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## The origin of vowel alternations in the Tangut verb<sup>1</sup>

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**Abstract:** *Like other Qiangic languages, Tangut has a complex verbal morphology. Based on comparative data from Qiangic languages, this article attempts at reconstructing the origin of the Tangut Ablaut system. In Tangut, some verbs have two stems, whose distribution is determined by the person of the agent and the patient. Stem 2 appears when the agent is first or second person singular and the patient is third person, and stem 1 in other verbal forms. We show that there was third person patient \*-w suffix in Tangut cognate with Northern Qiang, and that stem 2 are the result of the coalescence of this suffix with the verb root vowel.*

**Keywords :** Tangut ; Qiang ; Rgyalrong ; Ablaut ; agreement

**提要：**如同羌语支的其它语言一样，西夏语有复杂的动词形态变化。本文在羌语支语言历史比较的基础上，试图探讨西夏语原音交替的来源。西夏语部分动词有两个词干，这两个词干的分布与主语和宾语的人称有关。主语是第一或第二人称单数、宾语是第三人称的时候，动词用词干 2，而在其他环境中动词则用词干 1。本文认为，原始西夏语本来有一个与北部羌语同源的及物第三人称标记\*-w-，词干 2 就是动词词根与该\*-w 后缀合并的结果。

**关键词：**西夏语；羌语；嘉绒语；元音交替；人称范畴

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Like Rgyalrong and other members of the Qiangic branch of Sino-Tibetan, Tangut has a complex agreement system in which person is not only marked by affixes, but also by stem alternations, as was first discovered by Nishida (1976) and elaborated by Gong (2001). In this article, we will first present former scholarship on Tangut verbal agreement, then propose a new analysis of the verbal stem alternations based on comparisons with modern Qiangic languages.

## 1. Tangut agreement system

### 1.1 Personal suffixes

Kepping (1975, 1985:217) was the first scholar to discover the existence of a personal agreement system in Tangut. She described three suffixes: 𗉑  $\eta a^2$  (1Sg), 𗉒  $nja^2$  (2Sg) and 𗉓  $nji^2$  (1Pl and 2Pl). These suffixes are related to the personal pronouns, though not in an entirely transparent way:

Suffixes	Pronouns
𗉑 $\eta a^2$ 1Sg	𗉑 $\eta a^2$ 1Sg
𗉒 $nja^2$ 2Sg	𗉒 $nja^2$ 2Sg
𗉓 $nji^2$ 1Pl / 2Pl	𗉓 $nji^2$ 2Sg Honorific, 2Pl

1Sg pronoun and suffix are identical both in pronunciation and in writing, though other first person singular pronouns such as 𗉔  $mjo^2$  also exist and require to be used with the 𗉑  $\eta a^2$  suffix. The second person singular pronoun 𗉒  $nja^2$  has the same reconstructed pronunciation as the suffix, but they are written with different characters, and never confused in texts. Finally, the plural SAP<sup>2</sup> suffix 𗉓  $nji^2$  has the same pronunciation as the second person honorific/plural pronoun 𗉓  $nji^2$ , but they are written with different characters. Besides, this pronoun, when used for a singular argument, requires the 𗉒  $nja^2$  suffix, as can be seen in the following example (#3.6, p.14<sup>3</sup>):

- (1) 𗉓 𗉑 𗉒 𗉔 𗉕 𗉒  
 $nji^2$   $tshji^2$   $ljij^1$  a  $dzjij$   $nja^2$   
 You serve PRF agree 2sg  
 Do you agree to serve her?

Therefore, although it seems probable that the personal suffixes are ultimately derived from the pronouns, they had already been grammaticalized for an important time when the first Tangut texts were written.

An interesting property of Tangut personal suffixes is that they may agree not with an argument, but with the possessor of an argument (a SAP possessor of a 3rd person argument). This is a common property of agreement in ST languages (except

<sup>2</sup> Speech-act participant, i.e. first or second person.

<sup>3</sup> All example sentences in this paper are from Jacques (2007), the textual edition and translation of the Tangut text 新集慈孝传 / 𗉑𗉒𗉓𗉔𗉕 'The new treatise on parental love and filial piety'. Gong Hwang-cherng's reconstruction of Tangut is used throughout the article (see Gong 2002).

Rgyalrong, see Jacques 2004:345), and was noticed by Kepping (1985:238). They can not only appear on verb, but also, in a few examples, directly on nouns without a copula (Jacques 2008).

In transitive verbs, when one argument is SAP and the other non-SAP, regardless of their respective syntactic roles, agreement occurs with the SAP argument. When both arguments are SAP, agreement occurs with the patient. This system is summarized in the following table, where columns indicate the patient and rows the agent:

	1s	1p	2s	2p	3
1s			𐌪 nja <sup>2</sup>	𐌫 nji <sup>2</sup>	𐌬 ɲa <sup>2</sup>
1p					𐌫 nji <sup>2</sup>
2s	𐌬 ɲa <sup>2</sup>	𐌫 nji <sup>2</sup>			𐌪 nja <sup>2</sup>
2p	𐌫 nji <sup>2</sup>				𐌫 nji <sup>2</sup>
3			𐌪 nja <sup>2</sup>	𐌫 nji <sup>2</sup>	

Table 1: Tangut agreement suffixes.

## 1.2 Stem alternation

As Gong (2001) pointed out, suffixes are not the only argument markers on the verb in Tangut, some verbs have an alternation between two stems that follow the following patterns:

alternation	stem1	stem 2	meaning
-ji → -jo	𐌪 mji 1.11	𐌫 mjo 1.51	hear
-ju → -jo	𐌪 lju 2.02	𐌫 ljo 2.44	throw
-ji → -ji	𐌪 sji 2.10	𐌫 sji1.30	die
-jij → ji	𐌪 ljij 2.33	𐌫 lji 2.09	see
-ier → -ior	𐌪 wier 1.78	𐌫 wior 1.90	love <sup>4</sup>

Table 2: Patterns of stem alternation in Tangut.

Most (if not all, as we will see below) of alternating verbs are transitive. Stem 2 is used when the verb's subject (that is, A for a transitive verb or S for an intransitive one) is 1Sg or 2Sg and the patient is third person (Gong 2001:26). Stem 1 occurs in all other cases, including those when a 1sg or 2sg agreement suffix appears but is coreferent with the patient of the verb (Gong 2001:32-34).

Agreement suffixes are usually present in most verb forms but may be elided, as Gong pointed out, leaving out the stem alternation as the only mark of agreement on the verb.

Alternating transitive verbs can have up to six distinct forms. The following table represents the (theoretical)<sup>5</sup> paradigm of the alternating verb 𐌬 phji<sup>1</sup>/ 𐌫 phjo<sup>2</sup> 'to

<sup>4</sup> This example was found in Jacques (2006b).

<sup>5</sup> This is the most common alternating transitive verb in Tangut. Almost all the forms in the table are attested; see

send, to cause to do’.

	1s	1p	2s	2p	3
1s			𐰚𐰏 phji <sup>1</sup> nja <sup>2</sup>	𐰚𐰏 phji <sup>1</sup> nji <sup>2</sup>	𐰚𐰏 phjo <sup>2</sup> nja <sup>2</sup>
1p					𐰚𐰏 phji <sup>1</sup> nji <sup>2</sup>
2s	𐰚𐰏 phji <sup>1</sup> nja <sup>2</sup>	𐰚𐰏 phji <sup>1</sup> nji <sup>2</sup>			𐰚𐰏 phjo <sup>2</sup> nja <sup>2</sup>
2p					𐰚𐰏 phji <sup>1</sup> nji <sup>2</sup>
3			𐰚𐰏 phji <sup>1</sup> nja <sup>2</sup>	𐰚𐰏 phji <sup>1</sup> nji <sup>2</sup>	𐰚 phji <sup>1</sup>

Table 3: Tangut transitive paradigm (stem alternation and suffixes).

Although Tangut lacks direct/inverse marking,<sup>6</sup> 1>3 and 2>3 are distinguished from 3>1 and 3>2 by means of stem alternation. The presence of this stem alternation is a further argument against the hypothesis of a recent grammaticalization of pronouns onto the verb (LaPolla 1992). However, the function of stem alternation in Tangut seems very different from the one observed in other Qiangic languages such as Rgyalrong.<sup>7</sup>

## 2. Reconstructing Tangut stem alternation

Gong (2001) thought that the vowel alternation in Stem 2 was due to the influence of the suffix onto the verb stem, but an alternative explanation for the origin of stem alternation is possible. We will argue that Tangut verb stem alternation is not a genuine Ablaut system,<sup>8</sup> but that it is instead the trace of a former suffix in the proto-Tangut language.

### 2.1 A comparative approach to stem alternation

In this section, we will first present the verb paradigm in Northern Qiang, a modern Qiangic language, then analyze Tangut vowel alternation from the point of view of historical phonology, and finally interpret the vowel alternation as the result of the fusion (in proto-Tangut) of the verb stem with a suffix cognate to the third person object suffix in Qiang.

Here is the verb paradigm of northern Qiang (Huang and Zhou 2007:131-3):

	1P	2P	3P	Intransitive
1A		-a / -æ	-w-a / -w-æ	-a / -æ
		-ə <sup>l</sup>	-w-ə <sup>l</sup>	-ə <sup>l</sup>
2A	-n		-w-ən	-n
	-j		-w-əj	-j
3A	-	-	-w	-

Table 4: Northern Qiang agreement system.

for instance examples #9, #10, #11, #20, #21, #23, #24, #25, #30, #32, #66 in Gong (2001).

<sup>6</sup> Unlike Rgyalrong, see DeLancey (1981).

<sup>7</sup> In Rgyalrong, at least three stems exist (Sun 2000): Stem 1 (default), Stem 2 (Past), Stem 3 (Transitive 1,2,3Sg>3 Non-past). From the point of view of grammatical function, only Stem 3 could be compared to Tangut Stem 2, but even this is not probable, as stem alternation in Tangut seems to be independent of TAM parameters.

<sup>8</sup> We mean by ‘Ablaut’ a vowel alternation that is not phonologically conditioned, such as the \*e/\*o alternation of proto-Indo-European or the vowel patterns in Semitic languages.

Qiang verbal morphology clearly follows an accusative alignment: the agent markers are the same as the intransitive suffixes. 1>3 and 3>1 are distinguished from 1>2 and 2>1 by the addition of a -w- third person patient suffix. This suffix is cognate with the Situ Rgyalrong –w direct suffix (DeLancey 1981) and cognate suffixes are found in Kiranti languages. In intransitive verbs, this –w suffix does not appear.

Let us now examine the –ji / -jo alternation from the point of view of historical phonology. Tangut –ji has many origins, one of which clearly is proto-Tangut \*-a or \*-ja, as comparison with Japhug Rgyalrong, Tibetan or other ST languages reveals (Matisoff 2004, Jacques 2006a, Gong 2007):

Tangut	Japhug	Tibetan	meaning	
𐰇	dzji 1.10	ndza	za (zos)	to eat
𐰈	.wji 1.10	pa	(byed byas) bya	to do, to close
𐰉	wji 1.10	-xpa		year
𐰊	śjwi 1.10	-ɕya	so < *swa	tooth
𐰋	gwi 2 .10	ŋga	b-go < *gwa	to wear (clothes)
𐰌	tji 1.67	ta		to put
𐰍	wji 1.67	-jpa		snow
𐰎	lhji 2.60	sla	zla	moon
𐰏	wji 1.67	-rpa		axe
𐰐	wji 2.60	spa		can

Table 5: -ji :: -a correspondence set

The Tangut rime –e also corresponds to Rgyalrong and Tibetan –a:

Tangut	Japhug	Tibetan	meaning	
𐰑	ŋwe 2.7	nuu-ŋa		cow
𐰒	gie 1.9	ŋqa	dka	hard
𐰓	wɛ 1.65	sya		rust

Table 6: -e :: -a correspondence set

There does not seem to be any phonetic conditioning for these distributions, and we have to reconstruct several low vowels in proto-Tangut. Following Gong (2007), we propose here \*ja → -ji, \*a → -e.

Among the examples of verbs with –ji(r) / –jo(r) and –ie(r) / –io(r) vowel alternations cited by Gong (2001) or observed by us, only transitive verbs are found. We propose that stem 2 originated as a fusion of the verb stem with a third person patient suffix \*-w cognate with the Qiang suffix presented in Table 4. We suppose that proto-Tangut \*-ja-w → -jo and \*-a-w → -o.

Stem 1	Proto-Tangut <sup>9</sup>	Stem 2	Proto-Tangut	Meaning
𐰇 dzji 1.10	*ndzja	𐰇 dzjo 1.51	*ndzja-w	to eat
𐰇 .wji 1.10	*pja	𐰇 wjo 1.51	*pja-w	to do
𐰇 gjwi 2 .10	*ŋg <sup>w</sup> ja	𐰇 gjwo 2.44	*ŋg <sup>w</sup> ja-w	to wear
𐰇 tji 1.67	*C-tja	𐰇 tjø 1.72	*C-tja-w	to put
𐰇 wier 1.78	*pra	𐰇 wior 1.90	*pra-w	to love

Table 7: A reconstruction of –ji / -jo and –ie / -io alternations in proto-Tangut.

After the fusion of the stem vowel with the –w suffix occurred, the changes \*ja → -ji and \*a → -e happened, creating the -ji / -jo and –(i)e / –(i)o alternations<sup>10</sup> attested in Tangut.

## 2.2 The distribution of stem 2

The explanation outlined in section 2.1 runs into a serious difficulty. In Qiang, the –w suffix is present on all transitive forms with 3<sup>rd</sup> person patient, whereas in Tangut, only the 1Sg>3 and 2Sg>3 forms have stem 2, not 1Pl>3, 2Pl>3 and 3>3 as would be expected if the distribution of \*-w in proto-Tangut were identical to Northern Qiang –w.

However, the restriction of a suffix originally found on all forms to only 1Sg>3 and 2Sg>3 is not undocumented in languages of the Qiangic branch. In Rgyalrongic languages, the past tense –s suffix<sup>11</sup> was originally found on all verbs (transitive and intransitive) and on all forms, as in modern-day Situ Rgyalrong. However, in Japhug Rgyalrong (where it is realized –t or –s depending on the subdialect), it only occurs in the 1Sg>3 and 2Sg>3 forms of open-syllable transitive verbs (Jacques 2004:337).

Therefore, it does not seem absurd that the –w suffix of proto-Tangut would have undergone a restriction from all transitive 3<sup>rd</sup> person patient forms to only 1Sg>3 and 2Sg>3, follow a path of evolution typologically similar to the past tense suffix of Japhug.

## 2.3 Other types of stem alternations

The three other types of alternation attested in the Tangut verbal agreement, -ju / -jo, -ji / -j<sup>i</sup><sup>12</sup> and -jij / -j<sup>i</sup><sup>13</sup> can also at least partially be accounted for by the hypothesis of a \*-w suffix in proto-Tangut in the 1Sg>3 and 2Sg>3 forms. All -ju / -jo and -jij / -j<sup>i</sup> alternating verbs presented by Gong (2001) are transitive. We would need to reconstruct the following changes:<sup>14</sup>

<sup>9</sup> We reconstruct the syllables with a tense vowel (indicated by a dot under the vowel in Gong Hwangcherg's reconstruction) with a lost presyllable \*C- in proto-Tangut, following Gong (1999).

<sup>10</sup> As pointed out by Gong (1993), Tangut -i- is the trace of Proto-Tangut \*-r-.

<sup>11</sup> The suffix is cognate to the –s ‘past tense’ or perfective suffix of Classical Tibetan.

<sup>12</sup> Tangut –ji also corresponds to Rgyalrong and Tibetan –i. Verbs with -ji / -j<sup>i</sup> alternation belong to the correspondence set where –ji corresponds to a Japhug front vowel.

<sup>13</sup> Tangut –jij corresponds sometimes to Tibetan and Rgyalrong front vowels, sometimes to Japhug –o (proto-Rgyalrong \*-an) and Tibetan –ang, see Jacques (2006a).

<sup>14</sup> As pointed out by an anonymous reviewer, some verb alternations in Tangut cannot be accounted for by our hypothesis, such as the -jow / -jij alternation in the verb ‘to give’ Stem 1 𐰇 khjow<sup>1</sup>, Stem 2 𐰇 khjij<sup>1</sup>. We leave to

Stem 1	Stem 2
-ju ← *-ju	-jo ← *-ju-w
-ji ← *-i	-jɿ ← *-i-w
-jij ← *-ij	-ji ← *-ij-w
-jij ← *-jaŋ	-ji ← *-jaŋ-w

Table 8: A reconstruction of all other stem alternations in Tangut.

However, among -ji / -jɿ alternating verbs given by Gong, we find two intransitive verbs: 𐰇 sji 2.10 / 𐰇 sji 1.30 ‘to die’ (cognate of Japhug *si* and Tibetan *shi*) and 𐰇 śji 2.9 / 𐰇 śji 1.29 ‘to go’ (cognate of Japhug *œ*). For examples such as these, a direct \*-w suffix in proto-Tangut cannot be hypothesized. The alternation could be due to analogy with transitive -ji / -jɿ alternating verbs or to the reanalysis of a different kind of alternation from an entirely distinct origin.

Interestingly, as already noted by Gong (2001:46) himself, stem alternation in the verb ‘to go’ does not always follow the rule we would expect (stem 1 with 1sg and 2sg, stem 2 with 1pl, 2pl and third person). It is easy to find examples of stem 1 followed by a first or second person suffix, or stem 2 with a third person subject:

(2)	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇
	thja	wji.	mee	dźjwi	phja	mja	lja	jɿ	
	1.20	1.67	2.11	2.09	1.20	1.20	1.20	2.28	
	this	beast	imperial	throne	side	fear	come	QUOT	
	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇	𐰇
	nioow	tshjwo	lju.	dźjiir	ɣwə	rjir	rjir	śji	ŋa
	1.57	1.48	2.52	1.92	2.25	2.74	2.77	2.09	2.14
	therefore		body	reject		before	PRF	go[1]	1SG

I feared that this beast could approach the throne, that is why I went ahead, ready to give my life. (#26.7, p.82)

In this example, the stem 1 form 𐰇 śji 2.9 appears followed by the first person suffix, though only stem 2 would be expected here according to Gong’s theory. In fact, the distribution of stem 1 and 2 of the verb ‘to go’ is unrelated to person. We counted all the occurrences of stem 1 and stem 2 of the verb ‘to go’ in Jacques (2007), and found out that both stems appear with first, second or third person subjects, as can be seen from the following table :

	Stem 1 𐰇 śji 2.9	Stem 2 𐰇 śji 1.29
1sg, 2sg	2	2
3	21	13
ambiguous	3	2

Table 9: Occurrences of stem 1 and stem 2 in the Tangut text ‘New treatise on parental love and filial piety’.

Therefore, this shows that the function of stem alternation in this verb is entirely distinct from the one observed with transitive verbs, and cannot be used as a counterexample against the idea presented above that stem 2 arose as the result of a fusion between the verb stem and a third person object / direct \*-w suffix.

### 3. Conclusion

Tangut, if compared to other languages of the Qiangic branch, has a very eroded phonology: it lost consonant clusters, final consonants, and underwent extensive vowel changes. Nevertheless, the complex morphology of proto-Tangut did not disappear with these phonological changes. Instead, what used to be concatenative morphology (prefixes, suffixes) became vowel alternation, and the degree of flexion of the Tangut language increased, rather than decreased, in the process.

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