

Composing *find*

Jéssica Mendes * Caleb Kendrick

September 18, 2025

DGfS Annual Meeting 2024 * Bochum, Germany



Introduction

The project

The project

Subjective attitude verbs (SAVs) (*find*-verbs) and vanilla doxastic verbs (*think*-verbs) differ in at least three ways:

The project

Subjective attitude verbs (SAVs) (*find*-verbs) and vanilla doxastic verbs (*think*-verbs) differ in at least three ways:

(1) Acquaintance requirement

- a. I **find** this pizza tasty. $\leadsto$ you've tried that pizza
- b. I **think** this pizza is tasty. $\nrightarrow$ you've tried that pizza

The project

Subjective attitude verbs (SAVs) (*find*-verbs) and vanilla doxastic verbs (*think*-verbs) differ in at least three ways:

(1) Acquaintance requirement

- a. I **find** this pizza tasty. ↷ you've tried that pizza
- b. I **think** this pizza is tasty. ↷ you've tried that pizza

(2) Selectional restrictions

- a. #I **find** John 6-feet-tall.
 - b. I **think** John is 6-feet-tall.
- (3)
- a. I **find** John tall.
 - b. I **think** John is tall.

The project

Subjective attitude verbs (SAVs) (*find*-verbs) and vanilla doxastic verbs (*think*-verbs) differ in at least three ways:

(1) Acquaintance requirement

- a. I **find** this pizza tasty. $\leadsto$ you've tried that pizza
- b. I **think** this pizza is tasty. $\nrightarrow$ you've tried that pizza

(2) Selectional restrictions

- a. #I **find** John 6-feet-tall.
 - b. I **think** John is 6-feet-tall.
- (3)
- a. I **find** John tall.
 - b. I **think** John is tall.

(4) Syntax

- a. John **finds** [_{SC} this pizza tasty].
- b. John **thinks** [_{CP} this pizza is tasty].

The project

	<i>find</i> -verbs	<i>think</i> -verbs
selection	only subjective predicates	no restrictions
acquaintance	don't obviate the AI	obviate the AI
syntax	SC	CP

Table 1: Differences between *find*-verbs and *think*-verbs.

The project

These facts invite two hypotheses:

- * H1: The meaning of *find* imposes constraints on the kind of clause it combines with.

The project

These facts invite two hypotheses:

- * H1: The meaning of *find* imposes constraints on the kind of clause it combines with.
- * H2: The meaning of *find* arises (at least partly) in virtue of the kind of clause it combines with.

Our contribution

We will argue for H2 (the meaning of *find* arises in part because of the clause it combines with), based on data from Brazilian Portuguese (BrP).

- * *achar* + SC = *find*
- * *achar* + CP = *think / guess / believe*

Our contribution

We will argue for H2 (the meaning of *find* arises in part because of the clause it combines with), based on data from Brazilian Portuguese (BrP).

- * *achar* + SC = *find*
- * *achar* + CP = *think / guess / believe*

(5) Eu **acho** [_{SC} essa pizza gostosa], #mas eu nunca provei ela.

I ACHO this pizza tasty , #but I've never tried it

'I **find** this pizza tasty, #but I've never tried it.'

(6) Eu **acho** [_{CP} que essa pizza é gostosa], mas eu nunca provei ela.

I ACHO that this pizza is tasty , but I've never tried it

'I **think** this pizza is tasty, but I've never tried it.'

Our contribution

We will argue for H2 (the meaning of *find* arises in part because of the clause it combines with), based on data from Brazilian Portuguese (BrP).

- * *achar* + SC = *find*
- * *achar* + CP = *think / guess / believe*

(5) Eu **acho** [SC essa pizza gostosa], #mas eu nunca provei ela.
I ACHO this pizza tasty , #but I've never tried it
'I **find** this pizza tasty, #but I've never tried it.'

(6) Eu **acho** [CP que essa pizza é gostosa], mas eu nunca provei ela.
I ACHO that this pizza is tasty , but I've never tried it
'I **think** this pizza is tasty, but I've never tried it.'

- * **Caveat** We will focus on the relationship between syntax and the acquaintance requirement, staying (mostly) neutral on how the selectional restriction of *find*-verbs should be encoded.

Roadmap

1. Introduction
2. Background
 - 2.1 The Acquaintance Inference (AI)
 - 2.2 The syntax of *find*-verbs
3. BrP Data
4. Proposal
 - 4.1 The bigger picture
 - 4.2 Compositional fragments
 - 4.3 Deriving AI via transparency plus lexical semantics
 - 4.4 Negation: A potential worry
 - 4.5 Preventing overgeneration
5. Conclusion
 - 5.1 Summary
 - 5.2 To-do list

Background

The Acquaintance Inference (AI)

The Acquaintance Inference (AI)

Predicates of Personal Taste (PPTs), like *tasty* and *fun*, imply first-hand experience of the right kind.

(7) This pizza is tasty.

↷ the speaker has tried that pizza

The Acquaintance Inference (AI)

Predicates of Personal Taste (PPTs), like *tasty* and *fun*, imply first-hand experience of the right kind.

(7) This pizza is tasty. $\leadsto$ the speaker has tried that pizza

In some ways, the AI behaves like a **presupposition**: it's not cancellable, and it 'projects' through negation:

The Acquaintance Inference (AI)

Predicates of Personal Taste (PPTs), like *tasty* and *fun*, imply first-hand experience of the right kind.

- (7) This pizza is tasty. $\leadsto$ the speaker has tried that pizza

In some ways, the AI behaves like a **presupposition**: it's not cancellable, and it 'projects' through negation:

- (8) a. This pizza is tasty, #too bad I've never tried it.
John might be smoking again, #but actually, he had never smoked before.
- b. This pizza is **not** tasty. $\leadsto$ the speaker has tried that pizza
It is not true that John is smoking again. $\leadsto$ John smoked before

The Acquaintance Inference (AI)

Predicates of Personal Taste (PPTs), like *tasty* and *fun*, imply first-hand experience of the right kind.

(9) This pizza is tasty.

↷ the speaker has tried that pizza

The Acquaintance Inference (AI)

Predicates of Personal Taste (PPTs), like *tasty* and *fun*, imply first-hand experience of the right kind.

- (9) This pizza is tasty. $\leadsto$ the speaker has tried that pizza

In other ways, the AI does **not** behave like a presupposition: it does not ‘project’ through modals, opaque attitude verbs, and questions:

The Acquaintance Inference (AI)

Predicates of Personal Taste (PPTs), like *tasty* and *fun*, imply first-hand experience of the right kind.

- (9) This pizza is tasty. $\leadsto$ the speaker has tried that pizza

In other ways, the AI does **not** behave like a presupposition: it does not ‘project’ through modals, opaque attitude verbs, and questions:

- (10) a. This pizza **might** be tasty. $\nrightarrow$ the speaker tried the pizza
b. John **might** be smoking again. $\leadsto$ John smoked before
- (11) a. I **believe** the pizza is tasty $\nrightarrow$ the speaker tried the pizza
b. I **believe** John is smoking again. $\leadsto$ John smoked before
- (12) a. Is this pizza tasty? $\nrightarrow$ the speaker tried the pizza
b. Is John smoking again? $\leadsto$ John smoked before

The syntax of *find*-verbs

The syntax of *find*-verbs

So far, we've talked about the compositional differences between *find*-verbs and other doxastics in terms of the SC vs. CP distinction. But there are languages in which a *find*-verb may combine with a CP, and languages in which it must:

The syntax of *find*-verbs

So far, we've talked about the compositional differences between *find*-verbs and other doxastics in terms of the SC vs. CP distinction. But there are languages in which a *find*-verb may combine with a CP, and languages in which it must:

(13) %I **find** [_{CP} that this pizza is tasty].

The syntax of *find*-verbs

So far, we've talked about the compositional differences between *find*-verbs and other doxastics in terms of the SC vs. CP distinction. But there are languages in which a *find*-verb may combine with a CP, and languages in which it must:

(13) %I **find** [_{CP} that this pizza is tasty].

(14) Magda **synes** [_{CP} at kjempesequoiatre er et elegant tre].

Magda **finds** that giant sequoia is INDF elegant tree

'Magda **finds** that the giant sequoia is an elegant tree.'

Norwegian [= (2) in (Anand and Korotkova, 2018)]

The syntax of *find*-verbs

So far, we've talked about the compositional differences between *find*-verbs and other doxastics in terms of the SC vs. CP distinction. But there are languages in which a *find*-verb may combine with a CP, and languages in which it must:

(13) %I **find** [_{CP} that this pizza is tasty].

(14) Magda **synes** [_{CP} at kjempesequoiatre er et elegant tre].

Magda **finds** that giant sequoia is INDF elegant tree

'Magda **finds** that the giant sequoia is an elegant tree.'

Norwegian [= (2) in (Anand and Korotkova, 2018)]

CP-embedding *find* behaves the same way as SC-embedding *find* with respect to selectional restrictions and acquaintance.

The syntax of *find*-verbs

Importantly, in *find*+CP languages, the CPs that combine with *find*-verbs are transparent:

The syntax of *find*-verbs

Importantly, in *find*+CP languages, the CPs that combine with *find*-verbs are **transparent**:

(15) *Context: Sven mistakenly believes Maria is a lawyer, but she's a judge.*

a. #Sven **tycker** [_{CP} att Maria är en fantastisk advokat].

#Sven **finds** that Maria is INDF excellent lawyer

#‘Sven **finds** that Maria is an excellent lawyer.’

Swedish [= (4) in (Korotkova and Anand, 2022)]

The syntax of *find*-verbs

Importantly, in *find*+CP languages, the CPs that combine with *find*-verbs are **transparent**:

(15) *Context: Sven mistakenly believes Maria is a lawyer, but she's a judge.*

a. #Sven **tycker** [_{CP} att Maria är en fantastisk advokat].

#Sven **finds** that Maria is INDF excellent lawyer

#‘Sven **finds** that Maria is an excellent lawyer.’

Swedish [= (4) in (Korotkova and Anand, 2022)]

The correct generalization, then, is that *find*-verbs combine with transparent clauses, and *think*-verbs combine with opaque clauses.

BrP Data

The BrP facts

In BrP, when the verb *achar* combines with a SC, it behaves exactly like *find*:

The BrP facts

In BrP, when the verb *achar* combines with a SC, it behaves exactly like *find*:

- * it requires subjective predicates

(16) #Eu **acho** [_{sc} o João vegetariano].

I ACHO [_{sc} the John vegetarian]

#‘I **find** John vegetarian.’

The BrP facts

In BrP, when the verb *achar* combines with a SC, it behaves exactly like *find*:

- * it requires subjective predicates

- (16) #Eu **acho** [_{sc} o João vegetariano].
I ACHO [_{sc} the John vegetarian]
#‘I **find** John vegetarian.’

- * it does not obviate the AI

- (17) Eu **acho** [_{sc} essa pizza gostosa], #mas eu nunca provei ela.
I ACHO [_{sc} this pizza tasty], #but I never tried her
‘I **find** this pizza tasty, #but I never tried it.’

The BrP facts

When *achar* combines with a CP, it behaves exactly like *think*:

The BrP facts

When *achar* combines with a CP, it behaves exactly like *think*:

- * it doesn't place any semantic restrictions on its complement

(18) Eu **acho** [_{CP} que o João é vegetariano].

I ACHO [_{CP} COMP the John is vegetarian]

'I **think** John is vegetarian.'

The BrP facts

When *achar* combines with a CP, it behaves exactly like *think*:

- * it doesn't place any semantic restrictions on its complement

- (18) Eu **acho** [_{CP} que o João é vegetariano].
I ACHO [_{CP} COMP the John is vegetarian]
'I **think** John is vegetarian.'

- * it obviates the AI

- (19) Eu **acho** [_{CP} que essa pizza é gostosa], mas eu nunca provei ela.
I ACHO [_{CP} COMP this pizza is tasty], but I never tried her
'I **think** this pizza is tasty, but I never tried it.'

The BrP facts

* Evidence from gapping suggests that achar is not ambiguous:

(20) O João **acha** matemática divertida e a Maria, que a escola
the John ACHAR math fun and the Mary, that the school
deles é boa.
theirs is good

‘John **finds** Math fun and Mary **thinks** their school is good.’

Judgements were confirmed by 5 native speakers of BrP.

The BrP facts

	<i>achar</i> +SC	<i>achar</i> +CP
selection	only subjective predicates	no restrictions
acquaintance	don't obviate the AI	obviate the AI

Table 2: Differences between and *achar*+SC and *achar*+CP.

The BrP facts

	<i>achar</i> +SC	<i>achar</i> +CP
selection	only subjective predicates	no restrictions
acquaintance	don't obviate the AI	obviate the AI

Table 2: Differences between *achar*+SC and *achar*+CP.

These facts cast doubt on the idea that *find*-verbs lexically-encode a requirement for transparent complements, after all, *achar* is flexible between a *find*- and a *think*-meaning.

Proposal

The bigger picture

We believe the *think-find* pattern is part of the bigger picture of **meaning alternations** that arise from differences in argument structure.

- (21) a. I ACHO [_{sc} the pizza tasty]. $\leadsto$ I've tasted the pizza
b. I ACHO [_{cp} that the pizza is tasty]. $\nrightarrow$ I've tasted the pizza

The bigger picture

We believe the *think-find* pattern is part of the bigger picture of **meaning alternations** that arise from differences in argument structure.

- (21) a. I ACHO [_{sc} the pizza tasty]. ~ I've tasted the pizza
 b. I ACHO [_{cp} that the pizza is tasty]. ↗ I've tasted the pizza
- (22) a. John saw [_{sc} Mary leave]. ~ John saw Mary leaving
 b. John saw [_{cp} that Mary left]. ↗ John saw Mary leaving

The bigger picture

We believe the *think-find* pattern is part of the bigger picture of **meaning alternations** that arise from differences in argument structure.

- (21) a. I ACHO [_{sc} the pizza tasty]. ~ I've tasted the pizza
 b. I ACHO [_{cp} that the pizza is tasty]. ↗ I've tasted the pizza
- (22) a. John saw [_{sc} Mary leave]. ~ John saw Mary leaving
 b. John saw [_{cp} that Mary left]. ↗ John saw Mary leaving
- (23) a. John explained [_{dp} the fact that Mary left]. explanandum
 b. John explained [_{cp} that Mary left]. explanans

The bigger picture

We believe this pattern is part of the bigger picture of **meaning alternations** that arise from argument structure.

- (24) a. I ACHO [_{sc} the pizza tasty]. ~ I've tasted the pizza
 b. I ACHO [_{cp} that the pizza is tasty]. ✗ I've tasted the pizza

The bigger picture

We believe this pattern is part of the bigger picture of **meaning alternations** that arise from argument structure.

- (24) a. I ACHO [_{sc} the pizza tasty]. ~ I've tasted the pizza
b. I ACHO [_{cp} that the pizza is tasty]. ✗ I've tasted the pizza

- (25) **Factivity alternation** in Turkish [(1a-b) in (Özyıldız, 2017)]

- a. Tunç [_{NMZ} Hillary'nin kazan-dığın-ı] biliyor.
Tunç Hillary win-NMZ-ACC knows
'Tunç knows that Hillary won.'
- b. Tunç [_{cp} Hillary'nin kazan-dı diye] biliyor.
Tunç Hillary win-PST DIYE knows
'Tunç believes that Hillary won.'

The plan

To assume a single lexical entry for *achar*, and derive its different readings from how it composes with SCs and CPs.

- * There are a few proposals to derive meaning alternations with opaque CPs and nominalizations/transparent CPs (Bondarenko, 2020, 2022, 2023; Özyıldız, 2017, a.o.).
- * For concreteness, we'll adopt Bondarenko's (2022) proposal.

The plan

To assume a single lexical entry for *achar*, and derive its different readings from how it composes with SCs and CPs.

- * There are a few proposals to derive meaning alternations with opaque CPs and nominalizations/transparent CPs (Bondarenko, 2020, 2022, 2023; Özyıldız, 2017, a.o.).
- * For concreteness, we'll adopt Bondarenko's (2022) proposal.

Compositional fragment - *achar* + SCs

Step 1 We assume a simplified entry for *tasty*: *tasty* simply denotes a predicate of situations that count as *tasty* in a certain context.

$$(26) \quad \llbracket \text{tasty} \rrbracket^{s,g,c} = \lambda s'.s' \sqsubseteq s.\text{tasty}_c(s')$$

- * This is fully compatible with a more sophisticated semantics for gradable adjectives.

Compositional fragment - *achar* + SCs

Step 1 We assume a simplified entry for *tasty*: *tasty* simply denotes a predicate of situations that count as *tasty* in a certain context.

$$(26) \quad \llbracket \text{tasty} \rrbracket^{s,g,c} = \lambda s'.s' \sqsubseteq s. \mathbf{tasty}_c(s')$$

- * This is fully compatible with a more sophisticated semantics for gradable adjectives.

Step 2 We also assume *achar* and SCs are predicates of situations:

$$(27) \quad \llbracket \text{achar} \rrbracket^{s,g,c} = \lambda s'.s' \sqsubseteq s \wedge \mathbf{think}(s')$$

$$(28) \quad \llbracket [\text{sc the pizza tasty}] \rrbracket^{s,g,c} = \lambda s'.s' \sqsubseteq s \wedge \mathbf{tasty}_c(s') \wedge \mathbf{holder}(s') = \text{the pizza}$$

Compositional fragment - *achar* + SCs

We propose *achar* takes SCs **as an argument**. It's well-known that verbs can impose restrictions on the kinds of arguments they combine with.

In the neo-Davidsonian approach we assume, we encode this as a presupposition on the argument-introducing head Θ_{th} :

$$(29) \quad \llbracket \Theta_{th} \rrbracket^{s,g,c} = \lambda p_{st} . \lambda s_s . \lambda s'_s : s \text{ is subjective} . p(s') \wedge \text{THEME}(s') = s$$

Compositional fragment - *achar* + SCs

Because SCs are of type $\langle s, t \rangle$, and the second argument of Θ_{th} is of type s , the SC must QR and leave a trace of type s to solve a type mismatch. That yields the (simplified) LF in (30), and the truth conditions in (31):

Compositional fragment - *achar* + SCs

Because SCs are of type $\langle s, t \rangle$, and the second argument of Θ_{th} is of type s , the SC must QR and leave a trace of type s to solve a type mismatch. That yields the (simplified) LF in (30), and the truth conditions in (31):

$$(30) \quad [[_{sc} \text{ the pizza tasty }] \lambda_1 \exists [\text{ John } [\Theta_{th} \text{ ACHA }] t_1]]]$$

$$(31) \quad \llbracket (30) \rrbracket^{s,g,c} = 1 \text{ iff} \\ \exists s'' [s'' \text{ is subjective } .s'' \sqsubseteq s \wedge \mathbf{tasty}_c(s'') \wedge \mathbf{holder}(s'') = \mathbf{the\ pizza} \wedge \\ \exists s' [s' \sqsubseteq s \wedge \mathbf{think}(s') \wedge \mathbf{holder}(s') = \text{John} \wedge \mathbf{theme}(s') = s'']]$$

Informally: there is a situation s'' of the pizza being tasty, and a situation s' of John thinking, and that the theme of s' is s'' .

Compositional fragment - *achar* + CPs

Combining our account with the theory of *that*-clauses from Kratzer (2006), we get a straightforward explanation of why *achar* obviates the AI when it embeds a CP.

- (32) a. $\llbracket \text{that} \rrbracket^{s,g,c} = \lambda s'. \lambda p. \text{CONT}(s') = p$
b. $\exists s [\text{thinking}(\text{John}, s) \wedge \text{CONT}(s) = \llbracket \text{the pizza is tasty} \rrbracket]$

Informally: there's a situation s of John thinking such that s 's content is the proposition that the pizza is tasty.

Compositional fragment - *achar* + CPs

Combining our account with the theory of *that*-clauses from Kratzer (2006), we get a straightforward explanation of why *achar* obviates the AI when it embeds a CP.

- (32) a. $\llbracket \text{that} \rrbracket^{s,g,c} = \lambda s'. \lambda p. \text{CONT}(s') = p$
b. $\exists s [\text{thinking}(\text{John}, s) \wedge \text{CONT}(s) = \llbracket \text{the pizza is tasty} \rrbracket]$

Informally: there's a situation s of John thinking such that s 's content is the proposition that the pizza is tasty.

Deriving AI via transparency plus lexical semantics

Given the following plausible constraint on PPTs, we can show that the transparency of *achar*+SC ensures they do not obviate the AI.

Acquaintance Principle (AP). A situation *s* makes true (or false) that an object *o* is tasty to *j* only if *s* is a situation of *j* tasting *o*.

Deriving AI via transparency plus lexical semantics

Given the following plausible constraint on PPTs, we can show that the transparency of *achar*+SC ensures they do not obviate the AI.

Acquaintance Principle (AP). A situation *s* makes true (or false) that an object *o* is tasty to *j* only if *s* is a situation of *j* tasting *o*.

Instead of viewing the AP as an epistemic constraint like Ninan (2014), we view it as an **ontological constraint** on the naïve metaphysics of speakers.

Deriving AI via transparency plus lexical semantics

Given the following plausible constraint on PPTs, we can show that the transparency of *achar*+SC ensures they do not obviate the AI.

Acquaintance Principle (AP). A situation s makes true (or false) that an object o is tasty to j only if s is a situation of j tasting o .

Instead of viewing the AP as an epistemic constraint like Ninan (2014), we view it as an **ontological constraint** on the naïve metaphysics of speakers.

$S \text{ finds } o \text{ tasty} \models o \text{ is tasty (to } S) \models_{\text{AP}} S \text{ tried } o$

Deriving AI via transparency plus lexical semantics

Given the following plausible constraint on PPTs, we can show that the transparency of *achar*+SC ensures they do not obviate the AI.

Acquaintance Principle (AP). A situation *s* makes true (or false) that an object *o* is tasty to *j* only if *s* is a situation of *j* tasting *o*.

Deriving AI via transparency plus lexical semantics

Given the following plausible constraint on PPTs, we can show that the transparency of *achar*+SC ensures they do not obviate the AI.

Acquaintance Principle (AP). A situation s makes true (or false) that an object o is tasty to j only if s is a situation of j tasting o .

Notice that in our current approach the fact that *think* obviates the AI arises as a by-product of referential opacity.

S thinks o tasty $\not\models o$ is tasty (to S) $\models_{\text{AP}} S$ tried o

Recap

- * We gave *achar* a single lexical entry deriving its vanilla doxastic and subjective doxastic meanings from how it composes with CPs and SCs.
- * We showed that the differential ability for AI obviation between *achar*+SC and *achar*+CP can be reduced to a difference in referential opacity.

Negation

Many theorists have found an entailment view of the AI unattractive because of the negation data.

(33) John found the pizza not tasty.

$\sim \rightarrow$ John has tried the pizza

Negation

Many theorists have found an entailment view of the AI unattractive because of the negation data.

(33) John found the pizza not tasty. $\leadsto$ John has tried the pizza

In this section, we sketch an account of this data drawing on work by Bernard and Champollion (2018) who have proposed a non-Boolean semantics of negation to solve several puzzles involving negative perceptual and causal reports

Negation

The intuitive truth-conditions for (34) are hard to obtain.

- (34) John saw Mary not leave.
 $\Rightarrow$ John saw Mary stay.

Higginbotham (1983)

Negation

The intuitive truth-conditions for (34) are hard to obtain.

- (34) John saw Mary not leave. Higginbotham (1983)
 $\Rightarrow$ John saw Mary stay.

The conditions in (35a) are compatible with Mary leaving, but John not seeing, and (35b) is made true by almost every situation.

- (35) a. $\neg \exists s. [\text{leave}(s) \wedge \text{ag}(s) = \text{Mary} \wedge s \in \llbracket \text{John saw} \rrbracket]$
 b. $\exists s. \neg [\text{leave}(s) \wedge \text{ag}(s) = \text{Mary} \wedge s \in \llbracket \text{John saw} \rrbracket]$

Negation

The intuitive truth-conditions for (34) are hard to obtain.

- (34) John saw Mary not leave. Higginbotham (1983)
 $\Rightarrow$ John saw Mary stay.

The conditions in (35a) are compatible with Mary leaving, but John not seeing, and (35b) is made true by almost every situation.

- (35) a. $\neg \exists s. [\text{leave}(s) \wedge \text{ag}(s) = \text{Mary} \wedge s \in \llbracket \text{John saw} \rrbracket]$
 b. $\exists s. \neg [\text{leave}(s) \wedge \text{ag}(s) = \text{Mary} \wedge s \in \llbracket \text{John saw} \rrbracket]$

Bernard and Champollion (2018) treat negation as a function *Neg* mapping verbal situations *P* to the falsifiers of *P*—the situations that preclude *P* from being true.

Negation

Assuming the VP-internal subject hypothesis, Bernard and Champollion arrive at the following LF and truth-conditions:

- (36) a. Mary did not leave.
b. $[\text{closure}[[_{DP}\text{Mary}][1[_{TP}(\text{did})[_{NegP}\text{not}[_{VoiceP}t_1[\text{ag}'\text{leave}]]]]]]]$
c. $\exists s.\text{actual}(s) \wedge s \in \text{Neg}(\lambda s'.\text{ag}(s') = \text{Mary} \wedge \text{leave}(s'))$

This ensures the actual situation is one where Mary stays.

Negation

Assuming the VP-internal subject hypothesis, Bernard and Champollion arrive at the following LF and truth-conditions:

- (36) a. Mary did not leave.
b. $[\text{closure}[[_{DP}\text{Mary}][1[_{TP}(\text{did})[_{NegP}\text{not}[_{VoiceP}t_1[\text{ag}'\text{leave}]]]]]]]$
c. $\exists s.\text{actual}(s) \wedge s \in \text{Neg}(\lambda s'.\text{ag}(s') = \text{Mary} \wedge \text{leave}(s'))$

This ensures the actual situation is one where Mary stays.

We can utilize the same technology to explain why the AI ‘projects’ over negation.

Preventing overgeneration

Since we are assuming *achar* composes with SCs and CPs via different routes, as it is, our account predicts that *achar* should be able to combine with a SC and a CP at once.¹

This prediction is **not** borne out; (37) is gibberish.

- (37) *Eu acho essa pizza muito salgada que o João não vai gostar
I find this pizza very salty that John not will like this
desse restaurante.
restaurant

Intended: ‘There is a thinking situation *s* about a situation *s'* of the pizza being salty, and the content of *s* is that John will not like that restaurant.’

¹Many thanks to Wataru Uegaki (p.c.) for bringing this point to our attention.

Preventing overgeneration

This too is part of a larger pattern: perception verbs in general cannot combine with a small clause *and* a CP:

- (38) a. *John saw Mary leave that the bathroom was a mess.
b. *John heard the door open that Mary was arriving home.
c. ...

Preventing overgeneration

One potential explanation: situations of perception are not contentful, and hence cannot be modified directly by *that*-clauses.

Preventing overgeneration

One potential explanation: situations of perception are not contentful, and hence cannot be modified directly by *that*-clauses.

In cases like (39a) and (39b), the CPs are actually modifying covert nouns, which are themselves predicates of contentful individuals:

- (39) a. John saw that Mary had arrived home.
 $\approx$ John saw <the evidence> that Mary had arrived home.
- b. John heard that Mary was angry.
 $\approx$ John heard <the rumor> that Mary was angry.

Preventing overgeneration

One potential explanation: situations of perception are not contentful, and hence cannot be modified directly by *that*-clauses.

In cases like (39a) and (39b), the CPs are actually modifying covert nouns, which are themselves predicates of contentful individuals:

- (39) a. John saw that Mary had arrived home.
 ≈ John saw <the evidence> that Mary had arrived home.
 b. John heard that Mary was angry.
 ≈ John heard <the rumor> that Mary was angry.

If this is on the right track, what looks like a ban on the combination of SCs+CPs is actually a ban on the stacking of complements, which is independently expected.

Conclusion

Summary

- * We have brought new data from BrP to bear on the semantics of subjective attitude verbs.

Summary

- * We have brought new data from BrP to bear on the semantics of subjective attitude verbs.
- * We argued that some of the properties of *find*-verbs follow from their argument structure.

Summary

- * We have brought new data from BrP to bear on the semantics of subjective attitude verbs.
- * We argued that some of the properties of *find*-verbs follow from their argument structure.
- * Along the way, we defended the viability of an entailment analysis of the AI.

Summary

- * We have brought new data from BrP to bear on the semantics of subjective attitude verbs.
- * We argued that some of the properties of *find*-verbs follow from their argument structure.
- * Along the way, we defended the viability of an entailment analysis of the AI.
- * We proposed that the negation problem that arises from this analysis can be solved by treating negation as a function mapping situations to negative situations.

Obligatory *de se*

One more wrinkle: *find* is obligatorily *de se*.

- (40) a. John finds the cake tasty.
b. $\approx$ John finds the cake tasty to John.
c. $\not\approx$ John finds the cake tasty to Maria.

Our current theory doesn't rule out (40c).

Obligatory *de se*

The best studied case of obligatory *de se* is attitude verbs with infinitival and gerund complements like (41).

(41) John expects PRO to be identified.

Obligatory *de se*

The best studied case of obligatory *de se* is attitude verbs with infinitival and gerund complements like (41).

(41) John expects PRO to be identified.

Chierchia (1989) posits that infinitives and gerunds denote properties:

(42) $\llbracket \text{PRO to be happy} \rrbracket = \lambda w. \lambda x. \mathbf{happy}(w)(x)$

On this view, *expects* is type $\langle \langle s, et \rangle, et \rangle$; so, in (41), John attributes to himself the property of being happy.

Obligatory *de se*

The best studied case of obligatory *de se* is attitude verbs with infinitival and gerund complements like (41).

(41) John expects PRO to be identified.

Chierchia (1989) posits that infinitives and gerunds denote properties:

(42) $\llbracket \text{PRO to be happy} \rrbracket = \lambda w. \lambda x. \text{happy}(w)(x)$

On this view, *expects* is type $\langle \langle s, et \rangle, et \rangle$; so, in (41), John attributes to himself the property of being happy.

It's not immediately obvious how to import this standard theory into the current compositional account.

Thank you!

References

- Anand, P. and N. Korotkova (2018). Acquaintance content and obviation. In *Proceedings of Sinn und Bedeutung*, Volume 22, pp. 55–72.
- Bernard, T. and L. Champollion (2018). Negative events in compositional semantics. In *Semantics and Linguistic Theory*, Volume 28, pp. 512–532.
- Bondarenko, T. (2020). Factivity from pre-existence: Evidence from barguzin buryat. *Glossa: a journal of general linguistics* 5(1).
- Bondarenko, T. (2023). Factivity-alternating attitude verbs in azeri. *Languages* 8(3), 184.
- Bondarenko, T. I. (2022). *Anatomy of an Attitude*. Ph. D. thesis, Massachusetts Institute of Technology.
- Chierchia, G. (1989). Anaphora and attitudes de se. *Semantics and contextual expression* 11, 1–31.
- Higginbotham, J. (1983). The logic of perceptual reports: An extensional alternative to situation semantics. *Journal of Philosophy* 80(February), 100–127.

References

- Korotkova, N. and P. Anand (2022). Refining ‘find’: Transparency and categorical judgment. Workshop ‘Subjectivity in semantic interpretation’, NASSLLI.
- Kratzer, A. (2006). Decomposing attitude verbs. *Talk given at the Hebrew University of Jerusalem.*
- Ninan, D. (2014). Taste predicates and the acquaintance inference. In *Semantics and Linguistic Theory*, Volume 24, pp. 290–309.
- Özyıldız, D. (2017). Attitude reports with and without true belief. In *Semantics and Linguistic Theory*, Volume 27, pp. 397–417.