What is at-issueness? An experimental comparison of diagnostics

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Abstract

At-issueness is a key concept in theoretical semantics/pragmatics, but there is no consensus about how it is defined or diagnosed (e.g., Tonhauser 2012; Tonhauser etal. 2018; Koev 2018). We present experimental data investigating whether four widely used diagnostics for at-issueness yield consistent results. Our findings reveal significant differences across diagnostics, indicating they are not interchangeable. Since the diagnostics target distinct theoretical conceptions of at-issueness, these differences offer insight into their comparability.

Contents

1 Introduction

Although at-issueness is a central concepts in semantics and pragmatics, the literature has not come up with a unified notion of at-issueness. Rather, the literature comes with various theoretical notions (Koev 2018; Tonhauser etal. 2018) and empirical reflexes used to diagnose them (e.g., Tonhauser 2012). Identifying distinct notions of at-issueness used in the literature, Koev 2018 raised the question Do the diagnostics that fall out from the different theories make comparable predictions about the same type of content? (p. 10). Based on impressionistic off-line judgments there are at least some types of contents for which the diagnostics yield different results, suggesting that they may diagnose related, but distinct notions of at-issueness. However, since the previous literature does not not paint an empirically clear picture, we experimentally compared four commonly used diagnostics for at-issueness.

The four diagnostics we tested are illustrated in (1–4) for sentence-medial non-restrictive relative clauses (NRRCs), which are usually taken to contribute non-at-issue content. As appositive content is generally taken to be not-at-issue, participants are expected to: Give low naturalness ratings under the QUD diagnostic (1) and the direct dissent diagnostic (3), not interpret the speaker to be asking about the content under the 'asking-whether' diagnostic in (2), will choose one of the yes-responses under the 'yes, but' diagnostic in (4).

(1) 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?

(2) 'asking whether' diagnostic (e.g., Tonhauser etal. 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?

(3) 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?

(4) 'yes, but' diagnostic (e.g., Xue and Onea 2011; Destruel etal. 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.

The diagnostics reflect different theoretical conceptions of at-issueness: The QUD diagnostic targets Q-at-issueness (Koev 2018), the 'asking whether' diagnostic assumes that (Tonhauser etal. 2018); and the direct dissent and 'yes, but' diagnostics reflect P-at-issueness.

Theoretical notions Koev 2018

- Q-at-issueness, where at-issue content addresses the QUD
- P-at-issueness, where at-issue content constitutes a proposal to update the common ground
- mention C-at-issueness, which is assumed to be a gerenalization of P-at-issueness, and further discussed later

Tonhauser etal. 2018

- at-issue content of interrogatives partitions the context set (related to both Q-at-issueness, and P-at-issueness)

Diagnostics and theory. (integrate into above discussion)

Previous research. (what do they tell us about question from koev) Prior research has identified disagreements, potentially arising from diagnostic differences:

Based on , Koev 2018 suggests that medial appositives can be Q-at-issue, but not P-at-issue. While Syrett and Koev 2015 found that sentence-medial appositives are less at-issue than sentence-final ones using the direct dissent test, Drozdov 2024 found no difference with the 'asking whether' diagnostic.

To investigate how consistent the diagnostics are, we conducted four experiments measuring the at-issueness of the same contents across diagnostics.

Questions

1. Do different diagnostics of at-issueness yield the same results when testing the same stimuli?
2. Do the results support the notion that different theoretical conceptions of at-issueness are distinct?

2 Experiments

To compare the results of at-issueness diagnostics, we conducted four experiments that each measured at-issueness with a different diagnostic, namely the QUD diagnostic (Exp.1), the 'asking whether' diagnostic (Exp.2), the direct dissent diagnostic (Exp.3) and the 'yes, but' diagnostic (Exp.4). To be able to compare the results of the diagnostics, the same seven contents shown in (5) were investigated under the four diagnostics, namely the contents of sentence-medial and sentence-final NRRCs, as well as the contents of the clausal complements of know, discover, confess, confirm and be right. These seven contents were instantiated by the same items across the four experiments.

(5) a. Content of sentence-medial NRRC
Lucy, who broke the plate, apologised. ⇝ Lucy broke the plate
b. Content of sentence-final NRRC
The police found Jack, who saw the murder. ⇝ Jack saw the murder

c. Content of the clausal complement of know
Ann knows that Raul cheated on his wife. ⇝ Raul cheated on his wife

d. Content of the clausal complement of discover
Mary discovered that Denny ate the last cupcake. ⇝ Denny ate the last cupcake

e. Content of the clausal complement of be right
Tom is right that Ann stole the money. ⇝ Ann stole the money

f. Content of the clausal complement of confirm
Harry confirmed that Greg bought a new car. ⇝ Greg bought a new car

Content of the clausal complement of confess **JT hates linguex. This is one of the reasons**
Lucy confessed that Dustin lost his key. ⇝ Dustin lost his keys

In each experiment, participants read the stimuli and gave ratings corresponding to the diagnostics.

2.1 Methods

2.1.1 Participants

For each of the four experiments, we recruited 80 participants on Prolific. These participants had registered on the platform as monolingual native speakers of English who lived in the USA. They had at least 100 previous submissions and an approval rate of at least 97%.

Table 1...

	recruited	ages	mean age	female	male	nonbinary	did not disclose
Exp.1							
Exp.2							
Exp.3							
Exp.4							

Table1: Information about the participants recruited in Exps.1-4.

2.1.2 Materials and procedure

Each content type was instantiated by one of seven items (e.g., 'Greg bought a new car') and realized as either an assertion (1), (3), (4) or a polar question (2). Participants responded for the seven target stimuli and two control stimuli, by adjusting a slider for (1–3), or by choosing a response in (4).

2.1.3 Data exclusion

We excluded the data of participants who did not self-identify as native speakers of American English and of participants whose responses to the xxx was more than 2 sd away from the group mean WHAT ABOUT EXP 4?

Table 2 identifies how many participants were excluded in each experiment, the properties of the remaining participants, and the number of data points that entered into the analyses.

	recruited	exclusion criterion language	fillers	remaining participants ages	mean age	f	m	nb	dnd	data points
Exp.1										
Exp.2										
Exp.3										
Exp.4										

Table2: Information about the participants excluded in Exps.1-4.

2.2 Results

???? show the mean responses by content for the four diagnostics. Comparing the results across diagnostics reveals some key differences. First, the diagnostics vary in their sensitivity to differences between contents: The by-content means in Experiment 2 ('asking whether' diagnostic) show a larger range (**??**) than in the other three experiments (**??????**).

Second, the content manipulation affects the ratings differently across the four diagnostics, sometimes in opposite directions. This results in a different order of predicates by response means between experiments.

- For instance, be right ranks highest under the 'asking whether' diagnostic (**??**), and the 'yes, but' test (**??**), but ranks lowest under the QUD-diagnostic (**??**), and shows no clear effect in the direct dissent diagnostic (**??**).
- Analysis similar to what we did in projection study? – Interaction effects
- How about something similar to the rank-analysis that Yvonne Kilian did for comparing diagnostics?

2.3 Discussion

The differening results between diagnostics suggest that they are not interchangeable.

2.3.1 Sensitivity

- Further, while the 'asking whether' diagnostic, for contents embedded in questions, is sensitive enough to detect fine-grained differences between contents, the smaller range of response means for the other diagnostics could suggest the need for a more sensitive diagnostic for contents embedded in declarative assertions.
- We did not replicate the effect reported in Syrett and Koev 2015, that sentence-final NRRCs receive higher at-issueness ratings than sentence-medial ones.
- Additional comparison to Syrett and Koev 2015 (details omitted in the abstract) points to potential effects of the response task and the speech act of the utterance embedding the tested content.

2.3.2 Order

- In particular, the varying relative order of by-content means across diagnostics provide an initial argument that they target distinct properties of the content.

3 Conlusions and outlook

3.1 Forward vs backward looking

- Q-AI ness + QUD diagnostic are about previous discourse
- P-AI ness and tonhauser's (issue I-AI ness) are about the upcoming discourse
- can utterances shift the QUD? QUD-stack; adèle hernot-mortier?
- conditionals, sentence-medial vs sentence-final appositives
- co-ordination vs subordinating discourse relations and moving the discourse forward
- possible confound: do the direct dissent diagnostic and the 'yes, but' test P-at-issueness or anaphoric availability (Snider (2018))

3.2 Questions vs assertions

- Q-AI ness and I-AIness are about question partitions
- P-AI ness is about assertive proposals
- is the speech-act distinction relevant? table model (and potentially some QUD implementations) suggest that this difference shouldnt matter
- possible counfound: commitment related to projection that we discussed in relation to the big study

Based on our data:

- the speech act seems to matter: the 'asking whether' diagnostic, targeting questions...

3.3 Other diagnostics

- Other diagnostics (Horn on argumentation / because-clauses; evaluative adjectives)

References

Yuqiu Chen. Presuppositions at the Semantics-Pragmatics Interface. 2024. URL https://ediss.uni-goettingen.de/handle/11858/15164.

Emilie Destruel, Daniel Velleman, Edgar Onea, Dylan Bumford, Jingyang Xue, and David Beaver. A Cross-Linguistic Study of the Non-at-issueness of Exhaustive Inferences. In Florian Schwarz, editor, Experimental Perspectives on Presuppositions, volume45, pages 135–156. Springer International Publishing, Cham, 2015. ISBN 978-3-319-07979-0 978-3-319-07980-6. doi: 10.1007/978-3-319-07980-6_6. URL https://link.springer.com/10.1007/978-3-319-07980-6_6. Series Title: Studies in Theoretical Psycholinguistics.

Katharina Drozdov. Projection and At-Issueness of Nonrestrictive Relative Clauses. 2024.

Todor Koev. Notions of at-issueness. Language and Linguistics Compass, 12:e12306, 2018. doi: https://doi.org/10.1111/lnc3.12306.

Todd Snider. Distinguishing at-issueness from anaphoric potential: A case study of appositives. In West Coast Conference on Formal Linguistics (WCCFL), volume35, pages 374–381, 2018.

Torgrim Solstad and Oliver Bott. Cataphoric resolution of projective content: The case of occasion verbs. Semantics and Pragmatics, 17:11:1–66, July 2024. ISSN 1937-8912. doi: 10.3765/sp.17.11. URL https://semprag.org/index.php/sp/article/view/sp.17.11.

Kristen Syrett and Todor Koev. Experimental evidence for the truth conditional contribution and shifting information status of appositives. Journal of Semantics, 32(3):525–577, 2015. doi: 10.1093/jos/ffu007. Publisher: Oxford University Press.

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

Judith Tonhauser, DavidI. Beaver, and Judith Degen. How projective is projective content? Gradience in projectivity and at-issueness. Journal of Semantics, 35(3):495–542, 2018. doi: 10.1093/jos/ffy007.

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

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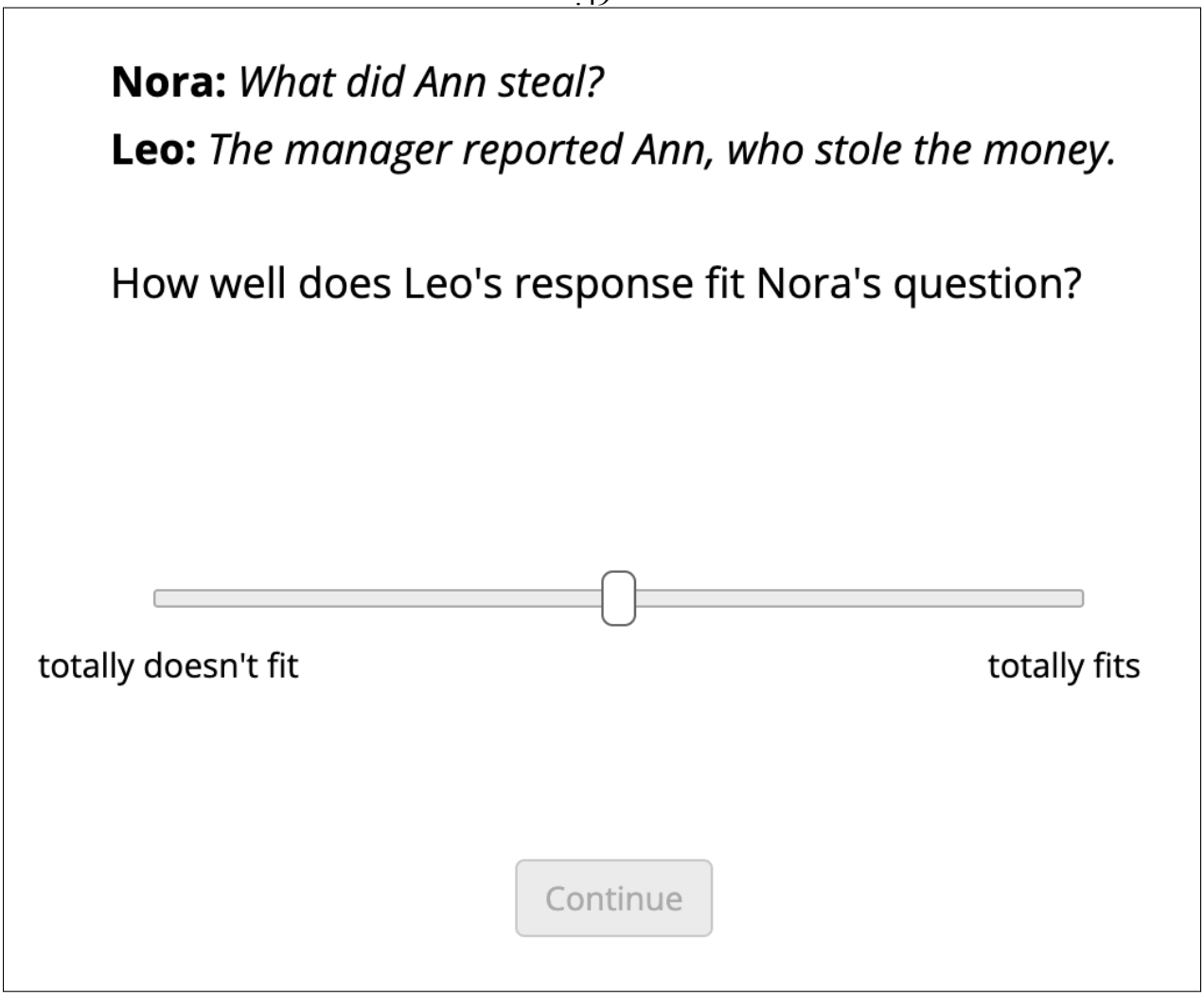

Figure1: Exp.1: QUD diagnostic

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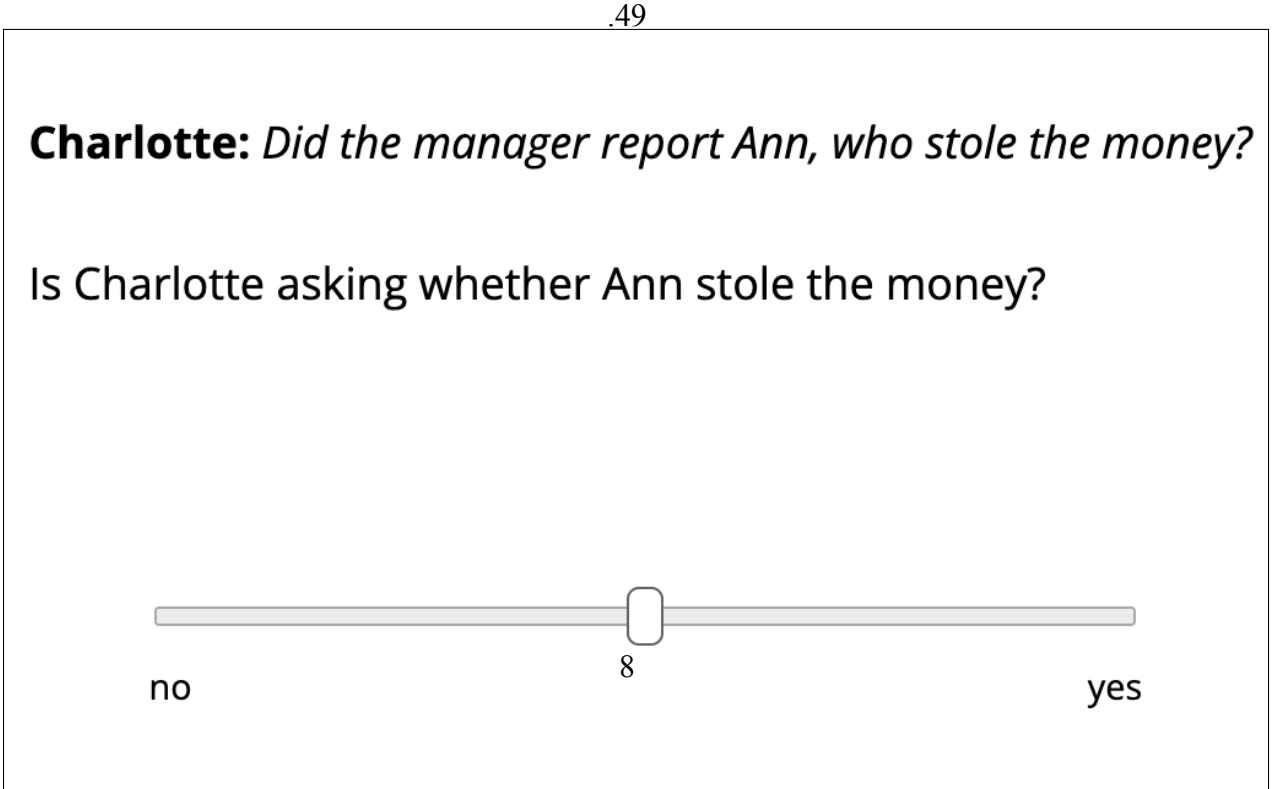

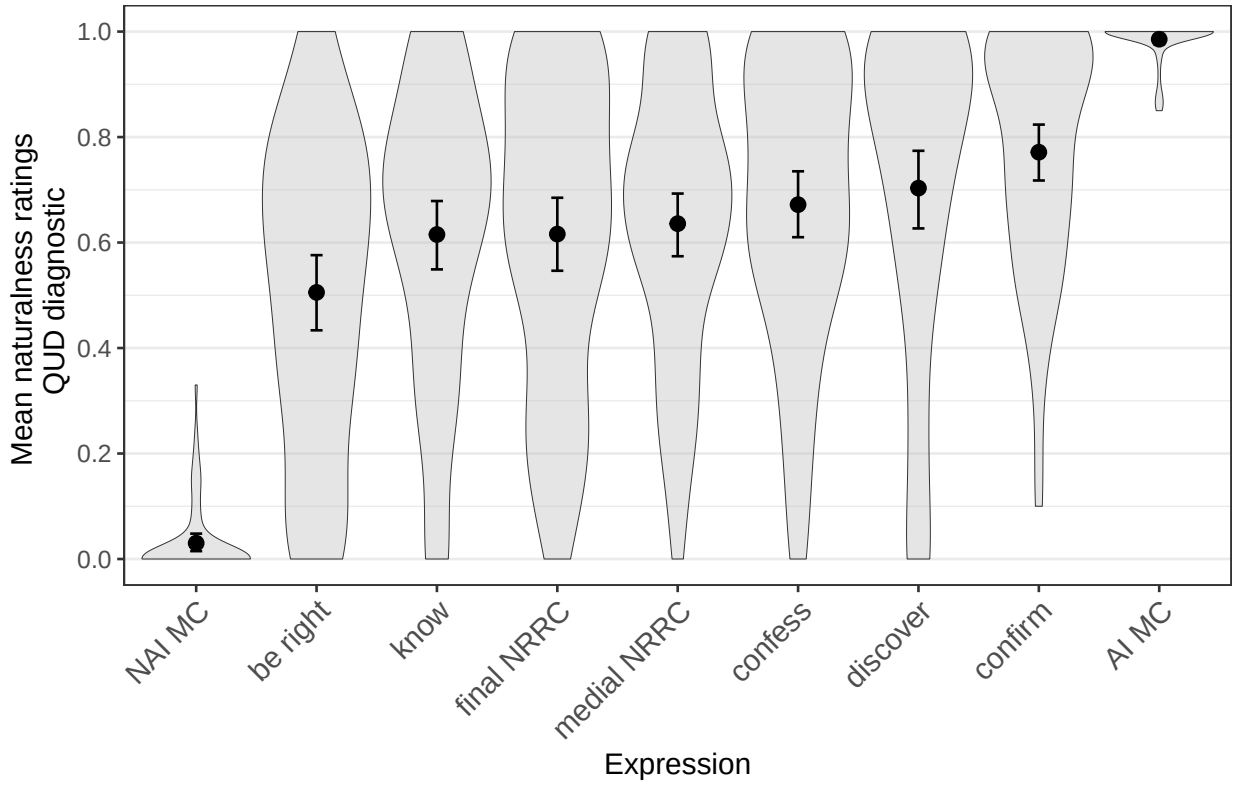

Figure6: Exp.1: QUD diagnostic

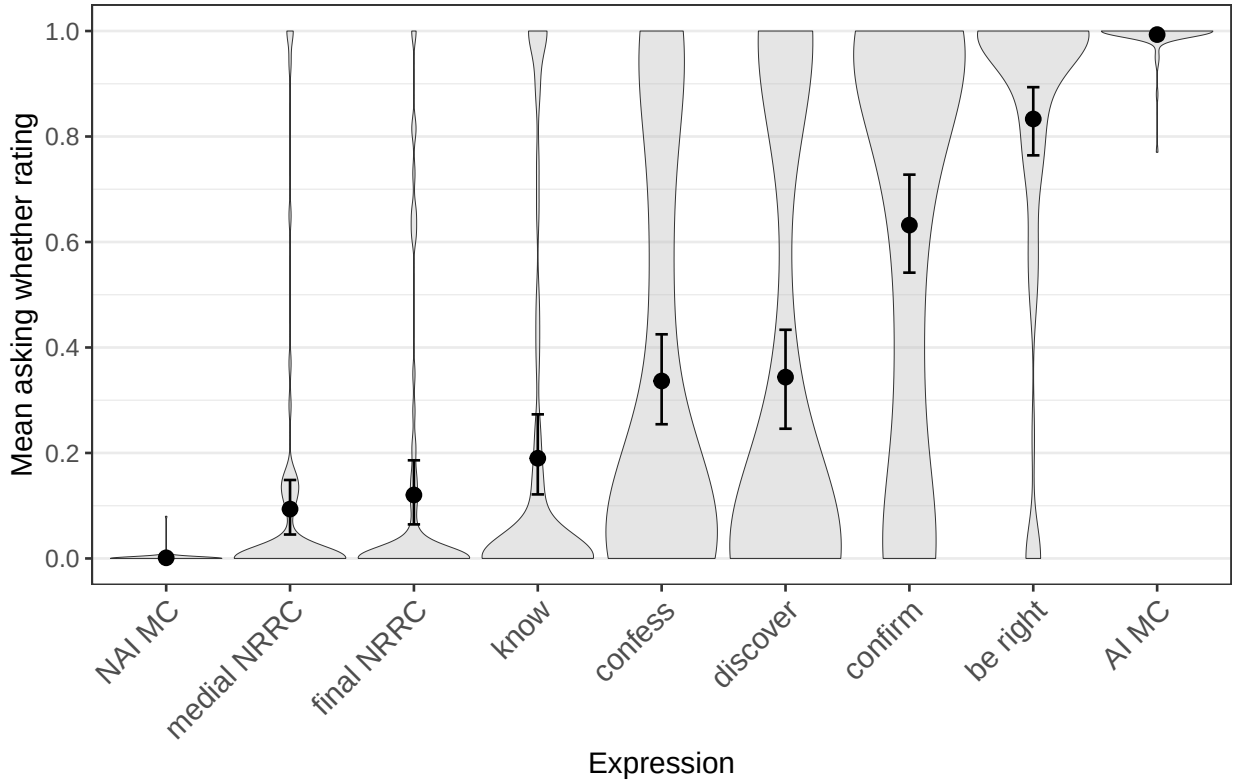

Figure7: Exp.2: ‘asking whether’ diagnostic