Prospective aspect in nłeʔkepmxcín*

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Abstract: Previous literature on nłeʔkepmxcín (Thompson and Thompson 1992, Thompson and Thompson 1996, Kroeber 1997, Kroeber 1999, Koch 2008) calls the auxiliary predicate *xʷúy̓* a "future tense"; in this paper, I argue that *xʷúy̓* is a prospective aspect. I claim that *xʷúy̓* entails that the given eventuality occurs in the future of a contextually salient reference time. In main clauses, the contextually salient reference time is most often the utterance time. In subordinate clauses, the contextually salient reference time is provided by the main clause. *xʷúy̓* is better analyzed as a prospective aspect as it allows for future-in-the-past readings. Secondly, I propose that *xʷúy̓* is not modal, following Matthewson (2013) and Matthewson, Todorović, and Schwan (2022). Like Gitksan *dim*, the nłeʔkepmxcín prospective aspect *xʷúy̓* provides both epistemic and circumstantial modals with their future temporal orientation Condoravdi (2002).

Keywords: prospective aspect, modality, nłeʔkepmxcín

1 Introduction

1.1 Overview

This paper focuses on the semantics of the auxiliary predicate *xʷúy̓* in nłeʔkepmxcín. nłeʔkepmxcín is a northern Interior Salish language with an estimated 100 speakers (Gessner, Herbert, and Parker 2022). Previous literature on nłeʔkepmxcín — Thompson and Thompson (1992) Thompson and Thompson (1996), Kroeber (1997), Kroeber (1999) and Koch (2008) — calls *xʷúy̓* a 'future tense'. If *xʷúy̓* were a future tense, it should entail that the reference time of the clause it marks follows utterance time, following Klein (1994). I argue instead that *xʷúy̓* is a prospective aspect.

Under my analysis, *xʷúy̓* entails that the time of the event follows a contextually salient reference time. When *xʷúy̓* appears in a main clause, the reference time most often coincides with utterance time. In subordinate clauses, *xʷúy̓* takes the time of the main clause event as its reference time. I demonstrate that *xʷúy̓* is compatible with reference times that precede utterance time (i) in

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main clauses, if the context is sufficiently rich and (ii) in subordinate clauses where the event in the subordinate clause follows the time of the event in the main clause, even if both the subordinate event and the main event precede utterance time.

Previous cross-linguistic literature on future markers has proposed that there are two components to future event time reference: modality and prospective aspect (Werner 2006, Matthewson 2006, a.o.). In this paper, I argue that *xʷúy̓* is not itself a modal, but may co-occur with overt epistemic and circumstantial modals. Following Matthewson et al. (2022), I propose that, when *xʷúy̓* co-occurs with overt modals, *xʷúy̓* provides the temporal orientation of the modal claim (in the sense of Condoravdi 2002). Also following what Matthewson (2013) and Matthewson et al. (2022) propose for Gitksan *dim*, I will argue that, in the absence of an overt modal, *xʷúy̓* semantically composes with a null modal.

1.2   Methodology

The data elicited by me in this paper was elicited according to standard practices in semantic fieldwork (see Matthewson 2004, Bochnak and Matthewson 2020). Consultants were provided with a context, and then asked to either translate a sentence from English into nłeʔkepmxcín (translation tasks), or were provided with an nłeʔkepmxcín sentence and asked to judge how appropriate it is in the given context (acceptability judgment tasks). Some data comes from conversation sessions (recordings of spontaneous conversation between two speakers, KBG and CMA) — if data comes from a conversation session, it is presented with a "Conversational context" that briefly describes what was being discussed at the time of the consultant's utterance. Data from sources other than the author's fieldwork is cited accordingly.

1.3   Structure

Section 2 presents *xʷúy̓* data. Section 3 proposes a semantics for *xʷúy̓* whereby *xʷúy̓* is a prospective aspect, not a future tense. In Section 4, I argue against the notion that *xʷúy̓* is a modal (as in, for example, Werner 2006 analysis of English future marker *will*). Section 5 concludes.

2   Data

2.1   Future of utterance time

Main clauses in nłeʔkepmxcín are superficially tenseless; that is, nłeʔkepmxcín main clauses do not contain overt tense morphology (Thompson & Thompson 1992:50). Tenseless clauses are felicitous in contexts that provide either a present or a past reference time, regardless of whether the predicate in the clause is stative or eventive. The compatibility of a stative predicate with a present and a past reference time, respectively, is shown in (1).[1] The compatibility of an eventive predicate with

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[1] There are two subject positions available in nłeʔkepmxcín. In each of the nłeʔkepmxcín examples presented in this paper, there is a null expletive subject clitic that co-occurs with the ergative subject suffix. I have chosen to overtly indicate this null expletive subject clitic when the predicate in question is intransitive, but I have chosen to omit the third-person subject from clauses containing transitive predicates for the sake of clarity. See (Davis 2000) for a detailed description of subject positions in Salish.

a present and a past reference time, respectively, is shown in (2).[2]

(1) a. Conversational context: CMA is talking about a drink she regularly makes.
   ném ẏé
   ném=∅   ẏé
   very=3sbj good
   'It is really good.'   (CMA | NV | VF)

   b. Context: You went to a concert last night to watch your friend perform. You had a really great time. Today, your sister asks you how the concert was. You say:
   ném ẏé
   ném=∅   ẏé
   very=3sbj good
   'It was really good.'   (CMA | NV | VF)

(2) a. Conversational context: CMA and KBG are discussing family terms.
   səxsə́xt kn xʷúẏceʔ
   səx∼sə́x-t=kn   xʷúẏceʔ
   aug∼make.mistake-imm=1sg.sbj again
   'I get mixed up yet/still.'   (CMA | NV | VF)

   b. Conversational context: CMA accidentally logged out of the Zoom session and is now logging back on.
   səxsə́xt kn
   səx∼sə́x-t=kn
   aug∼make.mistake-imm=1sg.sbj
   'I made a mistake (I pressed the wrong button).'   (CMA | NV | VF)

When the time of the event denoted by the predicate follows utterance time, *xʷúẏ* is required. Consider the rejections of the utterances that do not contain *xʷúẏ*, and their accompanying comments, in (3)–(5).

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[2] Glossing abbreviations follow the Leipzig Glossing Conventions (Comrie, Haspelmath, and Bickel 2015); glosses that deviate from the Leipzig Conventions are: 2cl= second-position clitic, aug = augmentative reduplication, aut = autonomous, cop = copula, ctr = control transitivizer, ctr.mid = control middle, d/c = determiner/complementizer, d/c.rem = remote determiner/complementizer, det.rem = remote determiner, emph = emphatic prefix, imm = immediate, indep = independent pronoun, infer = inferential evidential, prosp = prospective aspect, rprt = reportative evidential, sense = sensory evidential. All errors in glossing and transcription are my own.

(3) Context: Your cousin is visiting you for a few days, but he leaves tomorrow. Your friend comes by and asks how long your cousin is staying. You say:

qʷcíyx tk spiʔx̌éwt

qʷc-íyx=∅   t=k=s-piʔx̌éwt

   leave-AUT=3SBJ OBL=DET=NMLZ-day.away

   Intended: 'He's leaving tomorrow / He will leave tomorrow.'

   Consultant comment: '[That's] not a full sentence. [Say] ***xʷúy̓*** *qʷcíyx tk spiʔx̌éwt*.'

                                               (CMA | NV | SF)

(4) Context: You walk into your friend's house and smell her cooking your favourite meal. You think:

kʷukʷscút kn

#kʷukʷ-s-t-sút=kn

   save-CAUS-TR-REFL=1SG.SBJ

   Intended: 'I will enjoy it.'   (KBG | NV | SF)

   Comment: 'I think you need a *xʷúy̓* in there.'

(5) Context: Your friends are trying to organize a get together tomorrow, but you have to work tomorrow. You say:

#*cwə́m kn tk spiʔx̌éwt*

#cw-ə́m=kn   t=k=s-piʔx̌éwt

   do-CTR.MID=1SG.SBJ OBL=DET=NMLZ-day.away

   Intended: 'I'm working tomorrow.'   (BP | Ly | SF)

   Comment: 'That doesn't sound correct. I would have said ***xʷúy̓*** *kn cwə́m tk spiʔx̌éwt*.'

As well as the above more 'typical' future notions, the auxiliary predicate *xʷúy̓* is compatible with circumstantial necessity contexts. *xʷúy̓* can be used to make an offer (6), to give a command (7), and to express (strong) goal-oriented modality (8).

(6) Context: Your friend is looking for a ride to a meeting you both have today. You say:

xʷúy̓ *néscn*

xʷúy̓ nés-[n]-[t]-si-n

xʷúy̓ go-CTR-TR-2SG.OBJ-1SG.ERG

'I'll bring you.'   (BP | Ly | VF)

(7) Context: You're in a café where the seating time is limited to one hour. You've been there for an hour already, so a worker comes over to you and says:

xʷúy̓ *kʷ qʷcíyx*

xʷúy̓=kʷ   qʷc-íyx

xʷúy̓=2SG.SBJ leave-AUT

'You have to leave.'   (BP | Ly | VF)

Consultant comment: 'That's sort of like saying you are to go.'

(8) Context: There's only one way to get from town to the mountains: the road that passes the lake. A tourist asks you how to get to the mountains from the town. You say:

xʷúy̓ kʷ nés ne xʷél k sptéknxʷ wəł péłuskʷu

xʷúy̓=kʷ   nés n=e=xʷél   k=s=pték-n-[t]-∅-[e]xʷ   wə=ł=péłuskʷu
xʷúy̓=2SG.SBJ go at=DET=road DET=NMLZ=pass-CTR-TR-3OBJ-2SG.ERG to=DET.REM=lake
'You have to take the road that passes the lake.'   (KBG | NV | VF)

The prospective aspect *xʷúy̓* may co-occur with overt epistemic modals *ʔe stx̣ə́pe neʔ* '(it) might' and *nke* 'inferential evidential (INFER)'. Consultants comment that a proposition containing *xʷúy̓* is more 'definite' than a proposition containing an epistemic modal. The context in (9) establishes that there is uncertainty about the speaker's ability to attend an upcoming dinner — in this context, a form containing the epistemic modal *ʔe stx̣ə́pe neʔ* was accepted. The context in (10) establishes that the speaker will definitely be able to attend the upcoming dinner — in this context, a form containing *xʷúy̓* is preferred to a form containing *ʔe stx̣ə́pe neʔ*. Consider the consultant comments for *xʷúy̓* vs. epistemic *ʔe stx̣ə́pe neʔ* in (9) and (10).

(9) Context: Your friend asks you to come for dinner at their house. You think you might have another commitment at that time. You say to your friend:

ʔe stx̣ə́pe neʔ k nsƛ̓ʔék

ʔe stx̣ə́pe neʔ k=n=s=ƛ̓ʔék
might   DEM D/C=1SG.POSS=NMLZ=arrive
'I might be able to come.'   (KBG | NV | SF)

(10) Context: Your friend asks you to come for dinner at their house. You know you have no other commitments at that time. You say to your friend:

#*ʔe stx̣ə́pe neʔ k nsƛ̓ʔék*

#**ʔe stx̣ə́pe** neʔ k=n=s=ƛ̓ʔék
 might   DEM D/C=1SG.POSS=NMLZ=arrive
 Intended: 'I will come.'   (KBG | NV | SF)
 Consultant comment: 'If you're definite[ly able to go], you would say *xʷúy̓ kn xéʔe ƛ̓ʔék*.'

The context in (11) (which is identical to the context in (12)) establishes that, based on the available evidence, rain is very likely. The consultant was presented with two options: a form containing *xʷúy̓* and the epistemic modal clitic *nke*, and a form containing only *xʷúy̓*. Consider the consultant's comments for *xʷúy̓ nke* in (11), compared to comments for *xʷúy̓* with no *nke* in (12). Consultant comments about *xʷúy̓* contributing certainty mirror consultant comments on St'at'imcets *cuz'*, which Glougie (2007) analyses as a prospective aspect.[3]

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[3] Glougie compares *cuz'* and the St'at'imcets future modal *kelh*, observing that "*cuz'* is associated with certainty in a way that *kelh* is not" (2007:220).

(11) Context: You go outside and see dark clouds gathering in the sky. You think:

    xʷúy̓ nke *tékł*

    xʷúy̓=∅=nke   tékł

    xʷúy̓=3 SBJ=INFER   rain

    'It must be going to rain.'   (CMA | NV | SF)

    Consultant comment: 'It seems like it's going to rain because you're looking at the clouds and it's getting dark.'

(12) Context: As above.

    xʷúy̓ *tékł*

    xʷúy̓=∅   tékł

    xʷúy̓=3 SBJ   rain

    'It's going to rain.'   (CMA | NV | SF)

    Consultant comment: '*xʷúy̓ tekł*, it's definitely going to rain.'

I will argue that modal readings of *xʷúy̓* when there is no overt modal present in the clause arise due to the presence of a phonologically null modal (following Matthewson et al. 2022). Since reference to future event times always involves modality, I assume that the phonologically null modal surfaces wherever *xʷúy̓* surfaces, save for when there is already an overt modal in the same clause as *xʷúy̓*. In other words, *xʷúy̓* must compose with a modal — the modal that *xʷúy̓* composes with may be covert or overt (Matthewson 2013 and Matthewson et al. 2022 propose the same analysis for the Gitksan prospective aspect *dim*). Therefore, I propose, contra previous literature on nłeʔkepmxcín (Thompson and Thompson 1992, Thompson and Thompson 1996, Kroeber 1997, Kroeber 1999, Koch 2008), that *xʷúy̓* is a **prospective aspect**, not a future tense. Under my analysis, *xʷúy̓* entails only that the eventuality time of the clause *xʷúy̓* appears in follows a salient, contextually provided reference time.

In most main clauses, the contextually provided reference time is simultaneous with the utterance time. However, when the context provides a sufficiently rich discourse that specifies a past reference time, *xʷúy̓* situates the eventuality time in the future of that salient past reference time, giving rise to future-in-the-past readings. In subordinate clauses, *xʷúy̓* situates the subordinate eventuality time in the future of the reference time, provided by the main clause. In subordinate clauses, both future-of-UT and future-of-RT (future of the reference time) readings are attested. If the eventuality time in the main clause precedes utterance time, then it is possible for the eventuality time of the subordinate clause containing *xʷúy̓* to precede utterance time. If the event time in the main clause follows utterance time, then the eventuality time in the subordinate clause containing *xʷúy̓* must also follow utterance time. The next subsection discusses future-of-RT readings of *xʷúy̓*, both in main clauses and in subordinate clauses. I begin by discusssing future-in-the-past readings of *xʷúy̓*, and then move to discussing future-of-RT *xʷúy̓* readings in subordinate clauses.

2.2 Future-of-RT readings

The prospective aspect *xʷúy̓* is compatible with non-future reference times when the time of the event in the clause containing *xʷúy̓* follows a salient reference time, established either by a sufficiently rich

discourse context or by a matrix clause with a past reference time. Consider (13), where a sufficiently rich discourse context licenses a future-in-the-past reading of *xʷúy̓* in a main clause.

(13) Context: My friends got together last night. I was going to join them, but my boss called me into work at the last minute. I call my friend today and tell her:

xʷúy̓ *kn wéʔe nés ƛ̓uʔ wéwecms ncwə́m*

xʷúy̓=kn   wéʔe nés ƛ̓uʔ wéw-n-t-s[e]m-[e]s   n-cw-ə́m
xʷúy̓=1SG.SBJ DEM go but call-CTR-TR-1SG.OBJ-3ERG 1SG.POSS-work-CTR.MID
'I was going to go (there), but my work called (me).'   (KBG | NV | VF)

There are no operators in (13) that provide any 'back-shifting' temporal semantics — that is, there is no overt past tense, no past temporal adverbial, nor any overt perfect or perfective aspect. The absence of back-shifting operators suggests that *xʷúy̓* is compatible with a future-in-the-past reading if the context is sufficiently rich and provides a past reference time.

I now consider subordinate clause readings of *xʷúy̓* where the matrix predicate establishes a reference time that is in the past of utterance time. When the matrix clause has a past reference time, the subordinate clause containing *xʷúy̓* may refer to an event that was going to happen in the future of the past reference time established by the matrix clause, as in (14) and (15).

(14) Context: My uncle doesn't usually come to family events, but he shows up when my dad's whole family is there. I hosted a family dinner yesterday — my dad's whole family came, apart from my uncle. I think:

cút kn k sxʷúy̓s ƛ̓ʔék nsísqeʔ

cút=kn   k=s=**xʷúy̓**=s   ƛ̓ʔék n-sísqeʔ
think=1SG.SBJ D/C=NMLZ=**xʷúy̓**=3POSS arrive 1SG.POSS-uncle
'I thought my uncle would come.'   (BP | Ly | VF)

(15) Context: Your neighbour walks every day, even when the weather is terrible. Today it's really snowing, but you can still see him out walking from your window. You think:

nsxʷáwkʷ k sxʷúy̓s ʔéx ne sʔúłxʷs kém̓eł ʔéx wə ʔéyc̓qeʔ

n-s-xʷáwkʷ   k=s=**xʷúy̓**=s   ʔéx n=e=s=ʔúłxʷ=s   kém̓eł
1SG.POSS-NMLZ-heart D/C=NMLZ=**xʷúy̓**=3POSS be at=DET=NMLZ=enter=3POSS but
    ʔéx=∅   wə=ʔéyc̓qeʔ
    be=3SBJ   to=outside
'I thought he would stay inside, but he's outside.'   (BP | Ly | VF)

The event in the clause containing *xʷúy̓*, that was going to happen in the future of the past reference time established by the matrix clause, need not have actually happened. The actualization of the event in a clause with a past reference time that also contains *xʷúy̓* may be overtly cancelled (as in (15), (16), and (17)) or overtly asserted (as in (18) and (19)). Under the assumption that there is a modal in the same clause as *xʷúy̓*, the examples in (16)–(19) demonstrate that the null modal does not have an actuality entailment (Bhatt 1999, Hacquard 2014).

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(16) Context: The weather forecast for yesterday said it was going to rain. I saw the forecast and cancelled my plans for yesterday. It didn't end up raining — the forecast was wrong! Today, I think:

*ẏéne **xʷúẏ** nukʷ tékɫ ƛ̓uʔ teté̓ʔ k stékɫs*

ẏén-[n]-[t]-∅-[en]e   **xʷúẏ**=∅=nukʷ   tékɫ ƛ̓uʔ teté̓ʔ=∅   k=s=tékɫ=s

sense-CTR-TR-3OBJ-1SG.ERG **xʷúẏ**=3SBJ=SENSE rain but NEG=3SBJ D/C=NMLZ=rain=3POSS

'I felt it was going to rain, but it didn't rain.'   (KBG | NV | VF)

(17) Context: My uncle doesn't usually come to family events, but he shows up when my dad's whole family is there. I hosted a family dinner yesterday — my dad's whole family came, apart from my uncle. I think:

*nscút **xʷúẏ** ƛ̓ʔék nsísqeʔ ƛ̓uʔ teté̓ʔ k sƛ̓ʔéks*

n-s-cut   **xʷúẏ**=∅   ƛ̓ʔék n-sísqeʔ   ƛ̓uʔ teté̓ʔ=∅

1SG.POSS-NMLZ-think **xʷúẏ**=3SBJ arrive 1SG.POSS-uncle but NEG=3SBJ

    k=s=ƛ̓ʔék=s

    D/C=NMLZ=arrive=3POSS

'I thought my uncle would come, but he didn't.'   (KBG | NV | VF)

(18) Context: Earlier, you were on a walk when you saw some dark clouds. You decided to hurry home. An hour after you get home, you hear rain falling. You think:

*nsxʷáwkʷ nukʷ k s**xʷúẏ**s tékɫ ʔe stékɫc*

n-s-xʷáwkʷ=nukʷ   k=s=**xʷúẏ**=s   tékɫ ʔe=∅

1SG.POSS-NMLZ-heart=SENSE D/C=NMLZ=**xʷúẏ**=3POSS rain COP=3SBJ

    [e]=s=tékɫ=s

    D/C=NMLZ=rain=3POSS

'I thought it was going to rain, and it rained.'   (BP | Ly | VF)

(19) Context: Your friend has been badgering you to come to a big party. She told you it would be a really good party. You both go, and you have a great time. The day after the party, you tell your friend:

*cút kʷ k s**xʷúẏ**s ẏé tk party ʔe sẏés*

cút=kʷ   k=s=**xʷúẏ**=s   ẏé t=k=party   ʔe=∅

say=2SG.SBJ D/C=NMLZ=**xʷúẏ**=3POSS good OBL=DET=*party* COP=3SBJ

    [e]=s=ẏé=s

    D/C=NMLZ=good=3POSS

'You said that the party was going to be good, and it was good.'   (BP | Ly | VF)

Future-in-the-past readings are not predicted to be possible under an analysis of *xʷúẏ* as a future tense, as proposed in previous literature (Thompson and Thompson 1992, Thompson and Thompson 1996, Kroeber 1997, Kroeber 1999, Koch 2008) — an absolute future tense, in the sense of Reichenbach (1947) and Klein (1994), entails that the reference time follows utterance time. The

availability of future-in-the-past readings of *xʷúy̓* supports my analysis of *xʷúy̓* as a prospective aspect, as a prospective aspect does not entail that the time of the eventuality is in the future of utterance time.

When a matrix clause provides a reference time that is in the future of utterance time, the subordinate clause may bear a *xʷúy̓*. Consider the complement of the attitude predicate, *cut* 'say / think', in (20). Note that both the matrix clause and the complement clause require marking with *xʷúy̓* — consider the infelicity of the complement clause that does not contain *xʷúy̓* in (21). The context specifies that both the event time in the main clause and the event time in the subordinate clause follow utterance time; at utterance time, the party organizers have no idea whether the speaker is going to go.

(20)   Context: There's a gathering coming up that I really don't want to go to. Guests are asked to fill in whether they have any dietary restrictions, but they don't have to RSVP. I get home, and my partner tells me he's told the organizers that I don't eat meat. I say:

xʷúy̓ *cúyet k sxʷúy̓kt nés*

xʷúy̓=Ø   cú<ʔi>et   k=s=**xʷúy̓**=kt   nés
xʷúy̓=3SBJ think<PL> D/C=NMLZ=**xʷúy̓**=1PL.POSS go

'They're going to think that we are coming (lit. they're going to think that we are going to come).'   (BP | Ly | SF)

(21)   Context: As in (20).

#**xʷúy̓** *cúyet k snéskt*

#**xʷúy̓**=Ø   cú<ʔi>et   k=s=nés=kt
xʷúy̓=3SBJ think<PL> D/C=NMLZ=go=1PL.POSS

Intended: 'They are going to think that we are coming.'   (BP | Ly | SF)

In sum, matrix clause and embedded *xʷúy̓* is compatible past and present reference times, as long as the eventuality time in the clause marked by *xʷúy̓* is in the (relative) future of the past or present reference time provided by the context (or the matrix clause, when *xʷúy̓* is embedded). The event time in the clause marked with *xʷúy̓* need not follow utterance time, but must follow the reference time. As spelled out further in Section 3, the observation that *xʷúy̓* does not entail that the reference time follows utterance time leads me to propose that *xʷúy̓* is a prospective aspect, rather than a future tense.

3   Analysis

I follow the semantic literature on tense (Reichenbach 1947, Klein 1994, a.o.) in assuming that every utterance contains reference to three times: a reference time, an event time, and the utterance time. Section 2.2 showed that main clause *xʷúy̓* may refer to an eventuality that occurred in the past of utterance time when the discourse context is sufficiently rich, and that subordinate clause *xʷúy̓* is also compatible with future-in-the-past interpretations. An absolute future tense would encode that the reference time follows utterance time (Klein 1994); if *xʷúy̓* were an absolute future tense, then *xʷúy̓*

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should be incompatible with future-in-the-past readings[4] My proposal that $x^w\acute{u}\acute{y}$ is a prospective aspect is consistent with recent literature (Matthewson 2006, Cable 2017, a.o.), which contends that 'future' does not exist as a true tense category cross-linguistically. To translate this idea to nłeʔkepmxcín, I assume that a main clause containing $x^w\acute{u}\acute{y}$ has a present reference time, but a future event time.

I propose the following denotation for $x^w\acute{u}\acute{y}$, identical to Matthewson et al. (2022)'s denotation of the Gitksan prospective aspect *dim*:

(22) $\llbracket x^w\acute{u}\acute{y}\rrbracket^g = \lambda P_{<l,st>}\ \lambda t\ \lambda e\ \lambda w.\tau(e) = t\ \&\ \exists e'\ \exists t'\ [t < t'\ \&\ e \gg e'\ \&\ \tau(e') = t'\ \&\ P(e')(w)]$

<div align="right">Matthewson et al. (2022:19)</div>

According to the denotation in (22), $x^w\acute{u}\acute{y}$ applies to a predicate of events P and outputs a predicate of events and times. For any event *e* and reference time *t*, *e* holds at *t* and *e* causes a P-event, *e'*. The P-event, *e'* happens at a time following *t*, namely, *t'*. The event *e* is a precursor to the later P-event. The denotation in (22) correctly predicts the availability of both 'future-of-UT' and 'future-in-the-past' readings of $x^w\acute{u}\acute{y}$. I argue that the availability of future-in-the-past readings of $x^w\acute{u}\acute{y}$ do not support an analysis of $x^w\acute{u}\acute{y}$ as an absolute future tense; following Klein (1994), an absolute future tense would entail that the reference time follows utterance time. In the future-in-the-past contexts where $x^w\acute{u}\acute{y}$ is accepted, the reference time precedes utterance time. An element that is an absolute future tense would be infelicitous in future-in-the-past contexts; therefore, $x^w\acute{u}\acute{y}$ cannot be an absolute future tense.

In adopting the denotation in (22), I am assuming that a covert morpheme provides a non-future reference time, in order for the *t* argument t in (22) to be saturated. Matthewson (2006) proposes that a null non-future tense (i.e., a null tense morpheme that is defined only if the time provided by the context does not follow utterance time) provides the *t* argument in St'at'imcets. The *t* argument could alternatively be filled by a null non-restricted tense (i.e., a null tense morpheme that does not have a restriction to at or before utterance time), as Chen, Vander Klok, Matthewson, and Rullmann (2021) propose for Javanese. For the purposes of this paper, I assume that nłeʔkepmxcín has covert semantic tense; whether this covert tense is restricted or unrestricted is a matter I leave to further research.

Turning to the link between modality and future time reference, I do not propose that $x^w\acute{u}\acute{y}$ is itself a modal. Instead, I propose that $x^w\acute{u}\acute{y}$, the prospective aspect, co-occurs with a null modal, as (Matthewson et al. 2022) propose in their analysis of the Gitksan prospective aspect *dim*. This null modal is likely circumstantial, as evidenced by the 'modal' readings of $x^w\acute{u}\acute{y}$ mentioned in Section 2. I propose that $x^w\acute{u}\acute{y}$ provides the null modal with its temporal orientation (in the sense of Condoravdi 2002), as is the case when $x^w\acute{u}\acute{y}$ composes with overt epistemic and circumstantial modals —$x^w\acute{u}\acute{y}$ is not itself modal. Section 4 expands further on the proposal that $x^w\acute{u}\acute{y}$ is not modal. From this point on, I gloss $x^w\acute{u}\acute{y}$ as PROSP, given my analysis of $x^w\acute{u}\acute{y}$ as a prospective aspect.

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[4] At present, empirical differences between posterior tenses (also known as relative future tenses) and prospective aspects are not well understood; both a prospective aspect and a posterior tense place the event(uality) time after the reference time. Many of the arguments presented in (Bohnemeyer 2014) differentiating perfect aspects from anterior tenses do not appear to apply to posterior tenses vs. prospective aspects; for instance, Bohnemeyer (2014:fn10) observes that both prospective aspects and posterior tenses are compatible with event time adverbials. Since it is unclear at the time of writing whether an analysis of $x^w\acute{u}\acute{y}$ as a posterior tense, as opposed to an anlysis of $x^w\acute{u}\acute{y}$ as a prospective aspect, would make any different predictions as to the(in)felicity of $x^w\acute{u}\acute{y}$, I propose an analysis of $x^w\acute{u}\acute{y}$ as a prospective aspect for simplicity.

4 xʷúy̓ is not modal

In this section, I propose that *xʷúy̓* is not modal. While utterances containing *xʷúy̓* are compatible with modal readings, as demonstrated by the felicity of *xʷúy̓* in goal-oriented (i.e., teleological) and deontic modal contexts, I follow Matthewson (2013) and Matthewson et al. (2022) in proposing that these apparently modal readings arise due to the presence of a null modal.

4.1 *xʷúy̓* and circumstantial modals

This subsection focuses specifically on the temporal interactions between *xʷúy̓* and the weak necessity modal *ske*. The weak necessity modal *ske* is compatible with both epistemic and circumstantial modal bases; for the purposes of this section, I focus particularly on circumstantial *ske*.

   The prospective aspect *xʷúy̓* may optionally co-occur with circumstantial modal *ske* (*ske* has the allomorph *seʔ* when the main predicate is intransitive). Note that circumstantial *ske* is compatible with a future event time even when *xʷúy̓* is not in the same clause. Consider the identical contexts in (23) and (24): (23) does not contain *xʷúy̓* while (24) contains both *xʷúy̓* and circumstantial *ske*.[5] In the context in both (23) and (24), the circumstantial modal claim has a present temporal perspective and a future temporal orientation. I propose, again following what Matthewson (2013) and Matthewson et al. (2022) propose for the Gitksan prospective aspect *dim*, that *xʷúy̓* overtly provides the circumstantial modal *ske* with its future temporal orientation.

(23)   Context: My partner and I have a big dog. My little cousin is coming over tomorrow, so we think our dog should stay outside tomorrow. I say to my partner:

   *púƛ̓mstm **ske** e sqáqxaʔ tk spiʔx̣éwt*

   púƛ̓m-s-t-Ø-[e]m=**ske**   e=s-qáqxaʔ   t=k=s-piʔx̣éwt
   exit-CAUS-TR-3OBJ-1PL.ERG=**ske** DET=NMLZ-dog OBL=DET=NMLZ-day.away
   'We should put the dog outside tomorrow.'   (CMA | NV | VF)

(24)   Context: As above.

   ***xʷúy̓** púƛ̓mstm **ske** e sqáqxaʔ tk spiʔx̣éwt*

   xʷúy̓ púƛ̓m-s-t-Ø-[e]m=**ske**   e=s-qáqxaʔ   t=k-s-piʔx̣éwt
   PROSP exit-CAUS-TR-3OBJ-1PL.ERG=**ske** DET=NMLZ-dog OBL=DET=NMLZ-day.away
   'We should put the dog outside tomorrow.'   (CMA | NV | SF)

   Notice the same pattern in the sentences below. The context in (25) mirrors the context in (23), in that both involve circumstantial modal claims with a present temporal perspective and a future temporal orientation. The context in (25) establishes that the trying-of-the-berry event has

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[5] Note that the circumstantial modal *ske* surfaces in (24) after the second word in the clause, the main predicate *púƛ̓mstm*. In later examples (26), (27), and (28), *ske* attaches to *xʷúy̓*, the first word in the clause. That *ske* surfaces after the second word in the clause is potentially 'abnormal' behaviour for second-position clitics theroetically, but occurs in other places in nɬeʔkepmxcín — particularly in cases of clausal nominalization with an auxiliary and a third-person possessive subject, where the possessive subject can attach to the main predicate while the nominalizer attaches to the auxiliary.

not occurred prior to utterance time; note the felicity of solely *ske* in (25), and of *xʷúy̓* and *ske* in (26).

(25)   Context: You're bringing your granddaughter out on the land to pick saskatoons. She can be a bit of a picky eater, so you're always encouraging her to try new things. You hold a saskatoon out to her and say…

   *məsténxʷ **ske** xeʔé tk scéqʷm*

   məstén-[n]-[t]-∅-[e]xʷ=**ske**   xeʔé t=k=s-céqʷm

   try-CTR-TR-3OBJ-2SG.ERG=**ske** DEM OBL=DET=NMLZ-saskatoon

   'You should try this saskatoon.'   (BP | Ly | VF)

(26)   Context: As above.

   xʷúy̓ seʔ kʷ məsténm xéʔe tk scéqʷm

   xʷúy̓=seʔ=kʷ   məstén-m   xéʔe t=k=s-céqʷm

   PROSP=**seʔ**=2SG.SBJ try-CTR.MID DEM OBL=DET=NMLZ-saskatoon

   'You should try this saskatoon.'   (BP | Ly | SF)

When the context provides a past temporal perspective, *xʷúy̓* is also judged felicitous. Consider (27) and (28) — the context in (27) establishes that the event that the modal claim concerns, the snowing event, should have happened prior to utterance time, but in the relative future of the reference time, last night. Note the felicity of *xʷúy̓*.

(27)   Context: It was really cold last night. You saw a lot of clouds gathering when you were going to bed. This morning, you wake up and immediately think:

   xʷúy̓ ske wúxʷt ɫ sʕáp us

   xʷúy̓=∅=ske   wúxʷt ɫ=s-ʕáp=us

   PROSP=3SBJ=**ske** snow D/C.REM=NMLZ-night=3SBJV

   'It should have snowed last night.'   (BP, KBG | Ly, NV | SF)

Similarly to in (27), the context in (28) establishes that the eventuality time of the circumstantial modal claim (i.e., the time of the singing eventuality) precedes utterance time. The temporal perspective of the circumstantial modal is past, since it concerns an event prior to utterance time. The temporal orientation of the circumstantial modal is future, since the singing event should have occurred in the relative future of the reference time (i.e., after the party started last night). Note the felicity of *xʷúy̓* in (28) despite the eventuality time preceding utterance time.

(28)   Your daughter has a lovely voice. She sings all the time around the house and is part of a choir. Unfortunately, she gets bad stage fright. You're at a gathering where her and her friends are up on stage singing, but you can see she's just mouthing the words. Later, you tell her:

   xʷúy̓ seʔ kʷ ʔíƛ̓m wə ɫ móqʷix teté? k sqeʔnímecn

   xʷúy̓=seʔ=kʷ   ʔíƛ̓-m   wə=ɫ=móqʷix   teté?=∅

   PROSP=**seʔ**=2SG.SBJ sing-CTR.MID at=DET.REM=gathering NEG=3SBJ

       k=s=qeʔním-n-[t]-s[i]-[e]n[e]

       D/C=NMLZ=hear-CTR-TR-2SG.OBJ-1SG.ERG

   'You should have sung at the gathering — I didn't hear you!'   (KBG | NV | SF)

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Although the circumstantial modal *ske / se?* need not co-occur with the prospective aspect *xʷúy̓*, I argue that when *xʷúy̓* is present, it contributes the circumstantial modal's future temporal orientation (as Matthewson 2013 and Matthewson et al. 2022 propose for the Gitksan prospective aspect *dim*). The fact that circumstantial *ske/se?* may refer to a future event time when there is no *xʷúy̓* in the same clause is an issue I leave to further research.

4.2   *xʷúy̓* and epistemic modals

To my knowledge, there are four overt epistemic modals in nłeʔkepmxcín: the inferential evidential second-position clitic *nke* (Hannon 2024), the sensory evidential second-position clitic *nukʷ* (Hannon and Smith 2023; Smith, p.c.), the possibility modal *x̓ákus*, and the complex possibility modal expression *ʔe stx̓ápe neʔ*. I set the sensory evidential *nukʷ* aside for the purposes of the present discussion, for reasons of space. This subsection concerns the temporal interaction between nłeʔkepmxcín epistemic modals and *xʷúy̓*.

4.2.1   *xʷúy̓* and *nke*

The prospective aspect *xʷúy̓* is felicitous in epistemic modal claims when the prejacent is in the future of a contextually salient reference time, and is rejected when the time of the event in the prejacent precedes the reference time. Consider (29) and (30), where the reference time is simultaneous with utterance time. Note the felicity of *xʷúy̓* in (29), where the time of the fishing event follows the reference time, and the rejection of *xʷúy̓* in (30), where the time of the fishing event precedes the reference time.

(29)   Context: You're in town, and you see your friend walking in the direction of the water, carrying bait and a fishing rod. You think:

   xʷúy̓ nke *wéw̓łm*
   xʷúy̓=Ø=**nke**   wéw̓ł-m
   PROSP=3SBJ=INFER fish-CTR.MID
   'He must be going (to go) fishing.'   (KBG, BP | NV, Ly | VF)

(30)   Context: You see your friend walking back from the water carrying a fishing rod and a cooler. You think:

   #***xʷúy̓ nke*** *wéw̓łm*
   #**xʷúy̓**=Ø=**nke**   wéw̓ł-m
    PROSP=3SBJ=INFER fish-CTR.MID
    Intended: 'He must have gone fishing.'   (KBG, BP | NV, Ly | SF)
    Consultant comment (BP): 'No, 'cos he's already done it.'

Epistemic modals marked with *nke* cannot have future time reference without a clausemate *xʷúy̓*. This is demonstrated in (31) and (32).

(31) Context: You wake up one morning and look outside your window. You see a few dark clouds, so you think:

#tékɬ nke

#tékɬ=∅=nke
rain=3SBJ=INFER
Intended: 'It must be going to rain.'   (KBG | NV | SF)

(32) Context: You see your friend walking in the direction of the creek carrying a bait box and a fishing rod:

#wéwɬm nke

#wéwɬ-m=∅=nke
fish-CTR.MID=3SBJ=INFER
Intended: 'He must be going to go fishing.'   (BP | Ly | SF)

The interaction between *xʷúy̓* and *nke* supports the hypothesis that *xʷúy̓* provides the epistemic modal *nke* with its temporal orientation. When the temporal orientation of the epistemic *nke* is future, *xʷúy̓* is required. When the temporal orientation of the epistemic modal *nke* is non-future, *xʷúy̓* is infelicitous.

4.2.2 *xʷúy̓* and *ʔe stx̣ápe neʔ*

The complex epistemic possibility modal expression *ʔe stx̣ápe néʔ(e)*, meaning 'it might', takes a clausal complement.[6] The complement of *ʔe stx̣ápe neʔ* permits interpretations whereby the time of the event in the complement clause occurs in the future of the contextually supplied reference time, with no *xʷúy̓* required in the complement. It is nonetheless equally felicitous for the complement to bear *xʷúy̓*.

I argue that, when *xʷúy̓* appears on the complement of *ʔe stx̣ápe neʔ*, *xʷúy̓* provides the future temporal orientation for the epistemic modal claim. Complements of *ʔe stx̣ápe neʔ* that do not contain *xʷúy̓* may also have future temporal orientation. I leave the felicity of unmarked complements of *ʔe stx̣ápe neʔ* in contexts that provide an event time in the future of utterance time to future research.

Consider (33) and (34): identical contexts specify that the complement of *ʔe stx̣ápe neʔ*, namely my younger sister returning home, is to occur in the future of utterance time. Note the felicity of the complement clause that does not contain *xʷúy̓* in (33), and the felicity of the complement that does contain *xʷúy̓* in (34).

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[6] Thompson & Thompson (1996:423) propose the following morphological breakdown of *ʔe stx̣ápe neʔ* — copula *ʔe*, followed by *s* nominalizer and *t* prefix of uncertain semantic content, a predicate *x̣ápe* 'wonder', and a demonstrative, often *neʔ*. I choose to leave *ʔe stx̣ápe* unsegmented, glossing it instead as 'might'. I segment out the demonstrative *néʔ(e)*, as other demonstratives *téʔ(e)* and *xéʔ(e)* are also felicitous after *ʔe stx̣ápe*, in the same contexts. It is worth noting here that, perceptually, the vowel in *x̣ápe* does not sound like a retracted stressed schwa. It is possible that my transcription is a mistranscription — further research is needed.

(33) Context: My mother is planning a small get together for our dad's birthday. My younger sister likes to come to our family get-togethers, but she lives really far so it's very expensive for her to come back. I think:

ʔe stx̣ə́pe neʔ k sƛ̕ʔéks ncéceʔ

ʔe stx̣ə́pe neʔ	k=s=ƛ̕ʔék=s	n-céceʔ
might	DEM D/C=NMLZ=arrive=3POSS	1SG.POSS-younger.sister

'My younger sister might come.' (KBG | NV | SF)

(34) Context: As above.

ʔe stx̣ə́pe neʔ k sx̌ʷúy̓s ƛ̕ʔék ncéceʔ

ʔe stx̣ə́pe neʔ	k=s=x̌ʷúy̓=s	ƛ̕ʔék	n-céceʔ
might	DEM D/C=NMLZ=**x̌ʷúy̓**=3POSS	arrive	1SG.POSS-younger.sister

'My younger sister might come.' (KBG | NV | SF)

Notice the same pattern in the context below, where the complement of *ʔe stx̣ə́pe neʔ* need not contain an overt prospective aspect *x̌ʷúy̓* in order for the event in the complement to be understood as occurring in the future of the utterance time. Consider (35), where the complement does not contain a *x̌ʷúy̓* despite the raining event in the complement not yet having occurred at utterance time. Note that it is again felicitous to insert a *x̌ʷúy̓* into the complement clause, as demonstrated in (36).

(35) Context: You walk outside and look up. You see a few dark clouds gathering. You think:

ʔe stx̣ə́pe néʔe k stékłc

ʔe stx̣ə́pe néʔe	k=s=**tékł**=s
might	DEM D/C=NMLZ=rain=3POSS

'It might be going to rain.' (CMA | NV | VF)

(36) Context: As above:

ʔe stx̣ə́pe néʔe k sx̌ʷúy̓s tékł

ʔe stx̣ə́pe néʔe	k=s=**x̌ʷúy̓**=s	tékł
might	DEM D/C=NMLZ=**x̌ʷúy̓**=3POSS	rain

'It might be going to rain.' (KBG | NV | SF)

When the context provides a past temporal perspective but a future temporal orientation, *x̌ʷúy̓* remains felicitous on the complement of *ʔe stx̣ə́pe néʔe*. Consider (37), in which the context specifies a past temporal perspective, but a future temporal orientation — the log might have been going to fall (i.e., at some time prior to utterance time, it was possible that the log was going to fall). Note the felicity of *x̌ʷúy̓* on the complement of *ʔe stx̣ə́pe néʔe*.

(37) Context: A man is teaching his son how to build a fence. The boy sees his father moving a log that had been leaning up against a tree, and he asks his father why he's moving the log. His father replies:

ʔe stx̣ə́pe néʔe *k sx̌ʷúy̓s kʷís xéʔe tk ɬqáyqʷ*

ʔe stx̣ə́pe néʔe k=s=**x̌ʷúy̓**=s   kʷís xéʔe t=k=ɬqáyqʷ
might DEM D/C=NMLZ=**x̌ʷúy̓**=3POSS fall DEM PBL=DET=log
'That log might have been going to fall.'   (KBG | NV | SF)

When the eventuality time in the complement of *ʔe stx̣ə́pe neʔ* is not in the future of the reference time, *x̌ʷúy̓* is infelicitous. Consider the context in (38), an epistemic modal with present temporal perspective and past temporal orientation. Notice the infelicity of *x̌ʷúy̓* on the complement of *ʔe stx̣ə́pe néʔe*.

(38) Context: You walk outside and notice that the ground is wet. This time of year, it could have been either snow or rain that made the ground wet. You think:

#**ʔe stx̣ə́pe néʔe** *k sx̌ʷúy̓s tékɬ*

#**ʔe stx̣ə́pe néʔe** k=s=**x̌ʷúy̓**=s   tékɬ
 might DEM D/C=NMLZ=**x̌ʷúy̓**=3POSS rain
 'It might be going to rain.'   (KBG | NV | SF)
 Consultant comment (KBG): 'Sounds like it's in the future.'

Consider also the example in (39), another epistemic modal with past temporal perspective and past temporal orientation. Notice again the infelicity of *x̌ʷúy̓* on the complement of *ʔe stx̣ə́pe néʔe*. If *x̌ʷúy̓* is removed from the complement clause, then (39) is felicitous.

(39) Context: You were on a walk this morning and you heard what sounded like a chickadee. However, the bird only called once and you didn't see it. Later, you think:

#**ʔe stx̣ə́pe néʔe** *k sx̌ʷúy̓s ċəṣkíkik e sqeʔnímne*

#**ʔe stx̣ə́pe néʔe** k=s=**x̌ʷúy̓**=s   ċəṣkíkik e=s=qeʔním-[n]-[t]-∅-[e]ne
 might DEM D/C=NMLZ=**x̌ʷúy̓**=3POSS chickadee DET=NMLZ=hear-CTR-TR-3OBJ-1SG.ERG
 'It might have been a chickadee that I heard.'   (KBG | NV | SF)
 Consultant comment: 'That *x̌ʷúy̓* doesn't seem to fit there.'

This subsection has shown that *x̌ʷúy̓* is felicitous in the complement of epistemic modal *ʔe stx̣ə́pe neʔ* only when the modal claim has future temporal orientation. The temporal perspective of the modal claim may be past or present. When the modal claim marked by *ʔe stx̣ə́pe néʔ(e)* has a non-future temporal orientation, *x̌ʷúy̓* is infelicitous.

4.2.3 *x̌ʷúy̓* and *x̣ə́kus*

In this subsection, I discuss the interaction between the prospective aspect *x̌ʷúy̓* and the epistemic possibility modal *x̣ə́kus* 'maybe' (lit. 'know=3SBJV'). Similarly to *ʔe stx̣ə́pe neʔ*, the epistemic possibility modal *x̣ə́kus* takes a clausal complement. Also similarly to *ʔe stx̣ə́pe neʔ*, the complement of the epistemic possibility modal *x̣ə́kus* may be interpreted as occurring in the future of utterance time even when there is no *x̌ʷúy̓* in the complement clause. Consider (40) and (41).

(40)   Context: You wake up and see a few dark clouds gathering in the sky. You think:

     x̣ə́kus k stékłc

     x̣ə́kus   k=s=tékł=s

     maybe D/C=NMLZ=rain=3POSS

     'It might rain.'   (KBG | NV | SF)

(41)   Context: It's winter. You want to go for a walk, but the ground looks icy. You think:

     x̣ə́kus k nsłətx̣ə́n ʔe xʷesít wn

     x̣ə́kus   k=n=s=łət-x̣ə́n   ʔe=xʷesít=wn

     maybe D/C=1SG.POSS=NMLZ=slippery-foot COMP=walk=1SG.SBJV

     'I might slip if I go for a walk.'   (BP | Ly | VF)

     The prospective aspect is accepted on the complement of *x̣ə́kus* when the eventuality time in the complement clause follows the reference time. Consider (42), where the reference time is simultaneous with utterance time, and (43), where the reference time precedes utterance time. The epistemic modal claims in (42) and (43) both have future temporal orientation, but differ in their temporal perspectives: (42) has a present temporal perspective, while (43) has a past temporal perspective. Both of (42) and (43) have future temporal orientation; note the felicity of *xʷúy̓* in (42) and (43).

(42)   Context: You're walking downtown and you see one of your friends. He's carrying a cooler and going in the direction of the water. You think:

     x̣ə́kus k sxʷúy̓s nés k̓ətním̓

     x̣ə́kus   k=s=**xʷúy̓**=s   nés k̓ətní-m̓

     maybe D/C=NMLZ=**xʷúy̓**=3POSS go fish-CTR.MID

     'Maybe he's going to fish.'   (BP | Ly | VF)

(43)   Context: A man is teaching his son how to build a fence. The boy sees his father moving a log that had been leaning up against a tree, and he asks his father why he's moving the log. His father replies:

     x̣ə́kus nke k sxʷúy̓s zík-t xéʔe tk łqáyqʷ

     x̣ə́kus=nke   k=s=**xʷúy̓**=s   zík-t   xéʔe t=k=łqáyqʷ

     maybe=INFER D/C=NMLZ=**xʷúy̓**=3POSS fall-IMM DEM OBL=DET=log

     'That log might have been going to fall.'   (KBG, BP | NV, Ly | SF)

     If the eventuality time of the complement of *x̣ə́kus* precedes utterance time, *xʷúy̓* is infelicitous. Consider the rejection of *xʷúy̓* in (44), where the context establishes that the speaker's evidence for the epistemic modal was acquired prior to utterance time, and the epistemic modal claim is about a time prior to utterance time.

(44) Context: Your friend has a dog who barks any time someone comes into her garden. You
      went to visit your friend yesterday, but her dog didn't bark. Today, you think:

   #***x̣ə́kus k sx̌ʷúy̓s ʕʷóy̓t e sqáqx̣aʔ***

   #**x̣ə́kus** k=s=**x̌ʷúy̓**=s   ʕʷóy̓t e=sqáqx̣aʔ
   maybe D/C=NMLZ=**x̌ʷúy̓**=3POSS sleep DET=dog
   'The dog might have been asleep.'   (KBG, BP | NV, Ly | SF)
   Consultant comment (BP): 'Sort of like saying maybe the dog is going to fall asleep. Doesn't
   fit here.'

   To summarize, in this section I have proposed that *x̌ʷúy̓* provides epistemic and circumstantial
modals with a future temporal orientation. I have also demonstrated that it is not necessary for
x̌ʷúy̓ to overtly occur with the circumstantial modal *ske / seʔ* in order for the circumstantial modal
claim marked by *ske / seʔ* to be future-oriented. *x̌ʷúy̓* is nonetheless felicitous on circumstantial
modal claims marked by *ske / seʔ* regardless of the temporal perspective (present or past) of the
circumstantial modal claim. Epistemic modals *x̣ə́kus* and *ʔe stx̣ə́pe neʔ* pattern like *ske / seʔ* in that
x̌ʷúy̓ contributes their future temporal orientation. Also similarly to *ske / seʔ*, neither *x̣ə́kus* nor
ʔe stx̣ə́pe neʔ require overt marking with *x̌ʷúy̓* in order for the epistemic modal claim to have a
future temporal orientation. It is infelicitous for *x̌ʷúy̓* to mark an epistemic modal utterance with a
non-future temporal orientation. Lastly, the epistemic modal clitic *nke* appears to be an outlier in
that epistemic modal claims marked by *nke* require a *x̌ʷúy̓* in order to be compatible with a future
temporal orientation.

4.3 Modal readings of *x̌ʷúy̓*

Recall from Section **2** that a main clause containing *x̌ʷúy̓* may have a modal reading, even when
there is no overt modal in the clause. Following Matthewson (2013) and Matthewson et al. (2022),
I argue that modal readings of *x̌ʷúy̓* arise due to the presence of a **phonologically null modal**. I
reiterate relevant examples (6)–(8) as (45)–(47), respectively.

(45) Context: Your friend is looking for a ride to a meeting you both have today. You say:

   x̌ʷúy̓ néscn

   x̌ʷúy̓ nes-[n]-[t]-si-[e]n[e]
   x̌ʷúy̓ go-CTR-TR-2SG.OBJ-1SG.ERG
   'I'll bring you.'   (BP | Ly | VF)

(46) Context: You're in a café where the seating time is limited to one hour. You've been there
      for an hour already, so a worker comes over to you and says:

   x̌ʷúy̓ kʷ qʷcíyx

   x̌ʷúy̓=kʷ   qʷc-íyx
   x̌ʷúy̓=2SG.SBJ leave-AUT
   'You have to leave.'   (BP | Ly | VF)
   Consultant comment: 'That's sort of like saying you are to go.'

(47) Context: There's only one way to get from town to the mountains: the road that passes the lake. A tourist asks you how to get to the mountains from the town. You say:

xʷúy̓* *kʷ nés ne xʷéɬ k sptéknxʷ wəɬ péɬuskʷu

xʷúy̓=kʷ   nés   n=e=xʷéɬ   k=s=pték-n-[t]-∅-[e]xʷ   wə=ɬ=péɬuskʷu
xʷúy̓=2SG.SBJ go   at=DET=-road   DET=NMLZ=pass-CTR-TR-3OBJ-2SG.ERG   to=DET.REM=lake
'You have to take the road that passes the lake.'   (KBG | NV | VF)

An utterance containing only a *xʷúy̓* cannot be interpreted epistemically. In order for an epistemic interpretation to be allowed, an overt epistemic modal must be in the same clause. Consider the rejection in (48).

(48) Context: Your older brother has a habit of waking up very late. You want to call him this morning, but you think:

#***xʷúy̓* *ʕʷóy̓t cʔéyɬ ɬ nqéck***

#**xʷúy̓**=∅   ʕʷóy̓t   c-ʔéyɬ   ɬ=n-qéck
  xʷúy̓=3SBJ   sleep   EMPH-now   DET.REM=1SG.POSS-older.brother
Intended: 'My older brother will be asleep now.'   (KBG, BP | NV, Ly | SF)

I follow Matthewson et al. (2022) in assuming that the null modal appearing in clauses where no overt modal is present is a circumstantial modal. I adopt the denotation of the null modal proposed in Matthewson et al. (2022), stated in (49).

(49) ⟦MOD⟧^{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, ⟦MOD⟧^{g,f,h} = $\lambda Q_{<i,<l,st>>}$ λt λe $\lambda w.\forall w'$ [$w' \in$ BEST$_{h(w,t)}$($\cap$(f(w,t)) → Q(t)(e)(w'))]
Matthewson et al. (2022):21

Reference to future event times involves both modality and prospective aspectual semantics. I propose that *xʷúy̓* encodes the latter, prospective aspect. The former, modality, is provided by the null circumstantial modal.

5   Conclusion

In this paper, I have proposed that the nɬeʔkepmxcín auxiliary predicate *xʷúy̓* is a prospective aspect, not a future tense. I have demonstrated that the nɬeʔkepmxcín prospective aspect *xʷúy̓* is compatible with future-of-UT readings, readings whereby the eventuality time in the clause containing *xʷúy̓* occurs in the future of utterance time. I have also demonstrated that *xʷúy̓* is compatible with contexts that specify that the eventuality time is in the future of some established reference time, but in the past of utterance time. These latter readings, future-in-the-past readings, would not be predicted under an analysis of *xʷúy̓* as an absolute future tense, but are predicted under my analysis of *xʷúy̓* as a prospective aspect. I have claimed that *xʷúy̓* is not itself a modal; rather, in plain future utterances, *xʷúy̓* co-occurs with a null modal. I have demonstrated that *xʷúy̓* can make a modal claim more 'definite', as Glougie (2007) observes for St'at'imcets *cuz'*. As in Gitksan, *xʷúy̓* provides epistemic and circumstantial modals with their temporal orientation. My analysis presupposes that there is a null tense in nɬeʔkepmxcín; further research will reveal whether this presupposition holds.

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