Semantics & Pragmatics Volume 10, Article 16, 2017
https://doi.org/10.3765/sp.10.16

This is an EARLY ACCESS version of

Biezma, María & Kyle Rawlins. 2017. Or what? *Semantics and Pragmatics* 10(16). https://doi.org/10.3765/sp.10.16.

This version will be replaced with the final typeset version in due course. Note that page numbers will change, so cite with caution.

©2017 María Biezma and Kyle Rawlins
This is an open-access article distributed under the terms of a Creative Commons Attribution License (https://creativecommons.org/licenses/by/3.0/).

EARLY ACCESS

Or what?*

María Biezma
University of Konstanz

Kyle Rawlins
Johns Hopkins University

Abstract This paper develops an argument that discourse considerations are crucial in the semantics of questions by looking at the case of English "or what" questions. We argue that "what" in these questions is a discourse pronoun anaphoric with the 'Question Under Discussion', and show that this account explains the range of variation in how "or what" questions are interpreted in context, compared to other question types. This accounts for the fact that OWQs can be used as plain information seeking questions, as rhetorical questions, and also as questions that express insistence about receiving an immediate answer. Along the way we present empirical arguments that "or what" questions do not involve sluicing, though they can best be compared to the phenomenon of antecedent-less 'pseudo-sluicing'.

Keywords: questions, semantics, pragmatics, discourse

1 Overview of "or what"

"Or what" questions (OWQs), illustrated in (1), involve inversion (or "whether"/"if" in embedded contexts), one or more non-final propositional disjuncts, and a final disjunct that is just the word "what".

(1) a. Is this analysis semantics, pragmatics, or what?
b. I don't know whether/if this is semantics, pragmatics, or what.

The relationship between polar and alternative questions has long been a key area of research in speech acts and the semantics-pragmatics interface; "or what" questions shed new light on this set of problems. We argue that empirically OWQs are on the

* We would like to especially thank Scott AnderBois, Ana Arregui, Justin Bledin, Ilaria Frana, Arno Goebel, Sven Lauer and Maribel Romero for comments and discussion. We also thank the audiences at the DGfS 2012 workshop *Questions in Discourse* at the University of Frankfurt, SPE7 at ZAS Berlin, NELS 46 at Concordia University, Johns Hopkins University and the University of Konstanz, where previous versions of this paper and additional material were presented. Thanks also to four anonymous reviewers and Kjell Johan Sæbø for extensive comments. All remaining errors are our own. This research was partially supported by the DFG research unit FOR2111, *Questions At The Interfaces* for Biezma and NSF-INSPIRE BCS-1344269, *Gradient symbolic computation* for Rawlins. Authors are listed alphabetically.

EARLY ACCESS

polar-alternative spectrum, and are closest to alternative questions. A key observation about their meaning is that it is heavily context-dependent, and accounting for this context dependence is the central puzzle in this paper. The examples in (2) illustrate the first case: a standard, information-seeking context use, where OWQs can be directly compared to polar and alternative questions.[1]

(2) Student to advisor: So, I came up with this analysis, but I don't know, ...

a. is this pragmatics↑? (*Polar question*)

b. is this semantics↑ or pragmatics↓? (*Alternative question*)

c. is this semantics↑, pragmatics↑ or what↓? (*'Or what' question* / OWQ)

In this context, the OWQ has a flavor that is similar to that of both other question types: they all request information about where the student's analysis fits into the larger theory. However, there are differences. The polar question explicitly introduces a single possibility for what the analysis could be, leaving other 'no' options open. The alternative question, pronounced with a final fall, closes off the possibility space to just these two distinct alternatives. In contrast to the alternative question, the OWQ implies that there could be something 'extra' beyond just semantics and pragmatics. In contrast to the polar question, the question itself suggests that responses should be drawn from an 'exhaustive' set of possibilities for what the analysis could be, though it mentions only two by name. Information-seeking OWQs are extremely productive; here are two representative attested examples from Davies (2008-):

(3) And the question is is does that mean when you get married your marriage ends up being better, or what? (COCA)

(4) Is the wing retraction mechanism manual, hydraulic or what? (COCA)

A second similarity to polar and alternative questions is that the contribution of an OWQ to larger discourse is context sensitive (Roberts 1996, Biezma & Rawlins 2012). We can see this by providing a prior question to explicitly manipulate the discourse topic, e.g. a question-question sequence. In (5) and (6), the same OWQ signals substantially different 'intent'. In (5) the speaker suggests John's house as a possible location for the reception and "what" hints at other possible locations, but in (6), the speaker indicates that the reception being at John's house is a possible reason for why Mary would skip it and "what" hints at other possible *reasons*.

(5) Where is the reception happening? Is it at John's house or what?
paraphrase: is the reception at J's house or where is it?

1 Throughout, following typical but not universal convention, we will use ↑ and ↓ as *extremely* rough glosses on rising (or high) pitch and falling pitch, respectively. See Bartels (1999), Pruitt & Roelofsen (2013) for more details on the exact pitch contours and intonation here.

EARLY ACCESS

(6) Why is Mary skipping the reception? Is it at John's house or what?
paraphrase: is M's reason for skipping the reception that it's at J's house or why is she skipping it?

The difference between (5) and (6) can be further developed by considering possible answers to the Q-Q sequences. For example, a "no" answer to (5) might be, "no, it's at Bill's house". This would be inappropriate in response to (6), which could instead license "no, it's because she had an argument with the dean." This latter response would be completely inappropriate for (5) as well. This is our first puzzle: why and how is the interpretation of an OWQ affected by a prior question in discourse?

Inspired by proposals for polar questions in Roberts 1996, Büring 2003, Biezma & Rawlins 2012, we suggest that OWQs can serve to indicate the structure of a prior, potentially implicit, *Question Under Discussion* (QUD). The context-sensitive behavior of polar and alternative questions in Question-Question sequences was one of Roberts' key diagnostics for QUD-sensitivity, so the pattern in (5)-(6) fits exactly this mold. Like polar and alternative questions, we propose that OWQs do this by explicitly spelling out one or more alternatives in the QUD. In the case of OWQs, this is done via the non-'what' disjuncts. The differences from other question types emerge just from the final "what" disjunct. We propose that "what" in these questions is anaphoric, and in particular is anaphoric to the immediate QUD; the overall semantics and resulting pragmatics for this question type is constructed via standard accounts of "or" in disjunctive questions. OWQs effectively 're-ask' the QUD while spelling out the identity of some of the alternatives (as in (5) and (6)). This anaphoric behavior resembles the account of identity in sluicing proposed by AnderBois (2014) and Barros (2014). However, we argue that OWQs cannot involve sluicing per se, and at best can be compared to pseudo-sluicing on Barros's 2014 proposal.

Despite the presence of disjunction, OWQs with an information-seeking use differ sharply from regular alternative questions such as (2b), which characterize all the available alternatives in context (see Biezma & Rawlins 2012 and references therein). They also have uses that do not exactly map to polar questions. We examine the differences by going beyond the relatively 'neutral' information-seeking uses of OWQs and looking at two other special cases: (i) cases where OWQs have a unique use as rhetorical questions, and (ii) cases where OWQs express insistence or 'cornering' along the lines of "or not" questions. An explanatory account for OWQs needs to address this context sensitivity, beyond the core information-seeking cases.[2]

2 There is another use of "or what" that we are not considering here, the cross-speaker use of "or what". Dealing with this requires consideration of imperatives (Biezma & Rawlins 2016).

(i) "Don't fuck with Pet Nylund's business." "Or what? You go to the Tubes?" (COCA)

EARLY ACCESS

(7) a. (Scenario: John does something really stupid.)
Is John an idiot or what? ⇝ John is an idiot.

b. Clasping Charlie's shoulder, Alice pointed to the dog. "Is he the most adorable thing you've ever seen or what?" (COCA)
⇝ The dog is the most adorable thing.

c. Jesus, is it nine thousand degrees in here, or what? I feel like my insides are boiling. (COCA) ⇝ It's extremely hot.

In contrast, "or not" questions cannot have this rhetorical interpretation, and it is at best marginal with polar questions:[3]

(8) (Scenario: pointing at a dog.)

a. #Is he the most adorable thing you've seen or not?

b. #Is he the most adorable thing you've seen?

Our proposal for the rhetorical reading of OWQs will lead to an analysis that makes them analogous to that of what we will term a *doubled alternative question*:

(9) Is that dog adorable or is it adorable? ⇝ the dog is adorable.

The proposal for both cases is that the alternative question acts as a question whose presuppositions force the QUD in context to be trivially singleton, i.e. force an answer to the question to be entailed in context. In a doubled alternative question this comes about compositionally, and in a rhetorical OWQ this happens by interaction with the context.

The final use of OWQs we will consider is when they are used to express impatience or insistence, similar to the behavior of "or not" alternative questions. We see the similarities in examples like (10b) and (10d), where OWQs give rise to what Biezma (2009) termed a 'cornering' reading for "or not"s. Intuitively, a cornering reading demands an immediate response addressing the content alternative from the addressee, and doesn't permit any other strategies for addressing the QUD.

(10) a. I have to go, are you coming to the party or not?

b. A: I'm about to leave, are you coming to the party?
B: Not sure yet...
A: I have to go, are you coming to the party or what?

c. You want an invite or not?

d. "...Jada asked me to call and confirm your address so she can send you an invitation to her wedding." Jada was getting married a third time

3 Other forms of polar question can be used here, e.g. preposed negative polar questions such as "Isn't he the most adorable thing you've seen?". We will not discuss other biased questions here; see Romero & Han (2004), van Rooy & Šafářová (2003) among others.

EARLY ACCESS

> and I hadn't been married once. No way. "You're lying. Jada would never hire you. What are you up to?" **"You want an invite or what?"** "I'm good." Jada already had my address. (COCA)

The remainder of the paper is organized as follows: in §2 we provide a more in-depth linguistic characterization of OWQs as alternative questions that are anaphoric to the QUD, and explore competing hypotheses about their structure; the main competitor to our proposal is an account involving ellipsis, in particular sluicing. We present corpus evidence that OWQs do not involve sluicing, though they can be compared to so-called 'pseudo-sluicing' (antecedent-less sluicing). In §3 we first set up a theory of polar and alternative questions in a QUD framework as a starting point, building on Biezma & Rawlins 2012, and then develop an account of "or what" questions as anaphoric to the QUD. From plain information-seeking questions in that section, we turn to rhetorical questions in §4, and then to cornering-like questions in §5, arguing that the context-sensitivity imposed by QUD-anaphoricity is exactly right for deriving this 'chameleonic' behavior, once a precise account of cornering with "or not" questions is developed. In a nutshell, the analysis to be developed in §3 has two crucial ingredients: (i) disjunction in OWQs is the same disjunction found in alternative questions and coordinates propositions, and (ii) "what" in OWQs is a pronoun anaphoric with the current Immediate Question Under Discussion.

2 What are "or what"s?

This section provides an empirical characterization of OWQs that likens them to alternative questions. We will show that *what* in OWQs invokes proposition-level alternatives, leading to an analysis of OWQs in terms of previous analyses for alternative questions in which *or* coordinates propositions. We will also argue that OWQs cannot be reduced to other types of disjunctive questions via a mechanism such as sluicing.

In the remainder of this introductory section we further develop the argument that OWQs are questions that are QUD-sensitive. In 2.1 we compare OWQs to both alternative and polar questions, noting that they seem to pattern more clearly with alternative questions; in 2.2. we examine, and argue against, the possibility that OWQs are derived from disjunctive question forms in which the second disjunct is a constituent question; we also examine other disjunctive questions in which the second disjunct is an indefinite.

Before beginning with the task of pinning down OWQs, we must establish that they are questions at all. A first type of evidence is simply the native speaker intuition that they are used as questions in root contexts, and can be answered as questions can, e.g. with particles like "yeah"/"yes" and "no". There is also structural evidence.

EARLY ACCESS

Like other interrogatives, OWQs undergo auxiliary inversion. They are productive in embedded contexts, where they appear headed by "whether" or "if" (examples from COCA):

(11) a. I don't know if it was people doing bad business dealings or what.
b. nobody knew if they were spies or what.
c. At first, Miina couldn't tell whether the boy was playing a trick on her, or was drunk, or what.

The above examples are verbs that select interrogatives; for a verb like "believe" that doesn't, an OWQ is out. Like other types of embedded "whether"-questions, they cannot embed under emotive factives such as "be surprised".

(12) *Nobody believed if/whether they were spies or what.

(13) *Everyone was surprised if/whether they were spies or what.

This selectional behavior suggests that OWQ clauses are regular interrogative clauses.

In (5) and (6) we have seen evidence that OWQs are interpreted differently depending on prior overt questions; following Roberts (1996) we have suggested that this indicates that OWQs are QUD-sensitive. We now test two predictions of this idea. First, the non-information-seeking readings should be QUD-sensitive as well. One immediate prediction is that a single OWQ form can have all of the readings we have discussed, depending on the context. The following examples illustrate this, with a single OWQ taking on an information-seeking reading, a rhetorical reading, and a 'cornering'-like reading.

(14) (Starting a conversation) (*Information seeking* OWQ)
A: What is this brownish thing you are drinking? Is that whisky or what?

(15) (In Scotland, tasting whisky at a famous distillery) (*Rhetorical* OWQ)
A: Mmm, Oh my! This doesn't compare to anything else I've tried. What gift did God give us with this?
B: I told you..., is that whisky or what?

(16) (A encounters his/her partner in the living room) (*Cornering-like* OWQ)
A: You are drinking! What is that? Is that whisky? The doctor specifically forbid you from having whisky. Is that whisky or what?

Second, the appearance of a discourse-initial OWQ should be constrained by inference to a covert QUD. An extreme case of this is illustrated in (17).

(17) (To a stranger on the street) #Do you have the time or what?

EARLY ACCESS

This data, taken together, introduces evidence that (like polar and alternative questions), OWQs are QUD-sensitive, and that their precise interpretation is heavily dependent on an immediate QUD. We turn now to the question of how they might be interpreted compositionally. The first issue to address is how to treat the disjunction that appears in OWQs.

2.1 Disjunction in "or what" questions

Given that OWQs embed with "whether", they pattern in form with polar and alternative interrogative clauses (as opposed to constituent interrogatives). In this section we will argue that OWQs pattern most closely with alternative questions. A useful contrast throughout this section will be with "or something/whatever" questions, which we take to be POLQs; intuitively, an "or something" indicates that there may be alternatives to its first disjunct, but also signals that the speaker doesn't care about those fine-grained distinctions; a 'yes' answer would collapse these extra alternatives together.[4]

(18) Why is Mary skipping the reception? Is it at John's house or something?

(19) Is she drunk or something? (COCA)

The main arguments for an alternative-question analysis for OWQs come from evidence that "what" introduces propositional alternatives to the question-meaning, similar to disjuncts in alternative questions. Belnap & Steel (1976: ex. 59) noticed that questions like (20a) formed by disjoining two polar interrogative clauses with final falling intonation have an ALTQ interpretation. That is, the speaker intuitively offers a choice between two alternatives constructed from disjoining two polar interrogative clauses. An OWQ constructed from the same alternatives plus "or what", where the final disjunct must also receive falling pitch is shown in (20b). Where the regular alternative question provides a 'closed' set of alternatives, the OWQ variant offers the same choices but allows for answers that don't fall neatly

4 Further evidence for a distinct analysis of "or something" comes from examining its behavior in non-questions; these final disjuncts can appear in declaratives, in contrast to "or what".

(i) The reception is at John's house or something/whatever.

(ii) *The reception is at John's house or what.

Just as in questions, declarative "or something"/"or whatever" act as hedges, indicating uncertainty or indifference respectively about the location of the reception, suggesting that the question versions are POLQs constructed from this same proposition. As with expressions of ignorance in a question in general, this might well license a response that addresses the ignorance, leading to an occasional apparent similarity in responses to alternative questions.

EARLY ACCESS

into one of the two categories. In contrast, an "or something" question can't be constructed from full clausal disjuncts, and isn't terribly coherent when constructed from non-clausal disjuncts, intuitively grouping the bird/plane/other options together.

(20) a. [Is this a bird↑ or is it a plane↓?
b. Is this a bird↑ or is it a plane↑ or what?↓
c. #Is this a bird or (is it) a plane↑ or something?↑

This comparison suggests that the compositional structure for (20b) is very similar to that of an alternative question, and that "or what" is introducing some extra proposition(s) into the alternative structure of the question itself. The common core across treatments of alternatives questions like (20a) is that they involve a denotation that is an alternative set, containing propositions derived from the disjuncts. The role of "or what", we suggest, is to add additional propositions to such a set.

There are two main views regarding the denotations of POLQs: in the standard analysis beginning with Hamblin 1973 POLQs denote a set consisting of the content proposition and its negation. A second view, developed in various forms by (Roberts 1996, Gunlogson 2001, Biezma & Rawlins 2012 a.o.) is that POLQs denote singleton sets (or the equivalent), and the hearer's choice between the content proposition and its negation is licensed in the pragmatics. Neither of these ideas is easily applied to OWQs, especially ones with more than two disjuncts: however it is done, polar questions contrast a single content proposition with its negation. In this respect OWQs are more like ALTQs than POLQs in presenting multiple alternatives with no inherent logical relation. Like POLQs, "or something" questions *do* intuitively license a choice between a content proposition and its negation, with the indefinite disjunct hedging the content proposition.

A second argument comes from the intonational facts mentioned above. OWQs take a final falling pitch contour, and are incompatible with a final rising pitch (as would be seen on polar questions). They also take pitch-accents on non-final disjunctions. This setup appears to be the standard intonational contour for ALTQs, and not POLQs (Bartels 1999, Pruitt & Roelofsen 2013).

A third argument comes from embedded clauses. Karttunen (1977b) noted that certain dubitative predicates (mainly "doubt") can embed polar interrogative clauses, but not alternative interrogative clauses. Here too OWQs pattern like ALTQs.

(21) a. John doubts whether Mary is going to the party.
b. #John doubts whether Mary is going to the party or not.
c. #John doubts whether Mary is going to the party or staying home.
d. #John doubts whether Mary is going to the party or what.

EARLY ACCESS

A fourth argument comes from polar questions with preposed negation. Han & Romero (2004) point out that information-seeking ALTQs cannot appear with preposed negation, and this is indeed the pattern we find with OWQs. In contrast, "or something/whatever" negative questions are good:

(22) a. *Isn't Alfonso going to the party or what?
b. *Isn't it hot or what?
c. Isn't the reception at John's house or {something / whatever}?

The arguments so far suggest strongly that OWQs are not polar questions, and less strongly that they pattern with ALTQs (when ALTQs are infelicitous, so are OWQs). We present finally one case where OWQs are felicitous in a context where only ALTQs are. English unconditional adjuncts allow alternative interrogatives, but not polar interrogative clauses (Gawron 2001, Rawlins 2013). The examples in (23)-(24) present attested examples of "whether ... or what" unconditionals, paired with much worse sentences involving an attempt at adjoining a polar interrogative clause.

(23) a. But we have to come up with alternative funding streams. We have to, whether it's more bake sales or what.
b. *We have to develop alternative funding streams, whether it's more bake sales.

(24) a. Whether that's on a golf course in a non-physical sense or what, I don't think any of us Australians would back down from a head-to-head battle.
b. *Whether that's on a golf course in a non-physical sense, I don't think Australians would back down.

Unlike OWQs, "or something/whatever" are uniformly bad in the antecedent of unconditionals, as opposed to "if"-conditionals:

(25) a. *Whether the reception is at John's house or something/whatever, you should go.
b. Compare: If the reception is at John's house or something/whatever, you should go.

A related case is when a 'regular' indefinite appears in a disjunct of a disjunctive question, as in (26). Such questions are also intuitively similar to OWQs.

(26) Should we invite Bill↑, Jill↑ or someone else↓?[5]

(27) Should we invite Bill↑ or should we invite someone else↓?

5 This example is due to an anonymous reviewer.

EARLY ACCESS

Standard analyses of alternative questions can easily handle such cases by taking "someone else" to be a vanilla indefinite scoping under disjunction. However, this data once again raises a compositional puzzle for OWQs. "What" in an OWQ cannot be narrow-scoped, and there is no parallel wide-scope disjunction form to (27) – so how are we to think about disjunction with "what"? It cannot be reduced to a nominal indefinite.

(28) a. Should we invite Bill↑ or what↓?
b. *Should we invite Bill or should we invite what?

Why does it matter what kind of question is involved? The key difference is in how to understand disjunction. In polar questions with disjunction, it is widely taken to scope below (in some sense) the question operator, which in our system leads to a single alternative that is internally disjunctive. The arguments that OWQs are not POLQs provide evidence that this is not what is happening for "or what". Rather, as with alternative questions, we suggest that the disjunction interacts directly with the alternative structure of the question, manipulating propositional alternatives. It is not crucial for us to strictly conclude that OWQs are ALTQs in any narrow sense, but we do believe based on the arguments in this section that disjunction in OWQs behaves the same as disjunction in ALTQs. Before presenting our analysis developing this idea (in §3), we rule out one more possibility: that OWQs can be reduced to yet one more kind of disjunctive question.

2.2 Complex disjunctive questions and the role of 'what'

One potential analysis of "or what" questions is that they might be derived by ellipsis, and in particular via sluicing (Ross 1969, Chung et al. 1995, Merchant 2001). This idea is bolstered by the existence of what we will term *complex disjunctive questions* (CDQs). Though conventional wisdom is that root constituent interrogatives cannot be freely disjoined (see e.g. Szabolcsi 1997, Hirsch 2016 for discussion), one case that is apparently possible involves an initial polar (or alternative) interrogative clause disjoined with a following full constituent interrogative clause. Such examples are reasonably well attested in corpora, and so we take it that they are grammatical in spoken informal English in at least some dialects. Sometimes these examples are transcribed as multiple sentences, leaving open the possibility that the "or" is a sentence-initial particle (Biezma & Rawlins 2016). For the sake of discussion we will set this aside, assuming it is possible that these involve clause-internal disjunction.

(29) a. Let me ask – Melissa, your health issues, did they go away, or what happened?
b. Is this a picture book or what is it?

EARLY ACCESS

(30) Are you local people, or where are you from? (COCA)

(31) Were they pretty well prepared, or how did they respond? (COCA)

Such questions would seem to provide a ready derivational 'source' for "or what" questions, and indeed have a similar interpretation. That is, CDQs are the flip-side of the sequences we discussed in (5)–(6): the role of this question type is to ask about a specific polar alternative and then clarify what the big question is supposed to be. Complex disjunctive questions can be thought of as establishing a QUD explicitly *after* refining it. This data raises two important questions: (i) to what degree is the interpretation of OWQs related to that of complex disjunctive questions, and (ii) can OWQs be reduced to complex disjunctive questions? While we suggest that the semantic/pragmatic analysis of the two question types may be the same, we argue that OWQs cannot be reduced completely to complex disjunctive questions.

To evaluate this idea, we briefly sketch what a sluicing account would look like. While we won't fix a particular account of sluicing (or make any assumptions about deletion vs. alternatives; see Merchant 2003b for an overview), the basic idea would be that "what" is standing in for a full syntactic clause that is identical (under some notion of identity) with a linguistic clausal antecedent. Then, an OWQ might be analyzed as in (33).

(32) John did something, but I don't know what ~~John did *t*~~. (*sluicing*)

(33) Did John go to the party or what ~~did John do *t*~~?

An initial problem for a sluicing account is that in OWQs, there isn't typically a ready linguistic antecedent for the structure that would be needed to fill in the elliptical meaning.

(34) When is the party? And, is it at John's house or what?
Attempt: When is the party? And, is it at John's house or what ~~is the place~~?

Even when there is a plausible antecedent, a good complex disjunctive paraphrase will typically have a light verb such as "do" or "be" as the main verb, rather than matching any antecedent verb. For example, in (33) we'd really expect the elided verb to be "go", but this isn't an option:

(35) Did John go to the party or what {[did he do] / *[did he go]}?

In addition, it is not always possible to find an appropriate 'non-elliptical' paraphrase that would be expected of OWQs if they do involve sluicing, and in many cases where a close paraphrase can be found, it doesn't involve "what".

EARLY ACCESS

(36) Where is the reception happening? Is it at John's house or what? / or where *(is it happening)?

(37) Why is Mary skipping the reception? Is it at John's house or what? / ?or what is the reason? / or why *(is she skipping it)?

The requirement to reconstruct a full clause with light verbs (often cleft structures) is in fact characteristic of what Merchant (2001) termed *pseudo-sluicing* (see Barros 2014 for extensive recent discussion of pseudo-sluicing, as well as Ginzburg & Sag 2001, Culicover & Jackendoff 2005 for more data along these lines), to characterize the few special cases where a linguistic antecedent is not required. Pseudo-sluices are (descriptively) structures that have the form of sluices, but are exceptionally licensed without an overt linguistic antecedent, such as Ross's classic "guess who?".

The next major stumbling block for a sluicing or pseudo-sluicing analysis is that it predicts that we should find the full range of "wh"-items productively in an OWQ-like structure, as they are fully productive in CDQs, as well as other cases of pseudo-sluicing (Merchant 2001). This is not the situation in English, though we expect it could be in other languages. We present evidence from corpus data that falsifies this prediction. OWQ-like structures with other "wh"-items are extremely rare in corpus data (in contrast to OWQ), and are highly variable in their acceptability. We suspect that they fall into the category of data where it is sometimes possible to infer speaker intent, and so they are interpretable in a sense, but are not grammatical.

To illustrate this prediction, consider (38a). This sentence is constructed from an attested CDQ, and so if a sluicing derivation were possible, we'd expect this to be acceptable; however, it is not.[6]

(38) a. *Are you local people, or where?
b. Are you local people, or where are you from? (attested CDQ from COCA)
c. Are you local people, or what?

6 A reviewer also suggests that (i-a) is fully acceptable. We have not been able to replicate this judgment, after consulting many native speakers. We do agree that (i-a) is *interpretable*, in that it is quite obvious what the intended meaning is. A full CDQ with pied-piping (i-b) is also not grammatical in English (though again it is obvious what it would mean if it were). We leave it open whether pied-piping-like structures make it easier to interpret such examples, as suggested by the reviewer's judgment.

(i) a. *Are you local people, or from where?
b. *Are you local people, or from where are you?

EARLY ACCESS

wh-item	how	what	what+N	when	where	which	who(m)	why
count	5	1304	4	4	11	1	13	22

Table 1 Corpus counts for ‘or’ + wh-item + ‘?’ in Davies (2008-)

This data point is not the end of the story, however, as there are rare cases where uses of non-“what” pronouns in forms like (38a) seem to be acceptable to some speakers. ((39) is provided by a reviewer.)

(39) a. Should we invite Bill, Jill or who?
b. Do you want to go now, in the evening, or when?

Because of examples like (39), we decided to evaluate the non-“what” data more carefully. To assess the productivity of other types of “or”+wh questions, we searched in Davies (2008-) for the sequence of “or” followed by a wh-NP followed by a question mark.[7] While the results do confirm the conjecture that such forms are occasionally produced in English, they also confirm the hypothesis that there is a sharp difference in markedness between “what” and other “wh”-items in this structural context. Setting aside “-ever” forms (which we take to be yet another interesting, but distinct, case) the results are given in table (39); here are representative attested examples:

(40) Mom would ask if Patrick might be coming home to visit sometime soon? or when? (COCA)

(41) does she have to find it at the bar or where? (COCA)

(42) And was it just a mass die-out from something they drank at the site or something covered them or why? (COCA)

(43) Did you catch her in a net, or with magic, or how? (COCA)

What makes these few examples more acceptable? Intuitively a non-“what” pronoun is acceptable only if there is some very clear indicator of the pronoun’s type from the prior disjunct(s); as (38a) suggests this is not a sufficient condition. They are also improved with multiple prior disjuncts, in contrast to OWQs. As with all examples so far,

7 These results in particular represent three searches: one for “`or [*Q*] ?`”, one for “`or when ?`” which is not matched by the more general search, and one for “`or what [N*] ?`”. The counts here contain a mix of real exemplars and false positives. While it is easy to hand-filter the non-“what” results because of low counts, it is not practical to hand-filter false positives from the “what” cases, and so we decided that the fairest way of comparing the numbers is to leave false positives in all categories. We leave a more serious corpus investigation for the future.

EARLY ACCESS

for any of the attested non-"what" examples, "what" can be productively substituted for the wh-item (though there are typically subtle differences in meaning).[8]

In summary, the facts regarding CDQs are not compatible with the most straightforward versions of a sluicing hypothesis: from the general acceptability of CDQs, it is highly surprising that OWQ-like forms with non-"what" items would be so much less attested or so much more marked for English speakers. Similarly, English pseudo-sluicing allows the full range of pronouns as well (Merchant 2001, Barros 2014). If "or what" involves sluicing (either on a deletion or a recovery analysis), it is a species of sluicing that (a) does not require a linguistic antecedent, (b) cannot have linguistic antecedents that ordinary slucing would license, and (c) is fixed to involve only the "wh"-item "what". Such a hypothesis is not easy to eliminate entirely, but it is far from a null hypothesis, and so we will not adopt it here. However, we will propose a very similar semantics to what has been suggested for pseudo-sluicing by Barros (2014), building on AnderBois 2014 on sluicing in general. That is, an "or what" approximates sluicing in a purely semantic way. What is overall clear is that "or what" does involve anaphoricity, but this cannot be captured by using surface anaphora (in the sense of Hankamer & Sag 1976), and so we will shortly turn to the idea that it involves deep(er) anaphora.

3 Questions, questioning, and the denotation of "what"

This section introduces the analysis of OWQs, focusing first on their use as information-seeking questions. In this use, their function is to request information of a hearer (what Groenendijk & Stokhof 1997 term an *interrogative act*, see also Hamblin 1958, 1973, Groenendijk & Stokhof 1984). Our proposal will include (i) a compositional semantics for interrogative clauses, and (ii) a theory of the role that such clauses play in discourse that feeds off their compositional semantics, building on the Questions Under Discussion literature (especially Roberts 1996, Büring 2003). §3.1-3.2 address the compositional semantics of interrogatives and how they fit into discourse, and §3.3 spells out our proposal for the denotation of *what* as anaphoric

8 We expect that there may be variation in similar constructions cross-linguistically; for example, in Spanish there is a featurally mismatched "o qué" that is comparable, but matching interrogative pronouns (especially with a preposition) are much improved over English.

(i) ¿Vienes mañana o {qué / ?cuándo }?
come.2.sg tomorrow or what / when
'Are you coming tomorrow or {what / when are you coming}?'

(ii) ¿Vienes mañana con María o con quién / o qué?
come.2.sg tomorrow with María or with whom or what
'Are you coming tomorrow with María or with whom / or what?'

EARLY ACCESS

to a QUD. While we think the core of our analysis could be realized under a range of assumptions about questions, we will fix one set of assumptions here, based on the classic Hamblin semantics.[9]

3.1 Compositional semantics of questions

We adopt a Hamblin account of the compositional semantics of questions (Hamblin 1973, Karttunen 1977a, Kratzer & Shimoyama 2002). In this approach, the denotations of interrogative clauses are characterized as alternative sets of propositions (where a proposition is treated as a set of worlds, or its characteristic function), each corresponding to a 'semantic answer' (Groenendijk & Stokhof 1984) to the question. The denotations of smaller constituents are also sets, in this case of ordinary denotations. When no operator has introduced alternatives, denotations will be singleton sets, and their unique member corresponds to their non-Hamblin meaning. We assume that semantic composition proceeds by combining sets 'pointwise' (Kratzer & Shimoyama 2002). Our composition rule for disjunction, based on work in alternative semantics (von Stechow 1991, Alonso-Ovalle 2005, Simons 2005), is given in (44):

(44) $[\![[\alpha \textbf{ [or } \beta\textbf{]}]]\!] = [\![\alpha]\!] \cup [\![\beta]\!]$

According to (44) the role of disjunction is to take the union of the disjuncts. In typical cases, the individual disjuncts will be singleton sets, and for questions, the resulting structure straightforwardly contributes to the question's alternative structure. For example, (46) spells out a simplified denotation of the alternative question in (45):

(45) Is Alfonso an idiot↑ or is he actually clever↓?

(46) $[\![\textbf{(45)}]\!] = \{\lambda w\,.\,\text{A. is an idiot in } w\} \cup \{\lambda w\,.\,\text{A. is actually clever in } w\}$

3.2 Interrogatives in Discourse

We turn now to connecting up an alternative semantics for interrogatives with a theory of discourse and answerhood, focusing on the polar/alternative question family. One end-goal is to make predictions about e.g. the context-sensitivity of "or what" questions.

9 The analysis we develop here could be translated to other alternative-semantics approaches, such as a two-dimensional focus semantics for questions (e.g. Beck & Kim 2006), or a version of Inquisitive Semantics (Ciardelli et al. 2013). We prefer a Hamblin semantics here because it allows a smooth interface with a Roberts (1996)-style Question Under Discussion.

EARLY ACCESS

We will adopt the idea that discourse is structured around one or more Question(s) Under Discussion (QUD; Ginzburg 1996, Roberts 1996, Büring 2003 a.o.). A QUD is a (possibly implicit) question that, at a stage in discourse, amounts to a goal: cooperative interlocutors attempt to collectively resolve the current QUD(s). There are two types of 'core moves' that a speaker can make in this model: (i) either attempt to resolve some QUD (i.e. provide an *answer*), or (ii) posit a question that could be used as a new QUD by discourse participants (i.e. raise an *issue*) or a *strategy* for resolving an existing QUD. As a simplification we will ignore other move types. We assume that questioning happens against the background of a Stalnakerian common ground/context set-style representation that records the current public informational state of the discourse; answers narrow the context set, eliminating possibilities, and questions raise issues that are not settled in the context set. A key idea introduced by Roberts (1996) is the *strategy*: a strategy is, roughly, a path towards resolving some QUD, such as by asking a subquestion.

We will adopt a particular version of discourse based on Büring's 2003 D(iscourse)-trees. On this view, discourse can be thought of as hierarchically tree-structured, where every node represents a possibly implicit discourse *move*. D-trees encode a total order of moves, determined by a depth-first L-R traversal of the tree. At any point in a discourse, there will be a question that is the most recent one (the Immediate QUD /IQUD or *Current Question*), and answers to that question are attached as daughters (though we will relax this particular assumption later). Constraints on discourse can therefore be stated as constraints on D-trees, and D-trees treated as a generative model. On the other side, from a listener's perspective, one challenge involved in interpretation is to infer what D-tree(s) are compatible with a speaker's move.

The well-formedness of D-trees, and therefore of responses in discourse, is modulated by relevance. Discourse moves must be 'relevant', and as a starting point we will adopt Robert's characterization below (Roberts 1996). First, some terminology: We take an explicit 'move' to be a communication event, and as such to be tightly linked to a context of utterance as well as a linguistic form. Given some move M, the context of utterance for that move at that point in discourse is notated c_M. Our approach to relevance is inspired by Roberts 1996:

(47) **Relevance** (Modified from Roberts 1996 ex. 15)
A move M is *Relevant* to a question q iff M either introduces an (at least) partial answer to q in context c_M (M is an assertion) or is part of a strategy to answer q (M is a question).

We will not instantiate this constraint directly, but incorporate it into the licensing conditions for moves that follow. We consider the notions of partial answer and

EARLY ACCESS

strategy in turn. Though it is far from the only word on pragmatic answerhood, we will adopt Roberts' definition of partial and complete answers in terms of contextual entailment. Basically, a declarative response will be relevant if it decides in context, either positively or negatively, any alternative in the current QUD:

(48) (Modified from Roberts 1996 ex. 3)

a. A partial answer to a question q is a proposition which contextually entails the evaluation – either true or false – of at least one element of the alternative set characterized by q.

b. A complete answer is a proposition which contextually entails an evaluation for each element of the alternative set characterized by q.

c. p contextually entails q in a context c just in case $(p \cap cs_c) \subseteq (q \cap cs_c)$, where cs_c is the Stalnakerian context set in context c.

d. p contextually entails the evaluation of q in context c iff either p contextually entails q, or p contextually entails $\neg q$.

This notion of 'answer' depends directly on the set of propositions that make up the QUD. A partial answer informs us about at least one of those propositions, whereas a complete answer provides information about all of them. This is formally cashed out in terms of one proposition 'evaluating' another: a proposition p evaluates a proposition q only if p entails either q or its negation. Contextual entailment, as usual, is characterized in terms of a subset relation on possibilities, relative to a Stalnakarian context set. By this definition (following Roberts), propositions can be partial answers to singleton alternative sets, by resolving the contained proposition one way or the other.

A second way of addressing a question is to introduce a subquestion; this part of the definition is intended to cover (among other things) Question-Question sequences such as (49). Intuitively, A's continuation serves to indicate that A has decided for the moment to focus on the possibility of having panna cotta, and therefore indicates a particular strategy towards resolving the more open "what" question.

(49) A: What do you want for dessert? Do you want panna cotta?

Biezma & Rawlins (2012) (henceforth also B&R) propose that while constituent questions can introduce QUDs, polar and alternative questions are instead tools for making explicit some (*polar questions*) or all (*alternative questions*) of the alternatives present in an immediate QUD; the identity of these alternatives may have been implicit. An illustration of the different question types is provided in (50):

(50) a. Where are you going tonight? (*constituent question*)

b. Are you going to the party↑? (*polar question*)

EARLY ACCESS

c. Are you going to the party↑ or staying home↓? (*alternative question*)

When trying to find out where the addressee is going out in the evening, the questioner could ask the constituent question in (50a), which would have as possible answers some set of alternatives that might be partially determined by context (e.g. the speakers might have previously discussed some possibilities). Instead of leaving this implicit, the questioner could choose to make explicit at least one possibility they're curious about, as with the polar question in (b). Here, other alternatives to the party remain implicit. A third option would be to ask an alternative question as in (c), which signals that these are the *only* options the questioner thinks are under consideration. On this view, both polar and alternative questions can thus provide (meta-)information about the (possibly implicit) QUD by explicitly spelling out some/all of the possible alternatives. A QUD may be explicit or implicit, and so polar and alternative questions might be strategies for addressing an implicit QUD. Following Roberts and Büring, we take implicit QUDs to correspond to implicit moves, and for simplicity we take the only implicit moves to be questions. Even if a QUD is implicit, information about the QUD is typically signaled by linguistic cues in subsequent moves, and so it ought to be inferrable.

We will assume a mapping between moves and their contents, which basically gives the denotations of moves, specified in (52). On the Biezma & Rawlins (2012) account, polar and alternative questions provide information about the QUD by introducing informative speaker presuppositions about the QUD into the common ground. In what follows we will spell out a new version of this proposal, and expand on it in §3.3 to account for the discourse role of 'or what' questions.[10] We begin with the simple 'percolation' rule shown in (53), which takes the IQUD of any move to be the content of any immediately dominating move. We assume for the sake of simplification that only questions can dominate other questions in a D-tree, that is, assertion moves are always leaf nodes; sequences of assertions must therefore involve sister nodes (or other higher right-ward attachment) in this simplified system.[11]

(51) Let a **D-Tree** T be a tree structure whose nodes are *moves*. Moves can either be implicit or explicit.

(52) A move M's **Content** is defined by:

10 In this paper we generally neglect the role of presuppositions that may be informative about information other than the discourse structure.

11 Because Roberts' relevance constraint does handle relevance to singleton sets, a Hamblin treatment of declarative denotations as singleton sets in our setup would in principle allow for assertions to be non-leaf-nodes; further assertions that agree with or deny the content proposition would count as relevant. We set such cases aside here, but see Bledin & Rawlins (2016).

EARLY ACCESS

a. If M is overt, $\text{Content}(M) = [\![\alpha_M]\!]^{c_M}$, where α_M is the linguistic form uttered in move M and c_M is the context of utterance of M.
b. Otherwise, $\text{Content}(M) \subseteq \mathscr{P}(\mathscr{W})$. ($\approx$ implicit moves are questions.)

(53) **QUD percolation, v. 1** (to be revised)
For any D-tree T and move M that is a node in T, the IQUD for T must satisfy the following constraints:
a. $\text{IQUD}(M) = \text{Content}(M')$, where M' is the move immediately dominating M in T (if it exists and is not an assertion).
b. $\text{IQUD}(M) = \emptyset$ (if M has no immediately dominating move in T)

For the sake of convenience, we will sometimes refer to the return value of the IQUD function relative to a move as 'the IQUD' for that move.

The first constraint we introduce is adapted straight from Roberts (1996) for describing strategies involving assertions – basically, answers. An assertion must at least partially address the questions that dominate it. While we do not provide a specific update rule in this paper for context sets, we assume that assertions lead to sequential (totally ordered) intersective (Stalnakerian) update to the context set that persists across moves. To do this we simply stipulate an extra constraint on assertions:

(54) **Assertion strategies**
If M is an assertion, M is licensed in a D-Tree T only if M introduces at least a partial answer in c_M to $\text{IQUD}(M)$. (see (47))

The next step is to develop an account of strategies for questioning. We do not directly define question strategies, but instead derive them from the interaction of presuppositions of questions and QUD percolation. In the B&R account, polar and alternative questions link semantics to discourse structure by presupposing that the alternatives provided compositionally by the question are elements in the QUD in context – that is, these question types are informative about the alternatives in an IQUD in a way that a constituent question might not be. In this paper we focus on strategies of this sort, and neglect other strategies discussed in the QUD literature. In (57) we have given a modified version of the Biezma & Rawlins (2012) question operator that is contextually restricted. Even though the question operator in (57) does not affect the content, it imposes felicity conditions (via definedness conditions) on the node α it associates with – these will be discussed below. (55) and (56) introduce auxiliary notions that will be used to address context dependence in (57): given a set of alternatives A, (55) defines the subset that constitute 'live options' in a context; and given a move M, (56) returns the contextually-restricted

EARLY ACCESS

QUD. This will potentially pare down the alternative set, eliminating any alternatives that are not viable in the context of the move.

(55) **Question sets in context** For any alternative set A and context c, let $\text{Restrict}(c,A) = \{p \mid p \neq \emptyset \wedge \exists q \in A : p = q \cap cs_c\}$
(Paraphrase: the set of non-empty alternatives in A that are live options relative to the context set in context c.)

(56) **QUDs in context** For any move M, let $\text{C-IQUD}(M) = \text{Restrict}(c_M, \text{IQUD}(M))$
(Paraphrase: the set of alternatives that are live options relative to the context set in the context of M.)

(57) **Question operator** (v. 1, to be revised)
$[\![\mathbf{[}_{[Q]}\ \alpha_M\mathbf{]}]\!]^c = [\![\alpha_M]\!]^c$
defined only if (i) a. $\text{Restrict}(c, [\![\alpha_M]\!]^c) \subseteq \text{C-IQUD}(M)$ or b. $\text{IQUD}(M) = \emptyset$
(ii) $|\text{Restrict}(c, [\![\alpha_M]\!]^c \cup \text{IQUD}(M))| > 1$

This question operator imposes two constraints: first, either the question sets a new QUD (the immediate QUD is empty), or the question in context is a (strict) subquestion of its IQUD. For the moment we implement subquestions with just subset-hood relative to the context. This is the first key kind of strategy for questioning that we adopt from Roberts and Büring: a big question can be dealt with by asking subquestions. Constraint (i) is a simplified implementation of relevance for subquestions. Constraint (ii) requires that the question, together with the IQUD, can't end up being trivial (singleton) in context. On B&R's proposal, this amounts to a version of Searle's preparatory condition for questioning: that the speaker does not know the answer.[12] These presuppositions will typically be *informative presuppositions* in the sense of Stalnaker (1998) – they will be used in contexts where they are not satisfied (but are satisfiable), to convey their content. Taken together with QUD percolation, these informative presuppositions will have several effects. Polar questions will characterize one or more alternatives in the immediate QUD, thus constraining the content of dominating moves beyond any linguistic information in those moves. Constituent questions will either be subquestions, or set a new QUD/topic.

On this analysis, a polar question will denote a singleton (following Roberts 1996) and satisfy constraint (ii) only in virtue of a QUD that provides at least another alternative. This idea is easiest to see in question-question sequences, such as (49) earlier – where the polar question serves to indicate one dessert option relative to the immediate overt QUD; we discuss another example like this below in (59). The relevance requirement for assertions still requires that an assertion must at least address this singleton alternative, either positively or negatively.

12 We revisit constraint (ii) when discussing rhetorical questions.

EARLY ACCESS

Alternative questions, in contrast, give rise to the exhaustivity inference that all possible alternatives in the QUD are spelled out in the question (see Biezma & Rawlins 2012, 2015). We follow Biezma (2009), Biezma & Rawlins (2012) in taking this to be a result of of the final falling intonation contour (but see Pruitt & Roelofsen 2013 and references therein for a different approach; our present analysis of "or what" questions does not require the B&R story). This contour is analyzed as a presupposition trigger, leading to the (informative) presupposition that only the spelled out alternatives are possible (semantic) answers; see the definitions in (57) and (58) below, modified from Biezma & Rawlins (2012). When the precise alternatives in the IQUD have not been previously specified, accommodating this presupposition involves accommodating exactly what the salient alternatives in the IQUD are, and therefore what the IQUD is. This presupposition is compatible with but stronger than the (i) condition from the presupposition of the Q operator in (57), and therefore it overrides (i).

(58) **Alternative questions**
Where $[\![[\,[_{[Q]}\ \alpha_M]_{\text{H*L-L\%}}]]\!]$ is an interrogative with a final falling contour H*L-L% such that α_M contains at least one disjunction:

$$[\![[\,[_{[Q]}\ \alpha_M]_{\text{H*L-L\%}}]]\!]^c = [\![[_{[Q]}\ \alpha_M]]\!]^c$$

defined only if $\text{Restrict}(c, [\![[_{[Q]}\ \alpha_M]]\!]^c) = \text{C-IQUD}(M)$

To illustrate this, assume a scenario where A and B are discussing what to make for dinner, and that there are only three options on the table: $a_1 - a_3$; this information comes from a prior discussion the day before. At the time of the discourse, these options start off implicit (preferences may have changed, etc.):

(59) Assume that a_1, a_2 and a_3 are the (implicit) alternatives that you want pasta, that you want fish or that you want ratatouille.

A: What do you want for dinner? Do you want pasta↑?
A′: What do you want for dinner? Do you want pasta↑ or fish↓?

In this scenario, at the point of the constituent question, the set of live alternatives given speaker's preferences at the time could in principle be anything in $\mathscr{P}(\{a_1, a_2, a_3\}) - \emptyset$ (in fact, one might not even want to rule out the empty set, but we leave this aside). The question does, however, presuppose that at least two options are live publicly, so asking the constituent question requires that the alternative set be drawn from $\{\{a_1, a_2\}, \{a_1, a_3\}, \{a_2, a_3\}, \{a_1, a_2, a_3\}\}$. The polar question followup in (59)-A then forces pasta to be at least a live option, which eliminates one of these 2nd order possibilities and thus provides information about the QUD: the set of options the questioner has in mind must be (at least) one of $\{\{a_1, a_2\}, \{a_1, a_3\}, \{a_1, a_2, a_3\}\}$. The alternative question in A′ in contrast actually

EARLY ACCESS

eliminates one of the possible latent alternatives: it forces the IQUD to be just $\{a_1, a_2\}$.

As the example in (59) illustrates, the main function of a polar/alternative question is for a sort of 'higher-order' coordination among agents to determine the alternatives in a QUD, which we take to be a key strategy involved in polar and alternative questions. As we will show in the next section, on our proposal 'or what' questions fulfill a similar role in indicating a coordinating strategy.

3.3 Anaphoric *what*

The core of the proposal for "or what" questions is that "what" is an anaphoric element that picks up the IQUD as its semantic value and 're-asks' an IQUD. As we will see, in many scenarios, the end result will look very much like what we have already seen for polar questions. *What* in an 'or what' question will be marked as anaphoric ($what_{anaphoric}$), with the denotation provided in (60) – "$\text{what}_{\text{anaphoric}}$" simply picks out the immediate QUD in the context of utterance. This analysis resembles the semantic identity condition on sluicing proposed by AnderBois (2014), Barros (2014); Barros proposes that sluicing in general has a "split" identity condition: sluices are licensed under a (somewhat minimal) structural identity condition, in parallel with a semantic/pragmatic constraint requiring the sluiced question to be anaphoric to the QUD indicated by the linguistic antecedent to the sluice (following AnderBois 2014). Pseudo-sluicing (apparent sluicing forms without a linguistic antecedent) on this account involves the special case where most of the work is done by the QUD constraint. Though we have argued that OWQs do not involve ordinary sluicing, this proposal can be read as if OWQs are a semantic variant of pseudo-sluicing on Barros's 2014 treatment. That is, our case here amounts to Barros' pseudo-sluicing without any structural identity condition whatsoever – "what" is directly anaphoric to the QUD.

(60) Where '$\text{what}_{\text{anaphoric}}$' occurs in move M, $[\![\textbf{what}_{\text{anaphoric}}]\!]^c = \text{IQUD}(M)$

This anaphoric treatment of "what" implies that OWQs will have a denotation similar to regular alternative questions – in fact they will typically denote the IQUD, while characterizing the identity of one alternative. Supposing again a toy context where the IQUD has three alternatives, and that $[\![\alpha]\!] = \{a_1\}$, a schematic example for a single-alternative OWQ is given in (61).

(61) $[\![\alpha \textbf{ or what?}]\!] = \{a_1\} \cup \{a_1, a_2, a_3\} = \{a_1, a_2, a_3\}$

At a basic level the proposal is that an OWQ just re-asks the IQUD. The interesting case is an example like we saw in (59), where the there is some uncertainty as to the

EARLY ACCESS

individuation of the alternatives. As with polar questions, the role of an OWQ will often be to indicate the identity of some alternative via an informative presupposition. Suppose that, as before, the dialogue participants A and B discussed the options yesterday, but allow for the possibility that things may have changed in the interim. In principle, the options are still a_1, a_2, a_3, but preferences may have changed, etc. In this sort of context an OWQ can be used as a regular information-seeking question, as in (62):

(62) Assume that a_1, a_2 and a_3 are the (implicit) alternatives that you want pasta, that you want fish or that you want ratatouille.

A: (a.) What do you want for dinner? (b.) Do you want pasta or what?

Like polar questions, OWQs on this analysis serve to reveal at least one alternative by naming it. The possible values for the IQUD in this toy context are drawn from $\mathscr{P}(\{a_1, a_2, a_3\}) - \emptyset$, once again. Therefore, a hearer can infer that the IQUD picked out by "what" must overlap with some element of this power set, in order for the C-IQUD to be inquisitive. If an OWQ is asked with a_1 as the explicit alternative, then the C-IQUD is drawn from (a contextually restricted version of) $\{A \in (\mathscr{P}(\{a_1, a_2, a_3\}) - \emptyset) \mid a_1 \in A\}$; if we assume (as above) that questions require a non-singleton alternative set, then the denotation of the whole question is therefore one of $\{a_1, a_2\}, \{a_1, a_3\}, \{a_1, a_2, a_3\}$. Because this question aligns with the C-IQUD, a hearer can conclude that the C-IQUD is also one of these alternative sets. The net effect of the informative presuppositions in this context is therefore exactly the same as with a polar question, though the machinery gets there by a slightly different route: the QUD is fully 're-asked' with one alternative made explicit.

We next provide a more detailed derivation for (62), in order to illustrate exactly how the informative presuppositions play out. We noted already that OWQs show up with alternative question intonation, and we therefore take the operator Biezma & Rawlins (2012) proposed for falling pitch on alternative questions to apply. They are also, of course, questions, so the Q operator applies as well.

(63) Where M is the move (62)-b, and c_M is the context of the move:

a. $\text{Content(M)} = [\![[_{[Q]}\ \textbf{do you want pasta or what}]_{\text{H*L-L\%}}]\!]^{c_M}$
$= [\![\textbf{do you want pasta or what}]\!]^{c_M}$
defined only if:
(i) $\text{Restrict}(c_M, [\![\textbf{do you want pasta or what?}]\!]^{c_M}) = \text{C-IQUD}(M)$
(ii) $|\text{Restrict}(c_M, [\![\textbf{do you want pasta or what}]\!]^{c_M})| > 1$

b. $[\![\textbf{do you want pasta or what}]\!]^{c_M}$
$= [\![\textbf{you want pasta}]\!]^{c_M} \cup [\![\textbf{what}_{\text{anaphoric}}]\!]^{c_M}$
$= \{\lambda w\,.\,h \text{ wants pasta in } w\} \cup \text{IQUD}(M)$

EARLY ACCESS

c. Therefore, $\text{Content}(M) = \{\lambda w.\ h \text{ wants pasta in } w\} \cup \text{IQUD}(M)$ defined only if:
   (i) $\text{Restrict}(c_M, \{\lambda w.\ h \text{ wants pasta in } w\} \cup \text{IQUD}(M)) = \text{C-IQUD}(M)$
   (ii) $|\text{Restrict}(c_M, \{\lambda w.\ h \text{ wants pasta in } w\} \cup \text{IQUD}(M))| > 1$

Suppose that each of the three alternatives above corresponds to a single unique world (w_1 to pasta, w_2 to fish, and w_3 to ratatouille), these are all that there is, and that all and only these three are live in the context: $\mathscr{W} = cs_{c_M} = \{w_1, w_2, w_3\}$. Then, simplifying away the contextual restrictions and translating everything to sets, we derive the following denotation and constraints on the IQUD:

(64) $\text{Content}(M) = \{\{w_1\}\} \cup \text{IQUD}(M)$, where:
   a. $\{\{w_1\}\} \cup \text{IQUD}(M) = \text{IQUD}(M)$ $\quad (\equiv \{w_1\} \in \text{IQUD}(M))$
   b. $|\{\{w_1\}\} \cup \text{IQUD}(M)| > 1$

That is, the denotation of the question is the IQUD combined with just $\{w_1\}$, and this alternative must be contained in the IQUD, and the IQUD must have at least one other alternative besides $\{w_1\}$. It is from (a) that we derived the equivalence in informative presuppositions in contexts like this. It follows that, assuming non-overlap of alternatives for simplification, the IQUD on this toy model must be one of $\{\{w_1\}, \{w_2\}\}$, $\{\{w_1\}, \{w_3\}\}$, $\{\{w_1\}, \{w_2\}, \{w_2\}\}$, or $\{\{w_1\}, \{w_2, w_3\}\}$.

So far we have established under certain conditions that OWQs can have equivalent informative presuppositions to polar questions, despite the difference in denotation. The denotational difference leads us to expect different behaviors between these two question types in some contexts. One difference is illustrated in (65): despite similar discourse function to polar questions, "or what" questions behave differently with respect to propositional anaphora. This is expected if the semantics of an OWQ is the same as an alternative question, since ALTQs generally are not able to antecede "that" as in (66).

(65) A and B are at a restaurant and are going through the menu:
   a. A: Do you want pasta↑?
      B: That sounds good. / Yes.
   b. A: Do you want pasta or what↓?
      B: #That sounds good. / #Yes.

(66) A: Do you want pasta or ratatouille↓? B: #That sounds good. / #Yes.

In the same context we can also observe a difference in response patterns between polar and "or what" questions, where the latter much more easily license responses that do not directly address mentioned alternatives:

EARLY ACCESS

(67) a. A: I'm not very hungry, I would just like to share something. Do you want pasta or ratatouille↑?
B: ?#I don't want chicken.

b. A: I'm not very hungry, I would just like to share something. Do you want pasta, ratatouille or what↓?
B: I don't want chicken.

In (67a) the response intuitively doesn't further the speaker's goal (of learning whether the addressee would be interested in pasta or ratatouille, and hence on sharing one of the two). In contrast, the OWQ in (67b) merely asks whether the addressee would like to share any of the mentioned dishes, leaving open the possibility of other sharing options. This follows on our account from the difference in semantics – if responses must be relevant to alternatives that are present in the question's alternative structure, then we predict that responses addressing non-explicit-alternatives will be more appropriate after an OWQ than a polar question.

OWQs differ also from POLQs and regular ALTQs in that OWQs can sometimes imply that the speaker does not know the identity of the missing alternatives. Our semantics vs. pragmatics analysis in (2) provided one such example: the graduate student can use this question to indicate that they're not even sure what the alternatives to semantics/pragmatics are. We will not provide a full account of such ignorance inferences here, but we will give an informal sketch. OWQs are in direct competition with alternative questions that spell out more alternatives in the QUD, or potentially all of the alternatives. If an OWQ is informative, it therefore might have been more informative to use a regular ALTQ that spells out every alternative, rather than an OWQ, which in Neo-Gricean terms means that obeying Quantity would result in a preference for an alternative question over an OWQ. In cases of ignorance, obeying Quality would result in the opposite preference. Reasoning on why the speaker didn't use the regular ALTQ one can conclude that they did not know how to spell out these alternatives directly (as in (2)). In addition, in contrast with POLQs in the denotation in our account, OWQs function to draw attention to all of the alternatives explicitly, although they only spell out some of them (at least in non-rhetorical cases). A polar question is, therefore, plausibly in competition with alternative questions at least with respect to Quantity-like inferences (e.g. the ignorance inference at hand). This Gricean reasoning could be modeled adopting a number of formal approaches to pragmatic reasoning (see Potts 2006 for a toy example and references therein); while solving the interaction of Gricean reasoning with OWQs and informative presuppositions fully would clearly be worthwhile, it is beyond the scope of what we can accomplish here.

Turning now to the differences between OWQs and constituent questions, in a context where a_1, a_2, and a_3 were clearly and obviously live options, the OWQ in

EARLY ACCESS

(62) is also not different from simply asking the constituent question, 'what do you want to eat?'. However, such a context is not the typical one. Suppose that even in this simple context there was some uncertainty about whether pasta was really on the table – perhaps the interlocutors had it the day before. In this kind of context, the constituent question would be underspecified. That is, it would be unclear whether w_1 is part of the domain restriction or not and therefore whether the proposition $\{w_1\}$ is really an alternative. Asking the "or what" question (just as with the polar question) would reveal that the speaker has in mind a domain restriction and IQUD that must allow $\{w_1\}$ as an alternative. This is the key difference between OWQs and constituent questions and at the same time the explanation of why OWQs (like polar questions) are not redundant in question-question sequences. That is, if the speaker's goal is to make clear what specific alternatives are available, a constituent question is the least 'informative' option.

Another more interesting case is where 're-asking' does not have to amount to asking the same question as before. This is because of the fact that the identity of various alternatives may have been revealed in the interim. That is, at the time we recover the live alternatives in the IQUD via "what" we do not forget what has been learned about possible answers/strategies. Recovering the alternatives from the big question then amounts to re-asking the question *in view of what has been learned since*. This is illustrated in (68), using the example worlds from above.

(68) A_1: What do you want for dinner? Do you want pasta?
B: I don't know what I want yet. I sure don't want fish.
A_2: Well, we need to do groceries, do you want pasta (then) or what?

(69) $\text{Restrict}(c, [\![\textbf{(68)-A}_2]\!]^c) = \{\{w_1\},\{w_3\}\}$

A's polar question reveals that one live alternative is pasta ($\{w_1\}$). B then excludes $\{w_2\}$, i.e. reduces the context set so that $\{w_2\} \cap cs = \emptyset$. A_2's moves recovers the live alternatives in the IQUD, and doesn't reveal any new or different alternatives, but 're-asks' the full question.

In summary, OWQs act like polar questions under certain conditions: when they are anteceded by obvious, regular IQUDs with multiple alternatives in information-seeking contexts. Under such conditions, both questions have the function of re-asking the IQUD while revealing the identity of an alternative. Because OWQs can have arbitrary numbers of disjunctions, they can reveal the identity of many alternatives, like alternative questions – but because of the use of anaphoric "what", they do not close off that alternative set in the way that a normal alternative question does. In the comparison with polar questions, there are two main desiderata remaining: to explain why OWQs can get rhetorical readings not available to polar questions, and to explain why OWQs sometimes have a flavor of insistence that is absent for polar

EARLY ACCESS

questions. We turn to these puzzles in subsequent sections, addressing rhetorical readings in §4, and insistence readings in §5. Before doing so let we consider a last case of OWQs which brings together many elements introduced so far.

3.4 OWQs with complete contexts

OWQs can also be uttered when all possible answers to the QUD are (apparently) spelled out. Examples like (70) instantiate many of the pieces we have discussed so far, with additionally a rhetorical and a cornering-like flavor. Our prediction with examples like this is that the use of "or what" forces cancellation of an implicit 'soft' existential presupposition for a plausible implicit QUD such as "what color dress do you want?". The soft presupposition (Abusch 2009) of the implicit question in this context is that the 'no dress' alternative is excluded.

(70) (Context: A is helping B plan the wedding, and they previously narrowed down the bridesmaid dress options to either a specific red dress, or a specific blue dress.)

A: Ok, you absolutely need to choose your bridesmaids' dresses or else they won't be ready on time. You cannot postpone it anymore! Do you want the blue ones or the red ones?
IQUD assuming soft existential presupposition:
$\{\lambda w\,.\,h_c$ wants the red dress in $w, \lambda w\,.\,h_c$ wants the blue dress in $w\}$

B: Oh my! Not again!

A: C'mon! Do you want the red ones, the blue ones or what?

(71) Forces the IQUD: $\{\lambda w\,.\,h_c$ wants the red dress in w,
$\lambda w\,.\,h_c$ wants the blue dress in $w, \lambda w\,.\,h_c$ wants no dress in $w\}$

Because of the sudden inclusion of the negative alternative, previously ruled out by assumption, an inference that can be drawn from A's "or what" question is that A is wondering whether B wants to get married at all. (A weaker possibility is that A wants to retract their earlier commitment to the narrowed-down set of dresses.) This is predicted because the account requires at least one locally viable alternative, and the contextual evidence suggests that neither of the dress alternatives are in fact viable – therefore, there must be at least some live worlds in the no-dress alternative. What would it mean that the addressee does not want any of the possible colors for the bridesmaids' dresses? They (as suggested by A) must either want to retract their earlier commitment, kick out the bridesmaids, or even cancel the wedding.

EARLY ACCESS

4 'Or what' rhetorical questions

As we showed in the introduction, OWQs have a characteristic 'rhetorical' use. We call these uses rhetorical because the question itself is apparently used to convey the proposition that forms the content of the non-'what' disjunct:

(72) Context: the room in which S is located feels warm.
S: Is it warm in here or what? Implies: it is warm in here.

Our account of this phenomenon rests on the anaphoric behavior of "what". We will propose that in this case, anaphoricity is 'trivial' in context because there is only one live alternative, namely the one spelled out in the first disjunct. This cannot happen with polar questions because they are not anaphoric in the same way. To explicate this we will compare rhetorical OWQs to other rhetorical alternative questions (*doubled alternative questions*) that also present one live alternative in the context of utterance. We offer an analysis for doubled alternative questions and argue that "or what" rhetorical questions achieve the same effect through a different route.

4.1 Rhetorical alternative questions

Two hallmarks of a rhetorical question are (i) that, despite interrogative syntax, the questioner does not expect an answer, and (ii) that the question has something of the 'feel' of an assertion, in that it can convey information about the questioner's beliefs. Rhetorical OWQs show both of these patterns: the question in (72), repeated in (73), does not lead to the expectation that the hearer needs to answer or respond, and it implies the content proposition: that it is warm. What explains this behavior?

(73) Is it warm in here or what?

We will adopt here Caponigro & Sprouse's (2007) (henceforth C&S) treatment of rhetorical questions (see also Biezma & Rawlins 2017 for an account of rhetorical questions building on C&S). On C&S's view, a rhetorical question is a regular question whose answer is known to both the speaker and the addressee; in particular, an answer is (already) part of the (Stalnakerian) Common Ground (see Caponigro & Sprouse 2007 for comparison to other approaches).

Alternative questions are not typically thought of as good rhetorical questions. However, the prediction of C&S's account is as follows: if an alternative question presupposes that there is only one possible answer in a relevant context, it will get a

EARLY ACCESS

rhetorical reading. The first such question we will examine is an 'ordinary' ALTQ with a biased context, in (74):[13]

(74) The professor to the PhD student who is complaining about how much work he has to do:

P: Are you doing your PhD or vacationing in Konstanz?
S: You are right.
S′ #That's not true!
S″ Well, actually, this is supposed to be my vacation...

The discourse function of rhetorical questions is different from that of assertions, and one way to observe this is by looking at the differences in the response patterns: while assertions can be responded to with *that's not true*, this is not possible in rhetorical questions. However, rhetorical questions can license *you are right/ I agree*, which is not possible for questions in general. From the response pattern, we can see that the question in (74) is in fact a rhetorical question. An agreement response is acceptable (indicating that S concedes they are not vacationing), a 'that's not true' response is infelicitous, but a marked "well, actually" response is acceptable. Moreover, this context leads to the expectation that the question should have a rhetorical reading on Caponigro and Sprouse's: because of the power dynamics and the conventions of graduate school, there is the expectation that the student is not there on vacation. Moreover, since the move is a question, the discourse-appropriate response must choose one of the alternatives – given this fact, the professor expects the student to choose the first, making the point that the second is ruled out.

A second species of rhetorical alternative question is the *doubled alternative question*, introduced earlier. We provide further examples below:

(75) (Scenario: John does something really stupid.)
Is John an idiot or is he an idiot? ⇝ John is an idiot.

a. You are right.
b. #That's not true!

(76) wait, harry forgot his passport yesterday? i'm sorry but is he an idiot or is he an idiot? (via Google)

13 Another example along these lines is provided to us by a reviewer (modified):

(i) (Scenario: A and B yesterday had an argument about whether their team would win or lose, with A saying it would win. Subsequently, the team won.)

A: Did our team win or did they lose? B: Yeah, you're right.

In this case, it is simply common ground that the team won, and therefore already contextually entailed that A's question is answered.

EARLY ACCESS

(77) am i a Nerd? or am i a Nerd? I have been been spending my Holiday Vacation in front of the PC. (sic; via Google)

Doubled ALTQs involve two identical (in form) alternatives. Intuitively, they offer the hearer a choice between the two identical alternatives and no other; because the two alternatives are identical they offer the hearer no real choice. This follows from the account of ALTQs we have adopted here on the assumption that the disjuncts exhaust the space of possibilities in discourse, as long as we relax the non-singleton constraint on questions (which we do below). Identical denotations for the disjuncts will lead to a singleton set denotation for the question.[14]

(78) Is John an idiot or is he an idiot?

(79) $[\![\textbf{(78)}]\!] = \{\lambda w\,.\,\text{J. is an idiot}\} \cup \{\lambda w\,.\,\text{J. is an idiot}\} = \{\lambda w\,.\,\text{J. is an idiot}\}$

As explained in §3 we assume an account for the final contour in alternative questions in (58), where the pitch contour corresponds to a 'closure operator' scoping over the question (see (58)). This operator indicates that the spelled out alternatives exhaust the salient QUD in context. That is, assuming that questions like (78) occur with the closure intonation introduced earlier, they trigger the presupposition in (58) that the contextually restricted alternative set denoted by the question is identical to the contextually restricted QUD, and therefore force the assumption that the QUD in context is singleton. Consequently, a doubled ALTQ on this analysis of alternative questions is expected to pick out a singleton set, presuppose that the immediate QUD in context consists only of the one alternative in that set. The one wrinkle is in the constraint we imposed in §3 that requires the IQUD together with the question's denotation to be non-singleton, something that should be violated on the face of it in examples like this. Our suggestion here is that, like many other felicity conditions on speech acts, this one can be suspended in appropriate contexts. For example, Searle (1969) points out that the sincerity condition is suspended or modified by conventions of exam contexts – instead of the speaker wanting to know the answer, the speaker wants to know if the hearer knows the answer. We will not present a general account of how felicity conditions on speech acts work, but we will restructure the question operator so that the non-singleton constraint isn't quite so hard-coded.

In particular, we suggest that the felicity condition in questions is really a condition on the 'output' of a questioning move (this would also be implementable directly in a more dynamic semantics; see Brasoveanu 2012 a.o.). In particular, a 'genuine' question is one that is not resolved in context, and a rhetorical question

14 This kind of question violates at least some formulations of 'Hurford's constraint' – that disjuncts can't overlap. However, Potts (2013) shows that violations of this constraint are rampant.

EARLY ACCESS

is one that makes it apparent from the form (etc) of the question that the question is already resolved. The singleton constraint from (57) is replaced with the felicity condition in (82), where we leave it unformalized in general how one infers that a question is resolved in a context. We suggest that rhetorical alternative questions in general instantiate specific cases of clause (ii) of (82).

(80) **Question operator** (v. 2)
$[\![[_{[Q]}\ \alpha_M]]\!]^c = [\![\alpha_M]\!]^c$
defined only if $\text{Restrict}(c, [\![\alpha_M]\!]^c) \subseteq \text{C-IQUD}(M)$ or b. $\text{IQUD}(M) = \emptyset$

(81) a. A question move M is resolvable in a context c iff
$|\text{Restrict}(c, [\![\alpha_M]\!]^c \cup \text{IQUD}(M))| > 0$
b. A question move M is resolved in a context c iff
$|\text{Restrict}(c, [\![\alpha_M]\!]^c \cup \text{IQUD}(M))| = 1$

(82) **Felicity condition on questioning (preparatory)**
A question move M is appropriate in a context c either if:
(i) M is resolvable and not resolved in c, or
(ii) it is apparent from the form and/or content of the question in context that the speaker intends the hearer to infer that the question is resolvable and *is resolved* in c.

Without the anti-singleton constraint, doubled-alternative questions are necessarily singleton, and force the content proposition to be entailed in the context – they therefore are expected to trigger condition (ii) of the felicity condition, indicating that it is common ground the redundant content proposition is a complete answer (see (83)). Hence, a doubled alternative question in any context, despite being a question, is purely informative in the sense defined in (84) – there is only one live alternative in context.

(83) $[\![\textbf{(78)}]\!] = \{\lambda w\,.\,\text{J. is an idiot}\} \cup \{\lambda w\,.\,\text{J. is an idiot}\} = \{\lambda w\,.\,\text{J. is an idiot}\}$
closure: defined in c only if $\text{Restrict}(c, \{\lambda w\,.\,\text{J. is an idiot}\}) = \text{C-IQUD}(M)$

(84) A set of propositions A is *purely informative* relative to a context c iff $|\text{Restrict}(c, A)| = 1$.

In sum, in a doubled alternative question the speaker commits to the belief that the (unique) content proposition is true in the context set, by presupposing that the resulting QUD has a purely informative alternative set. This is grammatically conveyed: it is derived from the properties of alternative questions, namely from the B&R presupposition that alternative questions exhaustify logical space. This linguistic presupposition triggers a pragmatic presupposition, which if accommodated, will mean that it is common ground that the content proposition is true.

EARLY ACCESS

4.2 Back to 'or what' rhetorical questions

The intuition that we develop in this section is that rhetorical readings of questions like (72) trigger the same ultimate effect as that of other rhetorical ALTQs: the rhetorical reading for OWQs obtains just in case it is common ground after asking the question (or before) that only the first-disjunct alternative is viable. The basic idea for why this can happen is that in such contexts, "what" must be anaphoric with a QUD that reduces to the content alternative in context. Even though both doubled ALTQs and rhetorical OWQs end up being an alternative question with only one viable alternative, they get to this through different routes: by the form of the question in doubled ALTQs and as an inference from context in OWQs.

In order to spell out how the proposal above for 'or what' questions explains their interpretation as rhetorical questions we assume that the antecedent for "what" can be purely informative in context, i.e. that it is possible for an IQUD to be trivial relative to the local context set. The semantics/pragmatics we derive for a rhetorical OWQ is straightforwardly as in (85). If the context set entails that John is an idiot (perhaps it is evident that John has just done something really stupid), then the contextually restricted version of '$\{\lambda w\,.\,\text{John is an idiot}\} \cup \text{IQUD}(M)$' will be singleton, and we predict a rhetorical reading.

(85) Scenario: John does something really stupid.
Is John an idiot or what?

When uttering the "or what" question, the speaker establishes that one viable answer to an (implicit) question about John (e.g. 'what is John like') is that John is an idiot (the content disjunct). While the question in principle leaves open other answers, in the context of utterance it's clear that John is potentially construable as an idiot (the way the speaker characterized John in view of the contextual evidence), and that this is potentially the only viable answer. By asking the question the speaker makes it clear what they consider the answer to the QUD to be.[15]

The rhetorical reading for OWQs, on our proposal, follows on the same logic that we argued for in doubled ALTQs: the set of possible answers is singleton in

15 As a reviewer points out, the account of rhetorical OWQs put forward in this paper raises the issue of why constituent questions that are characteristically rhetorical cannot take "or what":

(i) a. # Who cares or what?
b. # Who gives a shit or what?

When it is possible to have questions disjoined and why it is sometimes possible is the subject of some current debate (see below), and we attribute the oddness of (i) to a more general descriptive fact, that "or what" is never good combined with constituent questions:

(ii) #Who came or what? [Information seeking]

EARLY ACCESS

context, and the addressee is asked to publicly acknowledge that this is so. In the case of OWQs, that the set of possible answers to the QUD is a singleton set is an inference from the context of utterance and the phrasing of the content alternative. In the case of doubled alternative questions this is encoded in the form of the question independent of context. As predicted by the general account of rhetorical questions we are adopting from C&S, a genuine answer to a rhetorical "or what" question is licensed:

(86) Someone is about to do something that seems very crazy: jump from the top of a tree.

Sam: Is he insane or what?

Tim: Well, actually, he is actually a professional stuntman. He is practicing for his next movie.

Tim′: Yeah, he definitely is.

In summary, because we have proposed that "what" is anaphoric, we predict that under certain conditions it can indicate a rhetorical reading in the same way as a doubled alternative question. The only major change we introduced in this section to account for this data was a relaxation of the singleton constraint, which would be needed in this framework for rhetorical questions in any case. When the first-disjunct alternative is entailed by the context, any QUD with that disjunct as a distinct alternative will be completely resolved in that context, and so the antecedent for anaphoric "what", though not necessarily singleton in principle, will be singleton in context, deriving a rhetorical reading.

If OWQs were good in contexts like this, we would indeed predict (i) have rhetorical readings. The exact constraints on when root constituent questions can be disjoined are complicated, and we will not try to solve this problem here. One prominent view (Szabolcsi 1997) is that they can never be disjoined, and apparent cases of such are actually self-corrections with a sentence-initial "or" (however, see Hirsch 2016). Why would disjunction not be possible? There is no settled answer, but a popular type of explanation involves island or intervention effects; see Larson 1985: ex. (44) and Beck & Kim 2006: ex. (90c), repeated in (iii-a,b):

(iii) a. I know whether Bill wonders who resigned or retired.

b. Who taught syntax or semantics?

As these authors observe, most attempts at disjunction are only acceptable when disjunction scopes low, inside the interrogative clause. To summarize: our prediction is that if a rhetorical interrogative clause can be disjoined, we should expect to see rhetorical "or what", but the complicated constraints on disjunctive interrogative clauses have so far masked any such data we have investigated.

EARLY ACCESS

5 "Or what" cornering questions

Alternative questions with "or not" have long been known to have a restricted distribution: they are felicitous only in some of the contexts where comparable polar questions are felicitous, and trigger extra inferences not triggered by regular polar questions (Bolinger 1978, van Rooy & Šafářová 2003, Biezma 2009: a.o). One important case of this is what Biezma (2009) termed a "cornering effect". Following (non-embedded) "or not" questions, an interlocutor is 'cornered', resulting in two effects: (i) they are under greater 'pressure' to provide an answer than normal, and (ii) there are no substrategies that can be used to defer addressing the question. (87) provides an example of this: descriptively, in response to B's failure to answer a more normal polar question, A uses an 'or not' question in an attempt to force a choice out of B. One of the chameleonic aspects of 'or what' questions is that they can be used to similar effect in similar contexts.

(87) A: What are you doing tonight? Are you coming to the party?
B: I'm not sure I feel like partying tonight...
A: Well, if you are going, you will need a ride and I'm about to leave, are you coming to the party or not?

(88) A′: I need to leave soon, are you coming to the party or what?

A's last move in (87) has the effect of "forcing" the addressee to give an answer (and make a decision). Following Biezma (2009), the "or not" question puts the discourse in a *cul de sac*.

Why should it be surprising that "or what" questions show this effect? For one thing, plain polar questions (with normal intonation), even in contexts where the question is effectively repeated, do not intuitively show the same level of impatience. Given that 'or what' questions can mimic information-seeking polar questions in cases we have examined so far, this is then surprising. Moreover, the structure of an "or what" question is rather different than an "or not" question. Following Biezma & Rawlins (2012) we take "or not" questions to be alternative questions in which there is an elided TP licensed by a feature in a high Σ phrase (see Merchant 2003a, Kramer & Rawlins 2009; a similar kind of ellipsis is found in "if not", "maybe not", "I believe not", etc.). They therefore involve 'surface anaphora' (Hankamer & Sag 1976) anteceded by the first disjunct. In contrast, OWQs (we have argued) involve only semantic ('deep') anaphora, to some prior QUD.

In what follows we show how to derive similar inferences for OWQs and "or not" questions despite a different compositional semantics. In order to tackle this task we first introduce a brief overview of "or not" questions. We only review the ingredients of the analysis necessary to compare "or not" questions with OWQs. For

EARLY ACCESS

a fuller analysis of this effect of "or not" questions see Biezma (2009), though some of the technical details here are an expansion of this previous work.

5.1 Cornering with "or not" questions

In a nutshell, we take the key difference between "or not" questions and other types to be that the negative alternative triggers a flattening of alternatives in a way that e.g. a polar question can't. This is depicted in (89) by comparing the QUD after a polar, alternative, and "or not" question, given the contextual assumption that there are only three possibilities.

(89) a. Are you coming to the party?
b. Are you coming to the party, visiting a friend or going to the movies↓?
c. Are you coming to the party or not?

a. Polar question QUD

you are coming to the party
you are visiting a friend (**implicit**)
you are going to the movies (**implicit**)

b. Full Alt-question QUD

you are coming to the party
you are visiting a friend
you are going to the movies

c. "or not" QUD

you are coming to the party
you are not coming to the party

In the case of "or not" questions, all options besides the explicit (first-disjunct) alternative are grouped together simply by the characteristic of not being that alternative. We will describe this effect as the *bundling* together of alternatives – negation is a tool used to collapse multiple relevant epistemic possibilities into one discourse possibility. Bundling is often a discourse strategy to (re)-characterize how the context set could develop relative to some bigger question. The explanation for the cornering effect on this view, comes from the idea that "or not" questions necessarily bundle if there are alternatives to bundle. (See Biezma 2009, Biezma & Rawlins 2012, as well as van Rooy & Šafářová 2003 for a somewhat different take.)

Formally, we treat bundling as the accommodation of a new node in the D-Tree that is intermediate between a higher QUD and the immediate move, forming the IQUD for this move. This node will allow alternatives to be systematically collapsed together in relation to the QUD. To set this up we introduce the auxiliary notion of a *flattened disjoint cover*[16] in (90), a cover formed by collapsing alternatives present in another cover. The resulting cover is what we call a *coarse extension* of the original, (91); this is exactly what is depicted in (89), where (c) is a coarse extension of (b). This relation forms a partial order on non-singleton alternative sets. Up until now, we have taken alternative questions to be licensed following a question just in case their alternative set is identical to the IQUD, but these definitions allow an interesting

16 From e.g. Simons (2005) fn. 8: A set of sets C is a cover of a set S iff: (i) Every member of C is a subset of S. (ii) Every member of S belongs to some member of C. (iii) The empty set is not in C. A cover is disjoint if its members are disjoint from each other.

EARLY ACCESS

weakening of this ($\trianglelefteq$ is compatible with equality): an alternative question can now be licensed when it collapses alternatives of the question it is addressing. Bundling is an entirely different strategy to what we have seen so far, and one not explored in the prior QUD literature as far as we are aware – it involves explicitly targeting a partial answer to a higher QUD as a strategy.

(90) If A is a set of sets of worlds, C is a *flattened disjoint cover* of A iff there is a disjoint cover C' of A s.t. for every $p \in C$, there is some $P \subseteq C'$ s.t. $p = \bigcup P$.

(91) $Q_2 \trianglelefteq Q_1$ iff $|Q_2| > 1$ and Q_2 is a flattened disjoint cover of Q_1.
(Say Q_2 is a *coarse extension* of Q_1)

(92) Proposal: In a sequence 'Q-1?; Q-2?', Q-2 is licensed only if $[\![\textbf{Q-2}]\!] \trianglelefteq [\![\textbf{Q-1}]\!]$

To incorporate the generalization in (92) into the theory of discourse we have developed, we relax the relationship between nodes in the QUD percolation rule (see (53)) to use $\trianglelefteq$ instead of $=$. This introduces a new degree of freedom into reasoning about what function IQUD is appropriate or intended for a particular discourse, as version 1 fully specified the IQUD relative to the contents of nodes.

(93) **QUD percolation, v. 2** (see (53) for v. 1)
For any D-tree T and move M that is a node in T, the IQUD for T must satisfy the following constraints:

a. $\text{IQUD}(M) \trianglelefteq \text{Content}(M')$, where M' is the move immediately dominating M in T (if it exists).

b. $\text{IQUD}(M) = \emptyset$ (if M has no immediately dominating move in T)

We take accommodation of implicit D-Tree nodes to be a 'last resort' effect, so extra nodes beyond what is minimally needed to satisfy the QUD percolation constraints will be added only when there is some evidence for them. The result we derive then is that "or not" questions will *often* trigger bundling, because they place very strict requirements on their IQUD – bundling is in fact forced by "or not" in any context where there are more than two alternatives in an IQUD. In contrast, bundling is never forced by "or what" questions per se, despite the fact that like "not", the "what" disjunct is acting as a sort of cover-term for alternatives.

We next sketch the above examples in more detail. For the sake of exposition we will switch between sets and their characteristic functions without comment. Suppose there are three worlds, all and only the worlds live in c: in w_1, h goes to the party, in w_2, h visits a friend, and in w_3, h stays home; we will write this set directly in place of c in the below formulas. Because they are all live, we can mostly ignore the 'Restrict' function, simplifying denotations of the three types of questions as follows:

EARLY ACCESS

(94) $[\![$**Are you going to the party?**$]\!]^c = \{\lambda w\,.\,h$ goes to the party in $w\}$
defined only if $\text{Restrict}(c, \{\lambda w\,.\,h$ goes to the party in $w\}) \subseteq \text{C-IQUD}(M)$
or if $\text{IQUD}(M) = \emptyset$

a. Denotation reduces to: $\{\{w_1\}\}$
defined only if $\{\{w_1\}\} \subseteq \text{Restrict}(\{w_1, w_2, w_3\}, \text{IQUD}(M))$

(95) $[\![$**Are you going to the party or not?**$]\!]^c =$
$\{\lambda w\,.\,h$ goes to the party in $w, \lambda w\,.\,\neg h$ goes to the party in $w\}$
defined only if:
$\text{Restrict}(c, \{\lambda w\,.\,h$ goes to the party in $w, \lambda w\,.\,\neg h$ goes to the party in $w\}) = \text{C-IQUD}(M)$

a. Denotation reduces to: $\{\{w_1\}, \{w_2, w_3\}\}$
defined only if $\{\{w_1\}, \{w_2, w_3\}\} = \text{Restrict}(\{w_1, w_2, w_3\}, \text{IQUD}(M))$

(96) $[\![$**Are you going to the party or what?**$]\!]^c = \{\lambda w\,.\,h$ goes to the party in $w\} \cup$ $\text{IQUD}(M)$, where M is the move being made.
defined only if:
$\text{Restrict}(c, \{\lambda w\,.\,h$ goes to the party in $w\} \cup \text{IQUD}(M)) = \text{C-IQUD}(M)$

a. Denotation reduces to: $\{\{w_1\}, \{w_2, w_3\}\}$ or $\{\{w_1\}, \{w_2\}, \{w_3\}\}$ (underspecified)
defined only if: $\{\{w_1\}\} \cup \text{Restrict}(\{w_1, w_2, w_3\}, \text{IQUD}(M))$
$= \text{Restrict}(\{w_1, w_2, w_3\}, \text{IQUD}(M))$

All of these questions require that $\{w_1\}$ be an alternative in the contextually restricted IQUD. There are two non-singleton IQUDs compatible with this: $\{\{w_1\}, \{w_2\}, \{w_3\}\}$ (intuitively: what are you doing tonight?), and $\{\{w_1\}, \{w_2, w_3\}\}$ (intuitively: whether you are going to the party or not going to the party?). A polar question imposes no other requirements, so is compatible with either IQUD, but an "or not" question is compatible only with the latter, which may force bundling. That is, it must collapse the w_2 and w_3 alternatives. The "or what" question is closer to the polar question so far. In any context where w_2 and w_3 are distinct, the "or not" question is necessarily a bundling question.

This system predicts that "or not" won't be the only way of bundling. For example, (97) illustrates a straightforward case of using bundling as a strategy for lumping parts of an IQUD together in a more practical way:

(97) Do you want to go to the Green Door for dinner or to a place with meat?

In (97), both alternatives are both potentially 'informative' as to what the overall space of possibilities is that the questioner has in mind, despite the bundling of potentially multiple restaurants under the heading of serving meat. This contrasts with an "or not" question p or $\neg p$?, where only the p alternative may be informative in this sense. That is, in the case of bundling with negation, there is no useful

EARLY ACCESS

cover description for the bundled alternative, at the same time as the questioner indicates that any sub-alternatives thus collapsed are not immediately relevant to the conversation. Therefore, a hearer can infer that the questioner is *only* interested in the content proposition p, in contrast to (97).

Alternative questions with 'or not' then involve three effects: indicating that the content alternative is (still) relevant, collapsing any previously relevant alternatives under the negative alternative, and relabeling the bundled alternatives under a proposition that is not itself useful for future discourse. These last two effects conspire to imply that the questioner simply does not care going forward about the bundled alternatives; this is in contrast to e.g. the meat-eating example, where the re-labeling provides a cue as to the future relevance of any bundled sub-alternatives. Where regular bundling questions are a kind of strategy for resolving a big question, 'or not' bundling questions are a strategy for setting aside the rest of any big question in favor of just the content alternative.

Many properties of regular cornering follow from this analysis. The intuition that they are often rude or peremptory is due to the questioner one-sidedly eliminating alternatives from future relevance to the discourse. The fact that they don't occur discourse-initially is affected by at least the following factors: (i) 'or not' questions don't inherently give any cues as to what alternatives are bundled under negation, in contrast to regular bundling questions, and (ii) in serving a meta-conversational purpose, they need a reason to be used (in contrast to e.g. a regular polar question) – see Romero & Han's 2004 Economy Principle. They therefore place stricter constraints on prior discourse than other means of bundling: there needs to be some inferrable reason to cut off from relevance the bundled alternatives.

We turn now to the interaction of OWQs with the phenomena of bundling.

5.2 Cornering with OWQs

Back to the main puzzle: OWQs seem to sometimes, but not always, trigger a cornering-like effect. This effect is encountered when the "or what" question spells out only one disjunct in the appropriate discourse situation, as in (10b). The basic idea is that when the "or what" question is uttered in a context in which there is only one alternative that really matters, and all the others could be (or must be) collapsed together, we obtain a cornering-like effect.

"Or not" and OWQs are similar in two ways: they both denote an exhaustive question (rather than a singleton), and they both fail to provide any (meta-)informative label for the 'extra' alternatives picked out by the final disjunct. They are different, however in that while 'or not' explicitly cuts off these extra alternatives from relevance (by *always* requiring bundling if there are $\geq$2 alternatives), 'or what' does not: it simply picks up these alternatives as an antecedent without signaling

EARLY ACCESS

anything about their structure. If bundling is a last resort, then our prediction is that the final disjunct in an OWQ *never* triggers bundling, even though it provides no direct information about these alternatives. Our proposal is that the part-time cornering behavior of OWQs follows from inferences about what alternatives the speaker cares about in context: i.e. reasoning about *why* the questioner refrained from characterizing the alternatives picked up by the final disjunct. They might do this because they don't care about them, but they might also do this because they don't know how to correctly individuate the alternatives. Getting a good account of these sorts of inferences is obviously tricky in the general case and we will leave it here.

One prediction that follows from this difference is that OWQs can be continued by polar questions about non-explicit alternatives, but "or not" questions cannot. This prediction is borne out directly in question-question sequences:

(98) A: If you want a ride, I'm about to leave, are you coming to the party?
B: Not sure yet...
A: I have to go, are you coming to the party or what? Do you want go to the concert instead?
A': I have to go, are you coming to the party or not? # Do you want go to the concert instead?

Thus, in Biezma's 2009 terms, OWQs do not form a true discourse 'cul-de-sac', even though they can convey a similar level of impatience. Because in the case of OWQs the cornering-like effect is the result of an underspecified context, a continuation as in (98) can resolve what sort of IQUD the speaker has in mind for OWQs.[17]

In summary, we now have three situations as to how the 'content proposition' stands relative to the QUD in terms of bundling. For a regular polar question, the content propositions serves simply to provide non-exhaustive positive information about some alternative(s) in the IQUD. For an "or not" question, the content proposition can do this, but the question in addition also collapses other alternatives in a way that explicitly provides no information about their identity. An OWQ provides information about content alternative(s), and explicitly fails to provide any information about additional alternatives beyond that they exist, but does not semantically

17 A further possibility that we will leave open is that some of the flavor of 'insistence' in various question types may be triggered by a covert operator (conceivably signaled by intonation) along the lines of the VERUM in Romero & Han (2004). In English this meaning can be overtly realized with the adverb "seriously", which can occur on a range of question types:

(i) Seriously, are you going to the party ({or what / or not})?

EARLY ACCESS

collapse these alternatives. The similarities with "or not" questions are in that they are exhaustive and non-informative about the extra propositions.

6 Future directions

Discourse, understood as a hierarchical structure of discourse-moves, plays an important role on the construction of meaning. This paper has presented arguments for a lexical item whose meaning refers to discourse structure – the pronominal "what". We have compared this situation to 'pseudo-sluicing', where Barros (2014) (building on AnderBois 2014) has argued for an identity condition along similar lines, that licenses ellipsis. However, we have argued that OWQs don't involve a more general phenomenon like sluicing, but rather a simple (deep) anaphoric relation to the immediate QUD. We have shown that such proposal provides an account of the 'chameleonic' behavior of OWQs; we predict that they can sometimes behave like information-seeking polar questions, sometimes like rhetorical alternative questions, and sometimes like cornering "or not" questions. The interpretation of an OWQ is determined by reasoning about the IQUD, the D-Tree, and the context set in the context of utterance, where each of these three elements constrains the others and so the three must be jointly reasoned about.

Overall, this analysis suggests that an account of compositional semantics cannot be complete without a rich and sophisticated system of discourse pragmatics, and a theory of their interaction. We leave off with a challenging open problem on this topic raised by our analysis and this big-picture conclusion: the compositional interpretation of embedded "or what" questions, such as (99) (based off of COCA examples).

(99) a. Nobody knew if they were spies or what.
b. Everybody was sitting around trying to figure out if he's just dormant or what.

As it stands, our analysis predicts that these should each have a reading determined by the QUD in the discourse context: "what" should simply introduce this QUD into the embedded context. Such readings exist, but the more interesting question is about a potential non-root reading for "or what". Can "what" be anteceded by information in an embedded context? Such readings do seem plausible for these examples, raising the possibility that the notion of QUD needs to be deeply integrated into the compositional semantics, and that embedded QUDs may be available for clause-embedding verbs. We leave this question for the future.

EARLY ACCESS

References

Abusch, Dorit. 2009. Presupposition triggering from alternatives. *Journal of Semantics* 27(1). 37–80. https://doi.org/10.1093/jos/ffp009.

Alonso-Ovalle, Luis. 2005. Distributing the disjuncts over the modal space. In Leah Bateman & Cherlon Ussery (eds.), *Proceedings of the North East Linguistic Society 35*, UMass, Amherst: GLSA.

AnderBois, Scott. 2014. The semantics of sluicing: beyond truth-conditions. *Language* 90(4). 887–926. https://doi.org/10.1353/lan.2014.0110.

Barros, Matthew. 2014. *Sluicing and identity in ellipsis*: Rutgers Ph.D. dissertation.

Bartels, Christine. 1999. *The intonation of English statements and questions*. Garland Publishers.

Beck, Sigrid & Shin-Sook Kim. 2006. Intervention effects in alternative questions. *Journal of Comparative Germanic Linguistics* 9. 165–208. https://doi.org/10.1007/s10828-006-9005-2.

Belnap, Nuel & Thomas Steel. 1976. *The logic of questions and answers*. Yale University Press.

Biezma, María. 2009. Alternative vs. polar questions: the cornering effect. In Ed Cormany, Satoshi Ito & David Lutz (eds.), *Proceedings of Semantics and Linguistic Theory (SALT) 19*, 37–54. https://doi.org/10.3765/salt.v19i0.2519.

Biezma, María & Kyle Rawlins. 2012. Responding to alternative and polar questions. *Linguistics and Philosophy* 35. 261–406. https://doi.org/10.1007/s10988-012-9123-z.

Biezma, Maria & Kyle Rawlins. 2015. Alternative questions. *Language and Linguistics Compass* 9(11). 450 – 468. https://doi.org/10.1111/lnc3.12161.

Biezma, María & Kyle Rawlins. 2016. *Or what?*: Challenging the speaker. In C. Hammerly & B. Prickett (eds.), *Proceedings of NELS 46th*, vol. 1, 93–106.

Biezma, María & Kyle Rawlins. 2017. Rhetorical questions: Severing questioning from asking. In Dan Burgdorf & Jacob Collard (eds.), *Semantics and linguistic theory (SALT) 27*, LSA and CLC Publications.

Bledin, Justin & Kyle Rawlins. 2016. Epistemic resistance moves. In Mary Moroney, Carol-Rose Little, Jacob Collard & Dan Burgdorf (eds.), *Semantics and linguistic theory (SALT) 26*, 620–640. https://doi.org/10.3765/salt.v26i0.3812.

Bolinger, Dwight. 1978. Yes-no questions are not alternative questions. In Henry Hiz (ed.), *Questions*, 87–105. D. Reidel Publishing Company. https://doi.org/10.1007/978-94-009-9509-3_3.

Brasoveanu, Adrian. 2012. Modified numerals as post-suppositions. *Journal of Semantics* 30. 155–209. https://doi.org/10.1093/jos/ffs003.

Büring, Daniel. 2003. On D-trees, beans, and B-accents. *Linguistics and Philosophy* 26. 511–545. https://doi.org/10.1023/A:1025887707652.

EARLY ACCESS

Caponigro, Ivano & Jon Sprouse. 2007. Rhetorical questions as questions. In Estela Puig-Waldmueller (ed.), *Proceedings of Sinn und Bedeutung 11*, 121–133.

Chung, Sandra, William A. Ladusaw & James McCloskey. 1995. Sluicing and Logical Form. *Natural Language Semantics* 3(3). 239–282. https://doi.org/10.1007/BF01248819.

Ciardelli, Ivano, Jeroen Groenendijk & Floris Roelofsen. 2013. Inquisitive semantics: a new notion of meaning. *Language and linguistic compass* 7(9). 459–476. https://doi.org/10.1111/lnc3.12037.

Culicover, Peter W. & Ray Jackendoff. 2005. *Simpler syntax*. Oxford University. https://doi.org/10.1093/acprof:oso/9780199271092.001.0001.

Davies, Mark. 2008-. Corpus of American english: 360 million words, 1990-present. Available online at http://www.americancorpus.org.

Gawron, Jean Mark. 2001. Universal concessive conditionals and alternative NPs in English. In Cleo Condoravdi & Gerard Renardel de Lavalette (eds.), *Logical perspectives on language and information*, 73–106. CSLI Publications.

Ginzburg, Jonathan. 1996. Dynamics and the semantics of dialogue. In J. Seligman (ed.), *Language, logic and computation, volume 1*, CSLI Publications.

Ginzburg, Jonathan & Ivan Sag. 2001. *Interrogative investigations*. Stanford, CA: CSLI Publications.

Groenendijk, Jeroen & Martin Stokhof. 1984. *Studies in the semantics of questions and the pragmatics of answers*: University of Amsterdam PhD dissertation.

Groenendijk, Jeroen & Martin Stokhof. 1997. Questions. In J. van Benthem & A. ter Meulen (eds.), *Handbook of logic and language*, 1055–1124. Elsevier/MIT Press.

Gunlogson, Christine. 2001. *True to form: Rising and falling declaratives as questions in english*: UC Santa Cruz Ph.D. dissertation.

Hamblin, C. L. 1958. Questions. *Australasian Journal of Philosophy* 36. 159–168. https://doi.org/10.1080/00048405885200211.

Hamblin, C. L. 1973. Questions in Montague English. *Foundations of Language* 10. 41–53.

Han, Chung-hye & Maribel Romero. 2004. Disjunction, Focus, and Scope. *Linguistic Inquiry* 35. 179–217. https://doi.org/10.1162/002438904323019048.

Hankamer, Jorge & Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7(3). 391–426. http://www.jstor.org/stable/4177933.

Hirsch, Aron. 2016. Disjoined questions as mention-some questions. Talk at Sinn und Bedeutung 21, Edinburgh.

Karttunen, Lauri. 1977a. Syntax and semantics of questions. *Linguistics and Philosophy* 1. 3–44.

Karttunen, Lauri. 1977b. To doubt whether. In *The CLS book of squibs*, Chicago Linguistics Society.

EARLY ACCESS

Kramer, Ruth & Kyle Rawlins. 2009. Polarity particles: an ellipsis account. In *Proceedings of NELS 39*, .

Kratzer, Angelika & Junko Shimoyama. 2002. Indeterminate pronouns: the view from Japanese. In Yukio Otsu (ed.), *Proceedings of the 3rd Tokyo conference on psycholinguistics*, 1–25. Hituzi Syobo.

Larson, Richard. 1985. On the syntax of disjunction scope. *Natural Language and Linguistic Theory* 3. 217–264. https://doi.org/10.1007/BF00133841.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford University Press.

Merchant, Jason. 2003a. Remarks on stripping. Manuscript, University of Chicago.

Merchant, Jason. 2003b. Sluicing. In Martin Everaert & Henk van Riemsdijk (eds.), *The syntax companion*, Blackwell.

Potts, Christopher. 2006. How far can pragmatic mechanisms take us? *Theoretical Linguistics* 32(3). 307–320. https://doi.org/10.1515/TL.2006.019.

Potts, Christopher. 2013. Conversational implicature: Interacting with grammar. Ms. Stanford, Presented at the Michigan Philosophy-Linguistics Workshop, Nov 22–24.

Pruitt, Kathryn & Floris Roelofsen. 2013. The interpretation of prosody in disjunctive questions. *Linguistic Inquiry* 44. 632–650. https://doi.org/10.1162/LING_a_00141.

Rawlins, Kyle. 2013. (Un)conditionals. *Natural Language Semantics* 21(2). 111–178. https://doi.org/10.1007/s11050-012-9087-0.

Roberts, Craige. 1996. Information structure in discourse: Towards an integrated formal theory of pragmatics. In Jae Hak Yoon & Andreas Kathol (eds.), *OSUWPL vol. 49: Papers in semantics*, The Ohio State University.

Romero, Maribel & Chung-hye Han. 2004. On negative *Yes/No* questions. *Linguistics and Philosophy* 27(5). 609–658. https://doi.org/10.1023/B:LING.0000033850.15705.94.

van Rooy, Robert & Marie Šafářová. 2003. On polar questions. In *Proceedings of Semantics and Linguistic Theory(SALT) 13*, CLC Publications. https://doi.org/10.3765/salt.v13i0.2887.

Ross, John R. 1969. Guess who? In Robert Binnick, Alice Davison, Georgia Green & Jerry Morgan (eds.), *Proceedings of CLS 5*, Chicago Linguistics Society.

Searle, John R. 1969. *Speech acts*. Cambridge University Press. https://doi.org/10.1017/CBO9781139173438.

Simons, Mandy. 2005. Dividing things up: The semantics of *or* and the modal/*or* interaction. *Natural Language Semantics* 13. 271–316. https://doi.org/10.1007/s11050-004-2900-7.

Stalnaker, Robert. 1998. On the representation of context. *Journal of Logic, Language and Information* 7. 3–19. https://doi.org/10.1023/A:1008254815298.

EARLY ACCESS

von Stechow, Arnim. 1991. Focusing and backgrounding operators. In W. Abraham (ed.), *Discourse particles*, 37–84. John Benjamins.

Szabolcsi, Anna. 1997. *Ways of scope taking*. Dordrecht: Kluwer. https://doi.org/10.1007/978-94-011-5814-5.