To flip a judge:

Predicates of personal taste in a commitment-based discourse model*

Jack Duff (UC Santa Cruz)

CUSP 12, USC — 9 November 2019

In this talk:

- Review data on the interpretation of English predicates of personal taste (PPTs) in conversation, and present exceptional cases
- Briefly present some pilot survey data collected to clarify the patterns
- Introduce a generalization based on the notion of discourse commitment
- Demonstrate how a formal commitment-based discourse model using centered worlds can capture the key interpretive patterns

1 Introduction

Predicates of personal taste (PPTs) (*tasty*, *fun*) are subjective (Bylinina, 2017).

- Permit faultless disagreement (FD) (Kölbel, 2004).

(1) Faultless disagreement:
J, to K: The Giant Dipper is <u>fun</u>!
K, to J: No, it's not!

(2) Typical (faulty) disagreement:
J, to K: The Giant Dipper is 100 years old!
K, to J: No, it's not!

(3) Working definition of FD as attributed by Bylinina (2017) to Stephenson (2007):
   a. Intuitively, the interlocutors disagree with one another.
   b. There is a sense in which both speakers have said something true, so long as each was sincere in her expression of her opinion.

*This work has benefited greatly from conversations with Morwenna Hoeks, Deniz Rudin, Pranav Anand, and Donka Farkas, as well as audiences at ESSLLI 2019 and UC Berkeley's Syntax & Semantics Circle.

c. For this reason, the disagreement does not seem to be one that can be resolved.

- Permitted inside *find*-complements.

(4) Jay finds the roller coaster fun.
(5) # Jay finds the roller coaster 100 years old.

- Accept experiencer arguments.

(6) The Giant Dipper is fun to Jay.
(7) * The Giant Dipper is 100 years old to Jay.

For this reason, many have proposed leaving space in the denotation of PPTs for a JUDGE, which is usually the speaker, and appears to shift in embedded contexts or the presence of an overt argument.

- via a shiftable/bindable index of interpretation (Lasersohn, 2005)

(8) $\texttt{tasty} \rightsquigarrow [\![\lambda y\,.\,\text{tasty'}(y, x)]\!]^x$

- as a null pronoun or implicit argument (Stojanovic, 2007; Stephenson, 2007)

(9) $\texttt{tasty}\ \textit{pro}_1 \rightsquigarrow [\![\lambda y\,.\,\text{tasty'}(y, g[1])]\!]^g$

Akin to other context-sensitivity proposals: epithets (Harris & Potts, 2009), non-PPT degree predicates (Bylinina, 2017), modals (Kratzer, 1981), and evidentials (Aikhenvald, 2004).

2 Interrogative flip and persistence

2.1 Basic interrogative flip

The judge of a PPT also displays INTERROGATIVE FLIP[1] (McCready, 2006).

(10) **J, to K:** The sushi at Stevenson Cafe is tasty (to me).
(11) **J, to K:** Is the sushi at Stevenson Cafe tasty (to you)?
(12) **J, to K:** Which soup at Stevenson Cafe is tasty (to you)?

(13) INTERROGATIVE FLIP (first try):
a. In assertions, PPTs have a general pressure for a speaker judge.
b. In questions, PPTs have a general pressure for an addressee judge.

[1] Apparently coined by Faller (2002) in discussion of the same pattern in the evidential domain.

2.2 Persistent communal judgement in definites and other presuppositions

PPTs within definites always appear communally judged, a counter-example to (13a,b).

(14) **J, to K:** The tasty bagel is in stock. *(the bagel which they agree is tasty)*

(15) **J, to K:** Is the tasty bagel in stock? *(the bagel which they agree is tasty)*

(16) **J, to K:** Remy will bring the tasty cookies. *(the cookies which they agree are tasty)*

(17) **J, to K:** Will Remy bring the tasty cookies? *(the cookies which they agree are tasty)*

Indefinites flip, so definiteness, not attributive position, is the key:

(18) **J, to K:** More than three talented artists performed at the fair.
(artists who I find talented)

(19) **J, to K:** Did more than three talented artists perform at the fair?
(artists who you find talented)

Indeed, Jay can't use a question with a definite PPT without implicating his own judgement.

(20) **J, to K:** Are the bagels tasty? (I find them disgusting.)

(21) **J, to K:** Is the tasty bagel in stock? (#I find it disgusting.)

Generalizes to other presuppositional content, e.g. factive complements.

(22) **J to K:** Ellie was surprised that the sushi is tasty. (*we all agree it is*)

(23) **J to K:** Was Ellie surprised that the sushi is tasty? (*we all agree it is*)

2.3 Evidence from a survey pilot

24 items manipulated in a 2x2 within-participant design crossing **Speech Act** (Assertion vs. Polar Question) and **Predicate Type** (+PPT vs. -PPT). 16 subjects were run in each of two surveys, one where the target adjectives were in **predicative** position, and another where the target adjectives were in attributive position within **definites**.[2]

[2]The study was delivered via Ibex, with participants recruited on Mechanical Turk, who were paid $2.50 for approximately 15 minutes of work. Each study began with 5 guided practice examples, and a burn-in period of 8 fillers designed for participants to become comfortable with the difficult task. 40 additional fillers were interspersed within the critical trials. Fillers and burn-in items included judgements on non-PPT gradable predicates, PPTs with overt experiencers in a *to*-PP, comparative and superlative constructions, perfect participles, and intuitively judge-dependent nominals like *celebrity.* In trials where participants did not answer in the middle of the first scale, they were prompted with a question targeting the acquaintance of the opposite conversational participant with the target noun.

Context: *Oscar and Linda are at a wine-tasting event.*

(24) **Oscar says to Linda:** **PREDICATIVE**

a. The Australian chardonnay is buttery. **Assertion, +PPT**

b. The buttery chardonnay is Australian. **Assertion, -PPT**

c. Is the Australian chardonnay buttery? **Question, +PPT**

d. Is the buttery chardonnary Australian? **Question, -PPT**

(25) **Oscar says to Linda:** **DEFINITE**

a. The buttery chardonnay is Australian. **Assertion, +PPT**

b. The Australian chardonnay is buttery. **Assertion, -PPT**

c. Is the buttery chardonnay Australian? **Question, +PPT**

d. Is the Australian chardonnay buttery? **Question, -PPT**

(26) **Question 1:** When Oscar says "buttery/Australian" he is probably talking about... (Answer on a 5-point Likert scale between:)

a. Whether the chardonnay is buttery/Australian in Oscar's opinion.

b. Whether the chardonnary is buttery/Australian in Linda's opinion.

(27) **Question 2:** (Only if participants answered in the center.) To clarify, Oscar is probably talking about...

a. Whether the chardonnay is buttery/Australian for both Oscar and Linda.

b. Whether the chardonnay is buttery/Australian for people in general.

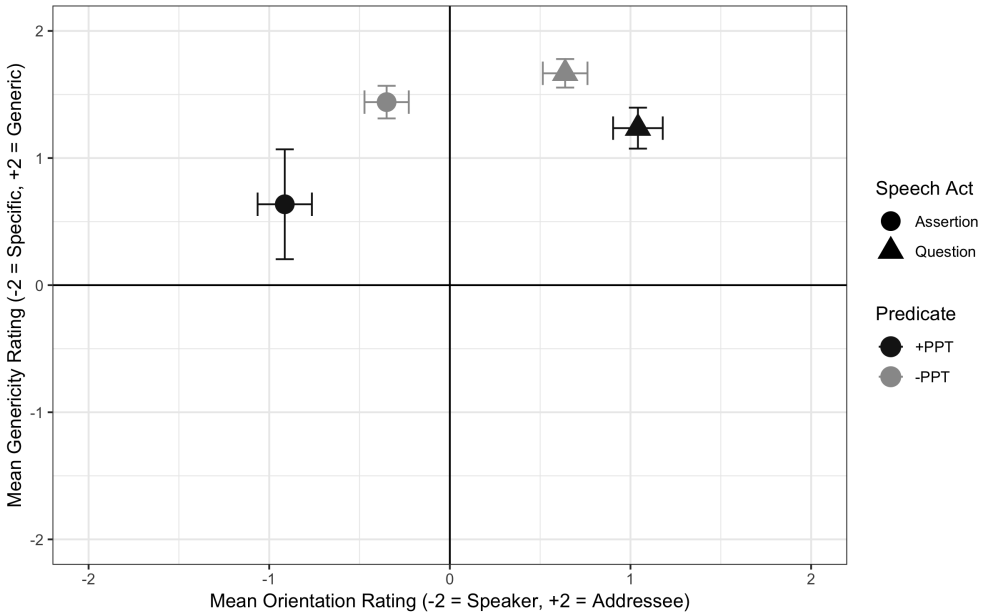

Figure 1: 16 participants' mean responses for predicative adjectives.

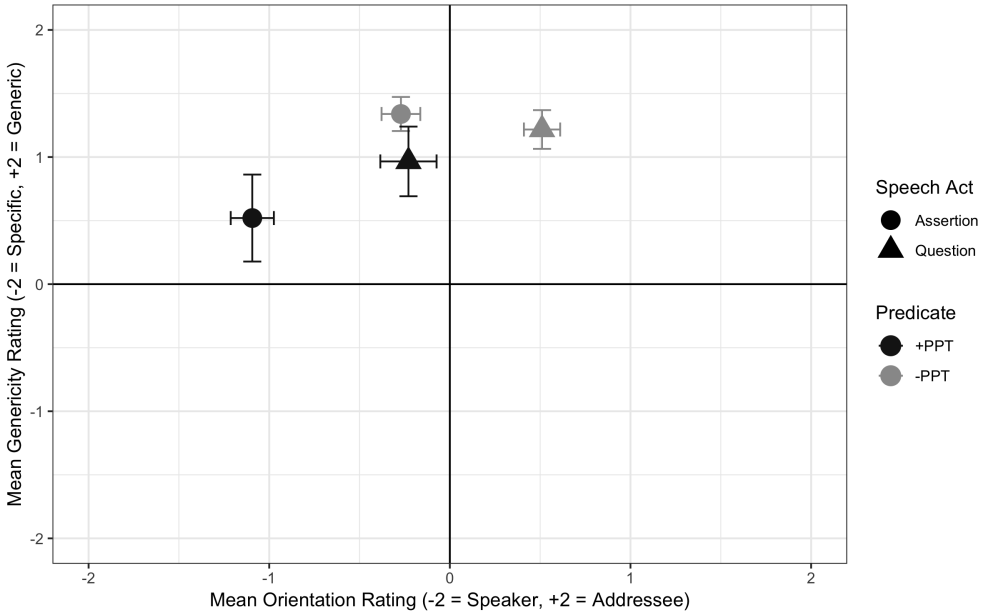

Figure 2: 16 participants' mean responses for attributive adjectives within definites.

We observe even with this minimal data that participants are less comfortable reporting an addressee-oriented interpretation for PPTs in questions when they're in predicative position.

2.4 Interim summary

(28) Interrogative Flip (second try):

a. In the **main content** of assertions, PPTs have a general pressure for a speaker judge.

b. In the **main content** of canonical questions, PPTs have a general pressure for an addressee judge.

c. **In presupposed content, PPTs must be communally judged by all discourse participants.**

3 Enter discourse commitment

To some extent, (28) can be summarized:

(29) Interrogative Flip (informally):
The judge of a PPT is the participant who is using it to provide information.
(Stephenson, 2007; Malamud & Stephenson, 2015)

Models of conversation centered around the notion of discourse commitment (Gunlogson (2001), Farkas & Bruce (2010), Farkas & Roelofsen (2017)) help us formalize this generalization.

Basically:

- The goal of discourse is for the participants to add information to the common ground.
- Discourse moves can accomplish this by:
  - Updating speakers' public commitments
  - Soliciting addressees' public commitments
- How we translate from move to effect can be made:
  - stipulated for different kinds of discourse moves (Farkas & Bruce, 2010)
  - derived from an inquisitive theory of meaning (Farkas & Roelofsen, 2017)

In particular, I'll show here that a version of these models extended to commitment over centered worlds can capture at least the patterns of interrogative flip, and its absence for definites.

4 Conversation and commitment over centered worlds

We can follow the arguments for *de se* belief (Lewis, 1979) to a form of conversation where participants aim to locate themselves and their interlocutors among all possible individuals (centered worlds) (Weber, 2013).

PPTs and other subjective content will differ from objective content in its reference to the center, $i[\textsc{c}]$.

(30) $\texttt{tasty} \rightsquigarrow \lambda y \lambda i \,.\, \text{tasty'}(y, i[\textsc{c}], i[\textsc{w}])$

I will also inherit the inquisitive approach from Farkas & Roelofsen (2017), where, roughly, propositions are sets of alternatives, and alternatives are sets of (here, centered) worlds.

4.1 The discourse state

For Farkas & Roelofsen (2017), commitment to an alternative is the act of the speaker locating their actual world $w@$ within that alternative.

Here, commitment locates the committer's actual centered world $\langle x, w@ \rangle$ within an alternative.

(31)
a. Part(icipants): The set of participants $\{x_1 ... x_n\}$ in the conversation.
b. Table: A stack of propositions ϕ to be settled.
c. Comm(itments): A function from participants x to the sets of centered possible worlds they are publicly committed to containing their actual world $\langle x, w@ \rangle$

The common ground is all centered worlds which might be a participant's actual centered world.

(32) COMMITMENT SET (CS): The set of all centered possible worlds consistent with the public commitments of a participant x, i.e. $\bigcap$COMMITMENTS(x)

(33) COMMON GROUND: The smallest set of centered possible worlds which all participants are committed to containing the participants' actual centered worlds, i.e. $\bigcup\{\text{CS}(x) \mid x \in \text{PARTICIPANTS}\}$.

Since the goal is to locate many centered worlds rather than a single shared world, issues can succeed in triggering maximal common ground update, and thus be resolved and removed from the table even if all participants do not agree, as long as the common ground reflects consistency for each participant individually.

(34) RESOLUTION:
A proposition ϕ is settled when each participant x's commitment set is consistent with some α in ϕ or is fully inconsistent with all α in ϕ.
$\forall x \in \text{PART}\left[\left(\exists\alpha \in \phi\left[\,\text{CS}_x \subseteq \alpha\,\right]\right) \vee \left(\forall\alpha \in \phi\left[\,\text{CS}_x \cap \alpha = \varnothing\,\right]\right)\right]$

(35) RESOLUTION BY AGREEMENT:
A proposition ϕ is settled in agreement when the entire common ground is consistent with some α in ϕ, or fully inconsistent with all α in ϕ .
$\left(\exists\alpha \in \phi\left[\,\text{CG} \subseteq \alpha\,\right]\right) \vee \left(\forall\alpha \in \phi\left[\text{CG} \cap \alpha = \varnothing\right]\right)$

Disagreement is faultless so long as there remains a single potential world consistent with a centered world for each participant.

(36) CONVERSATIONAL CRISIS:
A discourse state exemplifies conversational crisis when, given the common ground, there is no world which may be occupied by all participants.
$\neg\exists w\left[\,\forall x \in \text{PART}\left[\langle x, w\rangle \in \text{CG}\right]\,\right]$

Note that disagreement on a subjective proposition may still settle it, and will not trigger conversational crisis.

4.2 Assertions and questions

Assertions:

- Signal a speaker commitment that their centered world is within the single alternative.
- Place onto the table a proposition which will only be resolved when all addressees have self-located their centered worlds.

(37) **J, to K:** The sushi is tasty.

UPDATE	DC
COMM(J)	$+\lambda i.\text{tasty'}(s, i[\text{C}], i[\text{W}])$
COMM(K)	-
TABLE	$+\{\lambda i.\text{tasty'}(s, i[\text{C}], i[\text{W}])\}$

We derive interrogative flip from a failure of the speaker to self-locate.

Questions:

- Signal no speaker commitment, or a trivial speaker commitment, as to their centered world.
- Place onto the table a proposition which will only be resolved when all addressees have self-located their centered worlds.

(38) **J, to K:** Is the sushi tasty?

UPDATE	DC
COMM(J)	$+\bigcup\{\lambda i.\text{tasty'}(s, i[\text{C}], i[\text{W}]), \lambda i.\neg\text{tasty'}(s, i[\text{C}], i[\text{W}])\}$
COMM(K)	-
TABLE	$+\{\lambda i.\text{tasty'}(s, i[\text{C}], i[\text{W}])\}$

4.3 Presupposition

A sane formalism for presupposition in such an account is to place a well-formedness constraint on the common ground.

I assume this constraint is as strong as it can be: the centered worlds in the common ground must be a subset of the centered worlds in the presupposed alternative.

This is equivalent to requiring all individuals to have located themselves in the presupposed alternative.

(39) **J, to K:** Is the tasty sushi in stock?

OBLIGATION	DC
COMM(J)	$\lambda i.\text{tasty'}(s, i[\text{C}], i[\text{W}]) \in \text{COMM(J)}$
COMM(K)	$\lambda i.\text{tasty'}(s, i[\text{C}], i[\text{W}]) \in \text{COMM(K)}$
TABLE	-

A moderate speaker-orientation can be invited here if we consider typical cases of accommodation pressure.

(40) **J, to K:** I'm so glad you've finally agreed to visit my favorite café with me. You're in luck: today they have the tasty muffin in stock.

4.4 Authority over subjective experience

Speakers are the ultimate authority on their own subjective experience. There is no room for debate on autocentric subjective matters (Korotkova, 2016).

(41) **J, to K:** I'm tired.
K, to J: # No, you're not!

These kinds of propositions, in some sense, raise a self-satisfying issue. The speaker's public gesture of commitment provides all the evidence necessary for anyone else (who trusts the speaker's accurate self-report) to agree.

PPTs with explicit 1st-person experiencers resemble these self-satisfying propositions.

(42) **J, to K:** The sushi at Stevenson Cafe is tasty to me.
K, to J: # No, it's not!

I take this kind of automatic acceptance to also be part of the cooperative response to a speaker uttering a PPT without an explicit experiencer.[3]

See Rudin & Beltrama (forthcoming) for a similar proposal for default agreement with PPTs.

4.5 Faultless disagreement - an example

I think now having a partial formally explicit pragmatics for PPTs, we can also account for faultless disagreement.

Suppose:

- two individuals: J, K
- four possible worlds defined on tasty'$(s, \text{J}, w) \times$ tasty'(s, K, w):
w_1:11; w_2:10; w_3:01; w_4:00
- thus, eight potential centered worlds (which I'll call j_{1-4} and k_{1-4}):
$\langle \text{J}, w_1\rangle$; $\langle \text{J}, w_2\rangle$; $\langle \text{J}, w_3\rangle$; $\langle \text{J}, w_4\rangle$; $\langle \text{K}, w_1\rangle$; $\langle \text{K}, w_2\rangle$; $\langle \text{K}, w_3\rangle$; $\langle \text{K}, w_4\rangle$

Jay tells Kay "The sushi at Stevenson Cafe is tasty.":

- Comm(J) += λi . tasty'$(s, i[\text{C}], i[\text{W}]) = \{j_1, j_2, k_1, k_3\}$
- Table += $\{\lambda i$. tasty'$(s, i[\text{C}], i[\text{W}])\}$
- By polite assumption, Comm(K) += λi . tasty'$(s, \text{J}, i[\text{W}]) = \{j_1, j_2, k_1, k_2\}$

If Kay utters "Yes, it is.":

- Comm(K) += λi . tasty'$(s, i[\text{C}], i[\text{W}]) = \{j_1, j_2, k_1, k_3\}$
- By polite assumption, Comm(J) += λi . tasty'$(s, \text{K}, i[\text{W}]) = \{j_1, j_3, k_5, k_7\}$
- CS(J)[4]= $\{j_1\}$
- CS(K) = $\{k_1\}$
- CG = $\{j_1, k_1\}$
- The issue is resolved (in agreement): CG $\subseteq \lambda i$. tasty'$(s, i[\text{C}], i[\text{W}])\}$.

[3]This is currently necessary in order for this model to accurately account for disagreement. Otherwise, no conversational progress is made, and the issue won't be resolved.

[4]I also assume all participants begin with something like the commitment λi . $i[\text{C}] =$ SELF

If Kay utters "No, it isn't.":

- $\textsc{Comm}(\textsc{k})$ += $\lambda i\,.\,\neg\text{tasty'}(s, i[\textsc{c}], i[\textsc{w}]) = \{j_3, j_4, k_2, k_4\}$
- By polite assumption, $\textsc{Comm}(\textsc{j})$ += $\lambda i\,.\,\neg\text{tasty'}(s, \textsc{k}, i[\textsc{w}]) = \{j_2, j_4, k_2, k_4\}$
- $\text{CS}(\textsc{j}) = \{j_2\}$
- $\text{CS}(\textsc{k}) = \{k_2\}$
- $\text{CG} = \{j_2, k_2\}$
- The issue is resolved (in disagreement):
  $\{j_2\} \subseteq \lambda i\,.\,\text{tasty'}(s, i[\textsc{c}], i[\textsc{w}]) \wedge \{k_2\} \cap \lambda i\,.\,\text{tasty'}(s, i[\textsc{c}], i[\textsc{w}]) = \varnothing$.

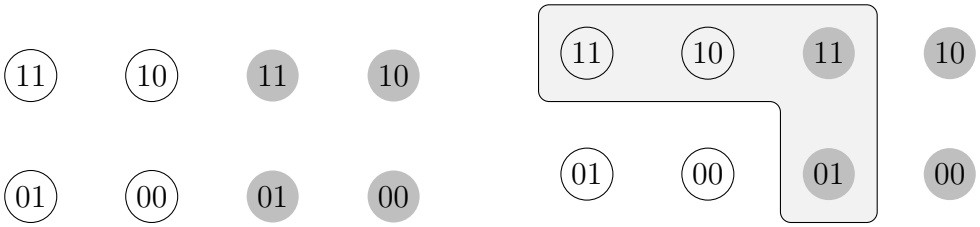

Figure 1: (a) Our toy set of possible worlds, where white circles are centered on $\textsc{j}$ and gray circles on $\textsc{k}$, and (b) $\lambda i\,.\,\texttt{tasty'}(s, i[\textsc{judge}], i[\textsc{world}])$.

4.6 On faultless disagreement

This model seems to get the "faultlessness" of FD for free. They are faultless because the facts which hold of the center in one individual's centered world need not hold of the center in another individual's.

The sense of "disagreement" also seems fairly intuitive. When Kay disagreed with Jay in the above example, she committed to the complement of Jay's commitment. This is presumably also what licensed the polar response particle *no*, though c.f. Roelofsen & Farkas (2015).

5 Wrapping up

Take-aways:

- Interrogative flip is not simply a binary phenomenon.
- Judgement appears to track with discourse commitment in conversation.
- Raising a commitment model from worlds to centered worlds captures the patterns, and also provides a theory of faultless disagreement.

To be continued:

- Appositives, non-canonical questions.
- Examine more closely the notion of disagreement in a centered-world system.
- Gathering some corpus data on how PPTs are used in multiparty conversation (not just *fun* and *tasty*!)
- Looking into heterogeneity across other context-sensitive expressions: Epithets look similar; evidentials flip but have no faultless disagreement; spatial terms don't really even seem to flip. Why?
- Related project: Collaborative work with Pranav Anand on the online processing signature of implicit vs. explicit judges. Does it look like argument integration?

References

Aikhenvald, Alexandra Y. 2004. Evidentiality. Oxford University Press.

Bylinina, Lisa. 2017. Judge-dependence in degree constructions. Journal of Semantics 34. 291–331.

Faller, Martina T. 2002. Semantics and pragmatics of evidentials in Cuzco Quechua: Stanford University Dissertation.

Farkas, Donka F. & Kim B. Bruce. 2010. On reacting to assertions and polar questions. Journal of Semantics 27. 81–118.

Farkas, Donka F. & Floris Roelofsen. 2017. Division of labor in the interpretation of declaratives and interrogatives. Journal of Semantics 34.

Gunlogson, Christine. 2001. True to form: Rising and falling declaratives as questions in English: UC Santa Cruz Dissertation.

Harris, Jesse A. & Christopher Potts. 2009. Perspective-shifting with appositives and expressives. Linguistics and Philosophy 32(6). 523–52.

Kölbel, Max. 2004. Faultless disagreement. Proceedings of the Aristotelian Society 104. 53–73.

Korotkova, Natasha. 2016. Disagreement with evidentials: A call for subjectivity. In Proceedings of SemDial 20, 65–75. New Brunswick, NJ.

Kratzer, Angelika. 1981. The notational category of modality. In Hans J. Eikmeyer & Hannes Reiser (eds.), Words, worlds, and contexts: New approaches in word semantics, 38–74. Berlin: De Gruyter.

Lasersohn, Peter. 2005. Context dependence, disagreement, and predicates of personal taste. Linguistics and Philosophy 28. 643–86.

Lewis, David. 1979. Attitudes de dicto and de se. Philosophical Review 88(4). 513–543.

Malamud, Sophia A. & Tamina Stephenson. 2015. Three ways to avoid commitments: Declarative force modifiers in the conversational scoreboard. Journal of Semantics 32. 275–311.

McCready, Elin. 2006. Context shifting in questions and elsewhere. In Proceedings of SuB 11, 433–447. Barcelona: Universitat Pompeu Fabra.

Roelofsen, Floris & Donka F. Farkas. 2015. Polarity particle responses as a window onto the interpretation of questions and assertions. Language 91. 359–313.

Rudin, Deniz & Andrea Beltrama. Forthcoming. Default agreement with subjective assertions. In Proceedings of SALT 29, UCLA.

Stephenson, Tamina. 2007. Judge dependence, epistemic modals, and predicates of personal taste. Linguistics and Philosophy 30(4). 487–525.

Stojanovic, Isidora. 2007. Talking about taste: Disagreement, implicit arguments, and relative truth. Linguistics and Philosophy 30. 691–706.

Weber, Clas. 2013. Centered communication. Philosophical Studies 166. S205–S223.