**The ordering of preverb strings in Ktunaxa**

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This paper looks at the order of preverb strings in Ktunaxa, a language isolate spoken in south-eastern British Columbia, northern Idaho and north-western Montana. Many preverbs can appear in variable orders relative to each other in the same verbal complex. Template morphology, the functional head theory by Cinque (1999), and a theory based on the scope system of Rice (2000) are all examined as possible explanations. This paper will show that Rice (2000) offers the best explanation, though the presence or absence of pronominal clitics may also affect the perceived acceptability of a preverb string, likely due to the prosodic effects of the clitics.

## 1 What are preverbs?

Preverbs in Ktunaxa are roughly comparable to English adverbs, but with a much wider range of meanings and functions[1]. They can modify other preverbs as well as the verb, and there seems to be no upward limit to how many preverbs can be found in one verbal complex. Strings of at least five are attested to in the literature (Dryer 2002). There can even be multiple instances of the same preverb in a verbal complex.

If preverbs are present they always appear directly before the verb base, regardless of what other morphemes may be present in the verbal complex. Dryer (2002) asserts that the position of preverbs is fifth in the verbal complex, directly before the verb base:

V.C.= (Early Particles) + (Subord) + (Pro) + (Indic Proclitic) + (Preverbs)* + Verb (Dryer 2002; 1)

Most preverbs are made from a verbal stem plus the preverb suffix *-iɬ*. *qa* ('not') is a notable exception.

Dryer (2002) classified preverbs into several semantic categories based on their meanings and functions. So far, data collected tentatively shows that preverbs may pattern with their semantic class, though little data of this type has been collected.

[1] There are at least several dozen preverbs in Ktunaxa. This paper presents an analysis of only a small handful of these preverbs.

## 2 The issue

The order of multiple preverbs within a string in a verbal complex is not yet understood in the literature (cf. Dryer (2002), Morgan (1991)). Preverbs sometimes seem to be able to appear in free variation relative to each other in the verbal complex, without any change in meaning.

| (1) | na | xaʔɬsin | qa | isił | sukiłqani |
|---|---|---|---|---|---|
| | na | xaʔɬsin | qa | is-ił | sukiłqa-ni |
| | DEM | dog | not(PRVB) | very-PRVB | good.looking-IND |

'This dog is not really good-looking.'

| (2) | na | xaʔɬsin | isił | qa | sukiłqani |
|---|---|---|---|---|---|
| | na | xaʔɬsin | is-ił | qa | sukiłqa-ni |
| | DEM | dog | very-PRVB | not(PRVB) | good.looking-IND |

'This dog is not really good-looking.'

## 3 Theories that do not account for preverb variability

Several different theories were explored when trying to account for preverb variability. This section explains why neither template morphology nor Cinque's theory of functional heads can account for preverb variability.

### 3.1 Template Morphology

Preverbs seem to have a 'slot' into which they fit relative to other morphemes in the verbal template, so I explored whether there was some way preverb variability could be due to template morphology. If preverb order is due to template morphology, one would expect to find variation one of two ways, either variation would only be seen between different dialects, or preverb order in strings would be completely free (as preverbs would all be placed into one large 'slot' in the template, and their order within would thus be unconstrained.)

When the data is examined however, neither of these possibilities seems to be what is happening with Ktunaxa preverbs. (3) and (4) are from the same dialect, and have preverbs in free variation, and (5) and (6) are examples of non-variable preverb order. Since variation occurs within the same dialect, and preverb order is not entirely free, template morphology cannot be the answer.

| (3) | Qapsqaqapsi | qa | tsxał | hanan | kiniʔni |
|---|---|---|---|---|---|
| | Qapsqaqaps-i | qa | tsxa-ɬ | hanan | k-iniʔ-ni |
| | seems-IND | not(PRVB) | FUT-PRVB | slow | SUB-be-IND |
| | Martina | | | | |
| | Martina | | | | |
| | Martina | | | | |

'Martina is not likely to be late.'

(4)

| Qapsqaqapsi | tsxaɬ | qa | hanan | kiniʔni |
|---|---|---|---|---|
| Qapsqaqaps-i | tsxa-ɬ | qa | hanan | k-iniʔ-ni |
| seems-IND | FUT-PRVB | not(PRVB) | slow | SUB-be-IND |
| Martina | | | | |
| Martina | | | | |
| Martina | | | | |

'Martina is not likely to be late.'

(5)

| isiɬ | ts'iɬ | tsxani |
|---|---|---|
| is-iɬ | ts'-iɬ | tsxa-ni |
| very-PRVB | rapid-PRVB | speak-IND |

'He spoke very rapidly.'

(6)

| *ts'iɬ | isiɬ | tsxani |
|---|---|---|
| ts'-iɬ | is-iɬ | tsxa-ni |
| rapid-PRVB | very-PRVB | speak-IND |

'He spoke very rapidly.'

### 3.2 Cinque (1999)

Another theory that I explored was Cinque's (1999) theory of functional heads. Cinque proposed that adverbs have fixed positions in the clausal hierarchy, and that verbal elements (words such as auxiliaries, finite verbs, and past participles) can move to different landing sites below, between, and above adverbs. If you had two adverbs, A and B, then they would have a fixed order, for example: A>B. However, if you add a verbal element (C) you could get three possible orders: A>B>C, A>C>B, C>A>B, as the verbal element has no fixed order relative to the adverbs.

Is it possible that there are two types of preverbs? One type like Cinque's adverbs (many preverbs do have adverbial-like functions) and another type of preverb like Cinque's verbal elements (there are preverbs that have similar meanings and functions to those of auxiliary-type elements in other languages, for example, *tsxaɬ* (Future) and *siɬ* (Durative).)

If Cinque (1999) is the appropriate model for Ktunaxa preverbs, the following would have to be true: if preverbs are in free variation, then at least one of the preverbs (possibly both) must be a verbal element, and if a preverb does act as a verbal element it will be in free variation with every other preverb with which it can be paired.

Given (3) and (4) above, either *tsxaɬ* or *qa* ('not') must be a verbal element since they are in free variation. However (7) and (8) show that *qa* cannot be the verbal element as it is not in free variation with *saniɬ ('badly')*, and (9) and (10) below show that *tsxaɬ* cannot be the verbal element, as it is not in free variation either with *saniɬ.* Since neither of the elements that are in free variation in (3) and (4) (*tsxal* and *qa)* are in free variation in all situations, Cinque's (1999) theory cannot be the answer. Any explanation of Ktunaxa preverbs must be able to account for how preverbs can be in free variation in some environments but have fixed orders in other environments.

(7) huqa sanił qumnini
hu- qa san-ił qumni-ni
1.sg- not(PRVB) bad-PRVB sleep-IND
'I did not sleep badly.'

(8) *husanił qa qumnini
hu- san-ił qa qumni-ni
1.sg- bad-PRVB not(PRVB) sleep-IN
'I did not sleep badly.'

(9) hutsxał sanił qumnini
hu- tsxa-ł san-ił qumni-ni
1.sg- FUT-PRVB bad-PRVB sleep-IND
'I will sleep badly.'

(10) *husanił tsxał qumnini
hu- san-ił tsxa-ł qumni-ni
1.sg- bad-PRVB FUT-PRVB sleep-IND
'I will sleep badly.'

## 4 Proposal

I propose that the order of preverb strings can be explained using a system based on the one outlined by Rice (2000). Rice proposed a system for Athabaskan verbs that orders morphemes by requiring "morphemes of greater scope to occur in fixed positions with respect to morphemes within their scope" (Rice 2000; 4). She further explained that variable morpheme order is also possible, and is due to either morphemes that are immune to the scope of other morphemes, or specific instances that make morphemes immune to the scope of other morphemes. Right away this theory offers the ability for preverbs to be in variable order with some preverbs but not others, a requirement for explaining Ktunaxa preverbs.

Structurally, these scopal relationships are represented by a morpheme with greater scope c-commanding the morphemes in its scope. A morpheme able to have scope over others will be further away from the verb base than the morpheme within its scope (Rice 2000).

Based on this, 2-PRVB strings with fixed order would have the rightmost preverb within the scope of the leftmost preverb. 2-PRVB strings that do have variable order would be composed of preverbs that are immune to the scope of each other.

Based on the scopal relationships present in 2-PRVB strings, the scopal relationships and thus possible orders of 3-PRVB strings should be predictable. Consider (11) and (12) below (repeated from (3) and (4).) Given that *tsxał* and *qa* are in variation there should be at least two possible orders to preverb strings containing them.

(*tsxał ~ qa*)

| | | | | | |
|---|---|---|---|---|---|
| (11) | Qapsqaqapsi | qa | tsxał | hanan | kiniʔni |
| | Qapsqaqaps-i | qa | tsxa-ł | hanan | k-iniʔ-ni |
| | seems-IND | not(PRVB) | FUT-PRVB | slow | SUB-be-IND |
| | Martina | | | | |
| | Martina | | | | |
| | Martina | | | | |

'Martina is not likely to be late.'

| | | | | | |
|---|---|---|---|---|---|
| (12) | Qapsqaqapsi | tsxał | qa | hanan | kiniʔni |
| | Qapsqaqaps-i | tsxa-ł | qa | hanan | k-iniʔ-ni |
| | seems-IND | FUT-PRVB | not(PRVB) | slow | SUB-be-IND |
| | Martina | | | | |
| | Martina | | | | |
| | Martina | | | | |

'Martina is not likely to be late.'

When *sanił* is added to *tsxał* and *qa* to create a 3-PRVB string, the order should be dependent on the order of *sanił* in 2-PRVB strings. (13)-(16) below (repeated from (7)-(10)) show that *sanił* is not in variation with either *qa* or *tsxał* and that *sanił* must always come after these two preverbs. This means that there are only two expected, acceptable orders for 3-PRVB strings: *tsxał qa sanił* and *qa tsxał sanił.* As it turns out these two orders are the only two accepted by the language consultant, as can be seen in *table 1*.

(*qa > sanił)*

| | | | |
|---|---|---|---|
| (13) | huqa | sanił | qumnini |
| | hu- qa | san-ił | qumni-ni |
| | 1.sg- not(PRVB) | bad-PRVB | sleep-IND |

'I did not sleep badly.'

| | | | |
|---|---|---|---|
| (14) | *husanił | qa | qumnini |
| | hu- san-ił | qa | qumni-ni |
| | 1.sg- bad-PRVB | not(PRVB) | sleep-IN |

'I did not sleep badly.'

(*tsxał > sanił)*

| | | | |
|---|---|---|---|
| (15) | hutsxał | sanił | qumnini |
| | hu- tsxa-ł | san-ił | qumni-ni |
| | 1.sg- FUT-PRVB | bad-PRVB | sleep-IND |

'I will sleep badly.'

| | | | |
|---|---|---|---|
| (16) | *husanił | tsxał | qumnini |
| | hu- san-ił | tsxa-ł | qumni-ni |
| | 1.sg- bad-PRVB | FUT-PRVB | sleep-IND |

'I will sleep badly.'

| PRVB order | Acceptable | Prediction |
|---|---|---|
| a) tsxał qa sanił | Y | Expected |
| b) tsxał sanił qa | N | Expected |
| c) qa tsxał sanił | Y | Expected |
| d) sanił tsxał qa | N | Expected |
| e) qa sanił tsxał | N | Expected |
| f) sanił qa tsxał | N | Expected |

Table 1.

| | | | |
|---|---|---|---|
| hutsxał | qa | sanił | qumnini. |
| hu-tsxa-ł | qa | san-ił | qumni-ni. |
| 1.sg-FUT-PRVB | not(PRVB) | bad-PRVB | sleep-IND |

'I will not sleep badly.'

However, the order of Ktunaxa preverbs is not always quite so straight forward. Consider the preverbs *tsxał, isił* ('very'), and *sanił*. As already shown in (15) and (16) *tsxał* and *sanił* do not have variable order, and (17) and (18) below show that *tsxal* and *isił* also do not have variable order, nor do *isił* and *sanił* as shown by (19) and (20). This means there is only one expected order: *tsxał isił sanił. Table 2* shows that this was not the only order accepted, though. Instead, the language consultant also accepted the order: *isił tsxał sanił.*

(tsxał > isił)

(17)

| | | | | |
|---|---|---|---|---|
| *Qapsqaqapsi | isił | tsxał | hanan | kiniʔni |
| Qapsqaqaps-i | is-ił | tsxa-ł | hanan | k-iniʔ-ni |
| seems-IND | very-PRVB | FUT-PRVB | slow | SUB-be-IND |
| Martina | | | | |
| Martina | | | | |
| Martina | | | | |

'It is likely that Martina will be late.'

(18)

| | | | | |
|---|---|---|---|---|
| Qapsqaqapsi | tsxał | isił | hanan | kiniʔni |
| Qapsqaqaps-i | tsxa-ł | is-ił | hanan | k-iniʔ-ni |
| seems-IND | FUT-PRVB | very-PRVB | slow | SUB-be-IND |
| Martina | | | | |
| Martina | | | | |
| Martina | | | | |

'It is likely that Martina will be late.'

(isił > sanił)

| | | | |
|---|---|---|---|
| (19) | *husanił | isił | qumnini |
| | hu- san-ił | is-ił | qumni-ni |
| | 1.sg- bad-PRVB | very-PRVB | sleep-IND |
| | "I slept very badly“ | | |
| (20) | huʔisił | sanił | qumnini |
| | hu- is-ił | san-ił | qumni-ni |
| | 1.sg- very-PRVB | bad-PRVB | sleep-IND |
| | ‘I slept very badly.’ | | |

| **PRVB order** | **Acceptable** | **Prediction** |
|---|---|---|
| a) tsxał isił sanił | Y | Expected |
| b) tsxał sanił isił | N | Expected |
| c) isił tsxał sanił | **Y** | **Not expected** |
| d) sanił tsxał isił | N | Expected |
| e) isił sanił tsxał | N | Expected |
| f) sanił isił tsxał | N | Expected |

Table 2.

| | | | |
|---|---|---|---|
| hutsxał | isił | sanił | qumnini. |
| hu-tsxa-ł | isi-ł | san-ił | qumni-ni |
| 1.sg-FUT-PRVB | very-PRVB | bad-PRVB | sleep-IND |
| ‘I will sleep very badly.’ | | | |

The order *isił tsxał sanił* violates the 2-PRVB string order of *tsxał>isił.* These results, however, can be accounted for by revising the analysis of the scope system to include the following: The two preverbs closest to the verb base (rightmost) formed one constituent before the third preverb applied. This third preverb only sees the rightmost preverb and is blind to the intervening preverb. This is represented by *figure 1*.

PRVB PRVB PRVB
PRVB [PRVB PRVB]
[PRVB [~~PRVB~~ PRVB]]

Figure 1. Revised analysis of 3-PRVB strings.

*tsxał* can precede *sanił* and it applies first by forming a constituent with *sanił*. Once this first constituent is formed *isił* applies after. Since *tsxał* is already part of a constituent *isił* cannot “see” it and only “sees” *sanił*, which it is

able to precede. This allows *isił* the ability to precede *tsxał* and form the second constituent.

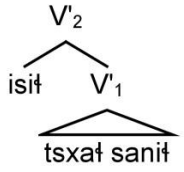


Figure 2. Constituents of preverb string: *isił tsxał sanił*

## 5 Further complications

This may still not be the whole story. The presence or absence of pronominal clitic markers may also have an effect on which preverb orders are allowed in a string. The reason for this is not yet known, but may be caused by prosody. When asked, the language consultant asserted that the rhythm of the preverb string often affected whether or not the string sounded acceptable to her. If you refer back to *table 1* and *table 2*, notice that both of the 3-PRVB string sentences begin with the pronominal clitic *hu-* (first person singular), but when there is no pronominal clitic with a 3-PRVB string, different results seem to arise.

Consider the preverbs *tsxał*, *isił*, and *ts'ił* ('rapidly'). As shown above in (17) and (18) *tsxał* must precede *isił* and cannot appear in the opposite order. (21) and (22) below show that *tsxał* must precede *ts'ił*, and (23) and (24) (repeated from (5) and (6)) show that *isił* must also precede *ts'ił*. This leads to one expected order: *tsxał isił ts'ił.*

(21)
| | | |
|---|---|---|
| tsxał | ts'ił | tsxani |
| tsxa-ł | ts'-ił | tsxa-ni |
| FUT-PRVB | rapid-PRVB | speak-IND |

"He will speak rapidly."

(22)
| | | |
|---|---|---|
| *ts'ił | tsxał | tsxani |
| ts'-ił | tsxa-ł | tsxa-ni |
| rapid-PRVB | FUT-PRVB | speak-IND |

'He will speak rapidly.'

(23)
| | | |
|---|---|---|
| isił | ts'ił | tsxani |
| is-ił | ts'-ił | tsxa-ni |
| very-PRVB | rapid-PRVB | speak-IND |

'He spoke very rapidly.'

(24)
| | | |
|---|---|---|
| *ts'-ił | is-ił | tsxa-ni |
| ts'-ił | is-ił | tsxa-ni |
| rapid-PRVB | very-PRVB | speak-IND |

'He spoke very rapidly.'

With the revised analysis, though, there are actually two expected orders, as it is also possible for *tsxaɬ* and *ts'iɬ* to form one constituent before *isiɬ* can apply. Thus the two expected orders are: *tsxaɬ isiɬ ts'il* and *isiɬ tsxaɬ ts'iɬ*. *Table 3* shows an unexpected result however:

| **PRVB order** | **Acceptable** | **Prediction** |
|---|---|---|
| a) tsxaɬ isiɬ ts'iɬ | Y | Expected |
| b) tsxaɬ ts'iɬ isiɬ | N | Expected |
| c) isiɬ tsxaɬ ts'iɬ | **N** | **Not expected** |
| d) ts'iɬ tsxaɬ isiɬ | N | Expected |
| e) isiɬ ts'iɬ tsxaɬ | N | Expected |
| f) ts'iɬ isiɬ tsxaɬ | N | Expected |

Table 3. tsxaɬ isiɬ ts'iɬ tsxani
tsxa-ɬ isi-ɬ ts'i-ɬ tsxa-ni
FUT-PRVB very-PRVB fast-PRVB speak-IND
'He will speak very rapidly.'

In *table 3* it appears that the two preverbs closest to the verb base are not forming a constituent (as they do in *table 2*) before the third preverb applies. This could be a result of the lack of the pronominal clitic in the *table 3* sentence.

The following two sentences give some support for this theory. Both are identical except for whether they have a third person or first person subject:

(25) Adam tsxaɬ qa sakiɬ ikni kanahusnanas
Adam tsxa-ɬ qa sak-iɬ ik-ni kanahusnana-s
Adam FUT-PRVB not(PRVB) still-PRVB eat-IND apple-OBV
kyukyits
kyukyits
noon
'Adam will not still be eating the apple at noon.'

(26) hutsxaɬ qa sakiɬ ikni kanahusnanas
hu-tsxa-ɬ qa sak-iɬ ik-ni kanahusnana-s
hu-FUT-PRVB not(PRVB) still-PRVB eat-IND apple-OBV
kyukyits
kyukyits
noon
'I will not still be eating the apple at noon.'

*Table 4* shows however, that there is some variation between these two sentences as to what preverb orders are acceptable:

| **Preverb order** | **1st Person (Hu-)** | **3rd Person (Adam)** |
|---|---|---|
| a) tsxal qa sakil | Y | Y |
| b) tsxal sakil qa | Y | Y |
| c) sakil tsxal qa | Y (awkward) | Y (awkward) |
| d) qa tsxal sakil | N | Y |
| e) sakil qa tsxal | N | Y (awkward) |
| f) qa sakil tsxal | N | Y (awkward) |

Table 4. (hu/Adam) tsxał qa sakił ikni
(hu/Adam) tsxa-ł qa sak-ił ik-ni
I/Adam FUT-PRVB not(PRVB) still-PRVB eat-INDIC
kanahusnanas kyukyits
kanahusnana-s kyukyits
apple-OBV noon
'I/Adam will not still be eating an apple at noon.'

Since the only difference between these sentences is whether a pronominal clitic or proper name is present as the subject, it seems clear that there are differences between what is deemed acceptable based on whether or not a pronominal clitic is used.

## 6 Conclusion

Preverb strings in Ktunaxa show that preverbs may have variable order in some environments but not others. To date, the only theory that has been able to account for this is one based on the scopal system outlined by Karen Rice (2000) for Athabaskan verbs. This theory has been modified to include two preverbs forming a constituent before a third applies, which allows for possible orders that would not be predicted by 2-PRVB strings. This forming of constituents seems like it may only happen when a pronominal clitic is present, and furthermore, there are differences in the possible preverb orders in any given sentence depending on whether or not a pronominal clitic is present. This is likely caused by prosodic effects.

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