1. Introduction

1.1 Main proposal

The goal of this paper is to provide evidence for the existence of a future operator inside future-irrealis complements. In Indo-European languages such as Serbian or English, this component is only covertly assumed to exist, and its presence is controversial. We show here that the proposed future operator is overtly manifested in Gitksan (Tsimshianic).

1.2 Background

In English, some nonfinite clauses under attitude verbs are interpreted with future semantics relative to the tense of the matrix predicate (as in (1)); other nonfinite complements are not interpretable as future, as shown in (2).

(1)  
   a. Solange hopes to be in Stockholm next week. (Abusch 2004:27)  
   b. Guido expects Solange to be in Stockholm next week. (Abusch 2004:27)  
   c. Leo decided to bring the toys tomorrow. (Wurmbrand 2014:405)

(2)  
   a. Leo believes Julia to be a princess (*tomorrow).  
      (adapted from Wurmbrand 2014:404)  
   b. John is trying to eat his breakfast right now/ *tomorrow.  
      (adapted from Wurmbrand 2014:438)

* We are very grateful to our Gitksan consultants Vincent Gogag, Hector Hill and Barbara Sennott – ha'miyaa! We would also like to thank Henry Davis, the UBC Gitksan Lab, the UBC Tense and Aspect in the Pacific Lab and the audience at SULA 10. This research was funded by the Social Sciences and Humanities Research Council of Canada (grant #435-2016-0381) and the Jacobs Research Fund of the Whatcom Museum.
Matthewson & Todorović

Abusch (2004) poses the question of where the future semantics comes from in the infinitives in (1). Do the complement clauses perhaps contain a silent element, parallel to the overt will in the finite complements in (3)?

(3)  
   a. Solange hopes that she will be in Stockholm next week.  
   b. Guido expects that Solange will be in Stockholm next week.  (Abusch 2004:28) 
   c. Leo decided a week ago that he will go to the party.  (Wurmbrand 2014:411)

There is a debate in the literature about the answer to these questions. One answer is that the future semantics in embedded clauses like in (1) does come from a covert element inside the complement (Abusch 2004, Wurmbrand 2014, Todorović 2015, 2018, Todorović and Wurmbrand to appear, i.a.). An alternative answer is that the future semantics comes from the matrix verb (Ogihara 1996, Abusch 1997, Pearson 2017, i.a.).

One reason this issue is so debated is that in Indo-European languages, there is no direct evidence to settle the question. Since the proposed future element is covert, indirect evidence for it must be found. Previous analyses (e.g. Wurmbrand 2014, Todorović and Wurmbrand to appear) provide syntactic evidence based on other behavior of the clauses (e.g., the future element is argued to be responsible for the lack of long passive in these clauses in German and in Serbian). Here we will argue that Gitksan provides overt evidence that the future semantics comes from an operator in the embedded clause. We will show that Gitksan overtly marks futurity in all future-interpreted complements via the element dim. We will further show that Gitksan dim has a distribution in complement clauses which closely parallels the environments in which Todorović and Wurmbrand (to appear) postulate a covert future operator in Serbian.

2. Serbian: Todorović and Wurmbrand’s analysis

Wurmbrand (2001 et. seq.) argues that English infinitival complements involve domains of different sizes. The three classes of attitude verbs Wurmbrand proposes for English are given in (4), which also indicates the size of their complement infinitives.

(4)  
   a. Future-irrealis: TP-domain  
      Leo decided/planned/promised/wanted [to eat tofu (tomorrow)].  
   b. Propositional simultaneous: CP-domain  
      Leo claimed/believed [himself to be eating tofu (*tomorrow)].  
   c. Tenseless: vP-domain  
      Leo tried/began/managed/forgot [to eat tofu (*tomorrow)].

Todorović and Wurmbrand (to appear; henceforth T&W) show that in Serbian, the complement clauses in sentences corresponding to (4) can be expressed via (morphologically) finite clauses, as in (5). Nevertheless, there is evidence for a similar classification into three classes of attitude verbs as in English. Based on syntactic evidence like clitic climbing, long passive and adverbal placement, T&W argue that the three classes of attitude verbs in Serbian take complements of different sizes, with the syntax as in (6). ‘AH now’ in (6b) stands for ‘attitude holder’s now’.
**Temporal properties of attitude complements**

(5) a. Jovan je odlučio da čita knjigu. **future-irrealis**  
   Jovan is **decided** DA read.IPV.3.SG.PRES book  
   ‘Jovan decided to read the book.’

b. Jovan je tvrdio da čita knjigu. **propositional**  
   Jovan is **claimed** DA read.IPV.3.SG.PRES book  
   ‘Jovan claimed to be reading the book.’

c. Jovan je pokušao da čita knjigu. **tenseless**  
   Jovan is **tried** DA read.IPV.3.SG.PRES book  
   ‘Jovan tried to read the book.’

(6) **future-irrealis**: want, decide  prop. simultaneous: believe, claim  tenseless: try

The **WOLL** operator in complements to future-irrealis verbs is a futurity operator which places events either after the utterance time, or after some past time (such as the time of deciding in (5a)) (Abusch 1997). T&W use a modal version of **WOLL**; here we adopt a simple non-modal version. As shown in (7), **WOLL** applies to a predicate and a time \( t \) and asserts that the predicate holds at some time after \( t \).

\[
\text{[[WOLL]}}^g_{C} = \lambda P_{<i,ar>}. \lambda t. \lambda w. \exists t' \ [t < t' \land P(t')(w)]
\]

The syntactic configurations in (6) correlate with the temporal properties of the complements. **Want**-type verbs (‘future-irrealis’) obligatorily embed a silent **WOLL**; this accounts for their obligatory future orientation (8a), and the lack of a simultaneous interpretation (8b). **Believe**-type verbs (‘propositional simultaneous’) do not embed a silent **WOLL**, and their complements do not receive a future interpretation without overt marking (8c). However, they can optionally embed overt **WOLL**, which contributes a future interpretation (8d). Finally, **try**-type verbs (‘tenseless’) take an impoverished complement which cannot contain **WOLL**. ‘Try’ complements are interpreted as simultaneous with the matrix reference time, as shown by the contrast in (8e) vs. (8f).

\[\]

\[\]

---

2 We depart from T&W in positing Tense in (6a). Future testing with semantic diagnostics will show whether its absence is motivated in Serbian.

3 The example in (8b) is felicitous under the interpretation where Jovan starts reading the Bible just after deciding to do it, but it is crucially infelicitous under the simultaneous interpretation.

4 For the distribution and role of the element *da* in the complements in (8), see T&W.
Another argument in favor of the structures in (6) has to do with the distribution of the perfective aspect in the different types of embedded clause. Assuming that perfective requires the event time to be included within its time argument (\( \lambda t \) in the denotation in (9)), Todorović (2015) argues that the perfective in Serbian is not available when its time argument is an instantaneous moment. The perfective is only felicitous when a longer time interval is provided (cf. Bennett and Partee 1978, i.a).

(9) \[
[\text{Perfective}] = \lambda P. \lambda t. \lambda w. \exists e [\text{time(e)} \subseteq t \& P(w)(e)] \\
\] (Kratzer 1998)

With propositional simultaneous complements with the structure in (6b), the Attitude Holder’s Now introduces a near-instantaneous interval as the reference time for the embedded present tense, and in turn as the time argument for the perfective. The requirements of the perfective cannot be met due to the short interval, and the perfective counterpart of (8c) is correctly ruled out. With future-irrealis complements, WOLL introduces a second, later, time interval, which is free to be longer than an instantaneous moment. The perfective is correctly ruled in (see Todorović 2015 for details).

An apparent problem for the above analysis is posed by ‘try’ — (6c) seems to suggest that the perfective in its simultaneous complement should be impossible. This is because the time argument for the perfective is dictated by the matrix present tense, which is assumed to be instantaneous. The perfective seems to be incorrectly ruled out:

(10) Pokušavam da prevedem pesmu.
try.1SG.PRES DA translate.PFV.1SG.PRES poem
‘I am trying to translate the entire poem.’
Temporal properties of attitude complements

However, Todorović (2018) argues that there is a way to capture (10). She follows Sharvit (2003), who argues that (English) try introduces both an extensional and an intensional component. The latter carries a presupposition that the event is not fully realized at the time of trying, but continues as part of subject’s beliefs. This component thus extends the relevant time interval forward, and, adopted for Serbian, it accounts for the future continuation of the embedded event and the felicitousness of the perfective in (10). Note an important distinction between future-irrealis and ‘try’ complements: while the event time in future-irrealis complements in (8a) is necessarily fully in the future with respect to the matrix verb, events in ‘try’ complements as in (8e) must already be ongoing at the time of trying.

The above discussion of Serbian (which can largely be extended to English) shows that different classes of attitude predicates embed complements of different sizes, with variations in the complements’ syntax accounting for different temporal properties. However, given that there is only indirect independent evidence for the embedded WOLL in future-irrealis clauses (see Wurmbrand 2014 for English and German and T&W for Serbian), the question arises whether the future semantics stems instead from the matrix verb (Ogihara 1996, Abusch 1997, Pearson 2017, i.a.). Our discussion below shows that this problem does not arise in Gitksan: Gitksan uses overt marking in every environment with future semantics, including future-irrealis complements. Gitksan thus provides a novel contribution to the debate on the locus of future semantics in this environment.

3. The Gitksan temporal system

3.1. Language background and methodology

Gitksan is an Interior Tsimshianic language spoken in the drainage of the upper Skeena River in northwestern British Columbia, Canada. It currently has fewer than 400 first language speakers. The language consists of a chain of dialects. Uncited data in this paper come from original fieldwork with three speakers: Vincent Gogag (from Gitanyaaw (Kitwancool)), Hector Hill (from Gijigyukwhla (Gitsegukla)), and Barbara Sennott (from Ansb'a'yxw (Kispiox)). Readers may notice differences in spelling due to dialect differences; these do not affect our semantic generalizations.

Fieldwork methodologies include elicitation of Gitksan utterances in controlled discourse contexts, translation tasks, acceptability judgment tasks, and storyboard tasks (Matthewson 2004, Burton and Matthewson 2015).

3.2. Temporal system

In Gitksan, there is no subclass of embedded clauses which lack certain inflectional categories. We conclude from this that the language does not possess infinitives; see Hunt (1993) for some discussion. The absence of infinitives does not affect our expectations for classes of complements to attitude predicates; recall that in Serbian also, the relevant complements are finite, yet they show striking semantic similarities with English non-finite complements.

Gitksan lacks overt morphology for past or present tense. Clauses without any temporal marking receive past or present interpretations, as shown in (11a). An adverbial
can disambiguate the interpretation, as in (11b). Importantly, future interpretations in all these examples are excluded.

(11) a. Bax\(=t\) Yoko.
    run\(=\text{DM}\) Yoko
    ‘Yoko ran / is running/ * will run.’  (Jóhannsdóttir and Matthewson 2007)

b. Siipxw\(=t\) James (k'yoots).
    sick\(=\text{DM}\) James (yesterday)
    ‘James was sick (yesterday)’ / ‘James is sick.’  (Matthewson 2013:363)

To obtain future interpretations, it is not sufficient to use adverbials. Instead, an overt marker \textit{dim} must be used:

(12) a. *(\textbf{Dim}) limx\(=t\) James t'ahlakw.
    *(\textbf{WOLL}) sing\(=\text{DM}\) James tomorrow
    ‘James will sing tomorrow.’  (Matthewson 2013:363)

b. *(\textbf{Dim}) siipxw\(=t\) James t'ahlakw.
    *(\textbf{WOLL}) sick\(=\text{DM}\) James tomorrow
    ‘James will be sick tomorrow.’  (Matthewson 2013:363)

We adopt the analysis of Jóhannsdóttir and Matthewson (2007) (see also Rullmann and Matthewson 2018, and Matthewson 2006 for St’át’imcets). There is a covert non-future tense, which licenses present or past readings. We assume that this tense is pronominal, and carries a presupposition that the reference time does not follow the utterance time:

(13) \[
\left\langle \text{\textsc{non-future}} \right\rangle^g_c = \lambda t : t \leq t_c . t
\]

Future readings are obtained when \textit{dim} appears. The denotation of \textit{dim} is exactly the denotation we already gave to \textit{WOLL} in (7), repeated here as (14).

(14) \[
\left\langle \textit{dim} \right\rangle^{g,c} = \lambda P_{<,\text{st}}, \lambda t . \exists t' [t<t' \& P(t')(w)]
\]

Parallel to Abusch’s analysis of English (in which \textit{will} is composed of present tense + \textit{WOLL}, and ‘past-future’ \textit{would} is composed of past tense + \textit{WOLL}), Gitksan dim co-occurs with the non-future tense to give either ordinary future or past-future readings. The denotation of the sentence in (12a) is given in (15) (ignoring the adverbial).

(15) \[
\left\langle (12a) \right\rangle = \left\langle \text{dim}(\text{PFV}(\text{limx}\text{James}))\right\rangle^{g,c} = \lambda w . \exists t' [g(i) < t' \& \exists e [\text{James.sing}(e) \& \tau(e) \subseteq t']]
\]
    ‘There is a time t’ after the salient non-future time g(i), and J. sings within t’.

3.4. \textit{Dim} is overt in Gitksan even where in other languages, \textit{WOLL} is covert

An interesting difference between Gitksan and languages like English or Serbian is that
Temporal properties of attitude complements

Gitksan *dim* is overtly present in every environment where there is future semantics. To illustrate, it is a well-known cross-linguistic phenomenon that root modals are interpreted with future orientation, while epistemic modals do not have to be (Abusch 2012, Thomas 2014, Klecha 2016, Chen et al. 2017, *i.a.*). In English, the future orientation is not spelled out under root modals, and the same debate arises as with complements to attitude verbs: does the futurity come from the modal itself (Condoravdi 2002, *i.a.*), or from a future operator below the modal (Matthewson 2012, 2013, Kratzer 2011, *i.a.*)?

In Gitksan, *dim* is obligatorily present under root modals (16). In contrast, under epistemic modals, it is present if and only if there is future orientation ((17) vs. (18)).

(16) **Sgi** *(dim) (ap) ha’w-s Lisa**
**CIRC.NECESS #(WOLL) (VERUM) go.home-PN Lisa**
‘Lisa should go home.’ (adapted from Matthewson 2013:380)

(17) **Context:** You can hear people hollering, so the Canucks might be winning.
**Yugw=imaa=hl xsdaa-diat.**
**IPFV=EPIS=CN win-3PL.II**
‘They might be winning.’ **PRESENT ORIENTATION** (Matthewson 2013:374)

(18) **Context:** You are watching the Canucks. They might win.
**Yugw=imaa[=hl] dim xsdaa-diat.**
**IPFV=EPIS[=CN] WOLL win-3PL.II**
‘They might win.’ **FUTURE ORIENTATION** (Matthewson 2013:374)

Another environment where Gitksan overtly marks futurity, while English silently conveys it, is purpose clauses, as illustrated in (19).

(19) **Context:** Why did Rosemary come to UBC today?
*’Witxw *nit *(dim) wil hahla’als-t.*
**arrive 3SG.II *(WOLL) COMP work-3.II**
‘She came to work.’
**Consultant’s comment on version without dim:** “Confusion of tenses.”

The above examples show that Gitksan overtly marks future semantics where in English, future meaning is provided covertly. Assuming that this is more generally the case and adopting T&W’s analysis, we predict that in embedded clauses, *dim* will appear as an overt spell-out of the WOLL postulated by T&W for Serbian embedded clauses. In the next section we show that the Gitksan data satisfy these predictions (with an interesting twist when it comes to ‘try’).

---

5 The one known exception to the overtness of future marking in Gitksan is in the antecedent of conditionals. Cross-linguistically, futurity in conditional antecedents is often derived without future morphology. For discussion, see Kaufmann (2005), *i.a*.

6 It is standard for *dim* to precede the complementizer *wil* (Rigsby 1986:280; Tarpent 1987:420); thanks to Henry Davis p.c. for pointing this out. Tarpent hints that this might constitute a mismatch between syntax and phonology. In (23) below we have another ordering puzzle, also brought to our attention by Henry Davis: *dim* would be expected to follow *yukw* (Rigsby 1986:279). Further research is required into this.
4. Predictions and results for Gitksan embedded clauses

T&W’s system predicts that in a language like Gitksan where futurity is always overtly marked, we will see a three-way split between attitude predicates, as laid out in (20).

(20) under ‘want’: obligatory overt future element
under ‘believe’: overt future element iff the belief is about a future eventuality
under ‘try’: no overt future element

In 4.1 we show that the Gitksan data straightforwardly support T&W’s predictions for ‘want’ and ‘believe’. In 4.2 we show that the distribution of the future element in ‘try’-complements provides insight into the semantics of two different ‘try’ predicates.

4.1. Complements of ‘want’ and ‘believe’

First we present data for complement clauses under ‘want’: dim in the complement is obligatory, as predicted. The dim is unambiguously in the embedded clause, as it always appears pre-predicatively (Rigsby 1986:279).

(21) Context: There’s a charity run next weekend. We’re talking about who will run. I ask ‘What about Colin?’
Hasak-t [(dim) bax-t].
want-3.II [(WOLL) run-3.II]
‘He wants to run.’

Future adverbs in these complements are possible, just like with future-irrealis complements in Serbian:

(22) Hasag-a’y [(dim) in eje=hl hon t’ehlekw].
want-1SG.II [(WOLL) 1SG.II eat=CN fish tomorrow]
‘I want to eat salmon tomorrow.’

Second, in complements of ‘believe’, dim is present if and only if the matrix subject’s belief is about a future event. Under the simultaneous interpretation of (23), dim cannot be used, but the future interpretations in (23-24) have dim. If the matrix subject’s belief is about a past event, there is no dim (25). Dim appears with a past event only under the past-future reading in (26), where Colin’s potential running follows the matrix clause past reference time (the time when the speaker saw Colin). Thus, the distribution of dim in these complements is as predicted for WOLL.

(23) Context: I’m looking for Colin. I ask you ‘Where is Colin?’ You reply:
Ha’niiigood-i’y [(dim) yukw=hl bax-t].
believe-1SG.II [(WOLL) IPFV=CN run-3.II]
i. Without dim: ‘I think he is running (now).’
ii. With dim: ‘I think he will run.’
Consultant’s comment on (ii): “He’s just about to start; he’s going to start.”
Temporal properties of attitude complements

(24) *Context: There is a run next week. Will Colin run?*
Ha'niigood-i'y [dim bax-t].
believe-1SG.II [WOLL run-3.II]
‘I think he will run.’

(25) *Context: The run was last week. Did Colin run?*
Ha'niigood-i'y [bax-t gi].
believe-1SG.II [run-3.II PRIOR.EVID]
‘I think he was running.’

(26) *Context: You saw Colin yesterday and it looked like he was getting ready to go for a run. I ask you: ‘What was Colin doing when you saw him?’ You say:*
Ha'niigood-i'y [dim bax-t].
believe-1SG.II [WOLL run-3.II]
‘I think he was going to run.’

4.2. Complements of ‘try’

While complements of ‘want’ and ‘believe’ behave exactly as predicted, complements of ‘try’ carry an interesting twist. English *try* can be translated into Gitksan in two ways: with *si’ix* (also pronounced *six* or *sik’ihl*) or with *bak* (which surfaces as *bag* in prevocalic environments). These two elements have different syntactic properties. *Si’ix* is a ‘preverbal’ (Rigsby 1986:379-380); it immediately precedes an inflected verb and does not itself bear inflection. *Bak* is an inflected verb taking an inflected complement clause; a DP matrix subject can intervene between *bak* and the embedded verb.7

(27) a. *si’ix* schema: [si’ix V+inflection (DP-subject)]
b. *bak* schema: [bak+inflection (DP-subject) [V+inflection]]

In terms of following future elements, *si’ix* is like Serbian ‘try’ in that *dim* cannot appear:

(28) *Context: Colin injured himself before the run. He is stubborn and decides to try anyway. We are watching the race and I spot him trying to run, limping along. I tell you:*
Yukw[=hl] *si’ix (#dim) baxt.*
IPFV[=CN] *try (#WOLL) run-3.II*
‘He’s trying to run.’
*Consultant’s comment: “Si’ix and dim don’t go together.”*

However, with *bak*, *dim* is obligatory in the embedded clause:

---

7 For some speakers, *si’ix* induces ‘passive’ morphology on a following intransitive verb; see Rigsby (1986:379).
Matthewson & Todorović

(29)  
\[ \text{Bag-a-t} \quad [\text{#(dim)} \quad \text{bax-t}] \]
\[ \text{try-TR-3.II} \quad [\text{#(WOLL)} \quad \text{run-3.II}] \]

‘He’s trying to run.’

These data suggest that Gitksan has two try-elements, one with the temporal profile of Serbian try (si’ix) and one with different temporal properties (bak). The challenge now is to tease the semantics of these two ‘try’ elements apart, and provide an analysis which explains why one appears with WOLL and one does not.

4.2.1 Teasing apart si’ix and bak

For a very wide range of contexts, si’ix and bak appear to be essentially interchangeable. Different speakers have different preferences in terms of which one they tend to volunteer, but each speaker accepts the other element in almost every context where trying is involved. For example, our fieldwork has not revealed any difference with respect to the aspectual classes of predicates the two ‘try’ items combine with. There is, however, one clear semantic difference between si’ix and bak: only si’ix is compatible with non-agentive predicates. This is shown in (30-31) for both present and past contexts.

(30)  
\[ \text{Si’ihl} \quad \text{wis-xw.} \]
\[ \text{try} \quad \text{rain-PASS} \]

‘It is trying to rain.’

b.  
\[ \# \text{Bag-at} \quad \text{dim} \quad \text{wis}. \]
\[ \text{try-TR-3.II} \quad \text{WOLL} \quad \text{rain} \]

‘It is trying to rain.’

(31)  
Context: How was the weather yesterday? (Guhl wihl lax ha k’yoote?)

a.  
\[ \text{Si’ix} \quad \text{wis} \quad k’yoote \quad (gi). \]
\[ \text{try} \quad \text{rain} \quad \text{yesterday} \quad \text{PRIOR.EVID} \]

‘It tried to rain yesterday.’

b.  
\[ \# \text{Bag-a-t} \quad \text{dim} \quad \text{wis} \quad k’yoote. \]
\[ \text{try-TR-3.II} \quad \text{WOLL} \quad \text{rain} \quad \text{yesterday} \]

‘It tried to rain yesterday.’

Consultant’s comment: “No. An individual can’t make it rain. Not unless you’re the rain dancer.”

In the next section we propose some first steps towards an analysis which captures both the agentivity and the temporal differences between si’ix and bak. We also provide a temporal analysis of complements of ‘want’ and ‘believe’.

5. Analysis

5.1. ‘Want’ and ‘believe’

‘Want’ and ‘believe’ in Gitksan are straightforward: since we saw above that they pattern
Temporal properties of attitude complements

exactly according to T&W’s predictions based on Serbian, we assign them the T&W analysis. Hasa ‘want’ takes a future-oriented complement, which contains WOLL, pronounced as dim. Ha'niigota ‘believe’ embeds WOLL if and only if the complement receives a future interpretation. Their respective trees are parallel to the Serbian ones given in (6a) and (6b) above.

As advertised, we see that Gitksan ‘want’ and ‘believe’ thus provide overt evidence for the silent embedded WOLL postulated for languages like Serbian and English by Wurmbrand (2014) and T&W. This is also cross-linguistic indirect evidence against alternative analyses whereby the futurity is folded into the matrix verb.

5.2. ‘Try’

In this section we offer preliminary discussion leading towards a prospective analysis of the two Gitksan ‘try’ elements.

The available formal analyses of try all, to our knowledge, build on the insights of pioneering work by Sharvit (2003). Sharvit argues that try differs from other attitude ss like want, and is instead more similar to a modal progressive aspect. She observes entailment similarities between try and the progressive aspect, as in (32). She also shows that, unlike want, try does not allow a narrow-scope, non-existential interpretation for an embedded indefinite object, as shown in (33).

(32) a. John was pushing a cart entails John pushed a cart. (Sharvit 2003:409)
b. John tried to push a cart entails there was a cart. (Sharvit 2003:409)
c. John wanted to push a cart doesn’t entail there was a cart.

(33) John wanted/#tried to cut a tomato, but there were no tomatoes to cut. (Sharvit 2003:404-405)

Sharvit argues that try, like the progressive, carries an extensional, in addition to an intensional, component. The extensional component asserts that some event begins in the evaluation world. Events like cutting-a-tomato require a tomato to be present from the beginning of the event, hence the entailment of the existence of tomatoes. The event potentially develops, in the accessible worlds, into an event of cutting a tomato; the development is captured by the intensional component, utilizing a continuation branch approach, as in theories of the progressive à la Landman (1992).

In Gitksan, there is some evidence that s’i’ix and bak differ with respect to the ‘tomato’ case, as shown in (34). While s’i’ix has an existential entailment, precluding the scenario in which there are no tomatoes, bak is felicitous in such contexts. The consultant’s description in (34b) suggests that bak somehow involves or resembles planning. Example (35) shows a very similar result with another speaker.

---

8 These entailments depend on the predicate, e.g. they hold for activities, but not for all accomplishments, as in (i) and (ii). See Sharvit (2003) for details.

9 A third speaker similarly rejected a version of (34/35) with s’i’ix, gave the comment that “S’i’ix mean[s] he already has it there,” and mimed a cutting action. However this speaker also rejected the bak sentence in
(34) a. # Si'ix  k'ots-d-i-s John=hl tomato, ii ap nee=dii
    try cut-T-TR-PN John=CN tomato CCNJ VERUM NEG=FOC
dox=hl tomatoes.
    be.on.PL=CN tomatoes
‘John tried to cut a tomato, but there were no tomatoes.’
Consultant’s comment: “Si’ix means he tried. But he didn’t try yet because there were no tomatoes.”

b. Bag-a-s John dim= t k'ots=hl tomato, ii ap nee=dii
    try-TR-PN John WOLL=3.1 cut=CN tomato CCNJ VERUM NEG=FOC
dox=hl tomatoes.
    be.on.PL=CN tomatoes
Consultant’s volunteered scenario: “John is coming into a room, and he’s got his knife handy and his companion is right there and then they notice that there are no tomatoes.”

(35) Context: John is coming into a room, and he’s got his knife handy and is planning to cut tomatoes and then he notices that there is nothing there.
a. # Sik’ihl  k'ots-di-s John=hl tomato, ii k'ap nee=dii
    try cut-TR-PN John=CN tomato CCNJ VERUM NEG=FOC
dox=hl tomatoes.
    be.on.PL=CN tomatoes
‘John tried to cut a tomato, but there were no tomatoes.’
Consultant’s comment: “To say sik’ihl means that he’s already going like this [mimes cutting] and then there’s nothing there.”

b. Bag-at dim k'ots John=hl tomato, ii k'ap nee=dii
    try-TR-PN WOLL cut John=CN tomato CCNJ VERUM NEG=FOC
dox=hl tomatoes.
    be.on.PL=CN tomatoes
‘John tried to cut a tomato, but there were no tomatoes.’

A further respect in which Sharvit argues that the progressive and ‘try’ differ is that ‘try’ has an attitudinal component – it quantifies over the subject’s success worlds; hence, it requires the agent as the attitude-bearer. This definition successfully applies to bak, which requires agentivity, as evidenced by (30b) and (31b). It doesn’t apply to si’ix, which does not require agentivity, as in the felicitous (30a) and (31a).

Further clues for distinguishing si’ix and bak are found in Grano (2011, 2017). While Grano’s analysis of try is also aspectual, and it presupposes that try is associated with an agent, it adds that: a) volitional events have an initial stage that corresponds to a mental action; b) try picks out this initial stage of the event, i.e. try asserts that the event is realized to a degree above zero; c) try is associated with an ordering source based on the agent’s intentions (INT). Grano’s analysis is given in (36).
Temporal properties of attitude complements

\[(36) \quad TRY(P)(x)(e)(w) \text{ is defined only if } \forall y \forall e' \forall w'[P(y)(e')(w') \rightarrow Ag(e', y) \text{ in } w']\]

Where defined, \(TRY(P)(x)(e)(w) = 1 \text{ iff } Ag(e, x) \land \forall w' \in INT_{x,w} : \exists e'[e \subset_{init} e' \land P(x)(e')(w')]\)

(Grano 2017:2013)

Note first that the mental preparatory stage of voluntary actions is sufficient to serve as the initial stage for \(try\), as shown in (37). Also, \(try\) refers to the agent’s doxastic state or intentions. If \(bak\) is like Grano’s ‘try’ with respect to mental actions, then mental intentions of the agent capture the meaning of Gitksan \(bak\) in (34b)/(35a) – a mental stage of preparing to cut tomatoes counts as the initial stage that is required for \(try\).

\[(37) \quad \text{John was unknowingly paralyzed and tried to raise his arm. (Grano 2017: 432)}\]

Since the mental preparatory stages are tied to an attitude bearer, it makes sense that \(bak\) is infelicitous in the ‘rain’ cases in (30b) and (31b) – there is no attitude bearer.

Having a preparatory stage component makes \(bak\) similar to ‘plan/decide/want’. However, what makes \(bak\) and ‘want’ different is that cases involving events which are entirely in the future are much more marginal with \(bak\) than with ‘want’. Although \(bak\) obligatorily embeds \(dim\), it is primarily used for events which are actively being attempted at the matrix reference time. This could be captured if ‘try’ does not easily tolerate a gap between the mental action and the physical one. Future research is needed to implement this difference between \(bak\) and ‘want/plan/intend’. Note that Gitksan interestingly does not have separate predicates for ‘plan’ or ‘decide’.

Regarding \(si’ix\), it seems to be like Serbian ‘try’ temporally, differing from it only in terms of (the lack of) agentivity (which must, therefore, be a separate property). Unlike \(bak\), it does not allow future-event cases, and thus has no WOLL component, because it requires something to be happening already at the reference time – this stems from the extensional entailments of \(si’ix\), as in (34a) and (35a). The extensionality and the requirement of the beginning of the event at the reference time make \(si’ix\) and the progressive quite similar. Future research will have to tease the two apart.

Finally, our data suggest that there are two temporal ways that ‘try’ can be captured in a language. Similar observations on different properties of ‘try’ have been made for Greek, Spanish, Portuguese (Grano 2017) and Hebrew (Sharvit 2003, Grano 2017).

6. Conclusion and further implications

The distribution of \(dim\) supports T&W’s analysis of Serbian, in which the future interpretation of embedded clauses derives from WOLL. Our investigation has parallels with the spirit of work by Kratzer (2006, 2013), Moulton (2009, 2015) and Bogal-Allbritten (2016). These authors argue that parts of the semantics of attitude verbs really come from the embedded clause. For these authors, it’s the modality which comes from the embedded clause: embedded clauses contain either overt modals (priority, reportative) or covert operators (\(\text{SAY, EPI, FACT}\)). Kratzer supports her proposals by looking at languages which have overt versions of the covert modals she proposes for English embedded clauses. We use the same cross-linguistic strategy: we find overt support in Gitksan for the covert WOLL proposed for Serbian by T&W.

One topic for future research is the fact that \(si’ix\) and \(bak\) can co-occur for some
speakers, as shown in (38). The eventual formal analysis must also account for such data.

(38) Si'ix bak-d-i s Colin dim=t jagw-i-s Bill.  
     try try-T-TR-PN Colin WOLL=3.1 kill-T-PN Bill  
‘Colin tried to kill Bill.’  
Consultant’s comment: “If you really wanted to emphasize the try.”

References

Temporal properties of attitude complements


Kratzer, Angelika. 2011. What “can” can mean. Lecture notes, University of Massachusetts, Amherst.


Todorović, Neda. 2018. If you can show the future, I know what you’re made of: Aspect + modal-temporal domain in Serbian. In P. Caha, M. Ziková and M. Dočekal (eds.), *Proceedings of Syntax, Phonology and Language Analysis (SinFonIJA 9)*. Linguistica Brunensia, Masaryk University, Brno.


Lisa Matthewson, Neda Todorović
lisa.matthewson@ubc.ca, neda.todorovic@ubc.ca