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Propositional anaphora between syntactic licensing and semantic accessibility

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A single utterance conveys propositions with different status

A single utterance often gives rise to several propositions. Among other things, these can differ in their at-issueness status.

(1) Aditi knows that Skye owns a pet cockroach.
- ⇝ Aditi believes that Skye owns a pet cockroach. — at-issue
- ⇝ Skye owns a pet cockroach. — non-at-issue

(2) Skye, who owns a pet cockroach, is in love with Aditi.
- ⇝ Skye is in love with Aditi. — at-issue
- ⇝ Skye owns a pet cockroach. — non-at-issue

At-issue propositions are described as foregrounded, as the main point of an utterance. Non-at-issue propositions are described as backgrounded and supplemental.

Answering the QUD versus making a proposal

Despite this innocent-seeming characterization, many voices in the literature argue for several distinct and partially independent notions of at-issueness. The most prominent is Koev (2018).

(3) **Q-at-issueness** (Koev 2018, see especially Simons et al. 2010)
A proposition *p* is Q-at-issue relative to a question under discussion *Q* and a context *c* iff

a. *p* is relevant to *Q* in *c* and
b. *p* **is appropriately conventionally marked** relative to *Q*.

(4) **P-at-issueness** (Koev 2013, 2018)
A proposition *p* is P-at-issue in a context *c* iff

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

By multiplicity, P- and Q-at-issueness are separate properties

With these in the background, we can formulate the multiplicity view:

> **Multiple non-at-issuenesses** Koev (2018)
> A proposition can be at-issue in more than one way. Being a proposal (P-at-issueness) and addressing the QUD (Q-at-issueness) are separate properties: they have different diagnostics (direct dissent vs. question–answer congruence), and they can dissociate.

The standard diagnostics measure two properties, not one

On the **multiplicity view**, anaphoric availability and, closely connected to it, challengeability are a side of at-issueness that is kept, at least to some extent, separate from answerhood.

The diagnostics for the (non-)at-issueness of the embedded clause in (5) are thus taken to indicate two properties, P-at-issueness and Q-at-issueness.

(5) a. Aditi knows that Skye owns a pet cockroach.—#No, (that's not true,) she's afraid of insects.
b. Does Skye own a pet cockroach?—#Aditi knows that Skye owns a pet cockroach.

Direct dissent is itself anaphoric: *no* and *that* need a propositional antecedent in the previous utterance.

On the multiplicity view, the infelicities have different sources

(5) a. Aditi knows that Skye owns a pet cockroach.—#No, (that's not true,) she's afraid of insects.
b. Does Skye own a pet cockroach?—#Aditi knows that Skye owns a pet cockroach.

(5)a is marked because non-at-issue propositions enter the common ground in a non-standard way (Anderbois, Brasoveanu & Henderson 2013, Murray 2014) that does not let the interlocutors interact with them directly: **they make no proposal**. Proposal status is conventional by assumption. It can be read off the lexical entry (of presupposition triggers) or the logical form (of complex sentences).

(5)b is odd because non-at-issue propositions cannot address the QUD, unlike the main clause. As with proposals, this is attributed to the **wrong marking**. A possible explanation: the hearer cannot retrieve the speaker's intention to provide an answer with the embedded content.

Neither approach says what makes a proposal or an answer

Neither approach specifies what a logical form has to look like to allow for proposal status or answerhood.

Some features, like position in the clause, have been argued to affect proposal status of NRRCs in particular (Syrett & Koev 2015), but it remains largely mysterious why. But see von Heusinger & Schumacher (2019); Gutzmann (2023); Buchholz, Hoek & von Heusinger (2025).

(6) a. Skye, who owns a pet cockroach, is in love with Aditi. medial NRRC
b. Aditi is in love with Skye, who owns a pet cockroach. final NRRC

That proposal status and answerhood track one another in (5) is largely an accident on these approaches.

That the same manipulation, (6)a vs. b, should affect both diagnostics is more mysterious still.

The reduction: at-issueness is relevance, and nothing else

Today, I want to pursue a more radical, reductionist hypothesis that contrasts with multiplicity:

> **Reduction hypothesis**
> There is one notion of at-issueness: *p* is at-issue relative to a QUD *Q* in a context *c* iff *p* is relevant to *Q* in *c*.
> Direct dissent with response particles diagnoses this property relative to the explicit or accommodated QUD. Conventional marking plays no role.

On this view, the overlap is total: the judgments in (5)a and b follow from one and the same principle, relevance and question–answer congruence.

We will see two kinds of evidence: dissent with response particles (Section 1) and an experiment on NRRCs (Section 3).

The reduction predicts that NRRCs behave like main clauses

The reduction has no slot for conventional marking.

It therefore predicts that both sentence-medial and sentence-final NRRCs can be just as at-issue as main clauses, if the circumstances are right.

In other words, all three instances of the proposition that Skye owns a pet cockroach in (7) should behave identically for some at-issueness diagnostic.

(7) a. Skye owns a pet cockroach and _ .
b. Skye, who owns a pet cockroach, _ .
c. Skye _ , who owns a pet cockroach.

Later on, we will see that this is indeed the case.

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1 P-at-issueness is Q-at-issueness

1.1 Response particles track the current question

Response particles are not used to give complete answers to polar questions by accident. They mark their target as (part of) an answer to an open question (cf. Krifka 2013, Roelofsen & Farkas 2015).

(8) Does Skye own a pet cockroach?

a. Yes(, she owns a pet cockroach).
b. No(, she hates pets).

If the response particles we use to test non-at-issueness share this question sensitivity, then maybe infelicitous challenges with response particles show that the question structure of the current conversation is violated.

1.2 Presuppositions want to be entailed by the context

By the dissent diagnostic, the infelicity of (10) after (9) shows that the complement of *know* is not P-at-issue.

(9) John knows that Mary is from America.

(10) #No, that's not true. Mary is from Canada!

But (9) is a good answer to (11), not to (12).

(11) Does John know that Mary is from America?
(12) Where is Mary from?

A presuppositional sentence can only be used in a context that entails it, and these are the contexts in which challenging the presupposition is odd.

The infelicity of (10) may thus be a Q-at-issueness effect.

1.3 The crux of the problem: accommodated questions

Most published judgments come without a question; the same is largely true in experimental work.

Hearers then accommodate a QUD that the sentence in question provides an acceptable answer to.

When we see (13):

(13) It was Skye who forgot to blow out the candles.
⇝ Somebody forgot to blow out the candles.

What we actually judge is (13) in response to something like (14):

(14) So, did you finally figure out who forgot to blow out the candles?

And in the context of (14), the infelicity of (15) is entirely unsurprising.

(15) #No, nobody forgot to blow them out.

1.4 Challenges without response particles are always fine

Given this, I focus only on response particles (*yes*, *no*; German *ja*, *nein*, *doch*), not on bare challenges.

Dissent with a response particle can be infelicitous, (16). Dissent without a particle is felicitous for any content, (17) and (18).

(16) A: Skye, who owns a pet cockroach, is in love with Aditi.
B: #No, she doesn't.

(17) A: Skye, who owns a pet cockroach, is in love with Aditi.
B: She doesn't own a pet cockroach, though!
B′: She's aromantic, though!

(18) Pauline, who is Margaret's cousin, was interviewed by Food Network.
a. She wasn't interviewed by them.
b. She isn't Margaret's cousin. (Snider 2017: 6)

1.5 Experimental support: Syrett & Koev (2015)

The reduction predicts that bare challenges pattern alike for NRRC and main-clause content, since they are not sensitive to the QUD.

This is at least partially borne out: *Hey, wait a minute* is fine with both (Syrett & Koev 2015, see Koev 2018: 7).

(19) A: My friend Sophie, a classical violinist, performed a piece by Mozart.
B: Hey, wait a minute. Sophie isn't a classical violinist. appositive
B′: Hey, wait a minute. She didn't perform a piece by Mozart. main clause

1.6 Response particle challengeability and relevance

Reducing P-at-issueness to Q-at-issueness amounts to recognizing that we can only challenge (with response particles) what is relevant to the current discussion. For other challenges, we use different forms.

(20) **Dissent condition**
A dissent move with a response particle targeting p is felicitous after an utterance u in context c iff

a. there is a question Q in $c + u$ such that p is relevant to Q, and
b. p has not been accepted or rejected in $c + u$.

(It is possible that one should extend (20) to include a propositional anaphors in general. I am not sure about this yet).

1.7 Prediction: only answers can be challenged

Response particle acceptability should track question structure. We can challenge the answer (or its components), but not propositions that are irrelevant to the question.

(21) A: Where is Louise?
B: Henry thinks that she is in Paris.
C: No, that's not true. She's in Rome. target: complement
C′: No, he doesn't. He thinks she's in Rome. target: matrix clause

The complement answers A's question; the matrix clause only names the source.

The reduction predicts C to be felicitous and C′ to be degraded.

Simons (2007: 1041) and Snider (2017: 8) discuss this case, but say both are fine. No experimental data are available on this contrast, as far as I know.

2 Interlude: *That* is a poor test for propositional anaphora

2.1 *That* is the stereotypical propositional anaphor

The experiment I will report measures availability with *doch*, not *that*.

In this, what I will do differs from the common practice in the literature on P-at-issueness and propositional anaphors (von Heusinger & Schumacher 2019, Gajewski 2025).

(22) a. [Aditi owns a cockroach]$_i$. Skye finds that$_i$ surprising.
b. It's not the case that [Aditi owns a cockroach]$_i$, but Skye believed that$_i$ for years.

In what is to come, I will try and motivate why I decided to go a different route.

In particular, I will try and convince you that *schon* and *doch* in German offer a number of advantages compared to *that* (or *so*).

2.2 Anaphora to individuals has three signatures

Following van Elswyk (2018), anaphora allows for donkey readings, (23)a, and strict–sloppy ambiguities, (23)b. An anaphor whose antecedent does not introduce a discourse referent is infelicitous, (23)c (Karttunen 1976, Heim 1982).

(23) a. If a linguist owns [a plant]$_i$, he kills it$_i$.
b. Aditi danced with her husband. Skye did too.
c. Aditi has [a partner]$_i$. He$_i$ is lovely. / Aditi is married. #He is lovely.

Propositional anaphora shows the same three properties: donkey readings, (24)a, strict–sloppy ambiguities, (24)b, and a requirement for a licensed discourse referent, (24)c (the latter from Snider 2019).

(24) a. If a lawyer knows [that her client is guilty]$_i$, she says so$_i$.
b. Aditi thinks [that her paycheck was deposited on time]$_i$.—Skye also thinks so$_i$.
c. Lucy said Charly was angry, but that's not true. / #Lucy made Charly angry, but that's not true.

2.3 *That* (also) picks up questions, events, and individuals

That is flexible: it can pick up questions, (25)a, events, (25)b, individuals, (25)c, and content individuals such as rumors, (25)d. Participants in an experiment may therefore resolve it to something other than a proposition.

(25) a. Did Skye finish her work?—I asked that (but didn't get an answer). / *I asked so/yes.
b. Did Skye finish her work?—I believe that happened.
c. Hat Skye das [Ticket für die Standseilbahn]$_i$?—Aditi hat das$_i$.

d. They talked about the rumor that Skye owns a cockroach. / They talked about that.

If this flexibility claim is on the right track, then *that* is not a good test for propositional anaphora: it can be resolved to something other than a proposition.

2.4 *That* fails where only propositions can occur

In environments that only take propositions, *that* is sometimes out: in the antecedent of a conditional, (26), in its consequent, (27), and with modal adverbs, (28).

(26) Skye's pet cockroach has not run away for three weeks.

a. If so, maybe it is time to give it a name.
b. *If that, maybe it is time to give it a name.

(27) Is Skye a carnivore?—If there's beef in her lunchbox, then yes/*that.

(28) Skye is/might be a carnivore.—Maybe so/*that, but she is our friend!

Arguably, this pattern is even more concerning because it is compatible with the idea that *that* is not a propositional anaphor at all.

2.5 *That* patterns with content DPs, not with clauses

Where a clause is fine but a content DP (*the rumor that*) is not, *that* is out too, (29) and (30). Where the DP is fine but the clause is not, *that* is fine, (31).

(29) a. Aditi believes Ash that Skye owns a cockroach.
b. *Aditi believes Ash the rumor that Skye owns a cockroach.
c. *Aditi believes Ash that.

(30) a. It seems possible/likely/certain that Skye owns a cockroach.
b. *It seems possible/likely/certain the rumor that Skye owns a cockroach.
c. *It seems possible/likely/certain that.

(31) a. *They talked about that Skye owns a cockroach.
b. They talked about the rumor that Skye owns a cockroach.
c. They talked about that.

2.6 *Schon* and *doch* are restricted to negated antecedents

Schon and *doch* are propositional anaphors with a polarity restriction: they require a negated antecedent clause, and they resolve to its positive counterpart. This is a condition on form, not on discourse status.

(32) a. Maria ist groß.—*Ich finde schon/doch.
b. Maria ist nicht groß.—Ich finde schon/doch.
c. Maria ist groß.—*Wenn schon/doch, wäre sie vielleicht Basketballprofi.
d. Maria ist nicht groß.—Wenn schon/doch, wäre sie vielleicht Basketballprofi.

2.7 *Schon* and *doch* are fine in exactly these environments

German *schon* and *doch* are good in the same environments: the antecedent and the consequent of a conditional, and with modal adverbs.

(33) a. Skyes Kakerlake ist seit drei Wochen nicht weggelaufen.—Wenn doch/schon, wäre es an der Zeit, sich ein anderes Haustier zu suchen.
b. Würde Skye ihre Topfpflanzen jemals absichtlich umbringen?—Wenn sie alleine ist, dann schon.
c. Skye hat keine Hauskakerlake.—Vielleicht schon/*das.

All in all, *doch* appears to be a better candidate for testing propositional anaphors:

- in many of the cases, it **behaves like a proposition**, and
- its restriction of only being able to target (the positive counterpart of) negated antecedents makes it **easy to create unambiguous stimuli**.

3 Semantically integrated NRRCs are as available as conjuncts

3.1 NRRCs have been found not to answer questions

In Chen, Thalmann & Antomo (2022), answers were rated worse when the question targeted the NRRC:

(34) The duck has a cough. She gets some cough syrup. Then she goes to bed to rest. The clown did not pay attention again and asks:
Assertion at-issue: “Where is the duck now?” / **NRRC at-issue**: “What did the duck get?”
Little Peter responds, “The duck, who got some cough syrup by the way, is in bed now.”

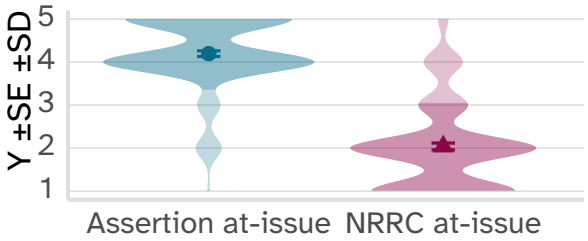


Figure 1 Adults’ judgments of NRRC answers in Chen, Thalmann & Antomo (2022), by whether the question targeted the main clause or the NRRC.

3.2 On irrelevant main clauses

There is a confound: when the NRRC answers the question, the main clause violates relevance in the sense of Lewis (1988).

If that's true, the low ratings may have nothing to do with the NRRC addressing the question.

An irrelevant NRRC is harmless when the main clause answers the question, (35)a, but a relevant NRRC does not rescue an irrelevant main clause, (35)b.

(35) a. Why is Skye sad?—Skye's crush, who went grocery shopping yesterday, is in love with someone else.
b. Why is Skye sad?—??Skye's crush, who is in love with someone else, went grocery shopping yesterday.

3.3 The goal: Make NRRC and main clause jointly relevant

The goal is to test cases in which the NRRC and the main clause can be assumed to be jointly relevant to the discourse goal, for example through a causal relationship. In (36), neither proposition answers the question on its own, (37), but together they form a causal chain that does.

(36) a. Why is Skye sad?—She is in love with Aditi, who is in love with someone else.
b. Why is Skye sad?—Aditi, who Skye is in love with, is in love with someone else.

(37) a. Why is Skye sad?—?She is in love with Aditi.
b. Why is Skye sad?—?Aditi is in love with someone else.

While the experiment to follow has no explicit question, integration is designed to ensure that it is easy to accommodate a question that makes main clause and NRRC jointly relevant.

3.4 Semantic integration is diagnosed with *because*

Integration reflects joint relevance: if p can be the reason for q, p is relevant to any QUD about why q.

(38) **Semantic integration**
A proposition p is semantically integrated with a proposition q if p can felicitously appear as the complement of a *because*-clause modifying q.

A pretest (60 items, 18 participants) rated *because*-sentences like (39) using a slider. The 48 items with the largest difference between the two versions were used as the basis for experimental items.

(39) a. Integrated:
Sina will mit Tobias **ans Meer** fahren, weil Tobias noch nie Muscheln gesammelt hat.

b. Non-integrated:
Sina will mit Tobias **zur Buchmesse** fahren, weil Tobias noch nie Muscheln gesammelt hat.

(40) completely unacceptable — completely acceptable

3.5 The pretest separates integrated from non-integrated items

Integrated items are rated close to ceiling, non-integrated items close to floor, and the main experiment's item means follow the pretest's.

(39) a. Sina will mit Tobias **ans Meer** fahren, weil Tobias noch nie Muscheln gesammelt hat.
b. Sina will mit Tobias **zur Buchmesse** fahren, weil Tobias noch nie Muscheln gesammelt hat.

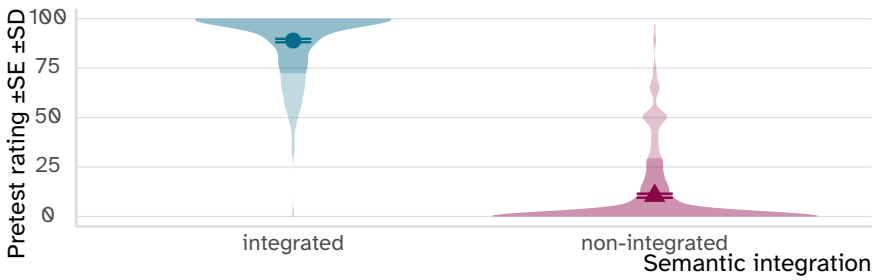


Figure 2 Pretest ratings by semantic integration for the 48 items used in semint (left), and the item means of the main experiment against the pretest item means (right).

3.6 Structure and order as conventional markers

We tested two sources of conventional marking for at-issueness: structure (NRRC vs. *and*) and order (final vs. non-final).

(41) **Design**: 2 × 2 × 2, within-within (48 items, 30 participants, Prolific)

a. SEMANTIC INTEGRATION: integrated vs. non-integrated
b. STRUCTURE: *and* vs. NRRC
c. ORDER: initial/medial vs. final

Participants judged an unambiguous continuation with *wenn doch*.

(42) **Continuation**
Aber wenn doch, überlegt PERSON sich das vielleicht nochmal anders.

(40) completely unacceptable — completely acceptable

3.7 Sample item: NRRC

(43) a. Medial, integrated:
Zum Meer will Sina Tobias, **der angeblich noch nie Muscheln gesammelt hat**, mitnehmen.
b. Medial, non-integrated:
Zur jährlichen Buchmesse will Sina Tobias, der angeblich noch nie Muscheln gesammelt hat, mitnehmen.
c. Final, integrated:
Zum Meer will Sina Tobias mitnehmen, der angeblich noch nie Muscheln gesammelt hat.
d. Final, non-integrated:
Zur jährlichen Buchmesse will Sina Tobias mitnehmen, der angeblich noch nie Muscheln gesammelt hat.

(44) **Continuation**
Aber wenn **doch**, überlegt Sina sich das vielleicht nochmal anders.

3.8 Sample item: NRRC (translation)

(45) a. Medial, integrated:
Sina wants to take Tobias, **who has allegedly never collected seashells**, to the sea.
b. Medial, non-integrated:
Sina wants to take Tobias, who has allegedly never collected seashells, to the annual book fair.
c. Final, integrated:
Sina wants to take Tobias to the sea, who has allegedly never collected seashells.
d. Final, non-integrated:
Sina wants to take Tobias to the annual book fair, who has allegedly never collected seashells.

(46) **Continuation**
But if **DOCH**, Sina might reconsider.

3.9 Sample item: *and*

(47) a. Initial, integrated:
Tobias hat angeblich noch nie Muscheln gesammelt und Sina will ihn zum Meer mitnehmen.
b. Initial, non-integrated:
Tobias hat angeblich noch nie Muscheln gesammelt und Sina will ihn zur jährlichen Buchmesse mitnehmen.
c. Final, integrated:
Zum Meer will Sina Tobias mitnehmen und er hat angeblich noch nie Muscheln gesammelt.

d. Final, non-integrated:
Zur jährlichen Buchmesse will Sina Tobias mitnehmen und er hat angeblich noch nie Muscheln gesammelt.

(48) **Continuation**
Aber wenn **doch**, überlegt Sina sich das vielleicht nochmal anders.

3.10 Sample item: *and* (translation)

(49) a. Initial, integrated:
Tobias has allegedly never collected seashells and Sina wants to take him to the sea.

b. Initial, non-integrated:
Tobias has allegedly never collected seashells and Sina wants to take him to the annual book fair.

c. Final, integrated:
Sina wants to take Tobias to the sea and he has allegedly never collected seashells.

d. Final, non-integrated:
Sina wants to take Tobias to the annual book fair and he has allegedly never collected seashells.

(50) **Continuation**
But if **DOCH**, Sina might reconsider.

3.11 What the participants saw

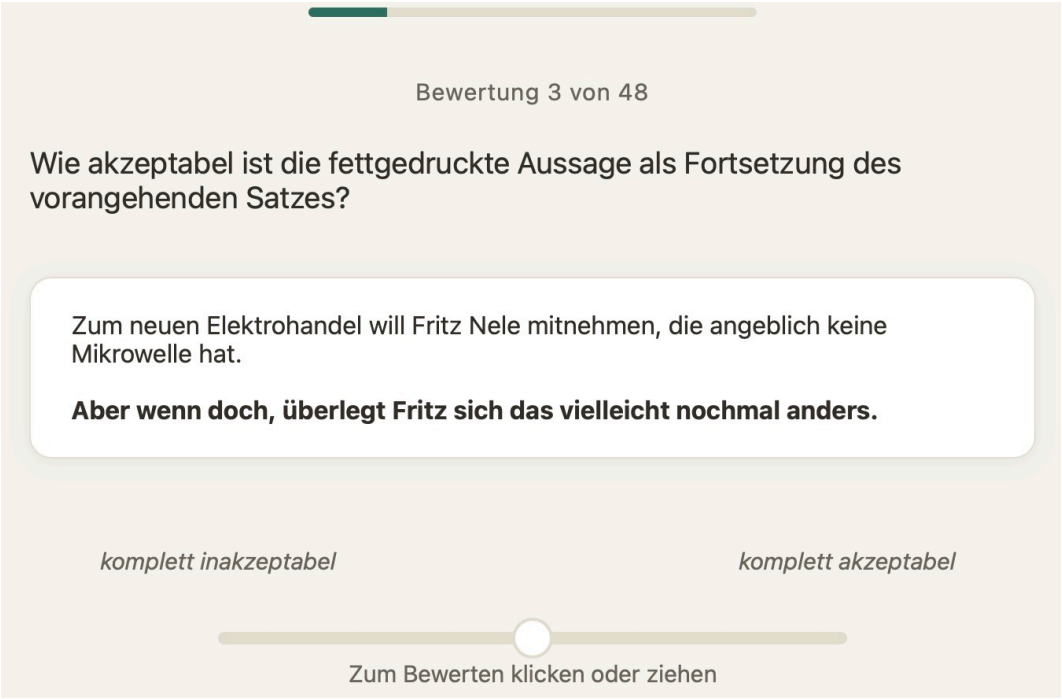


Figure 3 Procedure

3.12 Only the reduction predicts no effect of STRUCTURE or ORDER

All accounts predict low judgments for the non-integrated cells, where the continuation lacks a reason. They differ in the integrated cells. Prominence (Gutzmann 2023) lets an antecedent's availability grow with its syntactic integration and recency. The reduction, *Relevance only*, predicts high judgments for every integrated cell.

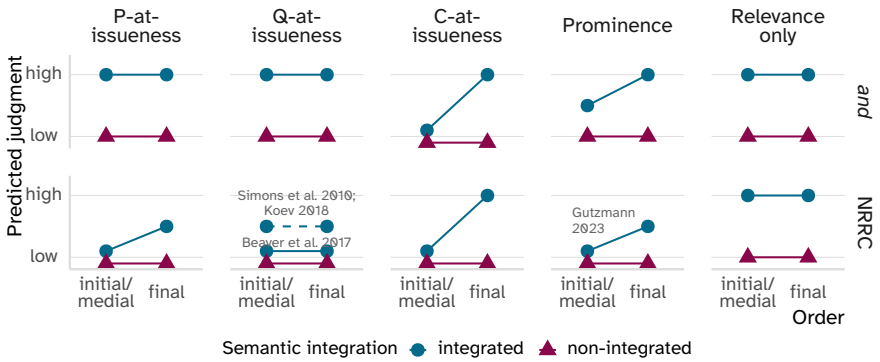


Figure 4 Predicted judgments for semint.

3.13 SEMANTIC INTEGRATION modulates accessibility

Integrated cells are rated high and non-integrated cells low, for both structures and both orders.

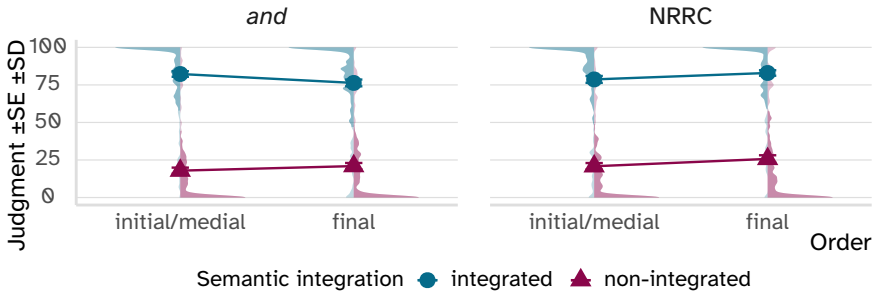


Figure 5 Judgments in semint by order, structure, and semantic integration.

3.14 Statistical modeling

The data were analyzed using a Bayesian censored distributional mixed model with a Gaussian likelihood:

(51) a. Y ~ SEMT_INT * STRUCTURE * ORDER
+ (1 + SEMT_INT * STRUCTURE * ORDER | id)
+ (1 + SEMT_INT * STRUCTURE * ORDER | item)
b. log SD ~ SEMT_INT * STRUCTURE * ORDER

For discussion of why distributional models are useful in experimental semantics and pragmatics, see Thalmann & Matticchio (2024) and Thalmann & Matticchio (2026).

The response variable was rescaled to fall between 0 and 1. All factors were sum-coded.

4 chains, 8000 iterations each, weakly informative priors.

3.15 Structure and order do not impact judgments

A censored Gaussian regression gives strong evidence for an effect of semantic integration, and evidence for equivalence for structure, order, and all interactions.

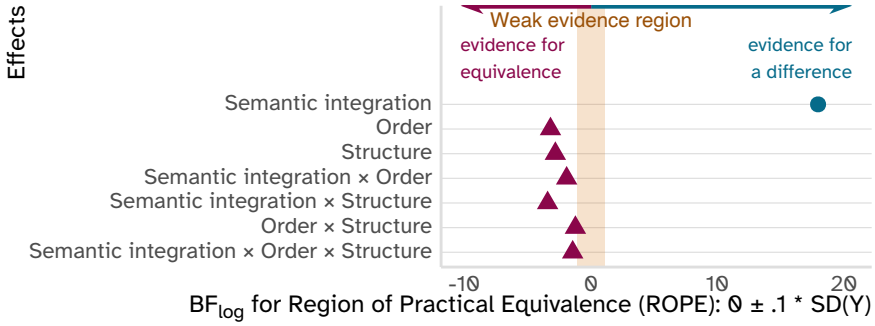


Figure 6 Bayes factors (log scale) for the main effects and interactions of a (distributional) censored Gaussian regression on the sum-coded factors and their interactions, with maximal random effects.

3.16 Every minimal pair of structure or order is equivalent

The minimal pairs show the same picture: only the contrasts between integrated and non-integrated cells differ.

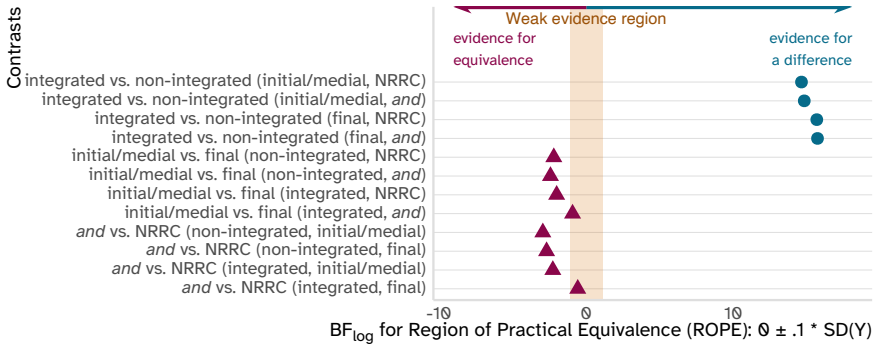


Figure 7 Bayes factors (log scale) for the minimal pairs of semint, (41), against a region of practical equivalence of 0 ± .1 SD of the ratings, from the model in Figure 6.

3.17 There is no conventional component to at-issueness

The results support the reduction: neither STRUCTURE nor ORDER, the two proposed sources of conventional marking, affects the availability of NRRC content.

Reduction hypothesis

There is one notion of at-issueness: p is at-issue relative to a QUD Q in a context c iff p is relevant to Q in c.

Semantically integrated NRRCs are as available for propositional anaphora as conjuncts.

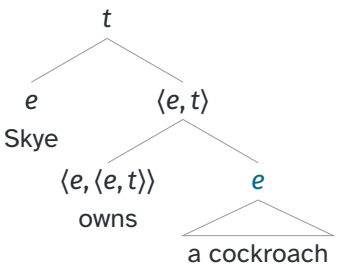
This suggests that the findings of Chen, Thalmann & Antomo (2022) for NRRCs reflect a relevance violation of the main clause, not a Q-at-issueness violation of the NRRC.

4 Available NRRC content needs a propositional discourse referent

4.1 Licensing and accessibility (Karttunen 1976, Heim 1982)

Individual discourse anaphora requires there to be an appropriate node in the structure that gives rise to a discourse referent.

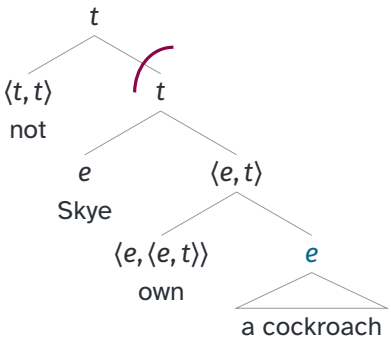
(52) a. Skye owns **a cockroach**. **It** hisses when it enters a room.



b. Skye owns cockroaches. #It hisses when it enters a room.

But even when there is such a discourse referent, it may not always be available for anaphoric pickup, a criterion that is called accessibility (for discussion, see Hofmann 2025).

(53) Skye does**n't** own **a cockroach**. #**It** hisses when it enters a room.



4.2 Unavailability has been tied to a missing propositional node

Analyses of NRRCs disagree on where NRRCs attach, and on whether the relative pronoun is a λ-binder or a referential pronoun (Schlenker 2023).

On a P-at-issueness (or Q-at-issueness) approach, it seems reasonable to tie the assumed unavailability of NRRC content for propositional anaphora to the absence of a node that denotes a proposition.

If NRRC content can antecede *doch*, the LF must license a propositional discourse referent for it.

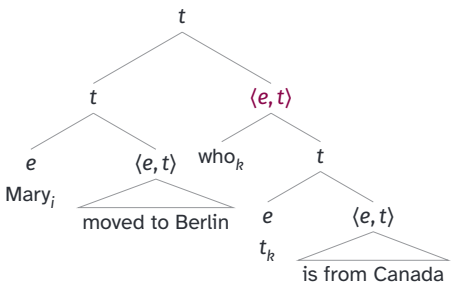
(54) Mary, who is from Canada, moved to Berlin.

We will walk through two kinds of analyses, one which aligns with our findings, and one which does not.

4.3 On clausal attachment, no node can license a referent

On Schlenker's main analysis, following McCawley (1982), the NRRC is an ordinary relative clause attached to a clausal node. The proposition that Mary is from Canada is a conjunct of the root's value, but not the value of any node.

(55)

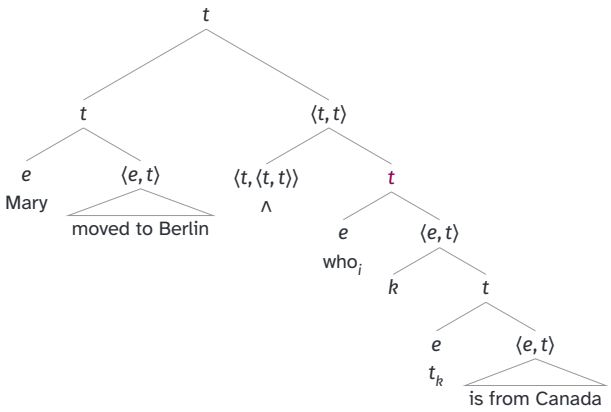


(To be interpretable, this analysis needs additional compositional machinery that is not shown here.)

4.4 A referential *who* licenses a discourse referent

If the relative pronoun carries a referential index (Schlenker 2023: §4.2.1), the NRRC denotes the closed proposition that Mary is from Canada.

(56)



4.5 The results disfavor LFs without discourse referents

In the experiment, propositional anaphora to NRRC content is possible. A discourse referent needs to be licensed, so LFs that provide none, like (55), are disfavored.

Note that *doch* cannot be taken to target the entire complex proposition, only the NRRC. Any other resolution would yield an implausible meaning.

(57) Zum Meer will Sina Tobias, der angeblich noch nie Muscheln gesammelt hat, mitnehmen. Aber wenn doch, überlegt Sina sich das vielleicht nochmal anders.

5 Conclusion: at-issueness is relevance

5.1 P- and Q-at-issueness both reduce to relevance

In this talk, I have argued

- that we should reduce both P- and Q-at-issueness to mere relevance,
- that conventional or structural properties (structure, order) have no influence on at-issueness,
- that the LF of NRRCs needs to give rise to a propositional discourse referent, and
- that accessibility of propositional antecedents is determined on semantic grounds, not on the basis of syntax: relevant propositions are available for pickup, no matter how they are realized.

The one further ingredient we do need: main-clause meanings *must* be relevant.

This explains results like those of Chen, Thalmann & Antomo (2022), where irrelevant main clauses are penalized.

5.2 Next steps: lying continuations

Wie akzeptabel ist die fettgedruckte Aussage als Fortsetzung des vorangehenden Satzes?

Bei der Prüfungsvorbereitung will Bernd Lea, die angeblich nicht gut allein lernen kann, helfen.

Aber wenn doch, hat sie ihn vermutlich angelogen.

komplett inakzeptabel *komplett akzeptabel*

Zum Bewerten klicken oder ziehen

5.3 Next steps: challengeability



Greta will Simon, der noch kein Konto eröffnet hat, zur neuen Bankfiliale begleiten.

Doch, er hat letzten Monat online ein Konto eröffnet.



Wie akzeptabel ist die Antwort der zweiten Person?

komplett inakzeptabel *komplett akzeptabel*

Zum Bewerten klicken oder ziehen

5.4 Open question: can presuppositions answer questions?

The relevance-only account predicts that, in exceptional circumstances, presuppositions can answer questions. But is that right?

My hunch is that yes.

In (58), the presupposed ("non-at-issue") complement of *know* answers the first question and the matrix content the second, so no part of the answer is irrelevant.

(58) Did Sue win the election? What does John think?—John knows that she won.

Experimental results will hopefully follow soon.

5.5 Non-conventional non-at-issueness

Back to Aditi and the cockroach: the complement can't be challenged because it answers no question, not because conventional marking stands in the way.

(5) a. Aditi knows that Skye owns a pet cockroach.—#No, (that's not true,) she's afraid of insects.
b. Does Skye own a pet cockroach?—#Aditi knows that Skye owns a pet cockroach.

Reduction hypothesis

There is one notion of at-issueness: *p* is at-issue relative to a QUD *Q* in a context *c* iff *p* is relevant to *Q* in *c*.
Direct dissent with response particles diagnoses this property relative to the explicit or accommodated QUD. Conventional marking plays no role.

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Appendix A: More on *that*

A.0.1 *That* patterns with content DPs, not with clauses

Here, we see this for *insist (on)*:

(59) a. Aditi insisted that Skye owns a cockroach.
b. *Aditi insisted the rumor that …
c. *Aditi insisted that.

(60) a. *Aditi insisted on that Skye owns a cockroach.
b. Aditi insisted on the rumor that …
c. Aditi insisted on that.

With *blame* and adverbs, we see the same association:

(61) a. *People blamed that Skye owns a cockroach for the scandal.
b. People blamed the rumor that …
c. People blamed that for the scandal.

(62) a. *That Skye owns a cockroach circulated widely.
b. The rumor that … circulated widely.
c. That circulated widely.

A.0.2 Only *be possible* seems to treat *that* as a clause

As the subject of *be possible*, *that* patterns with the clause and not with *the rumor that*, (63).

(63) a. That Skye owns a cockroach is possible/likely/certain/the case.
b. *The rumor/fact/report that Skye owns a cockroach is possible/likely/certain/the case.
c. That is possible/likely/certain/the case.

But other content DPs are much better here, (64), so the full inventory of content DPs needs to be tested.

(64) The allegation/claim that Skye owns a cockroach is possible/likely/certain/the case.

A.0.3

That cannot always be replaced by its antecedent

Replacing *that* by its allegedly propositional antecedent is at times ungrammatical, (65).

(65) Aditi thinks that it's raining.

a. That's surprising.
b. *Aditi thinks that it's raining is surprising.
c. That it's raining is surprising.

Other anaphors are out with emotive predicates in the first place, (66) (Kiparsky & Kiparsky 1970).

(66) a. *Skye regretted that it rained and Aditi regretted so, too.
b. Skye regretted that it rained and Aditi regretted that, too.

Appendix B: Scalar implicatures

B.0.1

Scalar implicatures do not license a discourse referent

Scalar and relevance implicatures are Q-at-issue but lack a syntactic antecedent (a formal link, in the terms of Heim (1990)).

Encouragingly, they resist anaphora with *wenn doch*, (68), although they answer the question.

(67) Er hat nicht alle Kekse gegessen. — Wenn doch, hätte ich mich auch mega geärgert.
he has not all cookies eaten — if PRT had I REFL also really annoyed
'He didn't eat all of the cookies.—If he had, I would have been really annoyed, too.'

(68) Er hat einige der Kekse gegessen. — #Wenn doch, hätte ich mich auch mega geärgert.
he has some the.GEN cookies eaten — if PRT had I REFL also really annoyed
'He ate some of the cookies.—If he had (eaten all of them), I would have been really annoyed, too.'

Appendix C: Problems for the reduction view

C.0.1

Problematic slifting

Koev (2018: 10f.) reports the reverse dissociation for slifting parentheticals. The parenthetical can be denied, (69), but it cannot answer a question about its own content, (70).

(69) A: Ellen is a passionate cook, her fiancé claimed.
B: No, he didn't. (Koev 2018: 11)

(70) A: What did Ellen's fiancé claim?
B: #Ellen is a passionate cook, Peter claimed.

Koev concludes that P- and Q-at-issueness are "somewhat independent notions" (Koev 2018: 11).

(71) Q: What did she do next?
A: #Her husband was a real sweetheart, she announced.
A′: She announced that her husband was a real sweetheart. (Koev 2018: 11)

Appendix D: More accounts

D.0.1

C-at-issueness

In addition to P- and Q-at-issueness, there is also C-at-issueness.

(72) **C-at-issueness** (Hunter & Asher 2016, Koev 2018)
A proposition is C-at-issue iff a freshly uttered segment can attach to it by some appropriate coherence relation.

D.0.2

What makes a proposition prominent

(73) **Prominence-lending properties for propositions** (Gutzmann 2023: 244)
A propositional component is more prominent,

a. the more prosodically integrated it is
b. the more syntactically integrated it is
c. the more semantically integrated it is
d. the more syntactic weight it has
e. the more recent it is (i.e. it occurs last in a sentence)
f. if it is in the same modality as the host utterance
g. if it is conventional
h. if it is truth-conditional
i. if it is semantically composed
j. if it is asserted (i.e. it makes a proposal)
k. if it is referred to by other parts of the utterance

D.0.3

Response particles and *yes, but*

My view on response particles predicts that they should track the QUD. This is arguably in line with the way *yes, but* challenges are set up (see Xue & Onea 2011).

(74) A: Tina just found out that Max is on vacation.
B: Yes, but Max is not on vacation.
B′: No, Max is not on vacation.

These challenges first deal with the part of the utterance that is designed to address the QUD, and only then with the irrelevant meaning components.

Appendix E: Statistical details

E.0.1

Censoring for bounded slider data

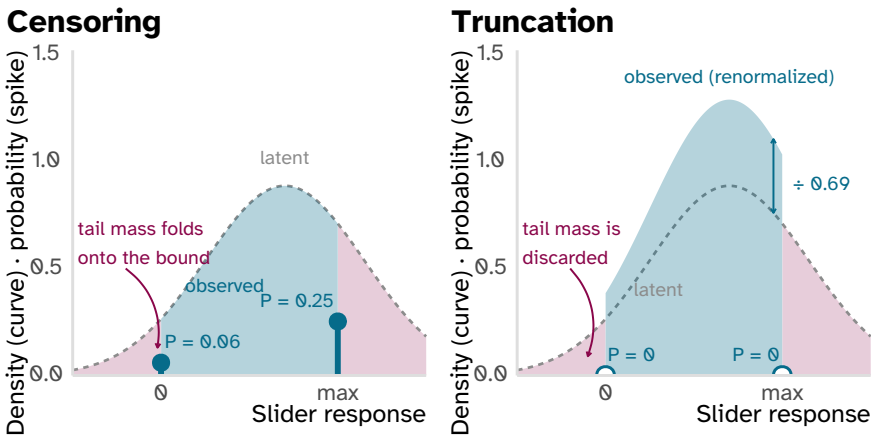


Figure 8 Censoring and truncation applied to the same latent Normal