

# SULA 7

Semantics of Under-Represented Languages  
in the Americas

4-6 May 2012  
Ithaca, NY

Invited Speakers:

Maria Bittner

Rutgers University

Theodore Fernald

Swarthmore College

Richard Littlebear

Chief Dull Knife College

Robert Henderson

University of California, Santa Cruz

Meagan Louie

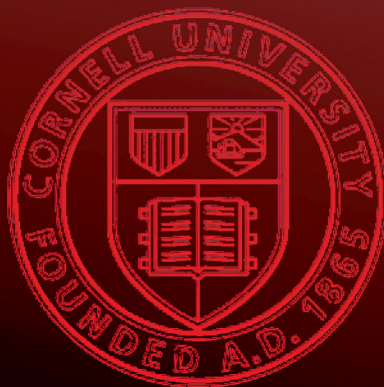
University of British Columbia, Vancouver



Cornell University  
American Indian Program

Cornell University  
Sage School of Philosophy

Cornell University  
Department of Linguistics



Friday Sessions:  
Clark Hall 700  
Saturday & Sunday Sessions:  
Physical Sciences Building 120

Central New York  
Humanities Corridor

Cornell University  
Institute for the Social Sciences



# Welcome

Welcome to the 7th meeting of Semantics of Under-Represented Languages in the Americas (SULA), held at Cornell University. We are very pleased to host SULA this year, the year when it makes the transition to an annual conference. The goal of SULA is to bring together researchers working on languages or dialects spoken in the Americas which do not have an established tradition of work in formal semantics. This field has grown a lot since 2001 when SULA began, and it continues to grow. We are very fortunate to have many pioneers in this area of research participating in the conference this year. In all, we have five invited talks, eight sessions with a total of seventeen talks, and a poster session with six posters.

In this booklet, you will find the program schedule and the abstracts, organized in order of appearance in the program. There is also an index of authors at the end. Lastly, on the back cover you will find a calendar view of the program schedule.

To all of our presenters and attendees, welcome! We thank you for coming and hope you enjoy the conference!

The SULA7 Organizing Committee is Christina Bjorndahl, Natalia Buitrago, Anca Chereches, Ed Cormany, Sarah Courtney, Molly Diesing (co-chair), Cara DiGirolamo, Teresa Galloway, Esra Kesici, Sarah Murray (chair), and William Starr.

SULA7 is generously supported by the Cornell Department of Linguistics, the Cornell Sage School of Philosophy, the Cornell Institute for the Social Sciences, the Cornell American Indian Program, and the Central New York Humanities Corridor.

## Previous SULAs:

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SULA 6	(2011: University of Manchester, England)
SULA 5	(2009: MIT/Harvard)
SULA 4	(2007: University of São Paulo, Brazil)
SULA 3	(2005: University of Buffalo)
SULA 2	(2003: University of British Columbia, Vancouver)
SULA 1	(2001: University of Massachusetts at Amherst)

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# SULA7 Program

Friday, 4 May 2012  
700 Clark Hall

8:30 – 9:30	Registration and breakfast
<b>Session 1</b>	
9:30 – 10:00	Jürgen Bohnemeyer <i>In the Mood for Status: Subjunctive and Irrealis in Yucatec</i>
10:00 – 10:30	Kirill Shklovsky <i>Expletive Negation and Polarity Focus in Tzeltal (Mayan)</i>
10:30 – 11:00	Elizabeth Bogal-Allbritten <i>Conjectural Questions in Navajo: The Case of ‘daats’i’</i>
11:00 – 11:30	Comments and discussion: Mats Rooth
11:30 – 11:45	Coffee break
11:45 – 12:45	INVITED SPEAKER: Meagan Louie <i>Two Strategies for Accommodating Blackfoot Conditional Antecedents</i> Chair: Sally McConnell-Ginet
12:45 – 2:00	Lunch
<b>Session 2</b>	
2:00 – 2:30	Ana Müller <i>Karitiana: A Language with no DPs</i>
2:30 – 3:00	Michel Assis Navarro <i>Domain Restriction and the Expression ‘kar’ in the Kaingang Language.</i>
3:00 – 3:20	Comments and discussion: Miloje Despic
3:20 – 3:30	Coffee break
3:30 – 4:30	INVITED SPEAKER: Richard Littlebear <i>The Significance of Learning and Teaching the Cheyenne Language</i> Chair: Sarah Murray
4:30 – 4:45	Coffee break
<b>Session 3</b>	
4:45 – 5:15	Seth Cable <i>Distributive Numerals in Tlingit: Pluractionality and Distributivity</i>
5:15 – 5:45	Rebecca Laturday <i>Future Modals in Ktunaxa</i>
5:45 – 6:05	Comments and discussion: Jürgen Bohnemeyer

Saturday, 5 May 2012  
120 Physical Sciences Building

9:00 – 9:30	Breakfast
<b>Session 4</b>	
9:30 – 10 :00	Julia Thomas and Timothy Grinsell <i>‘Finna’ as a Socially Meaningful Modal in African American English</i>
10:00 – 10:30	Stacey Menzies <i>Nsyilxcen Epistemic Modals</i>
10:30 – 10:50	Comments and discussion: Sally McConnell-Ginet
10:50 – 11:00	Coffee break
11:00 – 12:00	INVITED SPEAKER: Maria Bittner <i>Perspectival Discourse Referents for Indexicals</i>  Chair: Dorit Abusch
12:00 – 12:15	Coffee break
<b>Poster Session</b>	
12:15 – 12:45	<a href="#">Poster</a> overviews
12:45 – 2:00	<a href="#">Posters</a> and lunch
<b>Session 5</b>	
2:00 – 2:30	Denis Paperno <i>Comitative Coordination in Q’anjob’al</i>
2:30 – 3:00	Teresa Galloway <i>Distinguishing Correlatives from Internally Headed Relative Clauses in ASL</i>
3:00 – 3:20	Comments and discussion: Jeff Runner
3:20 – 3:30	Coffee break
3:30 – 4:30	INVITED SPEAKER: Theodore Fernald <i>Theoretical, Descriptive and Practical Applications of Navajo Linguistics</i>  Chair: Molly Diesing
4:30 – 4:45	Coffee break
<b>Session 6</b>	
4:45 – 5:15	Judith Tonhauser <i>Reportative Evidentiality in Paraguayan Guaraní</i>
5:15 – 5:45	Patrick Littell and Scott Mackie <i>Further Dimensions of Evidential Variation: Evidence from N̄eʔkepm̄xcín</i>
5:45 – 6:05	Comments and discussion: Sarah Murray
6:30 – 9:00	Dinner at the <a href="#">A. D. White House</a>

Sunday, 6 May 2012  
120 Physical Sciences Building

9:00 – 9:30	Breakfast
<b>Session 7</b>	
9:30 – 10:00	Claire K. Turner <i>Perfective Readings in Saanich: The <math>ET \subseteq RT</math> account</i>
10:00 – 10:30	Guillaume Thomas <i>Towards a Unified Analysis of Nominal and Sentential Tense in Mbyá</i>
10:30 – 10:50	Comments and discussion: Daniel Altshuler
10:50 – 11:00	Coffee break
<b>Session 8</b>	
11:00 – 11:30	Amy Rose Deal <i>Nez Perce Embedded Indexicals</i>
11:30 – 12:00	Dan Velleman <i>Projection and Belief in K'ichee': Two Examples of Crosslinguistic Semantic Variation</i>
12:00 – 12:20	Comments and discussion: William Starr
12:20 – 12:30	Coffee break
12:30 – 1:30	INVITED SPEAKER: Robert Henderson <i>A Scalar Account of Mayan Positional Roots</i> Chair: William Starr
1:30 – 2:30	Lunch

Poster Session (Saturday at 12:15p)

Fábio Bonfim Duarte <i>On the Semantics of Affectedness in the Ka'apor Language</i>
Carlos A. Fasola <i>Time in Mapudungun</i>
Jo Johnson <i>Pragmatic underspecification of tag question evidentials in Mi'kmaq</i>
Aviva Shimelman <i>Yauyos Quechua Evidentials and Evidential Modifiers</i>
Bettina Spreng <i>Default Viewpoint Aspect without Tense: The Case of Inuktitut</i>
INVITED POSTER: Mia McKie <i>Visualizing Skarù:ε'</i>





# Abstracts

Organized by order in the program

## In the mood for status: subjunctive and irrealis in Yucatec

Jürgen Bohnemeyer, University at Buffalo – SUNY

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**1. Goals** – This paper sketches the semantics of the so-called 'status' system of Yucatec Maya. The theoretical goals are, first, to explore a possible treatment of the semantics of subjunctive and irrealis moods in at least one language; secondly, to explore a possible explanation for why viewpoint aspect and mood are conflated in a single functional category in Mayan languages and why their expressions are more generally frequently paradigmatically related across languages, and thirdly, to clarify and further develop the notion of 'event realization' introduced in Bohnemeyer & Swift 2004 in the process.

**2. Uses of the subjunctive** – At the center of my attention in this presentation is the subjunctive status subcategory. The subjunctive is triggered by the remote future, recent past, and remote past AM markers and by a counterfactual AM marker roughly translating as 'almost'. The subjunctive also occurs in jussives; complements of predicates of desire, fear, attempt, and motion path verbs (in what Aissen 1987 calls a 'motion-cum-purpose' construction), time focus constructions with past-time reference, and in the antecedents of counterfactual conditionals (see (4) below). In combination with negation, it has a negative perfect interpretation. It is also governed by the irrealis subordinator *kéen*, which occurs in (embedded or adjoined) relative clauses and focus constructions with (deictic or anaphoric) future time or habitual/generic reference.

**3. Possible situation semantics** – I assume Kratzer's (1989, 1990, 1998, 2002) possible situation semantics, in which possible worlds are maximal situations and propositions are sets of situations. Propositions may be true in situations, but the logical relations such as entailment and equivalence are defined over worlds. Following Kratzer (2002: 660), a possible situation *s* is a **fact exemplifying a proposition** *p* iff (1) holds:

$$(1) \forall s' \in D_s. (s' \leq_s s \ \& \ s' \notin p) \rightarrow \exists s''. s' \leq_s s'' \leq_s s$$

where  $D_s$  is the domain of possible situations,  $\leq_s$  symbolizes a mereological relation among situations, and  $s''$  is a minimal situation in which *p* is true. I treat Davidsonian events as situations that have parts that are stages in time and assume that facts that exemplify a proposition must be part of a world in which the proposition is true and that worlds do not contain future situations. It follows that the future is non-factual.

**4. Realization** – All and only propositions that contribute to the **question under discussion** (QUD, Roberts 1996; similarly the *quaestio* in Klein & von Steutterheim 1987, 2002) are **at issue** in a given context. Suppose the QUD necessarily concerns a **topic situation** (Austin 1950) and the **topic time** (Klein 1992, 1994, etc.) is simply the temporal trace of the topic situation (see also Kratzer 2011). Then an event predicate *P* is realized in a given situation  $s \in D_s$  iff *s* has a part  $e \in D_e$  that instantiates *P* and thereby exemplifies *P*(*e*). It follows from the assumptions in this and the preceding section that a fact that realizes a given event description can only be introduced as a part of the topic situation.

**5. The analysis** – I analyze the subjunctive as entailing realization of the event predicate outside the topic situation:

$$(2) \llbracket SUBJ \rrbracket^c = \lambda P. \exists e. \neg(e \leq_s s_{topc}) \ \& \ P(e)$$

where  $s_{topc}$  is the topic situation at contextual index *c*. There are three ways of satisfying (2) in Yucatec: (i) possible realization in the future of  $s_{topc}$  - this occurs with the remote future

marker, with complements of predicates of desire, fear, attempt, and path, and with irrealis subordinate clauses and negation; (ii) realization outside the utterance world, in an alternate reality – with counterfactuals; (iii) non-at-issue realization in the past of *stope* – with the recent and remote past markers and in the time focus construction. This distinction seems to be driven by the construction and the semantics of the trigger. Crucially, since new facts can only be asserted as part of the topic situation, the entailment in (2) cannot survive at the discourse level except in the form of a presupposition. This is illustrated for the recent past marker in (3): the continuation in (3b) contradicts the presupposition of realization and therefore is considered infelicitous.

- (3) Ma' sáam sùunak le=kòombi=o';...  
 NEG REC turn\ATP:SUBJ(B3SG) DET=van=D2  
 'It's not a while ago that the bus returned;...'
- a. ...inw=a'l-ik=e', h-ts'o'k mèedyà òora.  
 A1SG=say-INC(B3SG)=TOP PRV-end(B3SG) half hour  
 '...I think it was half an hour ago.'
- b. ??...tuméen ma' sùunak=i'.  
 CAUSE NEG turn\ATP:SUBJ(B3SG)=D4  
 '...because it hasn't returned yet.'

**6. Counterfactuals** – Iatridou 2000 argues that counterfactual conditionals are asserted over topic worlds that exclude the utterance world. In Iatridou's language sample, subjunctives only occur in counterfactual antecedents in languages that distinguish past and non-past subjunctives. Iatridou suggests that the element of counterfactuality is contributed, not by the subjunctive, but by the past tense morphology in such cases. Yucatec counterfactual conditionals (see (4)) contradict this generalization – Yucatec is a tenseless language (Bohnenmeyer 1998, 2000, 2002, 2009).

- (4) Mu'm bèey-tal in=botàar,  
 NEG:A3 like.this-INCH.INC A1SG=vote  
 'I can't vote,'  
 méen ma' way-il-en=i'.  
 CAUSE NEG(B3SG) here-REL-B1SG=D4  
 'because I'm not from here.'
- Pero wáah káa bèey-lak in=bóotare',  
 but ALT SR like.this-INCH.SUBJ(B3SG) A1SG=vote  
 'But if I were able to vote,'  
 hi'n=bóotar-t-ik Pablo=e'.  
 ASS:A1SG=vote-APP-INC(B3SG) Pablo=D3  
 'I'd vote (for) Pablo.'

On the analysis sketched above, there may be an alternate typological route to counterfactuality: not in terms of the tense-like relation between topic world and utterance world, but in terms of the aspect-like relation between topic world and realization.

**7. Discussion** – On the proposal sketched here, the functional categories of mood and viewpoint aspect are so tightly connected as to be complementary in some languages and orthogonal in others. Both determine the realization of a described situation by mapping it to the topic situation of the discourse. Viewpoint aspect does so in terms of contrasts between different types of overlap between topic situation and described situation, whereas mood does so in terms of contrasts between overlapping and non-overlapping realization vis-à-vis the topic situation.

Expletive Negation and Polarity Focus in Tseltal (Mayan)  
Kirill Shklovsky, MIT  
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Petalcingo Tseltal (Mayan, Southern Mexico) features a construction used to express speaker uncertainty. While this construction includes obligatory (sentential) negation, this negation is semantically vacuous, since it does not contribute negativity to the denotation. In this presentation we propose a modal-type analysis of this construction and compare it to other instances of expletive negation in other world's languages.

The construction in question (henceforth, *the unnegative*) is used to express speaker uncertainty and shares its prosodic features with intonational polar questions. Such questions in Tseltal receive a low final boundary tone (L%), in contrast to declaratives which feature flat or rising utterance-final intonation (H% boundary tone). The unnegative construction, exemplified in (1), is indeed ambiguous between a polar question and a declarative interpretation.

- (1) a. ma yakal ja'al [L%]?  
NEG PROG rain?  
'Is it raining?' or 'It might be raining'

The first puzzle with respect to unnegatives concerns the issue of why they share intonational contour with polar questions. Two types of evidential-based approaches have been developed for question/declarative isomorphy, however, besides the fact that there is no obvious evidential in Tseltal unnegatives, these proposals make predictions that are not borne out in this language. Fasola (2007) develops a declarative-type account of Imbabura Quechua marker *-chu*, which appears in polar questions and negative assertions. In Fasola's analysis the relevant utterance with *-chu* is semantically and syntactically declarative while the interrogative force comes about as a result of Gricean reasoning. Such an approach seems to predict that assertions disclaiming knowledge should function as questions, contrary to Tseltal facts. Alternatively, Littell, Matthewson, & Peterson (2010) propose an interrogative account of "conjectural questions" in three Amerindian languages based on the idea that syntactic interrogatives combined with conjectural/inferential evidentials signal the fact that the speaker believes the interlocutor not to be in a position to answer the question. As a result, conjectural questions are questions semantically and syntactically, but act as assertions pragmatically (cf. Caponigro & Sprouse 2007 on rhetorical questions). If this approach was correct for Tseltal unnegatives, we would expect that the context would admit unnegatives only in cases where the speaker believed the hearer not to be in a position to resolve the question. This turns out not to be the case: unnegatives are licit in situations where the speaker has no such belief.

Another puzzle in the unnegative construction relates to the presence of negation. Given the fact that the negation in unnegatives does not contribute negative meaning, it looks to be an instance of expletive negation (cf. Horn 1989, Espinal 1992, Van der Wouden & Zwarts 1993, Abels 2002, Espinal 2000, Yoon 2011, among others). The vacuous negation analysis is supported by the fact that negation in Tseltal unnegatives does not license NPIs. Unlike many reported instances of expletive negation, however, negation in Tseltal unnegatives is obligatory (though see Zanuttini & Portner (2003), Yoon (2011), and references in the latter work for instances of expletive negation that is required). Yoon (2011) proposes a unified analysis of expletive negation (EN) where the main semantic contribution of EN is along the evaluative dimension (Potts 2005; 2007). In Yoon's proposal "evaluative negation" (the term she uses) takes some contextually-given scale, and contributes meaning in the evaluative dimension signifying that the speaker believes that the expressed proposition ranks low on the given scale. The scales Yoon proposes are *buletic* and *epistemic*, reflecting the desires of the speaker or likelihood of occurrence respectively, though other scales are imaginable as well. The problem with this approach for Tseltal unnegatives is the fact that speakers do not consider the proposition expressed in unnegatives to be particularly unlikely: rather they assign it something close to a 50/50 probability. Also, unnegatives (as well as other instances of expletive negation in other languages) do not seem to have evaluative content,

according to the Potts criteria. Finally, unlike many instances of expletive negation (excepting expletive negation in exclamatives in Zanuttini & Portner 2003), the negation in Tseltal unnegatives appears in root clauses only.

Our proposal for Tseltal unnegatives builds on the fact that they appear to have a modalized meaning. Besides the fact the denotation of unnegatives necessarily refers to possible worlds, we observe that Tseltal unnegatives can be used to convey approximate amounts much like English modalized expressions of uncertainty: *How much did that disc cost? I don't know, it might have been fifteen dollars.* (see Sauerland & Stateva (2011) for one account of approximators). We propose the part of the meaning of unnegatives is derived via an abstract modal/propositional attitude verb, which contributes quantification over possible worlds, and embeds the expressed proposition. With respect to the intonational isomorphy between polar questions and unnegatives we observe that similar facts obtain in Korean and Japanese (Yoon 2011): the question marker in these languages is homophonous with the non-factive complementizer. While at present we are unable to account for why the non-factive complementizer is required in unnegatives, but not in other non-veridical root clauses (such as statements with dubitative markers and negated assertions), we can nonetheless understand the intonational facts of unnegatives on analogy with Korean and Japanese.

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### Conjectural questions in Navajo: The case of *daats'í*

Elizabeth Bogal-Allbritten

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This paper explores the semantics of the modifier *daats'í* in Navajo (Athabaskan). Both written sources (Young and Morgan 1987) and consultants translate sentences like (1) as shown below:

- (1) Deigo **daats'í** si'á  
 upright **daats'í** it-sits  
 'Is it upright?' *or* (Young and Morgan (YM) 1987: 753; fieldwork (FW))  
 'I wonder if it's upright.' *or* 'Maybe it's upright, or maybe not.' (FW)

Utterances of the form *daats'í p* have similarities to both modal statements and questions. On the basis of primary fieldwork, I demonstrate that neither approach alone adequately captures the semantics of *daats'í*. I argue for an account that will handle all of the translations of *daats'í p* in (1), proposing that *daats'í* introduces Conjectural Questions (CQs). CQs are a class of construction attested in unrelated languages of the Americas. I take as a starting point Littell et al.'s (2009) theory that CQs have the semantic shape, but not pragmatic force, of questions. I ask whether CQs as found in Navajo and other languages are a single phenomenon or are best treated as semantically disparate constructions.

***Daats'í* vs. Questions:** A first approach is to analyze *daats'í* as a question morpheme. I assume that questions denote sets of propositions that count as possible answers: [[is it raining?]]<sup>w</sup> = {it is raining, it is not raining} (Hamblin 1973). In addition, questions carry two additional pragmatic requirements: (i) the Speaker thinks that the Addressee may know the answer and (ii) an answer from the Addressee is necessary (Caponigro and Sprouse 2007). I compare *daats'í* to the question morpheme *-ish* and show that they pattern distinctly. First, *daats'í* is felicitous in contexts of mutual ignorance while *-ish* is not (2).

- (2) *Context:* You don't know if it is raining or not. Your coworker has been inside your windowless office with you all morning so you know she doesn't know if it is raining.
- |   |  |
|---|--|
| a. Naháłtin <b>daats'í</b><br>it.is.raining <b>daats'í</b><br>'I wonder if it's raining.' | b. # Naháłtin- <b>ish</b><br>it.is.raining-Q<br>'Is it raining?' |
|---|--|
- (FW)

Second, *daats'í p* utterances do not require the Addressee to answer before conversation continues. If *-ish* instead of *daats'í* appeared in (3), the Speaker's utterance would be infelicitous.

- (3) Yiskáago nahodoołtííł **daats'í**. Bee chaha'ohí dííyitííł.  
 tomorrow it.will.rain **daats'í** umbrella you.bring.it  
 'It might (or might not) rain tomorrow. You should bring an umbrella.' (FW)

***Daats'í* vs. Modals:** Given that *daats'í* patterns distinctly from *-ish* in several key ways, we could follow Willie (1996) and analyze *daats'í* as a modal. I compare *daats'í* to *shíí*, another adverb which I analyze as an epistemic modal. *Shíí p* is true where the Speaker has inferential evidence that *p* holds in all worlds most consistent with the Speaker's beliefs about the actual world.

On one hand, both *daats'í* and *shíí* can be syntactically embedded beneath an attitude verb (4), suggesting a syntactic position consistent with both being modal expressions (Matthewson et al. 2007). However, *daats'í* exhibits semantic behavior distinct from *shíí*. First, sentences with *shíí* are not translated as questions, either in matrix or embedded contexts:

- (4) a. [ Lééchaą yázhí na'ałkóq' **daats'í** yééhósin ] nisingo, taah yíłt'e'  
 puppy it.swims **daats'í** it.knows.how I.thinking water.into I.threw.it  
 'Wondering if the puppy knew how to swim, I threw it in the water.' (YM 1987: 775)
- b. [ Lééchaą yázhí na'ałkóq' **shíí** yééhósin ] nisingo, taah yíłt'e'  
 'Thinking the puppy must know how to swim, I threw it in the water.' (FW)

Second, *shíí* presupposes that the Speaker has inferential evidence favoring *p* (e.g., 'the beans') while *daats'í* can only be used if the Speaker lacks such evidence:

- (5) *Context:* You feel queasy. You ate a lot of different things yesterday (beans, ice cream, mutton...).
- You say:* Naa'ohí **daats'í** shi'iisool  
 beans **daats'í** they.bloated.me.up  
 'Maybe it was the beans that made me bloat up.' (YM 1987: 243)

*Comment:* “*Daats’i* is better because you’re not sure. With *shíí* you’re blaming it on the beans.”  
*Daats’i* can also be used if the context biases *~p* as the most likely outcome. *Shíí* cannot be:

- (6) *Context:* You left for school before your sister Mary. Mary had a stomachache when you left. *You say:*  
 a. Mary bibid diniih. ‘Ólta’góó **daats’i** doogááł.  
 Mary her.stomach it.hurts school-to **daats’i** she.will.go  
 ‘Mary has a stomachache. I wonder if she’ll go to school / Maybe she’ll go to school, or not.’ (FW)  
 b. # Mary bibid diniih. ‘Ólta’góó **shíí** doogááł.

**Conjectural Questions:** The Navajo data bear a strong resemblance to a family of constructions referred to as Conjectural Questions (CQs). CQs (also called Deliberative Questions by Truckenbrodt 2006) are characterized by being felicitously uttered (i) in contexts where there does not exist sufficient evidence for the Speaker to express possibility using an inferential modal, and (ii) express a notion of interrogativity on the part of the Speaker while still being felicitous in contexts of mutual ignorance. CQ-like constructions are reported for a substantial number of languages of the Americas, including Tselal (Shklovsky 2011), Cheyenne (Murray 2010), and Quechua (Fasola 2007). German verb-final questions are also licensed under similar discourse conditions (Truckenbrodt 2006). I add Navajo to the set of languages with a construction exhibiting CQ-like properties. CQs have not previously been described for an Athabaskan language.

Littell et al. (2009) posit an analysis of CQs in Salish and Tsimshianic languages. In these languages, the combination of question morphemes with inferential morphemes results in translations similar to Navajo *daats’i p* utterances. Utterances like (8) are felicitous in contexts of mutual ignorance.

- (8) **Nee=ima=hl** sdin=hl xbiist=a Gitksan  
**YNQ=INFER** be.heavy box=INTERROG  
 ‘I wonder if the box is heavy.’ (Littell et al. 2009: 91)

Littell et al.’s analysis of CQs hinges on the presence of both interrogative and modal morphology. The extension of (8) is the set of possible answers to the question *is the box heavy?*, while the inferential modal contributes presuppositions conjoined to each possible answer that there is inferential evidence for the answer. Since there is potentially conflicting inferential evidence for each possible answer, the Addressee is believed not to be capable of resolving the question.

While CQs in a number of languages make use of a combination of interrogative and modal/evidential morphology (Salish and Tsimshianic languages; Cheyenne (Murray 2010)), other languages utilize a single morpheme. For instance, German verb-final questions are licensed under discourse conditions very similar to CQs in other languages (Truckenbrodt 2006). In this construction, the *wh*-complementizer *ob* ‘whether’ seems to be the critical element. No overt modal element is present.

- (7) *Context:* Neither the Speaker nor the Addressee has seen Peter for years.  
 Mary: **Ob** Peter immer noch kubanische Zigarren mag?  
**whether** Peter always still Cuban cigars likes  
 ‘I wonder whether he still likes Cuban cigars?’ (Truckenbrodt 2006)

In other languages, including Quechua (Fasola 2007) and Navajo, the single morpheme appears to pattern more closely with modals in the language (syntactically, if not semantically). The disparity in the shape of CQs raises the broader question of whether CQs constitute a single class of constructions that make use of the same grammatical resources.

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## Two Strategies for Accommodating Blackfoot Conditional Antecedents

Meagan Louie (UBC)

**1 Intro** Blackfoot has two distinct conditional constructions which vary in their antecedent's clause-type morphology. Following Frantz 2009's terminology for these clause-types, I refer to the two types of conditionals as *SUBJUNCTIVES* and *UNREALS*. I propose that these conditionals differ in how they accommodate their antecedents: *SUBJUNCTIVE* antecedents are accommodated into the Speaker's current belief-state, whereas *UNREAL* antecedents are accommodated into a more abstract premise set, eg., the notion of Basis as defined by Veltman 2005. I argue this accounts for their distinct distributions.

**2 Data I** *SUBJUNCTIVE* and *UNREAL* conditionals usually translate into English indicative and past-subjunctive conditionals respectively. Consider (1), where the antecedent expresses a hypothetical future event: Blackfoot *SUBJUNCTIVES* are felicitous, but *UNREALS* are not, just like English indicative and past-subjunctives respectively.

(1) *Context*: I know I shouldn't steal my sister's apple. But I'm feeling really hungry...

- |    |   |    |                                       |
|----|---|----|---------------------------------------|
| a) | <b>kam-sa-ikamo'saatá-íniki</b>   | b) | <b>#nit-íi-sa-ikamo'saata-ohtopi</b>  |
|    | <b>if-neg-steal.vta-sbj:1/2</b>   |    | <b>1-ic-neg-steal.vta-unr</b>         |
|    | “If I don't steal... <i>SUBJUNCTIVE</i>                                   |    | #“If I hadn't stolen... <i>UNREAL</i> |
|    | <i>oma apasstaaminaam</i>   |    | <i>n-ókowaan</i>                      |
|    | dem apple   |    | <i>áak-it-omatap-ohtako</i>           |
|    | ..that apple, my stomach (a) will start/(b) would have started sounding.” |    | <i>fut-rl-start-sound.vai</i>         |

However, while English indicatives are also used to speculate about epistemically uncertain past events, Blackfoot *SUBJUNCTIVES* are not. Given the contexts in (2) and (3), an English (past) indicative is preferred and a past-subjunctive infelicitous. Contrastingly, (2) shows that a Blackfoot *SUBJUNCTIVE* is infelicitous and an *UNREAL* preferred. This is a restriction on the grammatical form of the antecedent; (3) shows that a present perfect (as opposed to past perfective) *SUBJUNCTIVE can* be used in such contexts.

(2) *Context*: My sister was running in a race yesterday. I haven't gotten the results yet, but I hope she won, because if she did, she'll want to celebrate. If she won yesterday, we'll eat cake.

- |    |  |                             |                       |                         |
|----|--|-----------------------------|-----------------------|-------------------------|
| a) | <b>#kam-omo'tsaaki-si matonni,</b>   | <i>nit-áak-Ioyi-hpinaan</i> | <i>pisatsskiitaan</i> |                         |
|    | <b>if-win.vai-sbj:3</b>  | yesterday                   | 1-fut-eat.vai-1pl     | cake <i>SUBJUNCTIVE</i> |
|    | Consultant: No, that would be more like for today (eg. “If she wins today, we'll eat cake.”) |                             |                       |                         |
| b) | <b>ii-omo'tsaaki-ohtopi matónni</b>  | <i>nit-áak-Ioyi-hpinaan</i> | <i>pisatsskiitaan</i> |                         |
|    | <b>ic-win.vai-unr</b>  | yesterday                   | 1-fut-eat.vai-1pl     | cake <i>UNREAL</i>      |
|    | “If she won yesterday, we will eat cake.”  |                             |                       |                         |
|    | Consultant: OK if I don't know she won, or you might know it and you can say that too.       |                             |                       |                         |

(3) *Context*: We aren't sure if Martina is at the department or not. I saw her earlier, but maybe she's already left campus. I do know that Martina always locks her office before she leaves campus.

- |    |  |    |   |
|----|--|----|---|
| a) | <b>#annahk Martina kam-omatoos-i</b>           | b) | <b>annahk M kam-ikaa-omatoos-i</b>                |
|    | <b>dem Martina if-leave.vai-sbj:3</b>          |    | <b>dem M if-perf-leave.vai-sbj:3</b>              |
|    | “If Martina left... <i>SUBJUNCTIVE</i>         |    | “If Martina <b>has</b> left... <i>SUBJUNCTIVE</i> |
|    | <i>omi otsita'potakihpi áak-itapiyooki-m</i>   |    | <i>o-kitsim</i>                                   |
|    | dem workplace fut-lock.vti-3>0                 |    | door  |
|    | ...her office, she will have locked her door.” |    |   |

(4) and (5) show that present-oriented *SUBJUNCTIVE* antecedents are felicitous in general: (4) and (5) show a present-oriented (counterfactual) stative and present progressive eventive respectively:

- |     |  |                                       |
|-----|--|---------------------------------------|
| (4) | <b>poos-iksi kam-ominnii-si-yaa</b>                                | <i>aahkama'p-ohkott-ipaawaani-yaa</i> |
|     | <b>cat-pl if-have.wings.vai-sbj:3-3pl</b>                          | <i>might-able-fly.vai-3pl</i>         |
|     | “If cats had wings, they might be able to fly.” <i>SUBJUNCTIVE</i> |                                       |



(5) *Context*: I'm setting up skype, and am trying to determine if the video feed is working.

**kam-á-ino-ok-kiniki,** a'pstaki-t!  
**if-impf-see.vta-inv-sbj:2>1,** wave.vai-impv:2s  
 "If you see me, wave!"

SUBJUNCTIVE

A summary: SUBJUNCTIVE conditionals are felicitous when the antecedent is future eventive [(1)], present perfect, stative, or progressive[(3b),(4a),(5)]; but infelicitous when the antecedent is past eventive (2a). If we assume a Reichenbach-inspired formalization of [(1)] as present prospective aspect (as in (6)), we can make the following generalisation: Blackfoot SUBJUNCTIVE conditionals require that the property expressed in their antecedent clause be evaluable with respect to the utterance time (see section 4).

(6)  $[[\emptyset_{\text{prospective}}]] = \lambda t. \exists e[P(e)(w) \ \& \ \tau(e) > t]$

The antecedent in (2), only evaluable with respect to a past time, does not satisfy this requirement.

**3 Data II** Unlike SUBJUNCTIVES, UNREALS do not restrict the temporal configuration of their antecedent - UNREALS are only barred from hypothesizing about a future event when the event in question is metaphysically unsettled (cf. Condoravdi 2002, Laca 2008). Consider the UNREAL in (7) - it is infelicitous in context A, where the speaker does not know that the proposition, p, expressed by the antecedent, is already settled, but felicitous in B where the speaker is aware that p is settled (as false).

(7) **nit-ii-omo'tsaaki-ohopi,** nit-áak-itap-oo Hawaii  
 1-ic-win.vai-**unr,** 1-fut-towards-go.vai Hawaii  
 "If I should win, I would go to Hawaii."

UNREAL

**A:** *Joanne is entering into a contest, and considers what to do with the prize-money* → ✗

**B:** *The contest is actually rigged. No one but the contest organizer's wife will win. Another contestant finds out and wistfully speculates on what he would have done with the prize-money.* → ✓

**4 Analysis** I propose that SUBJUNCTIVES accommodate their antecedent into the Speaker's current belief-set, where the speaker's beliefs are formalized as functions from world-time pairs to truth-values (i.e., type  $\langle\langle i \langle wt \rangle \rangle$ ), and all of these beliefs are evaluated with respect to a single time parameter - the utterance time. Such a formalization requires that all premises in the belief set, as well as any proposition being accommodated into this set (i.e., SUBJUNCTIVE antecedents), be evaluable with respect to the utterance time. I suggest that such a formalization of a belief-set is motivated by a desire for computational simplicity. Storing beliefs as elements of type  $\langle wt \rangle$  would require the Speaker to maintain an inventory of distinct evaluation times for each proposition in their belief set. The system outlined above avoids this computationally onerous requirement. I further propose that UNREALS accommodate their antecedent into a set of propositions inspired by what Veltman 2005 terms a Basis. I use the term Basis to refer to a minimal set of mutually-independent propositions which, given general laws, entail the propositions known by the Speaker. While Veltman abstracts away from temporality, I suggest that because there are fewer premises in a Basis (compared to a belief set), the premises contained therein can be formalized as functions from worlds to truth-values - i.e., each proposition in the Basis (as well as any proposition being accommodated into the Basis) is associated with its own evaluation time. This allows UNREALS a freer temporal interpretation. Further, Veltman's mechanism for antecedent-accommodation is such that the Basis, in conjunction with general laws, does not force (i.e., settle) the truth of the antecedent (see Veltman 2005 for details). Uttering an UNREAL instead of a SUBJUNCTIVE conditional (where a SUBJUNCTIVE is not ruled out) should thus trigger an implicature that p is settled with respect to the Speaker's belief set, i.e., the settledness implicature observed in section 3.

**5 Conclusions** I proposed that the morphological clause-type of Blackfoot conditional antecedents correlates with the type of premise set into which the antecedent is accommodated, accounting for (i) proposition-internal temporal restrictions on SUBJUNCTIVES, and (ii) proposition-external contextual restrictions on UNREALS. While most premise-semantics for conditionals (eg., Kratzer 2010, Lewis 1981, Veltman 2005) abstract away from temporality, I have proposed that distinct types of premise sets in Blackfoot crucially differ according to how their propositions compose with (an) evaluation time(s).

## Karitiana – a language with no DPs

Ana Müller (University of São Paulo)

**Focus:** This paper investigates the semantics of Noun Phrases (NPs) in Karitiana (Tupi-Arikém family, spoken by approximately 400 people in northwestern Brazilian Amazonia).

**Thesis:** The paper claims that the simpler hypothesis for Karitiana NPs is that they always denote predicates that get bound by sentential quantifiers or by existential closure. Since Karitiana is a language in which NPs are always bare, a typological consequence of this claim is that there are languages in which NPs can occupy argumental positions (Chierchia 1998).

**Background:** There is much cross-linguistic variation in the syntax and semantics of BNs. The two most influential theories that account for it are Longobardi 1994 and Chierchia 1998. According to Longobardi, only DPs may be argumental. BNs in argumental positions are either DPs with empty Ds or DPs in which N has moved to D. Empty Ds must be governed; and N to D movement is only possible for Ns that get a kind interpretation. Chierchia's theory, on the other hand, allows Ns to denote either predicates or kinds (arguments), depending on parametrization. However, he posits type-shifting operations that may turn kinds into predicates and vice-versa. These operations may occur only as last resort.

**Problem:** Karitiana NPs are always bare and occur with definite, indefinite, and kind (or generic) interpretations in all argument positions. Karitiana has no inflectional morphology, such as gender, case, or number, on its NPs. It is also determinerless and has no functional words comparable to Romance or Germanic definite and indefinite articles and demonstratives, or quantifiers similar to *some/any* or *each/every* (Müller *et al* 2006). Sentence (1), for ex., is totally undetermined for the number or (in)definiteness of its NPs. However, unlike better-known bare-noun languages, such as Chinese, Karitiana is not a classifier language.

- (1) **Taso**     $\emptyset$ -naka-'y-t                      **boroja**  
man    3-DECL-eat-NFT                      snake  
'A/the/some man/men ate a/the/some snake(s)'/ 'Men eat snakes'

Following Longobardi, one could posit the existence of an empty D, a three-way ambiguous determiner that shifts a NP predicate into a definite/indefinite/kind denoting NP. This claim cannot be falsified in Karitiana, because the three readings are available in the same contexts (*modulo* lexical entailments). The same problem shows up if we try to implement Chierchia's theory, since three non-overt and indistinguishable type-shifters, be it from kinds to predicates and to definite and indefinite NPs; or from predicates to kinds and to definite and indefinite NPs, would have to be posited. Consequently, the most economic theoretical claim for the language is that its NPs are always predicates and that these predicates possibly get bound by sentential quantifiers and by existential closure.

**Predictions:** This claim predicts that: (i) Karitiana BNs should be able to occur in both definite and indefinite contexts; (ii) they should be able to occur with both existential and generic (universal) interpretations; (iii) they should not behave as kind-denoting NPs.

**Evidence:** It is well known that indefinites do not entail/presuppose uniqueness/familiarity, and introduce novel entities into the common ground; whereas definites entail/presuppose uniqueness/familiarity, and do not introduce novel entities into the common ground. The first piece of evidence for (i) comes from pairs of coreferential Bare Nouns (BNs) (2), in which the same BN is used both as novel and as familiar to the common ground.

- (2)a. **Professor enfermera**     $\emptyset$ -na-aka-t                      koot    i-ambyk-t                      escola.  
teacher    nurse                      3-DECL-cop-NFT                      ystday    NMZ-come-ABS.AGR school  
'A teacher and a nurse came to school yesterday.'

b. **Professor** Ø-na-aka-t i-le-t livro-ty Maria hot.  
 teacher 3-DECL-cop-NFT NMZ-read-ABS.AGR book-POS Maria to  
 ‘The teacher read a book to Maria.’

The second piece of evidence for (i) is that BNs in Karitiana are used both in situations in which the referent is unique (2) and in situations in which the referent is not unique (3).

(3) 3-pyry-kii-n **geladera** akan pip.  
 ASST-cop.PL-NFT frige village POS  
 ‘There are refrigerators in the village.’

A third piece comes from the fact that both anaphoric (4) and disjoint (5) interpretations are possible for BNs.

(4)a. Yn i-so’oo-t **ombaky-ty.**  
 I NMZ-see-ABS.AGR jaguar-POS  
 ‘I saw a jaguar.’

b. Yn i-so’oo-t sojxa **ombaky** i-’y.  
 I NMZ-see-ABS.AGR boar jaguar 3p-eat  
 ‘I saw that the jaguar was eating a boar.’

(5)a. Pyry-’a tyka-n **irip** akan.  
 3-ASST-have IMPF-NFT tapir village  
 ‘There is a tapir in the village.’

b. Pyry-’a tyka-n **irip** akan gooto pip tyym.  
 3-ASST-have IMPF-NFT tapir village new in too  
 ‘There is a tapir in the new village too.’

Evidence for (ii) comes from the fact that there is nothing in the morphosyntax of the BN that can tell apart generic/kind from existential definite or indefinite readings (6).

(6) **Ombaky** i-pykyna-t.  
 jaguar NMZ-run-ABS.AGR  
 ‘Jaguars run’ *generic*  
 ‘The jaguar(s)/A jaguar/Jaguars ran.’ *episodic*  
 ‘The jaguar(s)/A jaguar/Jaguars is/are running/ran.’ *episodic*

Finally, evidence for (iii) comes from facts like the one illustrated in (7), in which that Bare NPs in Karitiana may have both narrow and wide readings.

(7) **Enfermera** otãm tykiri Ø-na-osedna-j Luiz.  
 nurse arrive when 3-decl-be.happy-fut Luiz  
 ✓ ‘Luiz will be happy if any nurse arrives.’  
 ✓ ‘Luiz will be happy if a certain nurse arrives.’

**Abbreviations:** ASST: assertative mood; ABS.AGR: absolutive agreement; COP: copula; DECL: declarative mood; IMPF: imperfective; NFT: non-future; NMZ: nominalizer; POS: posposition.

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**Domain Restriction via definite article and the expression *kar* in the Kaingang language.**  
 Michel Assis NAVARRO (Master's degree - USP)

The aim of this speech is to present a semantic analysis of both (i) the phenomenon of domain restriction in the DP and (ii) the expression *kar*, which conveys the idea of totality, in the Kaingang language, a Brazilian language from the Macro-Jê Stock, Jê family, spoken in southern and southeastern Brazil. At first, the definite article in Kaingang seems to have a non-trivial distribution: it applies first to a universal quantifier, and via such combination restricts the domain of the quantifier, such as in Basque, Greek and St'át'imcets (Giannakidou 2003, Etxeberria 2005 and Etxeberria & Giannakidou 2009, Matthewson 2001):

1. **Kaingang**  
 gĩr kar ag [[NP]kar]ag  
 child all D.pl  
 'all the children'

2. **Basco**  
 mutil guzti-ak [[[NP]guzti]-ak]  
 boy all-D.pl  
 'all the boys'

(Etxeberria 2005:37a)

3. **Grego**  
 o kathe fititis [o[kathe[NP]]]  
 D.sg every student  
 'every student'

(Giannakidou 2004: 32b)

4. **Salish**  
 i tákem-a smúlhats [i...a[tákem[NP]]]  
 D.pl all-D mulher  
 'all the women'

(Matthewson 2001:5)

However, some semantic and syntactic data may point the analyses in another direction. For instance, the expression *kar* is neutral regarding the property of distributivity, and as such can co-occur with predicates called *collective* in Vendler's typology (Vendler 1967):

5. Gĩr **kar** ag vỹ escola **gĩn** Ø.  
 child all D.pl m.s school surround ASP  
 'All the children surrounded the school.'

6. Gĩr **kar** jagně hã nỹtĩ.  
 child all alike be  
 'All the children are alike.'

So much so that even with the so called *mixed predicates*, such as *to build a house*, the distributive readings are attributed to the sentences only in cases a distributive operator is introduced *via* verbal reduplication:

7. Kanhgág **kar** ag vỹ ĩn ũ han Ø.  
 kaingang all D.pl m.s house a do ASP  
 'All the kaingangs (together) built a house'

8. Kanhgág **kar** ag vỹ ĩn ũ hanhan he Ø.  
 kaingang all D.pl m.s house a do-RED ASP  
 ‘Each kaingang built a house’

Added to the semantic data above, which made us ask whether *kar* has quantificational force, there are some syntactic examples that may contribute to a different hypothesis regarding the semantic status of *kar*. Instead of a QP - such as in Basque - structures with **kar+ag** seem to create a DP. Contrary to Basque, thus, it is possible to conjoin in Kaingang two [NP + *kar*] sequences under the same definite article, in the same way that it is possible to conjoin two NPs under the same D:

9. a. [[**Proféso kar**] mré [gĩr] **kar**] **ag** vỹ escola gĩn Ø.  
 teacher and girl all D.pl m.s school surround ASP  
 ‘All the teachers and all the children surrounded the school’

- b. [[**Proféso**] mré [gĩr] **ag**] vỹ escola gĩn Ø.  
 teacher and girl D.pl m.s school surround ASP  
 ‘The teachers and the children surrounded the school’

10. a. \*[[Neska bakoitz] eta [mutil guzti]-**ek**] sari bat irabazi zuten  
 girl each and boy all-D.pl.erg prize one win aux  
 ‘Each girl and all the boys won a prize.’

(Etxeberria & Giannakidou 2009:22)

- b. **Ikasle** eta **irakasle-ak** azterketa garaian daude.  
 student and teacher -D.pl.abs exam period-ines aux  
 ‘The students and the teachers are in exams period.’

(Etxeberria 2005: 37a)

Thus, based on the above data and more data we intend to illustrate in the speech, we will advocate that the expression *kar* seems to be a modifier - à la Lasersohn (1999) -, instead of a quantifier, and as such it does not have a quantificational force of its own and its semantic function is to control pragmatic deviations from the truth conditions of the sentences. As a result of this analysis, the definite article in Kaingang would not operate on a quantificational expression, as in Basque and Greek, but on the NP. Such fact than suggests that the definite article *ag* in Kaingang, in contexts it co-occurs with *kar*, does not lose its *max* function in order to work merely as a type preserver and a domain restrictor combined with a quantificational expression, as proposed by Giannakidou 2003, Etxeberria (2005) e Etxeberria & Giannakidou (2009) for Basque, Greek and S’át’imcets. *Ag* supplies a contextual variable *C.*, i.e., functions as a domain restrictor, but still is a definite article occupying the *head* of a DP projection, very much in the spirit of an earlier proposal by Westerståhl (1984) for definite determiners.

**Key-words:** Kaingang language, domain restriction, definite article, quantification, modifier, etc.



numeral in (4d) could not be a ‘floating’ modifier of the distributive share *wé keitl* ‘those dogs’; rather, it must originate as an adverbial modifier. Furthermore, the contrast between (4a,b) shows that the numeral in (4a) must be adnominal; if it were adverbial, then the ill-formedness of (4b) would not be expected.

**5. Semantics of Distributive Numerals** Importantly, whether the distributive numeral is adnominal or adverbial has no effect upon whether the sentence can describe ‘event key scenarios’ or ‘entity key scenarios’ (Gil 1982, Oh 2005). As shown by (5), an adnominal distributive numeral can describe event key scenarios. As shown by (6), adverbial distributive numerals can describe entity key scenarios.

(5) Scenario: My son went fishing every day last week. Each day, he caught three fish.

A<sub>x</sub> yéet nás’gigáa xáat aawashaat.  
my son three.DIST fish caught

*My son caught three fish each time.*

Judgment: True/felicitous description of scenario above.

(6) Scenario: My neighbors have four dogs. My daughters Hazel and Bea went over to their house to wash their dogs. Hazel washed two dogs, and Bea washed the other two.

A<sub>x</sub> shaa yátx’i dáxgaa has aawashúch wé keitl  
my female children two.DIST they.bathed those dog

*My daughters bathed two of those dogs each.*

Judgment: True/felicitous description of scenario above.

There are, however, a variety of constraints/generalizations governing the possible interpretations of structures containing distributive numerals. Some are listed below; all have been established via the methodology described in Section 3 above.

(7) a. **Sentences of the Form ‘Distributive Numeral > Subject<sub>Plural</sub> > Object<sub>Plural</sub> > Verb’**

(i) Can describe entity key scenario where *share* = subject and *key* = object

(ii) *Cannot* describe entity key scenario where *share* = object and *key* = subject

(iii) Can describe event key scenario where *share* = subject

b. **Sentences of the Form ‘Dist. Num. > Subject<sub>Plural</sub> > Dist. Num. > Object<sub>Plural</sub> > Verb’**

Can *only* describe event key scenarios where *share* = object, *subject*

(e.g. Each time, *num*<sub>1</sub> subjects V-ed *num*<sub>2</sub> objects)

**6. Semantic Analysis** I propose that Tlingit distributive numerals are (always) pluractional operators (Beck & von Stechow 2007). The ability of sentences containing distributive numerals to describe both ‘entity key’ and ‘event key’ scenarios is not due to an ambiguity, but instead to their possessing rather general truth-conditions. I propose two different lexical entries for *-gaa*, one creating adnominal distributive numerals, and the other creating adverbial ones. The semantics for ‘adnominal *gaa*’ is given in (8); ‘adverbial *gaa*’ is similar. I assume that sentence (2) has the LF in (9), and thus the T-conditions in (10). Note that in deriving the T-conditions in (10), I assume many of the key ideas of Kratzer (2008).

(8) [[ *gaa* ]] = [ λn : [ λQ<et> : [ λP<et> : [ λe<sub>e</sub> : ∃x. Q(x) & P(x)(e) &

<e, x> ∈ \*{ <e’, y> : part(e,y) & |y| = n } ] ... ]

(9) [ [ [ three *gaa* ] fish ] [ 1 [ my sons [ v [ caught *t*<sub>1</sub> ] ... ]

(10) ∃e . ∃x . \*fish(x) & \*caught(e,x) & \*agent(e) = my.sons &

<e, x> ∈ \*{ <e’, y> : part(e,y) & |y| = 3 }

*There is a (plural) event e, and a plurality of fish x, and e is a (cumulative) event of catching x, and my sons are the (cumulative) agent of e, and the fish x can be formed from all those triples that participated in a subevent of e.*

As can be seen from the informal paraphrase of the T-conditions above, the analysis correctly predicts that (2) is true both in scenarios where each son caught three fish, and ones where the sons collectively caught three fish on multiple occasions. Thus, the single lexical entry in (8) predicts that (2) is true in both ‘entity key’ (2a) and ‘event key’ (2b) scenarios. The same prediction is shown to hold for sentences containing ‘adverbial *gaa*’. Finally, the analysis correctly predicts all the various generalizations, excerpted in (7), that concern the interpretations of sentences containing distributive numerals. Moreover, I show how the semantics in (8) could be modified to apply to English ‘binominal each’ constructions.

**Future Modals in Ktunaxa**  
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**Introduction.** This paper provides a semantic analysis of two future expressions, *ɕxat* and *ɕ*, in Ktunaxa, an endangered language isolate spoken in south-eastern British Columbia, northern Idaho and north-western Montana. Previous analyses suggest that *ɕ* and *ɕxat* are variants of the same morpheme, with the former glossed as the shortened form of the latter (cf. Morgan 1991; Dryer 2002, 2007; Kootenay Culture Committee, 1999). Distinct patterns and semantic properties emerge, however, upon further investigation of their relative uses. I focus on the semantic distribution of these two morphemes, suggesting they both encode epistemic modality and the modal notion of intentions. Following Kratzer’s (1981, 1991b) framework for possible world modality, my analysis illustrates that *ɕ* and *ɕxat* have lexically-specified modal force, as strong and weak necessity, respectively, but are compatible with multiple conversational backgrounds.

**Data.** Although either *ɕ* or *ɕxat* may be used to express the future, a distinction becomes evident when both forms are tested in identical contexts. Copley (2002) outlines a situation in English where one future expression may be used, but not another. She notes that in the context of an offer, as in (1), only *will* is felicitous. This same pattern emerges in Ktunaxa.

(1) There’s a birthday party tomorrow and everyone is deciding who should bring what.

- |   |   |
|---|---|
| a) Hu <i>ɕxat</i> <i>ɕinaŋki-ni</i> <i>kukɕiŋikit</i><br>1SG <i>ɕxat</i> bring-IND    cake<br>‘I’ll bring the cake (if you want)’ | b) Hu <i>ɕ</i> <i>ɕinaŋki-ni</i> <i>kukɕiŋikit</i><br>1 <i>ɕ</i> bring-IND    cake<br>‘I’m bringing the cake’ |
|---|---|

In an offering context, only *ɕxat* is accepted. My consultant remarked that the use of *ɕ* in (1)b is slightly rude because it is more forceful than *ɕxat* - the addressee can’t easily contradict the speaker and ask her to bring the fish instead. A distinction between *ɕ* and *ɕxat* is also evident in situations akin to (2), which involve the knowledge base of the speaker.

(2) Mary lives in a different province. Since her sister is getting married the day after tomorrow and the rehearsal dinner is tomorrow night, we await her arrival.

- |   |  |
|---|--|
| a) <i>ɕxat</i> <i>wax-i</i> <i>mali</i> <i>kanmiyit-s</i><br><i>ɕxat</i> arrive-IND    Mary    tomorrow-OBV<br>“Mary will (probably) arrive tomorrow” | b) <i>ɕ</i> <i>wax-i</i> <i>mali</i> <i>kanmiyit-s</i><br><i>ɕ</i> arrive-IND    Mary    tomorrow-OBV<br>“Mary will arrive tomorrow” |
|---|--|

Speaker judgements affirm it would be infelicitous to use *ɕxat* if the speaker were positive that Mary would arrive tomorrow, since (2)a expresses incomplete certainty. My consultant offered the explanation that in (2)b the speaker might also know that Mary is a bridesmaid, so he knows she can’t miss the rehearsal dinner and thus is more certain of her arrival.

**Generalisation.** The data presented in (1) and (2), I argue, demonstrate that Ktunaxa’s *ɕ* and *ɕxat* are compatible with the modal notions of intention (1) and prediction or expectation (2). In (1), the intentions of the speaker are most relevant to the utterance’s truth conditions, while in (2), intentions are irrelevant; it is the knowledge of the speaker that determines which morpheme



is used in these examples. Rather than differing in their conversational backgrounds,  $\phi$  and  $\phi xat$  are distinct in their relative modal forces. This distinction is easily accounted for using von Fintel and Iatridou's (2008) analysis of weak necessity modals within a Kratzerian (1981, 1991b) framework. The term *weak necessity* here captures the difference in force between 'strong' necessity modals, which universally quantify over sets of accessible worlds, such as the English *must*, and other necessity modals that seem relatively weaker, such as *ought*. von Fintel and Iatridou's analysis extends Kratzer's framework, where modals are analysed relative to a modal base and an ordering source, by adding a third conversational background in the form of a second ordering source, which affects only weak necessity modals. This second ordering of worlds results in a smaller quantificational domain, and thus a weaker modal force than their 'strong necessity' counterparts; for all worlds highly-ranked by a strong necessity modal's single ordering source, the prejacent is true, while for weak necessity modals, only those worlds that are additionally ranked as most ideal by the second ordering source must have the prejacent as true.

**Discussion.** In (1), above, both  $\phi xat$  and  $\phi$ , I argue, have circumstantial modal bases. The ordering source for each is the set of propositions denoting the speaker's intentions. The weak necessity modal  $\phi xat$  in (1)a contains the implicit conditional clause, *if you want*, which, as Copley (2002) explains, is necessary for an offer. This conditional, I suggest, serves as a second bouletic ordering source, ranking the ideal worlds of the primary ordering source according to the desires of the *addressee*. Because of this second ordering,  $\phi xat$  is felicitous as an offer, as it expresses that the event will occur only if the addressee wishes it to. In (1)b, by contrast, since  $\phi$  lacks this second ordering source, the prejacent is true in every world compatible with the speaker's intentions, regardless of the addressee's desires. Similarly, the presence of a second ordering source for  $\phi xat$  in (2) can account for the apparent difference in modal strength between (2)a and (2)b. The modal base for these utterances is epistemic, and the ordering source is stereotypical. The relative weakness of (2)a is obtained via a second ordering source, which consists of a set of propositions denoting other conditions to Mary's arrival, such as her desire to attend the dinner, that she can afford to take the day off work, that she is not otherwise busy, and the like. Only worlds in which these propositions are true in addition to those in the modal base and primary ordering source will be highly-ranked. In (2)b, by contrast, there is no second ordering source and the strong claim is made that Mary arrives in all worlds that proceed stereotypically and are compatible with the speaker's knowledge.

By providing insight into temporal and modal reference in Ktunaxa, an endangered, understudied language isolate, this paper contributes to the growing discussion of the types of modality that may be encoded in future markers, and whether futurity in natural languages is inherently modal.

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This paper provides both a formal and a descriptive account of the preverbal marker *finna* in African American English (AAE). The analysis fills 2 gaps in the literature: the general paucity of research on formal semantics in AAE and the under-developed integration of formal semantic meaning with social meaning for dialectal variants. Using lyrics from hip-hop and rap songs, this work examines 90 tokens of the pre-verbal marker *finna* (also seen as *fitna* and *finna*). The data suggest that *finna* behaves like a performative modal in AAE, giving rise to a proximate future interpretation (following Ninan 2005, Kaufmann 2012). This modal is distributionally and formally distinct from the future marker *gonna*. Finally, *finna* has acquired a salient social meaning in AAE, especially outside of the South. The data support an enhanced distribution for *finna* in contexts where the creation of a strong ethnic or cultural style is desirable, such as in hip hop lyrics.

*Finna* is compatible with a wide range of syntactic and semantic phenomena, including both telic and atelic complements and inanimate and animate subjects. Two semantic features distinguish *finna* from well-studied Mainstream English (ME) auxiliaries. First, unlike ME *try*, *finna* may not be explained only with reference to the speaker's intentions (see Grano 2011). Second, *finna* almost always receives a proximate future interpretation and is therefore distinguishable from futurate modals like *gonna* (see Binnick 1971, Klecha 2011). *Finna* and *gonna* are not identical in distribution or in meaning, as evidenced by occurrence with temporal adverbs (1).

1. (a) What the fuck your punk ass finna do now? (attested)
- (b) What the fuck your punk ass gonna do now?
- (c) I'm gonna see him play next year.
- (d) ??I'm finna see him play next year.
- (e) I'm finna go live. (attested)

Formal studies of tense, mood, and aspect in AAE are scarce (Green 2002), and only two works explicitly address *finna* or Southern English *fixin to* (see Ching 1987; Smith 2009). This paper provides a formal semantics of *finna* as a performative modal (see Ninan 2005). Under Ninan's proposal, the deontic modal *must* behaves as an imperative in some unembedded environments. Ninan bases his proposal in part on data like (2), which has a natural counterpart in (3).

2. You must wash the dishes. #But you're not going to.
3. I'm finna roll. ??But I ain't gonna.

Taking a cue from Ninan's analysis, this paper treats *finna* as committing its subject to acting as if the subject prefers that *finna*'s complement be true. While Ninan accomplishes this sort of operation by means of Portner 2005, 2007's To-Do Lists, this paper instead employs a slightly modified version of Kaufmann 2012's more traditional modal machinery. The semantics of *finna* appear as in (4).

4.  $\lambda G_{\text{bouletic}} \lambda F_{\text{circum}} \lambda t' \lambda P \lambda t \lambda w. \forall w' \in \text{BEST}(G(F(w,t)))[P(t',w')]$

In prose, (4) suggests that *finna* denotes those propositions that are optimal with respect to a bouletic (i.e., desire) ordering source (and a circumstantial modal base). However, an additional presupposition is necessary to cash out the performative nature of *finna*: the bouletic ordering source must be restricted to the speaker's desires. This is a slightly simplified version of Kaufmann's Ordering Source Restriction.

Combining these elements produces the correct predictions for *finna*. First, the proximate futurity of *finna* falls out of the imperative-like semantics of the performative. Once the speaker has committed herself to acting as if she (maximally) prefers X, the speaker ought to do X relatively

soon after the utterance. Thus, *finna*'s near futurity is created by pragmatic inference, which may be cancelled in some contexts (5).

5. (a) We finna make a movie (attested)

Second, *finna*'s appearance with second- and third-person subjects poses no more difficulties than *must*'s appearance with these subjects: the use of *finna* in these contexts, as with the use of *must*, imposes obligations on the hearer or on the third person (cf. Ninan 2005, though Ninan acknowledges the odd result of third-person “imperatives”). Third, the appearance of *finna* with inanimate subjects is correctly interpreted as a prediction in light of the speaker's desires. Thus, for example, a sentence like (6) is uttered felicitously where in all the optimal worlds compatible with the speaker's desires, the bay blows.

6. The bay finna blow (attested)

Fourth, this treatment accounts for a sentence like (3), above, in which denial of the preajcent plausibly creates an odd effect. Finally, the performative nature of *finna* distinguishes it from verbs like *try* and *gonna* as analyzed by other researchers.

These formal constraints, working in conjunction with extra-linguistic predictions about *finna*, may have important implications for its distribution. Though *finna* is often paraphrased as “about to” in ME, *finna* and *bouta* never co-occur here within the same song. Where *finna* is repeated in a verse, it is never restated with *bouta* or vice versa. For non-Southern U.S. dialects, one difference between *bouta* and *finna* is clear: the social meaning of *finna* is more apt to index an ethnic identity than *bouta* as *about to* or *bouta* occurs broadly in Northern Cities dialects among White and African American speakers, while *finna* occurs only among African American speakers. Extra-linguistic factors interact with grammatical, semantic constraints to produce variations in speaker usage that index to style and social meaning. As Bender (2001) shows, the perceived social meaning of a variant is, in fact, amplified by its occurrence in a more grammatically marked environment. This accounts for the fact that, while engaged in rapping, AAE-speaking artists may be more likely to use the variant that indexes cultural and ethnic identity, and that furthermore, they may achieve more bang for their buck in creating this ethnically-indexed style when they push the boundaries of grammatical acceptability by using *finna* with inanimate subjects or more temporally distant predicates as quoted above. Finally, examples in which speakers flout grammatical constraints for the sake of amplified social meaning offer insight into the actuation problem of semantic change. Diachronic semantic broadening may be rooted in these initial uses that are grammatically marked, yet more socially meaningful. Thus, both synchronically and diachronically, formal semantics accounts of *finna* are crucially augmented by incorporating social meaning.

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## NSYILXCEN EPISTEMIC MODALS

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**1) Introduction:** Research on the modal systems of Pacific Northwest languages provides empirical support for the recent claim that some epistemic modals encode evidential restrictions (Matthewson 2011, von Stechow & Gillies 2010). For example, the St'át'imcets and Gitksan modal systems lexically specify the source of evidence used to make an epistemic modal statement (Matthewson et al. 2007, Rullmann et al. 2008, Peterson 2010). In addition, von Stechow and Gillies (2010) argue that English *must* also has an evidential component indicating that the speaker is making an inference based on indirect evidence. In this paper, I investigate the semantics of the epistemic modal system of Nsyilxcen (Okanagan), an Interior Salish language spoken in South Central British Columbia and Northern Washington. The data comes from original fieldwork and involves two Nsyilxcen epistemic modals, *mat* and *cmay*. Similar to modal systems in other Salish languages, the Nsyilxcen modals have a lexically specified conversational background; they are both unambiguously epistemic. Furthermore, both modals encode an evidential restriction that the speaker is making an inference about the truth of the proposition based on indirect evidence. The modals differ in modal force (variable modal force for *mat*; possibility for *cmay*) but also in their specific evidence restrictions. *Mat* is permitted in contexts with indirect evidence based on reasoning or the results of an action or event. *Cmay* is restricted to contexts where there is evidence based on reasoning.

**2) Nsyilxcen Epistemic Modals:** The epistemic modals *mat* and *cmay* are felicitous in contexts with indirect evidence, and are infelicitous in contexts where there is direct evidence of the described event. This is shown in (1) where *mat* and *cmay* are both infelicitous in a context where direct evidence is present.

1) Context (Direct Evidence): You look outside and see that it is raining.

a) way qait  
AFFIRM RAIN  
'It is raining'

b) # **mat/cm**ay qait  
**MOD** RAIN  
'It might/must be raining'

*Mat* and *cmay* are distinguished based on the type of indirect evidence they encode. (2) shows that *mat* and *cmay* are both permitted in contexts with weak indirect evidence from intuition, logic or previous experience. In this case both *mat* and *cmay* have a possibility interpretation.

2) Context (Reasoning): You know that Mary loves to go running and often goes on runs randomly. I ask you, where is Mary?

a) Mary **cm**ay ac-s-qic-lx  
MARY **MOD** CONT-NOM-RUN-3.ERG  
'Mary might have gone running'

b) Mary **mat** ac-s-qic-lx  
MARY **MOD** CONT-NOM-RUN-3.ERG  
'Mary might have gone running'

However, (3) shows that in a context with strong indirect evidence based on reasoning, *cmay* is infelicitous and *mat* is felicitous with a necessity interpretation.

3) Context (Reasoning): Mary runs everyday to train for a marathon. She usually runs at 6pm on Tuesdays. Today is Tuesday and its 6pm. I ask you, where is Mary?

a) # Mary **cm**ay ac-s-qic-lx  
MARY **MOD** CONT-NOM-RUN-3.ERG  
'Mary must have gone running'

b) Mary **mat** ac-s-qic-lx  
MARY **MOD** CONT-NOM-RUN-3.ERG  
'Mary must have gone running'

Finally (4) shows that in a context with indirect sensory evidence from the results of an event, *cmay* is infelicitous. In this context, *mat* prefers a necessity interpretation.

4) Context (Results): You and your friend are working together and her stomach starts to growl. You think she might/must be hungry.

- |   |   |
|---|---|
| a) # <b>cmay</b> tali ilx <sup>w</sup> ut<br>MOD VERY HUNGRY<br>'She might be hungry' | b) <b>mat</b> tali ilx <sup>w</sup> ut<br>MOD VERY HUNGRY<br>'She must be hungry' |
|---|---|

The data shows that *mat* is permitted in contexts that contain weak and strong evidence based on results or reasoning. *Cmay* is restricted to contexts with weak indirect evidence based on reasoning only.

**3) Discussion:** The data presented here shows similarities between the evidential restrictions on the Nsyilxcen epistemic modals *mat* and *cmay* and the Gitksan epistemic modal *=ima* (Peterson 2010). Like *mat* and *cmay*, *=ima* is used in contexts of indirect inferential evidence. (5) presents Peterson's lexical entry for *=ima*:

- 5)  $\llbracket =ima \rrbracket^{c,w}$  is only defined if *c* provides a modal base *B* such that for all worlds  $w' \in B(w)$ , the inferential evidence in *w* holds in  $w'$ .  
If defined  $\llbracket =ima \rrbracket^{c,w} = \lambda p. \exists w' [w' \in Og(w) (B(w)) \wedge p(w') = 1]$  (Peterson 2010: 179)

*B(w)* specifies an epistemic modal base and the ordering source, *Og*, places an evidential restriction on the set of accessible worlds. Peterson also assumes a fixed existential quantificational force, where the different modal force readings for *=ima* are determined by the evidential restrictions provided by the ordering source. If the ordering source is empty it will yield a possibility reading. Strengthened interpretations arise when the ordering source contains progressively more propositions narrowing down the set of worlds quantified over. Peterson's analysis could account for *mat* which, similar to *=ima*, is felicitous in contexts that correspond to both necessity and possibility interpretations. Also, the ordering source in this analysis allows for evidential restrictions based on reasoning or results. This analysis could also be extended to *cmay* if the ordering source can account for the fact that *cmay* is restricted to contexts with evidence based on reasoning and to contexts with possibility interpretations. Furthermore, Deal's (2011) discussion of the Nez Perce circumstantial modal *oqa* raises the issue that modals like *mat* and *=ima* may only correspond to a full range of strengths in upward entailing contexts. Further research is necessary to determine how the Nsyilxcen epistemic modals behave in downward entailing contexts.

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## Perspectival discourse referents for indexicals

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The reference of an indexical expression depends on the context of utterance. For example, what proposition is expressed by saying *I am hungry* depends on who says this and when. According to Kaplan (1977), English indexicals, such as the first person pronoun *I* and the present tense of *am*, are *directly referential*, i.e. refer directly to the context of utterance. Formally, Kaplan analyzes a *context* as a tuple of an agent, world, time, and place,  $c = \langle a_c, w_c, t_c, l_c \rangle$ , such that in  $w_c$  at  $t_c$ , the agent  $a_c$  is located in  $l_c$ . The proposition expressed by  $a_c$  saying “*I am hungry*” in  $w_c$  at  $t_c$ , is determined by applying the meaning ( $\llbracket I \text{ am hungry} \rrbracket$ ) to this context parameter ( $c$ ).

On this STATIC APPROACH, the interpretation of indexicals involves context dependence only. This static approach continues to dominate research on indexicals, including work in Discourse Representation Theory, which explicitly represents context change (see e.g. Kamp 1981, 1985, Zeevat 1999). It also dominates cross-linguistic research, which recognizes that in some languages indexicals in attitude reports may reflect the perspective of the subject, in addition to or instead of the speaker (see e.g. Rice 1986 for a detailed description of such a system in Slavey, and Schlenker 2003 and Anand 2006, for static analyses in terms of operators that modify all or some of the coordinates of context parameters in the scope of attitude verbs).

In contrast, Stalnaker (1978) suggests a DYNAMIC APPROACH, where the interpretation of indexicals involves not only context dependence, but also context change. In Stalnaker’s own words, “when I speak, I presuppose that others know I am speaking [...]. This fact, too, can be exploited in the conversation, as when Daniels says *I am bald*, taking it for granted that his audience can figure out who is being said to be bald. I mention this commonplace way that assertions change the context in order to make clear that the context on which an assertion has its *essential effect* is not defined by what is presupposed before the speaker begins to speak, but will include any information which the speaker assumes his audience can infer from the performance of the speech act.” (p. 323)

In Bittner (2007, 2011), I formalized Stalnaker’s ‘commonplace effect’ in *Update with Centering*, a dynamic system that explicitly represents changing states of attention in discourse. In this system, discourse entities are introduced into the center of attention (*top tier*) or periphery (*bottom tier*). Ranked entities can then be referred to by typed attention-guided anaphors. The act of speaking up focuses attention on this event—formally, it introduces this very event on the top tier. It thereby licenses discourse reference to the speech act by the typed top-tier anaphor that refers to the currently top-ranked top-tier event ( $\top \varepsilon$ ). Other eventualities, introduced by verbs, go on the bottom tier. This makes them available for discourse reference by bottom-tier anaphors (e.g.  $\perp \varepsilon$ , for the top-ranked bottom-tier event;  $\perp \sigma$ , for the top-ranked bottom-tier state), all the while the speech act maintains its status as the top-ranked top-tier event ( $\top \varepsilon$ ). English indexicals, such as *I* and *you*, refer to individual-valued functions of the speech act—to wit, the *central participant* ( $\uparrow \top \varepsilon$ ), and the *background participant* ( $\downarrow \top \varepsilon$ ), respectively. Direct quotes after a verb of communication (e.g. *say* in *You said to me: “I am hungry.”*) temporarily promote the bottom-tier event of that verb to top-ranked top-tier status for the duration of the direct quote. Therefore,

indexicals outside of the quote are anchored to the speech act, whereas indexicals within the quote are anchored to the communication event of the verb.

The present paper argues in favor of this dynamic approach, by presenting new evidence from grammatical centering in Kalaallisut (Eskaleut: Greenland). As illustrated in (1), dependent verbs in Kalaallisut redundantly mark currently top-ranked third person individuals on the top and bottom tier ( $\top\delta$  and  $\perp\delta$ ) by the form of the person inflection (e.g. *-mi* ‘3SG $\top$ ’ vs. *-at* ‘3SG $\perp$ ’) as well as the mood inflection (e.g. *-ga* ‘FCT $\top$ ’ vs. *-mm* ‘FCT $\perp$ ’ for a not-at-issue fact about  $\top\delta$  vs.  $\perp\delta$ ). This centering contrast does not extend to matrix verbs: matrix moods and subjects are always topic-oriented (e.g. declarative ‘-DEC $\top$ -3SG’ for the main at-issue fact about  $\top\delta$ ).

*Context:* Yesterday the children had a dog-sled race.

- (1) a. *Ole-p ikinngun-ni ajugaa-mm-at nuannaar-pu-q.*  
 [Ole-ERG $\top$  friend-3SG $\top$ ] $\perp$  win-FCT $\perp$ -3SG $\perp$  happy-DEC $\top$ -3SG  
 Ole $\top$ ’s friend $\perp$  won, so he $\top$  (= Ole) was happy.
- b. *Ole-p ikinnguta-a ajugaa-ga-mi nuannaar-pu-q.*  
 [Ole-ERG $\perp$  friend-3SG $\perp$ ] $\top$  win-FCT $\top$ -3SG $\top$  happy-DEC $\top$ -3SG  
 Ole $\perp$ ’s friend $\top$  won, so he $\top$  (= friend) was happy.
- c. *Ole-p Kaali ajugaavvigi-ga-mi-uk nuannaar-pu-q.*  
 Ole-ERG $\top$  Kaali $\perp$  defeat-FCT $\top$ -3SG $\top$ -3SG $\perp$  happy-DEC $\top$ -3SG  
 Ole $\top$  beat Kaali $\perp$ , so he $\top$  (= Ole) was happy.
- d. *Kaali Ole-p ajugaavvigi-mm-a-ni nuannaar-nngit-la-q.*  
 Kaali $\top$  Ole-ERG $\perp$  defeat-FCT $\perp$ -3SG $\perp$ -3SG $\top$  happy-not-DEC $\top$ -3SG  
 Ole $\perp$  beat Kaali $\top$ , so he $\top$  (= Kaali) wasn’t happy.

Crucially, this grammatical centering system treats *indexical* persons (first and second) as *inherent topics*. That is, indexical persons require the  $\top$ -form of any dependent mood (2). Also, whereas third persons compete for the status of the highest top-tier individual ( $\top\delta$ , see \*(3a)), indexical persons do not participate in this competition (e.g.  $\checkmark$ (3b)). On the static context-dependence-only approach, these patterns are mysterious. In contrast, they are predicted by the dynamic start-up centering approach, since indexical persons on this view refer to individual-valued functions of the *highest top-tier event* ( $\uparrow\top\epsilon$  or  $\downarrow\top\epsilon$ )—the start-up central perspective.

- (2) *Ajugaa-{ga | \*mm}-ma Ole nuannaar-pu-q.*  
 win-{FCT $\top$  | \*FCT $\perp$ }-1SG Ole $\top$  happy-DEC $\top$ -3SG  
 I won, so Ole $\top$  was happy.
- (3) a.\* *Ole-p Kaali ajugaavvigi-ga-mi-ni ...*  
 Ole-ERG $\top$  Kaali $\perp$  defeat-FCT $\top$ -3SG $\top$ -3SG $\top$  ...  
 (INTENDED: Ole $\top$  beat Kaali $\perp$ , so ...)
- b. *Ole ajugaavvigi-g(a)-i-ni nuannaar-nngit-la-q.*  
 Ole $\top$  defeat-FCT $\top$ -1SG-3SG $\top$  happy-not-DEC $\top$ -3SG  
 I beat Ole $\top$ , so he $\top$  (= Ole) wasn’t happy.

The dynamic approach also explains shifted indexicals. I propose that Slavey indexical persons are anchored to the *highest top-tier eventuality* ( $\top\epsilon$  or  $\top\sigma$ , whichever ranks higher) for which the relevant individual-valued function ( $\uparrow(\cdot)$  or  $\downarrow(\cdot)$ ) is defined. Indexical shifts in attitude reports are due to temporary shifts in the current value of this central perspectival referent.

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Ka'apor is a language spoken by around 1000 people who live in the state of Maranhão, in the northern region of Brazil. The purpose of this paper is to examine the grammatical status of the particle [ke] in the Ka'apor language. The empirical data collected thus far indicates that this particle marks internal arguments of transitive verbs, as follows:

- (1) *ihē narāj ke a-pirok*  
 I orange AFET 1SG -peel  
 "I peeled the orange".

This particle is also found in contexts where it comes enclitic to subjects of stative and unaccusative verbs, thereby giving rise to an absolutive alignment system, as is illustrated by the following examples.

- (2) *Ana ke<sub>i</sub> h<sub>i</sub>-e ʔō ʔi*  
 Ana AFET 3SG-be tired PERF  
 "Ana is tired".

- (3) *ihē ke a-'ar*  
 I AFET 1SG-fall  
 "I fell".

Based on the above examples, I will be assuming henceforth that the particle [ke] has the role of conveying the semantics of affectedness. For this reason, this particle will constitute one of our most direct tools for diagnosing when an argument is semantically affected or not. A natural assumption is then to assume that the semantic denotation for [ke] is one of affectedness, such that this is the meaning that [ke] contributes to the D/NP that it marks. Additionally, the morphosyntactic distribution of [ke] in the above examples suggests that Ka'apor exhibits an absolutive alignment. In this system, the object and the intransitive subjects are both marked with [ke], whereas the agent subject remains unmarked. This hypothesis is reinforced by the fact that prototypical agents, as in the example (1), above, and as in the example (4), below, are not normally marked with [ke].

- (4) *araxu ø-ahem uhu*  
 Araújo 3SG-shout a lot  
 "Araújo shouted a lot".

In addition to the contexts examined thus far, there exists a possibility that the enclitic particle [**ke**] marks the subject of agentive verbs. Then, in the contexts below, although the subject has some control over the action and receives the  $\theta$ -role of AGENT, the particle [**ke**] can come enclitic both to the unergative subjects and to the transitive subjects of agentive verbs. In such a situation, the subject does not correspond to a prototypical agent, but to an argument whose  $\theta$ -role is hybrid in nature. In sum, the subjects below correspond to what Saksena (1980) describes as being the affected-agent in languages such as Hindi.

- (5a) *Purutu ke ø-ahem*  
 Purutu AFET 3SG-shout  
 "Purutu shouted

- (6a) *Maíra ke ø-wata*  
 Maíra AFET 3-andar  
 "Maíra walked [with suffering]".

Here, the subject does not have control over the action performed. Then, in (5a), something (a stone, a knife, a chair, etc) might have fallen on Purutu's foot and he did not have a chance to avoid it. The same interpretation holds for the subject in (6a), as the subject performed the action of walking with affectedness. However, the non-affected meaning is obtained if the subject does not co-occur with the particle [ke]. Then, when we omit the particle [ke], the meaning of affectedness cannot be inferred, but only the meaning that the subject performed the action on purpose and with control, as follows:



## UNERGATIVE CONSTRUCTIONS

- (5b) *Purutu*            *Ø-ahem*  
Purutu            3SG-shout  
“Purutu shouted”.  
[=Purutu was an agent of the shouting, probably he did it on purpose”.]
- (6b) *Maíra*            *Ø-wata*  
Maíra            3-andar  
“Maíra walked [with suffering]”.  
[=Maíra was an agent of the event of walking, he performed it on purpose.]

Similar contrast is also found in transitive constructions. For example, the verb -*ʔu* “eat” can select an affected agent, which is marked by the particle [**ke**], as in the example (7a). In such context, the subject is the agent of a causing event of eating, which is performed with some affectedness. The reason is related to the fact that, in the ka’apor culture, to eat owl always involves being affected. The affected agent of such a verb can also be viewed as the recipient of the verb activity, and, therefore, constitutes the goal toward which this activity is directed. Thus, the action represented by ‘eat’ is not only directed at their objects, but also toward their agents.

- (7a) *a’e*    *ke*    *u-’u*    *ta*                            *pypyhu*    *ke*                            *tĩ*  
he        AFET    3SG-eat    VOL                            owl        AFET                            REP  
“He is going to eat the owl”.

On the other hand, this verb can also select an agent, as in the example (7b), a situation in which the subject has control over the action of eating and, as a consequence, the particle [**ke**] need not appear.

- (7b) *a’e*    *tatu*                            *ke*    *u-’u*                            *ta*  
he        armadillo                            AFET    3-eat                            VOL  
“He will eat armadillo”.

Based on these data, the hypothesis I will be exploring in this paper is that the particle [**ke**] is triggered whenever subjects and objects are pragmatically affected by the event/action denoted by the predicate. Hence, this analysis entails that the subject of unergative and transitive verbs presents a hybrid semantic status, inasmuch as it is at the same time the agent and the affected argument. For this reason, I will be referring to this subject, hereafter, by the descriptive label ‘affected agent’. This, in turn, permits us to explain the distribution of the particle [**ke**] in Ka’apor: its main role is mark the affected arguments regardless whether they are in subject, direct objects or indirect objects positions. Based upon this distribution, I will hypothesize that the particle *ke* primarily signals two semantic Cases: the dative and the accusative. In sum, the dative marks the core arguments that usually occur in the slots of goals and affected agents, whereas the accusative mark the patients.

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## Time in Mapudungun

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Recently, there has been much debate as to whether there exist tenseless languages, especially within Native American languages: Kalaallisut (Bittner 2005), St'át'imcets Salish (Matthewson 2005), and Yukatek Mayan (Bohnenmeyer 2009). Mapudungun, an isolate spoken in Chile, displays properties commonly used as initial diagnostics for tenselessness: displaying a future vs. non-future distinction, suggestive of a modal rather than tense system, and displaying a correlation between the aktionsart of a predicate and its temporal interpretation. Specifically, unmarked stative stems are interpreted as present, unmarked eventive stems as past, and a predicate marked with *-a* is interpreted as future.

Nevertheless the traditional analysis of *-a* has been as a future tense (see Smeets 2008, who, however, analyzes it as a sort of irrealis). In addition, another morpheme, *-fu*, which when it occurs on statives implies that the state is over has traditionally been analyzed as a past preterite (Augusta 1903) or (past) imperfective marker (Valdivia 1606, Havestadt 1777). If these traditional analyses are correct, Mapudungun possesses tenses. In this presentation I carry out a semantic analysis of the morphemes of interest *-a* and *-fu*.

Reporting on original fieldwork, I argue that that *-a* is a future modal on the basis of various sources of morpho-syntactic evidence and, most importantly, semantically on the basis of the fact that it displays quantificational variability, and in particular that it allows an existential reading, (1), and permits different conversational backgrounds, (2).

- |   |  |
|---|--|
| (1) Fey rakizuam-i ñi amu-a-el Pedro<br>3 think-indic.3 3.poss go-fut-inf P.<br>✓ 'He thinks that Pedro will go.' $\forall$<br>✓ 'He thinks that Pedro might go.' $\exists$ | (2) Fey rakizuam-i ñi amu-a-fu-lu Pedro<br>3 think-indic.3 3.poss go-fut-FU-inf P.<br>'He thinks that Pedro should go.' Deont. |
|---|--|

I also argue against potential analyses of *-a* as a subjunctive or irrealis mood. I therefore analyze *-a* as the spell-out of a WOLL modal of the type posited to underlie both English *will* and *would* (Abusch 1997), and propose the following simplified semantics for it (where R is the accessibility relation associated with the modal,  $R_w$  is the set of worlds R-accessible from w, and the universal force variant is used for illustration):

- (3)  $[[ \text{WOLL}_R \text{ vP} ]]^{w,t} = 1$  iff  $\forall w' \in R_w. \exists t'. t < t' \ \& \ [[ \text{vP} ]]^{w',t'} = 1$

Recently, Golluscio (2000) has analyzed *-fu* as “a metapragmatic operator which acts to alert to, interrupt, or rupture conventional implicature in speech”. This analysis has been endorsed by Smeets (2008) and concurs with that of Harmelink (1996). The primary empirical support for this view comes from matrix clauses such as the following in which certain contrary-to-expectation implicatures are salient.

- |  |   |
|--|---|
| (4) La-fu-y<br>die-FU-indic.3<br>'It died and resurrected.' (Salas 2006) | (5) Müle-ke-fu-n campo mew<br>be-hab-FU-indic.1.s country P<br>'I used to live in the country (but no longer do so).' |
|--|---|

Nevertheless, I challenge this recent consensus view and vindicate the earlier analysis of –fu as an imperfective marker. Evidence comes from the examination of embedded occurrences of –fu. Embedded statives marked with –fu display simultaneous readings under matrix predicates interpreted as past, just like imperfective marked statives in Spanish and other languages (Gennari 1999). In addition, neither embedded statives nor eventives marked with –fu license the implicatures observed in matrix clauses.

- (6) iñché küre-fu-n ni la-fu-n  
 I.s believe-FU-1.s I.s.poss die-FU-inf  
 ‘I thought I had died (and not resurrected).’ cf. (4)
- (7) upe-nentu-küno-n ni müle-fu-el leche  
 forget-take.out-leave-indic.1.s 3.poss be-FU-inf milk  
 ‘I forgot that there was already milk (and there still is).’ cf. (5)

I explain the matrix interpretations via an implicature by informativity such that if a state is described as imperfective anaphorically to the speech situation rather than perfective, then the state did not persist. An eventive predicate marked with –fu will express that its result state has ended. Embedded clauses are interpreted with respect to the time of the matrix eventuality and so escape this implicature and yield the ordinary dependent time interpretation of imperfectives instead.

In summary, I extend the empirical picture of the temporal interpretation of different types of clauses in Mapudungun and offer a semantic analysis of the morphemes –a and –fu. I discuss in what sense these may be considered tenses and, consequently, in what sense Mapudungun may be considered tenseless. Lastly, I note that since the empirical picture I present overlaps with, but also differs from, that of St’át’imcets presented in Matthewson (2005), who advocates a tensed analysis, this study contributes to our understanding of tense and tenselessness in Native American languages in general.

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## Pragmatic underspecification of tag question evidentials in Mi'kmaq

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**Puzzle:** Mi'kmaq (Algonquian) has a verbal suffix  $-s(\dagger)p(n)$  which receives tag question interpretation in a sentence. This question tag suffix is *prima facie* composed of the direct and indirect evidential suffixes  $-p(n)$  and  $-s(n)$  (all Mi'kmaq examples from Inglis 2002).

- |     |  |     |   |
|-----|--|-----|---|
| (1) | <i>I'-wape'k†-p.</i><br>PAST-white-DIR<br>'It used to be white.'             | (2) | <i>I'-wape'k†-s.</i><br>PAST-white-IND<br>'It used to be white, so I'm told.' |
| (3) | <i>I'-wape'k-s†p.</i><br>PAST-white-TAG<br>'It used to be white, didn't it?' |     |   |

We provide an account of the tag question suffix which derives its pragmatic properties from the interaction of the direct and indirect evidential suffixes.

**Background on tag questions:** Although little formal work has been done on the semantics of tag questions, the literature on the subject assumes that they have the same logical form as negative polar questions (Reese & Asher 2010). Negative polar questions are observed to differ from positive questions in that they convey a backgrounded speaker attitude, or bias: that the speaker at some point had expected a positive response to the question (Givon 1979, Ladd 1981, Horn 1989 et al.). This bias is treated on some accounts as following from the interaction of the semantic content of an interrogative sentence and pragmatic principles (Romero & Han 2004). Other treatments take biased questions to be a complex speech-act type (Reese & Asher 2007, 2010), *assert • question*, carrying a hybrid illocutionary force: the sentence asserts  $p$ , and questions  $?¬p$ .

**Two readings for Mi'kmaq tag questions:** Negative polar questions in English with preposed negation, like their counterparts with low negation, convey the sense that the speaker previously expected or believed in the likelihood of a positive response. However, they are not pragmatically equivalent: this sense is much stronger for negative questions with preposed negation than for those with low negation (4) (Romero & Han 2004). Romero & Han account for this difference by proposing that preposed negation introduces the epistemic operator VERUM FOCUS, which necessarily gives rise to a non-cancelable 'positive epistemic implicature.'

- (4) Scenario: The speaker is organizing a party and she is in charge of supplying all the non-alcoholic beverages for teetotalers. The speaker is going through a list of people that are invited. She has no previous belief or expectation about their drinking habits.  
A: Jane and Mary do not drink.  
S: OK. What about John? Does he not drink (either)?  
S': # OK. What about John? Doesn't he drink (either)? (Romero & Han)

Mi'kmaq tag questions display the same pragmatic properties as negative polar questions with both high and low negation, depending on context.

- (5) [while looking at a closed window in a room which is cold]  
*Panta'tek-s†p tuo'puti.*  
open-TAG window

'The window, it was open, wasn't it?'

(6) *I'-wape'k-sɨp to'q.*

PAST-white-TAG COMMUNITY.KNOWLEDGE

'It used to be white, didn't it? [everyone knows that]'

(neighborhood history tells me that it used to be white)

In (5), the speaker conveys that she expects confirmation that her statement is true, while being open to contradiction. In (6), however, compatibility with the *to'q* particle shows that the speaker holds a propositional belief that the object in question used to be white.

**Proposal:** We propose that the  $-s(\dot{\text{ɨ}})p(n)$  suffix is pragmatically underspecified such that it yields two readings: 1) an inference that the speaker expects a positive response to the prejacent, and 2) a non-cancelable inference that the speaker believes the prejacent to be true. We propose that these readings result from differing scope interactions of the direct and indirect evidential suffixes that comprise the question tag suffix. In the first reading, the statement expresses the speaker's belief about the evidential relation of the addressee to the proposition expressed by the prejacent: belief about what reportative evidence with respect to the proposition should be. In the second reading, the speaker is making an assertion about her own epistemic state with respect to a reported proposition.

**Observations and implications:** The proposed analysis yields the two readings as the result of the scope interaction of two overt morphemes, rather than by introducing an extra operator. It also captures the intuition of Reese & Asher that biased questions occupy an intermediate position between question and assertion. We note that opposite polarity tag questions in English also carry both readings and propose that prosody plays a role in disambiguating them. The analysis also correctly predicts that statements with the  $-s(\dot{\text{ɨ}})p(n)$  suffix fail as alternative questions, and predicts a gap in the evidential paradigm: the tag-question suffix is not available for verbs in the first person, as this would create vacuous interpretations on both readings.

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Yauyos Quechua Evidentials and Evidential Modifiers  
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This paper examines the evidential system of Yauyos (ISO 639-3: [qux]), a hitherto undocumented, extremely endangered Quechuan language of Peru. Yauyos, like other Quechuan languages, counts three evidential affixes: direct (-*mI*), reportative (-*shI*), and conjectural (-*chrI*), as in (1), (2), and (3).<sup>1</sup> Yauyos is unusual, however, in that each of its three evidentials counts three variants, formed by the affixation of the evidential modifiers ("EM's"), - $\emptyset$ , -*k*, -*ki*, to the base form. Evidentials obligatorily take modifiers; modifiers attach exclusively to evidentials. With all three evidentials, the -*k* form is associated with some variety of increase over the - $\emptyset$  form, and the -*ki* form with greater increase still. In the default case, the EM's indicate an increase in strength of evidence. With DIRECT -*mI*- $\emptyset$ /*k*/*ki* and REPORTATIVE -*shI*- $\emptyset$ /*k*/*ki*, the EM's then generally affect the interpretation of strength of assertion, with -*k* and -*ki* indicating increasingly strong assertions, as in (1) and (6); with CONJECTURAL -*chrI*- $\emptyset$ /*k*/*ki*, the EM's affect the interpretation of certainty of conjecture, with -*k* and -*ki* indicating increasingly certain conjectures, as in (4) and (5). In case the evidential takes scope over a modalized verb, the modifiers then generally affect the interpretation of the force of the modal: with universal-deontic and future-tense verbs, for example, -*k* and -*ki* generally indicate increasingly strong obligations or imminent futures, respectively, as in (7) and (8).

I argue that interpretation is pragmatic.  $\langle -\emptyset, -k, -ki \rangle$  forms a Horn scale that gives rise to conversational (quantity) implicatures. That a speaker uses the a weaker EM entails that she couldn't have used a stronger form. I model this making use of Schulz and van Rooij's (2004, 2005, 2006) model-theoretic formalization of Grice's Principle.

Gricean interpretation is described by selecting minimal models, selection taking place among those possibilities where the speaker knows *P* and the order that determines minimality compares the strength of evidence of evidence type *EV* that the speaker has for *P*. The sentence  $\mathbf{K}^{EV,EM}P$  'the speaker knows *P* by *EV-EM*' (wrt *W* and *R*) is: defined in *w* if the speaker has evidence for *P* of type *EV* of and strength *EM* in *w*; is true in *w* if  $P=T$  in every world in  $R(w)$ ,  $w \in R(w)$ . The order  $\leq_{EM,S}$  ranks possibilities in terms of the extent of the speaker's evidence of type *EV*.  $\varphi$  is evidence for  $\psi$  if the conditional probability of  $\psi$  given  $\varphi=T$  exceeds the conditional probability of  $\psi$   $\varphi=F$  (McCready(2010)).

DEFINITION (*Interpreting evidentially-marked sentences according to the Gricean Principle*)

*Let EM be an evidential modifier and S be a pair of a predicate P and a pair of an evidential type EV and evidential modifier EM in context C =  $\langle W, R \rangle$ . Define the pragmatic interpretation  $grice_{SvR}^C(EM, S)$  of EM wrt S and C*

$$grice_{SvR}^C(EM, S) =_{def} \{w \in [\mathbf{K}^{EV,EM}P]^C \mid \forall w' \in [\mathbf{K}^{EV,EM}P]^C : w \leq_{EM,S} w'\}$$

<sup>1</sup> Citations are to recordings made by the author during the course of the documentation of the language. The glossed recordings may be retrieved from the DoBeS archive. [http://corpus1.mpi.nl/ds/imdi\\_browser](http://corpus1.mpi.nl/ds/imdi_browser)

- 1 *Oka-ta qasa-mu-n-mi-Ø kay-paq*  
oca-ACC freeze-CIS-3-EVD-Ø DEM.P-LOC  
'Oca freezes around here.' (LlankaTravel, 05:09-12)  
-Ø DIRECT present: evidence from personal experience, utterance is a neutral assertion
- 2 *Qari-n-ta-sh-Ø wañu-ra-chi-n masha-n-ta-sh-Ø wañu-ra-chi-n*  
man-3-ACC-EVR-Ø die-PRF-CAUS-3 son.in.law-3-ACC-EVR-Ø die-PRF-CAUS-3  
'She killed her husband, they say; she killed her son-in-law, they say.' (ViñacGrandparents3, 37:28-35)  
-Ø REPORTATIVE past: evidence is secondhand, utterance is a neutral assertion
- 3 *Alma-yuq ka-ya-n-chri-Ø*  
soul-POSS be-PROG-3-EVC-Ø  
'She must be with a soul [of a recently dead relative].'  
(YuracsayhuaSoul, 01:59-02:01)  
-Ø CONJECTURAL present: evidence is either personal or secondhand, utterance is a neutral conjecture
- 4 *Chay-chri-k mana chaski-rqa-chu*  
DEM.D-EVC-K no accept-PST-NEG  
'That's why it wouldn't have received it.'<sub>EMPH</sub>  
(ViñacGossip, 2:18-21)  
-k CONJECTURAL past: strong speaker certainty in conjecture
- 5 *Anu-ya-n-ña-chri-ki*  
wean-PROG-3-DISC-EVC-KI  
'She must be weaning [him], for sure.'  
(ViñacMilking, 00:55-57)  
-ki CONJECTURAL present: strongest speaker certainty in conjecture
- 6 *Prisiyu-n-pis ka-n-mi-ki chakiruptinqa*  
price-3-ADD be-3-EVD-KI dry-URGT-SUBDS-3-TOP  
'They have their (high) price when you dry them.'  
(ViñacMilking, 16:08-10)  
-ki DIRECT present: strongest assertion, increase in degree of the predicate, 'pricy'
- 7 *Ri-shaq. Yaku-ta-chri-ki qawa-mu-shaq*  
go-1.FUT water-ACC-EVC-KI see-CIS-1.FUT  
'I have to go. I have to take care of the water now'.  
(TanaOrchard, 30:39-43)  
-ki CONJECTURAL universal deontic: strongest obligation, urgency
- 8 *Kuka-cha-n-kuna-ta apa-ru-pti-y-qa tiya-pa-wa-nga-chri-k*  
coca-DIM-3-PL-ACC bring-URGT-SUBDS-1-TOP sit-BEN-1.OBJ-3.FUT-EVC-K  
'If/when I bring them their coca, they will accompany me sitting.'<sub>EMPH</sub>  
(ViñacCure1, 0:27-32)  
-k CONJECTURAL future: close/certain future

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I argue that the cross-linguistic morpho-syntactic diversity of expressions for 'and' is reflected in a diversity of semantic interpretations: while Boolean 'and' extends from the sentential domain to other domains pointwise, sum formation extends from type **e** to the sentential case metaphorically. I argue that this difference explains contrasts between two conjunctions in Q'anjob'al (Mayan, Guatemala).

Q'anjob'al employs both a comitative marker *yetoq* 'with' that functions both as a preposition and as a conjunction, and specialized conjunctions *k'al* and *i* 'and':

- (1) ch-w-ochej naq Xhun y-etoq / i / k'al naq Yakin  
 INC-A1S-like 3MAN Xhun A3-with / and / and 3MAN Yakin  
 'I like Xhun and Yakin.'

Several kinds of arguments given by McNally (1993) for Russian, support that *and*- and *with*- conjunctions in Q'anjob'al differ in meaning. Conjunction *i* can combine properly quantificational (type **ett**) and other non-referential NPs, and thus has to have a crosscategorical Boolean semantics.

- (2) miman ix jujun heb' kuywom <sup>OK</sup>i / \*y-etoq jujun heb' ulawom  
 big woman every PL student <sup>OK</sup>and / \*A3-with every PL guest  
 'every student and every guest is fat' (lit. 'is a big woman')

*Yetoq*, restricted to referential NPs (type **e**), is interpreted simply as a sum/group forming operator.

In many languages, *with*-coordination can conjoin only noun phrases but not sentences. But in Q'anjob'al, *yetoq* 'with' can combine sentences and other kinds of phrases.

But in this function, comitative coordination is still different from *i*. *Yetoq* is not acceptable in most contexts where *i* 'and' can be used.<sup>1</sup>

*Yetoq* is only acceptable between clauses which contribute to a common topic, roughly paraphrased as *and in addition to that*. For *yetoq* to be used felicitously, the clauses it conjoins always have a common topic to which they make a joint contribution, compare:

- (3) a. x-kankan naq Xhun b'ay na <sup>OK</sup>i / \*y-etoq x-toq y-istil naq b'ay txomb'al  
 COMP-stay 3MAN Xhun to house <sup>OK</sup>and / \*A3-with COMP-go A3-wife 3MAN to market  
 'Xhun stayed home and (\*in addition to that) his wife went to the market'
- b. merwal ch-kus naq Xhun y-uj tol x-k'ayil naq masanil s-tumin y-etoq  
 very INC-sad 3MAN Xhun A3-by that COMP-lose 3MAN all OWN-money A3-with  
 x-kam masanil yawb'ejal naq  
 COMP-die all crops 3MAN  
 'Xhun is sad because he lost all his money and (<sup>OK</sup>in addition to that) his crops died.'
- c. k'am tzetalyetal ch-w-aq'a y-etoq k'am maktxel b'ay ch-w-aq'a  
 no what INC-A1S-give A3-with no who to INC-A1S-give  
 'I have nothing to give and (<sup>OK</sup>in addition to that) nobody to give things to'

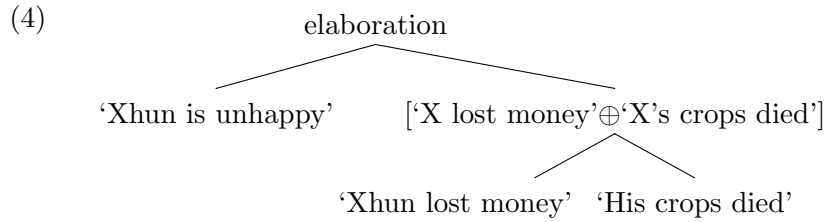
In (3-b), the common topic is Xhun's lack of luck. In (3-c), the common topic is that the speaker is unable to share. In both cases, the two clauses together elaborate on their shared topic.

I propose to formalize the property of *yetoq* to require a common topic from the clauses it conjoins by analyzing the sentential usage of *yetoq* as a metaphorical extension of group/sum formation. Assume that each clause can denote a minimal illocutionary act (Searle and Vanderveken, 1985); then

<sup>1</sup>Glosses for grammatical elements include: INC 'incompletive aspect', COMP 'completive aspect', 3MAN '3rd person classifier/pronoun for men', A3 '3rd person ergative agreement prefix', A1S '1st person singular ergative agreement prefix', OWN '3rd person emphatic possessive prefix'.

a comitative coordination of clauses denotes a sum of two illocutionary acts (e.g. two assertives), and this sum relates to the rest of the discourse as a unit.

Assume that clauses/utterances in discourse are connected with *rhetorical relations* such as *background*, *motivation*, *conclusion*, etc. (Mann and Thompson, 1988). Intuitively, what I labeled above informally as “contributing to the same topic” can be represented as bearing the same (discourse) relation to the rest of the discourse structure, e.g. two (sub)utterances can be *elaborations* on the same preceding discourse. The role of *yetiq* then is to guarantee that the clauses it links stand in the same relation to the rest of the discourse. A natural implementation of this role, provided that *yetiq* otherwise denotes sum formation, is to assume that *yetiq* as a clausal linker forms a sum of two utterances. They, as a sum, are linked with a single discourse relation, schematically:



I have argued that as a clausal coordinator *yetiq* maintains traces of the sum formation meaning, as in the NP conjunction, with its pragmatics of ‘togetherness’ (McNally, 1993). This analysis of *yetiq* supports the hypothesis that sentential and NP coordination can be related in different ways in different languages. While some coordinators like Q’anjob’al *i* and English *and* can be given an order-theoretic denotation (Keenan and Faltz, 1985; Rooth and Partee, 1983), where NP coordination is a pointwise extension of the clausal case, the sentential usage of *yetiq* is a (metaphorical) extension of its basic sum meaning from entities to discourse units.

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**Distinguishing Correlatives from Internally Headed Relative Clauses in ASL**  
**Teresa Galloway, Cornell University**

Previous work on the syntax and semantics of relative clauses in ASL has argued for analyzing relatives as either internally headed structures (Liddell 1980) or as correlatives (Coulter 1983, Fontana 1990, and Neidle 2002). Based on my own fieldwork and analysis, I argue that **both** IHRCs and correlatives are found in ASL, with clear interpretative and syntactic distinctions between them.

Many relative clauses in ASL share the superficial characteristics of SVO word order (the base word order of ASL) and a position at the left edge of the matrix clause, as seen in the examples below (PT denotes a pointing gesture and THAT<sub>pt</sub> denotes a fused form of THAT combined with PT; overlines indicate co-occurring facial expressions abbreviated 'br', 'wr', and 'tns'):

- (1) a.  $\overline{\text{BOY vCL>"spray" WATER pt+}} \text{ KICK MY \#DOG}$   
           b.  $\overline{\text{BOY vCL>"spray" THAT}_{pt_{boy}}} \overline{\text{KICK MY \#DOG}}$   
               *[The boy who watered (the lawn)] kicked my dog.*
- (2) a.  $\overline{\text{THAT SENATE VOTE}_{law} \text{ LAW}} \text{ ME SUPPORT}_{law}$   
           b.  $\overline{\text{THAT SENATE VOTE}_{law} \text{ LAW}} \overline{\text{THAT}_{pt_{law}} \text{ ME SUPPORT}_{law}}$   
               *I support [the law the senator voted for].*

Despite the superficial similarities, these examples are better classified as two distinct types of relative clauses in ASL. The first type, exemplified by the 'a' examples, are what I will argue are internally headed relative clauses (IHRCs). Syntactically, these RCs show evidence of nominalization--the final pt+ in (1a) and the 'tense' facial expression in (2a). They also obey the **indefiniteness restriction** described by Williamson (1987) which states that the head of an IHRC may not be morphologically definite. Contrast (3a) and (3b):

- (3) a.  $\overline{\text{GIRL BORROW BOOK}} \text{ pt}_{book} \text{ GONE}$   
           b. \*  $\overline{\text{GIRL BORROW THAT BOOK}} \text{ pt}_{book} \text{ GONE}$   
               *[The book the girl borrowed] is missing.*

The second type, seen in examples (1b) and (2b) are what I will argue are correlatives. Unlike IHRCs, correlative clauses show no evidence of nominalization. Rather, the correlative is an independent clause left adjoined to the matrix and followed by a demonstrative pronoun in the matrix co-indexed to the head of the RC. The demonstrative pronoun in ASL is either THAT<sub>pt</sub> or in some dialects (as in the examples below), SELF. Unlike IHRCs, correlatives are not subject to the indefiniteness restriction, as marking the head of the correlative with prenominal THAT as in (4) is perfectly acceptable:

- (4)  $\overline{\text{THAT SENATE VOTE THAT LAW}} \overline{\text{SELF}_{senate} \text{ ME SUPPORT}_{senate}}$   
       *'If that senator votes for the law, then I will support him'*

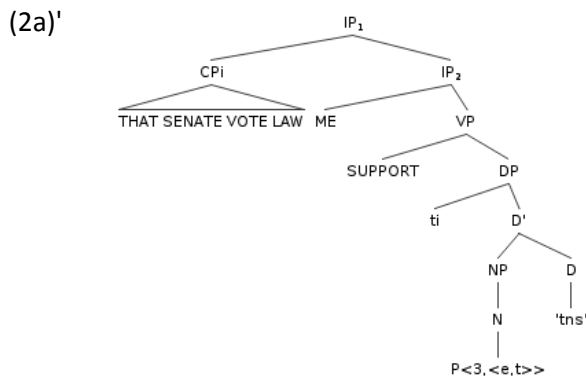
Furthermore, the resulting meanings are quite different from those produced by an IHRC.

- (5)  $\frac{\text{br}}{\text{SENATE VOTE THAT LAW}} \frac{\text{br+wr}}{\text{SELF}_{\text{senate}} \text{ ME SUPPORT}_{\text{senate}}}$   
 'In general, any senator who votes for that law, I will support'

The above example could be paraphrased as 'for all pairings of a senator and that law such that the senator voted for the law, I will support that senator'. This is in line with Dayal's (1995) observation that correlatives can be thought of as 'having quantificational structures of the same kind as conditionals.' Or to be more precise, (5) can be translated as:

- (5)'  $\forall x [\text{senator}(x) \wedge \text{vote}(x, \text{law})] [\text{support}(\text{me}, x)]$

In contrast, the semantic representation of an IHRC (following Shimoyama, 1999) would involve e-type anaphora. The logical form of (2a) would be represented as:



Where the proform P is a free variable of type  $\langle e, t \rangle$  which gets its denotation from the context c. Here, the function  $g_c$  assigns to the index 3 associated with the proform the property of being a law that the senator voted on.

$$g_c := [3 \rightarrow \lambda x (\text{law}(x) \wedge \text{vote}(\text{senator}, x))]$$

In sum, I contend that superficially similar structures that had formerly been conflated in the literature are in fact two distinct types of relative clauses with properties we expect to find cross-linguistically.

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## Theoretical, Descriptive and Practical Applications of Navajo Linguistics

Theodore B. Fernald

(Swarthmore College & Navajo Language Academy/Diné Bizaad Naalkaah)

This talk is about interactions between cultures – Navajo & non-Navajo, scholarly & pedagogical, theoretical & descriptive – in research and applications of linguistics.

I report on work by Navajo linguists and colleagues in the Navajo Language Academy (NLA) /Diné Bizaad Naalkaah. The NLA has held summer workshops on Navajo linguistics every year since 1997. Members of the NLA held similar workshops during the 1970s.

In these workshops, Navajo and non-Navajo linguists and language teachers work together on matters of theoretical analysis and pedagogical application. The workshop is a bridge between linguists and language teachers. Linguists make an effort to relate their often-esoteric work to language teachers, thus developing an immediately practical use for it. At the same time, language teachers are gaining skills in the linguistic analysis of human languages. I discuss some challenges that can arise and ways the NLA has tried to get beyond them.

The work of the NLA also involves cooperation between descriptive and theoretical enterprises in linguistics. As many scholars have found, these enterprises can strengthen each other. Hallmark examples are the fact that negative polarity items can be described with great accuracy in future descriptive grammars. This kind of descriptive work would not have been possible without theoretical research over the past 50 years on negation (see Fernald & Perkins 2007, Hale & Platero 2000). NPIs were nearly unknown before the tradition of generative grammar. While the scientific investigation of language is valuable in its own right and needs no justification, insights from this work are now benefiting descriptive work and leading to better reference materials.

Finally I again raise the question of what counts as adequate description of a language. To the classic triad (grammar, dictionary, texts) we recommend adding a User's Guide, a reference about pragmatics for use of the language in a particular culture. The work of the NLA includes the development of reference works along with support for language teachers and scholars in linguistics.



## Reportative evidentiality in Paraguayan Guaraní

Judith Tonhauser, The Ohio State University

This talk explores the meaning of the Paraguayan Guaraní reportative evidential clitic =*ndaje*, based on corpus data and data collected in fieldwork, and compares its distribution and meaning to that of (reportative) evidential markers in e.g. St'át'imcets (Matthewson et al. 2007), Quechua (Faller 2002, 2007), Cheyenne (Murray 2010), and Tagalog (Schwager 2008, Kierstead 2012). The talk also discusses strategies for dealing with conflicting speaker judgments.

**The meaning of atomic sentences with =*ndaje*:** The clitic =*ndaje* (glossed '=SAY') is optional in Guaraní, and its absence does not imply direct evidence (unlike in e.g. Quechua, Faller 2002). Pablo's utterance in (1) implies both that the father is still working (the 'prejacent' implication, *p*) and that it was said that his father is still working (the 'reportative' implication, *ndaje(p)*). Evidence for the two implications is e.g. that (1) can be followed up with both the (Guaraní version of the) question 'Who said that?' and the question 'And when is he going to stop?'

- (1) Context: Pablo arrives at his parents' house. His father isn't there. Pablo tells his mother:

Che-rú=**ndaje** o-mba'apo guéteri.  
my-father=SAY 3-work still

'It's said that my father is still working.'

In this talk, I present empirical evidence that utterances of atomic sentences with =*ndaje* are acceptable if the speaker has reportative evidence (secondhand, thirdhand or folklore) for an utterance that entails the prejacent, but not if s/he has direct evidence or evidence obtained by reasoning for the truth of the prejacent. I also show that the speaker must be committed to the truth of the evidential implication, but not to the truth of the prejacent, and can in fact believe the prejacent to be false or true, or have no opinion about its truth value. Crucially, utterances of sentences with =*ndaje* are acceptable in contexts where neither the prejacent nor the reportative implication are part of the common ground, which suggests that neither implication is a presupposition (contra e.g. Schwager 2008 on the Tagalog evidential *daw*, but see Kierstead 2012).

**Syntactic embeddability of the reportative evidential:** Cross-linguistically, evidentials differ in the extent to which they can occur in the syntactic scope of entailment-canceling operators, like negation, questions, modals and the antecedents of conditionals. Compared to evidentials in other languages, =*ndaje* is very embeddable, as consultants readily accept utterances where =*ndaje* is syntactically embedded under a modal, as in (2a), in the antecedent of a conditional, as in (2b), in a question, as in (2c), and under a verb of saying or a propositional attitude verb, as in (2d). Since =*ndaje* is a clitic, and sentential negation is expressed in Guaraní with a circumfix, =*ndaje* cannot syntactically embed under negation, as shown in (2e). The translations of the examples in (2a-e) and the respective logical forms correspond to meanings of the Guaraní examples all three of the consultants I have worked with on the reportative evidential agree on (as will be shown in the talk by presenting acceptability judgments for such utterances in a variety of discourse contexts).

- (2) a. I-katu o-manó=**ndaje** Pedro.  
3-possible 3-die=SAY Pedro

'It is said that it's possible that Pedro will die.'

(Logical form: *ndaje*(possible(Pedro will die)))

- b. [It is said that the cricket used to be a young, white woman with a beautiful voice.]

Sapy'ánte mombyry-gua o-hendú-ramo=**ndaje** chupe i-jurujái o-pytá-vo.  
suddenly far-from 3-hear-if=SAY her 3-wonder 3-stay-AT

'It is said that if somebody heard her from far away, they stayed with mouth open.' (slightly modified from Acosta and de Canese 2003:54f.)

(Logical form: *ndaje*(if(somebody heard her))(they stayed with mouth open)))



- c. Mba'é=pa=**ndaje** o-jehu fiésta-pe?  
 what=QU=SAY 3-happen party-at  
 'What is said happened at the party?'  
 (Logical form:  $qu_x(ndaje(x \text{ happened at the party}))$ )
- d. Na-i-porã-i che-pan dúlse=**ndaje** o-poro-mbo-py'a-hasy.  
 NEG-3-good-NEG my-bread sweet=SAY 3-all-CAUS-stomach-sick  
 'It's not good that it is said that my sweets cause people stomach ache'  
 (Logical form:  $it-is-not-good(ndaje(my \text{ sweets cause people stomach ache}))$ )
- e. Nd-o-manó-i=**ndaje** Pédro. \*Nd-o-manó=**ndaje**-i.  
 NEG-3-die-NEG=SAY Pedro  
 'It is is said that Pedro didn't die.' (Logical form:  $ndaje(not(Pedro \text{ died}))$ )

**The meanings of utterances of complex sentences with =ndaje:** The possible meanings of utterances of complex sentences with =ndaje that all three of my consultants agree on are summarized in Table 1: The first column gives the (abstract) logical forms of the three possible meanings, with *O* abbreviating the 'operator' (e.g. 'possible', 'if', etc.). A checkmark (✓) occurs in a cell if the complex sentence has the meaning (as illustrated in (2a-e)); a minus (–) occurs if it doesn't.

Meaning	Modal	Conditional	Question	Prop att	Negation
$ndaje(O(p))$	✓	✓	–	–	✓
$O(ndaje(p))$	–		✓	✓	–
$ndaje(p) \ \& \ O(p)$			–		–

Table 1: Possible and impossible meanings of complex sentences with =ndaje

In the talk, I present a formal semantic analysis of the empirical generalizations summarized in Table 1. The gist of the analysis is the following: **i)** =ndaje is a modifier of propositions, which accounts for its inability to modify questions (sets of propositions) or outscope the meaning of a propositional attitude verb, and accounts for the possibility of the meaning of a conditional to be its prejacent. **ii)** Since =ndaje must occur outside the negation circumfix, and it can be independently shown that only expressions inside the circumfix are in the scope of negation, the prejacent of =ndaje must include the meaning of negation in negated sentences. **iii)** =ndaje cannot occur under the scope of a modal since that would require the speaker to attribute to another epistemic agent the possibility of that agent having reportative evidence for the prejacent.

**Conflicting native speaker judgments:** Those cells in Table 1 that are left empty are those for which the three speakers I worked with gave conflicting judgments. In particular, while one speaker (A) systematically gave judgments that suggest that all of the empty cells in the table should be filled with checkmarks, the other two speakers (B, C) systematically gave judgments that suggest that all of the empty cells should be filled with minuses. The judgments for the last row of the table are of particular interest: according to speaker A, a projective interpretation of the reportative implication (i.e. where  $ndaje(p)$  is not interpreted in the semantic scope of the operator *O* and *O* is not part of the prejacent) is possible for complex sentences where =ndaje occurs under a modal, in the antecedent of a conditional or under a propositional attitude verb (or a verb of saying). For speakers B and C, however, a projective interpretation is not possible. In the talk, I discuss several strategies for dealing with such conflicting judgments.

**Selected references:** • Faller, M. (2007). The Cusco Quechua reportative evidential and rhetorical relations, *Linguistische Berichte* 14, 223-252. • Kierstead, G. (2012) *Projective content and the Tagalog reportative*, Talk presented at the 2012 LSA meeting, Portland, OR. • Schwager, M. (2008) On what has been said in Tagalog: Reportative *daw*, in *Evidentiality*, 1-26, UBCWP.

## Further dimensions of evidential variation: Evidence from Nl̓eʔkepmxcín

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Matthewson et al. (2007), investigating the evidential system of the Salishan language St'át'imcets, establish a degree of cross-linguistic variation regarding which evidential meanings are specified and which are left to context: whereas English epistemic modals specify quantificational force but not evidence type, St'át'imcets evidentials specify evidence type but not quantificational force.

A close examination of the evidential system of Nl̓eʔkepmxcín (Thompson River Salish), a language closely related to St'át'imcets, suggests that evidentials may vary even further regarding what they specify and what they leave to context. Two of the Nl̓eʔkepmxcín evidentials, *ekʷu* (REPORTATIVE) and *nke* (INFERENTIAL), act in ways parallel to their St'át'imcets counterparts, but the third evidential, *nukʷ*, exhibits unexpected semantic and pragmatic behavior. *nukʷ* is traditionally described as the “non-visual” evidential, frequently appearing when the speaker’s assertion is based on hearing, smell, taste, or touch (Thompson and Thompson, 1992).

(1) *Context: The speaker has just taken a bite of fish.*

cm-s-t-es            nukʷ e    sqeytn  
burn-CAUSE-TR-3SUB    SENSE    DET    fish  
'He burned the fish.'

In many ways *nukʷ* patterns with the other Nl̓eʔkepmxcín evidentials. Syntactically, it occupies the same slot in the second-position enclitic sequence, and is in complementary distribution with the other evidentials. Semantically, its evidential meaning likewise projects through negation, resists direct (“That’s not true!”) denial, and is *not-at-issue*: the evidential meaning cannot itself constitute an answer to a question under discussion (Faller, 2002; Murray, 2010; Matthewson, 2010).

Its full range of use, however, is much wider than “non-visual evidence” narrowly construed – it is used just as frequently to express emotional states (2), pain, surprise (3), regret, premonitions, hunches (4), and even negative regard.

(2) qʷnoʃʷ nukʷ k    n=sxʷoxʷ  
sad            SENSE    IRR    IPOSS=heart  
'I'm sad.'

(3) *Context: The speaker accidentally knocks over her cane.*

kʷi-s-t-ene            nukʷ  
fall-CAUSE-TRANS-1SUB    SENSE  
'Oops, I dropped it.'

(4) *Context: The speaker is at the dentist, and has a feeling that something just isn't right about their business.*

te    nukʷ    teʔ    čiy    k    s=y̓e=s  
NEG    SENSE    NEG    be.like    IRR    NOM=good=3POSS  
'It just doesn't seem right.'

In these uses, there is no clear restriction to a particular mode of knowing – exclamations of dismay or realization such as (3), for example, could be supported by visual evidence, by a sudden memory, or inference from results.

On the other hand, *nuk<sup>w</sup>* exhibits strict restrictions on other aspects of evidential meaning: it is used only in response to first-person feelings and sensations, and only when these are present at the time of utterance. Unlike the other Nl̥eʔkepmxcín evidentials, and evidentials in many other languages, the “judge” or “origo” of *nuk<sup>w</sup>* cannot be shifted to another person in a question, or under a verb of saying; nor can it be used when the relevant evidential experience was in the past. For example, unlike the reportative evidential *ek<sup>w</sup>u*, which can be used to request an answer based on reportative evidence available to the addressee (5), *nuk<sup>w</sup>* cannot request an answer based on the addressee’s sensory experience (6).

(5) keʔ ek<sup>w</sup>u k s=çelt=s e q<sup>w</sup>oʔ  
 whether REPORT IRR NOM=cold=3POSS DET water  
 ‘Is the water cold [according to what you’ve heard]?’

(6) \*keʔ nuk<sup>w</sup> xeʔ k s=çlox<sup>w</sup>=s  
 whether SENSE DEM IRR NOM=hot=3POSS  
 ‘Is it [the tea] hot [according to your sensory experience]?’

We propose that, rather than encoding a restriction on evidence source, as do the other evidentials, *nuk<sup>w</sup>* instead has a primarily *expressive* meaning (Kaplan, 1999; Potts, 2005; Schlenker, 2007, in the sense of): that the speaker is at the moment of utterance having a notable feeling or sensory experience.

Despite an expressive rather than modal implementation, we argue that *nuk<sup>w</sup>* is nonetheless part of the Nl̥eʔkepmxcín evidential system – it is still used to express the source of evidence for a speaker’s claims. The difference between *nuk<sup>w</sup>* and more familiar evidentials is, instead, one of what is expressed: *nuk<sup>w</sup>* specifies *when* and *by whom* the evidential experience was had, but leaves the exact type of evidence to contextual inference. *nuk<sup>w</sup>* thus offers us an additional option regarding evidential restrictions, with implications for evidential typologies and further research on the cross-linguistic expression of evidentiality.

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**Perfective readings in Saanich: the  $ET \subseteq RT$  account**  
**Claire Turner, University of British Columbia**

Much work on aspect assumes that the perfective involves temporal inclusion, placing the entire run time of an event (ET) within a contextually given reference time (RT) (Kratzer 1998).

$$(1) \lambda P_{\langle 1, \langle s, t \rangle \rangle} . \lambda t_i . \lambda w_s . \exists e_1 (\text{time}(e) \subseteq t \ \& \ P(e)(w) = 1) \quad (\text{Kratzer 1998})$$

In work on Salish languages, however, Bar-el (2005) and Kiyota (2008) have argued that clauses in the perfective don't always get a reading where the event time is included entirely within the given reference time. Kiyota, looking at SENĆOŦEN (Saanich, Northern Straits), focuses on activities and certain state-like predicates, which get inceptive readings in certain contexts:

(2)  $\text{t}^{\text{ilom}}=\text{s}\text{on}$                        $k^w=\text{s}$                        $k^w\text{t}$                        $\text{t}\acute{\text{e}}\acute{\text{c}}\text{al}-\text{s}$                        $\text{t}\text{ə}$                       Jack  
**sing**[PFV]=1SG.SBJ                      COMP=NMLZ                      PERF                      arrive-3POSS                      DET                      Jack  
 'I sang when Jack arrived.' / \*'I was singing when Jack arrived.' (Kiyota 2008: 48)

(3)  $\text{c}\acute{\text{e}}\text{y}=\text{s}\text{on}$                        $\text{?}\text{ə}=\text{k}^w=\text{s}$                        $\text{c}\acute{\text{ə}}\text{leq}^w\text{t}$   
**work**[PFV]=1SG.SBJ                      OBL=COMP=NMLZ                      yesterday  
 'I started working yesterday / \* I worked yesterday.' (Kiyota 2008: 95)

In order to account for this data, Kiyota (2008) proposes that i) activities and states have an extra BECOME subevent in their denotation (which is based on Rothstein 2004), ii) perfective aspect in SENĆOŦEN requires only one subevent of a complex event to be included in the reference time:

$$(4) \llbracket \text{PFV} \rrbracket = \lambda P . \lambda i . \exists e . \exists e' [e' \sqsubseteq e \ \& \ \tau(e') \subset i \ \& \ P(e)] \quad (\text{Kiyota 2008: 15})$$

Further, Bar-el and Kiyota propose that English activities also contain a BECOME subevent, since they also can get an inceptive reading in contexts like (2).

However, there are some problems with the definition of perfective in (4). First, it wrongly predicts that accomplishments will not also get inceptive readings when modified by punctual clauses (similarly to (2)), since Bar-el and Kiyota propose for independent reasons that they include only one subevent (DO). Second, including BECOME in the representation of an activity is conceptually problematic as it suggests that activities involve change and that the initial subevent is different from other subevents. Lastly, (4) predicts that inceptive readings will be found across tenses; yet they are not found with overt past tense:

(5)  $\text{c}\acute{\text{e}}\text{y}=\text{1}\text{ə}=\text{s}\text{on}$                        $\text{?}\text{ə}$                        $k^w=\text{s}$                        $\text{c}\acute{\text{ə}}\text{leq}\text{t}$   
**work**=PST=1SG.SBJ                      OBL                      COMP=NMLZ                      yesterday  
 'I worked yesterday.' (Kiyota 2008: 95)

I argue in this paper that a standard definition of perfective, as in (1), is more desirable than the proposed modification in (4). Kamp & Rohrer (1983) argue that the sequential (or “inceptive”) readings of French examples like (2) occur because clauses in the perfective aspect can introduce a new reference time. If we adopt Kamp & Rohrer’s claims to SENĆOŦEN, then the modifications in (4) are not necessary to account for (2). It is better to adopt the standard definition of perfective (1) since it does not require the unusual claim that activities contain a BECOME subevent. In (3),

‘yesterday’ appears to set the RT. However, as shown in (5), the clause with the overt past tense is interpreted differently from the clause with no overt past tense. (5) shows that when the RT is explicitly specified as prior to the utterance time, the entire event is also prior to the utterance time ( $ET \subseteq RT$ ). I suggest that in (1) the RT includes the utterance time.

One difficulty that arises is the presence of ‘medial’ readings. The definition in (1) predicts that these are not possible with perfective aspect, since the entire run time of an event should be included in the reference time. Actually this is what we find in SENĆOŦEN when a specific reference time is given. Kiyota showed that perfective aspect is not appropriate for a situation when the run time of an event explicitly exceeds the reference time on both ends:

Context: You had to fix something on your house and it took three days, Tuesday-Thursday.

- (5) #č́éy=ləʔ=sən                      ʔə      kʷsə      nə                      ʔéʔləŋ      ʔə      tsə      sɬixʷs  
 work[PFV]=PST=1SG.SBJ              OBL      DET      1SG.POSS      house      OBL      DET      Wed  
 ‘I was working on my house Wednesday.’ [must use imperfective of ‘work’] (Kiyota 2008: 93)

Translations suggesting medial readings arise only in ‘out of the blue’ contexts, when there is no overtly specified or contextually salient reference time.

- (6) qékʷəŋ                      tə              Jack  
 rest[PFV]                      DET              Jack  
 ‘Jack is resting.’ (Kiyota 2008: 31)

Such sentences contain no overt tense. I suggest that in these situations, speakers assume a reference time which is larger than an instant and includes now. I have found in my own fieldwork that tenseless sentences can also be read with the event in the past or immediate future. Speakers must differ with respect to the interval they interpret as the RT when faced with an out of context tenseless sentence.

- (7) a. qékʷəŋ                      b. qékʷəŋ=sən  
 rest[PFV]                      rest[PFV]=1SB.SBJ  
 ‘He took a rest.’              ‘I’m going to rest.’ (FW 2009)

In conclusion, using examples from published sources and from my own fieldwork, I argue that the formula presented in (1) can account for the readings of different predicate types with perfective aspect in SENĆOŦEN. Given that (1) is often assumed for work on perfective across languages, this work provides contributing evidence for the universal nature of the basic aspectual categories.

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## Towards a unified analysis of nominal and sentential tense in Mbyá

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A remarkable feature of the temporal system of Mbyá is the scarcity of tense morphology. Bare verbs are interpreted either in the past or in the present. Two temporal particles *-kue* and *-rã* are attested inside Noun Phrases (NPs) (see Tonhauser 2006, 2007). In addition, *-kue* and *-rã* are attested on nominalized sentential complements and relative clauses, and the complex morphemes *va'ekue* and *va'erã* may be used to express past and future tenses on matrix verbs. In Thomas (To appear), I argued that *-kue* and *-rã* are interpreted as relative past and future tenses in their sentential uses (on nominalized clauses and in matrix clauses). One challenge for this analysis is that there are constraints on the interpretation of *-kue* and *-rã* inside NPs that do not apply to the sentential uses of these particles. For instance (1) licenses the inference that João is not Marco's friend at the utterance time. This property has been dubbed the *change of state property* by Tonhauser (2007). In addition, (1) conveys that Marco's or João were still alive at the time when they stopped being friends. This is what Tonhauser (2007) calls the *existence property*. In these respects, (1) contrasts with (2), which does not have these properties.

- (1) João ma Marco i-rũ-kue  
João TOP Marco B3-friend-KUE  
'João is Marco's former-friend'
- (2) João ma o-iko va'e-kue Marco i-rũ  
João TOP A3-be REL-KUE Marco B3-friend  
'João was Marco's friend'

I argue that these additional inferences are due to the interaction of the semantics of *-kue* and *-rã* with general constraints on the temporal interpretation of NPs. The change of state property arises in (1) because this sentence triggers an obligatory implicature that João is not a friend at the utterance time. Clausal uses of *-kue*/*-rã* trigger this implicature too, but in this case the implicature can be canceled. Explaining why the implicature triggered by the past and future tenses is obligatory inside NPs is the main challenge of this project and will be the focus of this talk. The existence property is derived by assuming that a silent operator is present inside NPs, that conveys that the evaluation time of NPs is a subset of the life time of their individual argument. Crucially, this operator out-scopes the tense *-kue*/*-rã* in its nominal uses, while it occurs in the scope of *-kue* in its clausal uses. The existence property and its absence are predicted as a consequence of these different scope options.

In this talk, I will focus on deriving the change of state property for *-kue*.

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## Nez Perce embedded indexicals

Amy Rose Deal • UC Santa Cruz

An initial inspection of Nez Perce speech/attitude reports seems to reveal a language with a straightforward dichotomy between direct reporting (quotation) and indirect reporting (embedding). Direct report (1a) uses the 1st person as an English quotation would; the indirect version (1b) switches to the 3rd person, just like in a non-quoted complement in English.

- (1) a. *pro* hi-neki-se- $\emptyset$  [ *pro*  $\emptyset$ -wees sayaq'ic cepeeletpit-pe ]  
*pro* 3SUBJ-think-IMPERF-PRES [ *pro* 1SUBJ-be.PRES pretty picture-LOC ]  
 She thinks, "I am pretty in the picture."  
 b. *pro* hi-neki-se- $\emptyset$  [ *pro* **hii**-wes sayaq'ic cepeeletpit-pe ]  
*pro* 3SUBJ-think-IMPERF-PRES [ *pro* 3SUBJ-be.PRES pretty picture-LOC ]  
 She<sub>i</sub> thinks she<sub>i</sub> is pretty in the picture.

The parallels with English break down, however, in two special cases. First is extraction. Ordinary embedded complements in both languages may be extracted from. In Nez Perce alone are attitude complements still readily susceptible to extraction when they contain quotation-like indexicals:

- (2) Isii-ne Angel hi-i-caaqa [ cew'cew'inis-ki *pro* 'e-muu-ce t ]  
 who-OBJ Angel 3SUBJ-say-TAM [ phone-with *pro* **1SUBJ**/3OBJ-call-TAM t ]  
 Who did Angel say she was calling? (lit. Who did Angel<sub>i</sub> say I<sub>i</sub> am calling t? )  
 cf. English: \*Who did Angel say, "I am calling t"?

Second is the distribution of descriptions *de re*. In Nez Perce but not in English, *de re* descriptions are acceptable in clauses like (1a) where the behavior of indexicals suggests quotation. On both counts the Nez Perce facts are similar to those found in otherwise more or less quote-like constructions with indexicals in a variety of unrelated languages, e.g. Amharic (Schlenker 1999), Matses (Munro et al. 2012), Navajo (Speas 2000), Slave (Rice 1986) and Zazaki (Anand and Nevins 2004). This paper is addressed to the Nez Perce instantiation of this phenomenon with the hope of shedding light on the range of possibilities for embedded indexicals cross-linguistically.

Four possible analyses are considered for sentences like (2). A first possibility is that such sentences simply do not contain indexical expressions. Apparent indexicals must instead be analyzed using ordinary descriptive content (cf. Sudo 2010 on 2nd persons in Uyghur). If this is so, we expect that the relevant expressions will be susceptible to modal quantification, just like English descriptions like 'the speaker'. This is not so. Rather, the Nez Perce data replicate perfectly the observations used by Kaplan (1989) to distinguish indexicals from ordinary definite descriptions:

- (3) 1st person  $\neq$  *the speaker*  
 a. # ke mawa Tatlo hi-ciiq-ce- $\emptyset$ , 'iin  $\emptyset$ -wees haama  
 whenever Tatlo 3SUBJ-speak-IMPERF-PRES I 1SUBJ-be.PRES man  
 Consultant (female): "Whenever Tatlo is speaking, I am a man...?"  
 b. ke mawa Tatlo hi-ciiq-tetu- $\emptyset$ , ci $\dot{x}$ new'eet hii-wes haama  
 whenever Tatlo 3SUBJ-speak-HAB.SG-PRES speaker 3SUBJ-be.PRES man  
 Whenever Tatlo speaks, the speaker is a man.

Parallel observations support an indexical analysis of the second person pronoun as well as the locative expression *kine* 'here'. In contrast, temporal expressions *watiisx* and *taqc*, the translation equivalents of 'yesterday/tomorrow' and 'today', are shown not to be indexical by this test.



A second possibility is that sentences like (2) are instances of partial quotation. It is not that the entire attitude report is quoted; only the subject pronoun within it (and perhaps its associated verbal agreement) is within the scope of the quotation operator. This is indeed a grammatical possibility in English, albeit one with heavy pragmatic requirements: *Who did Angel say that "I" was calling?* This analysis predicts a certain grammatical independence on the part of quotation-like indexicals; quotation of one indexical should have no effect on any other indexical. This prediction, too, is false. Rather, like in the Zazaki paradigm discussed by Anand and Nevins (2004), either all person/locative indexicals in a given complement must behave as quoted, or none may.

- (4) Katie hi-hi-ce [ *pro*  $\emptyset$ -neki-se [ 'iin-k'u  $\emptyset$ -wees kine ] ]  
 Katie 3SUBJ-say-TAM [ *pro* [1SUBJ]-think-TAM [ I-too [1SUBJ]-be.PRES here ] ]  
 a. Katie<sub>i</sub> says she<sub>i</sub> thinks she<sub>i</sub> is also here. b. \*Katie<sub>i</sub> says she<sub>i</sub> thinks I<sub>j</sub> am also here.  
 ≈ Katie<sub>i</sub> says "I"<sub>i</sub> think "I"<sub>i</sub> am also here. ≈ Katie<sub>i</sub> says "I"<sub>i</sub> think I<sub>j</sub> am also here.

Parallel facts obtain when the quotation-like indexical is syntactically lower than its non-quotation-like counterpart, and when the two do not stand in a syntactic c-command relationship.

A third possibility is that sentences like (2) involve not quotation but binding of a 1st person pronoun by a higher expression (von Stechow 2003). Facts like (4) should then be derivable from general constraints on binding. Temporal adverbials *watiix* 'yesterday/tomorrow/one day away' and *taqc* 'today/same day', which are bindable but not indexical, provide a test case. It turns out that these expressions are not subject to any constraint similar to that requiring person/locative indexicals within a clause to behave alike in quotation-like behavior. The relationships among embedded indexicals are not reducible to independently motivated constraints on binding.

A fourth and final possibility is that sentences like (2) are instances of context shift, a clause-level phenomenon involving overwriting of contextual parameters (Anand and Nevins 2004). I propose a modification of Anand and Nevins's overwriting mechanism which replaces original contextual coordinates with coordinates (so to speak) of the attitude event. Thus the embedded clause of (2) is interpreted against a context where the agent of the matrix attitude event (namely Angel) serves as the value of the Speaker coordinate. Patterns like (4) follow straightforwardly; all embedded 1st persons depend on a Speaker parameter which is overwritten with the same value.

I conclude with a discussion of the connection between context shifting and attitudes *de se*. In contrast to prior work positing context shifting as a dedicated route to *de se* (e.g. Anand 2006), I show that *de se* requirements on context shifting in Nez Perce are dependent on the type of indexical being shifted. Shifting of first and second person indexicals strongly requires *de se* or *de te* attitudes. Shifting of locative indexicals, on the other hand, imposes no such requirement. Thus (5) is acceptable in a context where a man, visiting a city building, sees a photograph of Bill Clinton, not knowing that the photo was taken right in the very city building where he is standing.

- (5) haama hi-neki-se- $\emptyset$  [ Clinton hi-weeke kine ]  
 man 3SUBJ-think-IMPERF-PRES [ Clinton 3SUBJ-be.PAST here ]  
 The man thinks<sub>j</sub> Clinton was here<sub>j</sub>.

Shifty locative indexicals are expected to occur whenever the location of the matrix attitude event serves as the value of the Location coordinate of the context against which we interpret the embedded clause. No *de se* condition appears in this formulation, and indeed no *de se* condition is supported by the facts. The contrast between locative and person indexicals in this respect suggests that the *de se* requirement on person indexical shifting may be due to independent, person-specific constraints, rather than to mechanisms of context shift in a more general sense.

## Projection and belief in K'ichee': two examples of crosslinguistic semantic variation

Dan Velleman, University of Texas at Austin

This paper presents a study of *projective meaning* — a category which subsumes presuppositions and conventional implicatures [1, 2, 4] — in the Mayan language K'ichee'. The study is based on a set of diagnostics developed by Tonhauser et al. [5], which are meant to be applicable in fieldwork situations in any language.

We find the Tonhauser et al. protocol must be refined in order to be useful in K'ichee'. One of the diagnostics crucially depends on a property of English belief verbs which — we show — K'ichee' lexical belief verbs do not share. Having cleared this methodological hurdle, we present results showing that highly similar projective meaning components may behave quite differently in different languages. Specifically, the additive implication of an additive particle (e.g. of English *also* or K'ichee' *choqe* 'also') behaves differently in K'ichee' than it does in other languages that have been studied so far.

**Classifying projective meaning** The Tonhauser et al. protocol involves the following diagnostics:

- (1) Let  $S$  be a sentence containing an expression  $t$  which triggers the inference that  $\phi$ .
  - a. Do “family of sentences” variants of  $S$ , such as ‘*not S*’, ‘*maybe S*’ or ‘*if S then R*’, also imply  $\phi$ ? If so,  $\phi$  is said to *project*.
  - b. Can  $S$  be uttered in a context where  $\phi$  is not already in the common ground? (That is, can  $\phi$  be informative?) If not,  $\phi$  is said to impose a *contextual felicity constraint (C.F.C.)*.
  - c. If  $S$  is embedded under some operator that creates a local context (such as a propositional attitude predicate), is  $\phi$  contributed to the local or the global context? If the local context,  $\phi$  is said to have a *local effect (L.E.)*.

Tonhauser et al. find four classes of projective content, distinguished by different combinations of the properties given above (Table 1). Interestingly, they find that comparable English and Guaraní projective meaning components always fall into the same class. (See Table 2: for instance, the prejacent of English *only* falls into the same class as the prejacent of Guaraní *-nte* ‘only’; expressive meanings in English fall into the same class as expressive meanings in Guaraní; and so on.)

	<i>Projects?</i>	<i>C.F.C.?</i>	<i>L.E.?</i>	<i>Meaning type</i>	<i>English</i>	<i>Guaraní</i>	<i>K'ichee'</i>
Class A	yes	yes	yes	Existence of referent	A	A	A
Class B	yes			Expressive content	B	B	B
Class C	yes		yes	Prejacent of <i>only</i>	C	C	C
Class D	yes	yes		Additive implication	A	A	C

Table 1: Projective meaning classes

Table 2: Examples of classification across languages

We show that this pattern of close crosslinguistic correspondence is not universal. There are projective meaning components in K'ichee' that do *not* fall into the same class as their English and Guaraní counterparts. One such example is the additive implication of an additive particle (Table 2, final row). The additive implications of English *also* and Guaraní *avei* ‘also’ impose a contextual felicity constraint; the additive implication of K'ichee' *choqe* ‘also’ does not; thus, the K'ichee' additive falls into a different class than the English and Guaraní ones do.

**Belief verbs and the local effect diagnostic** In the course of adapting the diagnostics to K'ichee', we encountered a methodological hurdle which we expect will be of some independent interest. To test whether some meaning component  $m$  of a sentence  $S$ , has its effect locally (c.f. 1c), Tonhauser et al. embed the sentence  $S$  in the frame ‘*X believes that S and that  $\neg m$* ’.

They reason thus: if  $m$  has a local effect, it will be contributed to  $X$ 's belief context, resulting in the claim that  $X$  believes both  $m$  and  $\neg m$ . The result should be either infelicity or the inference that  $X$  is irrational — and this is indeed what we get in English (demonstrated in 2) and Guaraní.

(2) ?John believes that I just quit smoking and that I never used to smoke.

[Bad on the assumption that John is sane and rational.]

This diagnostic exploits a property of the English verb *believe*: speakers take it to refer to *high degrees of belief*, such that no sane person can be said to “believe” both  $m$  and  $\neg m$ . In K'ichee', by contrast, we show that there are no lexical belief predicates with this property. In particular, the verbs *kukojoh* and *kuchomaj*, standardly offered as translations for ‘he thinks’ or ‘he believes,’ may refer to *low but non-zero degrees of belief*, such that a sane person can have the relevant attitude towards two contradictory propositions. Thus, examples such as (3) are judged felicitous.

(3) *Ri nunaan, kukojoh cher xew le a Te'k xb'anowik, e kukojoh cher*  
 the my.mother she.thinks that only the youth Diego he.did.it and she.thinks that  
*xew le a Lu' xb'anowik.*  
 only the youth Pedro he.did.it

“My mother thinks [or ‘is considering the possibility’] that only Diego did it, and thinks that only Pedro did it.”

(My consultants take (3) to describe a situation in which the speaker's mother is entertaining two possibilities or hypotheses, and has not ruled out either one.)

This leaves verbs such as *kukojoh* unsuitable for use in this diagnostic. However, we have found that an idiomatic expression — *kub'ij wih*, literally meaning “he DOES say” but here used to mean “he's certain that” — refers specifically to high degrees of belief and thus has the correct properties for use in the local effect diagnostic. We conclude that, if this diagnostic is to be crosslinguistically valid, it cannot simply be translated into the target language; rather, the diagnostic protocol must include a validation stage in which it is confirmed that the belief predicate being used does indeed refer to a sufficiently high degree of belief.

**Discussion** We have described two points of semantic variation between K'ichee' and better-studied languages. First, we have shown that some K'ichee' presuppositions fail to impose a contextual felicity constraint (C.F.C.) even though their counterparts in English and other well-studied languages do impose one. It is interesting to compare K'ichee' to St'át'imcets, in which Matthewson [3] has claimed that *all* presuppositions fail to impose a C.F.C. We can see K'ichee' as occupying the typological middle ground between St'át'imcets and English on this point.

The second point of variation concerns the meanings of lexical belief verbs. It is a phenomenon of descriptive and theoretical interest in its own right, and deserves further attention in the future; but it also serves as a sort of methodological cautionary tale, showing that a diagnostic cannot simply be translated without carefully checking that its essential properties have been preserved.

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# A scalar account of Mayan positional roots

Robert Henderson

This talk investigates an enigmatic root class in Mayan languages, called *positional* in the descriptive literature, and argues that these roots should receive a scalar semantics. Example (1) presents some instances of positional roots in Kaqchikel, while (2) shows a few of their canonical derivations.

- |                   |   |
|-------------------|---|
| (1) POSITIONALS   | (2) DERIVED POSITIONALS                     |
| a. kōt ‘twisted’  | a. x-kot-e’ ‘It twisted.’                   |
| b. ch’eq ‘wet’    | b. ri ch’eq-ech’ik che’ ‘the very wet tree’ |
| c. sēt ‘circular’ | c. set-ël ‘It’s circular.’                  |

<b>Core Proposal: Positional roots denote measure functions of type <math>\langle e, d \rangle</math> (from individuals to degrees on a scale)</b>
--

After mustering distributional arguments for a degree-based account of positional roots, I then expand the analysis along three routes. First, I show how a series of positional-specific morphological facts can be explained when positional derivations are reanalyzed as degree morphology. Second, given the cross-categorial distribution of scalar items, I show how the analysis lets us understand why positionals are so category neutral: **They lexicalize the scalar core underlying gradable predicates across categories.** Finally, I consider how to integrate derived positionals into clause-level degree constructions like the comparative. All along the way there will be tension between giving positionals a scalar semantics and preventing them from collapsing on bona fide root adjectives. This will open up a way to think about different sources of gradability.



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