Universal and existential quantification as evidence for asymmetrical treatment of subjects and objects in Ktunaxa

Andrew Matheson
University of British Columbia

Ktunaxa is an isolate language spoken in the Kootenay Mountains in interior British Columbia that is sandwiched between the Salish family to the west and the Algonquian family to the east. This paper explains Ktunaxa's methods for using universal and existential quantifiers, and what that means for the syntactic structure of Ktunaxa. There are two methods of quantification: modification of a noun phrase and modification of a verb phrase. After showing the difference, bare trees and a comparison of grammatical and ungrammatical utterances will be shown, which will give evidence of asymmetrical treatment of subjects and objects. It will be shown that preverbs, a class of words that modify verbs, have their own syntactic projection and that the entire VP adjunct is optionally moved to Spec of IP. This syntactic analysis is mirrored in a thesis by Glougie (2000) on Blackfoot quantification, which will be discussed at the paper's end.

1 Preliminary investigation

1.1 Introduction to Ktunaxa quantifiers

In our investigation of Ktunaxa, we will begin with an explanation on the lexical inventory of the different paradigms. As far as general quantifiers go, most of the quantifiers precede and modify nouns, but most existential and universal quantifiers have a verb-modifying counterpart. The quantifier paradigms divide into phonologically different verbal and nominal formations, and lexical mass versus count categories.

1.2 Inventory of Ktunaxa quantifiers

1.2.1 Modification of the NP

According to Dryer (2002), the most commonly elicited forms of quantification are grammatically within the NP. I found this true of my elicitations only when the noun was the Subject NP. Such are the nominal modifications seen below:

(1) maʔ-is qaqiks-i **ʔatwiɬkani** wuʔu
mother-POSS say-INDIC **a lot (MASS)** water
na-s aquknuk-s
this-OBV lake-OBV
'His mother says, "there is a lot of water in this lake."'

(2) maʔ-is qaqɬaps-i waha **ɬuʔni** ʔakitʔɬaʔ-nam
mother-POSS answer-IND no **NEG** house-INDEF
'His mother answers, "there are no houses (in this forest)."'

The above examples are typical of the quantifier modifying the subject NP. Such a modification most likely manifests itself as an adjunct to the subject DP.

1.3 Existential and universal quantifiers

Table A

Ktunaxa	***gloss***
q'api	*all*
ɬu:ni	*none*
wiɬiɬ	*a great deal*
xaȼniɬ	*both*
ʔatwiɬka:ni	*a lot*
yunakaʔni	*many*
ȼamnani	*a little*

The paradigm above was assembled partially from Dryer (2002), and partially from my own elicitation. The first two, *all* and *none* are the universals, and the rest are existentials. Ktunaxa appears to have no specific counterpart to the English *some*, the quantifiers instead have a specific lexical take. Some of these words can only modify nouns, some can only modify verbs, and some can do both with the help of a preverb marker /-iɬ/.

(3) taxa-s **q'api-ɬ** ʔuniɬ-iɬ-ni
then-OBV **all-PRVB** fear-PASSIVE-INDIC
'Then everyone was afraid of him.' (Dryer 2002)

(4) qakiɬ-ni **q'apiʔ-s** watak-s
say-INDIC **all-OBV** frog-OBV
'He said to all the frogs.' (Dryer 2002)

(5) **ȼamnani** wuʔu in-s aȼu-nana-s
a little water DEM-OBV dish-DIM-OBV
'There is a little water in this cup.'

The above examples are from Dryer and myself, and they are examples of the use of the quantifiers, which always precede the given phrase. The first example is a VP modification, and the second two are examples of the DP modification. (Note that the second example in this set is modifying an indirect object as opposed to a direct object).

1.4 Numerals

Table B

Ktunaxa	***gloss***
u'ki	*One*
Asni	*Two*
qałsa	*three*
xa¢a	*four*
Yiku	*Five*
'inmisa	*Six*
wist'ała	*seven*
wuxa¢a	*eight*
qaykitwu	*nine*
'itwu	*Ten*

The above are the numerals of Ktunaxa, which can precede DPs to give them a quantificational number. These can productively take the preverbal suffix in order to create numerals, which can precede the VP.

1.5 Mass versus count distinction

Ktunaxa, like English, makes a distinction between countable nouns like *people* and *dogs* and mass nouns like *water* and *snow.*

Table C

Mass			Count		
a little	*a lot*	*none*	*Many*	*few*	*nothing*
¢'amnani	ʔatwiłka:ni	łu:ʔni	yunakaʔni	¢'amnani	łu:ʔni

This table was created from a story elicited about various countable and uncountable nouns that exist in a forest. The above words are in the form in which they modify a subject DP.

(6) Mass

maʔ-is	kaqiks-I	waha	**ɬu:ʔni**	ʔa:kɬu
mother-POSS	say-IND	no	**NEG**	snow

'His mother says "no, there is no snow (in this forest)."'

(7) Count

Ka	ma	k-in	ʔupχa	χma	k-**yunaka**
my	mom	NOM-be	know	MOD	SUB-**many**
kt'uqɕqamna		na-s	ʔakits'łaʔin-s		
bird		this-OBV	tree-OBV		

'Mommy, do you know if there might be many birds in this tree?'

The above examples are a pair that directly contrasts the lexical use of a mass noun with a count noun. There is a distinction on both the level of the DP and the VP, depending on what is supposed to be quantified.

1.6 The distribution of quantifiers in Ktunaxa

As stated previously, to use existential and universal quantifiers, there are two methods. One can employ nominal modification, or verbal modification. Ktunaxa uses a class of word that Dryer (2002) calls 'preverbs,' which are similar to the preverbs in Algonquian. To put it simply, this class of words contains sundry lexical and grammatical information. Universal and existential quantifiers are one of the things that can appear as a preverb. Below is a table of the two types of quantifiers.

Table D

VERBAL MOD	**NOMINAL MOD**	*gloss*
q'apiɬ	q'api	*all*
łitiɬ	ɬu:ʔni	*no/none*
wiɬiɬ	yunakaʔni	*a great deal*
u'kiɬ	u'ki	*one*
asniɬ, (xaɕniɬ)	asni	*two (both)*
qałsaɬ	qałsa	*three*

Dryer (2002) also discusses the preverbal marker /-iɬ/. Though this does not seem to be productive with every quantifier, it does seem to be productive among the numerals.

1.6.1 Nominal quantification

Nouns in Ktunaxa can take any of the above noun-related constructions, but only in subject position. The quantifier always precedes the noun.

(8) **q'api** niʔi pu:s ik-ni niʔi-s q'uniłnakinił-s
all DEM cats eat-INDIC DEM-OBV bread-OBV
'All the cats ate the bread.'

(9) *niʔi pu:s ik-ni **q'api-s** niʔi-s q'uniłnakinił-s
DEM cat eat-INDIC **all**-OBV DEM-OBV bread-OBV
Intended: 'The cats ate all the bread.'

Example (8) is the only distribution in which one finds the nominal modifiers acceptable. Nominal modifiers were rejected by native speaker intuition in the object position.

1.7 Preverbal quantification

In order to quantify the object of a sentence in Ktunaxa, one must go via the verb. A preverb precedes the verb stem.

(10) **q'api-ł** ik-ʔni niʔi-s q'uniłnakinił-s niʔi pu:s
all-PRVB eat-INDIC DEM-OBV bread-OBV DEM cat
'The cats ate all of the bread.'

(11) *ik-ʔni **q'api-s** niʔi-s q'uniłnakinił-s niʔi pu:s
eat-INDIC **all-OBV** DEM-OBV bread-OBV DEM cat
Intended: 'The cats ate all of the bread.'

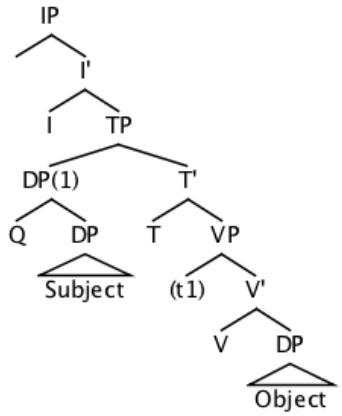
The preverb ends up taking scope over the entire VP and the patient DP. The subject of the sentence comes at the end of the sentence here. Following speaker intuition, the subject of the sentence can come at the front of the sentence if the context is not salient, in order to highlight the involved subject. But if the subject is obvious, the focus is placed on the preverb and verb.

2 A syntactic analysis

2.1 The nominal modifier

A quantificational modifier on a subject of a sentence in Ktunaxa is an adjunct to its DP. It is in a constituent with the DP. The subject of the language is generated in the Spec of VP, and then moved to Spec of TP.

Tree A

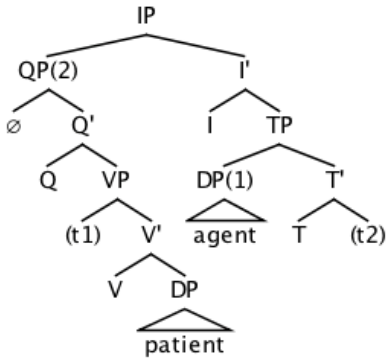


In Tree A, the Q appears as simply an adjunct. The entire DP is transformed to the Spec of TP, which is how the SVO word order of Ktunaxa is created. This transformation of the subject does appear to be optional, depending on different focus domains.

2.2 The quantifier preverb

It is first to be posited that the preverb quantifier in Ktunaxa has its own syntactic projection, of which it is the head. Thus the VP and patient DP that follow are its adjunct. This entire adjunct transforms to the Spec of IP. If the subject does not move, it comes with the adjunct and stays at the left edge of the sentence. If the subject does have to move out of Spec of VP, it appears at the end of the sentence as in example (3) in section 1. Below is tree B, a preverbal structure.

Tree B



Tree B shows what would happen if the subject did come at the end. The object is a syntactic constituent that is very closely related to the verb in Ktunaxa, so much so that it does not seem to be able to easily separate from the verb. Tree A and B show, however, that the subject DP is an independent constituent that has fairly free movement depending on context.

3 Discussion and other evidence

3.1 Potential scrambling and focus domains

The flexible movement of the subject DP exposes an unanswered query. When I asked the consultant for her judgments on the subject coming at the end of a sentence, it was stated that the context determines whether it is happening at the place of the utterance, or elsewhere. For the subject to come at the end of the sentence, it must be salient. If it is elsewhere, the subject must be highlighted, and must be at the front. When it comes at the back, it seems to feature deaccenting (Ladd 2008). This question requires a significant amount of further investigation.

3.2 Algonquian support for the preverbal analysis

Glougie (2000) proposes a similar structure to that of my own in Ktunaxa. She proposes there is a projection for the preverbal quantifier in Blackfoot as well, and that it is "superior" to the VP and the object DP, resulting in the same sort of adjunct formation. Below are data from her 2000 thesis.

(12) ann-a **ak-hkan**-ohpoma-ts-i om-iksi poos-iiks
DEM-3 **fut-all**-buy-tr-3 DEM-an.pl cat-an.pl
'He will buy all those cats.' (Glougie 2000)

(13) *ann-a **ohkan-ak**-ohpoma-ts-i om-iksi poos-iiks
DEM-3 **all-fut**-buy-tr-3 DEM-an.pl cat-an.pl
Intended: 'He will buy all those cats.' (Glougie 2000)

These data exemplify the superiority of the preverbal quantifier, thus supporting its need for superiority over the rest of the sentence. If a subject comes first in a sentence in Ktunaxa, which has a preverbal quantifier, it almost mirrors this perfectly. See below.

(14) niʔi pu:s q'api-ɬ ik-ʔni niʔi-s q'uniɬnakiniɬ-s
DEM cat all-PRVB eat-INDIC DEM-OBV bread-OBV
'The cats ate all of the bread.'

The data in comparison with Blackfoot show a trend of asymmetrical treatment of subjects and objects. The data below this even further support it.

When I asked for a judgment on this sentence, my consultant said it was semantically comical, but grammatically acceptable:

(15) qałsa pu:s qałsa-ł ik-ʔni niʔi-s q'uniłnakinił-s
three cat three-PRVB eat-INDIC DEM-OBV bread-OBV
'Three cats ate three pieces of bread (each cat has their own piece).'

The two quantifiers in (15) show in one piece of data the necessity for asymmetrical structure.

4 Conclusion

Asymmetrical treatment of subjects and objects is not an uncommon phenomenon in the languages of the world. Ktunaxa, like Blackfoot, carries a projection for the preverb or quantifier itself, of which it is the head. Then the VP and object DP are adjuncts to it, and this adjunct moves to Spec of IP. The optional movement of the subject out of Spec of VP raises questions about focus and scrambling in the language. How much flexibility of word order is there in Ktunaxa? Interesting speaker comments were collected in terms of context and word order, which could lead to an analysis and motivation for scrambling in Ktunaxa, which I hypothesize would be syntactically and semantically driven.

4.1 Special thanks

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