Introduction
000000

Experiments 1–4: Results
000

Experiments 5--6
00000

General discussion
00

References

What is at-issueness? An experimental comparison of diagnostics

Conglei Xu, Lisa Hofmann, Judith Tonhauser

lisa.hofmann@ling.uni-stuttgart.de

Universität Stuttgart

Experiments on the semantics/pragmatics interface (XPrag fest 2025)
July 18st, 2025

At-issueness

Distinguish propositional content expressing the main point of an utterance (at-issue content) from those conveying background information (not-at-issue content)

Introduction
●○○○○○

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

At-issueness

Distinguish propositional content expressing the main point of an utterance (at-issue content) from those conveying background information (not-at-issue content)

(1)   *Greg, who bought a new car, is envied by his neighbor.*
   a.   At-issue content: *Greg is envied by his neighbor*
   b.   Not-at-issue content: *Greg bought a new car*

At-issueness

Distinguish propositional content expressing the main point of an utterance (at-issue content) from those conveying background information (not-at-issue content)

(1) *Greg, who bought a new car, is envied by his neighbor.*
   a. At-issue content: *Greg is envied by his neighbor*
   b. Not-at-issue content: *Greg bought a new car*

▶ Several definitions and diagnostics have been proposed in the literature

At-issueness

Distinguish propositional content expressing the main point of an utterance (at-issue content) from those conveying background information (not-at-issue content)

(1)   *Greg, who bought a new car, is envied by his neighbor.*
     a.   At-issue content: *Greg is envied by his neighbor*
     b.   Not-at-issue content: *Greg bought a new car*

▶ Several definitions and diagnostics have been proposed in the literature

▶ Very little discussion of whether definitions and diagnostics target the same underlying phenomenon (Snider 2017b,a, 2018; Koev 2018; Faller 2019; Korotkova 2020)

At-issueness

Distinguish propositional content expressing the main point of an utterance (at-issue content) from those conveying background information (not-at-issue content)

(1)   *Greg, who bought a new car, is envied by his neighbor.*
   a.   At-issue content: *Greg is envied by his neighbor*
   b.   Not-at-issue content: *Greg bought a new car*

▶ Several definitions and diagnostics have been proposed in the literature

▶ Very little discussion of whether definitions and diagnostics target the same underlying phenomenon (Snider 2017b,a, 2018; Koev 2018; Faller 2019; Korotkova 2020)

▶ This work: take a step in adressing this question, compare whether four commonly used diagnostics yield the same results for propositional contents introduced by the same kinds of expressions

Experiments 1–4

▶ Across four experiments, we manipulated the diagnostic used to assess the at-issueness status of the same contents

Experiments 1–4

▶ Across four experiments, we manipulated the diagnostic used to assess the at-issueness status of the same contents

▶ We chose four diagnostics that have been suggested to target different notions of at-issueness and show different empirical patterns (Snider 2017b,a, 2018; Koev 2018; Faller 2019; Korotkova 2020)

Experiments 1–4

▶ Across four experiments, we manipulated the diagnostic used to assess the at-issueness status of the same contents

▶ We chose four diagnostics that have been suggested to target different notions of at-issueness and show different empirical patterns (Snider 2017b,a, 2018; Koev 2018; Faller 2019; Korotkova 2020)

▶ We offer a systematic experimental comparison

Introduction
○○●○○○
Experiments 1–4: Results
○○○
Experiments 5--6
○○○○○
General discussion
○○
References

Question-based at-issueness diagnostics

Question-based diagnostics assume a conception of at-issueness relative to the QUD: At-issue content is the part of an utterance that interacts with the current QUD (Amaral et al. 2007; Simons et al. 2010)

Introduction
○○●○○○

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Question-based at-issueness diagnostics

Question-based diagnostics assume a conception of at-issueness relative to the QUD: At-issue content is the part of an utterance that interacts with the current QUD (Amaral et al. 2007; Simons et al. 2010)

(2)   QUD diagnostic (e.g., Tonhauser 2012; Chen 2024)
        A: *What did Greg buy?*
        B: *Greg, who bought a new car, is envied by his neighbor.*
        Question to participants: How well does B's response fit A's question?

Introduction
○○○●○○

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Question-based at-issueness diagnostics

Question-based diagnostics assume a conception of at-issueness relative to the QUD: At-issue content is the part of an utterance that interacts with the current QUD (Amaral et al. 2007; Simons et al. 2010)

(2) QUD diagnostic (e.g., Tonhauser 2012; Chen 2024)

   A: *What did Greg buy?*
   B: *Greg, who bought a new car, is envied by his neighbor.*

   Question to participants: How well does B's response fit A's question?

(3) 'asking whether' diagnostic (e.g., Tonhauser et al. 2018; Solstad and Bott 2024)

   Is Greg, who bought a new car, envied by his neighbor?

   Question to participants: Is the speaker asking whether Greg bought a new car?

Introduction
○○○●○○

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Question-based at-issueness diagnostics

Question-based diagnostics assume a conception of at-issueness relative to the QUD: At-issue content is the part of an utterance that interacts with the current QUD (Amaral et al. 2007; Simons et al. 2010)

(2)   QUD diagnostic (e.g., Tonhauser 2012; Chen 2024)
        A: *What did Greg buy?*
        B: *Greg, who bought a new car, is envied by his neighbor.*
        Question to participants: How well does B's response fit A's question?

(3)   'asking whether' diagnostic (e.g., Tonhauser et al. 2018; Solstad and Bott 2024)
        Is Greg, who bought a new car, envied by his neighbor?
        Question to participants: Is the speaker asking whether Greg bought a new car?

   ▶ Other diagnostics make other assumptions (Snider 2017b,a, 2018; Koev 2018; Faller 2019; Korotkova 2020)

Introduction
○○○●○○

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Assertion-based at-issueness diagnostics

Assertion-based diagnostics assume that the at-issue content of an assertion constitues a proposal to update the common ground that can be affirmed or denied (Farkas and Bruce 2010; Murray 2014; AnderBois et al. 2015)

Assertion-based at-issueness diagnostics

Assertion-based diagnostics assume that the at-issue content of an assertion constitues a proposal to update the common ground that can be affirmed or denied (Farkas and Bruce 2010; Murray 2014; AnderBois et al. 2015)

(4)   Direct dissent diagnostic (e.g., Tonhauser 2012; Syrett and Koev 2015)

    A: *Greg, who bought a new car, is envied by his neighbor.*
    B: *No, that's not true, he didn't buy a new car.*

Question to participants: How natural is B's rejection of A's utterance?

Introduction
○○○●○○
Experiments 1–4: Results
○○○
Experiments 5--6
○○○○○
General discussion
○○
References

Assertion-based at-issueness diagnostics

Assertion-based diagnostics assume that the at-issue content of an assertion constitues a proposal to update the common ground that can be affirmed or denied (Farkas and Bruce 2010; Murray 2014; AnderBois et al. 2015)

(4)   Direct dissent diagnostic (e.g., Tonhauser 2012; Syrett and Koev 2015)

   A: *Greg, who bought a new car, is envied by his neighbor.*
   B: *No, that's not true, he didn't buy a new car.*

   Question to participants: How natural is B's rejection of A's utterance?

(5)   'yes, but' diagnostic (e.g., Xue and Onea 2011; Destruel et al. 2015)

   A: *Greg, who bought a new car, is envied by his neighbor.*
   B: *Yes, but he didn't buy a new car.* /
        Yes, and he didn't buy a new car. /
        No, he didn't buy a new car.

   Task for participants: Choose the response that sounds best.

Experiments 1–4: contents

In seven conditions, each experiment tested propositional contents which previous literature leads us to expect show differences in at-issueness status

Experiments 1–4: contents

In seven conditions, each experiment tested propositional contents which previous literature leads us to expect show differences in at-issueness status

Propositional contents associated with:

► Sentence-medial and sentence-final appositive NRRCs (non-restrictive relative clauses): Syrett and Koev 2015 found that final appositives are more at-issue than medial ones under a version of the direct-dissent diagnostic

Experiments 1–4: contents

In seven conditions, each experiment tested propositional contents which previous literature leads us to expect show differences in at-issueness status

Propositional contents associated with:

- ▶ Sentence-medial and sentence-final appositive NRRCs (non-restrictive relative clauses): Syrett and Koev 2015 found that final appositives are more at-issue than medial ones under a version of the direct-dissent diagnostic

- ▶ Clauses embedded by *be right, confirm, discover, confess,* and *know*: Degen and Tonhauser 2025 found fine-grained differences in how at-issue these are under the 'asking-whether' diagnostic

Experiments 1–4: contents

In seven conditions, each experiment tested propositional contents which previous literature leads us to expect show differences in at-issueness status

Propositional contents associated with:

▶ Sentence-medial and sentence-final appositive NRRCs (non-restrictive relative clauses): Syrett and Koev 2015 found that final appositives are more at-issue than medial ones under a version of the direct-dissent diagnostic

▶ Clauses embedded by *be right, confirm, discover, confess,* and *know*: Degen and Tonhauser 2025 found fine-grained differences in how at-issue these are under the 'asking-whether' diagnostic

In each experiment, 80 participants saw each of 7 conditions once, each randomly paired with a clause to instantiate it (item), e.g. *Greg bought a new car,* + 2 controls (attention checks)

Introduction
○○○○○●

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Materials

Exp. 1 (QUD diagnostic)

Nora: *What did Ann steal?*
Leo: *The manager reported Ann, who stole the money.*

How well does Leo's response fit Nora's question?

totally doesn't fit   totally fits

Continue

Introduction
○○○○○●

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Materials

Exp. 1 (QUD diagnostic)

Nora: *What did Ann steal?*
Leo: *The manager reported Ann, who stole the money.*

How well does Leo's response fit Nora's question?

totally doesn't fit — totally fits

Continue

Exp. 2 ('asking whether' diagnostic)

Charlotte: *Did the manager report Ann, who stole the money?*

Is Charlotte asking whether Ann stole the money?

no — yes

Continue

Introduction
○○○○○●

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Materials

Exp. 1 (QUD diagnostic)

Nora: *What did Ann steal?*
Leo: *The manager reported Ann, who stole the money.*

How well does Leo's response fit Nora's question?

totally doesn't fit ——————●—————— totally fits

Continue

Exp. 2 ('asking whether' diagnostic)

Charlotte: *Did the manager report Ann, who stole the money?*

Is Charlotte asking whether Ann stole the money?

no ——————●—————— yes

Continue

Exp. 3 ('direct dissent' diagnostic)

Dawn: *The neighbor envies Greg, who bought a new car.*
Charlotte: *No, he didn't buy a new car.*

How natural is Charlotte's rejection of Dawn's utterance?

totally unnatural ——————●—————— totally natural

Introduction
○○○○○●

Experiments 1–4: Results
○○○

Experiments 5--6
○○○○○

General discussion
○○

References

Materials

Exp. 1 (QUD diagnostic)

Nora: *What did Ann steal?*
Leo: *The manager reported Ann, who stole the money.*

How well does Leo's response fit Nora's question?

|---|
| totally doesn't fit — totally fits |

[Continue]

Exp. 2 ('asking whether' diagnostic)

Charlotte: *Did the manager report Ann, who stole the money?*

Is Charlotte asking whether Ann stole the money?

|---|
| no — yes |

[Continue]

Exp. 3 ('direct dissent' diagnostic)

Dawn: *The neighbor envies Greg, who bought a new car.*
Charlotte: *No, he didn't buy a new car.*

How natural is Charlotte's rejection of Dawn's utterance?

|---|
| totally unnatural — totally natural |

Exp. 4 ('yes, but' diagnostic)

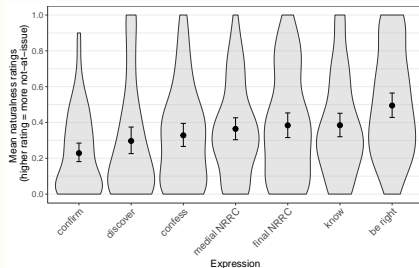**Vincent:** *The boss scolded Dustin, who lost his key.*

Nina:

○ *Yes, but he didn't lose his key.*
○ *Yes, and he didn't lose his key.*
○ *No, he didn't lose his key.*

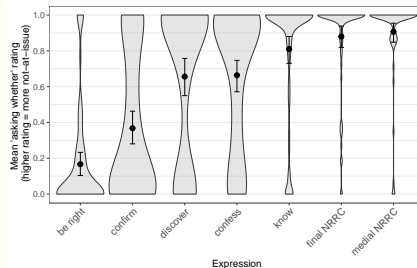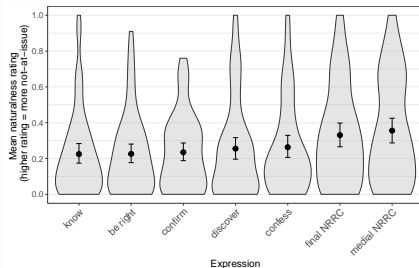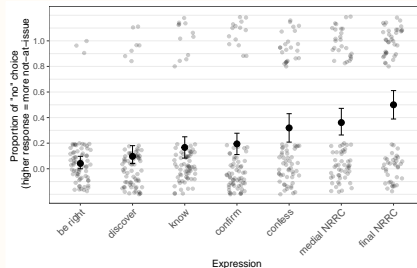Please choose the response by Nina that sounds best to you.

Introduction
000000

Experiments 1–4: Results
●00

Experiments 5--6
00000

General discussion
00

References

Results

Exp. 1 (QUD diagnostic)

Exp. 2 ('asking whether' diagnostic)

Exp. 3 ('direct dissent' diagnostic)

Exp. 4 ('yes, but' diagnostic)

Introduction
000000

Experiments 1–4: Results
○●○

Experiments 5--6
00000

General discussion
00

References

Some observations

▶ Experiment 2 (asking whether) shows the greatest differentiation between the contents, Experiment 2 ('direct dissent') showing the least; (range of means, and significant differences between them)

▶ rankings are very different (confirm always lower than discover)

▶ start w exp 2 / overlay w other diagrams that show statistical analysis

▶ No difference between medial and final NRRCs

▶ (posthoc pairwise comparisons of the estimated means/proportions for each content using the 'emmeans' package (Lenth 2023) in R (R Core Team 2016). The input to the pairwise comparisons were mixed-effects beta regression models (Exps. 1-3) or a mixed-effects logistic regression model (Exp. 4))

Introduction
000000

Experiments 1–4: Results
00●

Experiments 5--6
00000

General discussion
00

References

Some points

▶ We do see differences between diagnostics, importantly not all show the same differences between contents

▶ none of our diagnostics replicate the finding from S+K that final appositives are more at issue than medial ones

▶ only one replciate degen + tonhauser

We could make some points here

1. And why Exp. 2 shows a greater differentiation than the others

We focus on point 3 here

Two hypotheses

why is asking whether so different

▶ q-at-issuenes (thats not it)

▶ question embedding (hypotheses)

▶ response task

Materials + procedure

screenshots

Introduction
000000

Experiments 1–4: Results
000

Experiments 5--6
00●00

General discussion
00

References

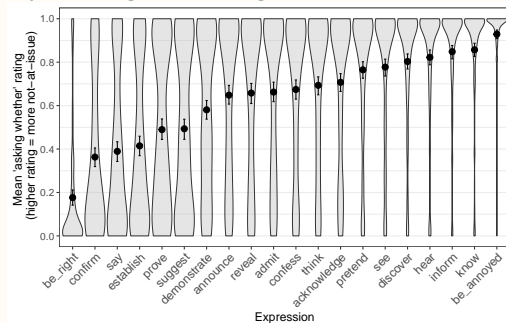# Q-at-issueness or question-embedding?

Why is 'asking whether' different from all others, when the QUD-one should be like the 'asking whether' test based on Q-AI-ness?

In experiments 5 and 6, we test whether the fine-grained differences among clause-embedding predicates observed with one diagnostic (asking-whether) are replicated with other diagnostics.
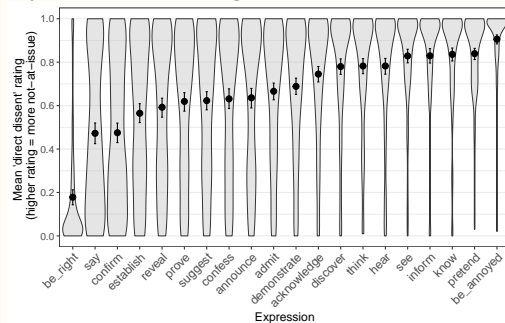
(6)   a.   Exp. 5 ('asking whether' diagnostic)
           Nora: *Is xx right that Lucy broke the plate?*
           Question to participants: Is Nora asking whether Lucy broke the plate?

   b.   Exp. 6 ('direct dissent' diagnostic)
           Nora: *Is XX right that Lucy broke the plate?*
           Leo: *Yes, she didn't break the plate.*
           Question to participants: How natural is Leo's response to Nora's question?

Introduction
000000

Experiments 1–4: Results
000

Experiments 5--6
00000

General discussion
00

References

Results

Exp. 5 ('asking whether' diagnostic)

Exp. 6 ('direct assent' diagnostic)

Results of Exps. 5-6. The panels show the mean ratings by expression for (a) Exp. 5 (asking whether diagnostic) and (b) Exp. 2 (direct assent diagnostic). Error bars indicate 95% bootstrapped confidence intervals. Violin plots show the kernel probability density of individual participants' ratings.

▶ Spearman rank = .93

Discussion

- ▶ These two are highly correlated
- ▶ Answer to quesiton. not about response task, but interrogative embedding
- ▶ in relation to previous literature which is about q-at-issueness

Introduction
000000

Experiments 1–4: Results
000

Experiments 5--6
00000

General discussion
●0

References

Takeaways

- ▶ it matters which diagnostic you use (experimental confirmation for snider, korotkova)
- ▶ difference between Q-at-issuenes doesnt seem to be the most important difference, but more where is the content embedded
- ▶ no replication of Syrett + koev
- ▶ What the results might tell us about whether the diagnostics diagnose a shared underlying property
- ▶ Interaction of lexical semantics and pragmatics: Q

Interrogatives

why are interrogatives like that?

►

Introduction
oooooo

Experiments 1–4: Results
ooo

Experiments 5--6
ooooo

General discussion
oo

References

References I

Amaral, Patricia, Craige Roberts, and E Allyn Smith. 2007. Review of the logic of conventional implicatures by Chris Potts. *Linguistics and Philosophy* 30:707–749. Publisher: Springer.

AnderBois, Scott, Adrian Brasoveanu, and Robert Henderson. 2015. At-issue proposals and appositive impositions in discourse. *Journal of Semantics* 32(1):93–138.

Chen, Yuqiu. 2024. Presuppositions at the Semantics-Pragmatics Interface .

Degen, Judith and Judith Tonhauser. 2025. Projection inferences: On the relation between prior beliefs, at-issueness, and lexical meaning. Manuscript under review.

Destruel, Emilie, Edgar Onea, Daniel Velleman, Dylan Bumford, and David Beaver. 2015. A cross-linguistic study of the non-at-issueness of exhaustive inferences. In F. Schwarz, ed., *Experimental approaches to presupposition*, pages 135–156. Springer.

Faller, Martina T. 2019. The discourse commitments of illocutionary reportatives. *Semantics and Pragmatics* 12:8:1–53.

Farkas, Donka and Kim Bruce. 2010. On reacting to assertions and polar questions. *Journal of Semantics* 27(1):81–118.

Koev, Todor. 2018. Notions of at-issueness. *Language and Linguistics Compass* 12:e12306.

Introduction
000000

Experiments 1–4: Results
000

Experiments 5--6
00000

General discussion
00

References

References II

Korotkova, Natasha. 2020. Evidential meaning and (not-)at-issueness. *Semantics and Pragmatics* 13:article 4.

Lenth, Russell V. 2023. *emmeans: Estimated Marginal Means, aka Least-Squares Means.* R package version 1.8.8.

Murray, Sarah E. 2014. Varieties of update. *Semantics and Pragmatics* 7(2):1–53.

R Core Team. 2016. *R: A Language and Environment for Statistical Computing.* R Foundation for Statistical Computing, Vienna, Austria.

Simons, Mandy, Judith Tonhauser, David Beaver, and Craige Roberts. 2010. What projects and why. In *Semantics and linguistic theory*, vol. 20, pages 309–327.

Snider, Todd. 2017a. At-issueness\ne anaphoric availability. *Proceedings of the Linguistic Society of America* 2:39–1.

Snider, Todd. 2018. Distinguishing at-issueness from anaphoric potential: A case study of appositives. In *West Coast Conference on Formal Linguistics (WCCFL)*, vol. 35, pages 374–381.

Snider, Todd N. 2017b. *Anaphoric reference to propositions.* Doctoral dissertation, Cornell University, Ithaca, NY.

Introduction
000000

Experiments 1–4: Results
000

Experiments 5--6
00000

General discussion
00

References

References III

Solstad, Torgrim and Oliver Bott. 2024. Cataphoric resolution of projective content: The case of occasion verbs. *Semantics and Pragmatics* 17:11:1–66.

Syrett, Kristen and Todor Koev. 2015. Experimental evidence for the truth conditional contribution and shifting information status of appositives. *Journal of Semantics* 32(3):525–577. Publisher: Oxford University Press.

Tonhauser, Judith. 2012. Diagnosing (not-) at-issue content. *Proceedings of Semantics of Under-represented Languages of the Americas (SULA)* 6:239–254.

Tonhauser, Judith, David I. Beaver, and Judith Degen. 2018. How projective is projective content? Gradience in projectivity and at-issueness. *Journal of Semantics* 35(3):495–542.

Xue, Jingyang and Edgar Onea. 2011. Correlation between presupposition projection and at-issueness: An empirical study. In *Proceedings of the ESSLLI 2011 workshop on projective meaning*, pages 171–184.