On apparently non-modal evidentials

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1   Introduction

Current literature offers a range of analyses of evidentials in natural language, which can be broadly grouped into two types: *modal* analyses (Kratzer 1991, Izvorski 1997, Ehrich 2001, Garrett 2001, Faller 2006, Matthewson et al. 2007, McCready and Asher 2006, McCready and Ogata 2007, Waldie et al. 2009, Peterson 2009, 2010, Lee this volume, among others), and *non-modal* analyses (Faller 2002, 2003, Chung 2005, Portner 2006, Davis et al. 2007, Murray 2009a,b, Peterson 2009, 2010, among others). The split between modal and non-modal analyses correlates with significant empirical differences between the groups of evidentials being analyzed (as outlined in section 2 below). However, the question arises of what distinguishes the many distinct *non*-modal approaches from each other. The goal of this paper is to test available non-modal analyses against one previously unanalyzed evidential in St'át'imcets (Lillooet Salish): *lákw7a*.[1]

I will argue that with respect to all the usual diagnostic tests (including known truth or falsity of the prejacent proposition, the impossibility of canceling or explicitly denying the evidence source, and so on), the available non-modal approaches do not make different empirical predictions from each other, and all appear to be applicable to *lákw7a*. However, I then show that *lákw7a* poses a problem for all non-modal analyses. In order to account for the evidence source restriction of *lákw7a*, we need to adopt Faller's (2003) notion of non-overlap between the event-trace and the speaker's perceptual field. If this is correct, then *lákw7a* must operate at the event level; this in turn means that it cannot be captured by any non-modal analyses, as all of these entail that evidentials operate at a level distinct from the propositional content. I conclude by arguing that *lákw7a* is a modal evidential after all. Following Matthewson 2009, 2010 (which in turn relies on Kratzer 2010, von Fintel and Gillies 2010), I suggest that the apparently significant empirical differences between the two classes of evidentials do not force us to abandon a modal analysis for *any* evidential.

[1]St'át'imcets data are presented in the orthography used in St'át'imc communities (see van Eijk and Williams 1981). The symbol *7* represents a glottal stop.

St'át'imcets is a Northern Interior Salish language, spoken in British Columbia, Canada, by fewer than 100 people. All data are from fieldwork unless otherwise noted.

2   Evidentials and epistemic modals

An evidential is something which encodes information about the speaker's source of evidence for the proposition being advanced. A well-known example is the Cuzco Quechua reportative *-si* (sometimes realized as *-s),* shown in (1). The proposition advanced in (1) is that Marya is at school, and *-si* conveys that the speaker obtained this information via a report.

(1)   Marya-qa   yachay wasi-pi-***s***   ka-sha-n
      Marya-TOP know   house-LOC-**REPORT** be-PROG-3
      p = 'Marya is at school.' ev = Speaker was told that *p* (Faller2002:22)

An epistemic modal, on the other hand, is something which introduces quantification over epistemically accessible possible worlds. A well-known example is English *must,* as in (2). The meaning of (2) is roughly paraphrased underneath the example.

(2)   Maria must be at school.
      In all stereotypical worlds compatible with the speaker's knowledge, Maria is at school.

We see that evidentials and epistemic modals have conceptually distinct definitions, and significant empirical differences between modals and at least some evidentials have been noted. For example, the Quechua reportative *-si* differs from English epistemic modals in that the former is compatible with the assertion that the proposition it embeds is false. This is shown in (3-4).

(3)   pay-kuna-***s***   ñoqa-man-qa qulqi-ta   muntu-ntin-pi saqiy-wa-n,
      (s)he-PL-**REPORT** I-illa-TOP   money-ACC lot-INCL-LOC   leave-1O-3
      mana-má riki   riku-sqa-yui ni   un sol-ta   centavo-ta-pis
      not-surp   right see-PP-2   not one sol-ACC cent-ACC-add
      saqi-sha-wa-n-chu
      leave-PROG-1O-3-NEG
      'They [reportedly] left me a lot of money, but, as you have seen, they didn't leave me one sol, not one cent.' (Faller 2002:191)

(4)   para-sha-n-***si***   ichaqa mana crei-ni-chu
      rain-PROG-3-**REPORT** but   not   believe-1-NEG
      'It's [reportedly] raining, but I don't believe it.' (Faller 2002:194)

Data as in (3-4) constitute one of Faller's main empirical arguments that the Quechua reportative *-si* is non-modal; Faller observes that 'In contrast, a speaker using English epistemic *may* or *must* cannot know for a fact that the embedded proposition is not true' (Faller 2002:194). This is illustrated in (5).

(5)   #They ***must/might*** have left me a lot of money, but, as you have seen, they didn't leave me one cent.

The infelicity of (5) follows from a standard modal analysis: a speaker who is certain that a proposition p is false cannot truthfully assert that p is possibly or necessarily true.[2]

Another evidential which allows its prejacent to be known to be false is the Cheyenne (Algonquian) reportative *sėstse* (Murray (2009a,b). The example in (6) constitutes Murray's (2009b) empirical argument that the Cheyenne reportative is not modal but 'parenthetical-like'.

(6) é-hó'tȧheva-***sėstse*** Floyd naa+oha é-sáa-hó'tȧheva-he-∅
     3-win-**RPT.3SG**   Floyd but   3-NEG-win-*h(an)e*-DIR
     'Floyd won, I hear, but I'm certain he didn't.' (Cheyenne; Murray 2009b:3)

Not all evidentials contrast with modals in this way, however, and it has often been argued that there are elements in language which perform both evidential and modal functions simultaneously – i.e., that there is a subset of evidentials which are epistemic modals with an extra restriction about evidence source.[3] For analyses along these lines, see Kratzer (1991), Izvorski (1997), Garrett (2001), Matthewson et al. (2007), McCready and Asher (2006), McCready and Ogata (2007), Waldie et al. (2009), Peterson (2009, 2010), Lee (this volume), among others.

One example of a modal evidential is St'át'imcets inferential *k'a,* illustrated in (7).[4] According to Matthewson et al. (2007), an utterance of the form *k'a p* asserts that according to the speaker's knowledge state, p is possibly or necessarily true, and presupposes that the speaker has inferential indirect evidence for p.

(7) *Context: You are a teacher and you come into your classroom and find a nasty*
     picture of you drawn on the blackboard. You know that Sylvia likes to draw that
     kind of picture.
     nílh=***k'a*** núkun' k=Sylvia ku=mets-cál ti=píktsh=a láku7
     FOC=**INFER** again   DET=Sylvia DET=write-ACT DET=picture=EXIS DEIC
     'It must have been Sylvia who drew the picture again.'

(8) illustrates another modal evidential, the St'át'imcets reportative *ku7*. (8) asserts that according to the speaker's knowledge state, Maria is possibly or necessarily at school, and presupposes that the speaker has reported evidence that Maria is at school.

(8) wá7=***ku7*** láku7 skul-álhcw=a   k=Sylvia
     be=**REPORT** DEIC school-house=EXIS DET=Sylvia
     '[reportedly] Maria is at school.'

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[2]Although see Kratzer (2010), Matthewson (2009, 2010).

[3]The reverse has also been argued, namely that at least some epistemic modals are evidentials (Kratzer 2010, von Fintel and Gillies 2010). In Matthewson (2009, 2010) I suggest that the classes of evidentials and epistemic modals may be identical; see section 6 below.

[4]Abbreviations used in St'át'imcets glosses: CAUS: causative, COMP: complementizer, DEIC: deictic, DET: determiner, DIR: directive transitivizer, ERG: ergative, EXIS: assertion of existence, FOC: focus, IMPF: imperfective, INFER: inferential evidential, MID: middle intransitive, NEG: negative, NOM: nominalizer, OBJ: object, PL: plural, POSS: possessive, SG: singular, STAT: stative, SUBJ: subject, TOP: non-topical subject. The symbol - marks an affix boundary and = marks a clitic boundary.

Both *k'a* and *ku7* restrict the speaker's evidence source for the embedded proposition, and thus are evidentials. In (7), the speaker cannot have witnessed Sylvia drawing the picture, and in (8), the speaker must have been told by a third person that Maria is at school. *k'a* and *ku7* are also epistemic modals. (9-10) show that *k'a* and *ku7* pattern with English *must* or *might*, rather than with Quechua *-si* or Cheyenne *sėstse,* when the embedded proposition is known to be false.

(9) #wá7=***k'a***   kwis, t'u7 áoz=t'u7 k=wa=s   kwis
     IMPF=**INFER** rain   but NEG=just DET=IMPF=3POSS rain
     'It may/must be raining, but it's not raining.' (Matthewson et al. 2007)

(10) *Context: You had done some work for a company and they said they put your*
     pay, $200, in your bank account. but actually, they didn't pay you at all.
     #um'-en-tsal-itás=***ku7***   i=án'was-a   xetspqíqen'kst táola,
     give-DIR-1SG.OBJ-3PL.ERG=**REPORT** DET.PL=two-EXIS hundred   dollar
     t'u7 aoz kw=s=7um'-en-tsál-itas   ku=stám'
     but NEG DET=NOM=give-DIR-1S.OBJ-3PL.ERG DET=what
     '[reportedly] They gave me $200, but they didn't give me anything.' (Matthewson et al. 2007)

The data in (3-10) show that there are important empirical differences between two classes of evidentials, those which pattern with modals and those which do not seem to. My focus in the remainder of this paper is the latter set. I will examine one previously unanalyzed modal in St'át'imcets, *lákw7a,* and show that a range of facts about *lákw7a* can be captured by *any* of the available non-modal analyses. However, I will then show that *lákw7a* poses a problem for all analyses.

3 *Lákw7a* as a non-modal evidential

In this section I introduce the basic *lákw7a* data and show that with respect to two core tests, it patterns with non-modal evidentials like Quechua *-si,* rather than with modal evidentials like St'át'imcets *k'a* and *ku7.*

    Lákw7a is historically a locative adverb, but also functions synchronically as an evidential which signals an absence of visual evidence for the proposition. A typical example is given in (11).

(11) wa7 ***lákw7a*** u7s7-ám
     IMPF ***lákw7a*** egg-MID
     'It's laid an egg (by the sound of it).'

Lákw7a has previously been granted only brief treatment in the literature. In his grammar of the language, van Eijk (1997:172) writes that '*Lákw7a* 'generally refers … to a smell, a sound, or some other sensation (i.e., refers to s.t. that not only is invisible but … *cannot even be made visible*)' (highlighting original). Davis (2006, chapter 15) argues that *lákw7a* is used when one senses something (either by hearing, smelling, or tasting) but cannot see it. Examples supporting this generalization are given in (12). I will provide an analysis of the evidence source restriction of *lákw7a* in section 5.

(12) a. wa7 ***lákw7a*** ku=ts7ás=a
          be ***lákw7a*** DET=come=EXIS
          'Someone's coming.' The speaker can hear them, but not see them.) (Davis 2006)

      b. wa7 ***lákw7a*** k=wa   ílal
          be ***lákw7a*** DET=IMPF cry
          'It sounds like somebody is crying over there.'

      c. áma ***lákw7a***!
          good ***lákw7a***
          'That tastes good!' (Davis 2006)

      d. wa7 ***lákw7a*** ku=sq'áq'pa7 lts7a ti=ts'í7=a
          be ***lákw7a*** DET=dirt   here DET=meat=EXIS
          'This meat tastes as if there's dirt in it.' (said while trying to eat it)

      e. tsem-s=kán   ***lákw7a*** ti=ts'í7=a
          burn-CAUS=1SG.SUBJ ***lákw7a*** DET=meat=EXIS
          'I burnt the meat.' (Context: you smell it)

      f. *Context: You are blindfolded. I ask you to tell me which of three cups a stone is in. You feel around and feel the stone.*
          nilh ***lákw7a*** lts7a
          FOC ***lákw7a*** here
          'It's in this one.'

Lákw7a patterns with non-modal evidentials on two core tests. The first test was already introduced above, namely whether the evidential is felicitous when the embedded proposition is known by the speaker to be false. As can be seen in (13), *lákw7a* is felicitous in such contexts.

(13) *Context: It smelled as if the pie was good, but there was too much salt so it was actually horrible.*
      t'éc=t'u7   ***lákw7a*** ku=páoy, t'u7 áoz=t'u7 kw=a=s   áma
      sweet=just ***lákw7a*** DET=pie but NEG=just DET=IMPF=3SG.POSS good
      'The pie seemed good, but it wasn't good.'

(14) is a minimal pair with (13), reiterating that a modal evidential is infelicitous in this environment.

(14) *t'éc=***k'a***=t'u7   ku=páoy, t'u7 áoz=t'u7 kw=a=s   áma
      sweet=**INFER**=just DET=pie but NEG=just DET=IMPF=3SG.POSS good
      'The pie might/must have been good, but it wasn't good.'

(15-18) are further minimal pairs showing that *lákw7a* is acceptable when the prejacent is known to be false, unlike English epistemic modals or St'át'imcets modal evidentials.

(15) wa7 ***lákw7a*** ku=mám'teq láku7 áltsq7=a,   t'u7 nílh=a cwílh=t'u7
      be ***lákw7a*** DET=walk   DEIC outside=EXIS but FOC=a after.all=just
      ti=sk'éxem=a   wa7 qan'ím-ens-an
      DET=wind=EXIS IMPF hear-DIR-1SG.ERG
      'It sounded like someone was walking outside, but it was the wind.'

(16) *wá7=**k'a** ku=mám'teq láku7 áltsq7=a,   t'u7 nílh=a cwílh=t'u7
       be=**INFER** DET=walk   DEIC outside=EXIS but FOC=a after.all=just
       ti=sk'éxem=a   wa7 qan'ím-ens-an
       DET=wind=EXIS IMPF hear-DIR-1SG.ERG
       'Someone might/must have been walking outside, but it was the wind.'

(17) *Context: When you left the house there were dirty dishes in the sink and a dirty
       floor. When you come home, it's spotless. You know that Eddy doesn't know how
       to clean and never has and never will.*
       o, ts'ex-n-ás   **lákw7a** ti=tsítcw=a   k=Eddy
       oh clean-DIR-3ERG **lákw7a** DET=house=EXIS DET=Eddy
       'Looks like Eddy cleaned up.'

(18) *Context: Same as for (17).*
       #o, ts'ex-n-ás=**k'a**   ti=tsítcw=a   k=Eddy
       oh clean-DIR-3ERG=**INFER** DET=house=EXIS DET=Eddy
       'Eddy might/must have cleaned up.'

A second empirical distinction between evidentials which are analyzed as modals and
those which are not is the inverse of the one just discussed: only the latter set of eviden-
tials are felicitous if the embedded proposition is known to be true. The idea behind
this test is that Gricean reasoning prevents a speaker from using an epistemic modal
if they are in a position to assert the embedded proposition, as the plain proposition
would be a stronger statement.[5]

     This test is applied to *lákw7a* in (19) (repeated from (12f)). We see that *lákw7a* is
felicitous in a situation in which the speaker is certain that the prejacent proposition is
true. An epistemic modal in English would sound very odd in this situation.

(19) *Context: You are blindfolded. I ask you to tell me which of three cups the stone
       is in. You feel around and feel the stone.*
       nilh **lákw7a** lts7a
       FOC **lákw7a** here
       'It's in this one.' (Consultant mimes putting hand on the stone)

Both Quechua and Cheyenne possess evidentials which allow the speaker to be certain
of the truth of the prejacent (the 'best possible grounds' and the 'direct' evidential,
respectively). As predicted, however, the St'át'imcets modal evidential *k'a* is bad in this
type of situation:

(20) *Context: Same as for (19).*
       #nílh=**k'a**   lts7a
       FOC=**INFER** here
       'It might/must be in this one.'

We have seen that with respect to both empirical tests discussed in this section, *lákw7a*
patterns with non-modal evidentials. It seems reasonable to conclude that *lákw7a* is
not a modal. In the following sections I will address the extent to which the various

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[5]Although see von Fintel and Gillies (2010) for arguments that a universal modal statement is not
always weaker than a plain proposition. See also section 6 below.

available non-modal analyses of evidentials are applicable to *lákw7a.*

4   Applying non-modal analyses to *lákw7a*

Non-modal evidentials have been variously analyzed as speech-act/illocutionary operators (which alter the type of speech act and modify sincerity conditions; Faller 2002, 2003), as sentential-force specifiers (which specify which type of conversational update is performed; Portner 2006), illocutionary operators which alter the pragmatic threshold for felicitous utterance (Davis et al. 2007), and as contributors of not-at-issue assertions (offering new information which is not negotiable; Murray 2009a,b). The differences between these analyses form part of a larger debate about what types of not-at-issue meaning exist in natural language (cf. Potts 2005, to appear, Roberts et al. 2009), and about the nature of assertion. The questions to be addressed here include how we determine which is the best framework to adopt for non-modal evidentials, and whether the different approaches correspond to substantive empirical differences.

In this section I will show in turn how each of the available non-modal analyses can be applied to *lákw7a,* and I will therefore argue that the choice between the different approaches has no significant empirical consequences. I begin with Portner's (2006) sentential force specifier approach.

4.1   *Lákw7a* as a sentential force specifier

In any conversation at any particular time, the common ground is the set of propositions which the interlocutors mutually assume to be taken for granted (Stalnaker 1978). A successful assertion updates the common ground by adding a proposition to it. Since non-modal evidentials like Quechua *-si* or St'át'imcets *lákw7a* are felicitous when the prejacent is known to be false, it is natural to assume that they do not attempt to place their prejacent proposition in the common ground. Within speech-act theory, this necessitates a speech-act with fewer commitments than asserting (such as Faller's 2002 'presenting', or von Fintel's 2003 'putting forward'). Portner (2006) argues that we can capture this effect directly, by using conversational updates. The basic idea is that 'The common ground is not every proposition's home' (Portner 2006:8).

Suppose that presenting (rather than asserting) is the most basic conversational update. The *Presented Set* (ps) then contains all the propositions of which the participants are mutually aware. Depending on the sentential force of an utterance, meaning is added to different subsets of ps. One subset of ps is the Common Ground, cg(ps): those propositions to which we have made additional commitments. Assertions, if successful, are added to cg(ps). The universal default home for a presented proposition is cg(ps), but there are other subsets of ps; for example, Report(ps) is the set of propositions for which we have reported evidence. Evidentials, then, can be viewed as grammaticized ways of indicating which subset of ps to update.

Applying this analysis to *lákw7a,* we could say that *lákw7a* signals that the proposition is added to a sensory-non-visual evidence set.[6] (Peterson 2010 says something

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[6]The non-visual restriction on *lákw7a* is slightly more complicated than was indicated above; see

similar to this for the Gitksan evidential *n'akw.)* This is illustrated in (21), where 'ds' stands for 'discourse structure' and 'SNV' represents the sensory-non-visual evidence set. See Portner (2006) for formal details of the system.

(21) $[[\ lákw7a \ ]] = \lambda p \ \lambda ds \ \text{PUT}_{SNV}(ds, \text{p})$

Portner's analysis makes a number of predictions which are upheld by *lákw7a.* First, we predict non-cancelability of the evidence source restriction. Just as for example the question-status of a question cannot be canceled, Portner's sentential-update approach predicts that the evidence source of *lákw7a* cannot be canceled. This is correct, as shown in (22).

(22)   *Context: You're telling your friend how you heard someone prowling around*
          your house. After you heard the noise, you saw them.
          #wa7 ***lákw7a*** ku=mám'teq láku7 álts'q7=a,   ats'x-en=lhkán   aylh
          be   ***lákw7a*** DET=walk   DEIC outside=EXIS see-DIR=1SG.SUBJ then
          'There was someone walking around outside – in fact, I saw them.'

(22) is infelicitous because the speaker's having seen the person outside violates the non-visual condition on *lákw7a.*

  A second prediction is that the evidence source will be non-deniable by an interlocutor. Markers of sentential force cannot be explicitly denied by an interlocutor; responses such as *That's not true* target only the prejacent proposition (Portner 2006:13). (23) shows that the evidence source of *lákw7a* is not subject to denial. The mother's utterance violates the evidence source restriction of *lákw7a* (since the mother saw the event). Nevertheless, Laura is unable to respond using *cw7aoz kw swenácw* 'that's not true'. The consultant's comment suggests that the contribution of *lákw7a* is not at-issue, asserted content.

(23)   *Context: You sneak some of your mother's ts'wan (wind-dried salmon) and she*
          sees you doing it. Later on, you hear her telling your father:
          #tsicw   ***lákw7a*** kwam   s=Laura   i=ts'wán=a   láku7 xétsem=a
          get.there ***lákw7a*** take(MID) NOM=Laura DET.PL=ts'wan=EXIS DEIC box=EXIS
          'Laura took some ts'wan from the box.'
          You say:
          #aoz kw=s=wenácw, áts'x-en-ts=kacw
          NEG DET=NOM=true see-DIR-1SG.OBJ=2SG.SUBJ
          'That's not true, you SAW me (take the ts'wan).'
          Consultant's comment: "No, you just wouldn't say it … because it's something
          you already know."

The sentential-update analysis also predicts that *lákw7a*-statements do not assert their embedded proposition. Empirically, one consequence of this is that the speaker should not have to believe the prejacent proposition to be true: unlike the common ground, the set of propositions for which we have sensory-non-visual evidence may contain propositions not believed by the speech participants. This prediction is correct for *lákw7a,* as shown above in (13,15,17). In fact, *lákw7a* is predicted to be compatible

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section 5 for discussion.

with *any* certainty level, from certain falsity to certain truth.[7] Further supporting evidence for the full certainty range of *lákw7a* is given in (24-25).

(24)   *Context: Wa7 k'a kánem k Mary? (What's Mary doing?)*
       wa7   ***lákw7a*** ít'-em
       IMPF ***lákw7a*** sing-MID
       'I guess she's singing / sounds like she's singing.'
       Consultant's comment: "You're not very sure."

(25)   *Context: You're next door and hear through the wall that someone is baking*
       some pies. Eddy was the only one home, so it must be him.
       wa7   ***lákw7a*** mayt k=Eddy   ku=páoy
       IMPF ***lákw7a*** make DET=Eddy DET=pie
       'Eddy must be making pie.'
       Consultant's comment: "Yeah. He's the only one home."

A second empirical argument for the claim that *lákw7a*-utterances do not assert the prejacent runs as follows. If a speaker asserts p, s/he cannot later deny having said that p. But if a speaker uses *lákw7a*, s/he *can* later deny having said that p, as shown by the felicitous conversation in (26).

(26)   A: wa7 ***lákw7a*** k=wa   ílal
            IMPF ***lákw7a*** DET=IMPF cry
            'Sounds like someone is crying.'
       Later . . .
       B: tsút=kacw   kw=a=s   wa7 láku7 k=wa   ílal. áy=t'u7 swat
            say-2sg.SUBJ DET-IMPF-3POSS be   DEIC DET-IMPF cry NEG=just who
            láku7 ku=wá7
            DEIC DET=be
            'You said someone was crying there. Noone is there.'
       A: áy=t'u7   áku7 kw=en=s   tsut. kan   tsut-ánwas
            NEG=just DEIC DET=1SG.POSS=NOM say   1SG.SUBJ say-inside
            kw=en=s   qan'ím-ens k=wa   ílal
            DET=1SG.POSS=NOM hear-DIR   DET=IMPF cry
            'I didn't say that. I thought I heard someone crying.'

The conversation in (26) contrasts with that in (27), which shows that assertions are not retractable in this way.[8]

(27)   A: wa7 k=wa   ílal
            IMPF DET=IMPF cry
            'Someone is crying.'

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[7]Chung (2010:939) argues the same for non-assertive evidentials in Korean: 'the speaker is totally neutral about his (her) attitude toward or belief in the proposition.'

[8]Déchaine (2007) makes the interesting and strong proposal that in Cree, plain declaratives are not asserted (not intended by the speaker to be added to the common ground). Déchaine argues for something very similar to Portner's Presented Set, with the added twist that languages can vary in whether the default set to which a presented proposition is added is the common ground or not. However, Déchaine does not apply tests like those given here to test the assertive status of Cree utterances.

Later …

B: tsút=kacw   kw=a=s   wá7 láku7 k=wa   ílal. áy=t'u7   swat
    say=2sg.SUBJ DET=IMPF=3POSS be   DEIC DET=IMPF cry NEG=just who
    láku7 ku=wá7
    DEIC DET=be
    'You said someone was crying there. Noone is there.'

A: #áy=t'u7   áku7 kw=en=s   tsut. kan   tsut-ánwas
    NEG=just DEIC DET=1SG.POSS=NOM say   1SG.SUBJ say-inside
    kw=en=s   qan'ím-ens k=wa   ílal
    DET=1SG.POSS=NOM hear-DIR   DET=IMPF cry
    'I didn't say that. I thought I heard someone crying.'
    Consultant's comment: "Not the way you said the first part. You definitely
    heard the cry, you definitely know it on that sentence."

We have seen that Portner's sentential-update approach accounts well for several core
facts about *lákw7a.* Interestingly, the sentential-force analysis also accounts for some
facts about determiner choice in St'át'imcets. As argued by Matthewson (1998), St'át'-
imcets has two sets of determiners: assertion-of-existence and non-assertion-of-exi-
stence. Non-AOE determiners are ungrammatical in environments which would result
in an assertion of the existence of an individual satisfying the NP description. Non-AOE
determiners therefore require licensing by an attitude verb, negation, an *if*-clause, a
question, etc. (cf. Giannakidou's 1998 nonveridical contexts, and see also Lin 1996 on
Chinese). This is illustrated in (28). (28a) is ungrammatical because the non-AOE de-
terminer *ku* in this environment is incompatible with existential closure, which would
result in the assertion that a woman exists.

(28)   a. *ít'-em   ***ku***=smúlhats
            sing-MID **NON.AOE.DET**=woman
            'A woman is singing / sang.'
        b. ***cw7aoz*** kw=s=ít'-em   ***ku***=smúlhats
            NEG   DET=NOM=sing-MID **NON.AOE.DET**=woman
            'No woman is singing / sang.'

As shown in (29), *lákw7a* licenses non-AOE determiners (cf. Lyon 2009):

(29)   a. wa7 ***lákw7a ku***=sq'áq'pa7   lts7a ti=ts'í7=a
            be   ***lákw7a* NON.AOE.DET**=dirt here DET=meat=EXIS
            'This meat tastes as if there's dirt in it.' (said while trying to eat it)
        b. wa7 ***lákw7a ku***=wá7   lasál lts7a
            be   ***lákw7a* NON.AOE.DET**=be salt   here
            'I can taste salt in this.'

The licensing of *ku* by *lákw7a* is predicted if we say that only propositions which are
asserted (added to the common ground) can result in assertion of existence environ-
ments. Any proposition in the sensory-non-visual evidence set is free to use a non-AOE
determiner.

In sum, we have seen in this section that a wide range of facts about *lákw7a* are
accounted for by a sentential force specifier analysis as in Portner (2006).

4.2 *Lákw7a* as a speech act operator

In this section we examine whether *lákw7a* is amenable to a speech-act analysis along the lines of Faller (2002). First let's see how Faller (2002) uses speech act theory to account for the Quechua reportative *-si.* Faller argues that *-si* is a function from speech acts to speech acts. The addition of *-si* has two effects: the illocutionary force is changed from 'assertion' to 'presentation', and the reportative evidence source is added as a sincerity condition (a pre-condition on felicitous utterance of the speech act; the speaker must believe the content of the sincerity conditions). Faller's analysis is shown in (30). The sincerity condition states that there is a individual s_2 who asserted p, and who is neither the speaker nor hearer of the current utterance. A speaker is therefore being insincere who utters a sentence *-si p* when *p* has not been asserted by some third person.

(30)   *-si:* ASSERT(p)   →   PRESENT(p)
                 SINC = {*Bel* (s,p)}   SINC = {$\exists s_2[\textit{Assert}\ (s_2,p) \wedge s_2 \notin \{h,s\}]$}
                                           (Faller 2002:200)

A speech-act analysis of *lákw7a* would parallel that of Quechua *-si* in that the illocutionary force would be 'present' rather than 'assert'. The sincerity conditions would have to include the requirement that there be sensory non-visual evidence for the proposition. This might look something like (31):

(31)   *lákw7a:* ASSERT(p)   →   PRESENT(p)
                  SINC = {*Bel* (s,p)}   SINC= {*Snv* (s,p)}

Just like Portner's analysis, Faller's speech-act analysis also successfully predicts the following salient features of *lákw7a:*

(32)   i.   Non-cancelability of the evidence source
         ii.   Non-deniability of the evidence source
         iii. Failure of *lákw7a* to assert / compatibility with any certainty level

As above, (32iii) accounts for the behaviour of *lákw7a* in the two tests discussed in section 3: felicity if the prejacent proposition is known to be true, or if it is known to be false. From this I conclude that *lákw7a* is apparently amenable to a speech-act operator analysis along the lines of Faller (2002).

4.3 *Lákw7a* as introducing not-at-issue assertion

An alternative analysis of non-modal evidentials is provided by Murray (2009a,b)[9]; Murray's analysis relies on the contrast between *at-issue* and *not-at-issue* content. At-issue assertions, which constitute the 'main point' of an utterance and which are proposals to update the common ground, are up for negotiation by interlocutors. Thus, a hearer can directly deny the at-issue assertive content of an utterance (for example by saying *That's not true).* Not-at-issue content, in contrast, is added to the common ground directly, and therefore is not negotiable. A hearer cannot directly deny not-at-issue con-

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[9]At the time of the writing Murray (2010) was not yet available.

tent. Presuppositions are one kind of not-at-issue content, and Potts' (2005, to appear) conventional implicatures are also not-at-issue.

Murray observes that the evidence source restriction of the Cheyenne reportative and direct evidentials is not up for discussion and is not deniable. It is not at-issue. However, the evidential restriction is new information, not a presupposition. Murray therefore proposes that the evidence source restriction of the Cheyenne evidentials is a *not-at-issue assertion*.[10]

According to Murray, a sentence containing an evidential contributes three things: (i) an *at-issue proposition* (which may or may not be asserted), (ii) an *evidential restriction* (which is asserted, but not at-issue), and (iii) an *evidential proposal* / relation (an ordering of worlds and a proposal to restrict the common ground to the TOP worlds in the ordering). For example, the Cheyenne reportative asserts the evidential restriction in (33). This reduces the input worlds in the common ground to worlds in which the speaker (i) heard the proposition p.

(33)   HRD(i,p) = {w | in w, speaker heard that p}

The evidential proposal of the reportative proposes no change to the common ground; with a reportative, the embedded proposition is not asserted. The evidential proposal is that the hearer 'take note of p'.

An important feature of Murray's analysis is that the evidential restriction is new information, not a presupposition. Murray (2009a,b) provides no specific data in support of this claim, but it makes intuitive sense that an utterance of a sentence containing an evidential does not take the evidential restriction for granted, but rather provides it as new information. This means that the presupposition-based modal analyses of e.g., Izvorski (1997) or Matthewson et al. (2007) should probably be altered so as to involve some non-common-ground type of not-at-issue content. This is easily doable without altering the main thrust of these analyses.

Interestingly, however, the claim that the evidential restriction is new information does not distinguish Murray's analysis from that of Faller (2002), who models the evidential restriction as part of the sincerity conditions. Sincerity conditions are not presupposed: preparatory conditions are taken for granted, but sincerity conditions are not (Faller 2002:16-17, describing Vanderveken 1990). Similarly, for Portner (2006), the restriction on evidence source is not presupposed. The rejection of presupposition for the evidential restriction is therefore common to all the available analyses of non-modal evidentials.

Murray's analysis also replicates the same speech-act-like effects as Faller does for the reportative, namely that the reportative is not a proposal to update the common ground (cf. Faller's 'present' speech act). For Murray, this comes from the evidential proposal, which for the reportative is that the hearer 'take note of' p. Murray's argument against Faller is a conceptual one; she argues that the not-at-issue assertion analysis is more parsimonious, requiring 'no appeal to a separate level of illocutionary meaning' (Murray 2009b:2). However, empirically speaking the two theories appear to account for exactly the same facts. In fact, all *three* theories so far account for exactly the same facts[11]. We turn in the next sub-section to the final non-modal analysis to be

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[10]See Roberts et al. (2009) for recent discussion of the (not-)at-issue distinction.

[11]At the time of writing, Murray (2010) was not yet available. The fuller version of Murray's proposals

considered, that of Davis et al. (2007).

4.4 *Lákw7a* as signaling the lowering of the quality threshold

According to Davis et al. (2007), evidentials are illocutionary force operators which function to change the *quality threshold* of the context in which they are uttered. The quality threshold corresponds, roughly speaking, to the level of certainty a speaker must have to assert a proposition: a speaker can only felicitously assert p if the probability of p is greater than the current quality threshold in the context. An evidential can lower the quality threshold so the speaker can assert something when she only has indirect evidence for its truth. Thus, Davis et al. allow propositions to be 'asserted' when the speaker is less than fully certain, and evidentials indirectly signal this.[12]

Applying Davis et al.'s analysis to *lákw7a* would work as follows. First, evidentials specify an evidence source; this is given in (34).

(34)   Uttering $S[lákw7a]$ commits the speaker to the existence of a situation in which he receives sensory-non-visual evidence for $[[S]]$. (cf. Davis et al. 2007:9)

Next, Davis et al. define a function which associates evidence types with probabilities:

(35)   Let $\varphi_{\text{lákw7a}}$ be the proposition that a situation in which an agent obtains *lákw7a*-type evidence for *p* is also a situation in which *p* is true.
μ maps context-morpheme pairs to probabilities: $\mu_c(lákw7a) = P_c(\varphi_{lákw7a})$

(35) reflects the idea that for each situation, there may be a different probability that sensory-non-visual evidence for a proposition *p* entails that *p* is true. For example, in a context c where the *lákw7a*-type evidence is fairly reliable, $\mu_c lákw7a$ might equal .9. The evidential then changes the contextually-given quality threshold from whatever it was to the value given by $\mu_c lákw7a$. The reader is referred to Davis et al.'s paper for remaining technical details, which I do not have space to spell out here.

The threshold-changing analyses successfully accounts for the core fact that *lákw7a*-type evidentials are compatible with any certainty level. Although all prejacents are asserted on Davis et al.'s analysis, 'assertion' is now relativized so that given an appropriately low quality threshold, a speaker is not committed to the truth of their assertions. As the Davis et al. analysis is an illocutionary one, it will also account for the non-cancelability and non-deniability of the evidence source. Again we see that empirically, all the core facts of *lákw7a* are accounted for.

My question for the quality threshold analysis is a conceptual one, namely whether we need all these steps. Under the quality threshold analysis, the evidential still lexically encodes evidence type. Evidence type, plus the reliability of that type of evidence in the particular discourse context, leads to a shift in the quality threshold by the right

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does involve some empirical differences with Faller's analysis (Sarah Murray, p.c.).

[12]According to Davis et al., epistemic modals differ from evidentials in not being able to change the quality threshold. However, 'both the evidential and modal strategies are likely to be fueled by the same fact about the epistemic state of the speaker', namely that the speaker lacks the required level of certainty to outright assert the prejacent (2007:84). Davis et al. note (2007:84-85) that the speaker's choice of whether to choose an evidential or an epistemic modal 'is likely to be governed by the question of whether the evidence source is relevant at that point in the discourse.'

amount so that one can felicitously assert p. This implies that for each context, there is a way to determine what the quality threshold is, how reliable the evidence is, and therefore how much the quality threshold needs to shift.

However, in any given context, it is unclear that the hearer has any way of knowing how reliable the speaker's evidence is. For example, if I use a reportative, you have no way of knowing whether the report I heard was uttered by a reliable or an unreliable person. So the values for $\mu_c\text{REPORT}$ and $P_c(\varphi_{\text{REPORT}})$ are known only to the speaker. All the hearer knows is that the speaker has a certain type of evidence for p, and that the probability of p may be less than the current quality threshold.

I therefore suggest that instead of adopting contextually-given function values, it is simpler – and even more correct – to say that non-modal evidentials leave probability entirely vague. A simpler analysis is one where the function of the evidential is purely to encode evidence type, and no information is given about certainty level. This fits with an evidential like *lákw7a,* which allows any certainty level from 0% up to 100%, and for which the hearer usually has no way of guessing the speaker's certainty level. This accords well with, for example, Portner's analysis, which dispenses with the idea that all declaratives perform assertions. *Lákw7a*-propositions are simply placed into a set of propositions for which a certain type of evidence exists. Propositions in that set may have any probability of being true, from 0 to 1.

To summarize this section, I have argued that the choice between the different approaches to non-modal evidentials has no significant empirical consequences. This is interesting in itself, because proliferation of frameworks in the absence of significant empirical differences is perhaps not ideal. In the next section I turn to an empirical problem posed by *lákw7a* for the available non-modal analyses of evidentials.

5   The evidence source of *lákw7a*

In section 3 I gave a brief and simplified characterization of the restrictions *lákw7a* places on evidence source. In this section I investigate evidence source in more detail. I will argue that *lákw7a* is subject to both a positive and a negative restriction with respect to evidence source; these are given in (36i,ii) respectively. I will provide an analysis of these restrictions which requires *lákw7a* to operate at the event level (rather than, say, at the speech-act level).

(36)   i.   *Lákw7a* requires sensory evidence for the proposition.
        ii.   *Lákw7a* disallows visual evidence of the eventuality itself.

The distinction between evidence for the *proposition* and evidence of the described *eventuality* is crucial here. I will provide data below illustrating the difference, but the idea is that we must distinguish between cases where a speaker has witnessed the event itself, and cases where the speaker has any other kind of evidence (for example, some results of the event) which leads her to conclude that the proposition might be true.[13]

The restrictions in (36) make a number of predictions, outlined in (37). In the next sub-section I show that these predictions are upheld.

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[13]See Nikolaeva (1999) for the claim that evidentials can restrict the speaker to only having evidence of the results of an event rather than the event itself.

(37) *Lákw7a* should allow:
- i.   Non-visual sensory evidence of the eventuality.
- ii. (Any kind of) sensory evidence of the results (or precursors) of the event.
  Lákw7a should disallow:
- iii. Visual evidence of the eventuality itself.
- iv. Pure inference or reasoning.

5.1 *Lákw7a*'s evidence source: The data

We saw above that *lákw7a* is felicitous with any kind of non-visual, sensory evidence of the eventuality, including hearing, taste, smell and touch (see (12)). This much confirms prediction (37i). As will become important below, the requirement that the evidence be non-visual does not entail that the evidence of the event is 'indirect'. In (38), the proposition is that the object smells, and the evidence is olfactory. The evidence could not be more direct.

(38) cw7ucw ***lákw7a***
      smell   ***lákw7a***
      'That smells.'

Similarly, in (39) the proposition is that the radio is too loud, and the evidence is auditory. This is direct evidence for the proposition being advanced.

(39) wenacwts-7úl ***lákw7a*** ti=radio=ha
      loud-too   ***lákw7a*** DET=radio=EXIS
      'The radio is too loud.'

The second prediction of the double restriction on *lákw7a,* (37ii), is that any kind of sensory evidence from results of the eventuality should be permitted, including visual evidence. This is illustrated in (40-42). In (40), the speaker did not witness how long the object was under the water, but feels the dryness, the results of the event.

(40) cw7áy=t'u7 ***lákw7a*** k=s=cin'=s   kw=s=wá7
      NEG=just   ***lákw7a*** DET=NOM=long.time=3SG.POSS DET=NOM=be
      l-ti-qú7=a–   wá7=t'u7 wa7 k'ac
      in=DET=water=EXIS IMPF=just IMPF dry
      'It couldn't have been under the water long – it's dry!

In (41-42), the sensory evidence of the results of the event is visual. *Lákw7a* is felicitous here because the negative restriction on *lákw7a* only rules out visual evidence of the *event itself*.

(41) *Context: You had five pieces of ts'wan [wind-dried salmon] left when you checked yesterday. Today, you go to get some ts'wan to make soup and you notice they are all gone. You are not sure who took them, but you see some ts'wan skins in John's room.*
      ts'áqw-an'-as ***lákw7a*** i=ts'wán=a   k=John
      eat-DIR-3ERG ***lákw7a*** DET.PL=ts'wan=EXIS DET=John
      'Looks like John might have eaten the ts'wan.'

(42)   *Context: You are a teacher and you come into your classroom and find a nasty picture of you drawn on the blackboard. You look around and you see that only one child has got chalk dust on her hands, Sylvia.*
nilh ***lákw7a*** s=Sylvia   ku=xílh-tal'i
FOC ***lákw7a*** NOM=Sylvia DET=do(CAUS)-TOP
'Sylvia must have done it.'

(43-44) are further instances of seeing the results of an event, in these cases an event for which direct evidence would be auditory.

(43)   *Context: You don't have your hearing aid in and you can't hear much. The radio is on and you see that your grandkids are kind of wincing and one has her fingers in her ears.*
wenácwts=t'u7 ***lákw7a*** ti=radio=ha
loud=just   ***lákw7a*** DET=radio=EXIS
'The radio must be too loud.'

(44)   *Context: You are watching through the glass at your daughter's dance class. They have two kinds of music that they play: rock and roll, and Tchaikovsky, the Dance of the Sugar Plum Fairy. You can't hear the music but you see them dancing around like fairies.*
nilh ***lákw7a*** Tchaikovsky k=wa   k'al'an'-min'-ítas
FOC ***lákw7a*** Tchaikovsky DET=IMPF listen-APPL-3PL.ERG
'They must be playing Tchaikovsky.'

And (45) shows that as predicted, sensory evidence of the *precursors* (rather than the results) of an event is also allowed.[14]

(45)   o, cuz'   ***lákw7a*** kwis, kéla7=t'u7 wa7   qwál'qwel't i=nqweqwú7lh=a
oh going.to ***lákw7a*** rain   very=just   IMPF ache   DET.PL=bone=EXIS
'Oh, it's going to rain, my bones are really aching.'

(46-48) show that visual witness of the eventuality itself is disallowed (prediction (37iii)). (46) is only acceptable if the speaker hears, rather than sees, symptoms of the sickness.

(46)   áols-em=lhkacw ***lákw7a***
sick=2sg.SUBJ   ***lákw7a***
'You must be sick.'
Rejected if the speaker sees someone is shivering and sweaty. Accepted if the speaker hears them coughing.

(47) is acceptable if one only sees John's lights, not John himself, and a similar comment is given by the consultant for (48).

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[14]Thanks to an anonymous reviewer for a comment which inspired me to discuss evidence which temporally precedes the event. The generalizations in (36) predict that visual 'precursive' evidence will also permit *lákw7a* (for example, seeing black clouds gathering as a precursor to rain). This has not yet been tested.

(47)   *Context: A is driving past John's house with B and sees John's lights are on.*
       wá7 ***lákw7a*** l=ta=tsítcw-s=a   s=John
       be   ***lákw7a*** in=DET=house-3SG.POSS=EXIS NOM=John
       'John must be home.'
       Consultant's comment: "Okay, 'cause you don't really see him."

(48)   tsicw ***lákw7a*** kwam   s=Laura   i=ts'wán=a   láku7 xétsem=a
       go   ***lákw7a*** take(MID) NOM=Laura DET.PL=ts'wan=EXIS DEIC box=EXIS
       'Laura took some ts'wan from the box.'
       Consultant's comment: "Okay if she didn't see her doing it."

An interesting subtlety confirms the distinction between visual evidence of the *eventuality itself* as opposed to its *results.* In (49-50), the speaker has visual evidence of the result state encoded by the predicate, and the utterances are infelicitous. They contrast with the data in (41-42), where the visual evidence was not entailed by the predicate, but merely contextually counted as a result of the event.

(49)   *Context: You are waiting for Billy to arrive. You suddenly see that he's here.*
       #t'iq   ***lákw7a*** k=Billy
       arrive ***lákw7a*** DET=Billy
       'Billy must've arrived.'

(50)   *Context: You needed a door put in. You come home and you see the door is in.*
       #lan   ***lákw7a*** es-máys   ti=séps=a
       already ***lákw7a*** STAT-made DET=door=EXIS
       'The door must've been made.'

The final prediction of the restrictions on *lákw7a,* (37iv), is that pure inference or reasoning is disallowed. This is correct, as shown in (51-53), where in each case the speaker is using inference or reasoning rather than having sensory evidence for the prejacent proposition.[15]

(51)   *Context: You are a teacher and you come into your classroom and find a nasty picture of you drawn on the blackboard. You know that Sylvia likes to draw that kind of picture.*
       #nilh ***lákw7a*** s=Sylvia   ku=xílh-tal'i
       FOC ***lákw7a*** NOM=Sylvia DET=do(CAUS)-TOP
       'It must have been Sylvia who did it.' (Corrected to inferential *k'a*).

(52)   *Context: I show you a coin and three cups. I put the coin under one of the cups and then I mix them around so you can't see any more which one it's under. I ask you to guess. You guess one cup, and I lift it up and show you that it's not under there. You guess a second one, the same. You point at the last cup and say:*
       #láti7 ***lákw7a*** lh=as   legw
       there ***lákw7a*** COMP=3SBJN get.hidden
       'It must be under that one.' (Volunteered with inferential *k'a.)*

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[15]Data such as these show that *lákw7a* is not licensed by just anything which is invisible; cf. van Eijk (1997:172). For example, the event in (53) is invisible, but is ruled out because the speaker has only inferential, rather than sensory, reasons for stating that her daughter is currently above the Pacific.

(53)   *Context: You take your daughter to the airport for a flight to Hawaii. You see the*
        plane take off. Three hours later your son asks you where your daughter is (he's
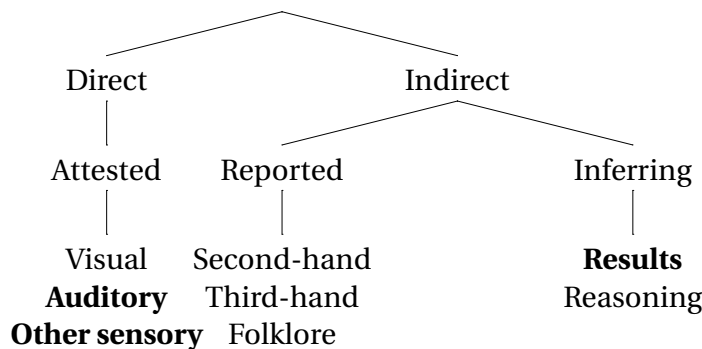   *forgotten she was going on holiday today).*

        #cá7-s=a   ***lákw7a*** ti=xzúm=a   qu7   lh=as   wá7
        high-3POSS=EXIS   ***lákw7a*** DET=big-EXIS water COMP=3SBJN be
        'She's above the Pacific.' (Fine with inferential *k'a*.)

To summarize the generalizations about evidence source, we have seen that *lákw7a* requires that the speaker have sensory evidence for the proposition, but disallows visual evidence of the eventuality.[16] In the next sub-section I will show that *lákw7a* does not fit with traditional categorizations of evidence source, and argue for an analysis along the lines of Faller (2003), Chung (2005, 2007).

5.2   *Lákw7a*'s evidence source: Analysis

Willett's (1988:57) categorization of evidence types is given in (54), with the types of evidence allowed by *lákw7a* highlighted.

(54)

```
                          _____|_____
                         |                       |
                      Direct                  Indirect
                         |                  _____|_____
                         |                 |                |
                      Attested          Reported         Inferring
                         |                 |                |
                      Visual          Second-hand        Results
                     Auditory          Third-hand        Reasoning
                   Other sensory        Folklore
```

Lákw7a does not fit into this classification; the traditional division into 'direct' vs. 'indirect' evidence fails for *lákw7a*, since *lákw7a* allows both direct perception of the event (as long as it's non-visual), and indirect evidence (as long as it's sensory).

More broadly, the traditional classifications of e.g., Willett (1988) and Aikhenvald (2004) (and much work which builds on these) conflate two different issues: first, what *means* (sense(s), reasoning) the speaker uses to gain knowledge of the eventuality, and second, whether the speaker directly perceived the *eventuality itself* (as opposed to its results or precursors). For example, Aikhenvald's (2004) definition of 'direct' is that it involves 'speaker's sensory experience'. But the speaker can have sensory experience of results of the event - a type of *indirect* evidentiality. Once we realize that there are two distinct issues in evidence source, the need for a disjunctive statement of *lákw7a*'s restrictions makes a lot more sense. The restrictions are repeated in (55). (55i) restricts the means by which the speaker obtained their evidence, and (55ii) restricts perception of the eventuality itself.[17]

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[16] *Lákw7a* shares similarities with the Gitksan sensory evidential *n'akw* (Peterson 2009, 2010), and with the Thompson Salish evidential *nukw* (Mackie 2010).

[17] Korean data in Lee (this volume) support the claim that evidentials may cross the direct/indirect boundary. Lee concludes from her data that evidentials do not have to distinguish evidence source.

(55) i.   *Lákw7a* requires sensory evidence for the proposition.
      ii. *Lákw7a* disallows visual evidence of the eventuality itself.

In the remainder of this section I will provide an analysis for the restriction in (55ii), making use of the notion of the speaker's perceptual field (Faller 2003).

The first thing to note is that (55ii) is very reminiscent of the restriction on a Quechua past tense suffix *-sqa,* as analyzed by Faller (2003). According to Faller, *-sqa* requires that the event be outside the speaker's perceptual field at the topic time. Faller models this in terms of (at least partial) non-overlap between the event-trace and the speaker's perceptual trace at the topic time (see also Nikolaeva 1999 and Chung 2005, 2007 for similar ideas). Faller's lexical entry for *-sqa* is given in (56):

(56) $[[\text{-}sqa]] = \lambda t_R \, \lambda P \, \lambda e \, . \, P(e) \wedge t_R < t_s \wedge \neg \, \forall <t,l> \, [t \subseteq t_R \wedge <t,l> \in \textit{e-trace(e)} \rightarrow <t,l> \in \textit{P-trace(sp)}]$

The P-trace is a function which maps an individual x onto x's perceptual field, for each time throughout their lifespan. (56) states that *-sqa* applied to a reference time, a predicate and an event, gives a value of true iff not all time-location (*<t,l>*) coordinates which are included in the spatio-temporal trace of the event at the reference time were included in the speaker's perceptual field. In other words, there is at least partial non-overlap between the speaker's perceptual field and the event at the reference time. Chung (2005, 2007) adapts Faller's analysis to deal with the Korean evidential tense *-te;* see also Nikolaeva (1999) and discussion in Speas (2008).

Lákw7a differs from *-sqa* in a couple of ways, the most obvious being that *lákw7a* is not a tense marker. *Lákw7a* is also more specialized than *-sqa,* in that for *lákw7a,* the event must be outside the speaker's *visual* field at the topic time. The idea of non-overlap between the speaker's visual field and the event trace correctly allows the speaker of a *lákw7a*-clause to have non-visual sensory perception of the event itself. The final difference between *lákw7a* and *-sqa* is that *lákw7a* requires no overlap whatsoever (as opposed to partial non-overlap) between the speaker's visual trace and the event trace.

The non-visual-overlap condition is given in (57) for a context c and an event e, with reference time R. The V-trace is a function which maps an individual x onto x's visual perceptual field, for each time throughout their lifespan.

(57) $[[\textit{lákw7a}]] = \lambda t_R \, \lambda P \, \lambda e \, . \, P(e) \wedge \forall <t,l> \, [t \subseteq t_R \, \& \, <t,l> \in \textit{e-trace(e)} \rightarrow <t,l> \notin \textit{V-trace(sp}_c)]$

Whether or not the precise analysis in (57) is correct, what is crucial is that the restrictions on *lákw7a must* make reference to the event argument. This was shown in section 5.1, where we saw that visual evidence is permissible if and only if the speaker sees results of the event, *not* the event itself. The consequence of this is that *lákw7a* must operate at the propositional level. This in turn sheds quite a bit of doubt on whether any of the analyses discussed in section 4 are applicable to *lákw7a.* In fact, Faller (2003) uses the fact that Quechua *-sqa* makes applies to the event argument as a motivation

However, given the argumentation here, Lee's results can be understood as implying that evidence source is a complex notion, and that evidentials may encode *only* evidence *source,* but do not have to encode *directness* ((non-)witness of the eventuality itself).

to reject a speech-act level analysis of *-sqa.*

Another interesting result of (57) is that Faller uses the fact that *-sqa* merely locates the event trace with respect to the speaker's perceptual field to argue that *-sqa* is not an evidential. This is because *-sqa* does not directly encode anything about information source. However, *lákw7a is* an evidential: *lákw7a* also encodes a positive requirement on information source, namely that it has to be sensory. From this we can conclude that even for some true evidentials, the notion of (non-)overlap between the event-trace and the speaker's perceptual field is required. This is in line with what I argued above, namely that the traditional notion of direct vs. indirect evidence conflates two distinct issues, and that some evidentials require a twofold restriction on evidence source: a restriction on the means by which the speaker obtained the evidence, and also a restriction on whether the speaker perceived the eventuality itself. The former is taken care of a traditional lexical restriction on evidence source, while the latter is taken care of by Faller's (non-)overlap condition.

6 *Lákw7a* might be a modal after all

I have argued in this paper that although many facts about *lákw7a* are in line with available analyses of non-modal evidentials, there is one critical stumbling block to applying such analyses to *lákw7a,* namely the fact that *lákw7a* applies at the level of the event argument. It is hard to see how to reconcile the conclusions of section 5 with any of the analyses discussed in section 4, all of which assume that non-modal evidentials operate at a level above, or separate from, the proposition. In this final section I briefly outline an analysis whereby *lákw7a* is a modal evidential, after all. This idea is spelled out in more detail in Matthewson (2009, 2010), although I argue for it there on the basis of different evidence, some of which is alluded to below.

Recall the core empirical differences between modal and non-modal evidentials, as outlined in sections 2 and 3: non-modal evidentials are felicitous when their prejacent is known to be true, and when it is known to be false. This is not normally the case for epistemic modals, as shown in (5, 14) above. However, neither of these arguments hold up when examined more closely. First let's take the claim that epistemic modals are infelicitous when their prejacent is known to be true. This is falsified by von Fintel and Gillies (2010), who give data such as in (58).

(58)   Chris has lost her ball, but she *knows* with full certainty that it is in either Box
          A or B or C She says:
          The ball is in A or B or C.
          It is not in A ... It is not in B.
          So, it must be in C.   (von Fintel and Gillies 2010:362)

von Fintel and Gillies argue that *must p* is infelicitous not when the speaker is certain about p, but rather when the speaker's evidence for p is *direct.* In other words, *must* contains indirect evidential semantics. This explains the contrast between (58) and (59); in (59), the evidential source requirement of *must* is violated, while in (58) it is not.

(59)   [Seeing the pouring rain.]

It's raining.
??It must be raining. (von Fintel and Gillies 2010:353)

These data show that the test involving truth of the prejacent is invalid as a way of showing that an evidential is non-modal. It can only show that an evidential has different evidence requirements from some other modals.

As for whether or not the speaker can know the prejacent to be false, this also provides no evidence against the modal status of an evidential. This follows from the analysis in Kratzer (2010), according to which there are at least two different types of conversational backgrounds for 'epistemic' modals: *realistic* and *informational,* with only the former ruling out a known-to-be-false prejacent. The realistic/informational distinction is given in (60-61).

(60)   A realistic conversational background for an evidential: a function f such that for all w in the domain of f, there is a body of evidence in w that has a counterpart in all w' $\in \cap f(w)$.
       in view of the available evidence; given the evidence (Kratzer 2010:12)

(61)   An informational conversational background: a function f such that for any w in the domain of f, $f(w)$ represents the content of some salient source of information in w.
       according to the content of . . . (Kratzer 2010:13)

(62) has a realistic conversational background; it asserts that in all worlds in which there is the same rumour as in the actual world, Roger was elected chief. Since the actual world is a world in which there is this rumour, the speaker of (62) makes a strong claim about the actual world, and cannot know that the prejacent is false.

(62)   *Context: There is a rumour that Roger has been elected chief.*
       Given the rumour, Roger must have been elected chief.

(63) has an informational conversational background; it asserts that in all worlds which are compatible with the content of the rumour, Roger was elected chief. This is a claim about what the rumour says, not a claim about whether Roger was elected in the actual world. Unlike (60), (61) is felicitous even if the speaker is sure that Roger was not elected chief.

(63)   *Context: There is a rumour that Roger has been elected chief.*
       According to the rumour, Roger must have been elected chief.

Given that informational epistemic modals are felicitous if p is known to be false, the false-prejacent test is invalid as a way of showing that an evidential is non-modal. It can only show that the evidential may be restricted to having an informational conversational background.[18]

These are not the only two tests for the (non-)modal status of an evidential, and

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[18]Kratzer (2009) argues exactly this, namely that the St'át'imcets reportative *ku7* has an evidential conversational background (and is therefore incompatible with the speaker knowing that p is false), while the German reportative *sollen* has an informational conversational background (and is therefore compatible with the speaker knowing that p is false).

space does not permit me to give a full defence here of the claim that *lákw7a* is a modal (see Matthewson 2009, 2010 for fuller argumentation). However, it is already significant that (a) the evidence source requirement of *lákw7a* suggests that it operates inside the proposition, and (b) the two major arguments for non-modality of an evidential are both invalid.

7 Conclusions

In this paper I have argued for four main points. First, a range of current non-modal analyses of evidentials make equivalent empirical predictions with respect to the core features of the set of evidentials they are designed to account for. The choice between them must therefore be made on conceptual grounds. Second, traditional conceptions of evidence source conflate two separate issues: the means by which the speaker obtained their evidence, and whether or not the speaker directly witnessed the event itself. Third, the St'át'imcets evidential *lákw7a* sheds doubt on all the non-modal analyses examined (in spite of seeming at first to be amenable to all of them). The problem posed by *lákw7a* is that its evidence source restriction requires reference to the event argument, and as such *lákw7a* must operate at the propositional level. Finally, two of the main arguments for non-modal evidentials are invalid, and *lákw7a* may – in spite of its striking similarities with non-modal evidentials – be a modal after all. If the last claim is right, this would in turn cast doubt on all non-modal analyses, and open up the possibility that all evidentials in human language are modal in nature.

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