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AN EXPLANATION OF THE GRAPHS *YU*, *DU* AND *DI* IN CHU BAMBOO MANUSCRIPTS: WITH AN EXCURSION ON THE RELATED ISSUES IN PALEOGRAPHY AND HISTORICAL LINGUISTICS

Guolong Lai

University of Florida, USA

ABSTRACT

This paper calls for a more rigorous methodology in the studies of paleography and excavated manuscripts and for a closer marriage between paleography and historical linguistics. I use one example (the case of the decipherment of the graph *yu*, "to sell," in Chu manuscripts) to illustrate the limits of the current methods and how a more rigorous method—including the application of the new development in Old Chinese phonology—can help paleographers to do better in their interpretation of excavated texts and to better understand language and graphic changes. I also use this example to argue that the mistake the scribes made in the manuscripts could be used as evidence for sound change in early China.

SUBJECT KEYWORDS

yu ("to sell") *du* and *di* "Graphic alteration" and phonetic change "Graphic borrowing based on rough phonetic similarity" Synchrony of loan graphs.

THE STRUCTURE OF THE TANGUT VERB¹

Guillaume Jacques

CNRS (CRLAO), Paris

ABSTRACT

The present paper is an attempt at analyzing the verbal morphology of Tangut from the point of view of both Tangut texts and modern Qiangic languages, its closest living relatives. Modern Qiangic languages, especially Rgyalrong, have a very strict verbal template. In this article, we propose that Tangut also had a verbal template, which was probably the result of independent grammaticalization rather than a shared inheritance with Rgyalrong. Then, we discuss apparent counterexamples to the proposed template and argue that other explanations are possible to account for them. Finally, we demonstrate the (previously unnoticed) existence of verbal incorporation in Tangut.

SUBJECT KEYWORDS

Tangut Rgyalrong Japhug Incorporation Directional prefixes Templatic morphology

As in Middle and Modern Chinese, in the Tangut script, there is a one-to-one relation between syllables and characters. No word boundaries are represented in any way, giving the misleading impression that verbal prefixes and suffixes were just clitics or independent particles. In this paper, drawing on comparative data from modern Qiangic languages and Tangut texts, we will try to answer an important question regarding the degree of grammaticalization of directional prefixes in Tangut: are they fully grammaticalized affixes as in Rgyalrong, or do they preserve some degree of freedom, like the directional prefixes of German or Vedic? In order to solve this problem, we will try to establish the structure of the Tangut verb template, and then analyze in detail all the examples that seem to deviate from it and are not attested in modern Qiangic languages.

1. THE VERBAL TEMPLATE IN RGYALRONG

Tangut belongs to the Qiangic subgroup of Sino-Tibetan. Some languages among the Qiangic group have a remarkably complex verbal morphology, especially Rgyalrong languages (Japhug, Situ, Tshobdun and Showu, see Sun 2000 and Jacques 2008a).

Rgyalrong languages have a very strict verbal template, mostly prefixing.² A verb can have up to five or six different prefixes, and at most three suffixes. The order of the prefixes in the template never changes in a given language variety, but can differ across dialects of the same language (see for instance Jacques 2008a:249). The basic structure is the same in all Rgyalrong languages. Here is a simplified representation of the Japhug verbal template (Jacques 2008a:197-198):

flexional prefixes						derivational prefixes				V	flexional suffixes		
a-	m̄m̄- m̄r-	ɕm̄- ɣm̄-		t̄m̄-	w̄ɣ-	ʒɣr-	s̄m̄-	-a -r	m̄m̄-		-t		
1	2	3	4	5	6	7	8	9	10	11	12	13	

Table 1: The Japhug verbal template.

- (1) Irrealis
- (2) negation
- (3) Translocative/Cislocative
- (4) Directional prefixes
- (5) Second person
- (6) Inverse
- (7) Reflexive
- (8) Causative
- (9) Passive
- (10) Autobenefactive
- (11) Verb root
- (12) Aorist 1sg/2sg transitive
- (13) Personnal agreement suffixes

The most noteworthy feature of this template is that negative prefixes always appear before directional prefixes, which themselves occur before the reflexive prefix. In the following sections, we will argue that Tangut data can also be accounted for by

assuming the existence of a verbal template.

2. TANGUT DIRECTIONAL AND NEGATIVE MORPHEMES

The Tangut verb presents some similarity to the Japhug one, although it has fewer distinct affixes. As in Japhug, we find several series of directional morphemes, first described by Kepping (1985:190):

	up	down	closer	farther	transloc.	cisloc.	neutral
series	𐄎	𐄏	𐄐	𐄑	𐄒	𐄓	𐄔
1	ja ⁰	nja ¹	kji ¹	wji ²	dja ²	dji ²	rji ²
series	𐄕	𐄖	𐄗	𐄘	𐄙	𐄚	𐄛
2	jj ¹	njj ²	kjj ¹	wjj ²	djj ²	djj ²	rjj ²

Table 2: Tangut directional prefixes.

The character 𐄎 .ja is also used to transcribe an interrogative verbal prefix (Kepping 1985:199), which will be discussed in section 5 of this paper.

Several distinct negation morphemes are also found:

𐄜 mji ¹	basic negation
𐄝 mjij ²	past negation
𐄞 mji ¹	negation of modal verbs
𐄟 tji ¹	prohibitive

Table 3: Tangut negations.

For movement and concrete action verbs, the directionals indicate the direction of the action, but for most verbs, they seem to have been already grammaticalized and are used to indicate TAM parameters.

Negative and directional morphemes rarely co-occur, but when they do, the order is very strict: unlike Japhug, the negative morphemes appear after, not before, the directional prefix (Kepping 1985:188). This order, however, is also found in modern languages, for instance in Shixing (Chirkova 2009:63).

Here are some examples illustrating this order:³

1)	𪛗	𪛘	𪛙	𪛚	𪛛
	1567	1906	4507	4521	5258
	gji ²	niow ¹	cio ¹	jaar ²	iq ¹
	boy	after	follow	cry	CONJ
	𪛗	𪛘	𪛙		
	1452	1918	0134		
	nja ¹ -mji ¹ -ju ¹				
	DIR1-NEG-look				

The boy followed (her) crying, but she wouldn't even look at him (Cixiao 11.8-12.1, Jacques 2007:39)⁴

2)	𪛜	𪛝	𪛞	𪛟	𪛠	𪛡
	4342	1734	0509	4174	4868	0433
	dja ² -tji ¹ -thjowr ² mju ²			gji ²	bju ¹	
	DIR1-PROHIB-move			want	INSTR	

As he did not want her to have to move (by herself), (Leilin 03.29A.1)

3)	𪛢	𪛣	𪛤	𪛥	𪛦	𪛧
	2628	0243	1139	2590	1918	0134
	goor ¹	sjj ²	.jij ¹	.wji ² -mji ¹ -ju ¹		
	boy	girl	GEN	DIR1-NEG-look		

He wouldn't look at these boys and girls. (Leilin 03.32B.6-7)

4)	𪛨	𪛩	𪛪	𪛫	𪛬	𪛭	𪛮
	3926	1526	3818	0497	5354	2590	0290
	nja ²	tshji ² -mjijr ²		ɲewr ²	thji ²	.wji ² -sju ²	
	you	serve-NMLZ:A		many	this	DIR1-be_like	
	𪛨	𪛩	𪛪	𪛫	𪛬		
	2341	4568	4601	3092	3583		
	tcier ¹	phjo ² -nja ²		dji ²	tja ¹		
	interest	send[2]-2SG		CONCSV	TOP		
	𪛨	𪛩	𪛪	𪛫			
	4342	1918	2893	734			
	dja ¹ -mji ¹ -khwej ² -mo ²						
	DIR1-NEG-big-IRR						

You use so many servants, aren't they too much (for you to handle)? (Leilin 03.18A.5-6)

The examples above show that directional and negation morphemes appear in a fixed order, but do not prove that they are real prefixes in the same way as the prefixes of the Rgyalrong verbal system: they could be clitics, or even independent morphemes that just happen to follow an ordering constraint.

In order to determine whether the hypothesis that directional and negation morphemes are real prefixes is tenable, we will have to provide an account for all examples in which the plain order [directional+negation+verb root] is breached by having a directional morpheme appear without a verb or is separated from the verb root by another element. We found four such situations.⁵ First, the character 𪛗 kji¹ when not followed by a verb. Second, 'double' directional prefixes. Third, a grammatical element 𪛛 lji¹, 𪛜 tchji¹ or 𪛝 tsji¹ inserted between the directional or negation morpheme and the verb. Fourth, a noun between the directional morpheme and the verb root.

After having accounted for all these cases, we will propose a series of phonological arguments to support the hypothesis that directional morphemes were real prefixes.

3. THE CHARACTER KJi¹

Nishida (2002:8) and Lin (2006, 2007:177-181) have noticed numerous examples of the character 𪛗 kji¹ appearing in three contexts where directional morphemes do not usually occur.

First, it is found before various postpositions together with the interrogative 𪛛 lji¹ (Lin 2007:180):

5)	𪛛	𪛗	𪛘	𪛙	𪛛	𪛗
	4435	1326	3583	0206	4435	1326
	lji ¹	kji ¹	tja ¹	buu ²	lji ¹	kji ¹
	what	???	TOP	victorious	what	???
	𪛛	𪛗				
	3583	3570				
	tja ¹	dzju ²				
	TOP	weak				

What is victory, and what is weakness? (*dirghāgamasūtra*)

6)	𗵑	𗵒	𗵓	𗵔	𗵕
	4435	1326	3349	795	2373
	lji ¹	kji ¹	rji ²	rji ² -lji ²	
	what	???	LOC	DIR1-come	
	Where is he from? (<i>puṅḍarikasūtra</i>)				

Second, it can appear before another verbal prefix:

7)	𗵖	𗵗	𗵘	𗵙	𗵚	𗵛	𗵜
	1999	1084	4740	3798	1326	2590	2474
	ŋwə ¹ ya ²		kja ²	tsəj ¹	kji ¹	.wji ² -rar ²	
	fifty		kalpa	small	???	DIR1-pass	
	𗵝						
	3092						
	dji ²						
	although						
	Although fifty kalpa have passed (<i>puṅḍarikasūtra</i>)						

Other instances of alleged “double” directional prefixes will be treated in section 4.

Third, it is found at the end of sentences (Lin 2007:181):

8)	𗵞	𗵟	𗵠	𗵡	𗵢
	2467	4751	3575	4481	1326
	.wja ¹	sej ¹	nji ²	ɕji ¹	kji ¹
	flower	pure	listen[2]	go[2]	???
	Go to listen to the Lotus (<i>puṅḍarikasūtra</i>)				

The versatility of use of the character 𗵢 *kji*¹ strongly suggests that it is used to transcribe at least three distinct morphemes: first, the well-known directional prefix; second, an adverbial element that can appear at the end of a noun phrase (examples (5) to (7)); third, a sentence-final particle or a verbal suffix.

Given the limited number of available examples and the fact that they all come from Buddhist texts, it is too early to propose a reliable analysis of their grammatical

function. A possibility is that the noun-phrase final 𗵢 *kji*¹ in (5) to (7) is a variant of the numeral 𗵣 *gi*² ‘one’, and is thus cognate to the Japhug Rgyalrong indefinite *ci* ‘one, a little’. As 𗵢 *kji*¹ in examples (5) and (6), Japhug *ci* can also occur after an interrogative:

9)	<i>nu</i>	<i>ɕu</i>	<i>ci</i>	<i>ku-nu-ŋu</i>	<i>ku</i>
	DEM	who	INDEF	GENR:S-auto-be	Q
	“Who is it (who does all that) ?” (Kunbzang, 333).				

This indefinite *ci* also occurs after noun phrases containing a numeral, and has the meaning of ‘approximately’:

10)	<i>ɛnu-tɣxu</i>	<i>w-ro</i>	<i>ci</i>	<i>ko-ɕe</i>	<i>pjɣ-cha</i>
	two-turn	3SG.POSS-rest	INDEF	EVD:EAST-go	EVD-can
	<i>ɲu-ŋu</i>				
	CONST-be				
	He could run a little more than two turns. (The Prince, 108).				

We know too little about both Tangut and Rgyalrong historical phonology to have any certainty regarding any possible relationship between 𗵢 *kji*¹ and *ci*, but this seems a possibility, which will be testable when more examples from Tangut texts such as (5) or (7) come to light. This hypothesis, in any case, does not apply to sentence-final 𗵢 *kji*¹, for which a distinct explanation will be necessary.

4. DOUBLE DIRECTIONAL PREFIXES?

In Rgyalrong languages, as well as in most modern languages of Western Sichuan,⁶ no verb can have two directional prefixes at the same time: there is only one prefixal slot. However, in Tangut, some examples appear to contradict this general principle. In the previous section, we have already discussed the case of 𗵢 *kji*¹, which occurs before other directional prefixes in examples such as (7). We have argued that in these cases it was better to consider 𗵢 *kji*¹ not as a directional prefix, but as an indefinite.

However, other cases of “double” directional prefixes have been mentioned. Kepping (1979:306) noticed the following example:

- 11) 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵
 3045 5964 1139 1793 4797 795 2590 5113
 tshew¹tsha¹ .jjj¹ lhji.jwir² rji²-.wji²-.wji¹
 Cao Cao GEN declaration of war DIR1-???- make [1]
 𣎵
 2503
 ku¹
 after
 (Yuan Shao had Chen Lin) write the declaration of war against Cao Cao.
 (Leilin 05.18A.6)

Lin (2007:178) discovered two other such examples in Leilin. Here is one of them:

- 12) 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵
 1245 1543 2019 0724 1139 3099 5645
 .jjj¹mjor¹ thja¹ nji² .jjj¹ dzjjj¹ tji²
 oneself this PL GEN live place
 𣎵 𣎵 𣎵 𣎵 𣎵
 3622 2560 795 2590 5113
 kjj².jjj² rji²-.wji²-.wji¹
 house DIR1-???- make[1]
 (Zhang Gang) himself had houses (prepared) for them to live in. (Leilin 03.10A.3-4)

All three examples involve the same verb 𣎵.wji¹ ‘to do, to make, to become’ with the same set of directional prefixes 𣎵. 𣎵.rji².wji². 𣎵.wji¹ is normally only used with 𣎵.rji², as in the following example:

- 13) 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵
 2592 1778 567 3622 448 795 5113
 la² .ju²rji² kjj² gji² rji²-.wji²
 tomb before house one DIR1-make[1]
 He made a house in front of his tomb. (Leilin 03.30A.4-5)

The main problem here is therefore the presence of the prefix 𣎵.wji². A possible explanation for this phenomenon is to assume that the character 𣎵.wji²

here, like 𣎵.kji¹ in the previous section, does not transcribe a directional prefix. However, treating it as an adverb is not satisfactory, since 𣎵.wji² appears between the directional prefix and the verb root, and therefore belongs to the verbal word. A better hypothesis is to assume that 𣎵.wji² is used to represent in the writing system the partially reduplicated form of the verb root 𣎵.wji¹. The -ji / -ji vowel alternation in the reduplicated form would be expected (see Gong 2003 :612-3). Since no character had been specially devised to write the reduplicated form of ‘to do’, the only option would have been to use a *jiajie* character, and 𣎵.wji² was probably chosen instead of other homophonous characters read .wji because it is one of the most common characters in the Tangut language.

The analysis proposed in section 3 and 4 suggests that all cases of ‘double’ directional prefixes in Tangut deserve an alternative analysis, and that no certain examples of double directional prefix have been found in Tangut texts up to now. In future investigations of Tangut texts, the following type of examples could be taken as evidence for genuine cases of double directional prefixes: a verb with two directional prefixes, the first of which is not 𣎵.kji¹, and the second of which cannot be interpreted as the reduplicated form of the verb root.

5. MODAL PREFIXES

Three distinct grammatical elements can appear between the directional or negative morphemes and the verb root: 𣎵.lji¹, 𣎵.tchji¹ and 𣎵.tsji¹. Since all three are used to transcribe a variety of entirely distinct morphemes, the situation is quite confusing. In this section, we will present an account of the various uses of each of these characters, and then concentrate on their function when they are inserted between the directional morpheme and the verb root.

Outside of the verbal system, the character 𣎵.tchji¹ is used to transcribe a demonstrative, whose distribution is quite limited: it almost only occurs in the collocation 𣎵.tchji¹zjo² ‘that time’. It can never be used alone as an independent pronoun.

𣎵.tchji¹ can also appear between the verb stem and the interrogative prefix 𣎵.ja or a directional morpheme of the second series (optative), as illustrated by the following examples:

- 14) 𣎵 𣎵 𣎵 𣎵 𣎵 𣎵
 3513 1139 2750 5981 1374 930
 m¹ .jjj¹ yu¹ .ja-tchji¹-dju¹
 sky GEN head Q-???-have[1]
 Does the sky have a head? (Leilin 05.14A.1)

- 15) 幪 綉 辨 辨 毖
 4028 2219 1374 330 4601
 nji² kjij¹-tchji¹-mjij¹-nja²
 you DIR2-???-dream-2SG
 Did you have a dream? (Leilin 06.16B.4)

Besides, this element 辨 tchji¹ appears with the negation 綉 mji¹ prefixed to the verb root. The compound 綉辨 mji¹tchji¹ means "impossible to"; this special phenomenon is discussed in detail in Kepping (1985:292-4).

- 16) 纒 纒 纒 纒 纒 纒 纒
 3133 0261 1531 1139 0795 0676 0046
 sjij¹ mjo² gja¹ jij¹ rji² wji¹ ljij¹
 today I army GEN DIR1-depart see[1]
 纒 纒 纒 纒
 5643 3092 2912 3092
 mji²dji² lhjwo¹-dji²
 CONCSV come_back-DUR
 纒 纒 纒 纒
 5643 1374 4803 2098
 mji¹-tchji¹-lji²-nja²
 NEG- ???-see[2]-1SG
 Today I see the army leaving, but I will not see it come back (Leilin 03.16B.6-7)

Kepping (1985:294) cites an example where the directional prefix 纒 .wji² appears before 纒辨 mji¹tchji¹, showing that there is no constraint against having a verb prefixed with these three elements.

An anonymous reviewer of this article thought that the element 辨 tchji¹ was to be interpreted as an infix pronoun coreferent with the patient (or with the only argument for intransitive verb). However, there are three reasons why this cannot be the case. First, as we mentioned above, 辨 tchji¹ only a demonstrative, is never used as a pronoun in Tangut, and even in this function as a demonstrative is restricted to a few lexical items. Second, 辨 tchji¹ also appears in sentences where both agent and patient are overt:

- 17) 纒 纒 纒 纒 纒 纒 纒
 0803 1195 3126 0214 4508 5643 1374 4658
 rjar² khie² dzji² lu² tji¹ mji¹-tchji¹-thji¹
 horse yak have[1] poor meal NEG- ???-drink

The one who is poor in horses and yaks will not eat to satiety. (Tangut Proverbs 11b.1, Kychanov 1974:172).

Third, if 辨 tchji¹ truly were a pronoun, one would not be able to explain why the negative prefix 綉 mji¹ is used, as it normally appears only with modal verbs. For these three reasons, it seems more reasonable to treat 辨 tchji¹ as a verbal prefix unrelated to the demonstrative as Kepping did. It is not entirely clear which gloss would be most appropriate to describe the functions of the verbal prefix 辨 tchji¹, but we can tentatively describe it as a marker of *potential* modality.

纒 lji¹ is used as a conjunction linking two nouns inside a noun phrase (Kepping 1985:318):

- 18) 纒 纒 纒 纒 纒 纒 纒
 1030 1234 2456 4444 2259 5045 0201 0724
 tçjow¹thji¹se¹ lji¹ miej²kjwi¹mji¹ nji²
 Zhang Tianxi and Meng Junming PL
 纒 纒 纒 纒
 5604 5113 0804 3600
 dzji.wji¹ dji²-xju¹
 ERG DIR1-call
 Zhang Tianxi (張天錫) and Meng Junming (孟君明) invited him. (Leilin 03.36B.2-3)

However, Kepping also points out that this morpheme is used as a concessive particle; it normally appears before directional and negative morphemes:

- 19) 𪛗 𪛘 𪛙 𪛚 𪛛 𪛜 𪛝
 2872 1685 4444 1918 2797 1567 5087
 .wē¹khj¹ lji¹ mji¹-lho gj² jow¹
 Wen Qin CONCSV NEG-go_out son Yang
 𪛞 𪛟
 2590 2912
 .wji²-lhjwo¹
 DIR1-come_back
 Since Wen Qin (文欽) did not show up, his son Yang (陽) retreated. (Sunzi, 9A-7b)

Lin (1995: 4.28-29#85) found an example where the concessive 𪛙 lji¹ is placed between the directional and the verb:

- 20) 𪛠 𪛡 𪛢 𪛣 𪛤 𪛥
 2541 1139 2627 5258 2975 3744
 dzjwo² jji¹ lji².io¹ tsjiir¹dziej²
 man DAT place title
 𪛦 𪛧 𪛨 𪛩 𪛪 𪛫
 5981 4444 2639 5113 3092 1105 2090
 ja-lji¹-mjiij²-.wji¹ djij² khjow¹-lew²
 DIR1-CONCSV-name-make[1] CONCSV offer[1]-NOM
 𪛬 𪛭
 1918 0930
 mji¹-dju¹
 NEG-have[1]
 Although he granted land titles to these people, he had no (land) to give them. (Sunzi, 7A.4b).

This extremely interesting example also presents a noun between 𪛙 lji¹ and the verb root. This will be examined as an example of noun incorporation in the next section.

Lin's example is by no means isolated in the corpus of Tangut texts. We found two other sentences of the same type. In the first one, 𪛙 lji¹ occurs after the directional 𪛗 kji¹:

- 21) 𪛮 𪛯 𪛰 𪛱 𪛲 𪛳 𪛴
 1183 2893 1326 4444 0508 3092 3133
 da² khwej² kji¹-lji¹-ɲwu² djij² sijj¹
 affair big DIR1-CONCSV-be CONCSV today
 𪛵 𪛶 𪛷 𪛸 𪛹 𪛺 𪛻
 5354 1139 5791 1796 2937 2536 2912
 thji² jji¹ .wja² tchju¹ lhjj .wjij²-lhjwo¹
 him GEN send Chu country DIR2-come_back
 Even in important matters, (he will succeed). If we send him today back to Chu, (our country will make peace with Chu). (Twelve kingdoms 2.52.1-2, Solonin 1995:60;113, Nie 2002:202).

Of course, one could argue here that 𪛰 kji¹ should not be analyzed as a directional in this example. However, this argument cannot be used in the following sentence:

- 22) 𪛼 𪛽 𪛾 𪛿 𪛿 𪛿
 0795 4444 5113 5643 4444 5176
 rji²-lji¹-.wji¹ mji¹-lji¹-dzioow²
 DIR1-CONCSV-do NEG-CONCSV-may
 𪛿 𪛿 𪛿 𪛿 𪛿 𪛿
 5981 4444 4859 5643 4444 0139
 ja-lji¹-to² mji¹-lji¹-nej²
 DIR1-CONCSV-end NEG-CONCSV-profitable
 Although it is done, it is not satisfying; although it is completed, it is not profitable. (Tangut Proverbs 29a.3, Kychanov 1974:122,209)⁷

Here 𪛙 lji¹ appears with the modal negation 𪛿 mji¹ and derivational morphemes of the first series. Although the meaning of the sentence cannot be ascertained for sure, it confirms the fact that the concessive 𪛙 lji¹ can appear between a directional or a negation and the verb root as in example (20). The concessive prefix 𪛙 lji¹, like 𪛗 tchji¹, occurs between the negation and the verb, but before incorporated nouns.

Examples such as (19) show that the concessive 𪛙 lji¹ can appear in two distinct positions within the verbal complex; this variability suggests that the process of incorporation of this element into the verb complex was not yet entirely completed at the time Tangut texts were written.

Another grammatical element that can be used between directional morphemes and the verb root is 𠵹 *tsji¹*. The character 𠵹 *tsji¹* normally transcribes an adverb meaning 'also' (Kepping 1985:318-9):

23)	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	0824	5417	1245	1139	4342	4225	5916	2885
	tɕhji ² rja ²		.jij ¹	.jij ¹	dja ² -sja ¹		xā ¹ phow ¹	
	immediately	oneself	GEN	DIR1-kill			Han Ping	
	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	5026	1906	1245	5815	1245	1139	4342	4225
	mji ¹	niow ¹	.jij ¹	tsji ¹	.jij ¹	.jij ¹	dja ² -sja ¹	
	hear[1]	after	oneself	also	oneself	GEN	DIR1-kill	
	He immediately killed himself. Han Ping 韓憑, when he heard this, committed suicide too. (Leilin 06.04B.3-4)							

𠵹 *tsji¹* is also used to transcribe an adjective meaning 'small', and appears in the reduplicated form 𠵹𠵹 *tsja¹tsji¹* 'elder sister':

24)	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	416	5815	4601	2098	4543	2600
	tsja ¹ tsji ¹ -nja ²		ŋa ²		mər ¹ mjar ¹	
	elder_sister-2SG		me		moustache	
	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	4342	5670	4601	3425	3391	4601
	dja ² -o ¹ -nja ²			pja ² pji ¹ -nja ²		
	DIR1-have-2SG			grandfather-2SG		
	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	2098	3371	1144	4342	5449	4601
	ŋa ²	dzja ¹ dji ¹		dja ² -tji ¹ -nja ²		
	me	topknot		DIR1-put[1]-2SG		

You are my elder sister,⁸ my moustache is here for you. Your are my grandfather; my topknot was put for you. (Tangut proverbs 14b.5, Kychanov 1974:106;179).⁹

However, we find one example where 𠵹 *tsji¹* is inserted between a directional from the first series and the verb root:

25)	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	0551	0551	4889	1139	2518	1045
	.jow ² .jow ²		dzjwi ¹	.jij ¹	njiij ¹	da ²
	relative		reciprocal	GEN	heart	word
	𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
	1734	5612	5444	2763	3696	5124
	tji ¹ -tshjiij ¹		lej ² yu ¹		na ¹ rar ²	
	PROHIB-say[1]		night		tomorrow	
	𠵹	𠵹	𠵹			
	4342	5815	4041			
	dja ² -tsji ¹ -kie ²					
	DIR1-???-hate[1]					

𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
4092	4092	2541	1139	1014	
khie ¹ ~khie ¹		dzjwo ²	.jij ¹	ŋwu ¹	
reciprocal~hate[1]		man	GEN	word	
𠵹	𠵹	𠵹	𠵹	𠵹	𠵹
1734	3551	4884	1906	2503	3513
tji ¹ -niow ² -nji ²			niow ¹ ku ¹		mə ¹
PROHIB-evil-2PL			after		sky
𠵹	𠵹	𠵹			
5981	5815	0756			
.ja-tsji ¹ -dzju ²					
DIR1-???-meet					

If one does not say words from the heart to one's relatives – the next day, one will hate them. If one does not speak evil to the men one hates, afterwards sky and earth will meet. (Tangut proverbs 23a.1-2, Kychanov 1974:197).

Although, as with many Tangut proverbs, the exact meaning of this sentence is not entirely clear, the element written as 𐄂 *tsji*¹ must be a modal prefix whose place in the structure of the verb is the same as 𐄂 *ljji*¹ and 𐄂 *tchji*¹. Additional examples are needed before one can determine its exact meaning.

Apart from these three prefixes, we find another prefixal element which can appear in the same position inside the verbal complex: 𐄂 *mja*¹-, which occurs together with the enclitic 𐄂 *mo*² as a circumfix marking irrealis modality (Kepping 1985:317). Zhang (2009:23) presents an example showing that 𐄂 *mja*¹- can be preceded by a directional prefix too.

6. INCORPORATION

In Tangut texts, in some very rare instances, we find a noun between the directional prefix and the main verb, as in example (20).¹⁰ This could seem to be a very clear example of tmesis, where the prefix, in fact an independent adverb, can be separated from the verb by another syntactic element. Apart from (20), we have found only three such examples:

26) 𐄂 𐄂 𐄂 𐄂 𐄂 𐄂

1567	1139	1326	3266	3852	4601
<i>gji</i> ²	<i>.jji</i> ¹	<i>kji</i> ¹ - <i>dzju</i> ² - <i>phjo</i> ² - <i>nja</i> ²			
son	GEN	DIR1-lord-cause[2]-2SG			

You made your son lord (of Zhongshan) (Leilin 03.10B.4)

In this example, we could analyze 𐄂 *kji*¹ not as a directional prefix, but as an adverb as in examples (5) to (7). However, such an analysis is not an option with the two following sentences, when the directional prefix not 𐄂 *kji*¹:

27) 𐄂 𐄂 𐄂 𐄂 𐄂 𐄂 𐄂

3798	4861	4962	3830	3045	5964	1139
<i>tsej</i> ¹	<i>zjo</i> ²	<i>.we</i> ²	<i>nji</i> ²	<i>tshew</i> ¹ <i>tsha</i> ²		<i>.jji</i> ¹
small	time	Wei	king	Cao Cao		GEN

𐄂 𐄂 𐄂

795	524	5522
<i>rji</i> ² - <i>dzju</i> ¹ - <i>ljii</i> ²		
DIR1-order-wait[2]		

When he was young, he served Cao Cao, the king of Wei. (Leilin 06.21B.5-6)

28) 𐄂 𐄂 𐄂 𐄂 𐄂

0685	0685	0685	4342	2518
<i>ŋa</i> ²	<i>ŋa</i> ²	<i>dja</i> ² - <i>nji</i> ¹ - <i>ljii</i> ²		
good	good	DIR1-heart-happy		

He became very happy. (Leilin 06.29A.1)

In examples (26) and (27), the noun appearing between the directional prefix and the verb root is the O (the verb being transitive), whereas in the last one, an intransitive stative verb, the noun corresponds to the S.

However, the tmesis analysis is not the only possible one. In other Qiangic languages such as Rgyalrong, we find extremely grammaticalized cases of verbal incorporation (Jacques 2008a:89-91). As the following examples will show, the incorporated noun is sandwiched between a derivational prefix and the verb stem, and sometimes undergoes vowel alternation.

noun	verb	incorporation	meaning
<i>qhu</i>	<i>ru</i>	<i>ny-qha-ru</i>	to turn around, 'back' to look back
<i>si</i>	<i>phut</i>	<i>yuu-su-phut</i>	to fell trees 'timber' 'to chop' tr.
<i>pcotsu</i>	<i>fsok</i>	<i>yuu-pcotsu-fsok</i>	to earn money 'money' ¹¹ 'to earn' tr.

Table 4: Examples of incorporation in Japhug.

Flexional prefixes such as directionals will of course appear before the noun, as in example (29), where the incorporated noun *-qha-* (*status constructus* of *qhu*) appears between the directional prefix *lu-* and the verb root *-ru*:

29) *tha-nutsum* *jamar* *ri* *ny*,

AOR:DOWNSTREAM.3 > 3-bring.back about CONJ CONJ

lu-nyqharu

IPFV:UPSTREAM-look.back

As he was about to bring it back, he looked back inside (The Fox, 34)

Examples (26), (27), (28) and (20) are most probably instances of the same phenomenon. Ancient derivational prefixes have fused with the verb in Tangut,

leaving at best only indirect traces (Gong 1999), so we should not expect a syllable corresponding to Japhug *yur-* or *ny-/nu-* to be present in Tangut.

The four examples presented above are probably not the only cases of noun incorporation in Tangut. However, in verb forms without a directional prefix, it is difficult to tell whether an object is incorporated or not. In the Tangut spoken language, a distinction might have existed between free noun and incorporated noun (tone sandhi might have occurred, for instance), but from the written sources, we have no way to decide.

7. PHONOLOGY

In sections 3-6 above, we have shown that all apparent counterexamples to the basic order [directional+negation+verb] could be accounted for in various ways, and that directional and negation morphemes could be in all cases interpreted as prefixes; However, we have not yet definitely proven that they cannot be analyzed as clitics.

When studying a dead language such as Tangut, it is quite difficult to distinguish between affixes and clitics. However, as far as directional prefixes, negations and the three modal prefixes 𪛗 *ljɿ¹*, 𪛘 *tɕhji¹* and 𪛙 *tsji¹* are concerned, we do have an additional argument coming from phonology.

Going back to Table 2, one can observe that directional prefixes of series 1 only have two distinct rimes: *-ji* and *-ja* (rhyme *-jɿ* is a variant of *-ji* with a rhotic initial). The rhyme *-ji* is a reduced rhyme that appears in reduplicated forms, either in the first member (see section 4) or in the second member (in nouns such as 𪛗𪛙 *tsja¹tsji¹* 'elder sister' as we have seen in section 5). It can hardly be a coincidence that one of the negation prefixes, 𪛚 *mji¹*, as well as all three modal prefixes 𪛗 *ljɿ¹*, 𪛘 *tɕhji¹* and 𪛙 *tsji¹* also have the same rhyme. This can be explained as a case of phonological attrition caused after grammaticalisation. The same phenomenon is observed in other Qiangic languages where directional prefixes also tend to have a limited set of central or back unrounded vowels (in Japhug *-u* and *-ɤ*, Jacques 2008a:244-5). Data from Pumi¹² show a good correlation between the *-ja* in Tangut and *-ɜ* in Pumi and between *-ji* in Tangut and *-ə* in Pumi:

Tangut	Pumi	Meaning
𪛗 <i>nja¹</i>	<i>tɕ-</i>	up
	<i>nɜ-</i>	down
	<i>khə-</i>	in
	<i>hɜ-</i>	out
𪛘 <i>dji²</i>	<i>də-</i>	cislocative
𪛙 <i>dja²</i>	<i>thɜ-</i>	translocative

Table 5: Comparison of Tangut and Pumi directional prefixes.

These data are not compelling enough to prove that the directional system of Pumi and Tangut share the same origin (though this possibility should still be considered), but show that the process of phonological attrition took place in a similar manner in these two languages. Phonological attrition is more easily explained as a consequence of grammaticalization and agglutination to the verb stem.

Another piece of evidence comes from series 2 directional prefixes, which all have the rime *-jij*. This fact can be explained as the result of the fusion of the directional morpheme with a modal element which, unlike the three others 𪛗 *ljɿ¹*, 𪛘 *tɕhji¹* and 𪛙 *tsji¹*, was not maintained as a distinct syllable.¹³ This fusion would not be expected if both directional and modal morphemes were just clitics.

Vowel attrition and morpheme fusion are strong arguments in favor of analyzing directional and modal morphemes as prefixes.

8. CONCLUSION

In this paper, I have proposed that in the Tangut verb, prefixes occur in a fixed prefixal chain which can be aptly described as a template, typologically similar in structure to the Rgyalrong verb. Apparent deviations from this template were shown to be either caused by object incorporation, insertion of a different verbal prefix or simply a case of *jiajie* whereby a character normally used to transcribe a directional prefix is used to transcribe an unrelated syllable. I also suggest the need of a special slot for modal prefixes. The complete verbal template (without detailing all suffixes and vowel alternation) is the following:

Directional/ Interrogative	Negation	modal 𪛗 <i>ljɿ¹</i> 𪛘 <i>tɕhji¹</i> 𪛙 <i>tsji¹</i> 𪛚 <i>mja¹</i>	Incorporated noun	verb root	suffixes
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Directional prefixes were already fully attached to the verb root in Tangut, and could not appear outside of this template. Nouns could be incorporated into the verb complex, as in Rgyalrong, and example (20) shows that incorporated nouns were placed between modal prefixes and the verb root. The only prefix that can appear in two distinct positions in the concessive 𐞗 *lj̥i*¹, which in some examples such as (19) appears before all other prefixes, and in other examples appears inside the verbal template. Further research will be needed to account for this phenomenon.

NOTES

1. I wish to thank Anton Antonov, Katia Chirkova, Nathan Hill, Randy J. Lapolla, Lin Yingchin, Alexis Michaud, Vyacheslav Zaytsev and one anonymous reviewer for valuable comments and corrections on former versions of this article. All of the above are absolved from responsibility for any error in this article. The glosses in this paper generally follow the Leipzig Glossing Rules, except for the following: CONJ (conjunction), CONSCV (concessive), CONST (constative), DIR1 (directional prefix of the first series), DIR2 (directional prefix of the second series), GENR (generic), PROHIB (prohibitive). Fieldwork on Pumi was funded by the PASQi project (Phylogenetic Assessment of Southern Qiangic) from the *Agence Nationale de la Recherche* (France), headed by Ekaterina Chirkova.
2. Some languages with complex verbal morphology have a morphological structure that does not allow an analysis in terms of a template (for instance Siouan, see Rankin et. al. 2002:186,190). Nevertheless, as far as Qiangic languages are concerned, we found no counterevidence up to now that such an analysis is possible.
3. All Tangut examples in this paper contain Tangut characters, the reference number of each character from Li (1997)'s dictionary, Gong (2002)'s reconstruction and a gloss in English. Numbers in square brackets [1] and [2] respectively indicate the first or second stem in verbs with vowel alternation (see Gong 2001 and Jacques 2009).
4. The main Tangut texts used in the present article are the 'Newly gathered notes on Maternal Love and Filial Piety', abbreviated as Cixiao (Jacques 2007) and the 'Grove of categories' abbreviated as 'Leilin' (Shi et al. 1990).
5. Other functions of the characters used to transcribe directional morphemes unrelated to the verbal system are not discussed here, such as 𐞗 *a-* as a numeral prefix and 𐞗 *wji*²*tji*¹ as a conjunction.
6. Shixing is perhaps an exception, see Chirkova (2009).
7. The meaning of this sentence is not entirely clear. The translation given here is only provisional.

8. This example shows agreement suffixes on noun directly without a copula. This phenomenon was first mentioned in Jacques (2008b).
9. The translation of this sentence is provisional. In any case, the second person singular cannot be the agent of the second verb ('you put my topknot'), otherwise the verb should be 𐞗 *tj̥o*¹.
10. The existence of this phenomenon was first mentioned by Ma (1987), though he did not analyze it as incorporation. Unfortunately, this reference was not accessible to me.
11. The word *pçotsu* 'paper money' comes from the colloquial Chinese *piaozi* 票子.
12. Data from our fieldnotes on the Pumi dialect of Shuiluo, Muli, Sichuan.
13. The origin of this modal element is unknown. The rhyme *-jij* can be either from proto-Tangut **-jaŋ* or from **-jej*.

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西夏语动词的结构

向柏霖

法国科学研究中心, 东亚语言学研究所

题要

本文从两个方面探讨西夏语动词的结构: 西夏文文献和现代羌语支语言。所有的羌语支语言都有着非常严谨的动词模板, 特别是嘉绒语。笔者认为, 西夏语也有类似的动词模板。然而, 与嘉绒语的动词结构相比, 西夏的动词结构比较简单, 而且前缀的顺序不相同。因此, 西夏语的动词模板可能不是原始羌语支的特征, 而是后起平行发展的结果。另外, 在西夏文文献当中发现一些表面上违反动词模板的例子, 本文将这些反例举出来并逐一加以解释。最后, 本文证明西夏语有动词编插法的构词手段, 这一现象在以前的研究中未见报导。

关键词: 西夏语 嘉绒语 茶堡话 编插法 趋向前缀 动词模板