



Matthewson, Lisa & Todorović, Neda & Schwan, Michael David. 2022. Future time reference and viewpoint aspect: Evidence from Gitksan. *Glossa: a journal of general linguistics* 7(1). pp. 1–37. DOI: <https://doi.org/10.16995/glossa.6341>



Open Library of Humanities

## Future time reference and viewpoint aspect: Evidence from Gitksan

**Lisa Matthewson**, Univ. of British Columbia, CA, [lisa.matthewson@ubc.ca](mailto:lisa.matthewson@ubc.ca)

**Neda Todorović**, Univ. of British Columbia, CA, [neda.todorovic@ubc.ca](mailto:neda.todorovic@ubc.ca)

**Michael David Schwan**, Univ. of British Columbia, CA, [michael.schwan@ubc.ca](mailto:michael.schwan@ubc.ca)

In many languages, future time reference can be conveyed in more than one grammaticized way. An example is English, which uses *will* and *be going to*. These two forms make different semantic and pragmatic contributions, and the source of the contrast is a matter of debate. For example, Copley (2009) argues that both *will* and *be going to* have a modal component, but *be going to* also contains progressive aspect. Klecha et al. (2008) and Klecha (2011) also posit modality for both forms, but argue that *will* introduces obligatory modal subordination; crucially for them, *be going to* does not contain the progressive. In this paper, we address the following three questions: (a) Do any other languages show a contrast between *will*-like and *be going to*-like futures? (b) Is there cross-linguistic support for the proposal that some futures contain progressive aspect? (c) Can cross-linguistic data shed light on the debate about English?

Our answer to all three questions is ‘yes’. We show that (a) Gitksan (Tsimshianic) displays a contrast between *will*-like and *be going to*-like futures; (b) their distribution provides support for progressive aspect in the latter type of futures; and (c) Gitksan contributes cross-linguistic evidence to the debate about the nature of futures in English. We provide an analysis that combines elements of both Copley’s (2009) and Klecha’s (2011) accounts. More generally, we argue that different future constructions across languages are derived by combining at least the following three building blocks: prospective aspect, a modal and the progressive.

*Glossa: a journal of general linguistics* is a peer-reviewed open access journal published by the Open Library of Humanities. © 2022 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

OPEN ACCESS



# 1 Introduction

## 1.1 Overview

Many languages have more than one grammaticized way to convey future time reference; an example is English, which has *will* and *be going to*. In these languages, the different forms typically convey different semantic and/or pragmatic information. For example, *will* is felicitous in an offer on an advertising billboard, while *be going to* is not (Copley 2009).

- (1) [A sign seen (a) and one not seen (b) on the highway.]  
 a. We'll change your oil in Madera.  
 b. #We're **going to** change your oil in Madera. (Copley 2009: 77)

There is debate about how to analyze these contrasting future forms; in particular, there is controversy about whether *be going to* contains progressive aspect: Copley (2009) argues that it does, while Klecha et al. (2008) and Klecha (2011) argue that it does not. According to Klecha and colleagues, a core difference between the two future constructions is that only *will* introduces obligatory modal subordination.

In this paper we bring cross-linguistic evidence to bear on the interaction between future time reference and viewpoint aspect. We present new data from Gitksan (Tsimshianic), a language which also possesses more than one grammaticized way to refer to the future. We focus on the contrast between the plain future morpheme *dim*, and a complex form *yukw dim*, which contains the progressive marker *yukw*. We demonstrate that these two Gitksan futures are semantically strikingly similar to English *will* and *be going to*, respectively. We argue that the presence of the progressive marker *yukw* in constructions similar to English *be going to* provides support for Copley's (2009) proposal that *be going to* contains progressive aspect. In addition, we argue that the contrast between *dim* and *yukw dim* requires the adoption of modal subordination in the former but not in the latter, following proposals by Klecha et al. (2008) and Klecha (2011). Gitksan future constructions thus require features of both Copley's and Klecha et al.'s analyses.

In the remainder of the introduction we provide background about the Gitksan language and outline our data collection methodology. In section 2 we overview the two English futures and the debate about their analysis. In section 3, we show that Gitksan also has two grammaticized forms for future time reference: a plain *dim*, and a complex form *yukw dim*. We show, via a range of empirical tests, their semantic similarity to *will* and *be going to*, respectively. Section 4 presents our analysis, according to which *dim* is a non-modal prospective aspect and *yukw* is a modal progressive. In plain *dim* constructions, modal semantics is introduced by a phonologically null modal. Section 5 situates our approach within the debate about the denotations of different future forms, and argues that future constructions cross-linguistically

are derived from smaller semantic building blocks that can include prospective aspect, a modal, and the progressive.<sup>1</sup>

## 1.2 Language background

‘Gitksan’ (ISO code git) is the English name for a continuum of Interior Tsimshianic dialects spoken in the northwest Interior of British Columbia, Canada. Gitksan had approximately 523 fluent speakers at the time of writing of Dunlop et al. (2018). There are active community efforts towards language revitalization and retention.

Gitksan is a predicate-initial language, but the predicate may be preceded by a nominal that has undergone fronting, as in (2)b; the movement of *smax* ‘bear’ is signaled by the intransitive subject extraction morpheme *-it*.

- (2) a. Gyukwsxw = hl smax.  
wake = CN bear  
‘The bear woke.’
- b. **Smax**<sub>i</sub> = hl gyukwsxw-it t<sub>i</sub>.  
**bear** = CN wake-SX  
‘It was a bear that woke.’ (Bicevskis et al. 2017: 291)

The predicate may also be preceded by (a) one or more of over a hundred ‘preverbals’ that often convey adverbial notions (illustrated in (3)), (b) ‘dependent markers’ that induce dependent-order agreement on the clauses they embed (in (4)),<sup>2</sup> and (c) other pre-predicative operators, one of which is the prospective marker *dim*, as in (5).<sup>3</sup>

- (3) **Luu sga** het-xw 'nii'y.  
**in blocking** stand-VAL 1SG.III  
‘I stood in, blocking the way.’ (adapted from Rigsby 1986: 373)
- (4) **Hlaa** maadim.  
**PROX** falling.snow  
‘It’s now snowing.’ (Rigsby 1986: 275)
- (5) **Dim** amksiwaa-max-da.  
**PROSP** white.person-language-3PL.INDP  
‘They’ll speak English.’ (Rigsby 1986: 415)

<sup>1</sup> We define prospective aspect as an element that orders an event time after a reference time (Klein 1994; Tonhauser 2011, among many others). See section 4.2 for more information.

<sup>2</sup> The two clausal orders, ‘independent’ vs. ‘dependent’, correspond very roughly to a matrix/subordinate distinction. The two orders differ in agreement morphology (Rigsby 1986: 272; see also Hunt 1993).

<sup>3</sup> *Dim* has been glossed both as future (e.g., Rigsby 1986; Matthewson 2013) and as prospective (e.g., Rullmann and Matthewson 2018). Anticipating our analysis below, we gloss it as prospective.

### 1.3 Methodology

Un-cited data in the paper come from our fieldwork. The data come from seven speakers, from several dialects. Primary consultants are Vincent Gogag (from Git-anyaaw (Kitwancool), Hector Hill (from Gijigyukwhla'a (Gitsegukla)), Jeannie Harris (from Ansbayaxw (Kispiox)), and Barbara Sennott (from Ansbayaxw). Additional consultants are Ray Jones (from Prince Rupert and Gijigyukwhla'a), Herb Russell (from Gijigyukwhla'a), and Louise Wilson (from Ansbayaxw, and seasonally Prince Rupert).

The following fieldwork methodologies were used: translation tasks (in both directions), elicited production tasks, acceptability judgment tasks, and forced choice tasks. Translations from English to Gitksan were elicited within specific discourse contexts (conveyed verbally). The consultant was first given the context, and then asked to produce a Gitksan version of an English sentence within this context. Elicited production tasks differ only in the lack of the intermediate presence of English; consultants were given a discourse context and asked to produce an appropriate Gitksan sentence in that context.

Acceptability judgment tasks involved the consultant evaluating a Gitksan utterance in a particular discourse context. The consultants were not given a strict response scale, but simply responded verbally about whether the sentence sounded acceptable in the given context. Where relevant, we provide spontaneously volunteered comments by the consultant.

Forced-choice tasks involved the consultant being given a discourse context followed by two alternative Gitksan utterances, which had previously been either volunteered or judged as acceptable in some discourse context (therefore were known to be grammatical). Consultants were asked to choose which utterance was better in the context. In these cases, there is no explicit ‘#’ judgment for the forms that were not chosen, because the task for the consultant was simply to pick which form they preferred.

## 2 Two futures in English

Several distributional differences between English *will* and *be going to* have been discussed in the descriptive and formal literature. Here we focus on three contrasts brought to the forefront by Copley (2009), Klecha et al. (2008) and Klecha (2011).

The first contrast concerns offer contexts. As shown in (1) and further illustrated in (6), *will* is felicitous inside offers, but *be going to* is dispreferred. It should be noted that (6)b is not totally unacceptable or consistently rejected, but (6)a is clearly more appropriate to convey the offer.

- (6) [I am hosting a potluck dinner next week. You have no idea what you're going to bring because you haven't thought about it yet. I tell you 'Nobody has offered to bring cake, but I hope somebody does.' You decide to offer to bring it so you reply:]
- a. I'll bring cake.
  - b. #I'm going to bring cake.

The second contrast involves warnings, as in (7)–(8). *Will* is preferred when the explosion is contingent on some action by the addressee, as in (7), and *be going to* is preferred when the explosion will happen no matter what, as in (8). We will refer to these two types of contexts as *conditional warnings* and *inevitable warnings*, respectively.

- (7) [There is a bomb which explodes when somebody opens the door. You warn me:]  
 a. Don't touch the door! The bomb **will** explode!  
 b. ?Don't touch the door! The bomb **is going to** explode!<sup>4</sup>  
 (adapted from Binnick 1971; Klecha et al. 2008; Klecha 2011)
- (8) [There is a time-bomb which is set to explode in two minutes from now. You warn me:]  
 a. #Don't go near it! It **will** explode!  
 b. Don't go near it! It's **going to** explode!  
 (adapted from Binnick 1971; Klecha et al. 2008; Klecha 2011)

The third contrast involves what Copley calls 'present temporal input', as in (9)–(10). According to Copley, such data show that *be going to* is the preferred form when the speaker's evidence for the future event is available in the utterance situation.

- (9) [Clouds have gathered and rain is imminent.]  
 a. #Oh look, it'll rain.  
 b. Oh look, it's **going to** rain. (Copley 2009: 71–72)
- (10) a. #Oh no! He'll jump!  
 b. Oh, no! He's **going to** jump! (Copley 2009: 72)

However, another of the supposed 'present temporal input' cases Copley provides, given in (11), does not seem to rely on evidence that is only present in the utterance situation. We believe that the important feature of the contexts in (9)–(11) is instead that they are discourse-initial; we will therefore refer to this set of examples as discourse-initial.<sup>5</sup> Binnick (1971) and Klecha (2011) also refer to the relevance of discourse-initialness in their discussion of the contrast between *will* and *be going to*.

---

<sup>4</sup> There is some disagreement in the literature about the status of utterances like (7)b. Klecha (2011) claims that (7)b is acceptable in contexts similar to that given here, although he notes that Binnick (1971) had claimed that *be going to* is not compatible with this type of context. In our judgment, *will* is better than *be going to* in this type of context, and in section 3, we will show that the *going to*-type future in Gitksan is clearly dispreferred here. See footnote 9 and section 5.3 for further discussion.

<sup>5</sup> The reader may notice that the notion of inevitability also comes into play here, as it did with the warning data. In (11), for example, the speaker's upcoming marriage is conceived of as inevitable, rather than contingent on some other event or mental attitude. This is not an accident and we will show in section 4 that one unified analysis accounts for all these facts.

- (11) a. #Guess what? We'll get married!  
 b. Guess what? We're **going to** get married! (Copley 2009: 72)

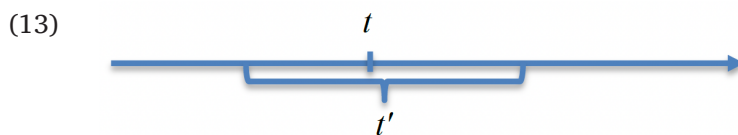
As we have already hinted, there are two main contrasting approaches to these differences between *will* and *be going to*. Both Copley (2009) and Klecha et al. (2008); Klecha (2011) propose that *will* and *be going to* convey modal semantics and futurity. However, Copley (2009) argues that *be going to* also contains a semantic progressive aspect, while Klecha et al. (2008) and Klecha (2011) argue that it does not. For Klecha and colleagues, *will* and *be going to* (which they call *gonna*) are truth-conditionally equivalent. They differ in that only *will* contains a presupposition that enforces modal subordination. In what follows, we outline the core conceptual ideas behind each of these analyses, while staying away from formalism.

## 2.1 Copley's account

Copley's analysis is designed primarily to account for the offering data.<sup>6</sup> She argues that the reason *will* allows offers, and *be going to* does not, is because of the composition of the two forms and the pragmatics of offering. *Will* conveys a necessity modal and combines either with no viewpoint aspect or with a generic aspect (we set aside generic *will* here). Roughly speaking, the analysis of *will* is paraphrased in (12).

- (12) An utterance of *will(p)(w)(t)*:  
 presupposes that there is a 'director' (an agent who determines what will happen in the future) of *p* in *w* at *t*;  
 asserts that in all worlds maximally consistent with the commitments of the director in *w* at *t*, the proposition denoted by *p* is realized (adapted from Copley 2009: 69).<sup>7</sup>

For *be going to*, Copley proposes that it contains the same necessity modal as *will*, and additionally includes progressive aspect. One core effect of the progressive is to introduce a super-interval of time surrounding the reference time; the relevant event takes place at that larger interval in some possible worlds (see section 4.3 for more details). The relation between the reference time *t* and the super-interval introduced by the progressive, *t'*, is schematized in (13).



<sup>6</sup> Our summary of Copley's analysis draws in part on the presentation in Louie (2014: 104ff). Any errors are our own.

<sup>7</sup> (12) does not force *p* to be realized at a time after *t*. At some points, Copley leaves futurity out of the formulas and suggests that it follows from the nature of the director relation (e.g., pp. 43, 67), and at other points, she hardwires the futurity (e.g., pp. 37, 69, 83). We set these details aside, but what is important is that *t* is a time at which the director's commitments hold. It is not necessarily equivalent to the utterance time.

Copley claims that in *be going to*, the progressive takes a proposition  $q$  which already contains the universal bouletic modal in (12); in other words, the progressive's prejacent  $q$  has itself the form *will*( $p$ ). Due to the semantics of the progressive, the following happens: instead of  $p$  being realized in all worlds maximally consistent with the director's commitments at the reference time  $t$ , it is realized in all worlds maximally consistent with the director's commitments throughout an interval  $t'$  surrounding  $t$ . Crucially,  $t'$  begins before  $t$ . This means that in a *be going to* assertion, the director is already committed to the future event before  $t$ .

Copley's idea is that the semantics of *will* is compatible with the pragmatics of offering, but the semantics for *be going to* is not. She captures the restrictions on felicitous offering as in (14). This condition considers both the role of the speaker (director) and the desires of the hearer. If the hearer wants what is offered, it will happen. If she doesn't want it, it won't.

- (14) An offer  $q$  by a director  $d$  to a hearer  $h$ :  
 presupposes that  $d$  directs  $q$  (has the ability and commitment to make  $q$  true);  
 asserts that if  $h$  wants  $q$ ,  $q$ ;  
 asserts that if  $h$  doesn't want  $q$ ,  $\neg q$ . (adapted from Copley 2009: 79)

There is also crucially a temporal component to offering: the time at which the hearer wants what is offered must be the same time that the speaker is prepared to carry it out (Copley 2009: 78). For example, if the hearer wants what is denoted by  $q$  at the utterance time but won't want it at the future time when  $q$  will happen,  $q$  shouldn't happen, as in (15). Similarly, if the hearer wanted  $q$  in the past but no longer wants it at the utterance time, proposing  $q$  at the utterance time does not make a good offer, as in (16). Neither (15) nor (16) are successful offers.

- (15) [A is getting married this afternoon and the florist hasn't shown up! A asks B if B can provide any flowers for the wedding. B replies:]  
 #I will bring some flowers tomorrow.
- (16) [Yesterday, A got married and the florist never showed up! A couple of hours before the wedding, A texted B asking if they could bring flowers, but B didn't receive the text until today. Today, B replies:]  
 #I will bring some flowers right now.

Putting all this together, the reason that offers don't work with *be going to* is because the speaker is committed to  $q$  at a super-interval  $t'$  of  $t$ , where  $t$  is the time at which the hearer's desires are checked. This means that the speaker is committed to  $q$  throughout an interval that begins *before* the hearer's desire for  $q$  is confirmed. In other words, the speaker is committed throughout  $t'$  to  $q$  happening, even though it is possible that at some point during  $t'$ , the hearer does not want  $q$  to happen. Since the time of the hearer's desires and the speaker's commitment do not necessarily align, *be going to* doesn't make an acceptable offer. Conversely, *will* does not involve any super-interval  $t'$ . Thus, the speaker is committed to  $q$  at  $t$ , which is the point in time when the hearer's



desires are checked. Given that the speaker's commitment and the hearer's desires are checked at the same time, the speaker can act based on the hearer's desires, making *will* felicitous in an offer context.

## 2.2 Klecha's account

The analysis of Klecha et al. (2008) and Klecha (2011) is designed primarily to account for the warning data in (7)–(8). Unlike in Copley's analysis, Klecha and colleagues argue that *will* and *gonna* are truth-conditionally equivalent, and *gonna* does not include progressive. The difference between them is that *will* has, and *gonna* lacks, a presupposition that obligatorily enforces modal subordination.

Modal subordination (Roberts 1989) is domain restriction on the set of worlds quantified over by a modal, and it involves anaphora. An example with *will* is given in (17).

(17) If Edna forgets to fill the birdfeeder, she will feel very bad. The birds **will** get hungry.  
(Roberts 1989: 683)

The second sentence in (17) means that in all the worlds *in which Edna forgets to fill the birdfeeder*, the birds will get hungry. The *if*-clause in the first sentence restricts the set of worlds that *will* in the second sentence takes into account; the domain restriction of *will* is anaphoric to the *if*-clause. According to Klecha, *will* obligatorily requires a discourse antecedent that provides the domain restriction, and *gonna* does not need one. He thus draws a parallel between *will* and definites, which similarly introduce familiarity presuppositions (Heim 1982). In (18), *a dog* restricts the domain of assignment functions for *it*; *it* is felicitous only if there is a discourse antecedent, in this case *a dog*.

(18) A dog walked in. It sat down. (Klecha 2011: 370)

Given that Klecha incorporates an obligatory antecedent in his analysis of *will*, the prediction is that *will* always needs an explicit or implicit *if*-clause (such as *If you touch the door*), which provides domain restriction on the set of worlds quantified over.<sup>8</sup>

This account explains why *will* works well for conditional warnings, but is inappropriate for inevitable warnings. *Will* quantifies over every world in which, for example, the hearer goes near the bomb. In a context where the bomb will explode no matter what, there is no discourse

---

<sup>8</sup> There is a similarity between this idea and an intuition of Copley's (although Klecha and Copley implement the idea in different ways and apply it to different subsets of the data). According to Copley, offers of the form *will(q)* are interpreted as if they had a silent *If you want q* clause (Copley 2009: 79–80).



antecedent necessary to provide the modal restriction for *will*. Conversely, *be going to* is not restricted to quantifying over worlds where the hearer goes near the bomb.<sup>9</sup>

Unlike Copley's (2009) account, Klecha's (2011) analysis does not involve decomposition of the different future forms into smaller parts. Instead, Klecha argues that the contrast between them is simply a matter of 'lexical idiosyncrasy' (2011: 367). He proposes that there are in fact three separate lexical items: *will*, *gonna*, and offering-*will*. Klecha treats offering-*will* as a separate lexicalized item for two reasons: (a) in some languages, offers are not expressed using future constructions (so there is a lexically distinct form for offers), and (b) when *will* is used in an offer, it has a performative flavor, unlike when it is used in non-offer scenarios. This is shown in the contrast between (19) and (20).

- (19) Alice: I'll make coffee.  
 Ryan: #That's not true!      OFFER: PERFORMATIVE      (Klecha 2011: 378)
- (20) Alice: Don't go near that! It'll blow up!  
 Ryan: That's not true!      NON-OFFER: NOT PERFORMATIVE      (Klecha 2011: 378)

One problem with this argument is that (19) and (20) are not fully parallel; only (19) mentions a future action by the speaker, and only (20) has a follow-up sentence that is clearly non-performative. As (21) shows, warnings involving future actions by the speaker can be performative. Conversely, offers can be rejected with 'That's not true' in contexts such as (22).

- (21) Alice: I'll have the locks changed!  
 Ryan: #That's not true!
- (22) [Alice is talking to her friend Megan. Ryan knows that Alice's apartment has dry rot and is going to need extensive renovations, but he hasn't had a chance to tell Alice that yet.]  
 Alice: Get in touch if you come to town – my spare room will always be available.  
 Ryan: That's not true!

We therefore do not believe that a separate lexical item is needed for offering-*will*. Instead, we will argue that the offer and warning data (and, indeed, the discourse-initial data) can all be captured under a unified analysis that combines features of both Copley's and Klecha's accounts.

---

<sup>9</sup> Klecha's analysis, as it stands, seems to predict that *gonna* is available either with or without domain restriction; however, one also might expect there to be a pragmatic preference for *will* over *gonna* when *will*'s presupposition is satisfied. As noted above, some speakers do in fact disprefer *gonna* in conditional warning contexts, while others are fine with it.

### 2.3 The two accounts contrasted

The contrasts between Copley's and Klecha's analyses are summarized in (23).

(23) **Copley:**

*bare will* = necessity modal  
*be going to* = PROG + necessity modal

**Klecha:**

*will*<sub>bomb</sub> = necessity modal with modal subordination presupposition  
*gonna* = necessity modal without modal subordination presupposition  
*will*<sub>offer</sub> = separate lexical item

Above, we introduced three core sets of data from English, involving offers, warnings, and discourse-initial contexts. We have shown that Copley's analysis appears promising for offers, while Klecha's analysis offers important insights about warnings with *will*. However, Klecha's analysis alone cannot account for the judgments of speakers for whom *be going to* is infelicitous in conditional warnings.

What about the discourse-initial cases, as in (9)–(11)? Copley aims to account for these contrasts through the Subinterval Property (SIP), which bare *will* lacks and progressive *be going to* has (2009: 70ff).<sup>10</sup> Roughly speaking, these contexts are situations in which the director is asserted to be committed to *p* at the moment of the utterance time.<sup>11</sup> Since bare *will* lacks the SIP, it cannot be applied to the single moment of the utterance time. Conversely, *be going to* is fine because it does have the SIP, due to the progressive: the situation of the director being committed to *p* holds throughout the entire larger interval. While this analysis captures the contrast, it is not quite clear to us why bare *will* lacks the SIP; Copley writes only that 'Bare futures we might expect to be -SIP' (2009: 70).

For Klecha, the distribution of *will* and *be going to* in discourse-initial contexts follows from the modal subordination account and requires no additional stipulations. In particular, *will* is infelicitous in discourse-initial cases because there is no antecedent to provide the domain restriction *will* requires. On the other hand, *be going to* does not require a domain restrictor and is thus felicitous in cases with no antecedent.

Given the equivocal nature of the evidence coming from English, it is worthwhile turning to cross-linguistic data to attempt to shed light on the debate. So far, cross-linguistic work has not got very far in this respect. While similar semantic contrasts to the offer data in (1) and (6) have been

---

<sup>10</sup> A predicate *p* of times has the Subinterval Property if and only if for all times *t*, for all subintervals *t'* of *t*, the truth of *p(t)* entails the truth of *p(t')* (Bennett and Partee 1978; this formulation taken from Copley 2009: 5).

<sup>11</sup> The director may include 'the world', in the case of rain.

found in Indonesian and Turkish (Copley 2009), St'át'imcets (Salish; Glougie 2007), and Siamou (Niger-Congo; Toews 2015), the forms which are dispreferred in offer contexts do not normally overtly contain progressive morphology. Blackfoot (Algonquian; Reis Silva 2009) is, as far as we know, the only non-English language in which a correlation has been established between non-offer contexts and progressive (or more precisely for Blackfoot, imperfective) morphology.

In the remainder of this paper, we address the following questions: (a) Do any other languages show a contrast between *will*-like and *be going to*-like futures? (b) Is there cross-linguistic support for the proposal that some futures contain progressive aspect? (c) Can cross-linguistic data shed light on the debate about English?

In the next section we begin answering these questions by turning to Gitksan. We show that (a) Gitksan displays a contrast between *will*-like and *be going to*-like futures; (b) their distribution provides cross-linguistic support for modal subordination in the former type of futures, and for progressive aspect in the latter type, and (c) Gitksan contributes to the debate about the nature of futures in English. We argue that Copley is right about *be going to*-type futures – they do contain progressive – and that Klecha is right about *will*-type futures: we can cover all three core facts about *will* if we assume modal subordination. Gitksan future constructions can thus be captured with a blend of parts of Copley's and Klecha's analyses. We also argue that the Gitksan data do not support Klecha's proposal that offering-*will* and *gonna* are lexically idiosyncratic, because Gitksan, like English, uses the same lexical item for ordinary futures as for offers, and it transparently composes non-offering (*gonna*-type) futures by using the progressive.

### 3 Two futures in Gitksan

#### 3.1 Introduction to *dim* and *yukw*

Future time reference in Gitksan is expressed by the pre-predicative marker *dim* (Rigsby 1986: 279). *Dim* is both necessary and sufficient for a future interpretation. Its obligatoriness is illustrated in (24). The temporal adverbial *t'aahlakw* 'tomorrow' conveys future time reference, but nevertheless *dim* is obligatory.

- (24) \*(**Dim**) limx = t / siipxw = t James t'aahlakw.  
 \*(**PROSP**) sing = PN / sick = PN James tomorrow  
 'James will sing / be sick tomorrow.' (Matthewson 2013: 357)

*Dim*'s sufficiency for a future interpretation is illustrated in (25), where *dim* is incompatible with eventualities that are ongoing at the utterance time, and (26), where *dim* is incompatible with past adverbials. See also Jóhannsdóttir and Matthewson (2007), Matthewson (2013), and Matthewson and Todorović (2018) for discussion.

- (25) [James ate some rotten bacon this morning and is right now throwing up in the bathroom. A friend pops in to visit, knowing nothing about this, and asks how your family are doing. You say:]  
 #**Dim** siipxw = t James.  
**PROSP** sick = PN James  
 ‘James will be sick.’
- (26) [James ate some rotten bacon yesterday, after which he threw up in the bathroom. A friend pops in to visit today, knowing nothing about this, and asks how your family are doing. You say:]  
 \***Dim** siipxw = t James ky'oots.  
**PROSP** sick = PN James yesterday  
 ‘James will be sick yesterday.’

*Dim* appears in a range of other contexts involving future time reference, for example with circumstantial modals (Matthewson 2013; see also section 4.2) and under certain attitude verbs (Matthewson and Todorović 2018), indicating the future temporal orientation of their complements.

Another relevant element is the progressive marker *yukw*. According to Rigsby (1986: 253), progressive *yukw* is syntactically an intransitive verb which combines with a clausal complement (with dependent-order agreement), as in (27).

- (27) **Yukw** = hl miilugw-i'y.  
**PROG** = CN dance-1SG.II  
 ‘I’m dancing.’ (Rigsby 1986: 167)

Schwan (2019) provides a range of empirical diagnostics to show that *yukw* is a progressive aspect. For example, although *yukw* is compatible with ongoing events, it is unacceptable in habitual contexts; it is not a general imperfective. This is shown in (28).

- (28) [Cheyenne has been training lately for a marathon. She’s really into this running thing. She isn’t good yet, but she’s trying. I’m telling a friend about Cheyenne’s new thing. Cheyenne is sitting a few seats away in a café, reading a book.]
- a. **Bax̄** = t Cheyenne.  
 run = PN Cheyenne  
 ‘Cheyenne runs.’ (Schwan 2019: 8)
- b. #**Yukw** = hl **bax̄** = s Cheyenne.  
**PROG** = CN run = PN Cheyenne  
 ‘Cheyenne is running.’ (Schwan 2019: 8)

Like the English progressive, *yukw* is rejected with individual-level states, as in (29).

- (29) a. *Wilaay-i=s* Mary=*hl* *wa-t / simhe*.  
 know-TR = PN Mary = CN name-3.II / truth  
 ‘Mary knows his name/the truth.’
- b. \**Yukw=t* *wilaax=s* Mary=*hl* *wa-t / simhe*.  
 PROG = 3SG.II know = PN Mary = CN name-3.II / truth  
*Consultants’ comments:* “It’s like saying, ‘She’s knowing the truth.’”  
 “*Yukw* and *wilaax* don’t match.” (Schwan 2019: 14)

Interestingly, however, *yukw* is compatible with stage-level (temporary) states. This is the case in English too, to a certain extent (Jóhannsdóttir 2011, among others), but Gitksan *yukw* is even more open to it, as in (30).

- (30) a. *Yukw=hl* *a'lax-diit*.  
 PROG = CN angry-3PL.II  
 ‘They are angry.’
- b. *Yukw=hl* *siipxw-t*.  
 PROG = CN sick-3.II  
 ‘S/he is sick.’

Importantly, the future *dim* and the progressive *yukw* can combine. There is thus a contrast between ‘plain *dim*’ and *yukw dim*, as in (31).

- (31) a. *Dim* *wis*.  
 PROSP rain  
 ‘It will rain.’
- b. *Yukw dim* *wis*.  
 PROG PROSP rain  
 ‘It is going to rain.’

The English translations in (31) reflect the usual tendency for how speakers translate the two forms. In the following subsections, we present diagnostics to show that plain *dim* corresponds to the behaviour established for *will*, while *yukw dim* has a distribution and meaning which closely parallel *be going to*. Note that in all the contexts discussed in sections 3.2–3.4, there is always a clear preference for the form that we predict will fit the given context. However, it is not always the case that the other form is outright rejected in the context. Sometimes, it is a matter of preference for one form over the other, which is established via a forced choice task.

### 3.2 Offer contexts

In offer contexts, plain *dim* is preferred, and the progressive future *yukw dim* is dispreferred ((32)–(34)). In some cases, we give two slightly different versions of the sentences, to show the responses from consultants who speak different dialects.

- (32) [I am hosting a potluck dinner next week. You have no idea what you're going to bring because you haven't thought about it yet. I tell you 'Nobody has offered to bring fry bread, but I hope somebody does.' You decide to offer to bring it so you reply:]
- a. **Dim** di-bagw-i-'y=hl eeja-m t'ilix.  
**PROSP** COM-arrive.PL-TR-1SG.II = CN fry-ATTR grease  
 'I'll bring fry bread.'
- a'. **Dim** di-kw'itxw-i-'y eeja'a-m anaax.  
**PROSP** COM-arrive-TR-1SG.II fry-ATTR bread  
 'I'll bring fry bread.'
- b. #**Yukw dim** = in di-bakw = hl eeja-m t'ilix.  
**PROG PROSP** = 1SG.I COM-arrive.PL = CN fry-ATTR grease  
 'I'm going to bring fry bread.'  
*Consultant's comment:* "No, it's not offering to be the one to bring the fried bread, it's just saying that you're going to bring the fried bread."
- b'. #**Yukw dim** = in di-kw'itxw eeja'a-m anaax.  
**PROG PROSP** = 1SG.I COM-arrive fry-ATTR bread  
 'I'm going to bring fry bread.'  
*Consultant's comment:* "When you say *yukw dim*, it doesn't sound good in the context ... when people use *yukw dim*, you are literally going to."

The examples in (33) contain an overt *if*-clause relating to the addressee's wishes (which further facilitates an offer scenario); plain *dim* is the preferred option.

- (33) [Potluck context as in (32)]
- a. **Dim** ts'ilim 'nii'y e=hl eeja-m anaax, ji asag-an.  
**PROSP** bring 1SG.III PREP = CN fry-ATTR bread IRR want-2SG.II  
 'I'll bring fry bread, if you want.'
- b. #**Yukw dim** ts'ilim-i'y e=hl eeja-m anaax, ji asag-an.  
**PROG PROSP** bring-1SG.II PREP = CN fry-ATTR bread IRR want-2SG.II  
 'I'm going to bring fry bread, if you want.'

Example (34) is similar to Copley's billboard example. *Dim* is volunteered and accepted, as in (a) and (a'), but *yukw dim* is rejected, as in (b) and (b'). A third speaker commented about a *yukw dim* version of this sentence that "You don't use *yukw* when you're advertising."

- (34) [Sign in the window of a hairdresser:]
- a. **Dim** k'oj-i-'y=hl ges-in a=hl xwsdins.  
**PROSP** cut-TR-1SG.II = CN hair-2SG.II PREP = CN five  
 'I'll cut your hair for five dollars.'

- a'. Xwsdins=hl gwiikw **dim** win dip k'ots=hl ges-in.<sup>12</sup>  
 five = CN groundhog **PROSP** COMP 1PL.I cut = CN hair-2SG.II  
 'For five dollars we'll cut your hair.'
- b. #Yukw = ni **dim** k'ots=hl ges-in a=hl xwsdins.  
**PROG** = 1SG.I **PROSP** cut-1SG.II hair-2SG.II PREP = CN five  
 'I'm going to cut your hair for five dollars.'
- b'.#Xwsdins=hl gwiikw **yukw dim** win dip k'ots=hl ges-in.  
 five = CN groundhog **PROG PROSP** COMP 1PL.I cut = CN hair-2SG.II  
 'For five dollars we're gonna cut your hair.'

These data show that just like in English, the progressive future in Gitksan is dispreferred in offer contexts, while the plain future form is preferred.

### 3.3 Conditional vs. inevitable warnings

The Gitksan plain vs. progressive futures also pattern like English *will* vs. *be going to* in the warning cases. (35)–(36) show that *dim* is acceptable when a bomb's explosion is dependent on the addressee's actions (a conditional warning) and *yukw dim* is acceptable when the bomb is going to explode no matter what the addressee does (an inevitable warning).

(35) [There is a bomb which explodes when somebody opens the door. You warn me:]

- a. Ham ji das=hl aats'ip, **dim** xhluxw=hl bomb!  
 don't.2SG IRR touch = CN door **PROSP** explode = CN bomb  
 'Don't touch the door, the bomb will explode!'
- a'. Ham ji des=hl aats'ip, **dim** hluxw-t!  
 don't.2SG IRR touch = CN door **PROSP** explode-3.II  
 'Don't touch the door, it will explode!'
- b. #Ham ji das=hl aats'ip, **yukw dim** xhluxw=hl bomb!  
 don't.2SG IRR touch = CN door **PROG PROSP** explode = CN bomb  
 'Don't touch the door, the bomb is gonna explode!'  
*Consultant's comment:* "When you say *Yukw dim xhluxwhl bomb*, there is a certainty at some point the bomb will explode whether you touch the door or not."
- b'.? Ham ji des=hl aats'ip, **yukw dim** hluxw-t.  
 don't.2SG IRR touch = CN door **PROG PROSP** explode = 3.II  
 'Don't touch the door, it's gonna explode!'  
*Consultant's comment:* "*Yukw dim* means it's going to. It's something like a plan that you're gonna go through. [(35)a'] is better."

---

<sup>12</sup> This consultant comments that the word *gwiikw* 'groundhog' can also be used for money, since groundhog pelts were used as currency.



(36) [There is a time-bomb on the door which is set to explode in two minutes from now. You warn me:]

a. #Ham ji dulbin-t ... **dim** xhluxw = hl bomb!  
 don't.2SG IRR be.near-3SG.II **PROSP** explode = CN bomb  
 'Don't go near it, the bomb will explode!'  
*Consultant's comment:* "When you say *Dim xhluxwhl bomb*, it's if you touch the door."

a'. #Ha'w ji hagwin yi-n loo-t, **dim** xhluxw-d = is!  
 don't IRR toward go-2SG.II OBL-3.II **PROSP** explode-3.II = QUDD  
 'Don't go near it, it will explode!'

b. Ham ji dulbin-t ... **yukw dim** xhluxw = hl bomb!  
 don't.2SG IRR near-3SG **PROG PROSP** explode = CN bomb  
 'Don't go near it, the bomb is going to explode!'

b'. Ha'w ji hagwin yi-n loo-t, **yukw dim** xhluxw-d = is!  
 don't IRR toward go-2SG.II OBL-3.II **PROG PROSP** explode-3.II = QUDD  
 'Don't go near it, it's going to explode!'

A third consultant accepts both *dim* and *yukw dim* in this inevitable warning context, but in a forced-choice task chooses the *yukw dim* version; this consultant also consistently volunteers the *yukw dim* version in this context (as do all the consultants).

In summary, we have seen that plain *dim* is preferred for conditional warnings, and progressive *yukw dim* is preferred for inevitable warnings. This matches our judgments for English *will* vs. *be going to*. As noted above, Klecha (2011) assumes that *be going to* is good in both types of warning in English. His analysis works well for Gitksan plain futures with *dim*, but does not fully account for the facts with *yukw dim*; applying Klecha's analysis of *gonna* to *yukw dim* would incorrectly predict that it should always be acceptable in conditional warnings.

### 3.4 Discourse-initial contexts

Recall that in English, *will* is infelicitous in certain discourse-initial contexts and *be going to* is fine. The same is true for the Gitksan plain vs. progressive futures, as shown in (37).

(37) [We are enjoying the sunshine in the garden. Suddenly you notice some black clouds have formed and it looks like it is about to rain. You say:]

a. #'Wihlii **dim** wis.  
 INDIRECT **PROSP** rain  
 'It will rain!'

b. 'Wihlii **yugw** = ii **dim** wis.  
 INDIRECT **PROG** = like **PROSP** rain  
 'It's going to rain!'

For some speakers, the plain *dim* form is not outright rejected in these contexts; nevertheless, on forced-choice tasks, *yukw dim* versions are consistently preferred over *dim* versions. In (38)–(39), the order of the forms differs, reflecting how they were presented to the consultant, to avoid an ordering bias.

- (38) [You see someone on the edge of a bridge. You say ‘Oh no! He’s going to jump!’. Which of the following sounds better?]
- a. Oo nee, **yukw** = hl **dim** saa gos-t!  
oh NEG **PROG** = CN **PROSP** away jump-3.II  
‘Oh no, he’s going to jump!’ CHOSEN
- b. Oo nee, **dim** saa gos 'nit!  
oh NEG **PROSP** away jump 3.III  
‘Oh no, he’ll jump!’ NOT CHOSEN
- (39) [We are enjoying the sunshine in the garden. Suddenly you notice some black clouds have formed and it looks like it is about to rain. You say ‘It’s going to rain!’ Which of the following sounds better?]
- a. **Dim** wis!  
**PROSP** rain  
‘It’ll rain.’ NOT CHOSEN
- b. **Yukw dim** wis!  
**PROG** **PROSP** rain  
‘It’s gonna rain!’ CHOSEN

The marriage-announcement cases also pattern the same in Gitksan and English. As shown in (40), only *yukw dim* is possible here.

- (40) [Context: We run into Clarissa after not seeing her for a while and she is arm-in-arm with somebody and they look happy. Clarissa says to us:]
- a. **Yukw** = hl **dim** neks-i’y!  
**PROG** = CN **PROSP** marry-1SG.II  
‘I’m going to get married!’
- b. #**Dim** neks-i’y!  
**PROSP** marry-1SG.II  
‘I will get married!’  
*Consultant’s comment:* “She could be so excited she forgot some words [i.e., she forgot *yukw*].”

### 3.5 Empirical summary

The data presented in this section have shown that there is a striking parallel between plain *dim* and *will*, and between progressive *yukw dim* and *be going to*. The parallels hold for all three data-sets: offers, warnings, and discourse-initial contexts.

## 4 Analysis

In this section we present our analysis of Gitksan, which is extendable also to English, as will be argued in section 5.2. We adopt a neo-Reichenbachian analysis of tense and aspect, following Klein (1994). In this framework, *tenses* are elements that restrict the temporal relation between an evaluation time (in matrix clauses, usually the utterance time) and a reference (a.k.a. topic) time (the time about which the clause makes a claim). *Aspects* are elements that restrict relations between reference times and event (a.k.a. situation) times; the relations may either be of inclusion (e.g., perfective or imperfective / progressive), or of precedence (e.g., perfect or prospective).

We begin with our analysis of non-future temporal reference in Gitksan.

### 4.1 Non-future tense

We showed in section 3.1 that *dim* is necessary and sufficient for future time reference in Gitksan. However, the language does not grammaticize other tense distinctions: there is no overt past or present tense morphology. For example, the sentence in (41) is compatible both with contexts in which Yoko's running was happening before the utterance time or is happening right now.

- (41) Ba $\bar{x}$  = t Yoko.  
 run = PN Yoko  
 'Yoko ran' / 'Yoko is running.' (Jóhannsdóttir and Matthewson 2007)

Following Jóhannsdóttir and Matthewson (2007), we assume that Gitksan possesses a covert non-future tense, that restricts the reference time to being at or before the evaluation time  $t_e$ . In matrix contexts,  $t_e$  is the utterance time.<sup>13</sup> This is modeled in (42) using a pronominal analysis of tense; the tense denotes a time interval, which precedes or coincides with  $t_e$ . The value of the reference time interval is a contextually salient time, given by the assignment function  $g$ .

- (42)  $\llbracket \text{NON-FUT}_i \rrbracket^{g,t_e,w^0} = g(i)$ , defined only if  $g(i) \leq t_e$

### 4.2 Dim

We now turn to future time reference. We analyse *dim* as a prospective aspect rather than as a future tense, and we adapt ideas of Bohnemeyer's (2014) for how to model prospectives.<sup>14</sup>

<sup>13</sup> See Aonuki (2021) and Todorović (2021a) for arguments that the Gitksan non-future tense is a relative tense; it is not always evaluated with respect to the utterance time. In section 4.2. we show examples in which  $t_e$  is not equal to the utterance time.

<sup>14</sup> We will continue to refer to *dim* and *yukw dim* informally as plain future and progressive future respectively; this does not mean that they contain literal future tenses.

As shown in (43), *dim* applies to a predicate of events  $P$  and outputs a predicate of times and events. For any event  $e$  and reference time  $t$ ,  $e$  holds at  $t$  and  $e$  causes a  $P$ -event  $e'$  that happens at a time  $t'$  following  $t$ .<sup>15</sup>

$$(43) \quad \llbracket \textit{dim} \rrbracket^g = \lambda P_{\langle 1, st \rangle} \lambda t \lambda e \lambda w . \tau(e) = t \ \& \ \exists e' \exists t' [t < t' \ \& \ e \gg e' \ \& \ \tau(e') = t' \ \& \ P(e')(w)]$$

The pre-event  $e$  can be thought of as some event (or state) that is a precursor of the later  $P$ -event. For example, in a case of predicting rain,  $e$  might be the gathering of clouds while  $e'$  is the raining event itself.

*Dim* co-occurs with the non-future tense, which provides the reference time argument  $t$ . This is parallel to a common analysis of English *will/would*, as containing an abstract futurity marker WOLL which combines with present/past tense (Abusch 1985). In English, WOLL + present (pronounced as *will*) places the event time after the utterance time, while WOLL + past (pronounced as *would*) places the event time after some past reference time. As Gitksan does not distinguish present from past, and the non-future tense is phonologically null, the combination of *dim* and tense is always pronounced as *dim*.

This analysis, involving a prospective aspect *dim* combining with the non-future tense, correctly predicts that *dim* can be used either for ordinary future time reference, or for ‘past futures’, as in (44); see Jóhannsdóttir and Matthewson (2007), Rullmann and Matthewson (2018) and Todorović (2021a) for further discussion. The progressive future *yukw dim* also has ‘past future’ readings, as shown in (45).

- (44) Gilbil = hl ganuutxw = hl hli = daa = t mahl-i = s Diana **dim** wil yee-t  
 two = CN week = CN PRT = SPT = 3.I tell-T = PN Diana **PROSP** COMPgo-3.II  
 goo = hl Winnipeg ji hlaa (am) k'i'y = hl ganuutxw.  
 LOC = CN Winnipeg IRR PROX (only) one = CN week  
 ‘Diana said two weeks ago that she would go to Winnipeg after one week.’  
 (Rullmann and Matthewson 2018: 292; adapted from Jóhannsdóttir & Matthewson 2007)

- (45) [I visited Aidan and while we were chatting, I asked him what he was doing later that day. Now I’m telling you what he replied.]  
 Mahl-d-i-s Aidan loo-'y **yukw dim** iija-m anaax-t.  
 tell-T-TR = PN Aidan OBL-1SG.II **PROG PROSP** fry-ATTR bread-3.II  
 ‘Aidan told me that he was going to cook fried bread.’

So far, we have not assigned any modal semantics to future time reference in Gitksan. Like the majority of the literature, we assume that reference to future events involves modality (see

<sup>15</sup> In the formula, the symbol  $\gg$  indicates causation. See also Copley (2018) for the role of causality in futurates.

Cariani and Santorio 2018 and references therein for recent contributions to this debate<sup>16</sup>). However, rather than assigning modal semantics to *dim* itself, we propose that *dim* combines with a separate modal, which can be phonologically null.

The main motivation for proposing that *dim* can co-occur with a covert modal is that *dim* freely co-occurs with *overt* modals. They encode various modal flavours and strengths, as in (46)–(47).

(46) **Da'akhlxw**-i=s Henry #(**dim**) jam-t.  
**CIRC.POSS-TR=PN** Henry #(**PROSP**) cook-3.II  
 'Henry is able to cook.' / 'Henry was able to cook.' (Matthewson 2013: 371)

(47) **Sgi** #(**dim**) (ap) ha'w=s Lisa.  
**CIRC.NECESS** #(**PROSP**) (VERUM) go.home-PN Lisa  
 'Lisa should/must go home.' / 'Lisa should have gone home.' (Matthewson 2013: 380)

Matthewson (2013) argues that when *dim* co-occurs with these modals, *dim* merely provides temporal ordering (i.e., prospective aspect); *dim* provides the temporal orientation of the modal, in the sense of Condoravdi (2002). Thus, in (46), the modal *da'akhlxw* conveys circumstantial possibility, and *dim* gives future orientation. Henry being able to cook means it is possible for him to cook at some time after the reference time (which is either the utterance time or some other salient time, depending on the context). In (47), *sgi* is a circumstantial necessity modal and again, *dim* provides future orientation. Lisa's return home happens after the time of the obligation, either the utterance time or some salient previous time. (For the idea that circumstantial modals are future-oriented, see Abusch 2012; Thomas 2014; Klecha 2016; Chen et al. 2017, i.a.).

Finally, (48) shows that *dim* can co-occur with epistemic modals, providing future temporal orientation. Crucially, when *dim* is not there, as in (49), temporal orientation is present or past. Given that the modal flavor and strength stay the same in (45)–(46), but the temporal orientation changes, these examples provide evidence that *dim* is responsible for the temporal orientation of the modal and does not itself contribute modality. For the idea that futurity can stem from a prospective aspect below a modal rather than the modal itself, see Kratzer (2011), Matthewson (2012), Rullmann and Matthewson (2018), among others.

---

<sup>16</sup> Cariani and Santorio (2018) propose a re-analysis of future modals to deal with well-known problems when these modals combine with negation. According to them, future modals do not involve quantification over possible worlds. These issues are outside our concerns.

- (48) Yugw = **imaa/ima'** = hl **dim** wis.  
 IPFV = **EPIS** = CN **PROSP** rain  
 ≠ 'It might have rained.' / ≠ 'It might be raining.' / 'It might rain (in the future).'  
 #Context: You see puddles, and the flowers looking fresh and damp.  
 #Context: You hear pattering on the roof.  
 √Context: You hear thunder, so you think it might rain soon. (Matthewson 2013: 365)
- (49) Yugw = **imaa/ima'** = hl wis.  
 IPFV = **EPIS** = CN rain  
 'It might have rained.' / 'It might be raining.' / ≠ 'It might rain (in the future).'  
 √Context: You see puddles, and the flowers looking fresh and damp.  
 √Context: You hear pattering on the roof.  
 #Context: You hear thunder, so you think it might rain soon. (Matthewson 2013: 364–365)

For parallelism with these cases, we propose that in plain future *dim* constructions, there is a covert modal, for which *dim* provides the temporal orientation. That is, the prospective aspect *dim* requires some kind of modal licenser, and if there is no overt modal, there is a null one.<sup>17</sup> We do not go into the details of the flavour or strength of this null modal, but, for concreteness, we assume it is some kind of circumstantial necessity modal.<sup>18</sup> We also assume that this modal has a modal subordination requirement, as proposed by Klecha (2011) for English *will*; in other words, it is not the prospective *dim* that requires modal subordination, but the null modal.<sup>19</sup>

The denotation of the null modal is given in (50).

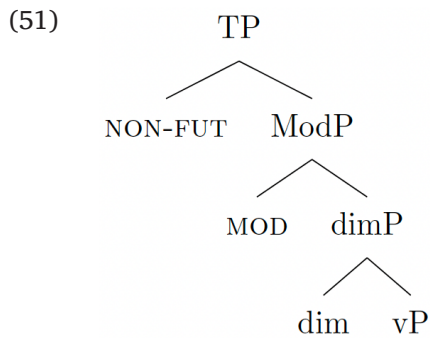
- (50)  $\llbracket \text{MOD} \rrbracket^{g,f,h}$  is defined only if  $f$  is a circumstantial modal base that is familiar in the discourse and  $h$  is a stereotypical ordering source  
 If defined,  $\llbracket \text{MOD} \rrbracket^{g,f,h} = \lambda Q_{\langle i, \langle \cdot, \cdot \rangle \rangle} \lambda t \lambda e \lambda w . \forall w' [w' \in \text{BEST}_{h(w,t)}(\cap f(w,t)) \rightarrow Q(t)(e)(w')]$

(51) shows the syntactic structure that supports the composition of Gitksan futures. The  $vP$  provides the predicate of events  $P$  that is the first argument of *dim*; *MOD* introduces modality, and a  $P$ -event is asserted to take place in all the best worlds given by the modal base and the ordering source, at a time after the time provided by the non-future tense.

<sup>17</sup> For the idea that future-denoting elements need to be syntactically licensed, see Todorović (2021b).

<sup>18</sup> Some research explicitly investigates the conversational backgrounds of future modals. For example, Tonhauser (2011) claims that the Paraguayan Guaraní future marker has a circumstantial or an epistemic modal base, and Giannakidou and Mari (2018) claim that Italian and Greek futures are epistemic.

<sup>19</sup> We are providing only an informal rendition of the modal subordination requirement (a presupposition that the modal base is familiar in the discourse). Klecha (2011) provides a more in-depth definition, but his analysis is couched within dynamic semantics, which we are not using.



The semantics of the sentence in (52), uttered in a world  $w_0$  at time  $t_0$ , are given in (53). We assume that the contextually salient reference time is  $t_0$ , the utterance time.

(52) **Dim** wis.  
**PROSP** rain  
 ‘It will rain.’

(53)  $\llbracket (52) \rrbracket_{g,t_0,w_0,f,h} = \llbracket \text{MOD}(\text{dim}(\text{wis})) \rrbracket_{g,t_0,w_0,f,h}(\llbracket \text{NON-FUT}_i \rrbracket_{g,t_0,w_0,f,h}) =$   
 $\exists e \forall w' [w' \in \text{BEST}_{h(w_0,t_0)}(\cap f(w_0,t_0)) \rightarrow [\tau(e) = t_0 \ \& \ \exists e' \exists t' [t_0 < t' \ \& \ e \gg e' \ \& \ \tau(e') = t' \ \& \ \text{rain}(e')(w')]]]$

According to (53), utterance of (52) in  $w_0$  at  $t_0$  asserts the following: there is an event  $e$  such that in all worlds  $w'$  that are compatible with the circumstantial modal base (which is familiar in the discourse), and that are ranked as best by the stereotypical ordering source,  $e$  takes place at  $t_0$  and there is an event  $e'$  and a time  $t'$  such that  $t'$  follows  $t_0$ ,  $e$  causes  $e'$ , and  $e'$  is a raining event that takes place at  $t'$ . Put simply, (52) is true if and only if in all circumstantially accessible stereotypical worlds, it rains within a time interval which follows the utterance time.

### 4.3 Progressive futures

We adopt a modal analysis of the progressive *yukw*. Modal analyses of the progressive have a long line of support in the literature for English (Dowty 1979; Portner 1998; among many others). As mentioned above, Schwan (2019) also argues for a modal approach in Gitksan. In addition, there is extensive evidence that reference to events is necessary for an empirically adequate account of the progressive; see, for example, Landman (1992). The analysis of Portner (1998) combines modality with reference to events, and we adapt a version of it here.

Our denotation for the progressive is given in (54). We follow Portner (1998) in assuming that the progressive relies on a circumstantial modal base; this modal base picks out the set of propositions that are relevant to whether the event is completed as an event of the right type. The progressive also relies on an ordering source, a set of propositions that ensure that the event is not interrupted. When applied to a predicate  $P$  in a world  $w_0$ , the progressive asserts that there



is an event going on in  $w_0$  at  $t_0$  which, if it is not interrupted, will become an event of type  $P$  (see Portner 1998: 774).

$$(54) \quad \llbracket \text{PROG} \rrbracket^{g,f,h} = \lambda P_{\langle 1, \langle s, t \rangle \rangle} . \lambda t \lambda e \lambda w . \tau(e) = t \ \& \ \text{in}(w, e) \ \& \ \forall w' [w' \in \text{BEST}_{h(w, t, e)}(\cap f(w, t, e)) \rightarrow \exists e' \exists t' [t \subset t' \ \& \ e \subset e' \ \& \ \tau(e') = t' \ \& \ P(e')(w')]] \quad (\text{adapted from Portner 1998: 774})$$

The application of progressive *yukw* to a non-future predication is illustrated in (55)–(56). In a context where the salient reference time  $g(i)$  is the utterance time, the sentence asserts that there is an event  $e$  going on at UT and in all the best worlds in which  $e$  is not interrupted,  $e$  is part of a larger event  $e'$  which is an event of raining.

$$(55) \quad \text{Yukw} = \text{hl} \ \text{wis} . \\ \text{PROG} = \text{CN} \ \text{rain} \\ \text{'It is raining.'}$$

$$(56) \quad \llbracket (55) \rrbracket^{g, t_0, w_0, f, h} = \llbracket \text{PROG}(\text{wis}) \rrbracket^{g, t_0, w_0, f, h} (\llbracket \text{NON-FUT}_i \rrbracket^{g, t_0, w_0, f, h}) = \\ \exists e . \tau(e) = g(i) \ \& \ \text{in}(w_0, e) \ \& \ \forall w' [w' \in \text{BEST}_{h(w_0, g(i), e)}(\cap f(w_0, g(i), e)) \rightarrow \exists e' \exists t' [g(i) \subset t' \ \& \\ e \subset e' \ \& \ \tau(e') = t' \ \& \ \text{rain}(e')(w')]]$$

Now we turn to the final step: progressive futures. The progressive denotation given in (54) takes as its first argument a predicate of type  $\langle 1, \langle s, t \rangle \rangle$  (a predicate of events, provided by the  $vP$  in cases like (55)). In *yukw dim* constructions, we need a type-shifted version of the progressive: *dim* has already introduced a time argument, so the first argument of *yukw* needs to be of type  $\langle i, \langle 1, \langle s, t \rangle \rangle \rangle$ . The type-shifted version of *yukw* is given in (57).

$$(57) \quad \llbracket \text{PROG} \rrbracket^{g,f,h} = \lambda P_{\langle i, \langle 1, \langle s, t \rangle \rangle \rangle} . \lambda t \lambda e \lambda w . \tau(e) = t \ \& \ \text{in}(w, e) \ \& \ \forall w' [w' \in \text{BEST}_{h(w, t, e)}(\cap f(w, t, e)) \rightarrow \exists e' \exists t' [t \subset t' \ \& \ e \subset e' \ \& \ P(t')(e')(w')]]$$

Putting all the pieces together, we obtain the denotation in (59) for sentence (58). We are assuming that the contextually salient time  $g(i)$  for the utterance of (58) is the utterance time  $t_0$ . (As shown in (44)–(45), ‘past futures’ also exist, and the extension to them is straightforward.)

$$(58) \quad \text{Yukw dim} \ \text{wis} . \\ \text{PROG PROSP} \ \text{rain} \\ \text{'It is going to rain.'}$$

$$(59) \quad \llbracket (57) \rrbracket^{g, t_0, w_0, f, h} = \llbracket \text{PROG}(\text{MOD}(\text{dim}(\text{wis}))) \rrbracket^{g, t_0, w_0, f, h} (\llbracket \text{NON-FUT}_i \rrbracket^{g, t_0, w_0, f, h}) = \\ \exists e . \tau(e) = t_0 \ \& \ \text{in}(w_0, e) \ \& \ \forall w' [w' \in \text{BEST}_{h(w_0, t_0, e)}(\cap f(w_0, t_0, e)) \rightarrow \exists e' \exists t' [t_0 \subset t' \ \& \ e \subset e' \\ \ \& \ \forall w'' [w'' \in \text{BEST}_{h(w', t')}(\cap f(w', t')) \rightarrow \tau(e') = t' \ \& \ \exists e'' \exists t'' [t' \subset t'' \ \& \ e' \subset e'' \ \& \ \tau(e'') = \\ t'' \ \& \ \text{rain}(e'')(w'')]]]]$$

This says that (58) is true if and only if there is an event  $e$  in  $w_0$  at  $t_0$  such that in all the best worlds  $w'$  in which  $e$  is not interrupted,  $e$  is part of an event  $e'$  and there is a time  $t'$  that includes

$t_0$ , and in all the best worlds that are accessible from  $w'$  and  $t'$ ,  $e'$  takes place at  $t'$  and  $e'$  causes a further event  $e''$  that takes place at a time  $t''$  following  $t'$ , and  $e''$  is a raining event in  $w''$ .

This complex denotation makes reference to three separate events: there is an event  $e$  in  $w_0$  at  $t_0$  which, if it is not interrupted, will become an event  $e'$ , and  $e'$  precedes (and causes) an event  $e''$  of it raining. This complexity is a result of the combination of our prospective analysis of *dim* (which involves preparatory events that cause the event described by the predicate), and Portner's event-based analysis of the progressive. In fact, Portner suggests something along similar lines for futurates (constructions which convey future time reference without overt future marking); he refers to Dowty (1979) for the original idea.<sup>20</sup>

- (i) Max was running the next day (but he got sick and had to stay in bed).

These could be handled within the present system in terms of a preparatory or planning event. The idea is that Max's event  $e$  of planning/preparing to run may be sufficient to make it the case that he runs in all worlds in Best (Circ, NI,  $e$ ).<sup>21</sup> In particular, we need to allow for a notion of interruption that applies to preparatory events, and say that Max's preparations were interrupted by his getting sick. (Portner 1998: 776)

The idea is similar in our analysis of progressive futures: it is the preparatory event that is progressivized. In other words, the precursor event of something happening has already started at the reference time in the actual world, and continues/completes in all the best accessible worlds. A similar example to Portner's (i) is felicitous with *yukw dim* in Gitksan (60); here, what is progressivized is the preparatory state before Hector talks:

- (60) [I asked Hector to tell me a story about his feast last month. He wanted to share it only with me, and he almost started, when Michael walked in and he never told me the story.]

**Yukw** (hli)<sup>22</sup> **dim** mehl-i=s Hector=hl wila wil-t dis wil=hl kw'itxw=s  
**PROG** (HYP) **PROSP** tell-T=PN Hector=CN MANR LVB-3.II TIME LVB=CN arrive=PN  
 Michael.  
 Michael

'Hector was going to tell a story when Michael showed up.'

Importantly, our analysis preserves Copley's original intuition that one core difference between *will* and *be going to* is whether the modal backgrounds are calculated at a moment, or at a larger interval. A progressive future sentence asserts that there is an event that follows  $t_0$  in all worlds

<sup>20</sup> See also Cipria and Roberts (2000) and Arregui et al. (2014) for a similar idea for Romance and Slavic imperfectives.

<sup>21</sup> 'Circ' is the circumstantial modal base and 'NI' is the non-interruption ordering source.

<sup>22</sup> For Tarpen (1987: 417), writing about the closely related Nisga'a, *hli dim* encodes 'an event that could happen or could have happened but did not.' Indeed, our consultant's comment for (60) with *hli* is that "there is a hint that it didn't happen."

that are compatible with the modal's conversational backgrounds at an interval  $t'$  surrounding  $t_0$ ; that is, an interval that began before  $t_0$ . Conversely, a plain future sentence accesses the modal background at  $t_0$ . Consequently, progressive futures, but not plain futures, convey that the future event is already determined before  $t_0$  (insofar as future events are ever 'determined': they will take place in all the best worlds in the modal base).

An important point to clarify is that we are proposing that in *yukw dim* constructions, *dim* combines with the modal progressive *yukw*, and there is no co-occurring null modal. Since we assume that the modal subordination requirement is introduced only by the null modal (as part of its lexical entry), we predict that there will be no modal subordination requirement in *yukw dim* constructions. This prediction is confirmed by the data, as we will make clear in the next sub-section.

#### 4.4 How the analysis captures the contrasts

The analysis presented above can capture the three core contrasts between plain and progressive futures in Gitksan and English.

Consider first offering contexts. In a context like (61) (repeated from (32)), plain *dim* is fine because the modal subordination requirement of its null modal is satisfied: I will bring fry bread *if you want it*. The progressive future *yukw dim* is ruled out because its modal backgrounds are calculated at a super-interval of the utterance time. This means that the speaker will bring fried bread in all the best worlds compatible with the facts at a time beginning *before* the utterance time. In other words, the speaker had already decided to bring fried bread, regardless of whether the addressee wants it. This is not a good offer and *yukw dim* is correctly ruled out.

(61) [I am hosting a potluck dinner next week. You have no idea what you're going to bring because you haven't thought about it yet. I tell you 'Nobody has offered to bring fry bread, but I hope somebody does.' You decide to offer to bring it so you reply:]

- a. **Dim** di-bagw-i-'y=hl eeja-m t'ilix.  
**PROSP** COM-arrive-TR-1SG.II =CN fry-ATTR grease  
 'I'll bring fry bread.'
- b. **#Yukw dim**=in di-bakw=hl eeja-m t'ilix.  
**PROG PROSP**=1SG.I COM-arrive=CN fry-ATTR grease  
 'I'm going to bring fry bread.'

Conditional warnings (i.e., warnings that are contingent on the addressee's actions) are correctly predicted by our analysis to be fine with *dim* and dispreferred with *yukw dim*. In (62)a, repeated from (35)b, the plain future involves a modal conversational background that is assessed at the utterance time, and its modal subordination requirement is satisfied by the implicit restriction *if you touch the door*. In (62)b, the progressive future clause asserts that in all the best worlds compatible with the relevant facts at a time beginning *before* the UT, the bomb will explode. This

does not fit the context, where it is not yet determined at UT that the bomb will explode (i.e., it depends on whether someone opens the door).<sup>23</sup>

(62) [There is a bomb which explodes when somebody opens the door. You warn me:]

- a. Ham    ji    das=hl    aats'ip, **dim**     $\underline{x}$ hluxw=hl    bomb!  
           don't.2SG IRR touch=CN door    **PROSP** explode=CN bomb  
           'Don't touch the door, the bomb will explode!'
- b. #Ham    ji    das=hl    aats'ip, **yukw dim**     $\underline{x}$ hluxw=hl    bomb!  
           don't.2SG IRR touch=CN door    **PROG PROSP** explode=CN bomb  
           'Don't touch the door, the bomb is gonna explode!'

The proposed analysis also explains the facts for inevitable warning contexts, such as in (63), repeated from (36). The time-bomb is set to explode in two minutes, i.e. the explosion is determined before the utterance time, so *yukw dim* is felicitous. Plain *dim* is infelicitous in this context, since the *if*-clause required for modal subordination does not fit here; the bomb will explode regardless of the actions of the hearer.

(63) [There is a time-bomb on the door which is set to explode in two minutes from now. You warn me:]

- a. #Ham    ji    dulbin-t ...    **dim**     $\underline{x}$ hluxw=hl    bomb!  
           don't.2SG IRR be.near-3SG.II **PROSP** explode=CN bomb  
           'Don't go near it, the bomb will explode!'
- b. Ham    ji    dulbin-t ... **yukw dim**     $\underline{x}$ hluxw=hl    bomb!  
           don't.2SG IRR near-3SG   **PROG PROSP** explode=CN bomb  
           'Don't go near it, the bomb is going to explode!'

Our analysis also explains why plain *dim* is dispreferred in discourse-initial cases as in (64), repeated from (39).

(64) [We are enjoying the sunshine in the garden. Suddenly you notice some black clouds have formed and it looks like it is about to rain. You say 'It's going to rain!' Which of the following sounds better?]

- a. **Dim**    wis!  
           **PROSP** rain  
           'It'll rain.' NOT CHOSEN
- b. **Yukw dim**    wis!  
           **PROG PROSP** rain  
           'It's gonna rain!' CHOSEN

---

<sup>23</sup> Recall that for English, Klecha (2011) claims that *gonna* is good in conditional warning contexts (see footnotes 4 and 9). This is because for Klecha, *gonna* has optional modal subordination, and is therefore acceptable in contexts involving modal subordination. In Gitksan, the progressive future is degraded in conditional warning contexts, and applying Klecha's analysis of *gonna* directly to *yukw dim* would incorrectly rule in (62).

The null modal that co-occurs with *dim* in (64)a enforces modal subordination, yielding the interpretation ‘if X happens, it will rain’. However, since it is already pretty certain that the rain will happen, an *if*-clause does not make sense here and the modal subordination requirement of the null modal is not satisfied. The progressive future *yukw dim* is correctly predicted to be felicitous in this context, because the future raining is already determined: in all the best worlds compatible with the facts at a time beginning *before* the utterance time, it is going to rain.

The same reasoning can be extended to the jumping and marriage announcement cases, repeated in (65)–(66). In (65), it looks as if the person on the bridge is necessarily going to jump. This clashes with the semantics of plain *dim*: due to modal subordination, *dim* would force the interpretation to be ‘He will jump if X happens’, but no X is provided by the context. Progressive *yukw dim* again makes reference to a super-interval surrounding the utterance time, so the jumping is determined before the utterance time, which matches the context.

(65) [You see someone on the edge of a bridge. You say ‘Oh no! He’s going to jump!’. Which of the following sounds better?]

- a. Oo nee, **yukw**=hl **dim** saa gos-t!  
oh NEG **PROG**=CN **PROSP** away jump-3.II  
‘Oh no, he’s going to jump!’ CHOSEN
- b. Oo nee, **dim** saa gos 'nit!  
oh NEG **PROSP** away jump 3.III  
‘Oh no, he’ll jump!’ NOT CHOSEN

Similarly in (66), the decision about marriage has already been made. *Yukw dim* is felicitous for the same reason as in (65), and plain *dim* is infelicitous, since it requires there to be a condition ‘They will get married if X happens’.

(66) [Context: We run into Clarissa after not seeing her for a while and she is arm-in-arm with somebody and they look happy. Clarissa says to us:]

- a. **Yukw**=hl **dim** neks-i'y!  
**PROG**=CN **PROSP** marry-1SG.II  
‘I’m going to get married!’
- b. #**Dim** neks-i'y!  
**PROSP** marry-1SG.II  
‘I will get married!’

## 5 Conclusion

### 5.1 Summary of proposals

Our first goal in this paper was to establish whether a contrast similar to that between English *will* and *be going to* can be found in languages other than English. We investigated Gitksan plain vs. progressive future constructions, and we provided evidence that these two forms of future time

reference show the same meaning contrasts as English *will* vs. *be going to*. In both languages, the plain future (*will* or *dim*) is compatible with offers and conditional warnings, and incompatible with inevitable warnings and discourse-initial contexts. And in both languages, the progressive future (*be going to* or *yukw dim*) is dispreferred in offer and conditional warning contexts, and fully acceptable in inevitable warnings and discourse-initially.

We have analyzed Gitksan *dim* as a prospective aspect, which places the time at which a predicate holds after some precursor event that takes place at the reference time. *Dim* co-occurs with an overt or covert modal; this modal provides the quantification over possible worlds appropriate for assertions about the future. When *dim* co-occurs with a covert modal, we have plain future constructions; these involve obligatory modal subordination (lexically specified on the covert modal, following the spirit of Klecha 2011). *Dim* constructions also involve covert non-future tense; this gives rise to either ordinary future readings, or past-future readings, depending on whether the non-future tense picks out the utterance time or a past time.

Our second task was to determine if there is cross-linguistic support for positing progressive aspect in some futures. The answer is yes. We showed that Gitksan *yukw dim* transparently contains the progressive *yukw*. The effect of the progressive above *dim* is to extend the time interval of the preparatory event which precedes the prejacent's future event. Since that longer time interval crucially begins before the relevant reference point, this gives rise to the meaning that the future event is already determined (due to happen in all the best worlds compatible with the relevant facts). Such an analysis correctly predicts that inevitable warnings, which involve events determined before the utterance time, are felicitous with the progressive future *yukw dim*. The same holds for discourse-initial contexts. *Yukw dim* asserts that the future event of, for example, jumping in (65), is already determined prior to the reference time, so it is correctly ruled in. The analysis also correctly predicts that *yukw dim* is incompatible with offers or conditional warnings; these do not make assertions about already decided events, but are crucially dependent on the addressee's desires or actions.

On the other hand, plain future *dim* is felicitous in exactly those contexts (offers and conditional warnings). More generally, plain future *dim* is felicitous whenever there is sensitivity to the circumstances at the utterance time; this is due to the obligatory modal subordination on the null modal. This also explains why plain *dim* is infelicitous with inevitable warnings or discourse-initial contexts, because in those contexts, the utterance time circumstances do not affect the future outcome of the action.

In sum, we have advanced an analysis of Gitksan *dim* and *yukw dim* future constructions which draws on elements of both Copley's (2009) and Klecha's (2011) analyses. The analysis is compositional and uses only independently-required building blocks: the prospective aspect *dim*, the progressive *yukw*, and a covert modal element in plain *dim* constructions.

## 5.2 English, and the big picture: Building blocks in future constructions

The third question we asked was whether cross-linguistic data shed light on the debate about English. We believe that our approach to Gitksan can be fruitfully extended to English, with full empirical coverage. Moreover, we argue that a combination of features from both Copley's and Klecha's analyses is required to cover the full range of facts.

Recall that Copley derives the contingency of *will* in offer contexts (i.e., the fact that offers crucially depend on the addressee's wishes) from a pragmatic requirement on offering (see (14)). As we pointed out above, this approach does not straightforwardly extend to the warning data. Conversely, Klecha's account involving modal subordination works well for warnings – conditional warnings involve modal subordination and inevitable warnings do not – but he himself asserts that the account should not be extended to offering data.

Our analysis incorporates from Klecha's account the idea that the plain future modal has obligatory modal subordination. Modal subordination narrows down the worlds being quantified over to those that include the hearer's desires or actions, and we have argued that this applies in a parallel fashion both to offers and to warnings: every accessible world *where you want the fried bread* or *where you touch the door* is a world where I'll bring the fried bread or the bomb will explode. Thus, unlike Klecha, we do not believe that offers require a separate lexical item offering-*will*; on the contrary, the modal subordination analysis of *will* extends nicely to offers.

The modal subordination idea also successfully captures the discourse-initial context data (which, again, are not fully explained by Copley's analysis alone): these contexts are not compatible with modal subordination and hence are only good with progressive futures, in English as well as in Gitksan.

Our analysis can also help to resolve the controversy about whether English *be going to* contains progressive semantics. Here is where Copley's analysis has a critical insight to contribute, and where her cross-linguistic predictions are upheld. Gitksan wears the progressivity of its progressive futures on its sleeve, in an even more transparent way than English does. Our analysis of Gitksan is compositional, and it uses only independently-motivated building blocks: the prospective aspect *dim*, a covert modal in plain *dim* constructions, and crucially the progressive *yukw*.

The Gitksan data, and the Gitksan-English comparison, enable us to advance a unified picture about how future constructions are composed in the two languages. The core idea is that languages combine smaller semantic building blocks to create complex temporal/aspectual meanings (cf. von Stechow and Matthewson 2008), as shown in **Table 1**. In both languages, futures that allow offers and conditional warnings, but disallow discourse-initial contexts, are composed of a covert modal (that has obligatory modal subordination – annotated as  $\emptyset_{\text{ModSub}}$ ) plus an overt prospective aspect (WOLL or *dim*; WOLL is spelled out as *will* or *would*). Futures that disallow



offers or conditional warnings, but allow discourse-initial contexts, are composed of progressive (-*ing* or *yukw*) plus prospective. If we tentatively assume that English uses the verb *go* as a prospective aspect, we have overt prospective in all cases.<sup>24</sup> In **Table 1**, ‘offer’ stands as shorthand for the collection of properties that plain futures have.

		MOD	PROG	PROSP	spell-out
English	offer	$\emptyset_{\text{ModSub}}$		WOLL	<i>will</i>
	non-offer		- <i>ing</i>	<i>go</i>	<i>is going to</i>
Gitksan	offer	$\emptyset_{\text{ModSub}}$		<i>dim</i>	<i>dim</i>
	non-offer		<i>yukw</i>	<i>dim</i>	<i>yukw dim</i>

**Table 1:** Building blocks in plain vs. progressive futures in English and Gitksan.

### 5.3 Future research

Much more research remains to be done. One issue that deserves further investigation is the status of English *be going to* in conditional warning contexts (*Don’t touch the door! The bomb is going to explode!*). As pointed out in footnote 9, Klecha’s analysis predicts that *be going to* is semantically acceptable here, but might be pragmatically dispreferred as *will* is a better choice because its presupposition is met. Given the disagreements about judgments in the literature, a first useful step would be to establish some firm empirical generalizations. In doing so, it would be good to avoid some complicating factors, such as the presence of a definite article in *the bomb*, which introduces potentially interfering presuppositions into the context.

In terms of the analysis of *be going to*, we showed that our inclusion of progressive semantics rules *be going to* out in conditional warnings, because the progressive asserts that the exploding will happen in all the best worlds compatible with the facts at a time beginning *before* the speaker touches the door. This works well for Gitksan, where the progressive future is degraded in conditional warnings, and for some English speakers, but the analysis would need tweaking for English speakers who allow *be going to* here.

Within Gitksan, there is one more building block that appears in future constructions: the pre-predicative marker *hlaa*, which we tentatively analyze as a marker of proximity, as does Jóhannsdóttir (2006). The effect of *hlaa* on plain *dim* futures is illustrated in (67). Futures with *hlaa* place the event time close to the reference time; a compositional analysis remains to be developed for these constructions.

---

<sup>24</sup> Thanks to Hotze Rullmann (p.c.) for leading us to this idea.

- (67) a. **Dim** k'ots-d-i-'y = hl ges-in.  
**PROSP** cut-T-TR-1SG.II = CN hair-2SG.II  
 'I'll cut your hair.'  
*Consultant's comment:* "It'll either be right now, or in the future."
- b. **Hlaa dim** = in k'ots = hl ges-in.  
**PROX PROSP** = 1SG.I cut = CN hair-2SG.II  
 'I'm about to cut your hair.'  
*Consultant's comment:* "Means five minutes, ten minutes, I'm gonna cut your hair."

There is also more investigation to be done on whether other aspects, including *yukw*, can appear below *dim*. According to our analysis, progressive *yukw* scopes over prospective *dim*, and *dim* selects for a vP (see (51)). If *yukw* needs to be located in an AspP, we predict that *yukw* cannot appear under *dim*.<sup>25</sup>

The facts in this regard are not clear-cut. On the one hand, sentences with *yukw dim yukw* are dispreferred, and often judged as unacceptable. In (68) the speaker volunteered a single *yukw*, and when asked about the possibility of double *yukw*, commented that "It's okay in English but it doesn't sound good in Gitsenimx [Gitksan]."

- (68) [Your relatives are coming for a visit. They say they are going to arrive at 5pm. You say:]  
 Nem = dii di~t'aa ji hlaa bekw-si'm, **yukw dim** (\***yukw**) ixw-i'y.  
 NEG + FUT = FOC DUR~sit IRR PROX arrive-2PL.II **PROG PROSP (PROG)** fish-1SG.II  
 'I won't be home when you guys get here, I'm going to be fishing.'

Further, *yukw* is rejected under plain *dim*, as shown in (68).

- (69) a. **Yukw dim** bax-t.  
**PROG PROSP** run-3.II  
 'He's going to run.'
- b. \***Dim yukw** bax-t.  
**PROSP PROG** run-3.II

On the other hand, structures as in (68) are occasionally accepted by some consultants, as for example in (70)a,b. One speaker offered a contrast between (70)b, which contains a lower *yukw* and means the people are already singing when you come in, and (70)c, which does not contain a lower *yukw*, and conveys that "People will start singing when you come in."

---

<sup>25</sup> Unless we posit an AspP inside of a vP, along the lines of Travis (2010).

- (70) [You are arriving late to a ceremony and you're being told to be discreet when you enter because there will be a man singing and you shouldn't interrupt.]
- a. **Yukw dim yukw** limx=hl get wil ts'in-in.  
**PROG PROSP PROG** sing=CN man COMP enter-2SG.II  
 'The man is going to be singing when you go in.'
- b. **Yukw dim yukw**=hl limx=hl get, ji hlaa ts'in-in.  
**PROG PROSP PROG**=CN sing=CN man IRR PROX enter-2SG.II  
 'People will be singing when you come in.'
- c. **Yukw dim** limx=hl get, ji hlaa ts'in-in.  
**PROG PROSP** sing=CN man IRR PROX enter-2SG.II  
 'People will sing when you come in.'

One possible explanation for the acceptability of lower *yukw* for some speakers comes from an independently attested homophonous verb *yukw*, which means 'busy'. In other words, the examples in (70) could be paraphrased as 'people will be busy singing upon your entry'; the verbal *yukw* forms a resultative verbal compound with *limx* 'sing' meaning 'busy singing'.<sup>26</sup> However, because there is no consensus on the acceptability of *yukw dim yukw* cases, we have to leave this question for future research.

It is also worth asking how speakers who reject (*yukw*) *dim yukw* express future progressive meanings (as opposed to the progressive future meanings we have been discussing throughout the paper). Can they simply use *yukw dim*? In other words, can the construction that we argued means 'be going to V' (progressive future) also be used to convey 'will be V-ing' (future progressive)?<sup>27</sup> Further research is needed here, but we do not believe so. Even though, as shown in (68), speakers can use *yukw dim* in a context where the event will already be in progress at some later salient time interval, *yukw dim* is also perfect in contexts where the event is not already in progress at a future time. This includes, for example, the discourse-initial contexts such as 'It is going to rain' (≠ 'It will be raining') and 'He is going to jump' (≠ 'He will be jumping.').<sup>28</sup>

In general, much more remains to be revealed about viewpoint aspect in Gitksan. It is noteworthy that the syntax of the progressive *yukw* – sitting very high in the tree and taking a

---

<sup>26</sup> Progressive *yukw* is likely a recent grammaticization from *yukw* 'busy'. The two *yukws* unambiguously appear in different syntactic contexts. The progressive *yukw* triggers dependent agreement, but for independent reasons, these changes would not show up in the structure embedded under the lower *yukw* in (70). We leave these issues for further research.

<sup>27</sup> We thank a reviewer for prompting us to clarify this point.

<sup>28</sup> There are additional problems for treating *yukw dim* as ambiguous between a progressive future ('be going to V') and a future progressive ('will be V-ing'). For example, this would raise the question for English of why we have a four-way distinction between *I will fish*, *I will be fishing*, *I am going to fish*, and *I am going to be fishing*. Gitksan-internally, this idea would also have the prima facie problem that *yukw* is higher in the syntactic structure than *dim*, so compositionally it makes more sense to have *yukw* semantically applying after *dim* does, as in our analysis.

subordinate clause – is quite different from that of the English progressive. There is also obviously much to be done in a wider range of languages on interactions between future markers and viewpoint aspect. We do not necessarily expect that our analysis will extend to all languages that have two contrasting grammaticalized means of expressing future time reference. Nevertheless, the close parallels between English and Gitksan, two unrelated languages, suggest that it is at least worth entertaining the hypothesis that our analysis has wider cross-linguistic validity. We also believe that the unification of offers with conditional warnings, as both deriving from obligatory modal subordination, provides a step forward in our understanding of the English facts.

---

## Abbreviations

1 = first person, 2 = second person, 3 = third person, I/II/III = pronoun series, ATTR = attributive, COM = comitative, CIRC = circumstantial, COMP = complementizer, CN = common noun connective, DUR = durative, EPIS = epistemic, FOC = focus, FUT = future, HYP = hypothetical, INDP = independent, IRR = irrealis, LOC = locative, LVB = light verb, MANR = manner, NECESS = necessity, NEG = negation, OBL = oblique, PL = plural, PN = proper noun connective, PREP = preposition, POSS = possessive, PROG = progressive, PROX = proximal, PROSP = prospective, PRT = partitive, Q = question, QUDD = question under discussion, SPT = spatio-temporal, SG = singular, SX = intransitive subject extraction, T = ‘T’ suffix, TR = transitive, VAL = valency adjusting morpheme, YNQ = yes-no question

## Acknowledgements

We are very grateful to our Gitksan language consultants for their contributions, insight, and patience: Vincent Gogag, Jeannie Harris, Hector Hill, Ray Jones, Herb Russell, Barry Sampere, Barbara Sennott and Louise Wilson – ha'miyaa / t'oyaxsi'm 'nisi'm. We thank the members of the Tense and Aspect in the Pacific Lab and the Gitksan Research Lab at UBC for their comments and suggestions throughout this research. Thank you to the audiences at the Societas Linguistica Europaea Conference 52 in 2019, Semantics of Under-Represented Languages in the Americas 11 in 2020, and the University of Indiana in 2021 for their helpful questions and comments. We especially thank Henry Davis, Angelika Kratzer, Hotze Rullmann and three reviewers (two anonymous, one who was Seth Cable) for their thoughtful comments and suggestions.

## Funding information

This paper draws on research supported by the Social Science and Humanities Research Council (grant number: 435-2016-0381) and the Jacobs Research Fund.

## Competing interests

The authors have no competing interests to declare.

---

## References

- Abusch, Dorit. 1985. *On verbs and time*. Amherst, MA: University of Massachusetts dissertation.
- Abusch, Dorit. 2012. Circumstantial and temporal dependence in counterfactual modals. *Natural Language Semantics* 20. 273–297. DOI: <https://doi.org/10.1007/s11050-012-9082-5>
- Aonuki, Yurika. 2021. *Relative pronominal tense: Investigation in English, Japanese, and Gitksan*. Vancouver, Canada: University of British Columbia MA thesis.

- Arregui, Ana & Rivero, María Luisa & Salanova, Andrés. 2014. Cross-linguistic variation in imperfectivity. *Natural Language and Linguistic Theory* 32. 307–362. DOI: <https://doi.org/10.1007/s11049-013-9226-4>
- Bennett, Michael & Partee, Barbara. 1978. Toward the logic of tense and aspect in English. Bloomington: Indiana University Linguistic Club. Reprinted in Partee, Barbara. 2010. In *Compositionality in formal semantics: Selected papers by Barbara H. Partee*, 59–109. Oxford: Blackwell. DOI: <https://doi.org/10.1002/9780470751305.ch4>
- Bicevskis, Katie & Davis, Henry & Matthewson, Lisa. 2017. Quantification in Gitksan. In Paperno, Denis & Keenan, Edward (eds.), *Handbook of quantification in natural languages*, vol. 3, 281–382. Dordrecht: Springer. DOI: [https://doi.org/10.1007/978-3-319-44330-0\\_6](https://doi.org/10.1007/978-3-319-44330-0_6)
- Binnick, Robert. 1971. *Will and be going to*. *Chicago Linguistic Society (CLS)* 7. 40–52.
- Bohnemeyer, Jürgen. 2014. Aspect vs. relative tense: the case reopened. *Natural Language and Linguistic Theory* 32. 917–954. DOI: <https://doi.org/10.1007/s11049-013-9210-z>
- Cariani, Fabrizio & Santorio, Paolo. 2018. *Will* done better: Selection semantics, future credence, and indeterminacy. *Mind* 127. 129–165. DOI: <https://doi.org/10.1093/mind/fzw004>
- Chen, Sihwei & Hohaus, Vera & Laturus, Rebecca & Louie, Meagan & Matthewson, Lisa & Rullmann, Hotze & Simchen, Ori & Turner, Claire K. & Vander Kloek, Jozina. 2017. Past possibility cross-linguistically: Evidence from 12 languages. In Arregui, Ana & Rivero, Maria-Luisa & Salanova, Andres (eds.), *Modality across syntactic categories*, 236–287. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780198718208.003.0012>
- Cipria, Alicia & Roberts, Craige. 2000. Spanish imperfecto and pretérito: Truth conditions and Aktionsart effects in a situation semantics. *Natural Language Semantics* 8. 297–347. DOI: <https://doi.org/10.1023/A:1011202000582>
- Condoravdi, Cleo. 2002. Temporal interpretation of modals: Modals for the present and the past. In Beaver, David & Casillas Martinez, Luis & Clark, Brady & Kaufmann, Stefan (eds.), *The construction of meaning*, 59–88. Stanford, CA: CSLI Publications.
- Copley, Bridget. 2009. *The semantics of the future*. New York: Routledge. DOI: <https://doi.org/10.4324/9780203880258>
- Copley, Bridget. 2018. Dispositional causation. *Glossa: a journal of general linguistics* 3(1). 137. DOI: <https://doi.org/10.5334/gjgl.507>
- Dowty, David. 1979. *Word meaning and Montague Grammar*. Dordrecht: Reidel. DOI: <https://doi.org/10.1007/978-94-009-9473-7>
- Dunlop, Britt & Gessner, Suzanne & Herbert, Tracey & Parker, Aliana. 2018. *Report on the status of B.C. First Nations languages*. Brentwood Bay, BC: First Peoples' Cultural Council.
- Giannakidou, Anastasia & Mari, Alda. 2018. A unified analysis of the future as epistemic modality: The view from Greek and Italian. *Natural Language and Linguistic Theory* 36. 85–129. DOI: <https://doi.org/10.1007/s11049-017-9366-z>
- Glougie, Jennifer. 2007. Aspect in St'át'imcets future expressions. In Jóhannsdóttir, Kristin M. & Oberg, Martin A. (eds.), *Papers for the international conference on Salish and neighbouring languages* 42, vol. 20, 220–235. Vancouver: UBC Occasional Papers in Linguistics.

- Heim, Irene. 1982. *The semantics of definite and indefinite noun phrases*. Amherst, MA: University of Massachusetts dissertation.
- Hunt, Katharine. 1993. *Clause structure, agreement and case in Gitksan*. Vancouver, Canada: University of British Columbia dissertation.
- Jóhannsdóttir, Kristin. 2006. Aspect in Gitksan. In Fujimori, Atsushi & Reis Silva, M. Amélia (eds.) *Proceedings of WSCLA 11*. 82–94. UBC: Working Papers in Linguistics and Pacific Northwest Languages and Literature Press.
- Jóhannsdóttir, Kristin. 2011. *Aspects of the progressive in English and Icelandic*. Vancouver, Canada: University of British Columbia dissertation.
- Jóhannsdóttir, Kristin & Matthewson, Lisa. 2007. Zero-marked tense: The case of Gitksan. In Elfner, Emily & Walkow, Martin (eds.), *Proceedings of the North East Linguistics Society 37*. 299–310. BookSurge Publishing.
- Klecha, Peter. 2011. Optional and obligatory modal subordination. In Reich, Ingo & Horch, Eva & Pauly, Dennis (eds.), *Proceedings of Sinn und Bedeutung 15*. 365–379. Saarbrücken: Saarland University Press.
- Klecha, Peter. 2016. Modality and embedded temporal operators. *Semantics and Pragmatics* 9. 1–55. DOI: <https://doi.org/10.3765/sp.9.9>
- Klecha, Peter & Jalbert, Joseph & Munn, Alan & Schmitt, Cristina 2008. Explaining why *gonna* precedes *will* in acquisition. In Chain, Harvey & Enkeleida, Hapia & Jacob, Heather (eds.) *Supplement of the proceedings of the 32nd Annual Boston University Conference on Language Development*. Somerville: Cascadilla Press.
- Klein, Wolfgang. 1994. *Time in language*. New York: Routledge.
- Kratzer, Angelika. 2011. *What “can” can mean*. Paper presented at Semantics and Linguistic Theory Conference 21, Rutgers; Lecture notes, University of Massachusetts, Amherst.
- Landman, Fred. 1992. The progressive. *Natural Language Semantics* 1. 1–32. DOI: <https://doi.org/10.1007/BF02342615>
- Louie, Meagan. 2014. *The temporal semantics of actions and circumstance in Blackfoot*. Vancouver, Canada: University of British Columbia dissertation.
- Matthewson, Lisa. 2012. On the (non-)future orientation of modals. In Aguilar Guevara, Ana & Chernilovskaya, Anna & Nouwen, Rick (eds.), *Proceedings of Sinn und Bedeutung 16*, vol. 2, 431–446. Cambridge, MA: MIT Working Papers in Linguistics.
- Matthewson, Lisa. 2013. Gitksan modals. *International Journal of American Linguistics* 79. 349–394. DOI: <https://doi.org/10.1086/670751>
- Matthewson, Lisa & Todorović, Neda. 2018. Temporal properties of attitude Complements: The Serbian – Gitksan connection. In Johnson, Kimberly & Göbel, Alexander (eds.), *Proceedings of the Tenth Conference on the Semantics of Under-Represented Languages in the Americas*, 149–165. Amherst, MA: GLSA.
- Portner, Paul. 1998. The progressive in modal semantics. *Language* 74(4). 760–787. DOI: <https://doi.org/10.2307/417002>



- Reis Silva, Amélia. 2009. Two futures in Blackfoot. Ms. University of British Columbia.
- Rigsby, Bruce. 1986. Gitksan grammar. Ms. University of Queensland.
- Roberts, Craige. 1989. Modal subordination and pronominal anaphora in discourse. *Linguistics and Philosophy* 12(6). 683–721. DOI: <https://doi.org/10.1007/BF00632602>
- Rullmann, Hotze & Matthewson, Lisa. 2018. Towards a theory of modal-temporal interaction. *Language* 94(2). 281–331. DOI: <https://doi.org/10.1353/lan.2018.0018>
- Schwan, Michael David. 2019. Yukw-ing in Gitksan. Ms. University of British Columbia.
- Tarpen, Marie-Lucie. 1987. *A grammar of the Nisgha language*. Victoria, Canada: University of Victoria dissertation.
- Thomas, Guillaume. 2014. Circumstantial modality and the diversity condition. In Etxeberria, Urtzi & Fălăuș, Anamaria & Irurtzun, Aritz & Leferman, Bryan (eds.), *Proceedings of Sinn und Bedeutung* 28. 433–450.
- Todorović, Neda. 2021a. Future interpretation in Gitksan and reduced clausal complements. In Laszakovits, Sabine and Shen, Zheng (eds.), *The size of things I: Structure building (Open Generative Syntax 12)*, 89–115. Berlin: Language Science Press. DOI: <https://doi.org/10.5281/zenodo.5140049>
- Todorović, Neda. 2021b. Licensing future in Serbian and beyond. Ms. University of British Columbia.
- Toews, Carmela. 2015. *Topics in Siamou tense and aspect*. Vancouver, Canada: University of British Columbia dissertation.
- Tonhauser, Judith. 2011. The Paraguayan Guaraní future marker *-ta*: Formal semantics and cross-linguistic comparison. In Rathert, Monika & Musan, Renate (eds.), *Tense across languages*, 207–231. Tübingen: Niemeyer. DOI: <https://doi.org/10.1515/9783110267020.207>
- Travis, Lisa. 2010. *Inner aspect: The articulation of VP*. Dordrecht: Springer. DOI: <https://doi.org/10.1007/978-90-481-8550-4>
- von Stechow, Kai & Matthewson, Lisa. 2008. Universals in semantics. *The Linguistic Review* 25. 49–111. DOI: <https://doi.org/10.1515/TLIR.2008.004>

