

How to cut the projective content pie

Judith Tonhauser
The Ohio State University

University of California, San Diego
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Collaborators and funding



David Beaver



Judith Degen



Marie-Catherine de Marneffe



Craig Roberts



Mandy Simons



Shari Speer



Jon Stevens



- (1) [A and B have been talking about Ricardo. B asks:]

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3-confess=Q 3-parrot 3-hide-NMLZ 3-from

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Projective content

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Long-standing research question:

Why does projective content project?

Cutting the projective content pie: The classical picture

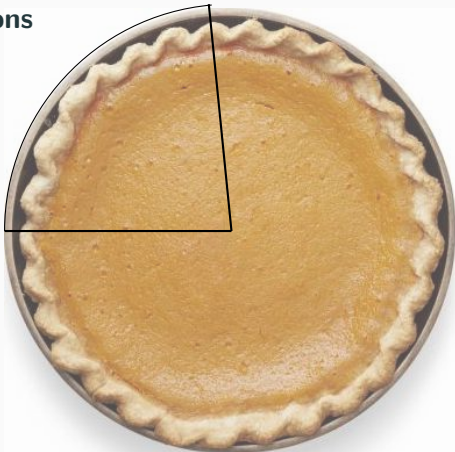


Cutting the projective content pie: The classical picture

Presuppositions

(e.g., Heim 1983
van der Sandt 1992)

+entailed
+not at-issue
+old

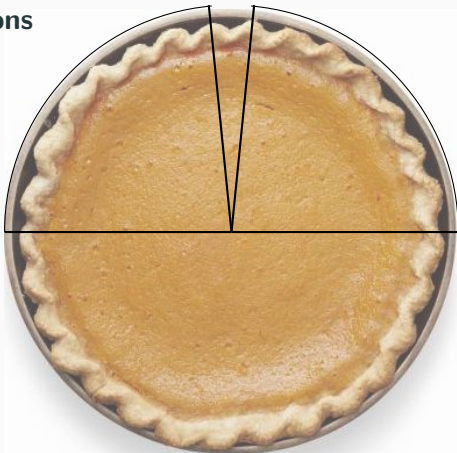


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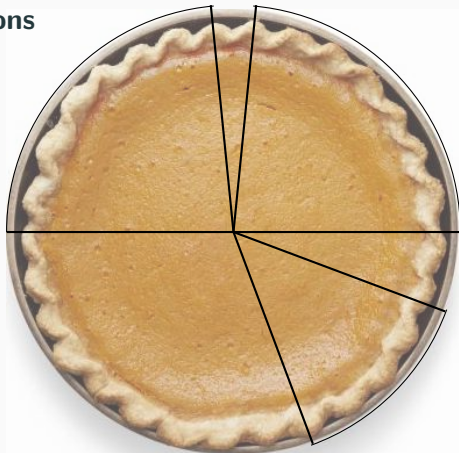
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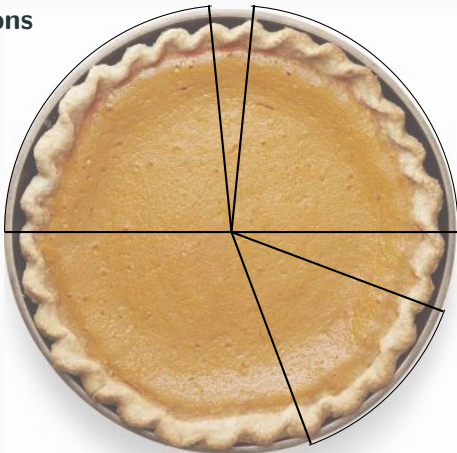
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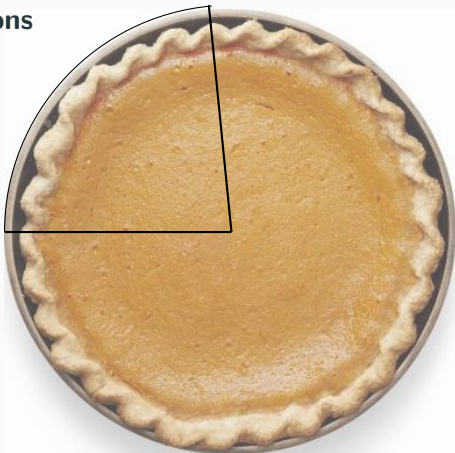
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Is this assumed division of projective content empirically adequate?

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One-on-one elicitation and experimental research on two genetically unrelated and typologically distinct languages

Classical conventionalist analyses of presuppositions

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- (4) Verb + present participle / pre-state content
 - a. Did Sue **stop** smoking? [presupposition: ✓]

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Ricardo is with the police.

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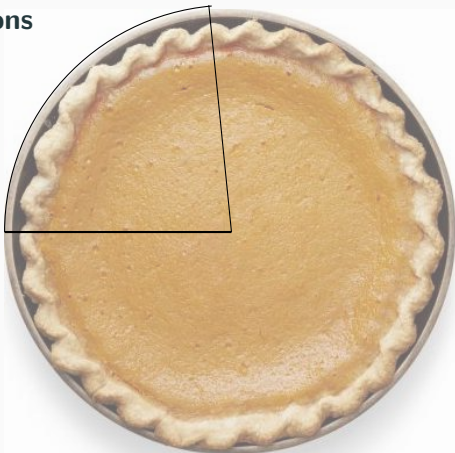
The assumption that all presuppositions must be part of the common ground prior to interpretation has not yet been established empirically, in comprehension or processing research.

Cutting the projective content pie

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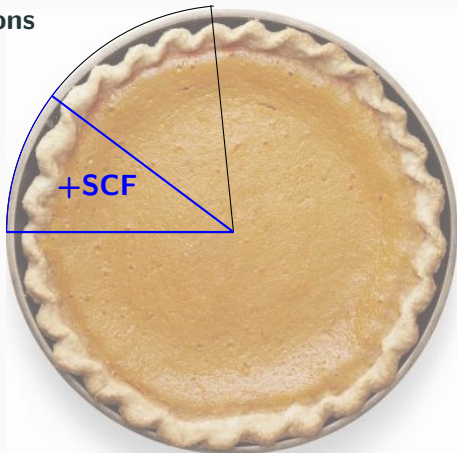


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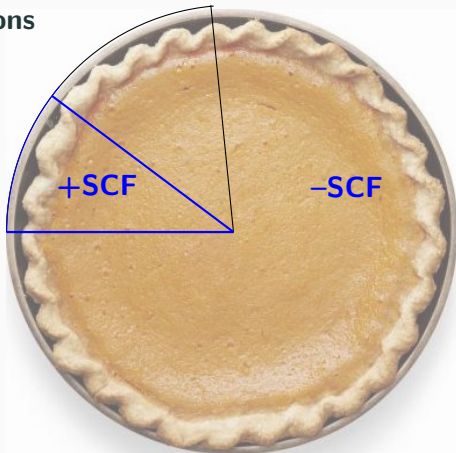


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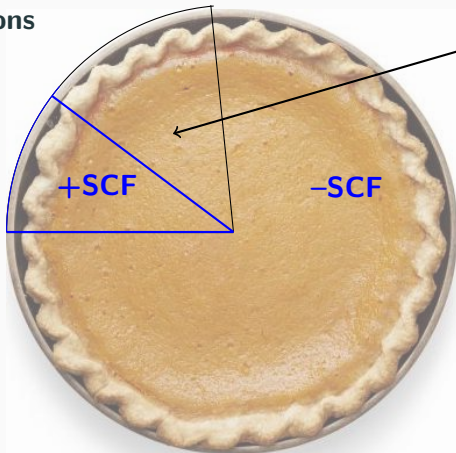


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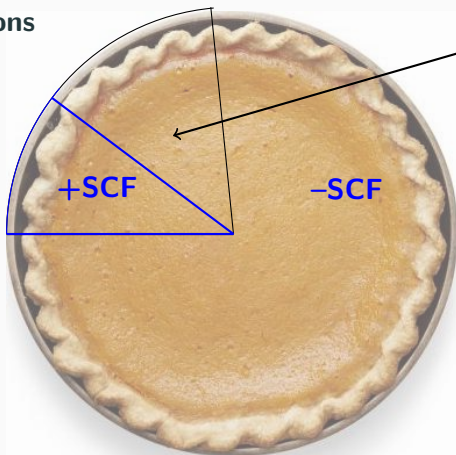
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“Informative
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Rescue: The process of “global accommodation” can add informative presuppositions to the common ground prior to interpretation.

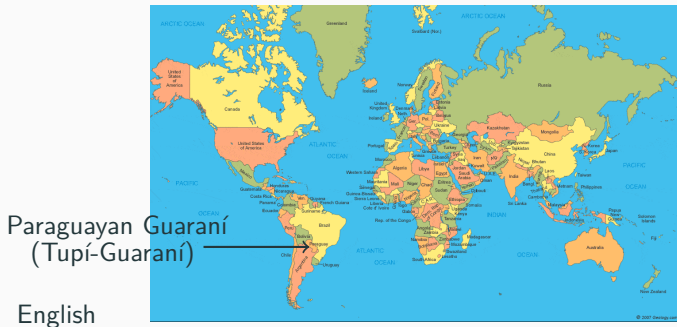
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Tonhauser et al. 2013: Crosslinguistically applicable projection diagnostic

Presuppositions in well- and lesser-studied languages

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Kaqchikel, K'iche'
(Mayan)

Paraguayan Guaraní
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English



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Presuppositions in well- and lesser-studied languages

E.g., expressions conveying a change of state from P to not-P:

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Juma 3sg-PST-stop INF-smoke cigarette
'Did Juma stop smoking?'

(9) Júma=pa **nd-o-pita-vé-i-ma**? [Guaraní]
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Classical conventionalist analyses of presuppositions do not lead us to expect the observed universal tendencies, i.e., that presuppositions may be **nondetachable** (Levinson 1983, Simons 2001).

Note, however: Matthewson 2006

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- **Items:** Written/spoken polar questions with presupposition triggers, and other expressions associated with projective content (English: 19; Guaraní: 17).
 - (9) [Magda, the speaker, is overheard at party / on the street]
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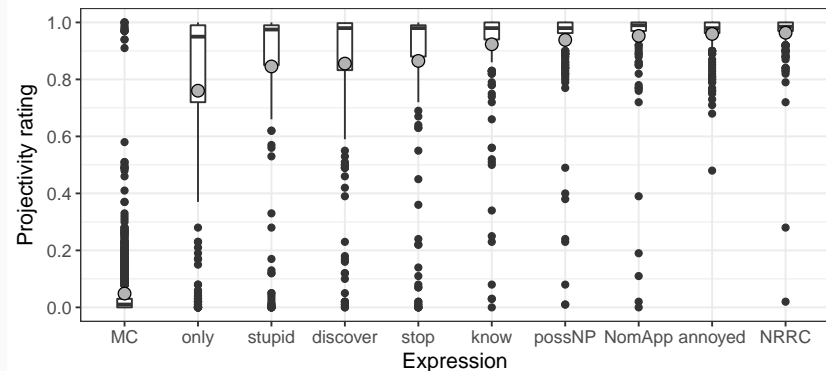
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Inter-item variability in American English

[Exp1a: 9 expressions, 210 participants]

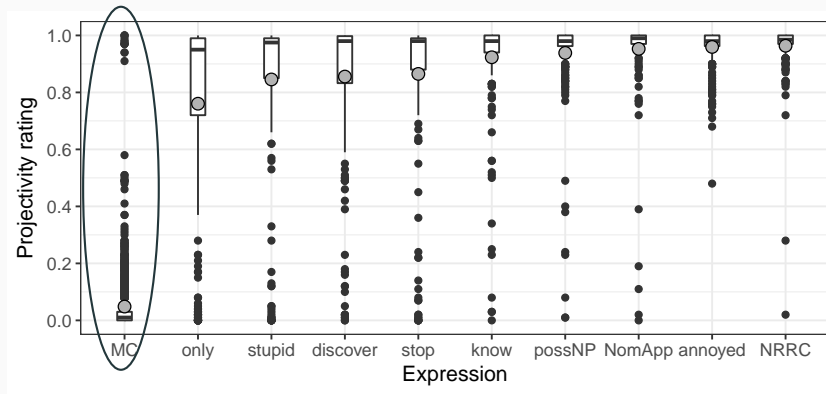
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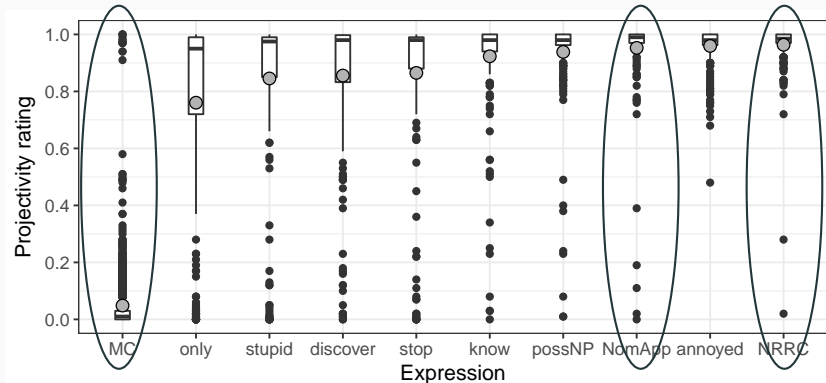
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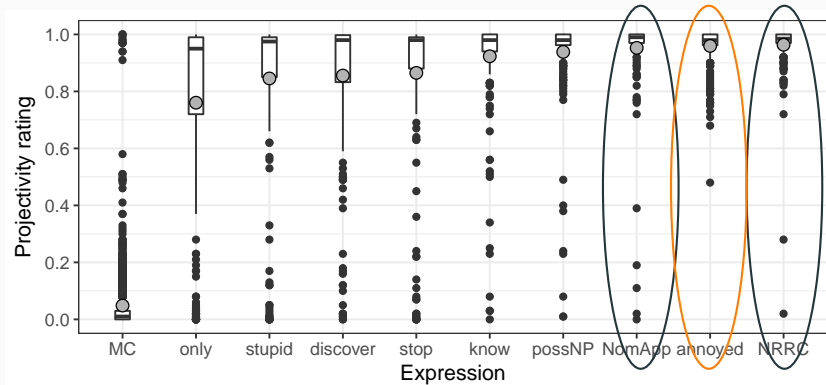
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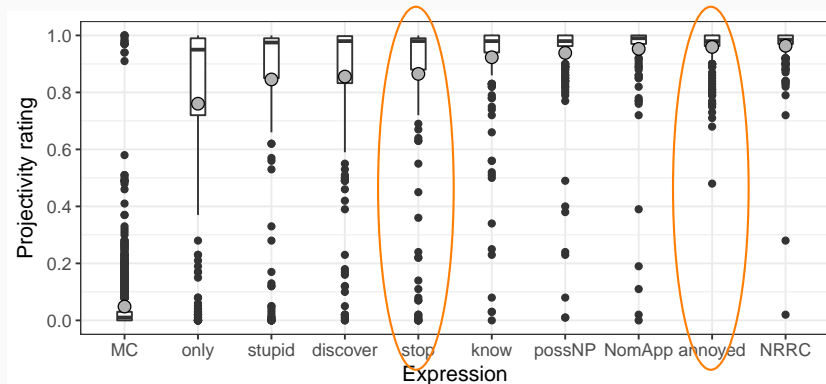
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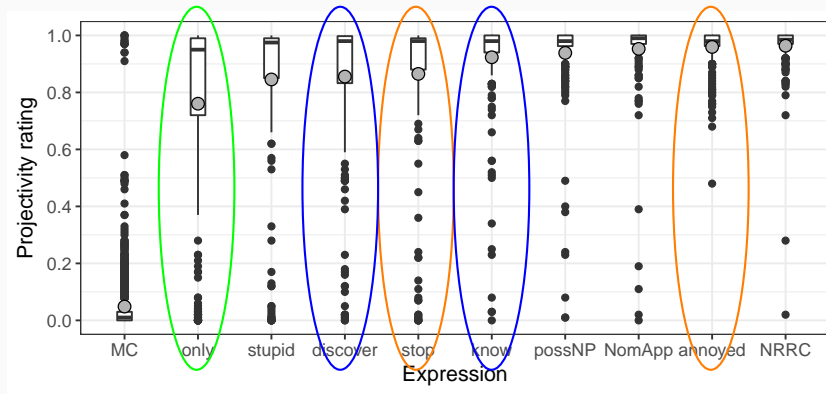
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Classical conventionalist analyses do not account for this inter-item variability, and neither do analyses that assume distinct sub-classes of presuppositions (e.g., Abrusán 2011, Romoli 2015).

[Tonhäuser, Beaver & Degen ms]

Inter-presupposition variability in American English

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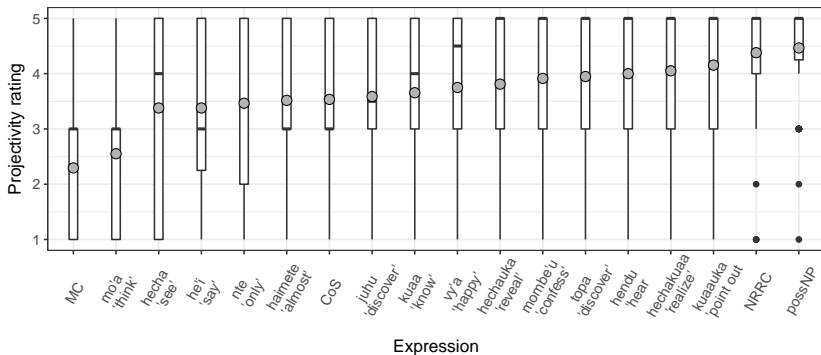
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- Empirically adequate analyses of projection must capture projection variability (for discussion, see Tonhauser, Beaver & Degen ms).

Inter-item variability in Paraguayan Guaraní

[17 expressions, 29 participants]

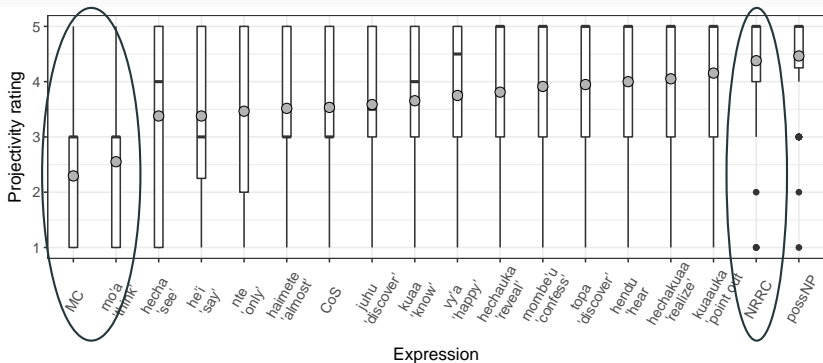
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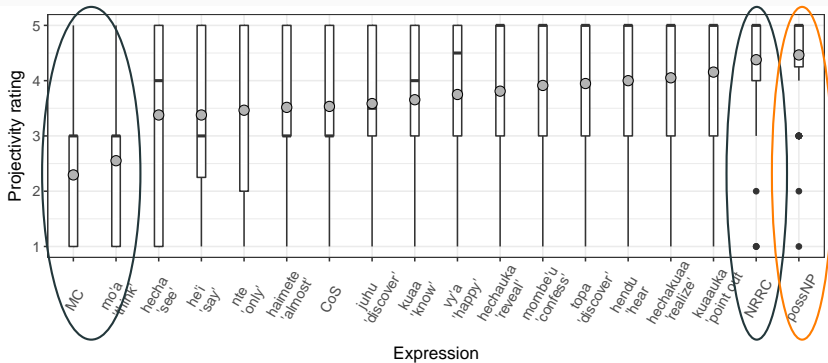
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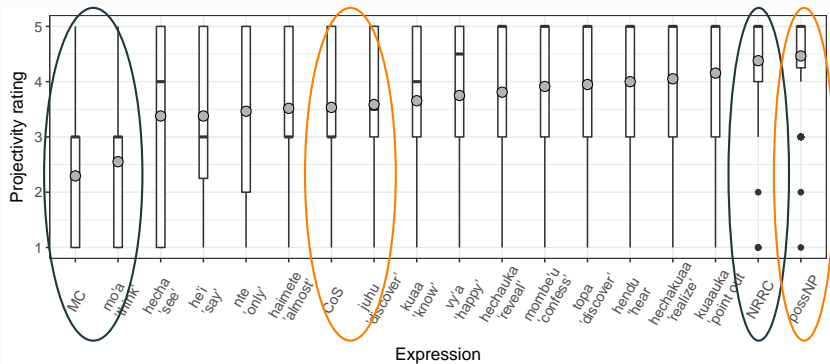
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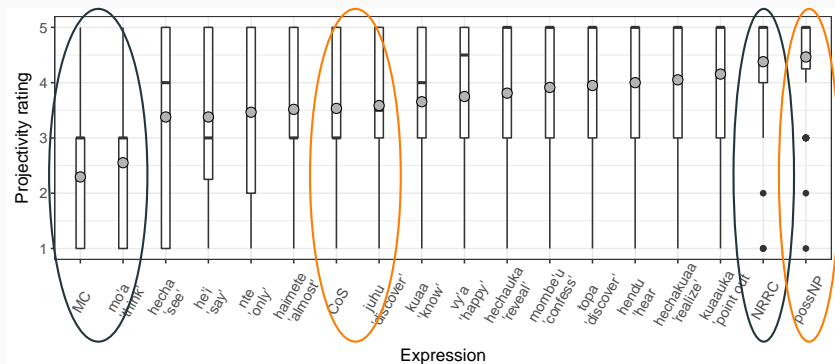
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Classical conventionalist analyses of presuppositions do not lead us to expect this inter-item variability, nor the parallels between English and Guaraní projection variability. (Tonhauser ms)

Interim summary: Presuppositions are heterogeneous

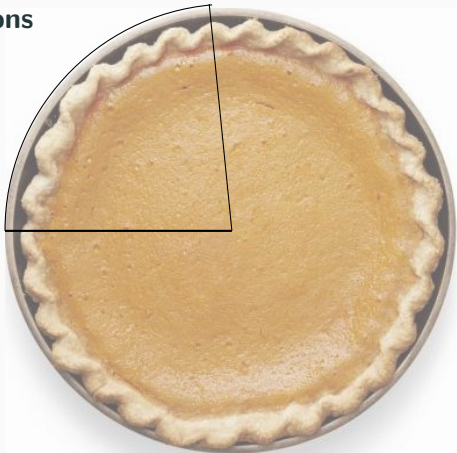
Presuppositions

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+entailed

+not at-issue

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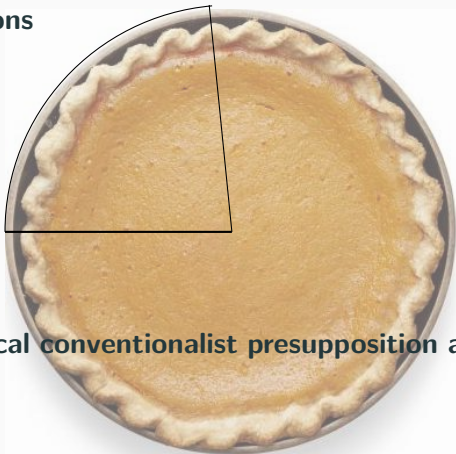
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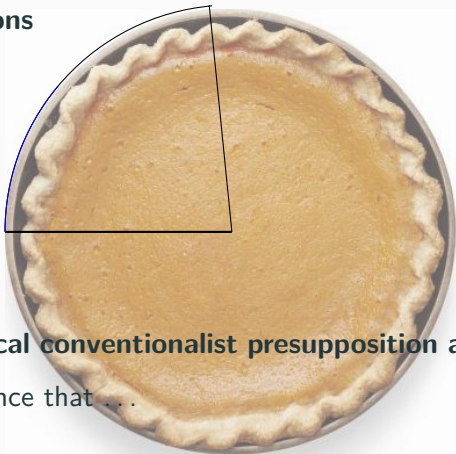
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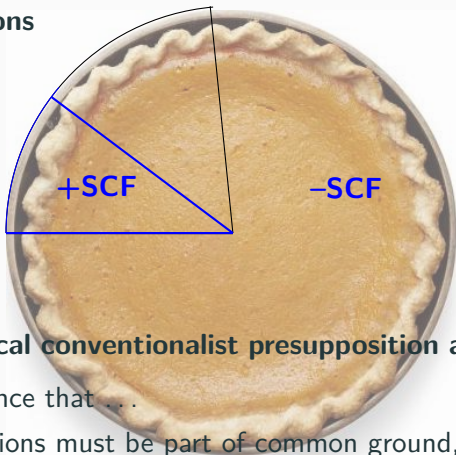
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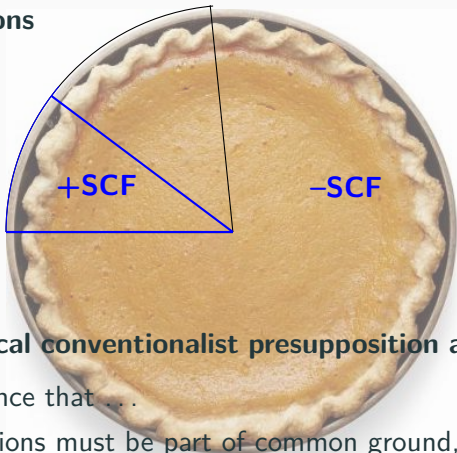
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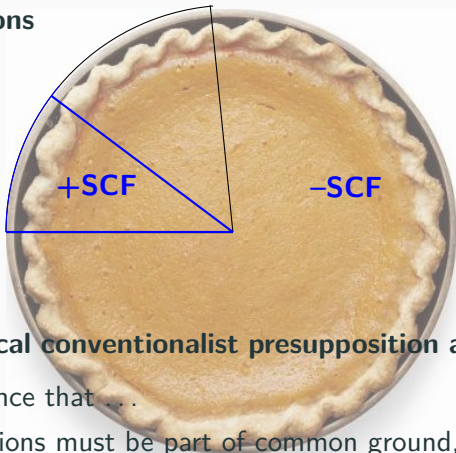
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Evaluation of classical conventionalist presupposition analyses:

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3. there is projection variability among presuppositions.

Cutting the projective content pie: A more nuanced picture



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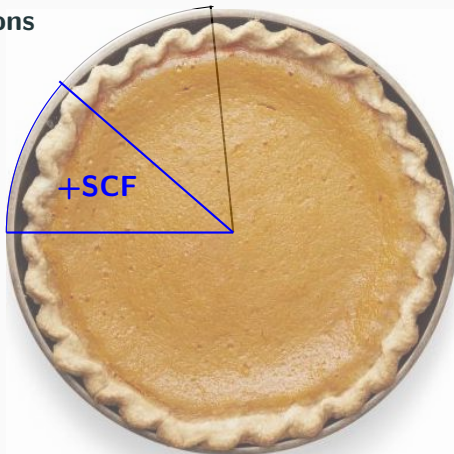
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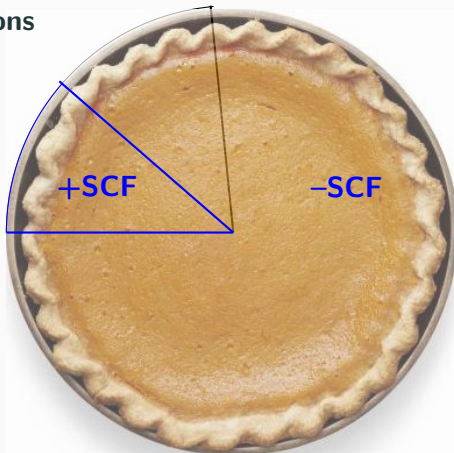
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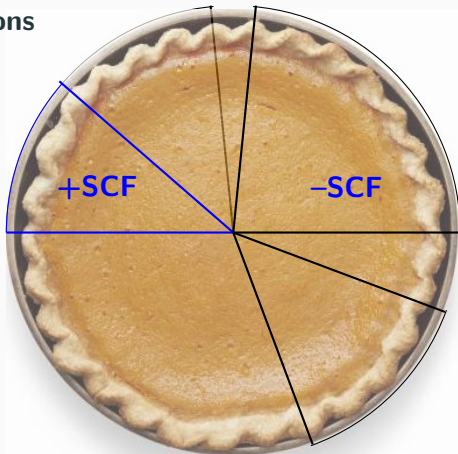


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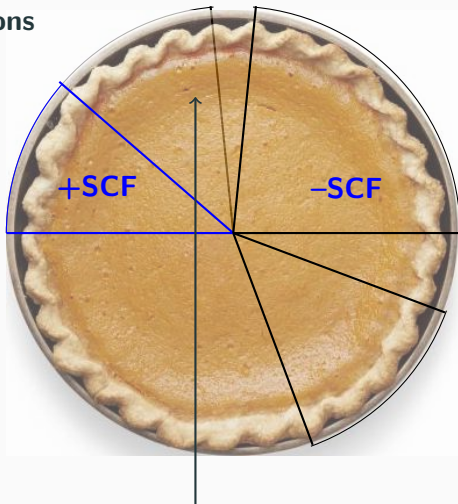
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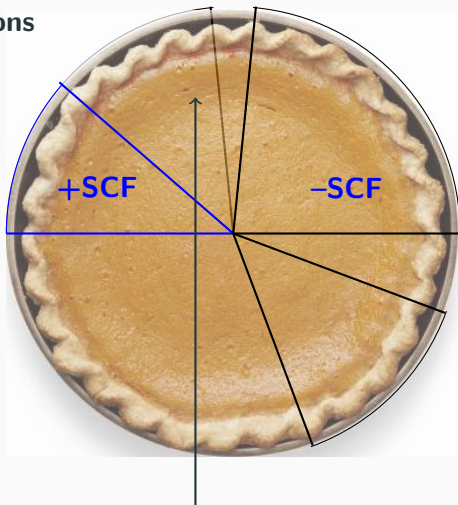
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Why do “informative presuppositions” project?

(Some proposals: e.g., Abusch 2010, Abrusán 2011, Romoli 2015)

Projective content as not at-issue content

Hypothesis: Projective content is not at-issue with respect to the Question Under Discussion. Identifying the meaning of an utterance necessitates identification of the question it addresses.

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(11) Non-restrictive relative clauses

A1: Where's Waldo? B: ✓

A2: What is Waldo wearing? B: #

B: **Waldo, who is wearing a striped T-shirt, is at a party.**

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B: Waldo, who is wearing a striped T-shirt, is at a party.

(12) Content of complement of *discover*

A1: Why is Henry in such a bad mood? B: ✓

A2: Where was Harriet yesterday? B: ✓

B: Harry discovered that Harriet had a job interview at P.

(see, e.g., Potts 2005, Simons 2007)

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Prosody ~ focus ~ questions ~ projectivity

Prosody provides a cue to focus, which in turn provides a cue to the question addressed. (e.g., Paul 1880, Most and Saltz 1979, Gussenhoven 1983, Rooth 1992, Birch and Clifton 1995, Roberts 2012/1998, Breen et al. 2010)

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Our hypothesis connects questions to projectivity.

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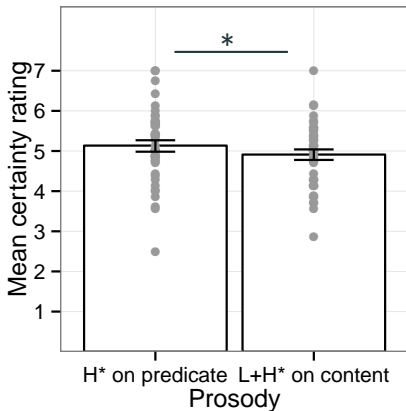
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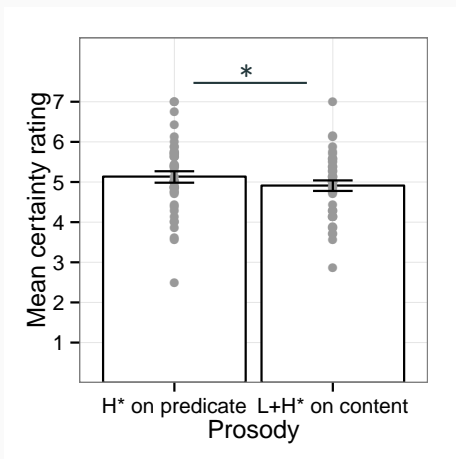
Prediction: Listeners are more likely to take speakers to be committed to the content of the complement in de-contextualized utterances of (15) than of (16).

[15 target sentences (5 attitude predicates), 47 participants]

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Replicated for other prosodic conditions, and for manner adverb utterances (Stevens et al. 2017); for similar findings see Cummins and Rohde 2015.

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Predictions:

1. Because prosody can provide a cue to the question that an utterance addresses, prosody provides a cue to projectivity. (Tonhauser 2016)
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Exploring the relation between projectivity and at-issueness

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Magda: Did Luli stop smoking?

Projectivity: Is Magda certain that Luli has smoked?

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- Exps. 2: Gradient at-issueness ratings for same projective contents:
 - (18) [Magda and Sam are overheard at a party]
Magda: Luli stopped smoking.
Sam: Are you sure?
Magda: Yes, I am sure that Luli has smoked.
At-issue: Did Magda answer Sam's question?

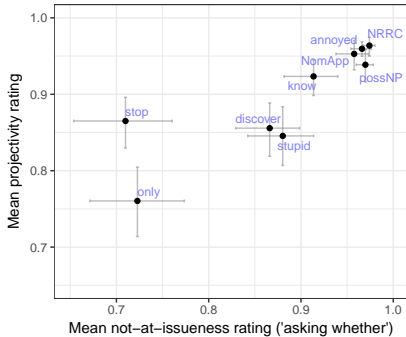
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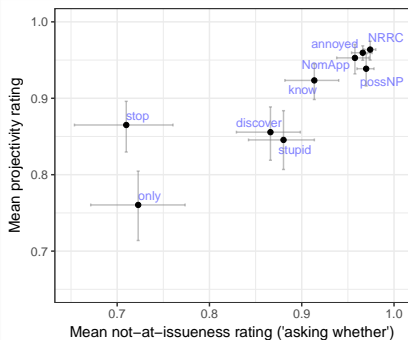
Exp 1a ($r = .85$)



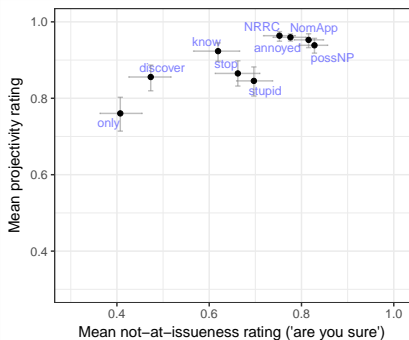
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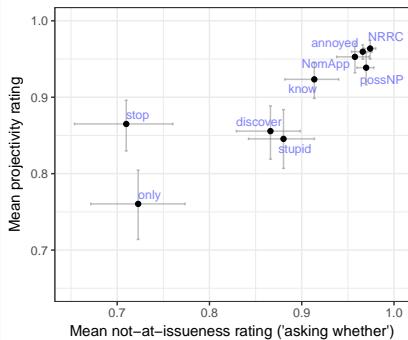
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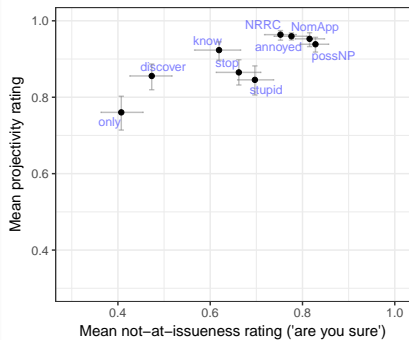
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The two at-issueness measures are correlated, but not identical.
(compare, e.g., *stop* vs. *discover*)

Additional findings of the experiment

- Projectivity is correlated with not-at-issueness, as predicted by our hypothesis (Simons et al. 2010, Beaver et al. 2017).

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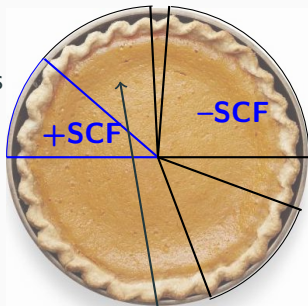
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Future research: How does lexical meaning influence or signal what the Question Under Discussion is?

Cutting the projective content pie: A more nuanced picture

Presuppositions



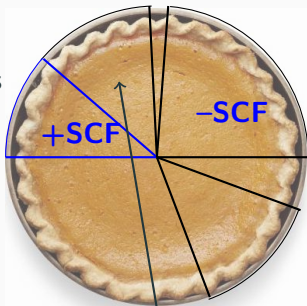
Conventional
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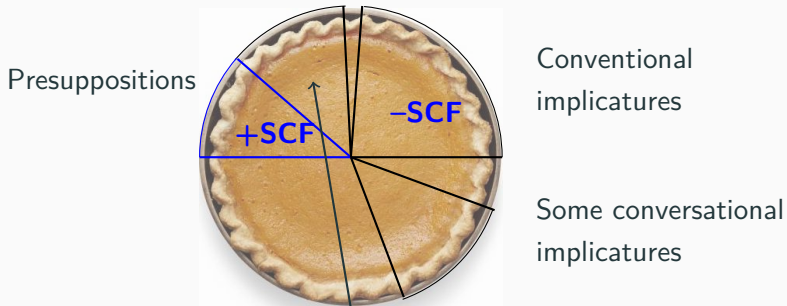
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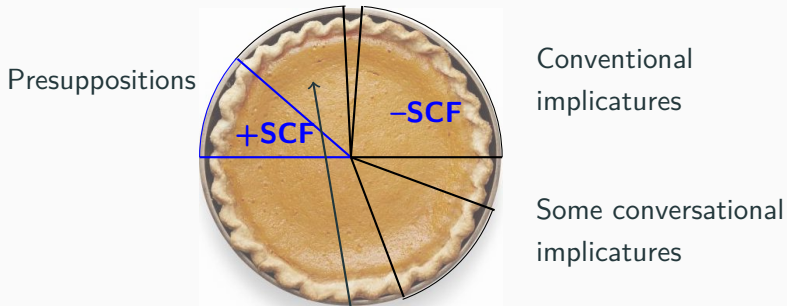
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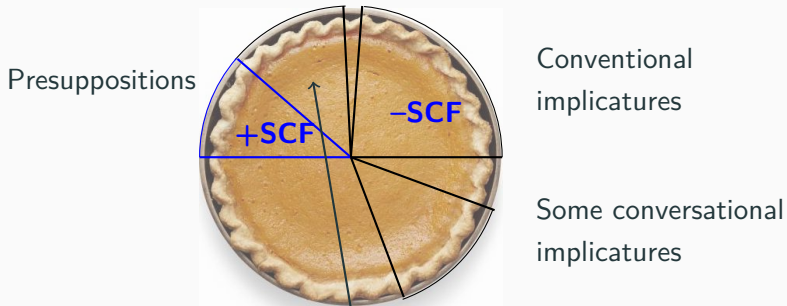
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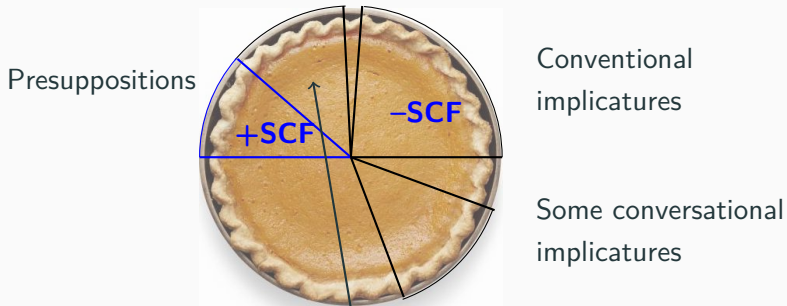
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- Lexical content / world knowledge
- Expression that projective content is associated with
- Context (Tonhauser, Degen, de Marneffe & Simons ms.)

Taking stock: Why does projective content project?

Presuppositions



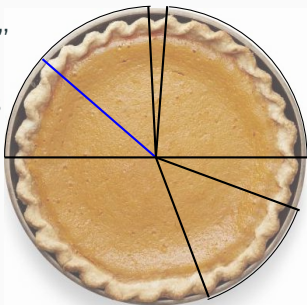
Conventional
implicatures

Some conversational
implicatures

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“Informative presuppositions”

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Conventional implicatures

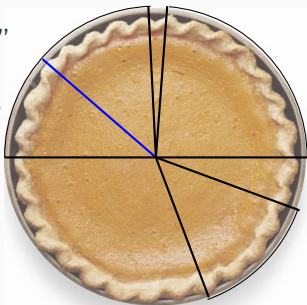
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1. “Informative presuppositions” in English and Guaraní:
 - SCF, nondetachability, projection variability

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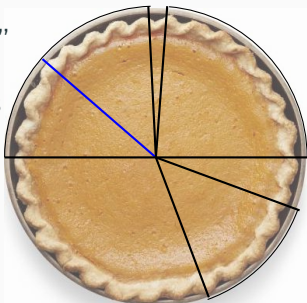
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What's next?

References

- Abrusán, Márta. 2011. Predicting the presuppositions of soft triggers. *Linguistics & Philosophy* 34:491–535.
- Abrusán, Márta. 2016. Presupposition cancellation: Explaining the 'soft-hard' trigger distinction. *Natural Language Semantics* 24:165–202.
- Abusch, Dorit. 2010. Presupposition triggering from alternatives. *Journal of Semantics* 27:37–80.
- Acton, Eric K. 2014. *Pragmatics and the Social Meaning of Determiners*. Ph.D. thesis, Stanford University.
- Amaral, Patrícia and Chris Cummins. 2015. A cross-linguistic study on information backgrounding and presupposition projection. In F. Schwarz, ed., *Experimental Perspectives on Presuppositions*, pages 157–172. Heidelberg: Springer.
- AnderBois, Scott, Adrian Brasoveanu, and Robert Henderson. 2015. At-issue proposals and appositive impositions in discourse. *Journal of Semantics* 32:93–138.

References II

- Barlew, Jefferson. 2017. *The Semantics and Pragmatics of Perspectival Expressions in English and Bulu: The Case of Deictic Motion Verbs*. Ph.D. thesis, The Ohio State University.
- Beaver, David. 2010. Have you noticed that your belly button lint colour is related to the colour of your clothing? In R. Bäuerle, U. Reyle, and E. Zimmermann, eds., *Presuppositions and Discourse: Essays Offered to Hans Kamp*, pages 65–99. Oxford: Elsevier.
- Beaver, David, Craige Roberts, Mandy Simons, and Judith Tonhauser. 2017. Questions Under Discussion: Where information structure meets projective content. *Annual Review of Linguistics* 3.
- Birch, Stacy and Charles Clifton. 1995. Focus, accent, and argument structure: Effects on language comprehension. *Language and Speech* 38:365–391.
- Breen, Mara, Evelina Fedorenko, Michael Wagner, and Edward Gibson. 2010. Acoustic correlates of information structure. *Language and Cognitive Processes* 25:1044–1098.
- Campbell-Kibler, Kathryn. 2005. *Listener Perceptions of Sociolinguistic Variables: The Case of (ING)*. Ph.D. thesis, Stanford University.
- Campbell-Kibler, Kathryn. 2007. Accent, (ING), and the social logic of listener perceptions. *American Speech* 82:32–64.

References III

- Campbell-Kibler, Kathryn. 2011. The sociolinguistic variant as a carrier of social meaning. *Language Variation and Change* 22:423–441.
- Castroviejo Miró, Elena. 2008. An expressive answer: Some considerations on the semantics and pragmatics of wh-exclamatives. In *Chicago Linguistic Society 44*, pages 3–17. Chicago: University of Chicago.
- Cummins, Chris and Hannah Rohde. 2015. Evoking context with contrastive stress: Effects on pragmatic enrichment. *Frontiers in Psychology* 6:Article 1779.
- Gussenhoven, Carlos. 1983. Testing the reality of focus domains. *Language and Speech* 26:61–80.
- Gutzmann, Daniel. 2015. *Use-Conditional Meaning: Studies in Multidimensional Semantics*. Oxford: Oxford University Press.
- Heim, Irene. 1983. On the projection problem for presuppositions. In M. Barlow, D. Flickinger, and M. Westcoat, eds., *West Coast Conference on Formal Linguistics (WCCFL) 2*, pages 114–125.
- Jeong, Sunwoo and Christopher Potts. 2016. Intonational sentence-type conventions for perlocutionary effects: An experimental investigation. In *Semantics and Linguistic Theory (SALT) 26*, pages 1–22. eLanguage.
- Jordan, Jessica. 2017. Projective content in Kiswahili. In *48th Annual Conference on African Linguistics*.

References IV

- Kadmon, Nirit. 2001. *Formal Pragmatics*. Oxford: Blackwell.
- Karttunen, Lauri. 1971. Some observations on factivity. *Papers in Linguistics* 4:55–69.
- Kierstead, Gregory. 2015. *Projectivity and the Tagalog Reportative Evidential*.
Master's thesis, The Ohio State University.
- Levinson, Stephen. 1983. *Pragmatics*. Cambridge: Cambridge University Press.
- Matthewson, Lisa. 2006. Presupposition and cross-linguistic variation. In *Proceedings of the 26th Meeting of the North-Eastern Linguistic Society*, pages 63–76.
- Most, Robert B. and Eli Saltz. 1979. Information structure in sentences: New information. *Language and Speech* 22:89–95.
- Murray, Sarah. 2014. Varieties of update. *Semantics & Pragmatics* 7(2):1–53.
- Paul, Hermann. 1880. *Prinzipien der Sprachgeschichte*. Tübingen: Niemeyer.
- Potts, Christopher. 2005. *The Logic of Conventional Implicatures*. Oxford: OUP.
- Roberts, Craige. 2012/1998. Information structure in discourse: Towards an integrated formal theory of pragmatics. *Semantics & Pragmatics* 5:1–69. Reprint of 1998 revision of 1996 OSU Working Papers publication.
- Romoli, Jacopo. 2015. The presuppositions of soft triggers are obligatory scalar implicatures. *Journal of Semantics* 32:173–291.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.

References V

- Schwarz, Florian. 2014. Presuppositions are fast, whether hard or soft – Evidence from the visual world. In *Semantics and Linguistic Theory (SALT) XXIV*, pages 1–22. Ithaca, NY: CLC Publications.
- Simons, Mandy. 2001. On the conversational basis of some presuppositions. In *Semantics and Linguistics Theory (SALT) XI*, pages 431–448. Ithaca, NY: CLC Publications.
- Simons, Mandy. 2005. Presupposition and relevance. In Z. Szabó, ed., *Semantics and Pragmatics*, pages 329–355. Oxford: Clarendon Press.
- Simons, Mandy. 2007. Observations on embedding verbs, evidentiality, and presupposition. *Lingua* 117(6):1034–1056.
- Simons, Mandy, David Beaver, Craige Roberts, and Judith Tonhauser. 2017. The Best Question: Explaining the projection behavior of factive verbs. *Discourse Processes* 3:187–206.
- Simons, Mandy, Judith Tonhauser, David Beaver, and Craige Roberts. 2010. What projects and why. In *Semantics and Linguistic Theory (SALT) XXI*, pages 309–327. Ithaca, NY: CLC Publications.
- Smith, E. Allyn and Kathleen Currie Hall. 2011. Projection diversity: Experimental evidence. In *Proceedings of the 2011 ESSLLI Workshop on Projective Content*, pages 156–170.

References VI

- Stevens, Jon Scott, Marie-Catherine de Marneffe, Shari R. Speer, and Judith Tonhauser. 2017. Rational use of prosody predicts projectivity in manner adverb utterances. In *39th Annual Meeting of the Cognitive Science Society*.
- Stout, Tammi. 2017. *An Investigation of Projection and Temporal Reference in Kaqchikel*. Ph.D. thesis, University of Texas at Austin.
- Tonhauser, Judith. 2016. Prosodic cues to speaker commitment. In *Semantics and Linguistic Theory (SALT) XXVI*, pages 934–960. Ithaca, NY: CLC Publications.
- Tonhauser, Judith. ms. Projection variability in Paraguayan Guaraní. Ms., The Ohio State University.
- Tonhauser, Judith, David Beaver, , and Judith Degen. msa. On the heterogeneity of projective content: Gradient projectivity and its relation to gradient at-issueness. Ms., The Ohio State University, Stanford University, University of Texas at Austin.
- Tonhauser, Judith, David Beaver, Craig Roberts, and Mandy Simons. 2013. Toward a taxonomy of projective content. *Language* 89:66–109.
- Tonhauser, Judith, Judith Degen, Marie-Catherine de Marneffe, and Mandy Simons. msb. Projection variability in English evaluative adjective sentences. Ms., The Ohio State University.
- van der Sandt, Rob. 1992. Presupposition projection as anaphora resolution. *Journal of Semantics* 9:333–377.

- Woodward, Richard B. 2009. 'The Americans' revisited. online.wsj.com/news/articles/SB10001424052748704322004574477761913139506.
- Xue, Jingyang and Edgar Onea. 2011. Correlation between projective meaning and at-issueness: An empirical study. In *Proceedings of the 2011 ESLLI Workshop on Projective Content*, pages 171–184.
- Yasavul, Murat. 2013. Two kinds of focus constructions in K'iche'. In *Proceedings of Semantics and Linguistic Theory (SALT) 23*. eLanguage.
- Yasavul, Murat. 2017. *Questions and Answers in K'iche'*. Ph.D. thesis, The Ohio State University.