Drawing a map to the Ktunaxa clause: Evidence from verbal morphology*

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Abstract: Ktunaxa is an underdescribed language spoken in the Pacific Northwest regions of Canada and the United States. Although several authors have provided descriptions of the grammar of Ktunaxa, there is to this day no formal analysis of the clausal syntax of the language. In this paper, I provide a first hypothesis to that effect, based on original fieldwork realized with one native speaker based in Vancouver. Based on the Mirror Principle (Baker, 1985), I argue that the C domain in Ktunaxa hosts the complementizer *k* and the indicative morpheme *-i*, that the Infl domain hosts a category I call *verbal obviation* which tracks event participants and topical situations, and that the *v* domain is inherently sensitive to the referential hierarchy and hosts passive morphology, inverse morphology and object agreement. I also show that subject agreement must be licensed between *v* and C. The analysis is couched within Universal Spine Hypothesis framework (Wiltschko, 2014).

Keywords: Ktunaxa, syntax, functional structure, verbal morphology, Universal Spine Hypothesis

1 Introduction

This paper investigates the functional apparatus of the clause in Ktunaxa, a language isolate spoken in the Kootenai region of British Columbia (Canada), and parts of Montana and Idaho (USA) (FirstVoices, 2018). Ktunaxa has received several descriptions (Boas, 1926a,b; Garvin, 1948a,b,c,d; Mast, 1988; Morgan, 1991). However, none provide a formal account of the Ktunaxa clause structure. Hence, the hypothesis I introduce here constitutes a first attempt at formalizing, within a generative framework, the clausal architecture of Ktunaxa. The purpose of this paper is twofold, it aims (i) to identify the hierarchical organization of the functional material within the clause in Ktunaxa, and (ii) to outline a set of hypotheses regarding the substantive content of the functional spine in Ktunaxa. I argue that the C domain in Ktunaxa hosts the complementizer *k* and the indicative morpheme *-i*, that the Infl domain hosts a category I call *verbal obviation*, and that the *v* domain is inherently sensitive to the referential hierarchy (also known as the animacy or topicality hierarchy (Corbett, 2000; Cristofaro, 2013; Silverstein, 1976) and hosts passive morphology, inverse morphology and object agreement. I also show that subject agreement must be licensed between *v* and C.

The paper is organized as follows: in section 2, I introduce the theoretical principles on which the analysis relies, namely the Mirror Principle (Baker, 1985) and the Universal Spine Hypothesis (USH) (Wiltschko, 2014). Each of the subsequent sections is dedicated to introducing specific hypotheses for each of the functional layers: section 3 is dedicated to the C domain, section 4 is dedicated to the Infl domain, and section 5 is dedicated to the *v* domain.

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The data introduced in the following pages comes from my own fieldwork and from the fieldwork conducted in collaboration with Elise McClay and the participants in the field methods class of Winter 2015-2016 at UBC. All the data has been elicited with Violet Birdstone, a native speaker of Ktunaxa based in Vancouver. Elicitation techniques included storyboards as well as grammaticality and felicity judgements in minimal contexts designed to monitor variation in three parameters: (i) speech act participants, the participants present during the speech event, (ii) speech acts, whether sentences were uttered to perform assertions or questions, and (iii) event participants, the participants in the event denoted by the verb.

2 Theoretical framework

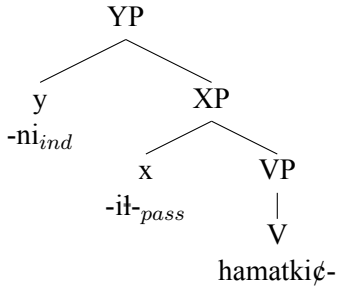
As a starting point, I assume Baker's Mirror Principle (1) which stipulates that the ordering within sequences of morphemes reflects the order of the syntactic heads, such that each morpheme corresponds to a syntactic head. A morphologically complex word is thus derived through cyclic movement across syntactic heads where it gathers its affixes. In the verbal domain, this means that the closer a morpheme is to the verbal stem, the lower it is in the syntactic structure.

(1) Mirror Principle (Baker, 1985:375)
Morphological derivations must directly reflect syntactic derivations (and vice versa).

For instance, if the passive morpheme immediately follows the verb stem, then it must be generated higher than the verb as in (2). Labels for this structure are introduced below in (5).[1]

(2) a. hamatikɋ**iɬ**ni
hamatkiɋ-**iɬ**-ni
give-PASS-IND

b.



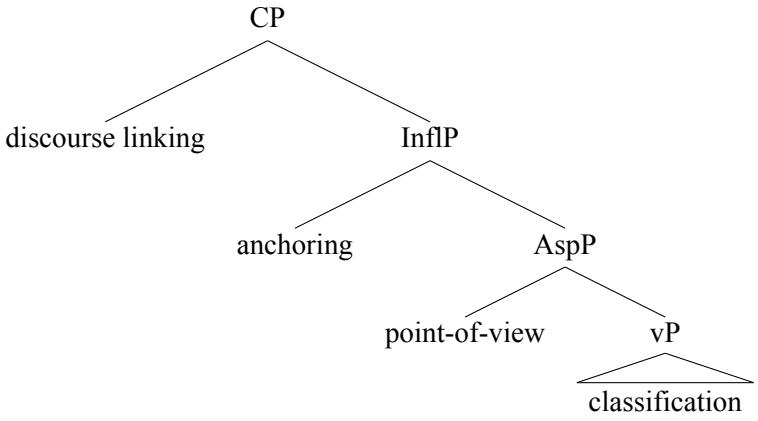
Under a strict version of the Mirror Principle, it is assumed that there is a one-to-one correspondence between morphemes and syntactic positions. I consider this to be the simplest heuristic to build a hypothesis about the Ktunaxa functional spine.

While the Mirror Principle provides a basis to derive the hierarchy between syntactic heads, i.e. their relative order, it makes no claim about how specific syntactic positions encode dedicated functions across languages. Hence, one cannot deduce, based on the Mirror Principle alone, which

[1] Abbreviations and conventions: 1 = 1st person; 2 =2nd person; 3 = 3rd person; COMP = complementizer; DEM = demonstrative; HAB = habitual; IND = indicative; INV = inverse; OBJ = object; OBJ.AGR = object agreement; OBV = obviative; PASS = passive; SBJ = subject; SBJ.AGR = subejct agreement; VOBV = verbal obviation.

functional category a morpheme is associated with. For that aspect of the investigation, I assume, based on the literature, that complementizers are hosted in C (Cheng, 1991; Rizzi, 1997), and that voice is hosted in *v* (Chomsky, 1995; Kratzer, 1996). These two functional heads and their associated morphemes serve as reference points in the structure. I also rely on the Universal Spine Hypothesis (USH) (Wiltschko, 2014) which argues that (i) the functional structure of the clause is universal, and that (ii) functional categories are defined independently of the semantic content of the morphological category they host. Hence, the categories that instantiate the same functional projections differ across languages, and similar morphological categories may serve different functions across languages. As such, the USH constitutes a heuristic where syntactic position serves to diagnose function independently of semantic content. In addition, it allows for the comparison of languages which have different morphological inventories without abandoning the claim that structure is universal. According to the USH, the clause involves four functional layers serving respectively four functions: discourse linking, anchoring, point of view and classification, which correspond respectively to the C domain, the Infl domain, the Asp domain and the *v* domain, as shown in (3).

(3)



Within the generative tradition, Infl is associated with the morphological category of tense inflection (e.g. English or French (Iatridou, 1990; Pollock, 1989)), such that anchoring depends on the relation between utterance time and reference time. In Ktunaxa, however, tense marking must precede the complementizer (4a). If tense follows the complementizer, the sentence is ungrammatical, as shown in (4b).

(4) a. Qała ʔat **ma** k ʔataq̇a ʔakukiɬʔits.
qała ʔat **ma** k ʔataq̇a ʔakukɬiʔit-s
who HAB PAST COMP climb mountain-OBV
'Who has climbed a mountain?'

b. *Qała ʔat k **ma** ʔataq̇a ʔakukiɬʔits.
qała ʔat k **ma** ʔataq̇a ʔakukɬiʔit-s
who HAB COMP PAST climb mountain-OBV
Intended: 'Who has climbed a mountain?'

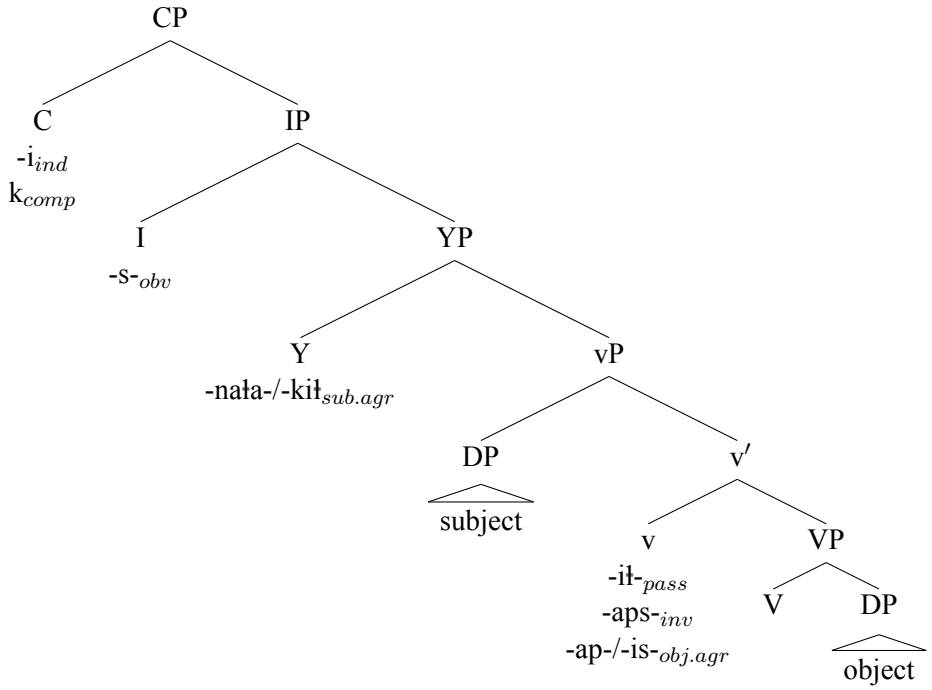
Assuming that the complementizer *k* is in C, the syntactic distribution of tense markers in Ktunaxa suggests that they must be hosted in a projection above C, and that Infl in Ktunaxa does not

host tense markers. This is unusual, unless we allow for the association between a morphological category and its function to be language specific. This is exactly what the USH suggests. It further predicts that in Ktunaxa, anchoring is instantiated with a different morphological category.

The structure I suggest for Ktunaxa is given in (5), where C hosts the complementizer *k*, Infl hosts a category I call *verbal obviation*, and *v* hosts passive and inverse morphology, and object agreement. Based on distributional evidence, I also suggest that C may host the indicative suffix *-i* although further investigation is necessary to determine whether this hypothesis is tenable. I also show that subject agreement must be licensed between C and *v*, either in Infl or in Asp. Since the data available at the moment cannot distinguish between these functional domains, I postulate that subject agreement is licensed in an unlabelled projection YP, located higher than *v*. Whether YP in the structure below must be integrated to Infl or is best accounted for as an autonomous functional domain is left for further research.

The structure in (5) shows, for each functional head, all the morphemes it can host.

(5)



Before I introduce data supporting the structure in (5), I must highlight that I deliberately focus on material in the clause that is subject to strict linear ordering constraints, such that the structure provided here can eventually serve to diagnose movement and the position of DPs which occur in peripheral positions in a relatively free order.

3 The C domain and clause typing in Ktunaxa

The Ktunaxa clause system includes at least two clause types, indicative clauses and *k*-clauses. Indicative clauses are matrix clauses and are generally interpreted as assertions, as in (6a). They differ

from *k*-clauses in that they require indicative morphology on the verb as shown by the ungrammaticality of (6b).

(6) a. hun hamatik¢**i** ɬinq̇uymuɬ titkats.
hun hamatki¢-**i** ɬinq̇uymuɬ tiktat-s
1.SBJ give-IND toy man-OBV
'I gave the toy to the man.'

b. *hun hamatik¢ ɬinq̇uymuɬ titkats.
hun hamatki¢ ɬinq̇uymuɬ tiktat-s
1.SBJ give toy man-OBV
Intended: 'I gave the toy to the man.'

In comparison, *k*-clauses appear in matrix position, where they are interpreted as questions, and as subordinates. Contrary to indicative clauses, *k*-clauses do not tolerate indicative morphology, as shown by the contrasts in (7), which shows *k*-clauses in matrix positions, and in (8), which shows *k*-clauses in subordinate position.

(7) a. **K**in hamatki¢ ɬinq̇uymuɬ niʔi titkats?
k-hin hamatki¢ ɬinq̇uymuɬ niʔi titkat-s
COMP-2.SBJ give toy DEM man-OBV
'Did you give the toy to the man?'

b. *__K__in hamatki¢**i** ɬinq̇uymuɬ niʔi titkats?
k-hin hamatki¢-**i** ɬinq̇uymuɬ niʔi titkat-s
COMP-2.SBJ give-IND toy DEM man-OBV
Intended: 'Did you give the toy to the man?'

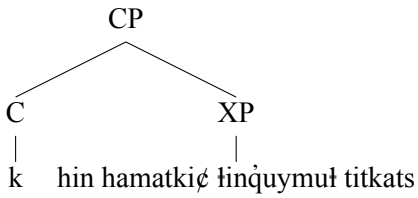
(8) a. Hun upxni **k**in hamatik¢ ɬinq̇uymuɬ niʔi titkats.
hun upx-ni **k**-hin hamatki¢ ɬinq̇uymuɬ niʔi titkat-s
1.SBJ know-IND COMP-2.SBJ give toy DEM man-OBV
'I know that you gave the toy to the man.'

b. *Hun upxni **k**in hamatik¢**i** ɬinq̇uymuɬ niʔi titkats.
hun upx-ni **k**-hin hamatki¢-**i** ɬinq̇uymuɬ niʔi titkat-s
1.SBJ know-IND COMP-2.SBJ give-IND toy DEM man-OBV
Intended: 'I know that you gave the toy to the man.'

Following Morgan (1991), I assume that *k* is a complementizer, as it introduces subordinate clauses and distinguishes different clause types (where a clause type is defined as a regular and systematic association between a syntactic construction and the (direct) speech act it instantiates (Sadock and Zwicky, 1985). Following the literature on complementation and clause-typing mechanisms (Cheng, 1991; Cook, 2008; Rizzi, 1997), I assume that the complementizer *k* is generated in C, as exemplified in (9b) which gives a preliminary structure to (7) reproduced in (9). Note that in this structure, the verb remains below the complementizer.

(9) a. Kin hamatkiɬ ɬinq̇uymuɬ niʔi titkats?
k-hin hamatkiɬ ɬinq̇uymuɬ niʔi titkat-s
COMP-2.SBJ give toy DEM man-OBV
'Did you give the toy to the man?'

b.



The other element that seems to be involved in clause typing in Ktunaxa is the indicative morpheme *-i* which does not occur in *k*-clauses and marks indicative clauses. Although I cannot provide evidence to identify the functional projection that hosts the indicative morpheme, I discuss two structural hypotheses that should be explored in future research.

The first hypothesis is based on the distribution of the indicative morpheme in relation to the verbal stem and inverse, passive and agreement morphology. As shown in the examples below, the indicative morpheme always occurs in final position on the verb, after passive morphology (10), after inverse morphology (11), and after agreement morphology (12). All other morpheme orders yield ungrammatical sentences.

(10) Hun hamatikɬ**iłni** ɬinq̇uymuɬ
hun hamatkiɬ**-iɬ-ni** ɬinq̇uymuɬ
1.SBJ give-PASS-IND toy
'I was given a toy.'

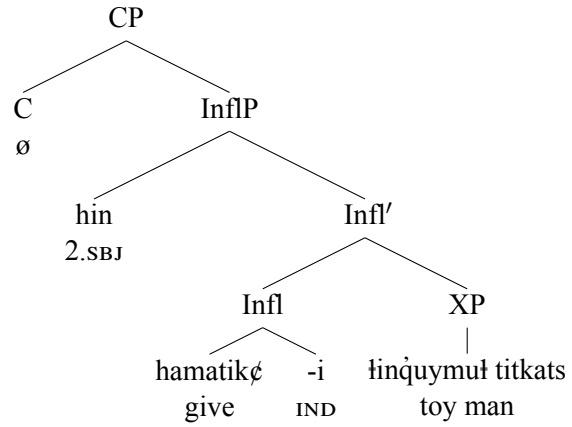
(11) Ƛans wukat**apsi** Małi.
Ƛan-s wukat-**aps-i** Małi.
John-OBV see-INV-IND Mary.
'John saw Mary.'

(12) Hun hamatikɬ**isnałani** ɬinq̇uymuɬ.
hun hamatkiɬ**-is-nała-ni** ɬinq̇uymuɬ
1.SBJ give-2.OBJ-1.SBJ.PL-IND toy
'We gave you a toy.'

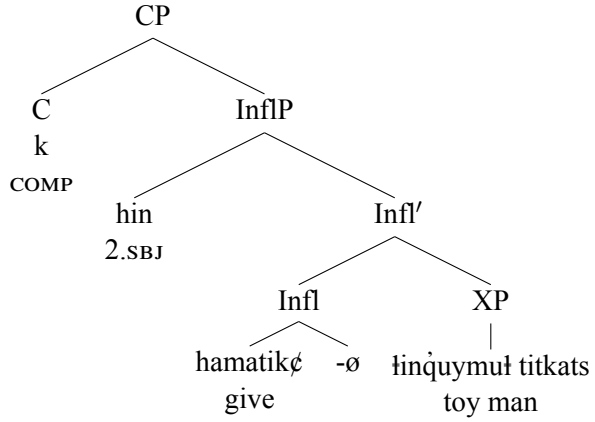
Based on the evidence just presented, the Mirror Principle predicts that the indicative morpheme is generated above V, and above the functional projections hosting passive, inverse-marking, and subject and object agreement morphology, in the farthest functional projection hosting verbal morphology: Infl. Hence, this hypothesis would suggest that in indicative clauses, the verb moves to Infl, and subject pronouns, which precede the verb in *k*-clauses and in indicative clauses, are hosted in the specifier of Infl. This hypothesis would account for the incompatibility of the indicative *-i* and the complementizer *k* in terms of the selectional restrictions imposed by the complementizer. This hypothesis is illustrated in (13).

(13)

a.



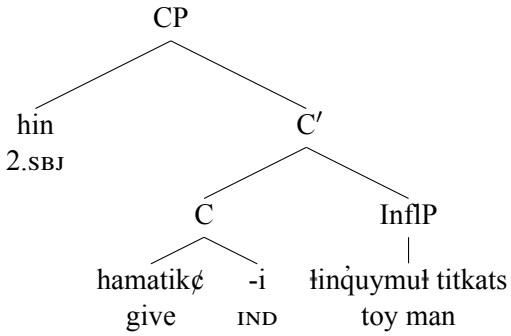
b.



The second hypothesis, illustrated in (14), interprets the fact that the indicative morpheme never occurs with the complementizer *k* as evidence that the complementizer *k* and the indicative morpheme *i* compete for the same syntactic position, the C head. This would mean that in indicative clauses, the verb moves to C to gather the indicative morpheme, while in *k*-clauses, where the verb occurs after *k*, the verb remains below C. Hence, in indicative clauses, subject pronouns are generated higher than C, and in *k*-clauses where they occur between the complementizer and the verb, they are generated lower than C. This hypothesis accounts for the incompatibility of *-i* and *k* in syntactic terms, and predicts that *-i* and *k* serve the same function of anchoring the clause to the discourse, and thus, should share some semantic properties.

(14)

a.



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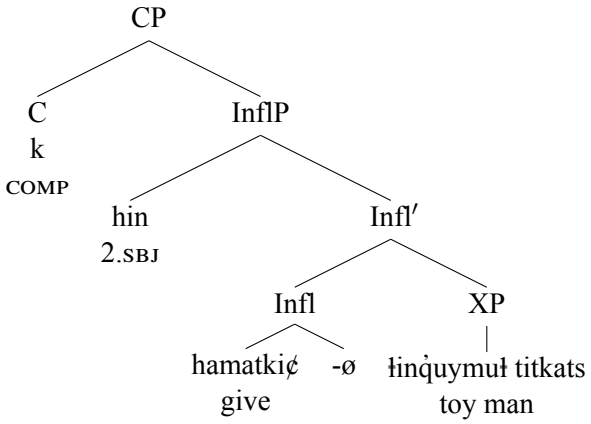


Until further research determines the syntactic position, the function and the semanticss of the indicative morpheme, I adopt the second hypothesis, and assume that the indicative morpheme is generated in C.

4 Infl and verbal obviation in Ktunaxa

In this section, I discuss the distribution of the so-called verbal obviative marking on the verb, which has been said to be triggered when the subject of the verb is obviative (Dryer, 2007; Morgan, 1991). I show that this generalization is erroneous and argue that verbal obviation marks the relation between the utterance situation and the event denoted by the clause, such that it instantiates the anchoring function. This is supported by distributional evidence suggesting that the verbal obviative morpheme is hosted in Infl. I begin by providing a description of the obviation system of Ktunaxa. This description will be relevant to the discussion of inverse morphology in section 5, as well.

4.1 Obviation in Ktunaxa

Aissen (1997) defines obviation as a grammatical system that operates on 3^{rd} person arguments and ranks them according to a hierarchy that involves grammatical function, inherent semantic properties and salience in the discourse. More specifically, obviative systems rank arguments according to the referential hierarchy (Silverstein, 1976) given in (15).

(15) 1/2 pron > 3 pron > proper N > human N > animate N > other

In addition to the categories given in (15), obviative systems distinguish between proximate DPs, which are presumed to be salient in the discourse, and obviative DPs which are presumed to be less salient, marginal or backgrounded. This distinction within the nominal domain is echoed in the verbal domain with the direct-inverse system which tracks which of the arguments of a transitive verb ranks the highest on the referential hierarchy. If the subject ranks higher than the object, the verb is *direct*, while if the subject ranks lower than the object, the verb is *inverse*.

In the Ktunaxa obviation system, proximate arguments are unmarked, and obviative arguments are marked with the suffix -*s*. Only 3^{rd} person arguments seem to partake in this system, such that only 3^{rd} person arguments bear obviative morphology, and inverse marking on the verb only ever occurs when both arguments are 3^{rd} person. Morgan (1991) and Dryer (2007) suggest that obviative subjects trigger obviative marking on the verb. This generalization, however, is not correct, as I show in the next section.

4.2 Verbal obviation

Ktunaxa verbs can bear what I call for the moment the verbal obviation marker. This marker is realized as the suffix -*s*, and it occurs after the verbal stem and before the indicative marker as shown in (16).

(16) a. Pałkyis haq̓wiłsi.
pałky-is haq̓wił-**s**-i
woman-OBV dance-OBV-IND
'The woman danced'.

Verbal obviation is only compatible with 3^{rd} person arguments, as shown by the ungrammaticality of (17).

(17) *Hun/hin haq̓wiłsi.
hun/hin haq̓wił-**s**-i
1.SBJ/2.SBJ dance-OBV-IND
Intended: 'I/you dance.'

The basic pattern in (16-17) has lead Morgan (1991) and Dryer (2007) to analyze verbal obviation as an obviative subject marker which would only occur when the subject of the verb is obviative. However, the generalization drawn by Morgan (1991) and Dryer (2007) does not hold, as shown in (18) where the subject is proximate (it does not bear the obviative marker -*s*) and yet, the verb bears the obviative suffix -*s*.

(18) Pałky haq̓wiłsi.
pałky haq̓wił-**s**-i
woman dance-OBV-IND
'The woman danced'.

Thus, contra Morgan and Dryer, I conclude that while verbal obviation is sensitive to the arguments' phi-features, it does not correlate with the status of the subject with respect to obviation, What, then, if not some form of agreement, is this verbal obviation marker?

Verbal obviation occurs in at least two different syntactic contexts: (i) in matrix clauses, (ii) in subordinate clauses. In matrix clauses, it marks an event as occurring in a narrative situation that differs, somehow, from the utterance situation. For instance, the examples given in (19) both involve the verb *akinmiłnikit* 'for there to be a storm' and both mean 'there was a storm'. However, according to my consultant, (19a), which involves the verbal obviation marker, is used in storytelling, while (19b), which does not involve the verbal obviation marker, is used to convey that a storm occurred in the recent past of the utterance situation. Furthermore, my consultant states that one would use verbal obviation to describe an event in a story that is about someone other than the speaker or the addressee.

(19) a. Akinmiłnikit**s**i.
akinmiłnikit-**s**-i
to.be.a.storm-OBV-IND
'There was a storm.'

b. Akinmiłnikitni
akinmiłnikit-i
to.be.a.storm-IND
'There was a storm.'
Consultant comment: (19a) is good when the storm happened in a story, while (19b) is good when the storm happened in the recent past.

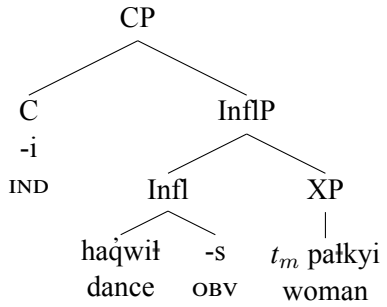
When verbal obviation occurs in a subordinate clause, it functions as a switch-reference mechanism, such that it is only grammatical if the subject of the subordinate clause is different from the subject in the matrix clause, as shown in (20).

(20) a. Małi upxni k haq̇wiłs
Małi upx-ni k haq̇wił-s
Mary know-IND COMP dance-OBV
'Mary$_i$ knows that she$_{j/*i}$/he/they danced.'

It seems that in both syntactic contexts, verbal obviation marks a contrast between situations, and more precisely, between the discourse situation (the utterance situation for matrix clauses, the matrix clause for subordinate clauses) and the situation denoted in the clause. In other words, verbal obviation serves the anchoring function, which predicts, according to the USH, that verbal obviation should be hosted in Infl. This prediction is compatible with the syntactic distribution of verbal obviation.

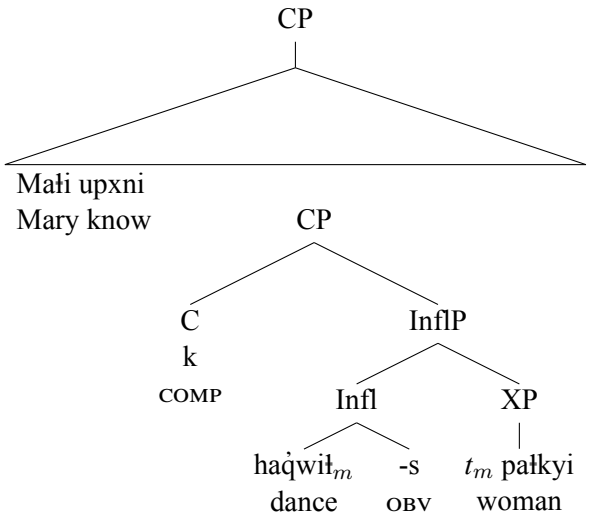
Assuming, as I suggested in section 3, that in indicative clauses, the indicative morpheme *-i* is generated in C, and that the verb is in Infl, and considering that the verbal obviative suffix *-s* occurs inside indicative morphology in indicative clauses, then it should be generated below C, potentially in Infl, as shown in (21) which provides the structure for example (18).

(21)



Similarly, assuming, as I suggested in section 3, that the verb remains below C in *k*-clauses, the morpheme in final position on the verb in a *k*-clause, in the case at end, the verbal obviation marker, should be generated no higher than the projection immediately below C, potentially in Infl. This is shown in (22) which provides a structure for example (20).

(22)



In summary, verbal obviation does not correlate with the status of the subject with respect to obviation, but it exhibits sensitivity to the arguments' phi features such that it never occurs when the arguments of the verb are 1^{st} or 2^{nd} person. When verbal obviation occurs in subordinate clauses, it functions as a switch-reference mechanism, and when it occurs in matrix clauses, it marks a contrast between the utterance situation and the situation denoted in the clause. Based on the mirror principle, verbal obviation must be hosted lower than C, possibly in Infl.[2]

5 The *v* domain of Ktunaxa

In this section, I introduce evidence that the *v* domain of Ktunaxa hosts passive morphology, inverse morphology, and object agreement, and I show that the *v* domain is sensitive to the referential

[2] A similar pattern has been described by McKenzie (2012) for switch-reference marking in Kiowa, where switch-reference tracks topical situations in coordinated structure and DP arguments in subordinate structures. According to McKenzie, Kiowa switch-reference markers are hosted in a SR projection, immediately below C. Whether Ktunaxa verbal obviation and Kiowa switch-reference instantiate the same functional category remains to be explored.

hierarchy. I conclude the section with a brief note on subject agreement which, I argue, should be licensed between *v* and C.

5.1 Inverse system

Ktunaxa possesses an inverse system which is triggered only when both arguments are 3^{rd} person. When the subject of a verb is obviative and the object is proximate, the verb bears the inverse morpheme *-aps*, as in (23a). If the subject is proximate and the object is obviative, then inverse marking on the verb is ungrammatical; see (23b).

(23) a. Ƛans wukat**aps**i Małi.
Ƛan-s wukat-**aps**-i Małi
John-OBV see-INV-IND Mary
'John saw Mary.'

b. Ƛan wukat**aps**i Małis.
Ƛan wukat-**aps**-i Małi-s
John see-INV-IND Mary-OBV
Intended: 'Mary saw John'.

Inverse morphology is compatible with both indicative clauses, as in (23a), and *k*-clauses, as in (24).

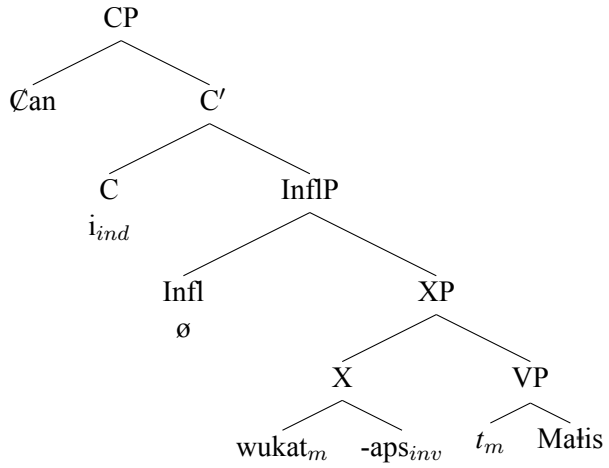
(24) Hun upxni Ƛans k wukat**aps** Małi.
hun upx-i Ƛan-s k wukat-**aps** Małi
1.SBJ know-IND John-OBV COMP see-INV Mary
'I know that John saw Mary.'

Since inverse marking occurs in verb-final position in *k*-clauses, and considering that the verb is lower than C in *k*-clauses, inverse should be hosted no higher than the highest projection below C, possibly in Infl. Similarly, since inverse marking occurs inside indicative morphology, and assuming that indicative morphology is hosted in C, the Mirror Principle predicts that inverse should be hosted, again, no higher than the highest projection below C, possibly in Infl. If this is the right analysis, then verbal obviative marking and inverse are hosted in the same syntactic position. This structure would be consistent with Morgan (1991)'s analysis who suggests that the marker *-aps* is a complex morpheme involving an inverse morpheme *-ap* and the verbal obviative marker *-s*. However, inverse-marking and verbal obviation differ in fundamental ways: (i) inverse-marking only occurs in transitive constructions while the verbal obviation marker occurs in intransitive constructions (cf. (16)), and (ii) inverse-marking occurs when the subject is obviative, while the verbal obviation marker is not sensitive to the status of the subject (see discussion in section 4.2). Crucially, inverse-marking expresses a relation between arguments with respect to the referential scale, while verbal obviation expresses no such relation. If this property of inverse-marking is built in the functional projection that hosts it, then inverse-marking and verbal obviation do not belong to the same functional category, and thus should not be in the same syntactic position. Unfortunately, linear order and cooccurrence patterns cannot support this conclusion, since were inverse to occur with verbal obviation, their cooccurrence might be obfuscated by their partial homophony.

Nevertheless, as I have argued that verbal obviation is hosted in Infl, I hypothesize that inverse-marking is hosted lower than Infl, which yields the minimal structure shown in (25b) for (23a) reproduced in (25a).

(25) a. Ƈans wukat**aps**i Małi.
Ƈan-s wukat-**aps**-i Małi
John-OBV see-INV-IND Mary
'John saw Mary.'

b.



In the next section, I show that inverse marking and passive morphology have the same distribution and the same properties. Assuming that voice morphology is hosted in *v* (Chomsky (1995), Kratzer (1996)), I suggest that inverse marking is also hosted in *v*.

5.2 Ktunaxa passive

In this section, I provide an overview of the properties of passive morphology in Ktunaxa and compare it to inverse morphology.

The Ktunaxa passive voice is realized as the suffix *-(i)ɬ* which immediately follows the verbal stem, as shown in the passive sentence in (26a) which contrasts with (26b), its equivalent in the active voice.

(26) a. Łaq̓anxunał ʔuk̓inkn**iɬ**ni.
łaq̓anxunał ʔuk̓inkin-**iɬ**-i
door open-PASS-IND
'The door was opened (by someone).'

b. Małi ʔuk̓inkini łaq̓anxunałs.
Małi ʔuk̓inkin-i łaq̓anxunał-s
Mary open-IND door-OBV
Mary opened the door.

The passive in Ktunaxa promotes an argument from the object domain to the subject position. This promotion depends not on the theta role of the argument but on its phi-features, such that it is

the highest argument on the referential hierarchy in the object domain that gets promoted. Hence, a 3^{rd} person object cannot be promoted over a 1^{st} person object. For instance, in (27a), the argument that has been promoted to the subject position is the 1^{st} person argument realized as the pronoun *hun*. The sentence is ambiguous between two readings: (i) the 1^{st} person argument is the goal of the verb *hamatkiȼ* 'to give', (ii) the 1^{st} person argument is the theme of the verb *hamatkiȼ* 'to give'. In contrast, the sentence in (27b) where a 3^{rd} person argument has been promoted over a 1^{st} person argument is ungrammatical.

(27) a. Hun hamatikȼiɬni ɬkamu.
hun hamatkiȼ-iɬ-i ɬkamu.
1.SBJ give-PASS-IND child.
(i) 'I was given a child.'
(ii)'I was given to the child.'

b. *Ɬkamu hamatikȼiɬapni.
ɬkamu hamatkiȼ-iɬ-ap-i
child give-PASS-1.OBJ-IND
Intended: 'The child was given to me.'

Thus, the passive in Ktunaxa is sensitive to the referential hierarchy, much like inverse-marking which tracks which argument of a transitive verb ranks the highest, and marks an inverse relation between the hierarchy of grammatical relations (subject over object) and the referential hierarchy (obviative over proximate). Since the passive always promotes the highest ranking argument to subject position, it forces a direct mapping between the hierarchy of grammatical relations and the referential hierarchy. In effect, passive morphology marks a relation exactly opposite to the relation marked by the inverse, such that we expect to never see passive and inverse morphology together, and this is indeed borne out. As shown by the contrast in (28), inverse marking is incompatible with passive morphology.

(28) a. Ɬkamu hamatikȼiɬni titkats.
ɬkamu hamatkiȼ-iɬ-i titkat-s
child give-PASS-IND man-OBV
'The child$_{\text{PROX}}$ was given to the man$_{\text{OBV}}$.'

b. *Ɬkamus hamatikȼ**iɬaps**i titkat.
ɬkamu-s hamatkiȼ-**iɬ-aps**-i titkat
child-OBV give-PASS-INV-IND man
Intended: 'The child$_{\text{OBV}}$ was given to the man$_{\text{PROX}}$.'

The incompatibility of inverse-marking and passive morphology could also signal that both morphemes compete for a single syntactic position, *v*. Certainly, if both passive and inverse are hosted in the *v* domain, then the *v* domain in Ktunaxa is sensitive to the referential hierarchy.

5.3 Verbal agreement

In this section, I discuss verbal agreement in Ktunaxa. I first introduce the basic patterns for subject and object agreement.

Ktunaxa verbs agree with their subject and object. Agreement is sensitive to person and number features. It shows robust pattern across verb classes with 1^{st} and 2^{nd} person arguments. Morgan (1991) claims that 3^{rd} person arguments also trigger agreement. However, as far as I can tell, the morphemes analyzed as 3^{rd} person agreement have a much more restricted distribution than 1^{st} and 2^{nd} person agreement morphemes, they never co-occur with overt DP arguments, and they only occur when there is no interpretation available for the arguments.[3] Until further research determines the semantic and syntactic properties of so-called 3^{rd} person agreement morphemes, I consider that there is no such thing in Ktunaxa. I first introduce the distribution of agreement morphemes, focusing exclusively on 1^{st} and 2^{nd} person agreement morphology.[4]

The contrast in (29) shows that object agreement must occur inside indicative morphology.

(29) a. *Hun hamatkiɬ**inis**.
hun hamatkiɬ**-i-is**
1.SBJ give-IND-2.OBJ
Intended: 'I gave you (something).'

[3] Consider the following paradigm:

(i) a. Małi wukatapni.
Małi wukat-ap-ni
Mary see-1.OBJ-IND
'Mary sees me.'

b. Małi wukatisni.
Małi wukat-is-ni
Mary see-2.OBJ-IND
'Mary sees you.'

c. Małi wukatkaʔni.
Małi wukat-kaʔ-ni
Mary see-2.OBJ-IND
'Mary sees someone.'

d. *Małi wukatkaʔni Ɫans.
Małi wukat-kaʔ-ni Ɫan-s
Mary see-2.OBJ-IND John-OBV
Intended: 'Mary saw John.'

(1a)-(1b) show that 1^{st} and 2^{nd} person object agreement are compatible with the verb *wukat*, 'to see', and that 1^{st} and 2^{nd} person objects are not realized with overt DPs. The contrast between (1c) and (1d) shows that so-called 3^{rd} person agreement is incompatible with an object. Furthermore, 3^{rd} person object agreement differs from 1^{st} and 2^{nd} person object agreement in that it is only triggered if the object is indeterminate. This shows that the semantic properties, and most likely the syntactic properties of so-called 3^{rd} person agreement, are different from the properties of 1^{st} and 2^{nd} person agreement markers. Future research should investigate the status of so-called 3^{rd} person agreement.

[4] Note that the examples in (29-31) involve multiple *pros* in object position. These pronouns are translated as indefinite DPs. This translation should not be mistaken for an analysis. Although *pro* seems to be compatible with an indefinite interpretation in Ktunaxa, its properties have not been systematically investigated yet.

b. Hun hamatik¢**isni**.
hun hamatki¢**-is-i**
1.SBJ give-2.OBJ-IND
'I gave you (something).'

The contrast in (30) shows that subject agreement must also occur inside indicative morphology.

(30) a. *Hun hamatik¢**inała**
hun hamatki¢**-i-ała**
1.SBJ give-IND-1.SBJ
Intended: 'We gave (something to someone).'

b. hun hamatki¢**nałani**
hun hamatki¢**-ała-i**
1.SBJ give-1.SBJ-IND
'We gave (something to someone)'

The contrast in (31) shows that object agreement must precede subject agreement.

(31) a. *Hun hamatik¢**nałanis**ni.
hun hamatki¢**-ała-is-**i
1.SBJ give-1.SBJ-2.OBJ-IND
Intended: 'We gave you (something)'

b. Hun hamatik¢**isnała**ni.
hun hamatki¢**-is-ała-**i
1.SBJ give-2.OBJ-1.SBJ-IND
'We gave you (something)'

Finally, object and subject agreement morphemes are grammatical in indicative clauses, as in (29-31), and in *k*-clauses, as in (32).

(32) Kun hamatik¢isnała łinq̇uymuł.
k-hun hamatki¢-is-nała łinq̇uymuł
COMP-1SBJ give-2.OBJ-1.PL.SBJ toy
'Did we give you a toy?'

The data presented above suggests that agreement morphology is licensed below C, since it is insensitive to variation in C and it is compatible with C heads, and that subject agreement is licensed higher than object agreement since it follows object agreement. I cannot, for the moment, provide a diagnostic that would identify the functional domain that licenses subject agreement, but I show below that object agreement and inverse marking share distributional properties, suggesting that they are licensed in the same functional domain.

5.4 Object agreement

Agreement morphology in Ktunaxa is only consistently overt with 1^{st} and 2^{nd} person arguments, while inverse marking is triggered when both arguments of the verb are 3^{rd} person. It is expected,

then, that inverse marking and agreement never co-occur since their phi-domains, so to speak, are mutually exclusive. It is still possible to show that object agreement and inverse marking have the same distribution in some verb classes, suggesting that they are hosted in the same syntactic position, in the *v* domain.

In Ktunaxa, psych-verbs systematically alternate between two argument structures depending on whether the experiencer is realized as the external argument or as an internal argument. For instance, the verb *sanmun* 'to feel bad (about something)' alternates with the verb *sanmunap* 'to make someone feel bad'. *Sanmun*'s experiencer is its external argument, while *sanmunap*'s experiencer is an internal argument. This alternation in argument structure correlates with the obligatoriness of the object, and by extension, of related morphology on the verb.

As shown in (33) with the verb *sanmun*, verbs which have the experiencer as their external argument need not have an object.

(33) a. Hun sanmuni.
hun sanmun-i
1.SBJ feel.bad-IND
'I feel bad/sad/displeased.'

b. Hun sanmuni Małi.
hun sanmun-i Małi
1.SBJ feel.bad-IND Mary
I feel bad/sad/displeased about Mary.'

In contrast, sentences in (34), which involve the verb *sanmunap*, only have the interpretation where the object, which has triggered agreement on the verb in the case of (34a) and inverse marking in the case of (34b), realizes the experiencer.

(34) a. Małi sanmunapni.
Małi sanmun-ap-ni
Mary to.make.feel.bad-**1.**OBJ-IND
'Mary makes me sad.'

b. Małis sanmun**aps**i Ƈan.
Małis sanmun-**aps**-i Ƈan
Mary-OBV to.make.feel.bad-INV-IND John
'Mary makes John sad.'

Hence, when agreement morphology and inverse marking are obligatory in cases where they mark a certain morphosyntactic class of verb. The data also shows that agreement morphology and inverse marking have the same distribution relative to the verbal stem and indicative morphology, which, according to the Mirror Principle, suggests that they are hosted in the same syntactic position. In addition, examples in (34a) suggest that agreement morphology and inverse marking stand in the same structural relation to the argument in object position. Whether inverse marking should be analyzed as a case of 3^{rd} person agreement has to be investigated further.

Finally, object agreement shares a property with inverse and passive morphology: it is sensitive to the referential hierarchy. In ditransitive constructions, the sequence of agreement morphemes is

always the same: 1^{st} person object agreement always precedes 2^{nd} person object agreement, as in (35a). The reverse sequence is ungrammatical, as shown by in (35b).

(35) a. Małi ¢inałknik¢**apnis**ni.
Małi ¢inałkinki¢**-ap-is-**i
Mary carry.for-**1.**OBJ-**2.**OBJ-IND
'Mary carried me for you'/'Mary carried you for me.'

b. *Małi ¢inałknik¢**isnap**ni
Małi ¢inałkinki¢**-is-ap-**i
Mary carryfor-**2.**OBJ-**1.**OBJ-IND.
Intended: 'Mary carried me for you'

Since the sequence of agreement morphemes is not determined by grammatical function, the sentence in (35a) is ambiguous between a reading where the direct object is 1^{st} person and the indirect object is 2^{nd} person, and vice-versa. Two hypotheses could account for this phenomenon: (i) the structural hierarchy in the object domain maps onto the referential hierarchy, in which case 1^{st} person objects are merged higher than 2^{nd} person objects, or (ii) the head licensing object agreement is sensitive to the referential hierarchy and attracts higher ranking arguments. Investigating these hypotheses is left for further research.

I have shown in sections 5.1 and 5.2 that *v* is sensitive to the referential hierarchy, and I have shown in the present section that object agreement exhibits the same sensitivity and patterns as inverse marking, in some verb classes at least. I conclude that the *v* domain hosts passive morphology, inverse morphology and object agreement. Further research should investigate whether *v* must be split into separate functional layers to account for the variety of morphological items it hosts.

Finally, considering that subject agreement always precedes indicative morphology, and always follows object agreement, and considering that indicative morphology is hosted in C according to the hypothesis I adopted throughout the analysis, subject agreement must be licensed between *v* and C. I have no evidence to determine the exact locus of subject agreement for the moment.

6 Conclusion

In this paper, I have provided a first account of the Ktunaxa functional structure based on the Mirror Principle and supported by the heuristic provided by the USH. I have suggested that the CP domain hosts the complementizer *k* and the indicative morpheme *-i*. I have suggested that verbal obviation is hosted in Infl where it serves to anchor the event denoted in the utterance situation. I have also hypothesized that the distinction encoded in Infl in Ktunaxa is sensitive to whether or not an event is topical, that is, whether it is related to the utterance situation or not. I have shown that the *v* is sensitive to the referential hierarchy and I have provided hypotheses to account for this sensitivity: either heads in the *v* domain attract arguments based on their ranking, or the very configuration of the *v* domain is determined by the referential hierarchy. Based on this property specific to *v*, I have argued that passive morphology, inverse morphology and object agreement are hosted in *v*. Finally, I have argued that subject agreement must be licensed below C and above *v*. I hope that I have provided hypotheses that are fertile enough to support a more in-depth investigation of the syntax of Ktunaxa.

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