eat'.

61) pKC ***ruu/*ruuk** probably descends from a separate root (see STC p. 144, HPTB: 80).

62) For the multifarious reflexes of this etymon, see Matisoff (1985a).

63) Cf. also Karen **-wέ-** 'reported speech'.

64) PKB revised this reconstruction to ***sgi̯wər**. Allofamically related is ***g'iwəd** 惠. See Matisoff (1985a: 58 *et seq.*), and the Appendix by Richard Kunst (pp. 66–69).

65) There is a long list of Chinese characters with negative meanings and labial initials: ***pi̯wət** 弗 'not'; ***pwət** 不 'id.'; ***pi̯ug** 否 'id.'; ***pi̯wər** 非 'it is not'; ***mi̯wəd** 未 'not yet'; ***mi̯wət** 勿 'negative

imperative'; ***mi̯wo** 无 'not have; not, no; neg. impv.'; ***mi̯wo** 無 'not have, not'; ***mi̯wo** 毋 'do not, not', etc. See Matisoff (1985a, n. 98).

66) Cf. also Meche (Bodo-Garo group) **da**.

67) See Li Daqin (2004: 138).

68) A similar phenomenon has been noted for Bisu (S. Loloish group). See HPTB: 38–39. However, the conditioning for the denasalization is subtly different in the two languages. In Bisu it is not the combination of an initial and a final nasal that blocks the change, but rather the nature of the nasal at the pLB level: if the nasal is simple, it gets denasalized in Bisu; if it is complex (aspirated or preglottalized), the Bisu reflex remains a nasal. See Matisoff (1979).

69) See Matisoff (2004b). For that matter, something similar seems to be characteristic of Tujia, e.g., 'animal' ***sya** > Tuj. **si²¹**.

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