

The lack of tense as a syntactic category Evidence from Blackfoot and Halkomelem¹

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In this paper we argue that Blackfoot (Algonquian) and Halkomelem (Salish) lack the functional category tense. As a consequence, these languages lack all syntactic and semantic properties of the head tense as well as the phrasal position associated with tense (SpecTP). The analysis which postulates the absence of the functional category tense is contrasted with an analysis whereby tense is universally present but the morpheme inventory associated with T differs cross-linguistically. It is concluded on empirical and theoretical basis that an approach whereby tense is absent fares better. Consequently, it is argued that the inventory of functional categories in a given language is an important source of cross-linguistic variation.

1 On grammatical categories and the absence thereof

It is a common assumption among American Structuralists as well as modern typologists that languages differ with regard to the grammatical categories they express. A case in point is the expression of tense which appears to vary across languages as noted for example by Mithun 1999:

A number of languages contain no grammatical tense categories at all. [...] As elsewhere in the world, languages in North America differ greatly in their tense systems, not only in their inventories of tense categories, but also in the nature of these categories and the uses speakers make of them. Mithun 1999: 152

In this tradition, a common way to make the distinction between the presence and absence of a grammatical category tense is by classifying the

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former as an inflectional and thus obligatory syntactic category and the latter as an optional particle or adverbial category. The importance of the obligatory vs. optional nature of tense marking in determining its classification is emphasized in the following quote from Mithun 1999:

In many languages the systematic specification of tense is obligatory, as in English. In order to speak grammatically, speakers must specify tense in every main clause. In some languages however, speakers have a choice. Mithun 1999: 152

Given this criterion (obligatory vs. optional expression of tense), tense in English can be classified as a grammatical category since every clause must be marked for tense:

- (1) a. I love John. = *present*²
 b. I loved John. = *past*

In this paper we are investigating two languages of North America: Halkomelem (henceforth Hk) a Central Coast Salish language spoken on the Coast of British Columbia (Canada) and Blackfoot (henceforth Bf) a Plains Algonquian language spoken in Alberta (Canada) and Montana (U.S.A.). Both languages significantly differ from English in the expression of tense such that tense does not appear to be an obligatory syntactic category. This is obvious from the fact that unmarked sentences can receive a past or a present interpretation.³

² We are abstracting away from the fact that the simple present tense yields a habitual reading with non-stative predicates. The crucial point is still that the unmarked present tense cannot yield a past interpretation in English:

i) I buy milk (every day). = habitual

³ If not otherwise indicated, all Hk data are from the Upriver dialect. All these data are presented in the official Stó:lō orthography, the key to which is as follows a = æ or e; ch = tʃ, ch' = tʃ', e (between palatals) = i, e (between labials) = u, e (elsewhere) = ə, lh = ɬ, o = a, ð = o, xw = x^w, x̣ = x, y = j, sh = ʃ, th = θ, th' = tθ', tl' = tɬ', ts = c, ts' = c', x = x or x^j, xw = x^w, ' = ʔ, ˘ = high pitch stress, ˘ = mid pitch stress (Galloway 1980 for discussion on this orthography and Galloway 1993 on the properties of stress in Upriver Halkomelem). Abbreviations used are as follows: 1 = 1st person, 2 = 2nd person, 3 = 3rd person, 4 = 4th person, AI = animate intransitive, act = active, aux = auxiliary, caus = causative, comp = complementizer, conj = conjunctive, cont = continuative, dem = demonstrative, det = determiner, dir = direct, dur = durative, ex = exclusive, fem = feminine, foc = focus, fut = future, indef = indefinite, Indep = independent pronoun, intrans = intransitive marker, inv = inverse, neg = negation, nom = nominalizer, o = object, obv = obviative, pass = passive (object) agreement, past = past tense, poss = possessive subject, prox = proximate, pl = plural, poss = possessive agreement, rel = relative, Q = question marker, redup = reduplication, s = subject, sg = singular, ss = subjunctive subject agreement, subord = subordinate, TA = transitive animate, trans = transitive marker.

- (2) a. Yéthe-st-éxw-chexw Hk
 tell-caus-3o-2sg.s
 i) 'You told him.'
 ii) 'You tell him.' (Galloway 1993: 317)
- b. Éy-sth-àlèm
 good-caus-pass
 i) 'I was liked.'
 ii) 'I am liked.' (Galloway 1993: 317)
- (3) a. Kit-ána aasáí'ni-wa Bf
 2-daughter cry-3sg
 i) 'Your daughter cried' (cf. Frantz 1991: 36 (v))
 ii) 'Your daughter is crying'
- b. Nít-sspiy-ihpinnaan
 1-dance-1pl
 i) 'We danced' (cf. Frantz 1991: 36 (x))
 ii) 'We are going to dance'

From a purely descriptive point of view the difference in the expression of tense seems fairly straightforward. However, it proves to be considerably difficult to formalize this generalization in an explanatorily adequate way. In particular, it is not immediately clear how to state the absence/presence of an obligatory grammatical category within the Principles & Parameters framework and its minimalist version (Chomsky 1995) adopted in this paper. There are a number of theoretical possibilities to implement the distinction which have been proposed in recent years. In particular, the absence vs. presence of an obligatory grammatical category can be formalized in either one of the following possibilities.

- i) *The tenseless approach*: Languages differ as to whether or not they project a functional category T(ense) (see Shaer 1992, 1997 for West Greenlandic Eskimo, Wiltschko 2003 for Hk).
- ii) *The universal tense approach*: All languages have the functional category T, but languages differ in the morpheme inventory associated with such a head. There are at least two versions of this analysis:
- ii.a) T can be filled by an empty vague morpheme with an interpretation that subsumes present and past tense (Matthewson 2003 for Lillooet).
- ii.b) T can be filled by an empty expletive morpheme, and the temporal interpretation of the clause is determined contextually (Borer 2004).

The two approaches make rather different empirical predictions: in a language without a functional category T we expect the absence of all properties associated with the head T resulting in differences in the expression of tense.

This much is expected under both approaches outlined above (as well as in the typological approach mentioned at the beginning of this paper), though the nature of the expected differences varies with each of these proposals. However, the absence of tense as a functional category has larger implications. In addition to the absence of the properties associated with the head T, we also expect the absence of all properties associated with the phrasal position immediately dominated by TP (namely SpecTP). The absence of SpecTP has far reaching consequences, since it is commonly assumed that T assigns/checks nominative case in SpecTP and as such SpecTP is assumed to be the position of grammatical subjects. In other words, under the first but not under the second type of analysis we predict that the difference in the expression of tense correlates with absence or presence of the grammatical subject relation, respectively.⁴

In this paper we will explore in detail the empirical and theoretical consequences of the two proposals and we will show that the more radical proposal which posits the absence of tense altogether fares better from an empirical and a theoretical point of view. The paper is organized as follows: in section two we discuss the consequences of the absence of SpecTP; in section three we discuss the consequences of the absence of T; in section four we suggest a preliminary analysis as to how Hk and Bf express temporal relations in the absence of tense; section five concludes the paper.

2 The absence of Spec TP

It is a common assumption within the Principles and Parameters framework that heads are associated with phrasal positions (known as specifiers). Furthermore, it is widely assumed that the specifier position associated with tense (SpecTP) is the position for grammatical subjects. In other words, the grammatical subject relation is not a primitive but a derived notion. Under the assumption that Hk and Bf both lack the functional category T, we predict that these languages will also lack a dedicated position for grammatical subjects. That this is indeed the case has been argued in Wiltschko 2003 for Hk and in Ritter & Rosen 2003, to appear for Algonquian languages. In this section we will review some of the evidence discussed there and introduce additional evidence for this claim. Note crucially that under the assumption that the difference in tense marking reduces to a difference in the morpheme inventory associated with T (as in Matthewson 2002) no such correlation is predicted.⁵ We will show that in both Bf and Hk external arguments do not map onto a grammatical subject position. The result is that, there

⁴ According to a third possibility recently discussed in the literature (Ritter & Rosen 2003, to appear), T is a defective category and as such is not associated with an A-position for subjects. However, they do not discuss a possible correlation between the defectiveness of tense as a category expressing temporal relations and the absence of A-positions.

⁵ Indeed, Matthewson 2003 argues on the basis of Lillooet Salish that such a correlation does not hold. For reasons of space we can not discuss the proposal of Matthewson 2003 in any detail in this paper.

is no nominative case (section 2.1); there are no non-thematic (i.e. expletive) subjects (section 2.2), and there are no derived subjects (section 2.3).

2.1 No feature checking for Nominative Case or EPP

As briefly mentioned above, it is a common assumption that the primary syntactic function of finite T is to assign/check nominative case. This has the effect that in languages that have a syntactic category T, nominative case is found only in tensed clauses:

- (4) a. He_{NOM} saw_{+tensed} a bear.
 b. *I want [he_{NOM} to_{-tensed} see a bear].

Under the assumption that Hk and Bf lack T, we predict that these languages should not show the effects of nominative case. That this is indeed the case has been argued by Wiltschko 2003 for Hk and by Ritter and Rosen 2003, to appear for Algonquian language. For example, neither Bf nor Hk have morphological case, so the form of a full DP appears is invariant in form, regardless of its thematic role or grammatical relation.

- (5) a. Titelem [te swíyeqe] Hk
 sing det man
 ‘The man is singing.’
 b. Kw’éts-l-exw-es [te swíyeqe] [te spá:th]
 see-trans-3o-3s det man det bear
 ‘The man sees a bear.’ (Galloway 1993:41)

- (6) a. Ikaikomimmiiwa nohkówa kitani Bf
 ik-akomimm-ii-wa n-ohkó-wa k-itan-yi
 ??-love-dir-3sg 1-son-3sg 2-daughter-4sg
 ‘my son loves your daughter’ (Frantz 1991: 53 (l))⁶
 b. Otsikákomimmokwa nohkówa otáni
 ot-sik-ákomimm-ok-wa n-ohkó-wa ot-itán-yi
 3-??-love-inv-3sg 1-son-3sg 3-daughter-4sg
 ‘Her daughter loves my son’ (Frantz 1991: 56 (k))

Note in passing that this is even true for Hk independent pronouns:

- (7) a. Lám [thú-tl’ò] Hk
 go det.fem-3Indep
 ‘She goes.’ (Galloway 1993:173)

⁶ Here and elsewhere we have added morpheme-by-morpheme glosses to examples taken from Frantz (1991).

- b. Óxwes-t-chexw [thú-tl'ò]
 give-trans-2sg.s det.fem-3Indep
 'You give it to her.' (Galloway 1993:173)
- c. Kw'éts-l-exw-es [tú-tl'ò] [thú-tl'ò]
 see-trans-3o-3s det-3Indep det.fem-3Indep
 'He sees her.'

Though not conclusive, the absence of a morphological nominative/accusative distinction is consistent with the assumption that there is no nominative case in either Hk or Bf.

2.2 No expletives

The next phenomenon we are considering has to do with the standard Principles & Parameters assumption which states that SpecTP has to be filled. This principle has come to be known as the Extended Projection Principle (EPP). An important consequence of the EPP in English is that SpecTP must always be filled, even in the absence of a thematic argument. In this case a meaningless (expletive) pronoun is inserted:

- (8) a. It is raining
 b. It seems that this sentence has subject.

Assuming that Hk and Bf do not have T and consequently no SpecTP, it follows that the EPP cannot be active. As a result, we do not expect there to be expletive subjects. This prediction is indeed borne out. In environments where English requires expletive subjects, both Hk and Bf show no sign of such a meaningless subject:⁷

- (9) a. Lhémexw *Hk*
 rain
 'It is raining.'
- b. Skw'áy kw'-el-s kw'éts-l-exw
 impossible det-1sg.poss-nom see-trans-3o
 'I can't see it.' (lit.: 'It is Impossible that I see it.') Galloway 1993: 181

⁷ Frantz (1991: 23) states that although meteorological verbs in Bf never have an overt subject they trigger 3rd person singular suffix *-wa*:

- (i) a. ksiistoyif-wa b. áisootaawa
 hot-prox rain-prox
 'it's hot' 'it's raining'

Our consultant produced (10)a without *-wa*. This fact might suggest that it is simply a default agreement element that is optional when there is in fact no subject.

- (10) a. áísootaa *Bf*
rain
'It's raining'
- b. Ííkssoka'piiwa otáísootaahsi
iik-soka'pii-wa ot-á-sootaa-hs-yi
very-good-3 3-dur-rain-?
'It is good that it is raining.' Frantz 1991: 111 (e)⁸
- c. Om imitááwa itssípsto'piwa ani náápiwiisi
om(a) imittaa-wa itssipsto'pi-wa ani naapiwiis-(y)i
dem dog-prox sit-prox dem house-obv
'There is a dog in the house' (lit.: 'This dog sits in the house')

The absence of expletive subjects in Bf and Hk is consistent with the assumption that there is no T head and consequently no SpecTP.

2.3 No A-movement

Another consequence of the assumption that T is associated with an obligatorily filled phrasal position, which functions as the grammatical subject has to do with the fact that in the absence of an external argument, sometimes the internal argument (or the external argument of the embedded predicate) is mapped onto the subject position. In the Principles & Parameters framework, this kind of mapping has come to be known as A-movement.

If a language lacks tense as a functional category we predict that there should not be any instances of case- or EPP-driven A-movement. That this is indeed the case has been shown extensively in Wiltschko 2003 for Hk and Ritter & Rosen 2003, to appear for Algonquian. For reasons of space we will not repeat the evidence discussed there. In essence it is shown that both these languages lack passive (involving case-driven A-movement) and raising (to subject) constructions.⁹

2.4 Discussion

The evidence discussed in this section points to the conclusion that both Bf and Hk lack an obligatory position for grammatical subjects: there is no morphological case, which marks grammatical subjects in languages like English. In other words, in languages like English, we find distinct

⁸ Although Frantz (1991: 111) gives the translation in (10)b above, he analyses the embedded clause as the subject of the matrix predicate. Thus, a more literal translation is '[That it is raining] is good.'

⁹ Based on the absence of weak crossover effects, Bruening 2001 claims that Passamaquoddy (Eastern Algonquian) inverse TA verbs are associated with a passive-like A-movement. McRae 2004 shows that Bf shows the same lack of WCO. See Ritter & Rosen to appear for an alternative suggestion to the effect that this is not an instance of A-movement.

morphological encoding for certain arguments and crucially, this marking cannot be captured as a generalization over the highest argument introduced by the verb. This is evidenced by the fact that this position has to be filled even in the absence of a thematic argument (namely by an expletive) and that there are environments where it is not the highest argument of the verb which maps onto this position (namely passive and raising). All of these properties are missing in Bf and Hk and thus we conclude that there is no dedicated position for grammatical subjects. If we adopt the standard assumption that SpecTP is the dedicated position for grammatical subjects then the absence of such a position in Bf and Hk follows directly from the assumption that tense is not a functional category in these languages.

Note that the correlation between the lack of T and the lack of subjects does not follow directly from the traditional typological claim since there is no straightforward way to relate the presence of a phrasal subject position to the presence of a grammatical category tense. Similarly, under the assumption that languages with optional tense marking simply differ in the morphological inventory of tense morphemes, it does not follow that an empty tense morpheme (vague or expletive) should correlate with the absence of a subject position.

Let us assume for the sake of the argument that a certain vague or expletive tense morpheme would indeed be correlated with the absence of a dedicated position for the grammatical subject relation. There are a number of arguments against such an analysis. The first argument has to do with the fact that there is in fact a morpheme expressing past in Hk (namely *-lh* analyzed as a modifier in Wiltschko 2003). Under an analysis whereby Hk has indeed a functional category T, this morpheme would most likely occupy T. This is indeed what Matthewson 2002 assumes for a similar past morpheme in Lillooet Salish – another language with optional tense marking. Since this morpheme appears to be neither vague nor expletive it should follow that its presence forces an active SpecTP. In other words, we might expect there to be a dedicated subject position just in case the past tense morpheme is present. This is however not the case. There is no evidence for nominative case, expletives or A-movement in the presence of an overt past tense marker:

No nominative case in the presence of past tense:

- (11) a. *Í-lh iwólem [te stá:xwelh] Hk*
 aux-past playing det children.pl
 'The children are playing.' (Galloway 1980:41)
- b. *Í-lh kw'éts-l-exw-es [te swíyeqe] [te spá:th]*
 aux-past see-trans-3o-3s det man det bear
 'The man sees a bear.' (Galloway 1993:41)
- (12) a. *Í-lh lám [thú-tl'ò] Hk*
 aux-past go det.fem-3Indep
 'She goes.' (Galloway 1993:173)

- b. Í-lh óxwes-t-chexw [thú-tl'ò]
aux-past give-trans-2sg.s det.fem-3Indep
'You give it to her.' (Galloway 1993:173)
- c. Í-lh kw'éts-l-exw-es [tú-tl'ò] [thú-tl'ò]
aux-past see-trans-3o-3s det-3Indep det.fem-3Indep
'He sees her.'

No expletives in the presence of past tense:

- (13) a. Í-lh lhémexw *Hk*
 aux-past rain
 ‘It was raining.’
- b. Í-lh skw’áy kw’-el-s kw’éts-l-exw
 aux-past impossible det-1sg.poss-nom see-trans-3o
 ‘I can’t see it.’ (lit.: ‘It is impossible that I see it.’)
- Galloway 1993: 181

No A-movement in "passive" in the presence of past tense:¹⁰

- (14) a. Éwe í-lh-s xwemékwath-eth-àl-em
neg aux-past-3ss kiss-trans-1sg.pass-em
'Nobody kissed me.'/'I wasn't kissed.'
- b. Éwe í-lh-s xwemékwath-eth-ò-m
neg aux-past-3ss kiss-trans-2sg.pass-em
'Nobody kissed you.'/'You weren't kissed.'

The assumption that T is always present but is simply not associated with an active subject position if occupied by an empty vague tense morpheme, is simply not supported by the facts. Unexpectedly under this approach, there is no evidence that tense distinctions are grammaticalized in Hk.

The converse argument can be made on the basis of English sequence of tense (SOT) effects. Ogiwara 1996 (among others) has argued that English has a specific rule which deletes a past tense morpheme in embedded clauses resulting in a “tenseless” embedded clause. Note that under the assumption that an empty vague tense morpheme would correlate with the absence of a grammatical subject position one might expect that in English the effects of an obligatory grammatical subject position would be lost in SOT environments. This is clearly not the case as shown in (15). We observe that even under the simultaneous (SOT) reading (i.e. the one that is presumably tenseless) we get effects of nominative case (15b), expletives (15c), and passive (15d):

¹⁰ As is clear from the examples in (14), Hk has a construction which is typically described as passive. However, there is clearly no A-movement to subject position involved as evident from the fact that the agreement with the PATIENT is still object agreement. For further evidence to this effect see Wiltshko 2001.

- (15) a. John said that Mary was pregnant.
 Simultaneous reading: John say (PAST) that Mary \emptyset be pregnant.
- b. John said that she was pregnant. *Nominative*
- c. John said that it was raining. *Expletive*
- d. John said that Mary was being followed by the FBI. *Passive*

We conclude that an analysis whereby the absence of a grammatical subject position in Bf and Hk is correlated with the presence of a vague or expletive tense morpheme cannot be maintained for two reasons: in Hk there is a past tense morpheme which still does not license a grammatical subject position; conversely in English there are contexts with a vague/expletive tense morpheme but nevertheless a grammatical subject position is licensed. Consequently, an analysis whereby T is a universally active projection cannot capture the correlation between the optionality of tense marking and the absence of a grammatical subject position.

3 The absence of T

In this section, we turn to effects that are expected in the absence of a head T. Some (but not all) of the evidence discussed here has been introduced in Wiltschko 2003 for Hk, but in this paper we show that the same arguments can be made for Bf. In addition, we show that the analysis, whereby T can optionally be filled by a vague or expletive morpheme cannot explain the full range of phenomena. In particular, we will argue that the absence of T correlates with the absence of inflectional tense distinctions (section 3.1), the absence of tense dependencies (SOT- effects) (section 3.2), the absence of a copula (section 3.3) and the absence of infinitives (section 3.4).

3.1 No inflectional tense distinctions

For the purposes of this paper, we will assume that tense features are located in T and that the basic tense distinction encoded there is between past and non-past (cf. Cowper 2003). This is illustrated in (16) below:

- (16) [TP [T \pm past] [_{VP} ...]]

In this section we will show that neither Hk nor Bf exhibit such an inflectional contrast.

3.1.1 *Halkomelem*

According to Galloway, “*there is no inflection for the present*” (Galloway 1993: 316) and further that “*present tense is the catch-all tense, used to indicate present action, habitual action, momentaneous action, and past action*” (Galloway 1993: 314; emphasis ER&MW). What this means is that the

absence of overt tense marking is compatible with either a present or a past interpretation:

- (17) a. Yéth-est-exw-chexw
 tell-caus-3o-2sg.s
 'You told him.'
 OR: 'You tell him.'
- b. Éy-sth-àlèm
 good-caus-pass
 'I was liked.'
 OR: 'I am liked.' (Galloway 1993: 317)

This sharply contrasts with English, where the absence of an overt tense marker is in fact interpreted as *present tense* as we saw in (1) repeated below as (18):

- (18) a. I know John. = *present*
 b. I knew John. = *past*

Galloway further mentions that "*inflections for the past are somewhat more complex. The following constructions and inflections are employed for past tense*" (Galloway 1993: 317). The first possibility he mentions has to do with word-order. In particular, he claims that the order clitic-verb (as opposed to the verb-clitic order) receives a past interpretation as shown in (19)

- (19) a. Tsel óxwest
 1sg.s give-trans
 'I gave it.'
- b. Tsel yéthestexw
 1sg.s tell-caus-3o
 'I told him.' (Galloway 1993: 318)

However, as Bar-el et. al, to appear discuss, the past reading of the clitic-verb order is merely a preference and a present interpretation is equally available in this order:

- (20) a. Tsel t'ilem Hk
 1sg.s sing
 i) 'I'm singing.'
 ii) 'I sang.'
- b. Tsel álhtel
 1sg.s eat
 i) 'I'm eating.'
 ii) 'I ate.'

Evidence for the claim that this order is indeed compatible with a non-past interpretation comes from the fact that it is compatible with a temporal adverbial which forces a present or a future interpretation

- (21) Tsel-cha álhtel wáyeles Hk
 1sg.s-fut eat tomorrow
 'I'll eat tomorrow.'

The interpretation of tense morphemes in English cannot be overridden by adverbs. That is, the present tense is not compatible with non-present adverbials whereas the past tense is not compatible with non-past adverbials:

- (22) a. *I love John tomorrow/yesterday
 b. *I loved John now/tomorrow

In order to unambiguously express past tense, speakers of Hk use temporal adverbs:

- (23) a. Lhith lí-s lheq'élexw Hk
 long.ago aux-3s know
 'She knew long ago.'
 b. tsel í:lh tel kwi chela:qel
 1 SG.S eating det yesterday
 'I was eating yesterday.'

However, in addition to the temporal adverbials, there is also a past tense marker *-lh*, (as we have seen in (11)–(14)). However, as briefly mentioned above, this past tense marker does not behave like an inflectional category (contra Galloway 1993) but rather acts like an optional modifier (cf. Wiltschko 2003).

- (24) Í-lh tsel lám
 aux-past 1sg.s go
 'I'm gone.' (Galloway 1993:319)

Evidence that *-lh* is not part of the inflectional tense system, is discussed in detail in Wiltschko 2003. But for convenience, we briefly review some of the evidence. First, as we have already seen, the occurrence of *-lh* is optional, which is not expected from an inflectional category (i.e., the absence of the past marker does not necessarily trigger a non-past interpretation (20)). Secondly, *-lh* can appear on categories other than V, which again is not typical of an inflectional category:

-lh on nouns (cf. Burton 1997):

- (25) a. kwth-el sílá-lh
 det-1sg.poss grandparent-past
 'my late/deceased grandfather'

Galloway 1993: 383

- b. swelmáy-lh
child of **deceased** sibling Galloway 1993: 383

-lh on independent pronouns

- (26) a. Kw'ú-tl'ò-lh
det-3Indep-past
'That was him (**deceased**)' Galloway 1993: 383

- b. Kw'sú-tl'ò-lh
det.fem-3Indep-past
'That was her (**deceased**)' Galloway 1993: 383

-lh on the possessive swa:

- (27) te-l swá-lh kyó
det-1sg.poss own-past car
'my **old/former** car'

-lh on adjectives

- (28) te hikw-elh-el swáqeth
det big-past-1sg.poss husband
'my husband who **used to be** big'

-lh on prepositions

- (29) stetís-elh te stó:lo
near-past det river
'**was** near the river'

In sum, we have seen evidence that Hk does not have an inflectional past/non-past distinction. A similar conclusion can be drawn on that basis of Bf.

3.1.2 *Blackfoot*

The description of Bf tense marking by Frantz (1991) is remarkably similar to the one of Galloway for Hk. Consider for example the following quotes (emphasis ER & MW):

[Past tense] is the most complicated of the tense and aspect morphemes because its discussion involves the area of greatest irregularity in Blackfoot...Past tense may be realized as...[s]**imple absence of both the durative aspect and future prefixes**...For most verbs there is **more than one acceptable way of indicating past tense** on some forms from the agreement paradigm. (Frantz 1991: 35-6)

These properties are not typical of an inflectional category tense. Furthermore, at least two of the strategies that Frantz (1991) lists as marking past

tense do not force a past interpretation but are in fact compatible with a non-past interpretation, as shown in (30) - (32):

- (30) Kit-ána aasái'ni-wa
 2-daughter cry-3sg
 'Your daughter cried' (cf. Frantz 1991: 36 (v))
 OR 'Your daughter is crying'
- (31) Nit-sspiy-ihpinnaan
 1-dance-1pl
 'We danced' (cf. Frantz 1991: 36 (x))
 OR 'We are going to dance'
- (32) Amo aakfi-wa ii-hpómmaa-wa ónniki-yi
 dem woman-prox ??-buy-prox milk-obv
 'This woman bought milk.' (cf. Frantz 1991: 36 (w))
 OR 'This woman is buying milk'

As in Hk, in order to unambiguously express past tense, speakers of Bf must use temporal adverbs (33)-(34).¹¹

- (33) a. Matúnnii aw-ákiiwani pokóón
 yesterday dur-hit ball
 'He was hitting the ball yesterday'
- b. Annóhk aw-ákiiwani pokóón
 now dur-hit ball
 'He is hitting the ball right now'
- (34) a. (a)ná issitsimaan annihk áy-o'kaa'-wa
 dem baby? earlier dur-sleep-prox
 'The baby was sleeping earlier'
- b. (a)na issitsimaan ay-o'kaa'-wa annohk
 dem baby? dur-sleep-prox right.now
 'The baby is sleeping right now'

This much establishes the absence of a morphological tense distinction which expresses a simple past/non-past contrast. This is of course expected under the assumption that Bf and Hk lack a dedicated head for tense. Next we look at SOT effects, which further support our conclusion.

¹¹ Frantz (1991) translates all examples with the durative prefix as non-past, but as (33) and (34) illustrate, a past time interpretation is possible. Moreover, a past tense interpretation is obligatory in the context of *matúnni* 'yesterday/the day before'.

3.2 No tense dependencies: Sequence of tense effects

It is a well-known fact about English, that a stative verb in an embedded clause must be specified as [+past], when it is selected by a [+past] matrix verb:

- (35) a. John believed that Mary was/*is lying.
b. John believed that Mary might/*may be lying.

Note that this seems to be a purely morpho-syntactic requirement since modals have to be marked [+past] in this context as well without semantically triggering a past interpretation (35)b. It is furthermore the case that the forced past tense in the embedded clause does not need to be interpreted (i.e. can be expletive). In other words, a [+past] clause embedded under a [+past] matrix verb is ambiguous between a past tense (shifted) and non-past (simultaneous) reading:

- (36) Mary said that she was tired. (Enc 1987: 350 ex. 18)
(i) Simultaneous reading: Time of being tired is at time of saying.
(ii) Shifted reading: Time of being tired is before time of saying

A common denominator of many analyses for SOT-effects is the assumption that its source is a dependency between the two T heads (cf. Adger 2003). If so, we predict for a language without T heads that there cannot be a dependency between T heads and consequently, we expect no SOT effects, neither morphological (i.e. no obligatory past tense marking in embedded clauses) nor semantic (no expletive past tense marking). We further expect that apparent “simultaneous” and “shifted” readings should be equally available since there are no structural/formal temporal dependencies that could be established. These predictions are indeed borne out as we will now show.

3.2.1 *Halkomelem*

There are no morphological SOT effects in Hk. For example, in (37) the matrix clause occurs with the past morpheme *-lh*, nevertheless the embedded clause need not be marked for past tense. And crucially, the embedded clause can still receive the simultaneous and the shifted reading:

- (37) *Í-lh* *xét'e* the Mali...
aux-past say det.fem Mary...
 ...kw'-s-es syémyem kw's spelwálh
 ...comp-nom-3s pregnant det year-past
'Mary said that she was pregnant last year.'
(i) “simultaneous reading”: Time of being pregnant is at time of saying.
(ii) “shifted reading”: Time of being pregnant is before time of saying.

As mentioned above, in the absence of T heads, we expect that apparent simultaneous and shifted readings are not the result of an interpretation triggered

by T but rather are an effect of the absence of T: as far as the temporal construal is concerned, anything goes which is compatible with the temporal adverbials found in the clause (including the past tense marker). This is indeed the case, as shown in (38)-(40) where both readings are always available independent of the presence or absence of the past tense marker (contra Wiltchko 2003):

- (38) Í-lh xét'e the Mali...
 aux-past say det.fem Mary...
 ...kw'-s-es í-lh syémyem kw's spelwálh
 ...comp-nom-3s aux-past pregnant det year-past
 'Mary said that she was pregnant last year.'
 (i) "simultaneous reading": Time of being pregnant is at time of saying.
 (ii) "shifted reading": Time of being pregnant is before time of saying.
- (39) Xét'e the Mali...
 say det.fem Mary...
 ...kw'-s-es í-lh syémyem kw's spelwálh
 ...comp-nom-3s aux-past pregnant det year-past
 'Mary said that she was pregnant last year.'
 (i) "simultaneous reading": Time of being pregnant is at time of saying.
 (ii) "shifted reading": Time of being pregnant is before time of saying.
- (40) Xét'e the Mali...
 say det.fem Mary...
 ...kw'-s-es syémyem kw's spelwálh
 ...comp-nom-3s pregnant det year-past
 'Mary said that she was pregnant last year.'
 (i) "simultaneous reading": Time of being pregnant is at time of saying.
 (ii) "shifted reading": Time of being pregnant is before time of saying.

Similar facts obtain in Bf, with the exception that Bf does not have a past tense marker.

3.2.2 *Blackfoot*

The example in (41) establishes that there are no SOT effects:

- (41) Namyáániwa áwaaniw iksístikoyihk
 na-myaani-wa awaani-w(a) ik-sistiko-yi-hk
 dem-Mary-prox say-prox ??-tired-obv-rel
 'Mary says she is tired'
 'Mary says she was tired'
 'Mary said she was tired'

And again, the temporal interpretation is such that "anything goes" as long as it is compatible with any temporal adverbials involved.¹²

In sum, SOT effects, which are dependent on properties of the syntactic head T are predictably absent in Hk and Bf. Of course this is expected under the assumption that these languages lack T.

3.3 No Copula

In English, a copula verb must be inserted in predicative context:

- (42) I am a woman.

Most analyses of this phenomenon relate the obligatory presence of the copula to properties of T: T must be spelled out. If so, we predict that in the absence of T, Bf and Hk should lack a copula in predicative environments. In this section we show that this prediction is indeed borne out.

In predicative environments, Hk does not make use of a copula verb:

- (43) a. Sháli tsel *Hk*
 woman 1sg.s
 'I'm a woman.'
- b. Swíyeqe chexw
 man 2sg.s
 'You are a man.'
- c. Kw'e lhíhleh sqáqe chexw
 det long.time.ago baby 2sg.s
 'A long time ago you were a little baby.'

The same generalization holds in Bf: in predicative environments, Bf does not make use of a copula verb:

- (44) a. aakíi *Bf*
 woman

¹² The presence of temporal adverbs seems to restrict the interpretations as indicated by the following examples, but more work is needed to confirm this claim:

- (i) Matunnii na-myaani awaani-w(a) ik-sistiko-yi-hk
 yesterday dem-Mary say-prox ??-tired-obv-rel
 'Yesterday Mary said she was tired.'
- (ii) matunnii na-myaani awaani-w(a) ik-sistiko-yi-hk
 yesterday dem-Mary say-prox ??-tired-obv-rel
 [ammohk asksohtsi kaniitatooyii-kssistiko]
 last week
 'Yesterday Mary said she was tired last week.'

- b. Nítaakííyihpinnaan
 nit-aakíí-hpinnaan
 1 woman-1pl.ex
 'we are women.'

(45) a. (n)inaa *Bf*
 chief

- b. Kitáaksinaayi
 kit-yaak-inaa-yi
 2-fut-chief-yi
 'you will be chief'

- c. N-ohkówa áaksinaawa
 n-ohkó-wa yáak-inaa-wa
 1-son-3s fut-chief-3s
 'my son will be chief'

Frantz 1991: 23

In sum, the absence of a predicative copula in Hk and Bf is expected under the assumption that T is absent in these languages. That is, if the sole function of the copula in English is to spell out T, then there simply is no motivation for a copula in Hk or Bf.

3.4 No infinitive

Another property which is associated with the T head in English is that T can be non-tensed (i.e. infinitival). The tensed/non-tensed distinction has well-known effects on the realization of subjects: if T is tensed (for past or non-past), then T can check/assign nominative Case. If however, T is not tensed (infinitival) as for example in certain embedded clauses, then T cannot check/assign nominative:

- (46) a. John wanted [her/PRO to leave]. *to-infinitive*
 b. John saw [her/*PRO leave]. *bare VP*

That the tensed/non-tensed distinction is indeed tied to the T head is further evidenced by the fact that certain complementizers are sensitive to the tensed/non-tensed distinction, which can be expressed as a selectional restriction holding between C and T:

- (47) a. John wanted for/*that her to leave.
 b. John wanted *for/that she left.

If indeed the connection between tense and case depends on the presence of a syntactic head T, then we make the following predictions. First, since Hk and Bf lack T, we expect that they should lack a contrast between infinitival and

tensed verbs. In other words, there should not be any constructions of the type of English infinitives. We further expect that complementizers should not be sensitive to verb inflection (e.g. *that* vs. *for*). In this section, we will show that these predictions are indeed borne out for both Hk and Bf.

3.4.1 *Halkomelem*

It is a striking fact about Hk that there is no tensed/non-tensed distinction (see Galloway 1993). As a result, there are no infinitival constructions of the type found in English.¹³

- (48) a. L-stl'i kw'-el-s t'it'elem
 1sg.poss-want det-1sg.poss-nom sing.redup
 'I want to sing.'
- b. Kw'éts-l-ò-m the Linda kw'-a-s yóyes
 see-trans-2sg.pass-em det Linda det-2sg.s-nom working
 'Linda saw you working.'
- c. Le stl'i-s kw'-el-s kw'éts-lexw the stóles-s...
 aux want-3s det-1sg.poss-nom see-trans det.fem wife-3poss...
 ... kw'e-s thiyeqw-t-s te sáq
 ... det-nom dig-trans-3s det bracken.root
 'He wanted me to see his wife digging fern root.' Galloway 1993: 182

Of course, given that there are no infinitival clauses, it is expected that complementizers cannot be sensitive to such a distinction.

3.4.2 *Blackfoot*

Like Hk, Bf does not show a tensed/non-tensed distinction and as a result, there are no infinitival constructions in this language. Frantz (1991:88) claims that Bf has prefixes "*the equivalents of which in most other languages*

¹³ On basis of examples like (i) Davis & Matthewson 1996 and Matthewson 2003 argue that in Lillooet Salish there are infinitival clauses:

i) lhík-s-kan ku mets-cál
 clear-caus-1sg.s det write-act

'I know how to write.' Matthewson 2003: ex. 28d

Yet, Lillooet behaves like Hk in many other respects such that for example tense marking is optional. This calls into question the proposed analysis whereby the absence of obligatory tense marking and the absence of infinitives have the same source. It remains to be resolved whether the constructions in i) are best analysed as infinitivals of the type found in English or whether they are simply bare VPs selected by the determiner/complementizer *ku*.

would be verbs which take embedded clauses.”¹⁴ These prefixes include the ones listed in (49) with the examples in (50) and (51):

- (49) ohkott- ‘able’
 ssáak- ‘try’
 yaahs ‘like, enjoy/be pleased by’
 iksistt ‘finish’
 mato~oto ‘go to do’
- (50) Nitáyaahsoyi
 nit-á-yaahs-Joyi
 1-dur-like-eat
 ‘I like to eat.’ Frantz 1991: 89
- (51) Áissáaka’po’takiwa
 á-ssáak-a’po’taki-wa
 dur-try-work-3sg
 ‘He is trying to work.’ Frantz 1991: 89

As an alternative, Bf can make use of a biclausal structure, where the verb of the embedded clause belongs to the **conjunctive paradigm**¹⁵

- (52) Nitsiksstaa nááhksoyssi
 nit-ik-sstaa n-ááhk-ôyi-hs-yi
 1-??-want 1-might-eat(AI)-conj-conj
 ‘I want to eat.’ Frantz 1991: 112 (i)

Furthermore, Bf has a construction, which is in many ways reminiscent of English raising, namely so called cross-clausal agreement (CCA):

- (53) Nit-wikIxtaa [n-oxko-wa m-axk-a’po’taki-xsi] no CCA
 1sg-want my-son-3 3-might-work-conj
 ‘I want my son to work.’
- (54) Nit-wikIxtw-a:-wa [n-oxko-wa m-axk-a’po’taki-xsi] CCA
 1sg-want-dir-3 my-son-3 3-might-work-conj
 ‘I want my son to work.’ Frantz 1978: 90 (1-2)

However, these sentences still do not behave like infinitives since the embedded verb retains its inflectional morphology.

¹⁴ Evidence that these are not matrix control verbs stems from the fact that they do not determine agreement morphology (Frantz 1991: 88).

¹⁵ Frantz (1991: 143) analyses *ááhk-* as a non-factive prefix that occurs in embedded ‘wishes’ (his quotes). He notes on that such constructions permit cross-clausal agreement (cf. Ritter and Rosen 2004 and references cited therein for discussion.)

3.5 Discussion

In this section we have seen evidence that Hk and Bf not only lack the syntactic properties associated with the phrasal (A-)position associated with T (SpecT) but also that they lack the syntactic properties associated with the head T: (i) there are no inflectional tense distinctions; (ii) there are no tense dependencies, i.e., SOT effects; (iii) there are no copulas and (iv) there are no infinitives. We have seen that all these properties are expected under the assumption that there is no projection of tense and consequently no syntactic head T in these two languages.

However, we still need to evaluate whether the alternative approach could deal with these facts. Recall that we are comparing the tenseless approach, with the claim that all languages have the functional category T. Under the latter view languages differ in the morpheme inventory associated with T: it can be filled by an empty morpheme with an interpretation that subsumes present and past tense (Matthewson 2002) or, alternatively, T can be filled by an empty expletive morpheme, and the temporal interpretation of the clause is determined contextually (Borer 2004). How do these proposals fare in light of the evidence discussed in this section?

Assuming that there is either a vague morpheme (subsuming a past and present interpretation) or else an expletive morpheme amounts to saying that there are indeed inflectional tense distinctions they just happen to be not detectable due to the vagueness of one of the morphemes. Recall that English makes use of a third distinction encoded in T, namely infinitives often marked by *to*. As we have seen both Bf and Hk lack an infinitival construction. The absence of an infinitive would be a mere coincidence under the universal tense approach, whereas it is expected under the tenseless approach (see also Fn 13). Similarly the absence of a copula verb would be a mere coincidence under the universal tense approach whereas it is expected under the tenseless approach advocated in this paper. Finally, at least in the presence of a past morpheme, which presumably occupies T under the universal tense approach, one might expect SOT effects just like in English, contrary to fact. It is furthermore not clear what exactly the universal tense approach predicts regarding SOT facts in the absence of an overt tense morpheme. However, as we have seen the tenseless approach makes the right predictions. We thus conclude that the tenseless approach is empirically and theoretically superior over the universal tense approach.

4 Expressing temporal notions in the absence of T: Some preliminary remarks

At the end of this paper we will address a problem for the tenseless analysis pointed out by Matthewson 2002, 2003. Her main concern is that an analysis without tense as a functional head poses a learnability problem in two ways. First, if not all languages share the same functional categories, it follows that the functional architecture cannot be universally determined. Consequently,

it has to be established how the child acquires the functional inventory of the target language. Second, the assumption of cross-linguistic variation in the clausal architecture has impact on the syntax-semantics interface and its learnability. In particular Matthewson argues that it is not clear how a reference time could be introduced in a language which lacks T. We start by addressing this second problem.

4.1 The locus of the reference time

Matthewson's 2002 main argument against a tenseless analysis of Halkomelem goes like this. She assumes (following Kratzer 1998) a universally determined compositional semantics along with a Reichenbachian model of tense, which includes an utterance time, a reference time, and an event time. Crucially, she argues that the reference time is introduced by T as a variable over time intervals (Kratzer 1998). The lexical entries of the tense morphemes in T place restrictions on the reference time. For example, *past* picks out a reference time that precedes the utterance time. Assuming that all languages introduce the reference time in T, it would follow that Halkomelem lacking T would also lack a reference time. She then goes on to convincingly show on the basis of Lillooet Salish, that there must be a reference time. We start by replicating Matthewson's argument in Halkomelem. Assume for the sake of the argument that there is no reference time in the following English example from Partee 1973):

(55) I didn't turn off the stove.

If there is no reference time we must assume that there is existential closure over time intervals. If so we expect two (and only two) readings for (55): if existential closure scopes over negation, we get a reading where 'there exists some time at which I did not turn off the stove'. If negation scopes over the existential operator, the reading is that 'there does not exist a time at which I turned off the stove', which means nothing else than that 'I have never turned off the stove'.

- (56) i) $\lambda w \exists t \neg \exists e [\text{turn.off.stove}(e)(w) \ \& \ \text{agent}(I)(e)(w) \ \& \ \tau(e) \subseteq t]$
 ii) $\lambda w \neg \exists t \exists e [\text{turn.off.stove}(e)(w) \ \& \ \text{agent}(I)(e)(w) \ \& \ \tau(e) \subseteq t]$
 Matthewson 2002: ex.14/15

The interpretation which (55) actually has on its most natural reading is that there is a particular time (namely the reference time) at which I didn't turn off the stove. Crucially, the same interpretation is available in Hk where negated sentences even without tense marking refer to a particular time:

- (57) Éwe tsel li-l kwéts-lexw te-wát
 neg 1sg.s aux-1sg.s see-trans det-who
 'I didn't see anyone'. Galloway 1993: 447

On the basis of examples like (57) in Lillooet, Matthewson concludes that there must be T to introduce the reference time.

The main problem we see with Matthewson's argument is the assumption that all languages must introduce the reference time at T. In other words we agree that even in Halkomelem there is a reference time. However, we do not agree that the reference time is necessarily introduced in T. In fact, there is no agreement in the literature as to where this reference time is introduced. Although Stowell 1995, like Kratzer 1988, argues that the reference time is introduced in T, other researchers have argued that T introduces the utterance time (Demirdache and Uribe-Etxebarria 2000, Zagana 1990) and that the reference time is introduced somewhere lower than T. For example Demirdache and Uribe-Etxebarria 2000 argue that the reference time is introduced in aspect whereas Shaer 1992, 2003 argues that verbs already include reference times in their meanings. If so, then T does not introduce the reference time but instead adds extra conditions on it. In fact, there is some evidence that this is even the case in English. Consider for example the following negated imperative:

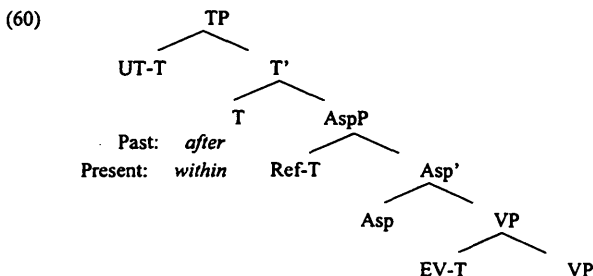
(58) Don't turn off the stove!

It is standardly assumed that imperatives do not contain T (see Giorgi and Pianesi 1997). Nevertheless, the sentence in (58) still has a reference time, i.e. it is interpreted to mean that the addressee should not turn off the stove at a particular time. Another environment where it has been argued that T is absent even in English is that of bare infinitives (Wurmbrand 2003):

(59) I saw John not eating.

Again, despite the absence of a T node, (59) has an interpretation where John was not eating at a particular time. I thus conclude that even for English it is empirically adequate to assume that the reference time is associated with a node lower than T (either aspect or the verb).

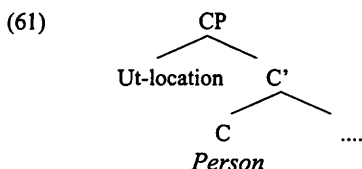
Now, let us assume following Demirdache and Uribe-Etxebarria 2000 that T introduces the utterance time in SpecTP and at the same time establishes a relation between the Utterance Time and the reference time:



According to (60), T has two functions, it serves to **anchor** the clause **temporally** by introducing the utterance time and it serves to establish an **ordering relation among times**. In the remainder of this section we will very briefly and preliminarily consider the means that could serve to anchor utterances and order times in a language without T.

4.2 Spatial anchoring

We propose that in a language which lacks T and which consequently cannot utilize T to anchor an utterance temporally, anchoring proceeds via the functional category C, where person is encoded (see Ritter and Rosen 2003, 2004 for Bf and Wiltschko 2002, to appear for Hk). Assuming that the category person subsumes 1st and 2nd person (Benveniste 1966) amounts to saying that C encodes **Speech Act participants**, which in turn determine speech act (=utterance) **location**.



In other words we propose that instead of utilizing T to anchor the utterance temporally via an utterance time, Bf and Hk utilize C to anchor the utterance spatially via the utterance location. In this section we will discuss some preliminary evidence that this is indeed the case, i.e. that spatial relations can be utilized to express temporal relations.

4.1.1 Halkomelem

For Hk, we just mention the fact that there are auxiliaries with a spatio-deictic component as shown in (62):

(62)	me/mí	'come to
	la/lam	'go to'
	í	'here'
	lí	'there'

Interestingly, in this context, Galloway observes that "*Although all four verbs contain semantic oppositions of emplacement ('here', 'come to') and displacement ('there', 'go to'), these semantic elements are rarely translated.*" Galloway 1993: 359. We suggest that the absence of a translation into English reflects the fact that in English, anchoring proceeds via T (because T is an obligatory syntactic category in English). Consequently, spatial anchoring is not necessary and is thus often avoided.

- (63) a. Tsel la t'ókw'
lsg.s go home
'I went home.'
- b. Tsel me t'ókw'
lsg.s come home
'I came home.'
- (64) a. Lá-tsel-cha máythòme
go-1sg.s-fut help-trans-2sg.o
'I'm going to help you.'
- b. Mí-tsel-cha máythòme
go-1sg.s-fut help-trans-2sg.o
'I'm coming to help you.'

Furthermore, as also mentioned in Galloway 1993, the spatio-deictic component can receive a "temporal" interpretation: "*la and me/mi add an inceptive sense, a directional sense, or a future sense [...] to the VP*" (Galloway 1993: 436).

Evidence that these auxiliaries mainly encode spatial relations (as opposed to temporal relations) comes from the fact that they can be used as (locative) prepositions:

- (65) a. Kw'áts-et-es lí kwtha lálem
see-trans-3s there det-2sg.poss house
'He saw it in your house.'
- b. Le kw'íyeqel lí te tsítsehl
aux climb there det high
'He climbed up high.' Galloway 1993: 340
- (66) a. Le lhókw' te móqw lá te thqát
aux fly det bird go.to det bird
'The bird flew to the tree.' Galloway 1993: 341
- b. Su le kw'áts te swíyeqe lám te skw'echóstel
then aux look det man go.to det window
'and then the man looked through the window'

Though obviously not conclusive, we have shown preliminary evidence to the effect that spatial relations are utilized in encoding temporal relations, which is consistent with the assumption that there is no T in Hk.

4.1.2 Blackfoot

Similarly some auxiliaries in Bf may have a spatio-deictic component as shown in (67):

- (67) a. Iitóómiihkaawa
 ii-oto-omii-hkaa-wa
 ??-go-fish-aquire-3s
 'He went fishing.'
- b. Áákotaapinniwa a'písiyi
 yaak-oto-apinn-ii-wa apísi-yi
 fut-go-adjust(TA)-dir-3s rope-4s
 'He will go adjust the rope.'

Frantz 1991: 89

In addition, Bf *may* lack temporal deixis altogether. For example the Bf word for yesterday (*matúuni*) simply means 'the previous day' (68) but crucially, it is not always used as a deictic expression (69):

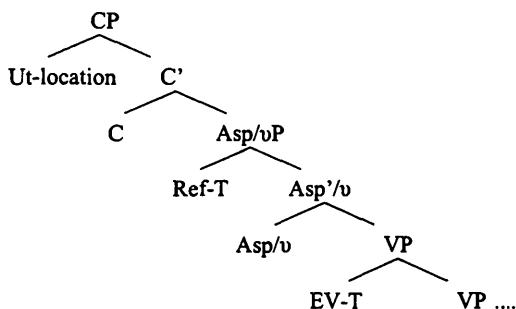
- (68) Nitsinóowa najáán **matúnnii**
 nit-inoo-wa na-jaan(i) matunnii
 1-see-prox dem-John yesterday
 'I saw John yesterday.'
- (69) Namyááni náinooyiwai **matúnnii**
 na-myaani na-inoo-yi-wa-i matunnii
 dem-Mary dem-see-obv-prox-?? day.before
 '(I saw John one day last week and...)
 'Mary saw him the day before.'

We have now established some preliminary evidence to the effect that utterances might be anchored via utterance location which results in the fact that spatial relations are more prominent than temporal relations. We will next turn to the question as to how times can be ordered in the absence of T.

4.3 Mood & Aspect instead of T

As mentioned above, T not only serves to anchor the utterance temporally, it also serves to establish an ordering relation among times (i.e., utterance time, reference time and event time). In the absence of T, it is not immediately clear as to how these ordering relations are established. We have already seen in section 3.1 that temporal orderings can be expressed via temporal modifiers but not all clauses contain such modifiers. Therefore, we tentatively propose that temporal ordering can arise as a byproduct of the interaction between **mood** (in the C-domain) and **aspect** (in the V/v domain), which are both grammatical categories in Hk (see Galloway 1993). Note in this context that Kratzer observes that "*tense, aspect and modality interact in intimate ways so as to fool us about their individual contribution to the temporal properties of sentences*" (Kratzer 1998: 2). With this in mind we can tentatively assume the following clause structure and the distribution of times within that structure.

(70)



In (70), C introduces the utterance location, aspect introduces the reference time, and the verb introduces the event time. In addition, mood (also located in the C-domain) is known to contribute temporal information (see Kratzer 1998). We conclude this section by discussing some preliminary evidence from Hk (discussed in Bar-el et al. 2003) which suggests that temporal effects can indeed be triggered by the interaction of mood and aspect. First, we observe that V to C-movement in Hk triggers a future (= irrealis) interpretation. In (71), the clitic is in C and consequently, the verb preceding C must have moved to adjoin to C (see Wiltschko 2002).

- (71) a. Álhtel-tsel
eat-1 sg.s
'I am going to eat.'
- b. T'ílem-tsel
sing-1 sg.s
'I am going to sing.'

If however the verb appears in its continuative form, a present interpretation is also available showing that continuative aspect overrides the irrealis interpretation triggered by V-movement:

- (72) a. Í:lhtel-tsel
eat.redup-1 sg.s
'I am eating.'
- b. T'ít'elem-tsel
sing.redup-1 sg.s
'I am singing.'

A similar effect is also found in the absence of V-movement (i.e. where the subject clitic precedes the verb). In this case, a present or past interpretation is possible but the past interpretation seems to be the preferred one:

- (73) a. Tsel t'ilem
 1sg.s sing
 (i) 'I'm singing.' (dispreferred)
 (ii) 'I sang.' (preferred)
- b. Tsel álhtel
 1 sg.s eat
 (i) 'I'm eating.' (dispreferred)
 (ii) 'I ate.' (preferred)

However, if the verb occurs in its continuative form we observe the opposite effect namely that the present interpretation is preferred:

- (74) a. Tsel i:lhtel
 1sg.s eat.redup
 (i) 'I'm eating.' (preferred)
 (ii) 'I was eating.' (dispreferred)
- b. Chexw t'it'elem
 2sg.s sing.redup
 (i) 'I'm singing.' (preferred)
 (ii) 'I was singing.' (dispreferred)

In the absence of a formal analysis, this phenomenon is not at all conclusive, however it seems to suggest that temporal effects can indeed arise through the interaction of mood (in C) and aspect (in v/V).

In sum, we have tentatively proposed that temporal anchoring and ordering in the absence of T proceeds via a number of different independently available interacting mechanisms: person in C serves to locate the utterance via speech act participants which are anchored spatially. In addition, temporal relations can be expressed through adverbials as well as an intricate interaction of mood and aspect. A similar proposal has been made for St'at'imcets (Interior Salish) by Davis and Matthewson 1996 who argue that: "*The absence of a distinct functional category of Tense correlates with the fact that temporal reference is encoded only indirectly in St'at'imcets, as a complex function of aspectual class, mood, speaker viewpoint, and spatio-temporal deixis.*" (Davis & Matthewson 1996). An exact formal analysis of this phenomenon has to await further research.

5 Conclusion

In this paper we have shown that tense is not a grammatical category in Bf and Hk. We have seen that there is a simple way to analyze this phenomenon, namely by assuming that there is no projecting category tense in Bf and Hk. From this analysis two clusters of properties can be derived immediately: i) all syntactic and semantic properties associated with the head T are missing and ii) all syntactic and semantic properties associated with the specifier position associated with T (SpecTP) are missing. In contrast, the empirical properties of

both Bf and Hk would not be as easily accommodated under the assumption that these languages do have a functional category T, but it is filled by either an expletive tense morpheme (as in Borer 2004) or alternatively by a vague tense morpheme (as in Matthewson 2002). But of course, there is still an advantage to this latter type of analysis: it allows for the assumption that the hierarchical organization of functional projections is universal and thus innate (cf. Cinque 1999). If we allow for the possibility that certain languages lack tense as a functional category, then the question of learnability arises again. In other words, we need to address the question as to how a child will decide whether or not a language has T.

One way of addressing this issue is by assuming that UG makes available a set of (hierarchically organized) functional categories but that languages do not necessarily make use of them. For the case at hand, this would mean that T is projected only in the presence of sufficient evidence for such a head. We tentatively propose that the following properties, which should be detectable on the basis of primary linguistic data, suffice to postulate the projection of T: i) (abstract) nominative case; ii) A-movement to subject position (passive and raising) iii) infinitives, iv) obligatory tense marking, and v) the possibility for expletive tense marking. Under this assumption the task of language learning reduces to finding out the categories the target language makes use of. Accordingly, variation in the inventory of functional categories can be viewed as an important source of cross-linguistic variation.

We further note that - at least judging from the languages we have looked at - there might be a correlation between the absence of T and the presence of agreement in C. Note, that it is not animacy agreement in C, which is crucial (as Ritter and Rosen 2004 suggest on the basis of Algonquian) because Hk lacks T but there is no evidence for animacy agreement in C. It might however be the case that there is a correlation between person features (and thus agreement) in C and the absence of T, but we will have to leave this question for further research.

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