

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 et al. 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.

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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 et al. 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 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 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?
- (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 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.

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 et al. 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 generalization of P-at-issueness, and further discussed later

[Tonhauser et al. 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 Experiment

To compare the four at-issueness diagnostics, we collected at-issueness judgments for seven types of content in a series of four experiments. These are the content of sentence-medial and -final NRRCs, and the content of the clausal complements of *discover*, *know*, *be right*, *confirm* and *confess*.

- (5)
 - a. Sentence-medial NRRC
Greg, who bought a new car, is envied by his neighbor.
 - b. Sentence-final NRRC

The at-issueness of the same contents was tested using the QUD-diagnostic in Experiment 1, using the ‘asking whether’ diagnostic in Experiment 2, with the direct dissent diagnostic in Experiment 3, and the ‘yes but’ test in Experiment 4.

2.1 Methods

2.1.1 Participants

For each of the four experiments, we recruited 80 participants on Prolific

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).

2.2 Results.

Figures 1 and 2 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 (Figure 1b) than in the other three experiments (Figures 1a, 1c and 2).

Figure 1: Mean responses by content for the QUD-diagnostic (a), ‘asking whether’ diagnostic (b), and ‘direct dissent’ diagnostic (c). Error bars indicate 95% bootstrapped confidence intervals. Violin plots indicate the kernel probability density of the individual participants’ ratings, which were given on a 0–1 scale, by adjusting a slider.

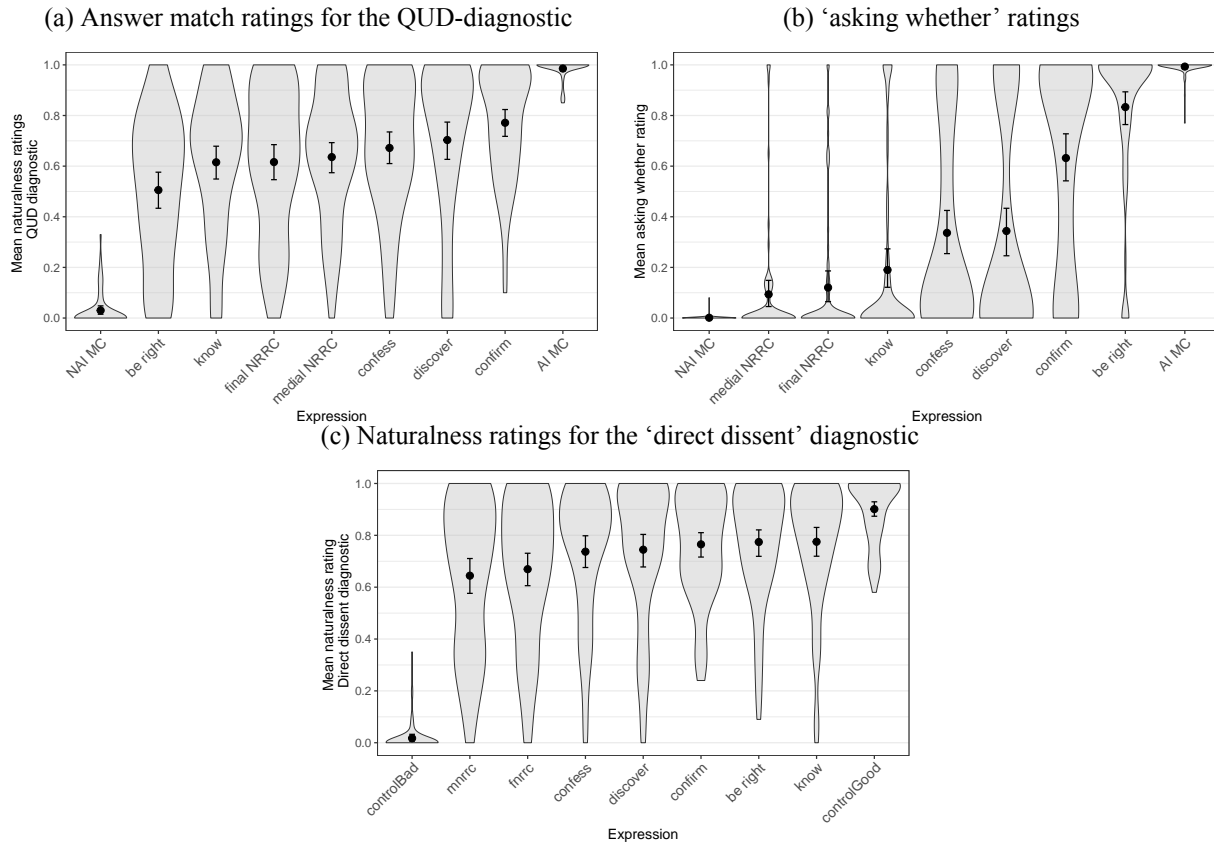
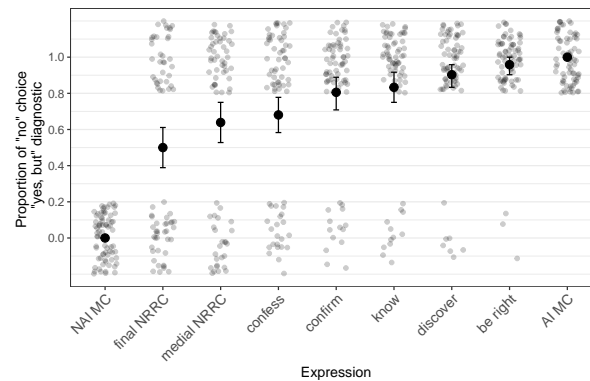


Figure 2: Proportion of ‘no’ choices by content for the ‘yes but’ diagnostic. Error bars indicate 95% bootstrapped confidence intervals. Gray dots indicate individual participant responses (either ‘no’ or one of the ‘yes’-responses, jittered vertically and horizontally for legibility).



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 (Figure 1b), and the ‘yes, but’ test (Figure 2), but ranks lowest under the QUD-diagnostic (Figure 1a), and shows no clear effect in the direct dissent diagnostic (Figure 1c).

Analysis.

- 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 differing 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 Conclusions 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 shouldn't matter
- possible confound: 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)

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