

What is at-issueness? An experimental comparison of diagnostics

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.

1 Introduction

At-issueness is a key concept in theoretical semantics and pragmatics, distinguishing propositions that constitute the main point of an utterance (at-issue content) from those expressing background information (non-at-issue content; e.g., [Karttunen & Peters 1979](#); [Horton & Hirst 1988](#); [Abbott 2000](#); [Faller 2003](#); [Potts 2005](#); [Tonhauser 2012](#)). Despite its importance, the concept lacks a unified definition. Instead, various theoretical notions coexist ([Koev 2018](#); [Tonhauser et al. 2018](#)) alongside multiple empirical diagnostics (e.g., [Tonhauser 2012](#)). This paper investigates whether four widelyused diagnostics for at-issueness yield consistent results when testing the same stimuli. Our findings reveal significant differences across diagnostics, indicating they are not interchangeable. Since the diagnostics target distinct theoretical conceptions of at-issueness, the differences offer insight into the comparability of these conceptions.

The four diagnostics under consideration are illustrated in (1–4) for sentence-medial appositive non-restrictive relative clauses (NRRCs), which are usually taken to contribute non-at-issue content ([Potts 2005](#)). Therefore, participants are expected to: Give low naturalness ratings under the QUD diagnostic (1) and the direct dissent diagnostic (2); prefer a *yes*-response under the ‘yes, but’ diagnostic in (3); and not interpret the speaker to be asking about the content under the ‘asking-whether’ 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) Direct dissent diagnostic (e.g., [Tonhauser 2012](#); [Syrett & 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?
- (3) ‘yes, but’ diagnostic (e.g., [Xue & 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.
- (4) ‘asking whether’ diagnostic (e.g., [Tonhauser et al. 2018](#); [Solstad & 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?

Koev 2018 argues that these diagnostics reflect distinct theoretical conceptions of at-issueness: The QUD diagnostic (1) aligns with Q(uestion)-at-issueness (Simons et al. 2010), which conceptualizes at-issue content as addressing a question under discussion (QUD; Roberts 1996; Ginzburg 1996) established in prior discourse (Amaral et al. 2007). The direct dissent (2) and ‘yes, but’ diagnostics (3), in contrast, reflect P(roposal)-at-issueness (Koev 2013), characterizing at-issue content as the main assertion of an utterance. This is understood as a proposal to update the common ground, which can be directly affirmed or denied using default discourse moves that include polar response particles (PRPs; e.g., English *yes/no*; Farkas & Bruce 2010). Conversely, non-at-issue content is either presupposed (already entailed in the common ground; Stalnaker 1973; 2002), or newly imposed on the common ground (Murray 2014; AnderBois et al. 2015), and requires special moves for disagreement, like revision, correction, or negotiation (Potts 2005). Finally, the ‘asking whether’ diagnostic (Tonhauser et al. 2018) assumes tht the at-issue content of questions explicitly raises a QUD, whereas their non-at-issue content does not contribute to what the QUD is (following Roberts 1996). While closely related to Q-at-issueness, this diagnostic does not fully align with Koevs Q/P distinction, a point we revisit in the discussion (??).

Prior studies reach diverging conclusions about the at-issueness of certain types of content, potentially arising from diagnostic differences: Studies examining appositives (summarized in Table 1) and complements of epistemic predicates such as *know* and *discover* (Table 2) provide inconsistent classifications depending on the diagnostic employed.

	medial appositives	final appositives
Tonhauser 2012, direct dissent/assent diagnostic Paraguayan Guaraní, fieldwork elicitation	NAI	–
Syrett & Koev 2015, direct dissent English, forced-choice continuation	NAI	AI
AnderBois et al. 2015, direct assent English, corpus examples and impressionistic judgments	NAI	AI
Koev 2018, direct dissent English, impressionistic judgments	NAI	–
Destrueel et al. 2015, ‘yes but’ German, forced-choice continuation	NAI	–
Koev 2018, QUD English, impressionistic judgments	AI	–
Tonhauser 2012, QUD Paraguayan Guaraní, fieldwork elicitation	?	–
Chen 2024, QUD German, 5-point rating	NAI	–
Tonhauser et al. 2018, ‘asking whether’ English, forced-choice continuation	NAI	–

Table 1: Overview of empirical findings about appositives

The often reported observation that sentence-medial appositives contribute non-at-issue content is supported by several empirical studies, but findings differ by diagnostic. Using the direct-dissent diagnostic, medial appositives consistently behave as non-at-issue across multiple languages and methods, including fieldwork elicitation for Paraguayan Guaraní (Tonhauser 2012), a forced-choice continuation task in English (Syrett & Koev 2015), and impressionistic judgments in English (Potts 2005; Amaral et al. 2007). The same conclusion emerges for German medial appositives with the ‘yes, but’ diagnostic in a forced-choice continuation task (Destruel et al. 2015), and the ‘asking whether’ diagnostic concurs by classifying English medial appositives as clearly non-at-issue (Tonhauser et al. 2018; Solstad & Bott 2024).

Koev 2018 suggests that English medial appositive NRRCs, though non-at-issue under the direct-dissent test, can behave as at-issue under the QUD diagnostic. This is in line with Tonhauser’s 2012 findings for Paraguayan Guaraní medial appositive DPs: These are not-at-issue on most diagnostics tested there (including direct dissent, and ‘yes, but’), but yielded mixed results with the QUD-diagnostic. Not in line with Koev’s suggestion are low QUD match ratings for German medial appositives found by Chen (2024), suggesting a clear preference for a non-at-issue interpretation; however, these clauses contained the discourse marker *übrigens* (by the way), which, Chen suggests, supports a non-at-issue interpretation. These diverging findings give rise to our first question: (i) can we replicate a systematic difference between the QUD-diagnostic and direct dissent, yes, but, and ‘asking whether’ for sentence-medial appositives?

In contrast, it has been argued that sentence-final appositives can be interpreted as at-issue for the direct-dissent diagnostic, for instance, based on English corpus examples in AnderBois et al. 2015, and notably Syrett & Koev’s 2015 forced-choice continuation task experiment. Koev 2018 makes a similar point for English sentence-final slifting parentheticals (e.g., *Ellen is a passionate cook, her fiancé claimed*; p. 11): these behave as at-issue based on the direct-dissent but not the QUD diagnostic. These results prompt an additional question: (ii) Can the contrast between medial and final appositives be replicated with direct dissent, and will any of the other three diagnostics reveal a similar difference?

In the literature testing the at-issueness of the embedded content of clause embedding predicates, findings (summarized in Table 2) are mixed as well.

The ‘asking whether’ diagnostic consistently characterizes complements of epistemic predicates (like English *know*) as non-at-issue: Using a slider response task, Tonhauser et al. 2018 found that clauses embedded under *know* and *discover* are clearly non-at-issue, and those under *confess* only slightly less so. Using the same method, Degen & Tonhauser 2025 found fine-grained lexical differences for the at-issueness of the embedded content of 20 English clause-embedding predicates: Figure 1 shows the distribution of ‘asking whether’ ratings by predicate with means and 95% bootstrapped confidence intervals. Their results again place the complement of *know* solidly in the non-at-issue range, while *discover* and *confess*, with mean ratings around 0.6 on the 0–1 scale, show only a weak preference towards a non-at-issue interpretation.

Findings for epistemic complements vary by diagnostic: In Paraguayan Guaraní, clauses embedded under *(oi)kuaa* ‘know’ behaves as at-issue regarding the ‘yes but’ and QUD diagnostic, but as not-at-issue regarding the direct dissent(/assent) test (Tonhauser 2012). Similarly, Chen’s 2024 5-point rating experiment using the QUD-diagnostic found that the embedded content of German *wissen* ‘know’ shows a preference for an at-issue interpretation; and a forced-choice continuation task using the ‘yes but’ test in German (Xue & Onea 2011) found the same for *entdecken* ‘discover’. These findings could suggest cross-linguistic differences, so that the embedded content of English *know* and *discover* is less at-issue than that of Paraguayan Guaraní *(oi)kuaa* and German *wissen* ‘know’ and *entdecken* ‘discover’. However, Solstad & Bott 2024 finds that the embedded contents of German *wissen* ‘know’ and *entdecken* ‘discover’ are interpreted as not-at-issue, using ‘asking whether’ diagnostic and the same methodology as Tonhauser et al. 2018; Degen & Tonhauser 2025. The differences therefore appear to arise from diagnostic differences rather than

	<i>know</i>	<i>discover</i>	<i>confess</i>	<i>confirm</i>	<i>be right</i>
Tonhauser et al. 2018 , ‘asking whether’ English, slider rating	NAI	NAI	NAI	–	–
Solstad & Bott 2024 , ‘asking whether’ German, slider rating	NAI	NAI	–	–	–
Degen & Tonhauser 2025 , ‘asking whether’ English, slider rating	NAI	?	?	AI	AI
Tonhauser 2012 , direct dissent/assent Paraguayan Guaraní, fieldwork elicitation	NAI	–	–	–	–
Tonhauser 2012 , QUD, ‘yes, but’ Paraguayan Guaraní, fieldwork elicitation	AI	–	–	–	–
Chen 2024 , QUD German, 5-point rating	–	AI	–	–	–
Xue & Onea 2011 , ‘yes, but’ German, forced-choice continuation	AI	–	–	–	–

Table 2: Overview of empirical findings about clause-embedding predicates

cross-linguistic differences. The findings summarized here thus motivate another key question for the present study: (iii) Will we find a difference for *know* between the asking-whether diagnostic and the other three?

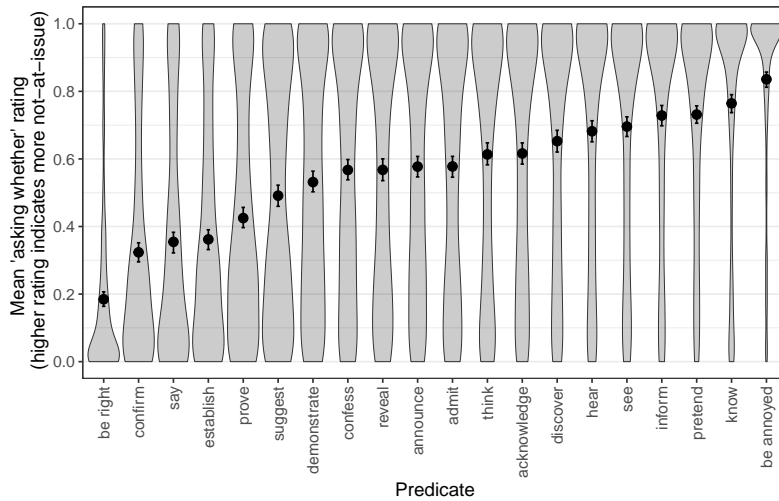


Figure 1: Mean ‘asking whether’ ratings for the contents of the clausal complements of 20 clause-embedding predicates, from [Degen & Tonhauser 2025](#).

In summary, we will investigate the questions developed above, and repeated here:

- i. Can we replicate a systematic difference between the QUD-diagnostic and direct dissent, yes, but, and ‘asking whether’ for sentence-medial appositives?
- ii. Can the contrast between medial and final appositives be replicated with direct dissent, and will any of the other three diagnostics reveal a similar difference?

- iii. Will we find a difference for *know* between the asking-whether diagnostic and the other three?

In addition, to systematically assess differences between the diagnostics, we follow [Tonhauser et al. 2018](#), which includes a brief comparison of the ‘asking whether’ diagnostic and another diagnostic used there, the ‘are you sure’ diagnostic¹.

- compare where they distinguish between the tested expressions, and where they don’t
- the relative order between these items
- the spread and variation between the ratings for the items
- the spread and variation within the ratings for the items

The paper will proceed as follows:

- Section 2: exps 1–4
- Section 3: exps 5 and 6
- Section 4: General discussion
- Section 5: Conclusion

2 Assessing at-issueness

2.1 QUD-diagnostic

The QUD diagnostic tests whether a propositional content associated with a declarative assertion (1B) can be interpreted as Q-at-issue by testing whether the assertion is felicitous as an answer to a preceding question that targets that content.

- show here

- (5) Q-at-issueness: (based on [Simons et al. 2010: 26](#), [Koev 2018: 2](#))
 A content *m* is Q-at-issue in a context *c* iff
- a. *m* is relevant to the QUD in *c*, and
 - b. *p* is appropriately conventionally marked relative to the QUD.

Here, *m* may be either a propositional content or a question meaning. Relevance to the QUD is defined as follows:

- (6) Relevance to the QUD in context *c* (based on [Simons et al. 2010: 13](#))
- a. A proposition *p* is relevant the QUD iff it contextually entails in *c* a partial or complete answer to the QUD.
 - b. A question *q* is relevant to the QUD, iff it has an answer that is relevant to the QUD.

The QUD-diagnostic from [Tonhauser 2012](#) operationalizes Q-at-issueness through naturalness judgments. It builds on two assumptions:

- i. An overt question explicitly introduces a QUD.²
- ii. An utterance is felicitous only if its at-issue content is relevant to the QUD ([Amaral et al. 2007](#); [Tonhauser 2012](#)).

Koev suggests that this diagnostic is *backward-looking*, because it tests whether a given content is at-issue relative to the previous discourse.

To test whether a given content *m* can be construed as Q-at-issue, participants are presented with a context that establishes a QUD via an overt question, followed by a response that includes *m*. For instance, (1) is used to diagnose the status of the content *m* of the appositive RC (Greg bought a

¹ say something about this?

² add reference

car) conveyed by B's utterance U , by presenting it as a response to a question Q that m is relevant to (What did Greg buy?), and asking a naturalness rating for U as a response to Q .

(1) 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?

If m (Greg bought a car) is interpreted as addressing the QUD, the response should receive high naturalness ratings. However, responses like (1B) typically receive low ratings, suggesting that m is not at-issue, that is, even though m is relevant to Q and thereby satisfies the first part of the definition in (5a). The low naturalness should, therefore, reflect that m is not-at-issue due to the second part of the definition in (5b): The low ratings for (1B) support the claim that appositive RCs are not appropriately conventionally marked to contribute at-issue content.

- [Chen 2024](#) used this diagnostic comparing

2.2 Direct dissent and 'yes, but' diagnostic

Accordingly, the direct-dissent diagnostic (2) tests whether a proposition associated with the initial utterance (2A) can be interpreted as P-at-issue by testing whether it can be felicitously contradicted using *no*. Relatedly, the 'yes, but' diagnostic (3) assesses whether speakers prefer to signal agreement (using *yes*) or disagreement (using *no*) with the main assertion when contradicting the tested content.

The direct dissent diagnostic (2) and the 'yes, but' diagnostic (3) reflect the notion of P(roposal)-at-issueness, based on the assumption that at-issue content contributes to the main assertion of an utterance, which is taken to constitute a proposal to update the common ground.

(7) P-at-issueness: ([Koev 2013; 2018](#))

A proposition p is P-at-issue in a context c iff

- p is a proposal in c and
- p has not been accepted or rejected in c .

Under this conception, the at-issue assertion is the contribution of an utterance that can be directly assented or dissented with using default discourse moves (in the sense of [Farkas & Bruce 2010](#)), for instance, using polar response particles (like English *yes/no*). Conversely, non-at-issue content is assumed to be entailed by the common ground prior to the utterance in question (e.g., presupposed content, [Stalnaker 1973; 2002](#)), or imposed on the common ground ([Murray 2014; AnderBois et al. 2015](#)). Importantly, the diagnostics in (2) and (3) build on the assumption that non-at-issue content requires non-default discourse moves (such as revision, correction, or negotiation) to be dissented with.

- that it should be possible to signal (at least partial) agreement with the main assertion of an utterance even when contradicting is non-at-issue content. It tests whether speakers prefer signaling agreement or disagreement with the previous assertion (using *yes/no*) in responses that contradict the content in question.
- These two diagnostics are characterized by [Koev 2018](#) as *forward-looking*, as they test whether a given content is at-issue relative to utterances in the following discourse.
- [Syrett & Koev 2015](#) Their Exp. 2 found that given a choice to disagree with a preceding main clause or appositive content, participants choose disagreeing with the main clause over a medial appositive around 80% of the time. However, for final medial RCs, this proportion is reduced to around 65%. They conclude that final appositive clauses can

compete with main clause content in the direct-dissent diagnostic, allowing these contents to be more readily interpreted as at-issue.

- Syrett & Koev 2015, Exp. 2: used a variant of the direct-dissent diagnostic within a forced-choice continuation task.
- utterance that included some appositive content (illustrated here for a medial appositive RC) polarity particle *no* to disagree choice to disagree with the main clause content, or the appositive content.

- (8) A My friend Sophie, who performed a piece by Mozart, is a classical violinist.
 B1: No, shes not. (target: main clause)
 B2: No, she didnt. (target: appositive)

to avoid concerns that the choice about which proposition to disagree with may be affected by the participants opinion about the content of these propositions, we instead chose a version of the direct dissent task that more directly targets the question whether disagreement using *no* is acceptable, by using acceptability judgments.

2.3 Asking whether

This diagnostic tests whether a content associated with a polar question (4) can be interpreted as at-issue by testing whether informants will understand it as the main issue being asked about.

Because the definition in (5) references the preceding context, Koev (2018) suggests that QUD-at-issueness is a backward-looking notion of at-issueness. However, overt questions may explicitly raise a QUD³, and thereby make a content Q-at-issue in the subsequent discourse. This is what is targeted by the ‘asking whether’ diagnostic in (4) (Tonhauser et al. 2018), based on the assumption that it is the at-issue content of interrogatives that partitions the context set, as opposed to their non-at-issue content (p.502).

- (4) *Is Greg, who bought a new car, envied by his neighbor?*

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

explain explain If participants respond "no," this suggests that the appositive content (Greg bought a new car) is not part of the at-issue content of the interrogative, providing evidence that it is not Q-at-issue. This diagnostic thus complements the QUD-diagnostic by probing the at-issueness of content from the perspective of explicitly raised questions rather than previously established ones.

based on the assumption that it is the at-issue content of interrogatives that partitions the context set, as opposed to their non-at-issue content (Tonhauser et al. 2018 p.502).

- Destruel et al. 2015: when German medial appositives are contradicted in the following utterance, then most participants choose to signal agreement and contrast *yes, but* ($\approx 90\%$), suggesting NAI status.
- Tonhauser et al. 2018, Medial appositives are among the contents that get the lowest ratings for asking-whether diagnostic in their Exp.1a, suggesting that these are NAI (see also Solstad & Bott 2024)

³ add reference

3 Discussion

3.1 Direction

3.2 Speech-act

3.3 Logical (in)dependence between contents

- Some diagnostics, especially (dis)agreement also interact with speaker commitments
- if the embedded content is false participants may choose to disagree with the main assertion, not necessarily because it is interpreted as at-issue, but because it is assumed to be true, and entails that the at-issue content is false.

3.4 Koev's dichotomy

If we contrast these notions by whether what is at-issue is determined by a declarative vs. an interrogative utterance, the asking whether test aligns more closely with the assumptions of the QUD-based notion of Q-at-issueness. However, Koev suggests that the two notions also differ in their directionality in discourse, arguing that the use of the diagnostics and definitions of at-issueness in the literature suggest that Q-at-issueness of a content is determined by the previous discourse (backward-looking), whereas P-at-issueness determines what will be at-issue at the point of the utterance and in subsequent discourse (forward-looking). Considering that the 'asking whether' diagnostic assumes that the at-issue content of an interrogative makes a content Q-at-issue in the discourse moving forward, this suggests that the dichotomy between forward-looking P-at-issueness and backward-looking Q-at-issueness might benefit from refining it by considering all logically possible combinations between speech act (assertion vs. question) and directionality in discourse (backward vs. forward).

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