Particle ‘or’

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1 Introduction

(1) A: Alfonso is being very quiet.
   B: Or he isn’t here.

(2) B’: (No,) He isn’t here.

Intuition: B’s response with sentence-initial ‘or’ provides a possible alternative to A’s claim, but doesn’t suggest that A’s claim is necessarily wrong. Often, but not always: corrective, but not a ‘full’ correction.

The big question

What is the account of ‘or’ in sentence-initial position?

• Puzzle 1: looks like ‘or’, but not syntactically binary.
• Puzzle 2: How to account for interpretation?

(3) Scenario: Murder investigation, butler is acting suspicious.
   A: Maybe the butler did it.
   B: Or he’s being blackmailed.

(4) A: The printer must be out of ink.
   B: Or the drivers are out of date.
   C: Or the network is down.
   D: Or the printer is broken.
   ...

Main claims:

• Sentence-initial ‘or’ is basically a discourse particle.
• Interpretation: introduces additional possible discourse futures.
• Not easily disentangled from the account of regular ‘or’.

Roadmap

1. Distributional questions – how general is this, where is ‘or’ located syntactically?
2. The simplest account: can it be reduced to binary ∨?
3. A dynamic account for declaratives.
4. Interrogatives and discourse futures.
5. Conclusions: on the ambiguity hypothesis.

For discussion I’m grateful to María Biezma and Justin Bledin, who are collaborators on (two distinct) closely-related projects. I’m also grateful to the many native-speaker-linguist informants who contributed to section 5 (listed there by name), members of the JHU semantics lab, Justin Bledin’s F16 philosophy of language seminar, and my 2016 NASSLLI course on questions and responses in discourse. An sketch of this idea appears in Biezma & Rawlins (2016).
1.1 Generality

First question: How general is sentence-initial ‘or’?

- My answer: extremely general and productive.
- One of the few existing concrete (if brief) comments in the theoretical linguistics literature on this ‘or’ suggests otherwise.

Szabolcsi (1997) ex. 36a:

(5) Who did you marry? Or, where did you live?

“This suggests that the or in [examples] does not really offer a choice but, instead, is an idiomatic device that allows one to cancel the first question and replace it with the second. This idiomatic character is corroborated by the fact that the Hungarian equivalents are entirely unacceptable unless inkább ‘rather, instead’ is added…”

- It’s definitely less frequent / natural with two constituent questions.

Webber & Prasad (2009): analysis of PDTB (Prasad et al. 2008) English coordinators, all of them are well-attested S-initially, including ‘or’.

- COCA (Davies 2008-): 33k hits for ‘or’. About half in spoken-fiction, where the fiction cases are typically dialogue.
- Some more things that can be combined in this way:

(6) A: Do you speak Italian?
   B: Or do you speak Spanish?

(7) A: Alfonso speaks Italian.
   B: Or does he speak Spanish? (corrective flavor)

(8) A: Does Alfonso speak Italian?
   B: #Or he speaks Spanish.

(9) Ask any of my three ex-wives. Or maybe don’t ask them.

(10) I couldn’t stop thinking about how mean my parents were. Or how noble I was.

Many non-sentential cases, which I will not directly deal with here:

(11) I hadn’t realized how demanding the work would be. Or how tedious.

1.2 The position of ‘or’ in the left periphery

It attaches high in the left periphery (Rizzi 1997). First bound: $\gg C$.

(12) a. Or is he just not here?
   b. What do you say to him? Or what do you say to other Americans?
c. OK, what’s your favorite soap opera? Or who’s your favorite star?

Where in the ‘fine structure’? Only things that appear higher are a few particles like ‘well’.

(13) a. Well, or he isn’t here.
b. Well, or they’re saying gross injustice is about to be ignored.

Targeting specific categories from Cinque’s 1999 articulated hierarchy:

(14) a. Or, maybe he isn’t here.
b. #Maybe or he isn’t here.

(15) a. ...those ideas usually are better than yours. Or, at least, that’s what they think. (adapted from a COCA example)
b. #At least, or, that’s what they think.

(16) a. Or, frankly, he isn’t here.
b. #Frankly, or he isn’t here.

Unembeddable:

(17) a. Bill thinks/said (*or) that (*or) the printer was out of ink.
b. Bill asked (*or) whether (*or) the printer was out of ink.

Summary:

• Bound for position: speech-act adverbs (‘frankly’) are the highest functional head in Cinque’s 1999 hierarchy of adverbs.

• Function and peripheral position of sentence-initial ‘or’ matches Zimmermann’s 2011 characterization of discourse particles:

  “Discourse particles in the narrow sense are used in order to organize the discourse by expressing the speaker’s epistemic attitude towards the propositional content of an utterance, or to express a speaker’s assumptions about the epistemic states of his or her interlocutors concerning a particular proposition.” (pp. 2012-3)

1.3 Particle ‘or’ is anaphoric

<table>
<thead>
<tr>
<th>Anaphoricity</th>
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<tr>
<td>Particle ‘or’ is not syntactically binary. But, this is not to deny that it is semantically/pragmatically binary.</td>
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<tr>
<td>1. Is ‘or’ anaphoric at all?</td>
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<td>2. If so, what is it anaphoric to?</td>
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Anaphoricity is a presupposition in the corpus literature – question there is often, how far back can the antecedent be?
• Really bad discourse-initially:

(18) (S walks up to a stranger on the street)
    #Or do you have the time?

**First approximation:** particle ‘or’ is anaphoric to a proposition.

• Contrast with ‘maybe’ relative to an overt question:

(19) A: What’s wrong with the printer?
    B: Maybe it’s out of ink.
    C: Or the drivers are out of date.

(20) A: What’s wrong with the printer?
    B: #Or it’s out of ink.

**Second approximation:** particle ‘or’ is anaphoric to a possible answer.

2  *The simplest account*

(21) Version 0: in response to $\psi$, $[\text{or } \phi] = [\psi] \lor [\phi]$.

• We need a bit more to get any sensible pragmatics.
• Version 0.1: (21) comes with a scalar inference: $p \lor q$ strengthened to $(p \lor q) \land \neg Kp \land \neg Kq$. Relatively standard (Sauerland 2004, e.g.).
  – Strengthened response challenges assertability conditions for $p$?

Problems with the simplest account?

• Doesn’t handle commitments right. That is, B has no commitment to even the possibility of the antecedent in cross-speaker cases.
• Presentation of a preferred alternative makes a symmetric disjunctive paraphrase hard. Not about knowledge.

(22) A: The meeting was very hard to schedule, and so needs to be at 7am.
    B: Or we could just cancel the whole thing.

• Doesn’t handle non-declaratives or mixed clause types. (Move to non-classical disjunction?)

(23) A: John’s being very quiet.
    B: Or is he just not here?

(24) A: Eat your vegetables.
    B: Or you’ll yell at me?

**Summary:** The simplest account is hard to integrate with the details of the pragmatics, as well as non-declarative cases.
3 A dynamic account for declarative cases

(1) A: Alfonso is being very quiet.
    B: Or he isn’t here.

Back to the core declarative cases. Desiderata to capture:

• B does not accept A’s claim per se.
• B doesn’t reject it either: accepts it as a possibility only.
• B introduces a new, competing possibility.

Consider a more ‘normal’ case. What is happening between A and B?

(25) A: Alfonso is being very quiet. B: ok.

• A makes a proposal to update the common ground. B’s ‘ok’ accepts
  this proposal and triggers the common ground update.

• Idea: particle-‘or’ responses are operating in this space.

3.1 Proposals and tables

Farkas & Bruce: context has a special slot for proposals, called the
Table. Asserting puts something on the Table – it is in limbo until
accepted or further acted upon.

(26) Let a context \( c \) be a tuple \( (cs_c, A_c, Q_c) \) where:
    a. \( cs_c \) is a set of worlds (the context set)
    b. \( A_c \) is either a proposition (type \( \langle s, t \rangle \) or \( \varnothing \)
    c. \( Q_c \) is a set of propositions (type \( \{\langle s, t \rangle\} \))

For \( A, Q, \varnothing \) indicates that the slot is currently empty. More general
approach: use a stack. I’m aggressively simplifying.

(27) \( c + ^c \text{ Assert}_x(\varphi) = (cs_c, [\varphi], Q_c) \)  
    Assertion, v.1

Felicity conditions on assertion:
    a. \( A_c = \varnothing \)
    b. \( cs_c \) is compatible with \( [\varphi] \)
    c. \( x \) believes \( [\varphi] \)

(28) \( c + ^c \text{ Accept}_x = (cs_c \cap \{w | A_c(w)\}, \varnothing, Q_c) \)  
    Acceptance, v.1

Felicity conditions on acceptance:
    a. \( A_c \neq \varnothing \)
    b. \( x \)'s belief state is compatible with \( A_c \)

(29) \( c + ^c \text{ Question}_x(\varphi) = (cs_c, A_c, [\varphi]) \)  
    Questioning v.1

(30) \( c + ^c \text{ Clear} = (cs_c, \varnothing, Q_c) \)  
    Rejection v.1

For a discourse with agents \( x, y \): \( c + \text{ Assert}_x(\varphi) + \text{ Accept}_y \) amounts to a
3.2 Disjunctive proposals on the table

A further constraint on assertions: must be relevant to a Question Under Discussion/QUD. In this setting, the QUD is the Q slot.

\((31)\) A proposition \(p\) is relevant to a question \(Q\) iff there is some \(q \in Q\) such that either: (i) \(p\) entails \(\neg q\), or (ii) \(p\) entails \(q\). (Roberts 1996)

Point of comparison: the alternative semantics account of disjunction.

\((32)\) \([\varphi \lor \psi] = [\varphi] \cup [\psi]\)

\((33)\) Simons’ Topic condition for disjunction (Simons 2001)

a. A question \(Q_1\) is relevant to another question \(Q_2\) iff for all \(p \in Q_1\), \(p\) is relevant to \(Q_2\)

b. A disjunction \([\alpha \lor \beta]\) is appropriate in a context only if \([\{\alpha\}, \{\beta\}]\) is relevant to the QUD in that context.

I will assume, following Kratzer & Shimoyama (2002), Groenendijk (2009), Ciardelli et al. (2013) that even in non-interrogatives, denotations may have alternative structure. So \([\varphi], [\psi]\) above are type \([\{s, t\}\), even if they are singleton.

- Terminology from inquisitive semantics: a hybrid is an alternative set that is both informative and inquisitive.
- An alternative set is informative just in case it doesn’t cover \(\mathcal{W}\) even though it may fail to choose between many alternatives, it excludes some worlds entirely.
- Assumption: an element in the assertion slot on the table may be a hybrid. The alternative structure is flattened out if it is accepted.
  - Similar to Groenendijk (2009), with flattening in the pragmatics.
  - See discussion in Menéndez-Benito (2006) on assertions in a compositional Hamblin semantics, basic idea goes back to Heim (1982).

Formal implementation with hybrids. \(\varphi\) is now of type \([\{s, t\}\) below:

\[(34)\] Where \(\varphi\) is type \([\{s, t\}\), \(\text{flatten}(\varphi) = \lambda w. \exists p \in \varphi : p(w)\)

\[(35)\] \(c + \text{'Assert}_x(\varphi) ) = \{ c \cap [\text{flatten}(\varphi)], Q_c \} \) \hspace{1cm} \text{Assertion, v.2}

- \(A_c = \emptyset\)
- \(c \cap [\text{flatten}(\varphi)]\) is compatible with \(\text{flatten}(\varphi)\)
- \(x\) believes \(\text{flatten}(\varphi)\)
- \([\varphi]\) is relevant to \(Q_c\).

\[(36)\] \(c + \text{'Accept}_x = \{ c \cap [\text{flatten}(A_c)](w) \}, \emptyset, Q_c \) \hspace{1cm} \text{Acceptance, v.2}

- \(A_c \neq \emptyset\)
- \(x\)'s belief state is compatible with \(\text{flatten}(A_c)\)

There is a huge industry on QUDs. Intuitively, a QUD is a public shared discourse goal, of resolving the question. Some key references: Roberts (1996), Ginzburg (1996, 2012), Büring (2003).


This Q-Q relevance is fairly strong; a weaker version would involve existential quantification and amount to Lewis’s 1988 non-orthogonality.

Write \(\{\alpha\}\) for the type of sets whose elements are type \(\alpha\).

Relative to \(W = \{w_1, w_2, w_3, w_4\}\), the set \(\{\{w_1, w_2\}, \{w_3\}\}\) would be informative, but \(\{\{w_1, w_2\}, \{w_3, w_4\}\}\) would not be. The singleton \(\{w_1, w_2, w_3\}\) would also be informative, but not inquisitive.

‘flatten’ is Kratzer & Shimoyama \(\exists\). Cf. also Heim (1982) on assertions, Inquisitive semantics double negation.

Paraphrase: Assertion puts a (potentially inquisitive) alternative set on the table as a proposal to update the context set.

Paraphrase: Acceptance incorporates the flattened (information-only) version of the alternative set on the table.
(37) \[ c + (\text{or } \varphi) = \langle cs_c, A_c \cup [\varphi], Q_c \rangle \]

Felicity conditions:
(a) \([\varphi]\) is relevant to \(Q_c\)
(b) \(A_c \neq \emptyset\)
(c) Agent’s belief state is compatible with \(\varphi\).

(38) **Corollary:** if binary ‘or’ is Hamblin, then \(c + (\varphi \text{ or } \psi)\) comes out to \(c + [\varphi] + [\psi] \).

Paraphrase: particle ‘or’ introduces a new alternative into the (non-empty) set of assertion proposals on the table.

Should (37) encode exclusivity / non-overlap? Unclear, but:

(39) a. Alfonso is taking Semantics 1. So he must have taken Language & Mind.

b. Or he took Cognition. (\(\not\rightarrow\) he didn’t take both?)

I will leave the question of exhaustification for particle ‘or’ open.

3.3 **Example**

Suppose that:
\[ Q_c = [\text{where’s John}] = \{ \lambda w_s . \text{J-at-work}'(w), \lambda w_s . \text{J-at-home}'(w) \} \]
\[ [\text{here}] = [\text{at work}] \]

(40) \[ c' = c + (\text{Assert}_x (\text{J’s not here})) = \langle cs_c, \{ [\text{J’s not here}] \}, Q_c \rangle \]

Felicity condition requires that \([\text{J’s not here}]\) be relevant to \(Q_c\).

(41) \[ c'' = c' + (\text{or he’s (here and) hiding}) = \langle cs_c, \{ [\text{J’s not here}], [\text{J’s (here and) hiding}] \}, Q_c \rangle \]

Acceptance after a simple assertion:

(42) \[ c' + (\text{Accept}_x) = \langle cs_c \cap \{ w \mid [\text{J’s not here}](w) \}, \emptyset, Q_c \rangle \]

Acceptance after a particle ‘or’ response:

(43) \[ c'' + (\text{Accept}_x) \]
\[ = \langle cs_c \cap \text{flatten}(\{ [\text{J’s not here}], [\text{J’s hiding}] \}), \emptyset, Q_c \rangle \]
\[ = \langle cs_c \cap (\{ w \mid [\text{J’s not here}](w) \} \cup \{ w \mid [\text{J’s hiding}](w) \}), \emptyset, Q_c \rangle \]

Rough-and-ready commitments:

- Given a sequence of contexts \(C\), if the context set of the final element of \(C\) entails or is compatible with \(\varphi\), then the Source of \(\varphi\) relative to the context sequence is the set of agents (which may be empty) who caused \(\varphi\) to be on the table as an element of some assertion at a context in the sequence.
4 From declaratives to interrogatives

The key idea: particle ‘or’ disjoins proposals to update the context.

- Assertions: proposal to update the common ground.
- New: questions are proposals to update the QUD.
- Potentially competing proposals can co-exist!

\( \text{(44) } A: \) Does Alfonso speak Spanish?
B: Or does he speak Italian?

The context after B’s move contains two, parallel proposals.

- One proposal involves asking (& presumably answering) A’s question. The second, B’s question.
- Attempting to respond will decide between these proposals.

4.1 A bunch of technical stuff

\( \text{(45) } \) A context is a tuple \((cs, Q)\) such that:
- a. \(cs\) is a context set.
- b. \(Q\) is a stack of sets of propositions.

\( \text{(46) } \) A supercontext is a tuple \((cs, Q, F)\) such that:
- a. \((cs, Q)\) is a context.
- b. \(F\) is a set of contexts.

\( sc + \text{Assert}_x(\varphi)^\sim = \langle cs_{sc}, Q_{sc}, \{cs \oplus \text{Assert}_x(\varphi)\} \rangle \)  
Assertion v.3

\( \text{(47) } \)
- a. \(F_{sc} = \emptyset\)
- b. \(x\) believes \([\varphi]\)

\( sc + \text{Question}_x(\varphi)^\sim = \langle cs_{sc}, Q_{sc}, \{cs \oplus \text{Question}_x(\varphi)\} \rangle \)  
Questioning v.2

\( \text{(48) } \)
- a. \(F_{sc} = \emptyset\)
- b. \(x\)’s belief state does not resolve \([\varphi]\)
- c. \(x\) believes another agent may be able to resolve \([\varphi]\).

\( sc + \text{Clear}^\sim = \langle cs_{sc}, Q_{sc}, \emptyset \rangle \)  
Rejection v.2

4.2 Local updates. For a context \(c\),

\( c \oplus \varphi_{[(s,f),]}^\sim = \langle cs_c \cap \{w \mid \text{flatten}(\varphi)(w)\}, Q_c \rangle \)  
*(i) \( cs_c \) is compatible with \(\text{flatten}(\varphi)\).  
*(assertibility)*

\( c \oplus \varphi_{[(s,f),]}^\sim = \langle cs_c, \text{push}(Q_c, \varphi) \rangle \)  
*(i) \( cs_c \) is compatible with \(\varphi\).  
*(answerability)*

\( \text{(50) } \)
- a. \(c \oplus \varphi_{[(s,f),]}^\sim = \langle Q_c, \emptyset \rangle\), where \(Q\) is the unique element in \(\{Q' \mid \exists c \in F_{sc} : Q_c = Q'\}\)

\( sc + \text{Accept}_x^\sim = \langle \bigcap \{cs \mid \exists c \in F_{sc} : cs_c = cs\}, Q, \{\}\rangle \), where \(Q\) is the unique element in \(\{Q' \mid \exists c \in F_{sc} : Q_c = Q'\}\)

\( \text{(51) } \)
Assume that if in sc top(Qsc) is completely resolved by cs, that context is automatically shifted to sc + "dispel". (Resolved QUDs vanish.)

An alternative set ϕ chooses a context c if either (or both):

- ϕ is relevant to top(Qc), or
- csϕ = cs.

If an assertion or question ϕ with content ψ by x occurs in sc such that Fsc ̸= ∅, then to interpret ϕ:

- If there is a unique c ∈ Fsc such that ψ chooses c, shift to ⟨cs, Qc, {}⟩.
- If acceptance is possible, shift to sc + Accept_x.

In some cases both of these could apply, so ‘non-determinism’ is possible (and a hearer must infer what was intended). In some cases neither could apply; this version is silent about what happens then.

4.2 The punchline

The final treatment of particle ‘or’ for this handout. Keep in mind that now ϕ includes a force operator.

\[
\text{(55) } \quad \text{sc + } \{\text{or } \phi \} = (\text{cs}, Qsc, Fsc) \cup F((sc + \{\text{clear} + \phi\}))
\]

a. Felicitous only if Fsc ̸= ∅

This loses the clean equivalence with binary ‘or’, but something similar is retained (assuming, again, Hamblin binary ‘or’):

\[
\text{(56) } \quad \text{sc + } \{\text{or Assert}_x(\phi)\} + \{\text{or Assert}_x(\psi)\} + \{\text{Accept}_y\}
\]

5 Binary and particle ‘or’

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<th>Ambiguity?</th>
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<tbody>
<tr>
<td>How do binary ‘or’ and unary ‘or’ relate?</td>
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<tr>
<td>• Hypothesis 1: Accidental homophony. We’ve got ‘or1’ and ‘or2’.</td>
</tr>
<tr>
<td>• Hypothesis 2: Systematic relationship. (‘regular polysemy’?)</td>
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<tr>
<td>• Hypothesis 3: Same item. Extreme idea, but compatible with my proposal.</td>
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Confound: if particle ‘or’ is productive and general, many same-speaker examples in the literature become hard to distinguish.

• Need a good diagnostic for same-speaker sentence boundary.
• Intonation / prosody provide cues. Massive speaker variability.

5.1 Is this English-specific?

Hypothesis 1 predicts this to be an English-specific phenomenon. Test with core declarative cases – are there translations of (1) that use a binary disjunction in the language? Romance:

(57) Spanish (María Biezma, p.c.)
A: Juan no está aquí
‘Juan isn’t here’
B: O está siendo muy silencioso
‘Or he’s being very quiet’

(58) Italian (Ilaria Frana, p.c.)
A: Gianni non è qui.
‘Gianni isn’t here.’
B: {O or / Oppure} si sta nascondendo
‘Or he’s hiding’.

(59) French (Geraldine Legendre, p.c.)
A: Jean (n’) est pas là
‘Jean isn’t around’
B: Ou bien il se cache
‘Or he’s hiding’

(60) Romanian (Ioana Grosu, p.c.)
A: Io nu este aici.
‘John isn’t here’
B: Ori el este foarte tacut.
‘Or he’s being very quiet’

Further afield:

(61) Korean (Najoung Kim, p.c.)
A: con yeki eps-ney
‘John’s not here.’
B: Animyen swum-e iss-kena
‘Or he’s being very quiet’

(62) Japanese (Akira Omaki, p.c)
A: John-wa koko-ni i-nai-yo.
‘John’s not here.’
B: sore-ka, shizukan shiteru-dake kamoshirenai.
‘Or he might be just being very quiet.’

(63) Kannada (Sadhwi Srinivas, p.c.)
A: John illa illi
‘John’s not here’
B: tumba quiet-aagi idaahe athva
‘athva’ ok at either edge. A reminder that ‘peripheral’ ≠ ‘left’. Can also use exclusive/conditional ‘illa andre’.

(64) Hindi (Sadhwi Srinivas, p.c.)
A: John yahan nahn hai
‘John’s not here’
B: yaa wo bohot chup hai
‘Or he’s being very quiet’

(65) Bulgarian (Christo Kirov, p.c.)
A: John ne e tuk
‘John’s not here’
B: Ili prosto ne se obajda
‘Or he’s being very quiet’.

n.b. Korean is complicated. ‘kena’ suffix may be possibility modal in this context, and something like it is required.

n.b. Japanese is also complicated. Modal of some kind is required.

Two disjunctions can be used: ‘illi’ or ‘a’. For ‘illi’ either a possibility modal or an exclusive is preferred, but optional; ‘a’ can only be used in combination with possibility modal ‘mojo bi’.
Generalizations from cross-linguistic data:

- Of the set of binary disjunctions in a language, at least one of them can be used as unary disjunction. (Potential exception: Japanese.)
- Often a preference for marking exclusivity, possibility, or both if available. In some cases, required.
- Disjunction in other languages is way more interesting!

Either hypothesis 2 or 3 is right – I will not try to differentiate them.

- Reminiscent of Kratzer (1986) on ‘if’. Not clear that focus on binary ‘or’ is a mistake – but it’s missing a big part of the picture.

5.2 Wrapping up

Conclusions

- ‘Or’ can productively be used as a syntactically unary ‘discourse particle’ in English that appears with a range of sentence types. Pattern appears to be cross-linguistically robust.
- Particle ‘or’ is licensed just in case its prejacent is relevant to the QUD, and other relevant possibilities have already been provided.
- Particle ‘or’ disjoins proposals for how the context should change – discourse possibilities.

Some more future directions:

- Particle ‘or’ and the pragmatics of attention (Bledin & Rawlins 2016).
- Better account of relevance to goals in discourse beyond just QUDs.
- Other modal particles as discourse possibility vs. informational possibility: ‘maybe’ etc.
- Return to ‘S-internal’ cases, Hirsch (2016) etc. Return to embedded antecedents.

References