

# Deriving the force and flavor of insubordinate clauses in Aleut

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## 1 Overview

### 1.1 Outline

**Cinque's Puzzle:** Syntax and modal flavor are connected. Is this due to syntactic material above or below the modal?

Western (Atkan) Aleut optative clauses. . .

- Are syntactically dependent/small
- Are exclusively associated with root modality
- Can represent directives and wishes in unembedded contexts

Syntactic structure, modal flavor, and sentential force are connected. **Characteristics of optative clauses themselves constrain modality.**

- Optative clauses occur on their own (in “insubordinate” constructions), where they have root modal interpretations.

(1) Chiŋta-aŋ-t!  
rain-**OPT**-2/3  
'Rain! (That it would rain!).'

- Optative clauses determine the interpretation of certain semantically underspecified predicates like *anuxta*- 'think/want/hope/wonder'

(2) Chiŋta-aŋ-t anuxtakuq.  
rain-**OPT**-2/3 I.think/want/hope/wonder  
'I **want** it to rain.'

I will sketch my analysis in **situation semantics**—specifically inspired by Portner (1997), Ramchand (2018), Ramchand & Svenonius (2014), and Wurmbrand and Lohninger (2023).

### 1.2 A note on data

Unless otherwise noted, all data is from my original elicitation with 8 native speakers of Western (Atkan) Aleut. The elicitation sessions occurred in Anchorage, Alaska between 2025–2026.

## 2 Past analyses of Cinque's Puzzle

Standard Kratzerian analysis of modal auxiliaries (e.g., Kratzer 1981):

- (3) Theodore **must** be home.
- a. *Epistemic reading:* **For all worlds** compatible with evidence, Theodore is at home
  - b. *Deontic reading:* **For all worlds** compatible with the rules, Theodore is at home

∴ *must* can have a unified analysis.

However, epistemic modals systematically show traits of being structurally higher than root modals. E.g.:

- (4) Theodore **must have to** watch TV.  
(adapted from Hacquard 2010:1496)
- a. Epistemic > root
  - b. \*Root > epistemic

### Cinque's Puzzle

Root modals differ syntactically from epistemic modals (Hacquard 2010).

Why would this be? (see Grano (to appear) for discussion)

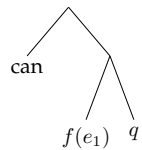
- Syntactic material above the modal constricts modal flavor (Hacquard 2010)
- Characteristics of the complement to the modal constrict modal flavor (Ramchand 2018)

## 2.1 Hacquard's analysis: "Looking up"

Assumptions:

- Modals are event-relative (rather than world-relative); e.g.:

(5) *Argument for modal base f is an event:*



(from Hacquard 2011:34, ex. (42b))

(6)  $\llbracket \text{can} \rrbracket = \lambda f_{\langle e, stt \rangle} . \lambda g_{\langle e, stt \rangle} . \lambda q_{st} . \lambda e . \exists w' \in \max_{g(e)} (\bigcap f(e)) : q(w') = 1$

(from Hacquard 2010:95, ex. (29b))

- Epistemicity requires an event associated with propositional content

The event is either bound by Asp (VP event), an embedding attitude event, or a speech act operator *ASSERT* (speech act event).

- Bound by Asp → VP not associated with propositional content → must be a root modal
- Bound by embedding attitude → attitude event has propositional content → epistemic modal possible
- Bound by *ASSERT* → speech event has propositional content → epistemic modal possible

Example with attitude verb:

(7)  $\llbracket \text{believe} \rrbracket = \lambda e . \lambda p . \lambda x . \lambda w . \text{Exp}(e, x) \wedge \text{belief}'(e, w) \wedge \forall w' \in \bigcap \text{CON}(e) : p(w') = 1$  where  $\bigcap \text{CON}(e) = \text{DOX}(\iota x \text{Exp}(e, x), w)$

→  $\text{CON}(e)$  is the content of the belief event

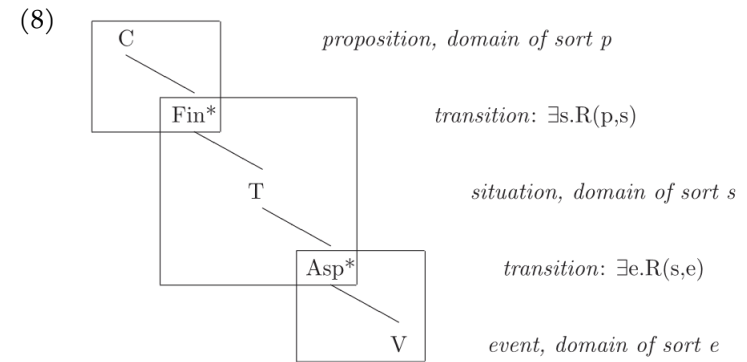
→ Because belief events have content, they can be associated with epistemicity

## Hacquard's (2010) view of modals

Modal interpretation is constrained by material above the modal (what Grano (to appear) calls "looking up the tree")

## 2.2 Ramchand's analysis: "Looking down"

3 layers of a clause:



(from Ramchand and Svenonius 2014:164, ex. (35))

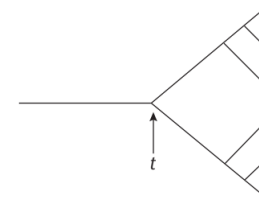
The complement to a modal is compared against alternatives of the same semantic type. **The size of a modal's complement determines its alternatives and ∴ interpretation:**

- Smaller than Asp → alternatives have no spatiotemporal information → circumstantial modality unrelated to actual event instantiations

(9) Hydrangeas can grow here.  
*not reliant on actual growing events*

- Smaller than Fin (or T) → represents a situation that's a live alternative for a reference situation → metaphysical<sup>1</sup> modal base and root modality

(10) *Branching time model for a metaphysical modal base:*



<sup>1</sup>I use Condoravdi's (2002) and Ramchand's (2018) term for this type of modal base, which is elsewhere called a historical modal base.

(from Portner 2009:233, fig. 5.1)

- Bigger than Fin (or T) → linked to a context (an information state) → can be true/false w.r.t. a context, epistemic

Example with two interpretations of *might*:

- (11)  $\llbracket \text{might} \rrbracket^{g,c} = \lambda s_r. \lambda P. \exists s_{e,t,w} [P(s) = 1 \wedge s \text{ is a CHOICE at } s_r \text{ in } c]^2$
- Root case*: Alternatives for  $s$  are unanchored in  $c$  → alternatives range across different future times and worlds
  - Epistemic case*: Alternatives for  $s$  have settled time/world parameters in  $c$  → polar alternatives (T/F w.r.t.  $c$ )

(adapted from Ramchand 2014:116, ex. (21))

#### Ramchand's (2018) view of modals

Modal interpretation is constrained by material below the modal (what Grano (to appear) calls “looking down the tree”)

### 2.3 What do attitude verbs have to say about this?

Other notable arguments for complement clauses themselves restricting modality/attitude: Moulton (2009), Bogal-Allbritten (2016, 2017), Grano and Lu (2021), Grano (2022, 2026).

Similar ideas arise in Portner (1997): Why does *think* take finite complements and *want* take nonfinite complements?

- Situations as “spatiotemporal parts of possible worlds”
- *Think*-type attitude verbs. . .
  - Involve modal bases that must be composed of whole worlds (like doxastic states)
  - Nonfinite complements involve forward-looking situations, ∴ cannot embed under *think*-type verbs
- *Want*-type attitude verbs. . .
  - Contain dispositions or plans to do something in the future (that is, situations, not full worlds)

<sup>2</sup>Ramchand posits the primitive notion of CHOICE rather than using the standard quantification over possible worlds analysis.

- Nonfinite complements involving forward-looking situations ∴ can embed under *want*-type verbs

- A simplified semantics for *want* and *believe*

(12)  $\llbracket \text{want}_{\alpha,b} \rrbracket =$  the set of **situations** which  $\alpha$  believes would realize his desires in belief state  $b$

(13)  $\llbracket \text{believe}_{\alpha} \rrbracket =$  the set of **whole worlds** which  $\alpha$  believes

#### An idea from Portner (1997)

Epistemicity and information states are connected to full worlds; dispositions, desires, and plans can be connected to situations.

## 3 Characteristics of Aleut optative clauses

### 3.1 Quick background on Aleut moods

Western Aleut is a head-final, polysynthetic language in the Inuit-Yupik-Aleut family.

Each Aleut clause is marked by 1 of (possibly) 11 different suffixal mood markers.

(14) *Sample moods from Aleut with 1.sg awa- ‘work’:*

|            |      |                                                          |
|------------|------|----------------------------------------------------------|
| proximal   | PROX | awa- <b>ku</b> -q<br>≈ ‘I am working’                    |
| remote     | REM  | awa- <b>na</b> -q<br>≈ ‘I worked (yesterday or earlier)’ |
| optative   | OPT  | awa- <b>a</b> -q<br>≈ ‘me to work’                       |
| dubitative | DUB  | awa- <b>ǎtaa</b> -ng<br>≈ ‘if I am working’             |
| ...        |      |                                                          |

- Clause types (as defined by mood markers) might occur embedded, as matrix clauses, or both
- Embedding predicates may select for certain clause types, but not others
- Clause types exhibit a scale of finiteness

Two embedded clause examples:

(15) *PROX clause:*

[ Sla-chxiiza-**x̂ta-ku-x̂** ] uku $\hat{x}$ ta-ku- $\hat{x}$ .  
weather-nice-be.apparently-**PROX**-sg see-PROX-sg

‘He sees [ that there’s nice weather ].’

(16) *OPT clause:*

[ Chi $\hat{x}$ ta-**a $\hat{x}$ -t** ] ala-ku-q.  
rain-**OPT**-2/3 want-PROX-1

‘I want [ it to rain ].’

#### Overview of OPT data

- OPT clauses are syntactically small
- OPT clauses are connected to futurity and root modality
- Characteristics of OPT itself result in root modality

## 3.2 Syntactic characteristics

Future and past tense-related auxiliaries cannot occur under OPT clauses (unlike, e.g., participial ‘PART’ clauses).

(17) *OPT clause:*

\* Ayaga $\hat{x}$  [ ugiin chagi $\hat{x}$  atxaza-**a $\hat{x}$ ta-a $\hat{x}$ -t** ]  
woman her.husband halibut catch-**PST.AUX**-OPT-2/3  
ala-ku- $\hat{x}$ .  
want-PROX-sg

Intended: ‘The woman wants [ her husband to have caught halibut ].’

(18) *PART clause:*

[ Hlaam ixchi-**i $\hat{x}$ ta-na-a** ] hi $\hat{x}$ saasa-ku- $\hat{x}$ .  
his.son come.home-**PST.AUX-PART**-sg/sq understand-PROX-sg  
‘He understands [ his son came home ].’

NPIs can be licensed across an OPT clause boundary (but not across, e.g., a PROX clause boundary).

(19) *Embedded OPT clause:*

[ Uging luka $\hat{x}$  **tachim** zari-qali-i $\hat{x}$ -t ] ala-**laka-q**.  
my.husband onion **yet** fry-start-**OPT**-2/3 want-**NEG.PROX**-1  
‘I **don’t** want [ my husband to **yet** fry the onion ].’

(20) *Embedded PROX clause:*

\* Duuxtura $\hat{x}$  [ Fiidur **tachim** haadati-**ku-x̂** ] hi $\hat{x}$ ta-**laka-x̂**.  
doctor F. **yet** get.better-**PROX**-sg say-**NEG.PROX**-sg  
Intended: ‘The doctor **doesn’t** say [ Theodore is **yet** getting better ].’

Extraction can occur across an OPT clause boundary (unlike, e.g., a REM clause boundary):

(21) *Embedded OPT clause:*

- a. [ Theodore **Nii $\hat{g}$ u $\hat{g}$ im Tunuu** hi $\hat{x}$ saasa-**a $\hat{x}$ -t** ]  
T. **Atkan** **language** understand-**OPT**-2/3  
ala-ku-q.  
want-PROX-1  
‘I want [ Theodore to understand **Atkan Aleut** ].’
- b. [ Uging ila $\hat{x}$ tii \_\_ hi $\hat{x}$ saasa-ma-**a $\hat{x}$ -t** ]  
my.husband also understand-also-**OPT**-2/3  
ala-ku-**ng**.  
want-PROX-1.SBJ.sg/**OBJ.sg**  
‘I want [ my husband to learn **it** too ].’

(22) *Embedded REM clause:*

- a. Ivaana $\hat{x}$  [ hlaam **qa $\hat{x}$**  atxaza-**na-x̂** ] anuxta-ku- $\hat{x}$ .  
I. his.son **fish** catch-**REM**-sg think-PROX-sg  
‘Ivan thinks his own son caught the fish.’
- b. ?? Ivaana $\hat{x}$  [ hlaam \_\_ atxaza-**qa-a** ]  
I. his.son catch-**REM**-sg/sq  
anuxta-ku-**u**.  
think-PROX-3.SBJ.sg/**OBJ.sg**  
Intended: ‘Ivan thinks [ his own son caught **it** ].’

#### Conclusions

OPT clauses are syntactically nonfinite.

## 3.3 Semantic characteristics

OPT clauses are inherently **future-oriented** with respect to the matrix predicate.

(23) *Future-oriented:*

Ayagaŋ [ ugiim          plitaŋ Subuutam aslaa uŋi-iŋ-t ]  
 woman her.husband stove Saturday on turn.off-**OPT**-2/3  
 ala-ku-ŋ.  
 want-**PROX**-sg

‘The woman wants [ her husband to turn off the stove on Saturday ].’  
*Cannot mean:* ‘The woman wants [ her husband to have turned off the stove on Saturday ].’

(24) *Refers to future with respect to the matrix clause:*

[ Tiğlas sayu-uŋ-t ] ala-na-q.  
 Eagles win-**OPT**-2/3 want-**REM**-1

*After the game:* ‘I wanted [ the Eagles to win ].’

**OPT** clauses are only embeddable under predicates associated with future-oriented preference.

|      |             |                                         |
|------|-------------|-----------------------------------------|
| (25) | <b>OPT</b>  | ‘want’, ‘tell (command)’, ‘beg’, ‘fear’ |
|      | <b>CONJ</b> | ‘think’, ‘say’, ‘believe’               |
|      | <b>PART</b> | ‘know’, ‘see’, ‘understand’             |
|      | ...         | ...                                     |

Epistemic ‘probably’ cannot occur in **OPT** clauses (but can in, e.g., **CONJ** clauses).

(26) ‘Probably’ in **OPT** clause:

\* [ Slati-**musu**-uŋ-t ] iğata-ku-ŋ.  
 get.stormy-probably-**OPT**-2/3 fear-**PROX**-sg  
 Intended: ‘I fear it will probably start storming.’

(27) ‘Probably’ in **CONJ** clause:

[ Slati-**musu**-uği-l ] anuxtakuŋ.  
 get.stormy-probably-FUT.AUX-**CONJ** thinks  
 ‘He thinks [ it will probably start storming ].’

#### Conclusions

**OPT** clauses future-oriented and connected to root modality.

Thus far, this is not cross-linguistically unexpected.

## 4 Optative clauses contribute root modality

### 4.1 Insubordinated optative clauses

Despite being nonfinite, **OPT** clauses can occur as matrix clauses—“insubordinate” constructions (Evans 2007).

(28) *Representing a wish:*

Chiŋta-aŋ-t!  
 rain-**OPT**-2/3

‘Rain!’ (‘That it would rain!’)

(29) *Representing a strong command:*

Unguchi-iŋ-t.  
 sit-**OPT**-2/3

‘Sit down.’ (rude to say to an elder)

Insubordinate **OPT** clauses only have **wish/directive** use; they cannot be used as epistemic assertions.

#### Conclusions

**OPT** clauses represent root modality even without an embedding predicate present.

### 4.2 Ambiguous embedding predicates

Embedding predicates like *anuxta-* can mean ‘think’, ‘want’, ‘hope’, and possibly ‘wonder’, **depending on the type of complement clause they combine with.**

(30) *Embedded CONJ:*

Ayagaŋ [ slachxiizaŋ malga-l ] anuxta-ku-ŋ.  
 woman nice.weather be.there-**CONJ** ANUXTA-**PROX**-sg

‘The woman **thinks** [ there is good weather ].’

(31) *Embedded GEN + -Vka:*

[ Chiŋta-**aka**-Ø-ŋ ] anuxta-ku-q.  
 rain-**can**-**GEN**-sg ANUXTA-**PROX**-1

‘I **hope** [ it rains ].’

(32) *For some speakers, embedded DUB:*

Ayagaŋ [ aniqdut chaŋsaŋ qa-aŋta-a ] anuxta-ku-ŋ.  
woman her.children soup eat-DUB-SG ANUXTA-PROX-SG

‘The woman **wonders** [ if her children are eating the soup ].’

(33) *Embedded OPT:*

[ Chiŋta-aŋ-t ] anuxta-ku-q.  
rain-OPT-2/3 ANUXTA-PROX-1

‘I **want** [ it to rain ].’

Similar ambiguous predicates exist in Mandarin (*xiang* ‘think/want’; Grano and Lu 2021) and Navajo (*nizín* ‘think/want’; Bogal-Allbritten 2016).

### Conclusion

The embedded OPT clause, rather than the embedding predicate, is restricting the modal interpretation.

## 5 Analysis

### 5.1 Assumptions

I will assume that there are 3 layers of clause connected to 3 syntactic zones (Ramchand & Svenonius 2014, Ramchand 2018, Wurmbrand and Lohninger 2023).

- Event zone: below Asp
- Situation zone: between Asp and T (existentially closed event)
- Proposition zone
  - Above T (existentially closed situation), defined as anchored to a context and able to be T/F w.r.t. that context
  - I will translate Ramchand’s analysis to a possible worlds analysis: contexts are composed of worlds; propositions are sets of worlds
  - Situations as pieces of worlds (with the maximal situation being a full world)

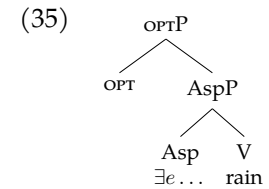
I will also assume that utterances can be added to 1 of 3 discourse components, which are composed of objects of different semantic types (see, e.g., Portner 1997, 2004, 2007, 2012; Charlow 2014; Starr 2020; Biezma 2025).

- Common ground: composed of worlds
- Question set: composed of sets of worlds
- Preference set: composed of sets of situations

### 5.2 Denotation of OPT

Assuming the following structure:

(34) chiŋta-aŋ-t  
rain-OPT-2/3  
‘rain-OPT’



Asp results in event closure.

(36)  $\llbracket \text{AspP} \rrbracket = \lambda s. \exists e [ \text{rain}(e) = 1 \wedge e \text{ in } s ]$

OPT contributes **future-orientedness**. In Ramchand’s framework, it is a **live situational alternative (s) from the perspective of a reference situation (s<sub>r</sub>)**.<sup>3</sup>

(37)  $\llbracket \text{OPT} \rrbracket = \lambda P_{vt}. \lambda s_r. \lambda s. P(s) = 1 \wedge \tau(s_r) \prec \tau(s)$

(38)  $\llbracket \text{OPTP} \rrbracket = \lambda s_r. \lambda s. \exists e [ \text{rain}(e) = 1 \wedge e \text{ in } s ] \wedge \tau(s_r) \prec \tau(s)$   
“the set of situations containing a raining event that succeed a reference situation s<sub>r</sub>”

Attitude verbs such as *ala-* ‘want’, *iŋata-* ‘fear’, etc. take the optative clause as an argument as usual.

(39)  $\llbracket \text{ala-} \rrbracket = \lambda P_{(v,vt)}. \lambda s_r. \lambda w. \forall s [ s \in \text{DES}(s_r)(w) \rightarrow P(s_r)(s) = 1 ]$   
“true iff all the desired situations s at s<sub>r</sub> in w have a P-relation to s<sub>r</sub>”

(40)  $\llbracket \text{OPTP ala-} \rrbracket = \lambda s_r. \lambda w. \forall s [ s \in \text{DES}(s_r)(w) \rightarrow \exists e [ \text{rain}(e) = 1 \wedge e \text{ in } s ] \wedge \tau(s_r) \prec \tau(s) ]$   
“true iff every desired situation s at s<sub>r</sub> in w contains a raining event and succeeds s<sub>r</sub>”

OPT results in a future-oriented reading that cannot be true of an informational context → it can only occur under preferential predicates.

Contrast with, e.g., Aleut PART, which correlates with epistemicity:

<sup>3</sup>I use *v* to represent the semantic type of situations.

- (41) [ Hlaam ixchi-iḡta-na-a ] hiḡsaasa-ku-ḡ.  
 his.son come.home-PST.AUX-PART-SG/SG  
 ‘He understands [ his son came home ].’

PART **existentially closes the topic situation description** and represents a set of worlds that **can be true of a context** (an information state).

- (42)  $\llbracket \text{PART} \rrbracket = \lambda P_{vt} . \lambda s_r . \lambda w . \exists s [ P(s) = 1 \wedge \tau(s) = \tau(s_r) \wedge s \text{ in } w ]$   
 “there is a situation  $s$  which is a  $P$ -situation, occurs at the time of reference situation  $s_r$ , and is in  $w$ ”<sup>4</sup>

“Representational” attitude verbs like *hiḡsaasa-* ‘understand’ involve quantifying over information states composed of worlds (such as doxastic states; Anand and Hacquard 2013) → they must take world-descriptions

#### Summary

- Predicates involving metaphysical alternatives are only compatible with future-oriented OPT clauses
- Predicates involving information states (Ramchand’s “contexts”) are only compatible with clauses that can be true of an information state (e.g., PART clauses)

### 5.3 OPT insubordinated

Recall the denotation for an OPTP (reproduced from (38)):

- (43)  $\llbracket \text{OPTP} \rrbracket = \lambda s_r . \lambda s . \exists e [ \text{rain}(e) = 1 \wedge e \text{ in } s ] \wedge \tau(s_r) \prec \tau(s)$

When OPTP is uttered on its own, the utterance situation itself saturates the  $s_r$  argument.

- (44)  $\lambda s . \exists e [ \text{rain}(e) = 1 \wedge e \text{ in } s ] \wedge \tau(s_{\text{UT}}) \prec \tau(s)$   
 “the set of situations containing raining events that succeed the utterance situation”

(44) is **non-representational**: That is, it is **non-truth-apt**, or not T/F of a world. It cannot be included in the common ground because it is not propositional (it cannot be T/F w.r.t. a context).

→ Cannot be an epistemic assertion

→ Instead, they are added to the preference set and are interpreted as directives/wishes

- (45)  $\llbracket (44) \rrbracket \cup \text{PREF}$

<sup>4</sup>PART also has a presuppositional component, which I do not address here.

### 5.4 Embedding OPT under ambiguous attitude predicates

Underspecified attitude predicates are similar to modal auxiliaries in that they are underspecified for modal base.

- (46)  $\llbracket \text{anuxta-} \rrbracket = \lambda P_{\langle v, vt \rangle} . \lambda f . \lambda s_r . \lambda w . \forall s [ s \in f(s_r)(w) \rightarrow P(s_r)(s) = 1 ]$   
 (same as (39), but with unspecified modal base)
- (47)  $f$  might be . . .
- $\llbracket \emptyset_{\text{DES}} \rrbracket$  composed of desired future situations at  $s_r$  in  $w$   
 → only compatible with OPT  
 → OPTPs under *anuxta-* are interpreted as ‘want’
  - $\llbracket \emptyset_{\text{DOX}} \rrbracket$  composed of believed worlds at  $s_r$  in  $w$   
 → only compatible with CONJ  
 → CONJPs under *anuxta-* are interpreted as ‘think’

## 6 Conclusions and looking forward

### 6.1 Summary

- OPT clauses have unique (dependent) syntactic properties that are connected to their unique, situation-level semantics
- Being situation-level limits OPT clauses to root modal interpretations
- Thus, despite being syntactically dependent, they can occur independently as matrix clauses and under underspecified embedding predicates, contributing root modal flavor

### 6.2 Broader patterns in Aleut

In general, clauses in Aleut showing greater structural dependence can never represent assertions:

- (48) *Relation between a clause type’s syntactic dependence and its illocutionary force in Aleut:*

|                  |      |                         |
|------------------|------|-------------------------|
| more independent | PROX | assertion               |
|                  | REM  | assertion, question     |
|                  | PART | NA (no independent use) |
|                  | CONJ | question                |
| more dependent   | OPT  | strong command          |

This is confirmed cross-linguistically by Evans (2007): **Insubordinate clauses (nonfinite clauses that appear in matrix contexts) do not represent epistemic assertions.**



This is explicable through a Ramchandian framework:

**Syntactic size correlates with semantic domain → semantic domain restricts possible sentential force**

- Large clauses correlate with epistemicity and assertion
- Small clauses correlate with root modality and non-assertion

*More clauses to be explored. . .*

## References

- Anand, P., & Hacquard, V. (2013). Epistemics and attitudes. *Semantics & Pragmatics*, 6, 1–59.
- Biezma, M. (2025). Insubordinated *if*-clauses as discourse subordination. *Natural Language Semantics*, 33, 43–81.
- Bogal-Allbritten, E. (2017). Basic pieces, complex meanings: Building attitudes in Navajo and beyond [Presented at “Information Structuring and Discourse” workshop at the Thirty-ninth Annual Conference of ‘Deutsche Gesellschaft für Sprachwissenschaft’].
- Bogal-Allbritten, E. A. (2016). *Building Meaning in Navajo* [Doctoral dissertation, University of Massachusetts Amherst].
- Charlow, N. (2014). Logic and semantics for imperatives. *Journal of Philosophical Logic*, 43(4), 617–664.
- Condoravdi, C. (2002). Temporal interpretation of modals: Modals for the present and for the past. In D. Beaver, S. Kaufmann, B. Clark, & L. Casillas (Eds.), *The Construction of Meaning* (pp. 59–88). CSLI Publications.
- Evans, N. (2007). Insubordination and its uses. In I. Nikolaeva (Ed.), *Finiteness* (pp. 366–431). Oxford University Press.
- Grano, T. (2022). Enough clauses, (non)finiteness, and modality. *Natural Language Semantics*, 30, 115–153.
- Grano, T. (2026). Modal flavor and finiteness in the grammar of *possible* (and possibly beyond) [ms., Indiana University at Bloomington].
- Grano, T. (to appear). Modal flavor-syntax interactions. In A. Arregui, V. Hacquard, & M. Ippolito (Eds.), *The Cambridge Handbook of Natural Language Modality*. Cambridge University Press.
- Grano, T., & Lu, C. (2021). Mandarin *xiang* and the architecture of attitude reports [Presented at the Linguistic Society of America 2021 Annual Meeting].
- Hacquard, V. (2010). On the event relativity of modal auxiliaries. *Natural Language Semantics*, 18, 79–114.
- Hacquard, V. (2011). Modality. In C. Maienborn, K. von Stechow, & P. Portner (Eds.), *Semantics: An international handbook of natural language meaning* (pp. 1484–1515). Mouton de Gruyter.
- Kratzer, A. (1981). The notional category of modality. In H. J. Eikmeyer & H. Rieser (Eds.), *Words, Worlds, and Contexts* (pp. 38–74). de Gruyter.
- Moulton, K. (2009). *Natural Selection and the Syntax of Clausal Complementation* [Doctoral dissertation, University of Massachusetts Amherst].
- Portner, P. (1997). The semantics of mood, complementation, and conversational force. *Natural Language Semantics*, 5, 167–212.
- Portner, P. (2004). The semantics of imperatives within a theory of clause types. In R. B. Young (Ed.), *Proceedings of the 14<sup>th</sup> Semantics and Linguistic Theory Conference* (pp. 235–252). Linguistic Society of America.
- Portner, P. (2007). Imperatives and modals. *Natural Language Semantics*, 15, 351–383.
- Portner, P. (2009). *Modality*. Oxford University Press.
- Portner, P. (2012). Permission and choice. In G. Grewendorf & T. E. Zimmermann (Eds.), *Discourse and Grammar: From sentence types to lexical categories*. Mouton de Gruyter.
- Ramchand, G. (2014). Stativity and present tense epistemics. In T. Snider, S. D’Antonio, & M. Weigand (Eds.), *Proceedings of the 24<sup>th</sup> Semantics and Linguistic Theory Conference*. Linguistic Society of America.
- Ramchand, G., & Svenonius, P. (2014). Deriving the functional hierarchy. *Language Sciences*, 46, 152–174.
- Ramchand, G. C. (2018). *Situations and Syntactic Structures: Rethinking auxiliaries and order in English*. MIT Press.
- Starr, W. B. (2020). A preference semantics for imperatives. *Semantics & Pragmatics*, 13, 1–60.
- Wurmbrand, S., & Lohninger, M. (2023). An implicational universal in complementation: Theoretical insights and empirical progress. In J. M. Hartmann & A. Wöllstein (Eds.), *Propositionale Argumente im Sprachvergleich: Theorie und Empirie/propositional Arguments in Cross-linguistic research: Theoretical and empirical issues* (pp. 183–229). Narr Francke Attempto.