

The Causative *s- and Nominalizing *-s in Old Chinese and Related Matters in Proto-Sino-Tibetan

Tsu-Lin Mei
Cornell University

This paper shows that the causative *s- prefix and the nominalizing *-s suffix are both present in Proto-Sino-Tibetan. (1) In particular, it shows that Old Chinese voicing alternation in intransitive/transitive verbs, e.g. 敗 *brads ‘ruined, defeated’ / 敗 *prads ‘to ruin, to defeat’, is due to the devoicing effect of the causative *s- prefix: *s-brads > *prads. (2) The *-s suffix generally had a nominalizing function, where the derived noun is the patient of the action represented by the verb. In Modern Chinese this suffix is now reflected in the ‘departing’ tone, which confirms Haudricourt’s theory that the ‘departing’ tone came from the *-s suffix. For example OC *grjang 量_平 ‘to measure’ : *grangs 量_去 ‘a measure’ :: WT ‘grang-ba ‘to number, to count’ : grangs ‘a number’. (3) It is well known that the reflexes of the *-s suffix mark the perfective in many Tibeto-Burman languages, including Written Tibetan. In Old Chinese the pair 張_平 *trjang ‘to stretch, extend’ / 脹_去 *trjangs ‘to be stretched, distended’ illustrates the alternation between verb and perfect of verb.

Key words: causative *s- prefix, nominalizing *-s suffix, perfective *-s suffix, Sino-Tibetan morphology

1. Introduction

In a 1989 paper entitled “The causative and denominative functions of the *s- prefix in Old Chinese”, I concluded that OC *s-, *-s, and perhaps also *N- belong to a system of derivational affixes regulating directionality and that the morphological traits common to Old Chinese and Written Tibetan show that these two languages belong to the same family. I now think that the examples given in that paper for the denominative function of *s- were passable, but that the arguments given for the existence of causative *s- were quite bad and in need of revision, which was carried out in Mei (2008a, 2008b). As for the nominalizing *-s suffix, I think my 1980 paper is adequate, but this nominalizing *-s needs to be connected with PTB perfective *-s, expertly delineated by Huang (1996).

I am happy to read in Matisoff (2003a:87-88) the following: “The *Conspectus* takes up where Wolfenden left off, positing an array of seven PTB prefixes, of which three are highly important, with relatively well-defined semantic content (*s-, *m-, and *a-), and four are less so (*b-, *g-, *d-, *r-).” As to their semantic content, he has this to say (p.107): “In sum, as far as aspectual function goes, *m- is consistently stativizing/intransitive, *s- is consistently causativizing/transitivizing, while *ʔ- behaves sometimes one way and sometimes the other.” If I am not mistaken, Matisoff’s PTB stativizing *m- is what other scholars have written as prenasal *N-, cognate to WT A-chung. Baxter & Sagart (1998) have for OC the *N- or “voicing” suffix, the nominalizing *s- (as well as prefixes *p-, *m-, *k-, *t-, etc. whose functions are either unknown or known only to the authors), but no causative *s- prefix. LaPolla’s 2003 “Overview of Sino-Tibetan morphosyntax” has causative *s- prefix, voicing alternation, nominalizing suffix -s, but no prenasal *N-.

After the publication of my (2008a, 2008b) papers, Laurent Sagart called my attention to his (1999:75) theory, based upon rGyalrong evidence, which asserts that stativizing *N- exists in PTB and that PST *N- is responsible for voicing alternation between transitive and intransitive verbs in Old Chinese, e.g. 敗 *p- ‘to defeat’ / 敗 *N-p- > *b- ‘to be defeated’, 見 *k- ‘to see’ / 現 *N-k- > *g- ‘to appear’. The rGyalrong evidence consists of transitive/intransitive pairs such as:

ka-tʃop ‘to set fire to’ : *kə-ndʒop* ‘to catch fire’
kɔ-pʷɔk ‘to split’ : *kə-mbɔk* ‘to be rent’

At first I was skeptical, largely because I do not believe examples from a single language, however conservative, are sufficient to establish a proto-prefix. As I looked around for related evidence, I came across similar transitive/intransitive pairs in Lolo (HZYGL, Ma 2003:431):

*tu*⁵⁵ ‘to set fire to’ : *ndu*⁵⁵ ‘to catch fire’
*ti*⁵⁵ ‘to make someone wear (a hat, shoes)’ : *ndi*⁵⁵ ‘to wear (a hat)’
*to*²¹ ‘to cause to drink’ : *ndo*³³ ‘to drink’

Along the way I re-read Chang & Chang’s 1975 pioneering paper “The prenasalized stop initials of Miao-Yao, Tibeto-Burman, and Chinese: a result of diffusion or evidence of a genetic relationship?” and on p.348 I found their sage advice: “If a nasal prefix was one source of voicing contrasts in Chinese, *s- was another. We infer the devoicing capacity of *s- in Chinese from comparison with Tibetan...” Thus it is in the spirit of Chang & Chang (1975) that I enter into the following discourse. While I still believe causative *s- is the source of voicing contrasts in many Sino-Tibetan languages,

including Old Chinese, I would not rule out the possibility that stativizing *N- or *m- is another.

2. Lolo and Lahu

Ma (2003:431-432) has a list of non-causative/causative pairs in Lolo and in Lahu. For Lolo I have also added pairs from Chen Shilin et al.'s original 1962 list.

Non-causative		Causative	
Lolo			
<i>gu</i> ³³	‘hear’	<i>ku</i> ³³	‘cause to hear’
<i>ga</i> ⁵⁵	‘wear clothes’	<i>ka</i> ⁵⁵	‘cause someone to wear clothes’
<i>bi</i> ⁵⁵	‘come out’	<i>pi</i> ⁵⁵	‘cause someone to come out’
<i>ge</i> ³³	‘break’	<i>khe</i> ³³	‘cause to break’
<i>dzuu</i> ³³	‘eat’	<i>tʂa</i> ³³	‘feed’
<i>ni</i> ³³	‘sit’	<i>ni</i> ³¹	‘cause to sit, to set’
<i>mo</i> ³³	‘to see’	<i>po</i> ³¹	‘to show’
<i>ndo</i> ³³	‘to drink’	<i>to</i> ³¹	‘give to drink’
<i>ndu</i> ⁵⁵	‘to catch fire’	<i>tu</i> ⁵⁵	‘to set fire to’
<i>ndi</i> ⁵⁵	‘to wear (a hat, shoes)’	<i>ti</i> ⁵⁵	‘make someone wear (a hat, shoes)’
Lahu			
<i>dɔ</i> ³¹	‘to drink’	<i>tɔ</i> ³³	‘give to drink’
<i>dɛ</i> ³³	‘to wear (clothes)’	<i>tɔ</i> ³³	‘make someone wear (clothes)’
<i>tʂa</i> ⁵³	‘eat’	<i>tʂa</i> ³¹	‘feed someone’
<i>khu</i> ³¹	‘eat (solid food)’	<i>khu</i> ³⁵	‘feed someone (solid food)’
<i>nɔ</i> ⁵³	‘wake up’	<i>nɔ</i> ³¹	‘wake someone up’

In Lolo, ‘sit/set’ has alternation between nasal and voiceless nasal. The latter is the result of the devoicing effect of the causative *s- prefix upon the plain nasal, i.e. *sn-* > *n̥-*. The stop initials must have undergone the same devoicing process by *s-, i.e. *sb-* > *p-*, *sg-* > *k-*, etc.

How did other scholars analyze the Lolo and Lahu data? Let us look at Chang & Chang’s 1975 treatment first. On pp.325-326 they write as follows.

In Liang-shan Lolo, some non-causatives have *N-*, which has voiced a voiceless stop:

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| (1) Noncausative: | <i>ndo</i> ³³ | ‘to drink’ |
| Causative: | <i>to</i> ²¹ | ‘to cause to drink’ |
| (2) Noncausative: | <i>ndi</i> ⁵⁵ | ‘to wear (a hat, shoes)’ |
| Causative: | <i>ti</i> ⁵⁵ | ‘to make someone wear (a hat, shoes)’ |

Other causative pairs have a simple voiced stop initial in the noncausative of both Tibetan and Liang-shan Lolo, which appears to have been devoiced by *s- in the causative.

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|-------------------|-------------------------|---|
| (1) Noncausative: | <i>ga</i> ⁵⁵ | ‘to wear clothes’ |
| Causative: | <i>ka</i> ⁵⁵ | ‘to cause someone to wear clothes,
i.e. to put clothes on another person
or give someone clothes to wear’ |
| (2) Noncausative: | <i>bi</i> ⁵⁵ | ‘to come out’ |
| Causative: | <i>pi</i> ⁵⁵ | ‘to cause to come out’ |
| (3) Noncausative: | <i>gu</i> ³³ | ‘to hear’ |
| Causative: | <i>ku</i> ³³ | ‘to cause to hear’ |

I now turn to Matisoff’s treatment of Lahu, a close relative of Lolo in the Lolo-Burmese branch of Tibeto-Burman. In the chapter on Lahu, Matisoff (2003b:219) writes:

The oldest way of forming causative verbs in the Tibeto-Burman family was by an *s- prefix. Although this prefix has long disappeared from the Loloish languages, its effects survive in over a dozen Lahu verbs of causative meaning that differ only in tone and/or initial consonant from a corresponding non-causative verb:

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|------------|--------------|-----------|-----------------------|
| <i>dḁ</i> | ‘drink’ | <i>tḁ</i> | ‘give to drink’ |
| <i>mḁ</i> | ‘see’ | <i>mḁ</i> | ‘show’ |
| <i>cá</i> | ‘eat’ | <i>cā</i> | ‘feed someone’ |
| <i>tḁ?</i> | ‘be burning’ | <i>tú</i> | ‘kindle; set on fire’ |

In *Handbook of Proto-Tibeto-Burman*, Matisoff (2003a:89-92) has a long section on the reflexes of *m- and *s- in three Tibeto-Burman languages, namely Burmese, Hayu, and Lahu. I shall cite the Burmese section in full, the Hayu section in part, before coming to the section on Lahu.

The most interesting morphological alternation involving prefixes is also arguably the most ancient: the opposition between inner-directed or stative verbs on the one hand, signaled by the nasal prefix *m-; and the transitive or outer-directed or causative verbs on the other, marked by the sibilant prefix *s-. Despite the relative semantic clarity of this opposition, the morpho-phonemic traces of these prefixes in the daughter languages range from the obvious to the indirect. On the obvious side we find pairs like WT *mnam* ‘have a smell, be odorous’ (v.i.) / *snam* ‘sniff something’ (v.t.). Often, however the only traces left by the proto-prefixes are opposition in the manner of the initial consonants in the verb-pairs:

- Burmese has well over 50 verb-pairs where the intransitive member has a plain initial and the causative/transitive has an aspirate (e.g. WB *prat* ‘be cut in two’ / *phrat* ‘cut sthg in two’, *nûi* ‘be awake’ / *hnûi* ‘awaken someone’, *lwat* ‘be free, loose’ / *hlwat* ‘set free’), where the aspiration is a clear reflex of the *s- prefix.
- Hayu (= Vayu), a dying TB language spoken in a few villages four days’ trek southeast of Kathmandu, displays several patterns of manner alternations in these pairs, with the conditioning not clear (Michailovsky 1988:106-110): (a) voiced vs. voiceless unaspirated (19 examples, including *dam* ‘be filled’ / *tam* ‘fill sthg’; *duk* ‘fall’ / *tuk* ‘drop sthg’); (b) voiced vs. voiceless aspirated (19 examples, including *bek* ‘enter’ / *phək* ‘cause to enter’, *bok* ‘be born’ / *phok* ‘give birth to’.)
- Lahu preserves over a dozen such pairs, which may be divided into four categories in terms of the manner traces left by the two prefixes:

(1) Voiced obstruent simplex vs. voiceless unaspirated causative

<i>dɔ̃</i>	‘drink’	<i>tɔ̃</i>	‘give to drink’
<i>jɔ̃</i>	‘study’	<i>cɔ̃</i>	‘train someone’
<i>dɛ̃</i>	‘come to rest’	<i>tɛ̃</i>	‘set sthg down’
<i>dũ</i>	‘dig’	<i>tũ</i>	‘bury someone’

As indicated above [(3.1)], the Lahu voiced series of obstruents descends unambiguously from PLB *prenasalized initials. The simplicia in this category thus clearly reflect the PLB stative prefix *m-.

(2) Voiceless unaspirated simplex and voiceless unaspirated causative

<i>cā</i>	‘eat’	<i>cā</i>	‘feed’
<i>tòʔ</i>	‘burn’ (v.i.)	<i>tú</i>	‘set on fire’

Here the initial of the simplex was voiceable (*d* and *j* occur in the language), but evidently the nasal prefix was never applied to these roots. (Prefixes are unpredictable entities after all!)

(3) Voiced fricative simplex vs. voiceless fricative causative

<i>vàʔ</i>	‘hide oneself’	<i>fá</i>	‘hide sthg’
<i>vəʔ</i>	‘wear’	<i>fí</i>	‘dress someone’

The simplicia descend from PLB *w-, and the causatives from PLB *ʔ-w-.

(4) Sonorant initials

<i>mḁ</i>	‘see’	<i>mḁ</i>	‘show’
<i>nḁ</i>	‘be awake’	<i>nḁ</i>	‘awake someone’
<i>lḁʔ</i>	‘lick’	<i>lḁ</i>	‘feed an animal’

Here the initials of the simplicia are necessarily voiced, so any effect of a nasal prefix would be impossible to trace. (The *nasal prefix left no tonal effects in Lahu.)

It seems clear that Chang & Chang (1975) and Matisoff (2003a, 2003b) are in agreement concerning two prefixes in PTB. (1) The causative *s- prefix, which, through its devoicing effect, generates pairs with voiced obstruent simplex vs. voiceless unaspirated causative, e.g. *bi*⁵⁵ ‘to come out’ / *pi*⁵⁵ ‘to cause to come out’ in Lolo and *dḁ*³¹ ‘drink’ / *tḁ*³³ ‘to give to drink’ in Lahu. (2) The stativizing *N- or *m- prefix, which, through its voicing effect, generates pairs such as Lolo *ndo*³³ ‘to drink’ / *to*²¹ ‘to cause to drink’, or Lahu *dḁ* ‘drink’ / *tḁ* ‘give to drink’.

In addition, there is considerable evidence in Tibeto-Burman for the devoicing effect of *s-* on sonorants, i.e. *s-*, *s-n* > *ḁ-*, *s-m* > *mḁ-*, *s-l* > *lḁ-* etc.

First, Dai (1985:11-12) compared Written Tibetan and Achang, a Burmish language.

	Achang	WT	
noncausative	<i>nḁp</i> ⁵⁵	<i>nub</i>	‘sink’
causative	<i>nḁp</i> ⁵⁵	<i>snub</i>	‘cause to sink’
noncausative	<i>ne</i> ³¹	<i>nye</i>	‘to be near’
causative	<i>ne</i> ³¹	<i>snye</i>	‘to lean against’

Second, Xu (1984:40) compared ‘be free, loose’ vs. ‘set free’ across three Burmish languages and Jingpho.

Jingpho	Zaiwa (Atsi)	Achang	Burmese	WB	
<i>lot</i> ³¹	<i>lut</i> ³¹	<i>luɽ</i> ⁵⁵	<i>luɽ</i> ⁵⁵	<i>lwat</i>	‘be free, loose’
<i>tat</i> ³¹	<i>lut</i> ⁵⁵	<i>luɽ</i> ⁵⁵	<i>luɽ</i> ⁵⁵	<i>hlwat</i>	‘set free’

As we saw earlier, the *hl-* initial of WB *hlwat* is a clear reflex of the *s- prefix.

This brings us to the beginning of the modern study of voiceless sonorants in Old Chinese. As the story is often told, I shall be brief.

Tung (1944[1975:12-13]) noticed that there is frequent contact in phonetic series between MC *m-* and MC *x-* and proposed that the latter comes from OC **m̥-*, e.g. 墨 **m-* > *m-* vs. 黑 **m̥-* > *x-*. Li Fang-Kuei (1971) expanded the number of voiceless sonorants, and for typographical reasons, *m̥-* is rewritten as *hm-*, *ŋ-* is rewritten as *hn-*, etc., thus:

* <i>hm-</i> > <i>x-</i>	黑 * <i>hmək</i> > <i>xək</i> , 墨 * <i>mək</i> > <i>mək</i>
* <i>hn-</i> > <i>th-</i>	態 * <i>hnəgh</i> > <i>thai</i> , 能 * <i>nəng</i> > <i>nəng</i>
* <i>hng-</i> > <i>x-</i>	許 * <i>hngjəgx</i> > <i>xjwo</i> , 午 * <i>ngəgx</i> > <i>nguo</i>
* <i>hl-</i> > <i>th-</i>	脫 * <i>hluat</i> > <i>thuat</i> , 悅 * <i>luat</i> > <i>jīwat</i>

Yakhontov (1960) proposed:

* <i>sm-</i> > <i>x-</i>	黑 * <i>smək</i> > <i>xək</i> , 墨 * <i>mək</i> > <i>mək</i>
* <i>sn-</i> > <i>th-</i>	態 * <i>snəgs</i> > <i>thai</i> , 能 * <i>nəng</i> > <i>nəng</i>
* <i>sng-</i> > <i>x-</i>	許 * <i>sngjəgx</i> > <i>xjwo</i> , 午 * <i>ngəgx</i> > <i>nguo</i>
* <i>sr-</i> > <i>s-</i>	使 * <i>srjəgx</i> > <i>sī</i> , 吏 * <i>rjəgs</i> > <i>lī</i>

He also noted that the *s- in some phonetic compounds are prefixes.

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| (1) 墨 * <i>mək</i> > <i>mək</i> | 黑 * <i>s-mək</i> > <i>xək</i>
(compare WT <i>s-mag</i> ‘dark, darkness’) |
| (2) 吏 * <i>rjəgs</i> > <i>lī</i> | 使 * <i>s-rjəgx</i> > <i>sī</i> |
| (3) 林 * <i>rjəm</i> > <i>ljəm</i> | 森 * <i>s-rjəm</i> > <i>sjəm</i> |

The examples listed above are actually instances of the denominative function of the *s- prefix. Some of Yakhontov’s formulas have been confirmed by comparative evidence. For example, for OC **sm-* > *x-*, we have #135 and #287 in Gong’s (2002:101, 113) list of Proto-Sino-Tibetan comparative lexicon.

135. OC 焜 **smjədx* > *xjwěi* ‘fire, burn’, WT *me* < *mye* < *smye* ‘fire’, WB *mī* ‘fire, light’

287. OC 墨 *mək > mək ‘ink, black’, 黑 *smək > xək ‘black’, WT *smag* ‘dark, darkness’, WB *mang* ‘ink’, *hmang* ‘ink’

Results from comparative evidence have consequences, and I shall discuss three items. (1) Li Fang-Kuei’s famous example of 喪 *s-mang > *sang* ‘suffer the loss of’: 亡 *mjang > *mjang* ‘to lose, disappear, perish’ is based upon the analysis in *Shuowen*: 喪, 亡也。从哭从亡。會意, 亡亦聲。 “喪 *sang* means ‘to lose’. It is a compound ideograph composed of two parts, 哭 ‘to cry’ and 亡 ‘to lose’. 亡 *mjang is also the phonetic.” This example has been widely cited as evidence for the *s- prefix in OC, but there is an inherent problem. If we believe with Yakhontov that *s-m- > x-, we cannot at the same time believe with Li Fang-Kuei that *s-m- > s-. The epigrapher Yu Xing-wu (1979:75-77) pointed out that in the oracle bone inscriptions 喪 *sang was written with the graph used to the 桑 *sang ‘mulberry’ and that the 亡 *wang* component was entirely absent. In the bronze inscriptions the 亡 graph was added to the 桑 graph, to distinguish 喪 *sang meaning ‘suffer the loss of’ from *sang 桑 indicating a type of tree. Therefore in the oracle bone inscriptions 桑 *sang ‘mulberry’ is a loan for 喪 *sang ‘suffer the loss of’, and in the bronze inscriptions, 桑 *sang ‘mulberry’ is the phonetic of 喪 and 亡 *mjang ‘to lose’ is the signfic. *Shuowen* got it all wrong.

- (2) Sagart (1999:65) gives the following pair as example of *s-ŋ- > s-:
 楔 *s-ŋet > *set* ‘wedge, piece of wood between the teeth of a corpse’
 齧 *ŋet > *nget* ‘gnaw, crunch in the teeth’

As Ting Pang-Hsin (2002:6) has noted in a review of Sagart (1999), this example is highly suspect. There are actually three words in GSR 279.

- (a) 契 MC *khiet* ‘script notches’
 (b) 楔 MC *siet* ‘wedge, piece of wood between the teeth of a corpse’
 (c) 齧 MC *ngiet* ‘gnaw, crunch in the teeth’

Ting points out three unresolved issues. (1) It is not certain that (b) and (c) belong to the same phonetic series, since (b) does not have 契 as its phonetic whereas (c) does. (2) (a) and (b) clearly belong to the same phonetic series, and their phonetic relation is between MC *k-* and *s-*. (3) It is doubtful (a) and (c) are cognates. In the *Shuowen* text cited by Hui-lin’s 慧琳《一切經音義》 (b) is defined as 開木具也 (an instrument for splitting wood), i.e. a wedge, and ‘piece of wood between the teeth of a corpse’ is a lately arisen, extended meaning of the word (b) 楔 ‘wedge’.

Sagart’s example comes from Bodman (1980:69). Again, if we believe with

Yakhontov that *s-ng- > x-, we cannot at the same time believe with Bodman & Sagart that *s-ng- > s-.

(3) We can combine Yakhontov and Li Fang-Kuei's formulas for s + sonorants as follows:

*sm- > *hm- > x- *sng- > *hng- > x-
 *sn- > *hn- > th- *sl- > *hl- > th-

It now becomes clear that (i) just as *s-* devoices *m-*, *n-*, *ng-* and *l-* in Tibetan languages, Burmish languages and Lolo, it also devoices *m-*, *n-*, *ng-* and *l-* in Old Chinese, and (ii) Li's formulas *hm- > x-, *hn- > th-, *hng- > x- and *hl- > th- are further developments of voiceless sonorants *hm-, *hn-, *hng-, and *hl- from Late Old Chinese to Middle Chinese.

Scattered throughout HZYGL (Ma 2003) there are data supporting Li's formulas. On p.31, there is evidence for *m̥-* > *h-* in Miao:

'tooth' Jianhe *mi*³⁵; Taijiang, Huangping *m̥i*³⁵; Leishan *hi*³⁵
 'evening' Jianhe *maŋ*⁴⁴; Taijiang, Huangping *m̥aŋ*⁴⁴; Leishan *hɿ*⁴⁴

Ma (2003:32) points out that in Guizhou Miao, voiceless nasal *m̥-* is pronounced as *ŋh-* by older speakers and as *th-* by younger speakers, e.g. 'sun' *ŋha*³³ ~ *tha*³³; 'to move' *ŋha*³³ ~ *tha*³³; 'listen, hear' *ŋhang*⁴⁵ ~ *thang*⁴⁵. On p.377 of HZYGL, Dai Qingxia writes "In a few instances, *ŋ* becomes *x*, for example, the Longchuan dialect of Achang has *ŋan*⁵⁵ for 'frost', but in the Langhe dialect of Achang it is pronounced *xan*⁵⁵."

In my 1989 paper, I gave many examples of the *s- prefix in Old Chinese, including the following:

- (1) 喪 *s-mang > *sāng* 'suffer the loss of'
 亡 *mjang > *mjwang* 'to lose, disappear, perish'
- (2) 順 *djəns > *dźjuěn* 'obey, submissive'
 馴 *sdjən > *zjuěn* 'docile, to tame'
- (3) 食 *djək > *dźjək* 'eat'
 飪 *sdjəks > *zī* 'feed'
- (4) 吏 *rjəgs > *li* 'officer'
 使 *srjəgx > *sī* 'to send, the command, envoy'
- (5) 滅 *mjiat > *mjät* 'extinguish, destroy'
 威 *smjiat > *xjwät* 'to cause to extinguish, destroy'

I have already indicated why I think (1) is invalid. (2) and (3) are based upon Li Fang-Kuei's formula *sdj- > *zi*, e.g. 詞 *sdjæg > *zji*, 續 *sdjuk > *zjwok*. I do not think this is a valid formula; a better alternative, as we shall soon see, is *sdj- > *tj-*, that is, *s- devoices *dj- and the result is *tj-. (3) will resurface with what I hope will be a better reconstruction. (4) is Yakhontov's example, and the function of *s- in this example is denominative; it converts a noun (吏 'officer') into a verb (使 'to send, to command'). (5) occurs in Ode 192, cited below with Karlgren's (1950) translation.

燎之方揚	when the fire is just flaming high,
寧或滅之	how can anyone extinguish (*mjiat) it?
赫赫宗周	The majestic Tsung Chou,
褒姒威之	(lady) Sī of Pao has destroyed (*smjiat) it.

威 *smjiat has a causative sense. My translation would be "Lady Sī of Pao has caused it (i.e., Tsung Chou) to be destroyed".

This brief review of my earlier work is humbling indeed. Of the scores of examples I proposed, only a handful stood the test of time, including (4) and (5). (4) is an instance of the denominative function of the *s- prefix, and (5) is an instance of the causative function of the *s- prefix. Also, it becomes clear that all convincing examples have to do with nasals and laterals.

This raises the question: if *s- can devoice sonorants, can it devoice obstruents as well? The answer is probably yes, and this leads us to explore verb pairs such as the following:

- (a) 敗 *brads > *bwai* 'ruined; become defeated'
敗 *prads > *pwai* 'to ruin; defeat'
- (b) 折 *djat > *zjat* 'broken (sticks, branches)'
折 *tjat > *tʂjat* 'to break, to bend'
- (c) 長_{長短} *drjang > *djang* 'long, tall'
長_{生長} *trjangx > *tjang* 'grow tall, increase'

Three observations are perhaps in order. (1) These pairs are phonologically similar to Lolo pairs such as *ga*⁵⁵ 'to wear clothes' vs. *ka*⁵⁵ 'to cause someone to wear clothes'; *bi*⁵⁵ 'to come out' vs. *pi*⁵⁵ 'to cause to come out'. As we saw earlier, both Matisoff (2003a, 2003b) and Chang & Chang (1975) regard these Lolo pairs as the reflex of earlier causative *s- prefix. (2) Semantically, it is reasonably clear that 'to defeat X' is 'to cause X to be defeated' and 'to break something' is 'to cause something to be broken'.

(3) Therefore the idea came to me that the causative *s- devoices the voiced obstruent of the noncausative verb and at the same time generates the voiceless transitive-causative verb, thus:

敗 *b- ‘ruined; become defeated’
 敗 *s-b- > *p- ‘to ruin, to defeat’

I thought to myself, such an obvious idea must have occurred to others. Not surprisingly, when I looked through the literature I discovered that August Conrady (1896: 163-165) had already listed voiced/voiceless alternations such as 敗 *b-/p-*; 別 *b-/p-*; 現 *ɣ-/見 k-*; 長 *ǰ-/č-* as well as cognates such as 墨 *m-/黑 h-*.

And Gong (2002:188) has proposed:

- (i) 敗 *N-brads > *brads > *bwai* ‘ruined; become defeated’
 *s-brads > *prads > *pwai* ‘to ruin, defeat’
- (ii) 別 *N-brjat > *brjat > *bjät* ‘different, leave’
 *s-brjat > *prjat > *pjät* ‘divide, separate’

Thus emboldened by my precessors, I proposed in Mei (2008a, 2008b) 敗 *b- / 敗 *s-b- > *p-* etc. not as a new theory but as a way to restore the legacy of Conrady (1896).

3. Examples of causative *s- and denominative *-s- in OC

I shall present examples of causative *s- and denominative *-s- under three headings: (i) obstruents, causative *s-, (ii) sonorants, causative *s-, and (iii) sonorants, denominative *-s-. The reconstruction of *s- in (i) is of course provisional. Others would account for voiced/voiceless alternations in terms of a stativizing *N- or *m-, thus *N-p- > *b-/p-* or *m-p- > *b-/p-*. We shall come to these competing solutions shortly. But for the time being, notice that—except for examples (14) and (15)—I have used a single devoicing rule for *s-*, which comes in two flavors. Let *b-* represent voiced obstruents, and *p-* voiceless obstruents, and let *m-* represent (voiced) sonorants and *m̥-* voiceless sonorants, then the devoicing effect of *s-* may be stated as follows:

- (SDO) *s-* devoicing (obstruents): *s-b-* > *s-p-* > *p-*
- (SDS) *s-* devoicing (sonorants): *s-m-* > *s-m̥-* > *m̥-*

(i) Obstruents, causative *s-

- (1) 敗 *brads > *bwai* ‘ruined, defeated’
 *s-b- > *prads > *pwai* ‘to ruin, defeat’
- (2) 別 *brjat > *bjät* ‘to be different, to leave’
 *s-b- > *prjat > *pjät* ‘to divide, to separate’
- (3) 斷 *duans > *duan* ‘severed’
 *s-d- > *tuans > *tuan* ‘to cut off’
- (4) 屬 *djuk > *žjwok* ‘conjoined, connected’
 *s-d- > *tjuk > *tšjwok* ‘to connect, to join’
- (5) 長_{長短} *drjang > *djang* ‘long, tall’
 長_{生長} *s-drj- > *trjangx > *tjang* ‘grow tall, increase’
- (6) 折 *djat > *žjat* ‘broken (of sticks, branches)’
 *s-d- > *tjat > *tsjat* ‘to break, to bend’
- (7) 解 *grigx > *gai* ‘to crack, break open (v.i.)’
 *s-g- > *krigx > *kai* ‘to cut up (an ox)’
- (8) 現 *gians > *gien* ‘to appear’
 見 *s-g- > *kians > *kien* ‘to see’
- (9) 繫 *gigs > *giei* ‘linked, joined’
 *s-g- > *kigs > *kiei* ‘to tie’
- (10) 會 *gwæds > *yuâi* ‘united, joined’
 *s-g- > *kwæds > *kuai* ‘to combine, to aggregate (the account)’

(ii) Sonorants, causative *s-

- (11) 滅 *mjiat > *mjät* ‘to drown, extinguish, destroy’
 威 *s-m- > *hmjiat > *xjwät* ‘to cause X to be destroyed’
- (12) 蛻 *luat > *jiwät* ‘exuviae of insects or reptiles’ (GSR 324e);
 悅 *luat > *jiwät* ‘pleased, glad’ (GSR 324o)
 脫 *s-luat > *hluat > *thuat*, *N-luat > *duat* ‘to take off, to peel off, escape, careless’ (GSR 324m)
- (13) 食 *N-ljæk > *djæk > *džjæk* ‘eat’
 飼 *s-ljæks > *ljæks > *zi* ‘food, give food to’

(iii) Sonorants, denominative *s-

- (14) 吏 *rjəgs > *li* ‘officer’
 使 *s-rjəgx > *sī* ‘to send, to command, envoy’
- (15) 林 *rjəm > *ljəm* ‘woods, forest’
 森 *s-rjəm > *sjəm* ‘woody’
- (16) 墨 *mək > *mək* ‘ink’
 黑 *s-mək > *xək* ‘black, dark’

A word should be said about (12), (13), (11), and (16). (12) 蛻 *tui* ‘exuviae of insects or reptiles’ is a cognate of 脫 *tuo* ‘to take off, to peel off’ in that the cicada or the snake peel off skin naturally, whereas to undress a child or to take off one’s own clothes does require external agency. The former has four readings in the *Guangyun*. 蛻, 蟬去皮也 *luat > *jivät* (a cognate of WT *glod* < *g-luat ‘loose, relaxed’) is the intransitive member of the pair of verbs. 蛻, 蛇易皮 *s-luats > *hluats > *thwai* > *tui* ‘(*that which is taken off:) exuviae of insects’ (Baxter & Sagart 1998:57) is the noun derived from the transitive. But here I am mainly interested in giving examples for *s-l- > *hl- > th-. The other items are put in parentheses. See Gong (2002:207) for further discussion. (13) is from Gong (2002:207) and he gives further examples of the loss of *s- before *lj-: 習 *s-ljəp > *ljəp > *zjəp* ‘to practice, exercise; repeatedly’: WT *slob-pa* ‘to learn, to teach’ and 夕 *s-ljiak > *ljiak > *zjäk* ‘evening, night’: WT *zla-ba* ‘moon’. In (13), the word 飼 ‘to feed’ has been reconstructed with a causative *s- prefix because we think ‘to feed’ is the causative of ‘to eat’, but *s- before *lj- disappears without leaving traceable effect. (11) and (16) are, in the system of Baxter (1992) and Sagart (1999), respectively:

滅 *m- / 威 *hm- 墨 *m- / 黑 *hm-

The practical consequence of my adopting their reconstruction is that I cannot claim that (11) is an instance of the causative function of the *s- prefix and (16) is an instance of the denominative function of the *s- prefix. This strikes me as a curiously efficient way to conduct scholarly debate; if I do not like your evidence, I can use my reconstruction system to make the evidence disappear. I am thus compelled to make a counter-proposal. I hope these authors after further deliberation will adopt *sm- > *hm- > x-, *sn- > *hn- > th-, *sng- > *hng- > x-, *sl- > *hl- > th-.

4. An intransitive nasal prefix *N-?

Sagart (1999:74-75) writes:

The Tibeto-Burman language rGyalrong has an intransitive nasal prefix *N-*, which assimilates its point of articulation to, and voices, a following voiceless consonant in a manner very similar to what can be supposed for Chinese. Examples (Lin 1993:193):

ka-tʃop ‘to set fire to’ : *kə-ndʒop* ‘to catch fire’
kɔ-pʷk ‘to split’ : *kə-mbɔk* ‘to be rent’
kɔ-klɔk ‘to wipe off, strike out, erase’ : *kə-ŋglɔk* ‘to fall off’

Some Chinese pairs follow:

見 *k- > k- ‘to see’ : 現 *N-k- > *g- > ɣ- ‘to appear’
 別 *p- > p- ‘to separate (trans.)’ : 別 *N-p- > *b- > p- ‘to take leave’
 折 *t- ‘to break, to bend (trans.)’ : 折 *N-t- > *d- ‘to bend (intrans.)’
 敗 *p- > p- ‘to defeat’ : 敗 *N-p- > *b- > b- ‘to be defeated’
 屬 *t- ‘to assemble’ : 屬 *N-t- > *d- ‘to be connected with’
 解 *k- ‘to separate, untie’ : 解 *N-k- > *g- > ɣ- ‘to be loosened’

Let us examine the evidence for and against Sagart’s proposed formulas: N-p- > b-, N-t- > d-, N-k- > g-.

Chang & Chang (1975) in their pioneering article pointed out that Miao-Yao, the Rong languages (rGyalrong, Trung, Lepcha), and the Yi (Loloish) languages all have prenasalized stops, so did WT, namely A-chung, which the authors write as “N-”. With regard the Rong languages, Chang & Chang (1975:330) said: “In Trung and Lepcha, unlike rGyalrong, there are examples of the voicing of a voiceless stop by a preceding nasal, and the nasal could merge not only with voiced stops but with voiceless ones as well; we may speculate that the voiceless stop was voiced at an intermediate stage.” They also compiled a comparative lexicon consisting of words with prenasalized stops in several Tibeto-Burman languages, including the words for ‘to weave’, ‘to burn’, ‘to fly’ and ‘dragon’. Dai (1994) made a study of the prenasal in Lolo-Burmese, and in that paper he also compared cognate words with prenasalized stop in WT, rGyalrong, and Loloish. Some of these words have OC cognates, easily found in Gong (2002). What follows is a composite list, assembled from lists in Chang & Chang (1975), Dai (1994), and Gong (2002).

- (1) ‘to weave’ WT *N-thag-pa*. Naxi *nta*³⁵ (Wei-xi), *da*¹¹ (Li-jiang).
 rGyalrong *-tyak* (Zu-da *katyak*, Suo-mo *tətak*).
 Miao-Yao *nto*⁴⁴ (Ma-jia-tun), *ntau*³³ (Ge-cheng), *tau*¹³ (Gao-tong).

Thailand Yao *dat* (RFH).

Chinese 織 *tjək > tšjək (Gong #291). PTB *tak (STC #17)

- (2) ‘to fly’ WT *N-phur*. Naxi *mbi*³¹. Lolo *dzi*³³ (Xide)
 Chinese 飛 *pjər > pjwei (Gong #192). PTB *pir ~*pur (STC #398)
- (3) ‘nine’ WT *dgu*. Naxi *ngv*³³. Lolo *gu*³³. rGyalrong *ke*³³ *ngu*⁵³.
 Chinese 九 *kjəgwɣ > kjəu. PTB *d-kuw (STC #13, p.131)
- (4) ‘dragon, thunder’ WT *N-brug*. rGyalrong (Suo-mo) *tarmok*
 (-*rmo* < *mrok < *n-bruk). (Chang & Chang 1975:341)
 Daofu (Horpa-Shangzhai) *mbru*. Tibetan (Daofu) *mbruq rm* <
 *mr (< *mbr) (HZYGL, p.199)
 Chinese 龍 *brjung > *rjung > ljwong ‘dragon’ (Gong 2002:200)
- (5) ‘to burn’ WT *N-bar*. Naxi *mbər*³¹.
 Chinese 焚 *bjən > bjuən ‘to burn’, WT *N-bar* ‘to burn, to blaze’, *sbar* ‘to
 light, to kindle’ (Gong #190)
- (6) ‘to load’ *N-gel*, pf. *bkal*, fut. *dgal*, imp. *khol* ‘to load, to lay on a burden’, *sgal*
 ‘burden, load’
 Chinese 荷 *galx > ya ‘carry’ (Gong #165)
- (7) ‘to cover’ WT *N-gebs*, pf. *bkab*, fut. *dgab* ‘to cover’
 Chinese 蓋 *gap > yap ‘to cover’, *kaps > kâi ‘to cover, a cover’

Let us consider example (3) first. Two of the three dialects of rGyalrong recorded by Lin (1993:700) have *ŋg-* initial in their word for ‘nine’: *kə-ŋngu*, *ŋgit*, *vngu*. Comparative evidence points to a PTB form *N-kuw ~ *d-kuw for ‘nine’. I suppose this must also be the PST form. But then *N-k- (or *d-k-) does not give *g- in OC, but gives *k-, since the word for ‘nine’ in OC clearly has a voiceless velar-stop initial *k-. We can of course assume that the voiced prefix *N- or *d- simply dropped out in the transition from PST to Proto-Chinese.

Example (2) poses similar difficulties for the theory. In (2) we are left to wonder whether the initial of the PST form is *N-p- or *p-. If the former, how can we explain the *p- in OC 飛 *pjər? If the latter, how can we explain the prenasalized stop in Naxi *mbi*³¹?

(6) and (7) show that OC *g- comes from *N-g-, that is, a voiced stop in OC such as *g- does not guarantee that it came from *N-k-.

If I am not mistaken, Sagart’s proposal says, among other things: PTB *N-k- is the necessary and sufficient condition for OC to have *g-. (6) and (7) show that it is not necessary; (3) shows it is not sufficient.

Nevertheless, the idea that some sort of voicing prefix existed in OC has many lives and is unlikely to expire anytime soon. And if some sort of voicing prefix existed in OC, what might it be? Matisoff's inner-directed *m- is clearly a candidate. Matisoff (2003a:90, 117) gives this WT example: *mnam-pa* 'smell, stink' (v.i.) vs. *snam-pa* 'sniff, take a smell of' (v.t.). LaPolla (2003:24) gives another WT example: *mkho-ba* 'desirable', 'to be wished for': *kho-ba* 'to wish, to want'.

In Old Chinese, *N- already appeared in 食 *N-ljək > *djək > *dźjək*. If we follow Baxter's lead and reconstruct *m-ljək instead, we get a better fit with its cognate in PTB, *m-lyak 'lick' (STC #211). Assuming that Matisoff's formulas *m-p- > b-, *m-t- > d-, *m-k- > g- for Loloish work equally well for OC, we can try:

- (8) 見 *kian 'to see' / 現 *m-k- > *gians 'to appear'
 (6) 折 *tjat 'to break' / 折 *m-tj- > *djat 'broken (of sticks, etc.)'
 (1) 敗 *prads 'to ruin, defeat' / *m-p- > *brads 'ruined, defeated'

But when we come to (5) 長 MC *djang* 'long, tall' / 長 MC *tjang* 'grow tall, increase' we need to pause. It seems to me reasonably clear that 'long, tall' is the basic word and 'grow tall' is the derived word; consider also 張 MC *tjang* 'make long, extend'. But since none of us are native speakers of OC, our Sprachgefühl is fallible. When we come to (11) 滅 *mjiat (< *m-) 'to extinguish' / 威 *hmjiat (< *s-m-) 'to cause X to be destroyed' we must come to a full stop. Clearly, *m- cannot account for an alternation involving voiced and voiceless labial nasals.

Having tried the *m- theory for size, I cannot escape the nagging feeling that the *m- theory really does not work for OC. The evidence is all indirect, and the argument is contrived. In other words, we have assumed, but have not shown, that *m- was an active stativizing prefix at the time when pairs (1) to (10) were being created in OC.

Let us return to the beginning. There is a general assumption that at the PST stage, verb pairs are formed in accordance with the following scheme. The first is Matisoff's (2003a:81, 117); the second is Gong's (2002:188).

stative-intransitive	/	transitive-causative
*m- (voicing, *m-p- > b-)	/	*s- (devoicing, *s-b- > p-)
*N- (voicing, *N-p- > b-)	/	*s- (devoicing, *s-b- > p-)

In the left column, we have voicing effect of the nasal prefix, *N- or *m-. In the right column, we have devoicing effect of the *s- prefix. This schematic theory is distinguished by its symmetry and elegance, and must be true in some sense. The question is for which sub-group of languages and at what time.

Let us assume PST has the *s- prefix and the nasal prefix, either *N- or *m- or both. Proto-Chinese inherited both *s- and *N-. Then *N- declined as an active prefix, and eventually disappeared from OC while *s- continued to be active, in both its causative and denominative functions, well into Early Old Chinese. This would explain (1) why in the case of ‘nine’ and ‘to fly’ discussed before, *N-k- and *N-p- clearly existed in PTB but no trace of *N- or its voicing effect can be found in OC 九 *kjəugx or OC 飛 *pjər and (2) traces of *N- (and *m-) in OC are found only in lexical items inherited from PST, such as 食 *m-ljək or *N-ljək ‘to eat:’ or 脫 *N-luat > *duat* ‘to take off, escape’. The only exception is the cognate pair 三 *səm > *sâm* ‘three’: 參 *N-səm > *tshəm > *tshâm* ‘triad’ (Gong 2002:178), but that is extremely rare.

In examples (1) to (16) we are essentially dealing with MIS (made in Sinitic) vocabulary items. I have already listed TB cognates for (12) 脫 *s-luat > *thuat* ‘to take off’, (13) 食 *m-ljək > *dźjak* ‘to eat’, and (16) 墨 *mək ‘ink, black’ and 黑 *s-mək ‘black, dark’. Gong (2002:187, 107) proposed WT and WB cognate verb pairs for (2):

209. 別 *brjat > *bjät* ‘different, leave’
 *prjat > *pjät* ‘divide, separate’
- WT *N-brad*, pf. *brad* ‘to scratch, to lacerate by scratching’
 sbrad ‘to scratch’
- WB *prat* ‘be cut in two; be cut off’
 phrat ‘cut in two; to break off’

And on the basis of this Sino-Tibeto-Burman comparative evidence, he proposed the following derivation for (1) and (2) (p.188).

- (2) (a) 別 PC (Proto-Chinese) *N-brjat > OC *brjat > MC *bjät* ‘different, separate’
 (b) PC *s-brjat > *s-prjat > OC *prjat > MC *pjät* ‘divide, separate’
- (1) (a) 敗 PC *N-brads > OC *brads > MC *bwai* ‘ruined, become defeated’
 (b) PC *s-brads > *s-prads > OC *prads > MC *pwai* ‘to ruin, defeat’

I accept part of Gong Hwang-chenng’s proposal and reserve judgment on the rest. The part I accept is the cognate relation between the WB pair and the OC pair. WB *prat* ‘be cut in two’ / *phrat* ‘cut something in two’ is the very same pair. Matisoff (2003a:90) used to illustrate the fact that Burmese has verb pairs “where the intransitive member has a plain initial and the causative/transitive has an aspirate” and he reminded us that “the aspiration is a reflex of the *s- prefix”. By accepting Gong’s OC-WB comparison,

we can affirm for OC, 別 *prjat < *s-brjat ‘divide, separate’.

There are two items in Gong Hwang-cherng’s proposal I find not entirely convincing. (1) I am not sure how a WT word meaning ‘scratch’ can be related to an OC word meaning ‘divide’, ‘different’. Therefore for the time being, I cannot accept his WT-OC comparison. (2) There is not enough evidence for an active *N- prefix in Proto-Chinese. Therefore I shall accept the derivation in (2b) and (1b) but for the time being reserve judgment on the derivation in (2a) and (1a).

Returning now to examples (1)-(16), we say that except for (2), (12), (13), and (16), the remainder are almost certainly verb-pairs made in Sinitic. And “Sinitic” here means Old Chinese, a language with an active *s- prefix but as far as we know, no active *N- prefix or *m- prefix.

Sagart’s *N- theory for the origin of voiceless/voiced pair of verbs in OC presupposes the active presence of the *N- prefix in Old Chinese. Since supporting evidence for the active presence of the *N- prefix in OC has yet to reach a critical mass, we must withhold judgment on his challenging theory. At this moment, I am cautiously optimistic.

To conclude this section, we have found verb pairs testifying to the active use of the *s- prefix in OC, both in its causative and denominative functions. Traces of the stativizing *m- and *N- are also found in lexical items OC inherited from PST.

5. The *-s suffix and its two functions: nominalizer and marker of past tense or perfective aspect

In 1980 I published in Chinese “Chronological strata in derivation by tone change” whose purpose is to show that PST *-s suffix had a nominalizing function and that the OC *-s became the “departing” tone of Middle Chinese and Modern Chinese. LaPolla (2003:25) gives a fine summary.

The *-s suffix generally had a nominalizing function (Pulleyblank 1973, Mei 1980, 1989), where the derived noun is the patient of the action presented by the verb, but also had a function that Mei (1980, 1989) and Schuessler (1985) have characterized as “change of direction” or “inversion of attention flow” respectively. Mei (1980) suggests these two functions derive from two different homophonous suffixes, which he equates with the Tibetan nominalizing and ablative suffixes respectively. In Modern Chinese this suffix is now reflected in the “departing” tone. In some cases, the addition of the suffix resulted in the creation of a new Chinese character, but in many cases there are simply two pronunciations for the same character. For example OC *C-rjang (量)

‘measure’ : *C-rjangs ‘an amount’ :: WT ‘grang-ba ‘to number’, ‘to count’ : grangs ‘a number’; OC *tjæk (織) ‘weave’ : *tjæks ‘thing woven’ :: WT ‘thag-pa ‘to weave’ : thags ‘texture’, ‘web’; OC *nup (納) ‘bring in’ : *nups (內) ‘inside’; *mre? (買) ‘buy’ : *mres (賣) ‘sell’; *dju? (受) ‘to receive’ : *djus (授) ‘to give’.

In an attempt to improve upon my 1980 paper, I shall do the following: (i) quote Stephan Beyer’s (1992:118) account of the nominalizing *-s* in Written Tibetan, (ii) restate the Old Chinese evidence in cognate words, e.g. *nup ‘bring in’ : *nups ‘inside’ etc. (iii) rewrite one of the examples (‘to measure’ : ‘an amount’) to conform with Gong Hwang-chenng’s (2002) latest reconstruction, and leave the other example unchanged, and (iv) delete desultory remarks concerning “change of direction” and WT ablative suffix.

(i) Stephan Beyer’s *The Classical Tibetan Language* (1992) says the following about “The Formative *-s* ‘Nominal’” on p.118.

The nonsyllabic formative *-s* “NOMINAL” is found in nouns derived from verbs—for example, *SKYAB* ‘protect’ *skyabs* ‘protection,’ *SKYEM* ‘be thirsty’ *skyems* ‘beverage, beer, libation,’ *KHRU* ‘bathe’ *khru* ‘bath,’ *GRANG* ‘count’ *grangs* ‘number,’ *NGRO* ‘go’ *Ngros* ‘motion, travel,’ *LTA* ‘look’ *ltas* ‘omen, sign, prodigy’ *NDOM* ‘come together’ *Ndoms* ‘genitals,’ *SPU* ‘decorate’ *spus* ‘beauty,’ *SPO* ‘change, shift’ *spos* ‘incense,’ *SBUG* ‘pierce’ *sbugs* ‘hole,’ *RTSI* ‘count, calculate’ *rtsis* ‘counting, numeration, astrology,’ *ZA* ‘eat’ *zas* ‘food,’ *ZAB* ‘be deep’ *zabs* ‘depth,’ *LOG* ‘return, turn around’ *logs* ‘side, direction, region,’ *SRUB* ‘stir, rake, rub’ *srubs* ‘cleft, slit, rent, wound,’ *SLOB* ‘learn, teach’ *slobs* ‘exercise, practice, experience.’

(ii) There are cognate pairs in Old Chinese in which the verb is in the “entering” tone and the derived noun is in the “departing” tone, here reconstructed as *-s in Old Chinese.

納 *nəp > nâp	‘bring in’	內 *nəps > *nəts > nuâi	‘inside’
立 *gwrjəp > ljəp	‘stand’	位 *N-gwrjəps > yjwi	‘place of rank’
織 *tjæk > tsjæk	‘weave’	織 *tjæks > tsi	‘thing woven’
責 *tsrik > tsək	‘demand payment’	債 *tsriks > tsai	‘debt’
塞 *sək > sək	‘stop up, block’	塞 *səks > sai	‘a pass, strait’
結 *kit > kiet	‘tie, knot’	髻 *kits > kiei	‘hair-knot, chignon’
列 *rjat > ljät	‘rank, order’	例 *rjats > ljai	‘usage, rule’

(iii) Two OC verb/noun pairs have WT verb/noun pairs as their cognates.

	OC		WT
量	*grjang > *rjang > <i>ljang</i> ‘to measure’		<i>grang</i> ‘to count’
	*grjangs > *rjangs > <i>ljang</i> ‘a measure’		<i>grangs</i> ‘number’
織	*tjək > <i>tšjək</i> ‘to weave’		<i>thag</i> ‘to weave’
	*tjəks > <i>tši</i> ‘stuff made of coloured silk’		<i>thangs</i> ‘texture, web’

In the '60s and '70s, we were all trying to confirm Haudricourt's theory of tonogenesis for Old Chinese, and under the leadership of Pulleyblank, we succeeded in showing that the “departing” tone came from an earlier *-s suffix. The companion theory claiming that rising tone came from an earlier glottal stop *-ʔ, on the other hand, has not met with general acceptance. It should be mentioned that the Chinese philological material for the most part came from Chou Fa-kao's (1962) *Historical Grammar of Ancient Chinese* (Part II: Morphology), and Chou has one section devoted to “non-departing tone indicating verb and departing tone indicating noun” and another devoted to “departing tone indicating perfective aspect (jishi shi 既事式).”

There is however something lacking in the results obtained so far. The nominalizing *-s- suffix, in terms of our argument, involves two languages only, OC and WT, and is in this sense a suffix with limited distribution. We would like to know whether other Sino-Tibetan languages also have the *-s suffix, and if so, what morphological function or functions do these *-s suffixes serve.

In this context, Huang Bufan's “Contemporary traces of the verb suffix *-s of Proto-Tibeto-Burman” (Huang 1996) is a path-finder. (1) Huang's paper is based upon ten Tibeto-Burman languages in China, including Tibetan, Jingpho, Qiang (spoken at Taoping), Shixing, Jinuo, Lahu, Naxi, Queyu, Cangluo Menba, Daofu, Muya, and Achang. The author's own fieldwork provides data for Muya (= Minyak), the Pumi language spoken at Muli, and the Xia'erba and Balti variety of Tibetan. (2) The *-s suffix takes the form of s(N(C)), with the uppercase <N> and <C> denoting “nucleus” and “coda” respectively. That is, the reflexes of *-s can be a single non-syllabic -s by itself, or a suffix-like syllable beginning with [s]. (3) “Based on their grammatical functions, the reflexes of *-s in various TB languages can be divided into four types: marker of tense or aspect, marker of modality (including evidentiality), conjunctions, and nominalizers.”

The last comment on the reflexes of *-s being nominalizers is especially interesting and bears upon our present discussion. In the paper Huang begins with the perfective -s suffix of WT, and proceeds to show in the last section that the s(N(C)) in five Tibeto-Burman languages, in addition to serving as the marker of past tense or perfective

aspect, also acquired the nominalizing function. I shall cite examples from three languages and choose the ones that are easiest to type.

The s(N(C)) elements in Daofu, Muya, Jingpho, Achang and the Balti variety of Tibetan can also derive nouns from verbs. Since this S(N(C)) follows a verb in the *yijing* or *wancheng* aspect in Daofu and Muya, the nominalizing function is likely to be a new usage originating from PTB *-s. (i) Examples from Jingpho (Liu 1984) are as follows:

$fa^{55} - ai^{33}$	‘things to eat’
$fa^{55} - \underline{sai}^{33}$	‘things having been eaten’ (p.35)
$fa^1 \underline{zin}^{55} - ai^{33}$	‘things to learn’
$fa^1 \underline{zin}^{55} - \underline{sai}^{33}$	‘things having been learnt’ (p.35)

(iii) Examples from Muya (Huang 1991) are as follows:

$khu^{55} - \eta u^{53}$	‘to have fried’
$khu^{55} - \eta u^{53} \underline{s\partial}^{33}$	‘things having been fried’ (p.123)
ndo^{53}	‘to hear’
$tho^{33} - ndo^{53} \underline{s\partial}^{33}$	‘what (he) has heard’ (p.123)

(v) In the Balti variety of Tibetan, which has preserved more elements from Classical Tibetan, the past tense suffix *-s* also has the nominalizing function, for example:

$lan-s$	‘rising, standing’
$gran-s$	‘being cold’
$mbris$	‘pen’ (< <i>fibri</i> ‘write’)
$bdzik-s$	‘destroying, destruction’

Huang’s remark about the dual function of *-s* in Balti Tibetan is the same point as Wolfenden (1925:58) made about Written Tibetan *-s* and *-d*: “As a consequence of their coming to indicate action as completed, *-s* and *-d* caused many derivatives to settle out of verbs in later times, crystallizing into adjectival and substantival meaning.” He then gives specific examples of “derivatives from perfectives in *-s*” under three headings: (1) from roots originally ending in a vowel, (2) from roots originally ending in *-d*, and (3) from roots originally ending in *-n*. Below I cite examples under the first and second heading on p.59.

From roots originally ending in a vowel we have:—

blus-ma ‘subst. ransom’ (cf. *blud-pa*, §53), Perfect of *blu-ba*, P. *blus* ‘to buy off, to ransom’.

.....

ltas ‘subs. miraculous sign or manifestation, omen, miracle’, Perfect of *lta-ba*, P. *blta*, F. *blta*, Imp. *ltos*, *blta* ‘to look at, to view’.

rtsis ‘subst. counting, numeration; account; estimation, esteem’, Perfect of *rtsi-ba*, P. (*b*)*rtsis*, F. *brtsi*, Imp. (*b*)*rtsi(s)* ‘to count, to reckon’.

ris ‘subst. figure, form, design’, Perfect of ‘*bri-ba*, P. *bris* ‘to draw, to design, to write’.

From roots originally ending in *-n*:—

zas ‘subst. food’, from the Perf. of *za-ba*, P. *bzas*, *zos*, ‘to eat’

Wolfenden and Huang Bufan essentially make the same point. Wolfenden noted that WT perfectives in *-s* became substantives, that is, the marker *-s* for perfective of the verb became a nominalizer. Huang Bufan shows that s(N(C)), the reflexes of PTB **-s*, are markers of perfective aspect or past tense, and that the same s(N(C)) in their respective TB languages also serve as nominalizers.

We have already seen that the reflex of the **-s* in Early Old Chinese is the “departing” tone of Late Old Chinese and Middle Chinese. So the questions about the morphological functions of PTB **-s* can also be addressed to the “departing” tone of Chinese. In particular we are interested in two questions. (1) WT *-s* marks the perfect of a verb and Tibeto-Burman s(N(C)) marks the past tense or perfective aspect of a verb. Does the “departing” tone, the reflex of **-s* in LAC and MC, have a similar function? That is, are there cognate pairs in Chinese such that the “non-departing” tone member is a verb and the “departing” tone member is the perfect of the verb? (2) WT *-s* and TB s(N(C)), as a consequence of their coming to indicate action as completed, also assume the role of nominalizer in their respective languages. Does the same phenomenon occur in OC? That is, whether verb/noun pairs such as **tjək* ‘weave’ / **tjəks* ‘thing woven’ can be shown to be a later incarnation of verb ‘weave’ / perfect of the verb ‘woven’?

The answer to the first question is: there are only two cognate pairs illustrating “verb/perfect of verb (in ‘departing’ tone)” 張 **trjang* ‘to stretch, draw’ / 張(脹) **trjangs* ‘to be stretched, distended’, and 過 **kwar* ‘to pass’ / **kwars* ‘to have passed, surpassed, passed’.

The answer to the second question is: there are pairs such as 織_入 **tjək* / 織_去 **tjəks*, 分_平 **pjən* / 份_去 **bjəns*, 陳_平 **drjin* / 陳(陣)_去 **drjins*, 傳_平 **drjuan* / 傳_去 **drjuans* in which the second member—the derived noun in “departing” tone—can be interpreted as coming from the perfect of the verb. The list can probably be extended.

- (1) 張 *trjang ‘to stretch, extend’; 張(脹) *trjangs ‘to swell, to be distended’

Zuozhuan Cheng year 10 : 將食, 張, 如廁 “He was about to eat, felt his belly distended, and went to stool”. Commentators say 張 *zhāng* should be read in the “departing” tone, and it means 腹滿, ‘belly full’, ‘belly distended’. GSR 721h gives the gloss for 張 *trjangs > *zhàng* as ‘to swell, conceited (Tso); wanting to go to stool (Tso)’. The last entry must be a reference to *Zuozhuan* Cheng year 10.

- (2) 過 *kwar ‘to pass by’; 過 *kwars ‘to pass; transgress, excess, fault’

Chou Fa-kao (1962:85) noted that “過 (*kwar) 逾也 ‘to pass by’, and 過 (*kwars) 既逾 ‘having passed (the limit)’” and that the second form in the sense of ‘transgression, fault’ is the extended meaning of ‘having passed (the limit)’. In Southern Min dialects both readings of 過 *guò* have been preserved. The word in “level” tone is used to describe vegetables being aged, i.e. faded, no longer fresh, over the hill: Fuzhou *kuai*, Amoy *kua*, Jian’ou *kue* (Chen & Li 1991:32, 55). The word in “departing” tone is used to convey ‘transmission of disease, in the sense that the disease having already been passed on’. Amoy *e*², Zhangzhou *ue*², Quanzhou *ə*² (Li Rulong 1996:102-103).

- (3) 織 *tjək ‘to weave’; *tjəks ‘thing woven’

WT verb *thag*, Fut. *btag*, Perf. *btags*, Imp. *thogs* ‘to weave, to grind’
Subst. *thags* ‘texture, web’ (Gong #291)

- (4) 分 *pjən > *pjuən* ‘divide, distribute’; 分(份) *bjəns > *bjuən*² ‘part, share’

WT verb *bul*, Fut. *dbul*, Perf. Imp. *phul* ‘to give; offering, gift, present’
(Gong #155)

For (3), please note that WT *btags*, the perfect of the verb, does have the *-s*. It is also clear that when the act of weaving is completed, the spider gets its web and the weaving girl gets a piece of fabric. So ‘thing woven’ as the gloss of *tjəks can just as well be changed to ‘the woven’. For (4) the WT cognate does not have *-s* in the perfective or the imperative. That is because WT ‘to give’ *bul*, *phul* end in *-l*, and we know that *-s* after *-n*, *-r*, *-l* became *-d* and then dropped out. 分(份) *fēn* ‘share, lot, duty’ (Li) (GSR 471a) is an apt translation of this word in that a man’s lot is what has been allotted or parceled out by Heaven.

- (5) 陳 *drjin ‘set forth, to display’ : 陳(陣) *drjins ‘battle array’ (GSR 371a-c)

Analects Book XV, Chap. 1 衛靈公問陳於孔子 “The duke Ling of Wei asked Confucius about battle array. Confucius replied, I have heard all about sacrificial

vessels, but I have not learned military matters.” ‘Battle array’ 陣 is written as 陳 in the *Analects*. The troops arrayed or displayed is the battle array or tactical formation.

- (6) 傳_平 *drjuan ‘transmit’; 傳_去 *drjuans ‘(what has been transmitted:) a record (Tso)’ (GSR 231f)

左傳 *Zuozhuan* is literally “what has been transmitted according to Zuo Qiuming” or *Zuo’s Record*. ‘Transmitted’ is the past and perfect of “transmit” just as *drjuans is the perfect of *drjuan ‘transmit’. ‘The transmitted’ *drjuans is the noun derived from the perfect of the verb (=‘record’).

Our tentative conclusion is as follows. Proto-Sino-Tibetan had an *-s suffix. Judging from its traces in WT and Tibeto-Burman languages, it is primarily a verb suffix, marking past tense or perfective aspect, and secondarily a nominalizer. Occurrence of the perfective -s in the codified grammar of WT undoubtedly gives it prominence. Old Chinese inherited the perfective *-s from ST, leaving cognate pairs such as 張 *trjang ‘to stretch, extend’ / 脹 *trjangs ‘distended, swell’ and 傳_平 *drjuan ‘transmit’ / 傳_去 *drjuans ‘transmitted’ etc. as relics. The OC perfective *-s, like its cognate in Tibeto-Burman languages, has a tendency to pass into a nominalizer, and the nominalizing *-s soon acquired a life of its own in OC. Thus when the perfective *-s faded in OC, what is left is an abundance of verb/noun pairs such as *tjək ‘to weave’ / *tjəks ‘thing woven’, *kit ‘tie, knot’ / *kits ‘hair-knot’ etc.

What have we gained from this long digression? First, we have shown that the PST perfective suffix *-s left some traces in Old Chinese. Second, I harbor the hope that PST verbal morphology can eventually be shown to contain the causative *-s-, the stative *N-, and the perfective *-s. More than a century ago, Conrady (1896) saw that just as Franz Bopp’s “On the conjugation system of the Sanskrit language—in comparison with the conjugation system of Greek, Latin and Germanic languages” laid the foundation of comparative Indo-European grammar in 1816, PST verbal morphology, as reflected in WT verbal morphology, shows the greatest promise of providing proof for the genetic relationship among Sino-Tibetan languages. This paper is another attempt to advance Conrady’s program of 1896.

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435 Rockefeller Hall
Cornell University
Ithaca, NY 14850, USA
tm17@cornell.edu

上古漢語的使動化 *s- 前綴、名物化 *-s 後綴 及其相關問題

梅祖麟

康乃爾大學

本文說明上古漢語承繼了原始漢藏語的使動化 *s- 前綴以及名物化 *-s 後綴。(1) 上古漢語的清濁別義導源於使動化 *s- 前綴的清化作用，例如“敗” *brads ‘自破曰敗’ / “敗” *prads ‘破他曰敗’ 更先是“敗” *brads / “敗” *s-brads > *prads。(2) 漢語的去聲來自 *-s 後綴，而上古漢語的去聲別義承繼了 *-s 後綴的名物化功用。

漢語 量平 *grjang (動詞) / 量去 *grjangs (名詞)

藏文 ‘grang-ba ‘計算’ / grangs ‘數目’

(3) 上古漢語的去聲別義也承繼了原始漢藏語 *-s 後綴標誌既事式(過去時)的功用。上古漢語“張平” *trjang ‘施弓弦也’ / “脹去” *trjangs ‘脹滿’ 說明平聲的“張”是動詞，去聲的“脹”是“張平”的既事式。

關鍵詞：使動化 *s- 前綴，名物化 *-s 後綴，既事式 *-s 後綴，原始漢藏語的形態