Inlocatives in Upriver Halkomelem*

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An investigation of the distribution of locative auxiliaries (*i* and *li*) in Upriver Halkomelem reveals a restriction on the occurrence of these auxiliaries: they are prohibited in two contexts: imperatives and clauses that translate as infinitives into English. I propose the term *inlocatives* for these constructions. I propose that locative auxiliaries in UHk serve as the functional equivalent of tensed finiteness in English. I conclude that the structural position hosting auxiliaries is T(ENSE)-based in English but LOC(ATION)-based in UHk. This is consistent with the pervasiveness of the category LOC in UHk on the one hand and the absence of obligatory tense distinctions on the other hand.

1 Introduction

In investigating the distribution of the locative auxiliaries (*i* and *li*) in Upriver Halkomelem (henceforth UHk) we observe that they do not freely occur in all contexts. In main clauses and embedded subjunctive clauses the use of locative auxiliaries is always possible (though not obligatory); in imperatives locative auxiliaries cannot be used; in embedded nominalized clauses locative auxiliaries trigger an interpretation which is significantly different (in a sense to be defined) than the interpretation of the corresponding clause without the auxiliary.

I argue that this asymmetry in the distribution of auxiliaries reflects a distinction akin to the distinction in English between tensed (finite) and infinitival clauses: locative auxiliaries are used in contexts where English uses tensed finite clauses; they cannot occur in contexts where in English infinitives are used. This parallelism between tensed finiteness and the use of locative auxiliaries suggests that locative auxiliaries serve the same function as inflectional tense (and thus finiteness) in English: they anchor the reported event to the utterance (or some other salient reference situation) (Enç 1987, Ritter and Wiltschko 2005). In order to capture this generalization, I introduce the term

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inlocatives. Infinitives and inlocatives are interpreted as unanchored to the utterance. As a consequence, they cannot be judged true or false (Portner 1997).

The functional identity between *locative* auxiliaries and *tensed* verbs suggests further that they instantiate the same category, which I assume to be INFL. I argue, however, that Halkomelem differs from English to the effect that INFL anchors events via LOCATION (henceforth LOC) and not via time. In other words, in a LOC-based INFL system, finite clauses assert where the event took place w.r.t. the utterance location; while in a TENSE-based INFL system (like English) finite clauses assert when the event took place w.r.t. utterance time (cf. Ritter and Wiltschko 2005).

The paper is organized as follows. In section 2, I discuss the distribution of locative auxiliaries. In section 3, I give a preliminary formal analysis that captures this distribution within the framework of the Principles & Parameters approach (Chomsky 1981, 1995, and subsequent work). In section 4, I provide independent motivation for the claim that auxiliaries in UHk are indeed LOC-based. I also show that the use and choice of auxiliaries in UHk (in contrast to English) is not sensitive to temporal notions (such as tense and dynamicity of events). And section 5 concludes.

2 The distribution of locative auxiliaries

It is well-documented in the relevant literature that Halkomelem has a set of commonly used auxiliaries. These divide into so called locative auxiliaries[1] (*í* and *lí*) and directional auxiliaries (*mí* and *lám*). [2] Relevant examples are given below:

(1) a. **í** qw'eyílex tú-tl'ò
AUX dance DET-3INDEP
'He was dancing'

b. **lí** qw'eyílex tú-tl'ò
AUX dance DET-3INDEP
'He was dancing.'

That auxiliaries are category distinct from main verbs is shown by the fact that auxiliary verbs can co-occur with main verbs (1). Furthermore, auxiliary verbs differ from main verbs in terms of their distribution. Auxiliaries obligatorily precede main verbs as shown in (2).

(2) a. *qw'eyílex **í** tú-tl'ò
dance AUX DET-3INDEP

[1] When they function as main verbs they are called 'demonstrative' in Galloway (1993: 358). I adopt Suttles' term 'locative auxiliaries' (Suttles 2004: 35) instead, since the categorial content 'locative' plays a crucial role in my analysis.

[2] In this paper, I only deal with the locative auxiliaries. The distribution of directional auxiliaries is significantly different, as I will mention when appropriate.

b. *qw'eyílex **lí** tú-tl'ò
dance AUX DET-3INDEP

Finally, auxiliary verbs do not undergo several morphological processes that are attested with main verbs: "no continuative, imperative, participle, passive or pluralizing inflection is possible with these [auxiliary; MW] verbs" Galloway (1993: 358).

This much establishes that there is an identifiable class of verbal elements which can be analyzed as auxiliaries (cf. also Galloway 1993, Suttles 2004). In this paper, I will take for granted their categorial identity as auxiliaries.

There remains the question, however, as to what the function of these auxiliaries is. This is a non-trivial question because locative auxiliaries do not directly translate into English (see also Galloway 1993). Thus, we want to know what role they play in the grammar of UHk.

To find out, it is revealing to examine their distribution in more detail. We start with a discussion of main clauses (§2.1) and then turn to embedded clauses (§2.2).

2.1 Locative auxiliaries in main clauses

In UHk, there are two locative auxiliaries *í* and *lí* (with cognates *ʔi* and *niʔ* in Musqueam). These auxiliaries can occur in initial position of a matrix clause (see (1) above), but in UHk they are not obligatory in any obvious way:

(3) a. qw'eyílex tú-tl'ò
dance DET-3INDEP
'He is dancing.'
b. tsel qw'eyílex
1SG.S dance
I'm dancing
c. q'óq'ey tú-tl'ò
sick DET-3INDEP
'He was/is sick.'
d. q'óq'ey tsel
sick 1SG.S
'I am sick.'

Within matrix clauses the auxiliary sometimes appears to have a temporal effect. The presence of the auxiliary is often translated as past while the absence of the auxiliary is often translated as present. This interpretational effect is however not obligatory. Sentences without auxiliaries are compatible with a past interpretation:

(4) a. tsel q'óq'ey kw cheláqelh-elh
1SG.S sick DET yesterday-PAST
'I was sick yesterday.'

b. tsel qw'eyílex kw chelaqelh-elh
1SG.S dance DET yesterday-PAST
'I was dancing yesterday.'

In sum, within main clauses, auxiliaries are usually freely available. In fact they are very frequently used in texts. The choice between *í* and *lí* is governed by considerations having to do with the location of the event. In particular, locative auxiliaries encode the "semantic opposition of emplacement ('here' ...) and displacement ('there' ...)" Galloway (1993: 359) [emphasis MW].

The only type of main clause where locative auxiliaries are disallowed is imperatives (Galloway 1993: 359).[3] This is true for imperatives formed with the dedicated imperative marker *–lha* as in (5), but also for imperatives with the regular 2nd person matrix subject clitic as in (6). In the latter case, the presence of the auxiliary forces a question interpretation and is not compatible with an imperative interpretation.

(5) a. qw'eyílex-lha
dance-IMP
'Dance.'
b. *lí qw'eyílex-lha
AUX dance-IMP

(6) a. qw'eyílex chexw
dance 2SG.S
'You dance!'
b. lí chexw qw'eyílex
AUX 2SG.S dance
≠ 'You dance!'
= 'Did you dance?'

The impossibility for the auxiliary to occur in the context of imperatives also holds for negative clauses which frequently appear with auxiliaries. Again, while the presence of the auxiliary is possible, it does not allow for an imperative interpretation.

(7) a. éwe chexw qw'eyílex-exw
NEG 2SG.S dance-2SG.SS
'Don't dance.'
b. éwe chexw lí-xw qw'eyílex
NEG 2SG.S AUX-2SG.SS dance
'You wasn't dancing.'
≠ 'Don't dance.'

[3] The directional auxiliaries are well-formed in imperatives.

We have now established that auxiliaries can freely occur in main clauses except in the context of imperatives. It appears that its function is to serve as a host for subject clitics and to provide some spatial information. This concurs Suttles' (2004) analysis: "[t]he auxiliaries serve as pegs on which to hang subject [...] person markers and non-personal particles. They also serve to set the predicate within a spatial context." (Suttles 2004: 35)

In the next subsection we investigate the distribution of auxiliaries in embedded clauses. We will see that in this context auxiliaries are much more restricted than in the context of main clauses. This leads me to conclude that auxiliaries in Halkomelem serve another function which goes beyond that of a mere "peg" for subject markers.

2.2 Locative auxiliaries in embedded clauses

From a morpho-syntactic point of view, UHk has two types of embedded clauses. They are distinguishable on the basis of the subject-agreement patterns they display. One type of subordination displays so called *subjunctive* subject agreement. Subjunctive clauses are required in the context of conditionals introduced by *we* 'if' as in (8), and in and negative clauses introduced by the negative particle *ewe* as in (9).[4]

(8) xélh cha te-l sqwálewel...
sad FUT DET-1SG.POSS thought
'I'll be sad' (lit.: 'My thoughts will be sad')
a. ...we lhémexw-es
... COMP rain-3SS
'if it rains'
b. ...we **lí**-s lhémexw
...COMP AUX-3SS rain
'if it rains'

(9) a. éwe tsel q'óq'ey
NEG 1SG.S sick
'I'm not sick.'
b. éwe tsel **lí**-l q'óq'ey
NEG 1SG.S AUX-1SG.SS sick
'I'm not sick.'

We conclude that subjunctive clauses behave similarly to main clauses: locative auxiliaries are possible, yet not required.

Another type of subordination requires nominalizing morphology, which in turn goes along with possessive agreement in place of subject agreement. Such clauses are introduced by a determiner (*kw*) which functions

[4] There are reasons to analyze negative clauses as not involving subordination (see Wiltschko 2002; but see Davis 2001, 2005 for a different view). In the context of the present discussion it is irrelevant whether negation involves subordination or not.

like a subordinator (i.e., a complementizer). This pattern is exemplified below with the predicate *iyólem* ('all right', often translated with the English modal 'can') and *stl'í* ('want'), respectively.

(10) a. u iyólem kwe-l-s qw'eyílex
EMPH all.right DET-1SG.POSS-NOM dance
'I can dance.' (lit.: 'It's allright that I dance.')

b. u iyólem kw-a'-s qw'eyílex te-léwe
EMPH all.right DET-2SG.POSS-NOM dance DET-2SG.INDEP
'You can dance.' (lit.: 'It's allright that you dance.')

c. u iyólem kw-s-es qw'eyílex tú-tl'ò
EMPH all.right DET-NOM-3POSS dance DET-3.INDEP
'He can dance.' (lit.: 'It's allright that he dances.')

(11) a. l stl'í kw-el-s qw'eyílex
1SG.POSS want DET-1SG.POSS-NOM dance
'I want to dance.' (lit.: 'My want is that I dance.')

b. lí a stl'í kw-'a-s qw'eyílex te-léwe
AUX Q want DET-2SG.POSS-NOM dance DET-2SG.INDEP
'Do you want do dance?'

c. stl'i kw'-s-es qw'eyílex tl' Strang
want DET-NOM-3POSS dance DET.OBL Strang
'Strang wants to dance.'

This type of subordination is used in a wider range of environments including "'can', 'can't', 'want', 'think, feel emotionally', infinitives, verbs after question words, and verbs following and dependent on the first verb in a sentence." Galloway (1993: 181).

So far we have seen that the use of locative auxiliaries appears to be optional (with the exception of imperatives) without any significant difference in meaning. While the same kind of optionality is still present in some nominalized clauses, optionality is no longer the general pattern. In this context, the use of auxiliaries is more restricted.

We start with clauses embedded under verbs of saying. These display a similar pattern as matrix clauses in that the use of the auxiliary appears optional without any major change in meaning.

(12) a. tsel xét'e kw Strang kw'-el-s qw'eyílex
1SG.S say DET Strang DET-1SG.POSS-NOM dance
'I told Strang I'm gonna dance.'

b. tsel xét'e kw Strang kw'-el-s lí qw'eyílex
1SG.S say DET Strang DET-1SG.POSS-NOM AUX dance
'I told Strang that I was dancing.'

In contrast, clauses embedded under predicates like *stl'í* ('want'), *iyólem* ('allright'), *skwáy* ('impossible'), *lhqéllexw* (know), and *málqeles*

('forget') display a very different effect. Here the use of the auxiliary yields an interpretation that is significantly different from the interpretation of the clause without the auxiliary. The descriptive generalization that emerges throughout these examples is summarized in (13).

(13) a. In the absence of an auxiliary, the embedded clause is translated with an infinitival clause.
b. In the presence of an auxiliary, the embedded clause is translated with a finite clause.

Consider first clauses embedded under the predicate *stl'í* ('want'):

(14) a. l-stl'í kw-el-s qw'eyílex
1SG.POSS-want DET-1SG.POSS-NOM dance
'I want to dance.'
b. l-stl'í kw-el-s **lí** qw'eyílex
1SG.POSS-want DET-1SG.POSS-NOM AUX dance
'I like it when I used to dance.'

(15) a. a'stl'í kw-'a-s qw'eyílex te-léwe
2SG.POSS-want DET-2SG.POSS-NOM dance DET-2SG.INDEP
'Do you like to dance yourself?'
'Do you want to dance?'
b. a stl'i kw-a-s **lí** qw'eyilex te-léwe
2SG.POSS-want DET-2SG.POSS-NOM AUX dance DET-2SG.INDEP
'You liked it when you used to dance.'

The presence of the auxiliary requires a translation with a finite clause (not with an infinitive). This translation indicates that the event reported in the embedded clause with the auxiliary must have actually happened. While in the absence of an auxiliary this is not so.

The same pattern holds if the matrix predicate is negated.

(16) a. éwe-l stl'í kw-el-s la íkw'[5]
NEG-1SG.POSS want DET-1SG.POSS-NOM AUX lost
'I don't want to get lost.'
b. ewe-l stl'í kw-el-s **lí** íkw'
NEG-1SG.POSS want DET-1SG.POSS-NOM AUX lost
'I didn't like it when I got lost.'
≠ 'I don't want to get lost.'
Speaker's comment: "You must have gotten lost to say this."

[5] Note the presence of the auxiliary *la* in (16). None of the phenomena discussed in this paper hold for this auxiliary. It can occur in imperatives (Galloway 1993: 359) and it does not trigger the same interpretational effect in embedded clauses as *li* does.

Exactly the same pattern is also observed with the other predicates that require a nominalized clause. Here I consider only a few examples. Consider sentences with *iyólem* ('allright').

(17) a. u iyólem kw-el-s qw'eyílex
EMPH allright DET-1SG.POSS-NOM dance
'I can dance.'

b. u iyólem kw-el-s lí qw'eyílex
EMPH allright DET-1SG.POSS-NOM AUX dance
'It's allright if I could dance.'
'It's allright when I used to dance'
'It's allright when I am dancing.'
≠ 'I can dance.'

In the absence of an auxiliary in the embedded clause, *iyólem* is most readily translated with the modal 'can' as in (17a) 'I can dance'. In the presence of an auxiliary however the translation changes significantly. The main predicate is translated as 'It's allright that...', whereas the volunteered translation of the embedded clause differs on different occasions (see (17b)). Note that all these translations involve a finite embedded clause. That this is an interpretational effect which is directly linked to the presence of the auxiliary is shown by the fact that (17b) does not receive the same interpretation as (17a).[6]

The same effect is found with the predicate *lhq'éllexw* ('know').

(18) a. lhq'éllexw-es tl' Strang kw-s t'ílem-s
know-3S DET.OBL Strang DET-NOM sing-3POSS
'Strang knows how to sing.'

b. lhq'éllexw-es tl' Strang kw-s lí-s t'ít'elem
know-3S DET.OBL Strang DET-NOM AUX-3POS sing.CONT
'Strang knows that he could sing.'
'Strang knows that he used to sing.'
≠ 'Strang knows how to sing.'

In the absence of an auxiliary in the embedded clause the sentence gets translated as 'I know how to dance.' while in the presence of the auxiliary this interpretation is not available. Rather the speaker offered two significantly different translations both involving finite complement clauses in English.

Finally, the verb *malqeles* ('forget') shows the same pattern:

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[6] Another predicate that takes embedded nominalized clauses skw'áy ('impossible') does not easily tolerate the presence of the auxiliary in the embedded clause and the speaker had difficulties coming up with a translation into English.

i) ?? skw'áy kw-el-s í-lh qw'eyílex te-'é'elthe
impossible DET- 1SG.POSS-NOM AUX-PAST dance DET-1SG.INDEP
EH's attempted translation : 'I can't used to dance before.'

(19) a. tsel málqeles kw-el-s t'ít'elem
1SG.S forget DET-1SG.POSS-NOM sing.CONT
'I forgot how to sing.'

b. tsel málqeles kw-el-s lí t'ít'elem
1SG.S forget C-1SG.POSS-NOM AUX sing.CONT
'I forgot that I used to sing.'
≠'I forgot how to sing.'

Finally, for completeness we note that locative auxiliaries are freely available in relative clauses, which is of course expected given that they are finite in English.

(20) tsel kw'éts-l-exw te swíweles ...
1sg.s see-trans-3o det boy
'I seen the boy...

a. ... kw-s t'it'elem kw cheláqelh-elh
DET-NOM sing.CONT DET yesterday-PAST
... that was singing yesterday.'

b. ... kw-s lí t'it'elem kw chelaqelh-elh
DET-NOM AUX sing.CONT DET yesterday-PAST
... that was singing yesterday.'

2.3 Summary

The locative auxiliaries *i/li* can freely be used in main clauses (except in imperatives), in embedded subjunctive clauses, in clauses embedded under verbs of saying, and in relative clauses. In this context the interpretational effect they trigger has to do with the location of the reported event. In another set of embedded clauses, namely the ones embedded under predicates like *stl'i* ('want'), *iyólem* ('allright'), *skwáy* ('impossible'), *lhqéllexw* (know), and *málqeles* ('forget') the use of locative auxiliaries yields a significantly different interpretation: the embedded clause cannot be translated as an infinitive. The generalization that emerges appears to be quite simple.

(21) Clauses with a locative auxiliary are the equivalent to English finite clauses.

This much captures the behaviour of locative auxiliaries in all the contexts we have see so far: main clauses freely allow for locative auxiliaries to be used and they are always finite. Imperatives do not allow for locative auxiliaries and they are not finite in English (see section 3.5). Embedded clauses which either allow or require a finite form in English freely allow for locative auxiliaries (i.e., embedded clauses under verbs of saying and conditionals). But for embedded clauses that typically require an infinitival form in English, the presence of a locative auxiliary forces a finite interpretation. This is responsible for the strong interpretational effect we have observed. Since the absence of a

locative auxiliary in these embedded clauses corresponds to infinitival clauses in English, I will refer to them as **inlocatives**.

To the best of my knowledge this generalization has never been discussed. The closest approximation is found in Kroeber (1999), who states that "It is doubtless not a coincidence that Sq and Hk examples lack auxiliaries in the complement clause; aux would be redundant if aspect and deixis are determined by the matrix predicate." (Kroeber 1999: 174)

It remains to be seen whether this generalization holds in other Salish languages as well.[7] In the remainder of this paper I will present a tentative analysis of the descriptive generalization in (21) and its consequences.

3 The syntax and semantics of Inlocatives

Having established that the use of locative auxiliaries in Halkomelem is functionally equivalent to finiteness in English, we can explore the source of this generalization.

3.1 Theoretical background

Why do locative auxiliaries function as markers of finiteness? To answer this question we need to have an idea about the nature of finiteness. It would go beyond the scope of this paper to do full justice to the literature on the topic (see Cowper 2005; Wurmbrand 2003 for a syntactic approach and Portner 1997 and subsequent work for a semantic approach). For the purposes of this paper I will assume that VPs denote properties in the form of (characteristic functions of) sets of possible situations (Davis and Matthewson 1996).[8] I assume that the property denoted by the VP is turned into a proposition (or a set of propositions) by asserting whether or not (and how) the reported situation relates to the Utterance situation (or some other salient Reference situation). If the reported situation can be related to the Utterance situation, then the situation is instantiated – either in the actual world or in a possible world. This is the essence of finiteness. In English, the reported situation is related to the Utterance situation via the syntactic category TENSE.

I assume a syntactic analysis of TENSE following work by Demirdache and Uribe-Etxebarria (2000), Stowell (1995), Zagona (1990) among others. According to these authors, TENSE is a **temporal predicate of (non-) coincidence** (in the sense of Hale 1986). A sentence in the present tense as in (22)(22a) can be represented as in (23), where present tense corresponds to a predicate of coincidence asserting that the situation time[9] coincides with the utterance time (i.e. it happens *now*).[10] In contrast, a sentence in the past tense, as

[7] According to Davis & Mathewson (1996), in Lillooet Salish it is the nominalizer which serves the function of marking finiteness.

[8] Throughout, I will assume situations instead of 'eventualities'.

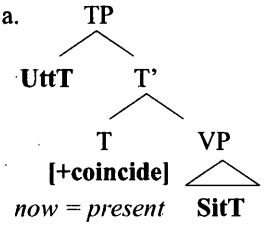
[9] Demirdache and Uribe-Etxebarria (2000) assume an event time argument instead of a situation time argument.

[10] For the purpose of this paper, I abstract away from aspect.

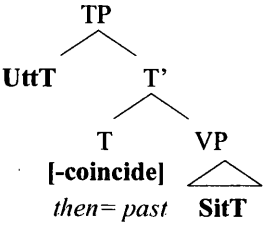
in (23a), can be represented as in (23b), where *past tense* corresponds to a predicate of non-coincidence, asserting that the event time does not coincide with the utterance time (i.e., it happens not now but *then*, which is interpreted as past [11]).

(22) a. Konrad is playing the guitar. b. Mika danced.

(23) a.



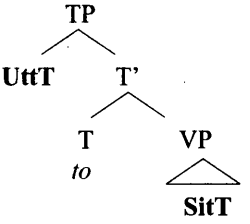
b.



Assuming that infinitives are tenseless (Wurmbrand 2006), it follows that no relation is established between the reported situation and the Utterance. I contend that this is the sole purpose of the infinitival marker *to* in English: it specifically encodes the **absence of a relation between the reported situation time and the utterance time.** Consequently, infinitives continue to denote properties (i.e., characteristic functions of sets of possible situations).

(24) Konrad wants **to** play the guitar.

(25)



Equipped with these assumptions, we can return to our question as to why locative auxiliaries function as markers of finiteness in Halkomelem.

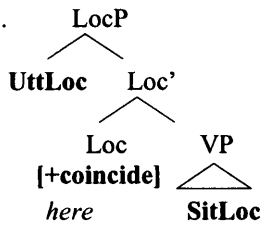
3.2 Locative auxiliaries as markers of finiteness

In English, finiteness manifests itself via TENSE: a tensed clause is finite; an untensed clause is non-finite. We have seen in section 2, that in Halkomelem locative auxiliaries function as markers of finiteness. I conclude that in Halkomelem, finiteness manifests itself via LOCATION (and not via

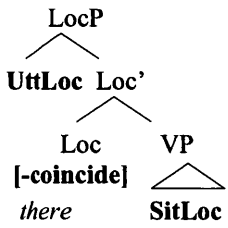
[11] Everything else being equal, non-coincidence between the event time and the utterance time should also yield a future interpretation. We assume, however, that future is more complex in that it introduces a modal component (Enç 1996), which can be interpreted as assertion of non-coincidence between situation world and utterance world.

TENSE). In particular, I propose (following Ritter and Wiltschko 2005) that Halkomelem has a syntactic category LOC(ATION) which serves exactly the same function as TENSE in English: it relates the reported situation to the utterance. But via space, not via time. In particular, I assume that LOC is spatial predicate of (non-)coincidence which relates a situation location to the utterance location (or some other salient reference location):

(26) a.



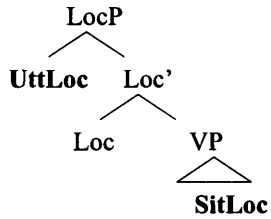
b.



This assumption immediately captures the description of locative auxiliaries found in Galloway (1993) who claims that locative auxiliaries encode the "semantic opposition of emplacement ('here' ...) and displacement ('there' ...)" Galloway (1993: 359) [emphasis MW] as well as that of Suttles (2004) who claims that "They also serve to set the predicate within a spatial context." (Suttles 2004: 35) I will return to this issue in section 4.

We now turn to the inlocatives. Just like infinitives in English are tenseless, I assume that inlocatives in Halkomelem are "locationless". It follows that no relation is established between the situation location and the Utterance location. Consequently, VP's can only continue to denote properties (i.e., characteristic functions of sets of possible situations) in the absence of a locative auxiliary.

(27)



While in English infinitives are overtly marked by means of *to*, I have not found an overt marker for inlocatives in Halkomelem. So the question arises whether it is the absence of a locative auxiliary which serves this function?

3.3 The absence of locative auxiliary does not mark non-finiteness

The fact that (at least in the Upriver dialect of Halkomelem) the use of locative auxiliaries in matrix clauses is optional (see section 2) suggests that the absence of an overt locative auxiliary does not serve as a marker of non-finiteness.

(28) a. qw'eyílex tútl'ò
dance DET-3INDEP
'He is dancing.'
b. q'óq'ey tútl'ò
sick DET-3INDEP
'He was/is sick.'

The optionality of locative auxiliaries in UHk finite clauses contrasts with the obligatoriness of tense marking in English finite clauses. This leads us to conclude that Halkomelem has a silent auxiliary. This is consistent with the fact that so called subject clitics can either clitizice to an auxiliary, or to the main verb but they can also appear in sentence-initial position, apparently not cliticizing to any host.

(29) a. álhtel-tsel
eat-1sg.s
'I'm going to eat.'
b. Lí-tsel álhtel
AUX-1SG.S eat
'I ate.'
c. ∅ tsel álhtel
1 SG.S eat
'I ate.'

The postulation of a ∅ locative auxiliary which serves as the marker of finiteness in (29c) is consistent with the fact that the clitic-initial word order tends to receive a past interpretation (Bar-el et al. 2003, Galloway 1993) just like the sentence with an overt auxiliary. In contrast, the verb-initial order receives a future interpretation (see Bar-el et al. 2003). In Bar-el et al. (2003), it was suggested that this future interpretation is a function of verb-movement. The current analysis allows to understand this pattern in a different way. If the verb in (29b) moves to LOC (and further to C), then there cannot be a locative auxiliary in LOC.

(30) a. [$_{CP}$ [*lí* *tsel*] [$_{Loc}$ ~~*lí*~~ [$_{VP}$ *alhtel*]]]
b. [$_{CP}$ [*alhtel* *tsel*] [$_{Loc}$ ~~**alhtel**~~ [$_{VP}$ ~~*alhtel*~~]]]
c. [$_{CP}$ [∅ *tsel*] [$_{Loc}$ ~~∅~~ [$_{VP}$ *alhtel*]]]

At this point of the analysis there are three structural configurations that can lead to the absence of an overt auxiliary: LOC can remain unfilled yielding an inlocative interpretation (akin to infinitives). LOC can be occupied by the verb (via V to LOC movement), yielding a future interpretation. And finally, LOC can be occupied by a zero auxiliary yielding a *past* interpretation (see section 4.2 for discussion):

(31) a. $[_{Loc}$ V] = future interpretation
b. $[_{Loc}$ ∅] = past interpretation
c. $[_{Loc}$] = inlocative interpretation

How can one tell the difference between the representations in (31)? While verb-movement (the configuration in (31a)) can be detected through the distribution of subject agreement morphology, the difference between the presence of zero morphology (as in (31b)) and absence of any morphology (31c) appears impossible to detect. In addition, it is not clear as to how the absence of morphology could be associated with an interpretation at all. Consequently, we should exclude the configuration in (31c). If these considerations are on the right track, then we are left with the pattern in (32). But then, how do we account for the inlocative interpretation?

(32) a. $[_{Loc}$ V] = future interpretation
b. $[_{Loc}$ ∅] = past interpretation
c. ? inlocative interpretation

Could the inlocative interpretation be a result of the absence of the category LOC? Are inlocatives truncated VP's (in the sense of Wurmbrand (2003)?

Assuming that "truncation from the middle" is impossible (Wurmbrand 2003), LOC must be present since all inlocatives are introduced by a subordinated (the determiner *kw*). Consequently, inlocatives cannot be bare VP's.

At this point I can only provide some speculations to address the question as to how the inlocative interpretation is achieved. This is the purpose of the next subsection.

3.4 V to LOC movement marks inlocatives

Suppose the inlocative interpretation arises via V to LOC movement. This would imply that the future interpretation is a special case of the inlocative interpretation.

(33) a. $[_{Loc}$ V] = inlocative (including future) interpretation
b. $[_{Loc}$ ∅] = past interpretation

Is there evidence that that the verb undergoes V to LOC movement in the context of inlocatives? Evidence to this effect stems from the distribution of the possessive agreement morphology we find in the context of inlocatives. Possessive morphology within nominal and clausal phrases is not uniform: some endings are suffixed to the possessed noun while others are suffixed to whatever word precedes the possessed noun.

Add onto	Word preceding noun	Noun	Example
1sg	-l		te-l má:l - *my father*
2sg	-'		te-' má:l - *your father*
3sg/pl		-s	te má:l-s - *his/her father*
1pl		-tset	te má:l-tset - *our father*
2pl	-'	-elep	te' má:l-elep - *your father*

Table 1: Distribution of possessive morphology (Galloway 1993)

Suppose that possessive morphology is associated with a syntactic head (cf. Davis and Wiltschko 1999). If so, it follows that suffixation of the possessive morphology to the verb indicates verb movement. Indeed, with the right person combination we find evidence for V-movement in the context of inlocatives: with 1st plural, 2nd plural and 3rd person subjects possessive morphology is attached to the verb.

(34) a. lí a stl'í-elep kw-s qw'eyílex-**elep**
AUX Q want-2PL.POSS DET-NOM dance-2PL.POSS
'Do you folks want to dance?'

b. a'a. stl'í-tset kw-s qweyílex-**tset**
yes want-1PL.POSS DET-NOM dance-1PL.POSS
'Yes. We want to dance.'

(35) lhq'éllexw-es tl' Strang kw-s t'ílem-**s**
know-3S DET.OBL Strang DET-NOM sing-3POSS
'Strang knows how to sing.'

While from this pattern we can infer that the verb undergoes some movement in the context of inlocatives, we cannot be sure that the verb does indeed move all the way to LOC. This is because, the 1st and 2nd plural possessive agreement endings can never appear on the auxiliary.[12]

(36) a. *éy-stexw-tset kw-s lí-**tset** qw'eyílex
good-CAUS-1PL.S DET-NOM AUX-1PL.POSS dance
'We like to dance.'

b. *iyólem kw-a-s lí-**elep** qw'eyílex
allright DET-2-NOM AUX-2PL.POSS dance
'It's allright if you folks dance.'

This suggests that the possessive agreement endings are generated in a position lower than LOC, call it NUM(BER) (see Davis and Wiltschko 1999). This

[12] Interestingly, the 3rd person possessive ending can occur on the auxiliary indicating that it might be generated in a different position than the 1st and 2nd person possessive agreement. Also, the directional auxiliaries differ in this respect in that they can be suffixed by the possessive ending.

would then explain why verbs can be suffixed by these endings but auxiliaries cannot, since they are base-generated in LOC, which in turn is higher than NUM.

(37) [LOC Aux [NUM [-elep] [V ...]]]

Note in passing that there is no principled reason that the possessive ending would have to be attached to the "thing possessed" i.e, the noun or the verb since we know from nominal possession that it can attach to an emphatic possessive element:

(38)
a. iwó:lem te-l **swa** pú:s
playing DET-1SG.POSS own cat
'My own cat is playing.'

b. iwó:lem te-' **swa** pú:s
playing DET-2.POSS own cat
'Your own cat is playing.'

c. iwó:lem te **swa-s** pú:s
playing DET own-3POSS cat
'His/her/their cat is playing.'

d. iwó:lem te **swa-tset** pú:s
playing DET own-1PL.POSS cat
'Our own cat is playing.'

e. iwó:lem te-' **swa-elep** pú:s
playing DET own-2PL.POSS cat
'Your folks' own cat is playing.'

At this point I do not have any more conclusive empirical evidence to the effect that the verb does indeed move to LOC in the context of inlocatives.[13]

Suppose for the sake of the argument that such evidence could be found. Then what does this mean? How can movement itself be associated with an interpretation? Recall that the same function is carried by the overt infinitival marker *to* in English.

It is not uncommon for a certain movement to be associated with a certain meaning (Williams 1997). But if so we have created a problem: inlocatives become indistinguishable from other cases where V moves to LOC. Recall that V-movement is available more generally and triggers a future interpretation. This might in fact turn out to be a virtue of the proposed analysis. In particular, English control infinitives are associated with a future irrealis interpretation (see Landau 2000, Portner 1997, Wurmbrand 2003 inter alia). So suppose that it is V to LOC movement which signals the absence of a relation between the reported situation and the utterance situation. Whether the two

[13] And see Davis (2005) for evidence against Verb movement in Lillooet altogether.

apparent readings do indeed reduce to one and the same abstract future-oriented or irrealis reading is left as a question for future research.[14]

3.5 V to LOC movement in Imperatives

Thus far I have argued that the absence of an overt locative auxiliary is structurally ambiguous. It can indicate V to LOC movement or instead indicate the presence of an empty auxiliary:

(33) a. $[_{Loc}$ V] = inlocative (including future) interpretation
b. $[_{Loc}$ ∅] = past interpretation

Recall from section 2 that overt locative auxiliaries are excluded in the context of imperatives. How can we understand this property in the context of the proposal developed in this section? Does the obligatory absence of a locative auxiliary indicate V to LOC movement, or else the presence of a zero auxiliary?

There is evidence that the former analysis is on the right track. We observe that in imperatives that contain subject clitics, the clitic necessarily follows the verb:

(39) a. t'ílem chexw
sing 2SG.S
'Sing.' Lit.: 'You sing.'
b. chexw t'ílem
2SG.S sing
'You were singing.'
≠ Sing! (cannot be used as a command)

We have argued that only the clitic initial form can contain a ∅ auxiliary. If so, then the sentence in (39), which functions as a command, cannot contain a ∅ auxiliary. This leaves us with the second option, namely that there is V to LOC movement in imperatives. Moreover, I have argued that V to LOC movement signals the absence of a relation between the reported situation and the utterance situation. Is there evidence that this is true in imperatives as well? Indeed it has been argued on independent grounds that imperatives denote properties (Hausser 1980, Portner 1997). This is consistent with the present analysis and suggests that a unified account for imperatives, inlocatives and clauses where a future interpretation is signalled by V movement is indeed plausible. I will have to leave the semantics of such an analysis for future research.

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[14] If this approach is on the right track, we would expect that English also uses its infinitival marker to express future irrealis. That this might indeed be so is shown by a certain kind of exclamatives:

i) Oh to see him again!

Notice also that V-movement is not the only way of expressing future in UHk. There is a dedicated temporal morpheme *cha* which fulfills this function unambiguously.

3.6 Summary

In this section I have developed a preliminary formal syntactic analysis for the empirical generalization established in section 2, repeated here for convenience:

(40) Clauses with a locative auxiliary are the equivalent to English finite clauses.

In particular, I have argued that the absence of a locative auxiliary in UHk can have two different sources. It is either derived by V to LOC movement (as in (33a)) or else by the presence of an empty locative auxiliary (as in (33b)).

(33) a. $[_{Loc}$ V] = inlocative (including future) interpretation
b. $[_{Loc}$ ∅] = past interpretation[15]

Further, I have argued that the purpose of LOC in Halkomelem is to establish a relation between the reported situation and the utterance situation. The function of V to LOC movement is akin to the infinitival marker in English which asserts that there is no such relation to be established. The result is that a clause where V to LOC movement took place is interpreted as a property (of situations) rather than as a proposition.

What remains to be established is that the relevant category is indeed LOC (as opposed to TENSE) and if so, whether it replaces TENSE or whether LOC and TENSE co-occur.

4 Auxiliaries in a LOC-based INFL-system

Up to this point, I have shown that the use of auxiliaries requires a finite interpretation of the clause it occurs in. We have, however, not seen any evidence that the core meaning of these auxiliaries is indeed locative. This is an important point to make, since finiteness in English is closely tied to TENSE. So if finiteness in Halkomelem is tied to LOCATION this would constitute a significant source of cross-linguistic variation. In this section, I show evidence that the Halkomelem auxiliaries encode LOCATION. This contrasts with auxiliaries in English, which interact with the tense system of the language.

4.1 Locative auxiliaries can be used as locative main verbs

Clear evidence that the auxiliaries under investigation are indeed spatial in nature stems from their use as main verbs. If so used, they are

[15] My most recent fieldwork has lead me to suspect that the ∅ auxiliary in UHk might have replaced *i* which no longer appears to be as productive as *li*. It appears to be exclusively used in subjunctive clauses and with a suffixed *–lh* (past) but not otherwise. Whether this is indeed accurate still needs to be verified in further fieldwork, which for reasons of time cannot be included in this paper.

unambiguously translated as spatial (rather than temporal) predicates. *lí* translates as *there* while *í* translates as *here.*

(41) a. lí tsel te lálem *Upriver Halkomelem*
LOC 1SG.S DET house
'I was over at the house.'
b. í tsel te lálem
LOC 1SG.S DET house
'I'm here at the house.'

(42) Q: li ew í kw Jared ?
AUX FOC LOC DET Jared
'Is Jared here?'
A: éwe lís í
NEG AUX-3S LOC
'No he's not here.'

(43) a. ʔi ʔi *Downriver Halkomelem*
AUX be.here
'He's here.'
b. ni niʔ
AUX be.there
'He's there.' (Suttles 2004: 38)

Similarly, the same forms (*í* and *lí*) can also be used as locative prepositions:

(44) a. kw'áts-et-es [lí kwtha lálem]$_{PP}$
see-TRANS-3S LOC DET-2SG.POSS house
'He saw it in your house.'
b. le lhókw' te móqw [i te-l chichelh-ólwelh]$_{PP}$
AUX fly DET bird LOC DET-1SG.POSS high-body
'The bird flew over me'

(45) a. tsel skw'etaxw lí te lálem
1SG.S be.inside LOC DET house
'I'm in the house.'
b. tsel skw'etaxw í te lálem
1SG.S be.inside LOC DET house
'I'm in the house.'

According to the present analysis, *í* and *lí* are interpreted as predicates of spatial (non-)coincidence regardless of whether they are used as auxiliaries, prepositions or main predicates. The core meaning of *í* and *lí* is indeed spatial, and not temporal. It remains to be see whether the core meaning of these forms

remains spatial even in their use as auxiliaries. I address this question in the next subsection.

4.2 Auxiliary selection is based on Location

Let us assume the simplest analysis, namely that *i* and *li* receive a spatial interpretation in all of their instantiations (main verb, preposition, and auxiliary). This hypothesis is challenged by the fact that the use of the auxiliary (at least sometimes) seems to convey a temporal interpretation. Recall the pattern of interpretation we have identified in section 3, repeated here for convenience:

(46) a. $[_{Loc}$ V] = inlocative (including future) interpretation
b. $[_{Loc} \varnothing]$ = past interpretation

Why would the empty auxiliary convey a temporal interpretation if INFL and auxiliaries are LOCATION based? I argue that the so called *past* interpretation of (46b) is better analyzed as a *there*-interpretation: the temporal effect is analyzed as a by-product of the spatial interpretation. First, we observe that the context in (46b) (∅ LOC) is compatible with a past AND a present interpretation:

(47) tsel lam
1SG.S walk
'I went.'
'I go.' (Galloway 1993: 176)

I propose that in Halkomelem, $\varnothing_{Loc}$ is associated with a 'present' interpretation, where '*present*' is determined by location (i.e., *here*). Thus, the only constraint associated with $\varnothing_{Loc}$ is that the situation location coincides with the utterance location'. From this we infer whether or not the event happened in the past or present.

As a result of spatial anchoring, information about time can be conveyed as a by-product (Davis and Matthewson 1996, Suttles 2004). Consider the example in (48) discussed in Suttles (2004):

(48) ni? cən c'éw-ət *Downriver Halkomelem*
aux 1sg.s help-trans
'I helped him.' (Suttles 2004: 35)

The speaker must be at the utterance location at the time of the utterance. Since there is a 1st person subject the speaker is interpreted as the agent of the event. The auxiliary *ni?* asserts that the utterance location does not coincide with the event location. Therefore, it must be the case that the helping event took place at a different time, namely in the past. Again, this fits nicely with the view of Suttles who claims that "[t]he auxiliaries *ɨ* 'be here' and *ni?* 'be

there' may appear to refer to time, but [...] this is only because *'the here' is more often 'now' and 'the there' more often 'then'*. (Suttles 2003: 508). In other words, although it is not asserted when with respect to the utterance the event happened. The temporal information can be inferred.

4.3 Locative auxiliaries do not interact with the temporal system

We have now established that Halkomelem auxiliaries directly interact with the spatial system of the language. In this section, I briefly show that auxiliaries in Halkomelem do not directly interact with the temporal system of the language in any direct way.

Let us start by discussing the properties of systems in which auxiliaries interact with the temporal system directly; i.e., systems with TENSE–based INFL. Here, auxiliaries are used to form complex tenses as in (49); auxiliaries are also necessary to encode certain aspectual distinctions as in (50) and aspectual distinctions are defined temporally in English.

(49) a. Konrad played the guitar. = past
b. Konrad **has** played the guitar. = present perfect
c. Konrad **had** played the guitar. = past perfect

(50) a. Konrad plays the guitar. = present
b. Konrad **is** playing the guitar. = present progressive
c. Konrad **was** playing the guitar. = past progressive

Furthermore, in several indo-European languages auxiliary selection is based on argument-structure (cf. Hoekstra 1984, 1999, Burzio 1986). While unaccusative verbs select for BE, unergative verbs select for HAVE.[16]

(51) a. Sie ist angekommen. *unaccusative*
3rd FEM BE.3 arrived.PART
'She arrived yesterday.'
b. Sie hat getanzt. *unergative*
3rd FEM HAVE.3 arrived.PART
'She danced yesterday.'
c. Sie hat ein Buch gelesen. *transitive*
3rd FEM HAVE.3 DET book read.PART
'She read a book.'

Assuming that argument-structure is determined by event-structure (van Hout 1996) this pattern suggests that there is a direct interaction between auxiliaries and event-structure. Since in Indo-European languages, event-

[16] This contrasts with more traditional accounts according to which auxiliary selection is determined by the semantics of the predicate: intransitive verbs expressing a change of place or state take BE, all others take HAVE (cf. Sorace 2000).

structure is defined over the temporal organization of the event we have another phenomenon which indicates a direct relation between auxiliaries and the temporal system.

In contrast, auxiliaries in Halkomelem do not interact with the temporal system directly. Auxiliaries are not used to form complex tenses (see examples throughout this paper). And auxiliary selection is not based on argument-structure:

(52) Island Hk

a. ni? cən t'iləm *unergative*
AUX 1SG.S sing
'I sang.'

b. ni? ləkʷ tə scest *unaccusative*
AUX break DET stick
'The stick broke.' (Hukari 1979: 167, ex 20, 21)

(53) Upriver Hk

a. lí chexw xókw-em *unergative*
AUX 2SG.S bathe-INTRANS
'Did you bathe?'

b. lí chexw kw'ókw'iy *unaccusative*
AUX 2SG.S hungry
'Are you hungry?'

The absence of an interaction between auxiliaries and tense in Halkomelem is expected if this language lacks the grammatical category TENSE (as argued in Wiltschko 2003). However, we have independent motivation for the assumption that LOC fulfills the same function as TENSE in Indo-European (from Inlocatives). We can understand this by assuming that we are in fact dealing with the same abstract category; call it INFL. Aux selection should be interacting with LOC. As shown throughout this paper, auxiliaries in Halkomelem play a significant role in establishing *where* an event took place with respect to the utterance situation. However, given the properties of auxiliaries in TENSE-based INFL languages one might expect that the choice of auxiliary in LOC-based INFL languages might be determined by the inherent spatial properties of the predicate/event. At this point in my research I have no evidence to this effect.

5 Conclusion

I have shown that in Halkomelem the presence of a locative auxiliary triggers a finite interpretation: finiteness is LOCATION-based. This differs from English, where finiteness is TENSE based. Following standard assumptions concerning categorial identity, the complementarity of TENSE and LOCATION in the two language types indicates that TENSE and LOCATION instantiate the same category: INFL.

Matthewson (2002, 2003) points out that the "tenseless" approach to Halkomelem faces the problem as to how the event is related to the utterance (or reference situation). The current proposal directly addresses this problem: events are related to the utterance via LOCATION. At the same time this proposal also captures the pervasiveness of the category LOCATION in the grammar of UHk (see Suttles 2004 for Musqueam Halkomelem). That is, locative auxiliaries are not the only source of anchoring via *location* in the grammar. Similarly, the determiner and demonstrative system obligatorily encode parameters of location thereby anchoring the individual (denoted by the noun) to the utterance (or reference) situation. I speculate that the obligatory encoding of *location* in the nominal domain is a direct consequence of the presence of a LOC-based INFL just like obligatory *structural case* is a direct consequence of the presence of a TENSE-based INFL system.

References

Bar-el, Leora, Gillon, Carrie, Jacobs, Peter, Watt, Linda, and Wiltschko, Martina. 2003. The position of subject clitics and its effect on temporal interpretation in Skwxwú7mesh and Upriver Halkomelem. In *Festschrift for Dale Kinkade*, eds. Donna B. Gerdts and Lisa Matthewson. 8-29.

Burzio, Luigi. 1986. *Italian Syntax: A Government-Binding Approach.* Dordrecht: Reidel.

Chomsky, Noam. 1981. *Lectures on Government and Binding. The Pisa Lectures.* Berlin, New York: Mouton de Gruyter.

Chomsky, Noam. 1995. *The Minimalist Program.* Cambridge: MIT Press.

Cowper, Elizabeth. 2005. The geometry of interpretable features: INFL in English and Spanish. *Language.* 81: 10-46.

Davis, Henry, and Matthewson, Lisa. 1996. Subordinate clauses and functional projections in St'at'imcets. *Papers for the 31st International Conference on Salish and Neighbouring Languages*, Vancouver, BC.

Davis, Henry, and Wiltschko, Martina. 1999. Inflection is syntactic. Evidence from Salish Possessives. Paper presented at *WCCFL*, University of Arizona.

Davis, Henry. 2001. On Negation in Salish. Paper presented at *36th International Conference on Salish and Neighbouring Languages*, Chilliwack, BC.

Davis, Henry. 2005. On the Syntax and Semantics of Negation in Salish. *International Journal of American Linguistics.* 71.1: 1-55.

Demirdache, Hamida, and Uribe-Etxebarria, Myriam. 2000. The primitives of temporal relations. In *Step by Step: Essays on Minimalist Syntax in honour of Howard Lasnik.*, eds. Roger Martin, David Michaels and Juan Uriagereka, 157-186. Cambridge, Massachusetts: MIT Press.

Enç, Myrvet. 1987. Anchoring Conditions for Tense. *Linguistic Inquiry* 18:633-657.

Enç, Myrvet. 1996. Tense and Modality. In *The Handbook of Contemporary Semantic Theory*, ed. Shalom Lappin. Oxford: Blackwell. 172-195.
Galloway, Brent. 1993. *A Grammar of Upriver Halkomelem*. Berkeley, Los Angeles, London: University of California Press.
Hale, Kenneth L. 1986. Notes on world view and semantic categories: Some Warlpiri examples. In *Features and projections*. eds. Pieter Muysken and van Riemsdijk. Dordrecht: Foris. 43-65.
Hausser, Roland R. 1980. Surface compositionality and the semantics of mood. In *Speech Act Theory and Pragmatics*, eds. John Searle, Ferenc Kiefer and Manfred Bierwisch, 71-95. Dordrecht & Boston: Reidel.
Hoekstra, Teun. 1984. *Transitivity. Grammatical relations in Government-Binding Theory.* Dordrecht Foris.
Hoekstra, Teun. 1999. Auxiliary Selection in Dutch. *Natural Language and Linguistic Theory.* 17: 67-84.
Hukari, Thomas. 1979. 'Oblique Objects in Halkomelem', *International Conference on Salish Languages*. Bellingham. 158-172.
Kroeber, Paul D. 1999. *The Salish language family: Reconstructing syntax.* Studies in the anthropology of North American Indians. Lincoln: University of Nebraska Press in cooperation with the American Indian Studies Research Institute Indiana University Bloomington.
Landau, Idan. 2000. *Elements of control: Structure and Meaning in infinitival constructions*. Dordrecht, Boston, London: Kluwer Academic Publishers.
Matthewson, Lisa. 2002. An Underspecified Tense in St'át'imcets. *Proceedings of WECOL.*
Matthewson, Lisa. 2003. On the absence of tense on determiners. *Lingua* 115: 12. 1697- 1735.
Portner, Paul. 1997. The semantics of mood, complementation, and conversational force. *Natural Language Semantics* 5:167-212.
Ritter, Elizabeth, and Wiltschko, Martina. 2005. Anchoring events to utterances without T. Paper presented at *West Coast Conference on Formal Linguistics (WCCFL)*, Vancouver, SFU.
Sorace, Antonella. 2000.Gradients in auxiliary selection with intransitive verbs. *Language* 76: 859-890.
Stowell, Timothy Angus. 1995. The Phrase Structure of Tense. In *Phrase Structure and the Lexicon*, eds. Johan Rooryck and Laurie Zaring. Dordrecht: Kluwer.
Suttles, Wayne. 2004. *Musqueam Reference Grammar.* Vancouver: UBC Press.
van Hout, Angeliek. 1996. Event semantics of verb frame alternations: A case study of Dutch and its acquisition. PhD dissertation, Brabant.
Williams, Edwin. 1997. Blocking and anaphora. *Linguistic Inquiry* 28:577-628.
Wiltschko, Martina. 2001. On the non-universality of TP. Evidence from Halkomelem Salish. Paper presented at *WECOL* 2000, Fresno.
Wiltschko, Martina. 2002. Sentential Negation in Upriver Halkomelem. *International Journal of American Linguistics* 68:253-861.

Wiltschko, Martina. 2003. On the interpretability of Tense on D and its consequences for Case Theory. *Lingua* 113:659-696.
Wurmbrand, Susi. 2003. *Infinitives. Restructuring and Clause Structure.* Mouton: de Gruyter.
Wurmbrand, Susi. 2006. Infinitives: A Future without Tense. Talk delivered at the Jersey Syntax Circle and at WCCFL 25 (Seattle, Washington).
Zagona, Karen T. 1990. Times as Temporal Argument Structure. Ms. University of Washington, Seattle.

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