Alternative Questions

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Abstract
This paper surveys the current state of art in research on alternative questions. Alternative questions stand at the confluence of three major topics in semantics, pragmatics, and syntax: questions, disjunction, and intonational meaning/focus. We focus on these components of alternative questions as themes in our survey, arguing for an emerging consensus that (i) disjunction in alternative questions must be modeled in an alternative-sensitive way, leading to ‘non-classical’ treatments where disjunction interacts directly with the semantics and/or pragmatics of questioning (here the debate is about the exact details of this interaction), (ii) to understand alternative questions the interaction of the question structure with intonation and especially focus must be explored, and (iii) a major missing piece in existing work is an exploration of the cross-linguistic picture. In particular, there are many languages where alternative questions involve a specialized coordinator, which calls into question the uniform treatment of disjunction in alternative questions in general.

1. Alternative Questions
Alternative questions (ALTQs) are one of the main types of questions that appear in natural language, together with polar (‘yes/no’) questions and constituent (‘wh’) questions. Three key properties of this question type are (i) question or interrogative marking, (ii) disjunction, and (iii) a particular intonational pattern. For example, a canonical English alternative question is given in (1), and two minimal variants, varying the pitch contour, and the interrogative morphology respectively, in (2) and (3).

(1) Does Bill like tea or coffee?
(2) Does Bill like tea or coffee?L–H%
(3) Bill likes tea or coffee?

Intuitively, the question in (1) offers the hearer a complete list of choices: Bill liking tea, or coffee. The disjunctive polar question in contrast asks the hearer to choose between him liking tea-and—or-coffee and not liking either of these two. The declarative in (3) does not intuitively ask a question at all but rather asserts something about Bill’s preferences up to certain limits. These limits can be epistemic, in which case the speaker knows that Bill likes one of the two but not which, or simply about Bill’s preferences – they are satisfied by either tea or coffee. A central question of this survey is understanding how these minimal changes in this paradigm lead to meaning differences, in the semantics and pragmatics. While these properties are present in English, it remains unclear how stable they are cross-linguistically, and thus, a second key desideratum is understanding the range of variation. We return to this issue in §6.2 and focus on English for now.

The task of analyzing alternative questions lies at the confluence of the analysis of disjunction, questions, and intonational meaning at the interface of syntax, semantics, and pragmatics. Consequently, ALTQs are a key window into all of these important topics. In this article, we will...
focus especially on the semantic components of ALTQs and to a lesser degree their interaction
with pragmatics and discourse.2

Like other questions in English, ALTQs have auxiliary inversion in root clauses. Alternative
questions also contain a disjunction, in English, ‘or’, combining two or more disjuncts. Neither of these
characteristics distinguish alternative and polar questions, since the latter may contain disjunction, as
seen in (1) and (2). The third distinguishing characteristic is the final falling contour, accompanied
typically by a pitch accent on non-final disjuncts (Bartels, 1999). (Root) disjunctive polar questions
lack this pitch accent and instead involve the characteristic rising intonation discussed by Bartels
(1999), Gunlogson (2001), etc. We take it that the falling contour is the same intonation contour
discussed as ‘list closure’ intonation by Zimmermann (2000), and we will use this term for the
contour. The non-final pitch peaks have been described as focus marking by Han and Romero
and Roelofsen (2013) provide further detailed investigation of the intonational properties.

See Aloni et al. (2009) for a recent account of the semantics of embedded ALTQs, which we
will not focus on here.

While the surface characteristics are clear (at least for English), it is not clear that at the level of
semantics/pragmatics, ALTQs have unique defining characteristics. The primary function of
root ALTQs is to provide the hearer with a choice between two or more overtly mentioned
alternatives to answer the question. As Krifka (2001a) points out, in this respect, they pattern
with mixed constituent/list questions (see Bäuerle, 1979):

(4) What would you like: coffeeH+*, or teaH+L–L%?

It is also far from clear how this characterization distinguishes ALTQs from disjunctive polar
questions such as (2). Consequently, and because so many structural properties are shared, a
central issue has been understanding the semantic and pragmatic distinctions between polar
questions (with or without disjunction) and alternative questions.

While early literature often approached the difference between (1) and (2) as a problem of
ambiguity, we do not think this is the right approach. In speech, root alternative questions
are typically disambiguated from disjunctive polar questions by intonation, and consequently,
understanding the role of intonation in the semantics and pragmatics is what is necessary to sort
out alternative and polar questions. Both the final falling contour and the intonation triggered
by focus structure may play a crucial role. We discuss this further in §4 and §5.

In comparing polar and alternative questions, one specialized type of ALTQ is worth singling
out: ‘not’ can appear in the second (last) disjunct, in an elliptical fashion.3

(5) Do you want coffeeH* or notH+L–L%? (vs. Do you want coffeeL+H–H%?)

(6) Bill knows whether Sue wants coffeeH+ or notH+L–L%?

Such questions are of interest because of their similarity to plain polar questions, and on clas-
sical accounts, the two are predicted to have the same meaning. For example, both can take ‘yes’
and ‘no’ responses.4 However, there appear to be a range of differences in contexts that an ‘or
not’ vs. a polar question can be used (Bolinger, 1978); we touch on these differences in §6.1.

In the remainder of the paper, we turn to the compositional semantics and the resulting prag-
matics of ALTQs. The discussion is framed in terms of the three key desiderata for English. In §2,
we look at various proposals for how interrogative morphology is (or isn’t) instantiated as
operators in the semantics. In §3, we turn to the analysis of disjunction in ALTQs. In §4, we in-
vestigate the role of closure intonation, which we suggest is closely tied to the issue of what exactly
the answers space (and alternative structure) of an ALTQ looks like. In §5, we discuss the potential
role of focus and focus marking in ALTQs. Finally, in §6, we turn to two wide open issues: the
pragmatics of ALTQs (especially ‘or not’ ALTQs), and the range and impact of cross-linguistic variation in ALTQs. Both of these issues, we suggest, are key areas where research on ALTQs need substantial progress. In the remainder of this section, we set out some general background on questions and sketch a framework for looking at ALTQs in terms of Hamblin semantics.

A widespread assumption about the semantics of questions is that their meaning involves alternative structure. Following Hamblin (1973), this is often represented in terms of sets of propositions, and propositions in an alternative set are taken to correspond to answers to the question. Though there is great debate about what it means to ‘correspond to answers’, the intuitive idea is relatively straightforward. For example, in examples like (2), a polar question denotes an alternative set with two propositions, corresponding to the positive and negative answers.

\[
(7) \text{Disjunctive polar question} \\
\left[ \text{Does Bill like coffee or tea?} \right] = \{ \text{that Bill likes coffee and/or tea; that Bill likes neither coffee nor tea} \} = \{ \lambda w_s. (B \text{ likes coffee in } w \lor B \text{ likes tea in } w), \lambda w_s. \neg (B \text{ likes coffee in } w \lor B \text{ likes tea in } w) \}
\]

For an alternative question, the precise contents of the alternative set are somewhat less obvious, and more debated. However, as a baseline, examples like (1) suggest that there should be at least propositions corresponding to each disjunct: responses corresponding to these propositions are clearly answers in some sense.

\[
(8) \left[ \text{Does Bill want coffee or tea?} \right] = \{ \lambda w_s. B \text{ wants coffee in } w, \lambda w_s. B \text{ wants tea in } w, \ldots \}
\]

It is far from clear that this set is complete. For example, there are at least two possible response patterns that the account is so far silent about: what happens if Bill wants neither, or both? If the alternative set in (8) is in fact complete, responses corresponding to these possibilities must not be answers but something else.

These representations, we suggest, form the common core of nearly every account of the alternative/polar distinction and, as such, provide a baseline for discussion. They raise two central questions that frame the debates in the literature: how would these representations need to be enriched to provide an account of alternative and polar questions, and how are these (or improved) representations derived? In the next several sections, we elaborate on these questions.

2. How Many Operators?

A central question in the study of questions is what semantics operations correspond to interrogative morphosyntax (i.e. inversion or ‘whether’). This correspondence often takes the form of one or more question operators (Hamblin, 1973; Groenendijk and Stokhof, 1984; Groenendijk, 1999; Krifka, 2001b; Kratzer and Shimoyama, 2002; Cable, 2007; Rawlins, 2008; among many others).

Perhaps the most straightforward way to account for the alternative–polar distinction is to assume that there are (at least) two different question operators, one delivering each meaning:

\[
(9) \text{a. } [Q_{\text{Pol}} \{p\}] = \{p, \neg p\} \text{ (Hamblin, 1973)} \\
\text{b. } [Q_{\text{Alt}} a] = a
\]

The specialized polar operator in (a), originally proposed by Hamblin (1973), takes a singleton set of propositions and returns a set formed by the original proposition and its negation. Correspondingly, one might imagine that there is in addition a specialized alternative question operator or operation (Karttunen, 1977; Groenendijk and Stokhof, 1984; Rawlins, 2008;
There are various proposals for what this might involve, but one option that fits naturally with the treatment of disjunction below is given in (b): this takes a set of alternatives and gives back the same set of alternatives; this is in fact KratzerShimoyama02 general question operator. On this kind of account, something else must provide the alternatives seen in (8), and on a Hamblin account, this would be disjunction; we return to this in §3.

While the presence of inversion or ‘whether’ provides some evidence that there is some operator present in CP, a general problem with this class of account is that there is no obvious morphosyntactic evidence for distinct operators. This is especially pressing, given that Kratzer and Shimoyama’s operator above is vacuous. In fact, AnderBois (2012) (discussed below) argues that in some languages, there is not even evidence for general question operators. Consequently, much research pursues a more reductionist agenda for polar and alternative questions. The reductionist debate is as follows: how many operators can we get away with while capturing differences between the question types, and what role do they take? This question is not a new one, and there is also a history of proposals syntactically reducing polar interrogative clauses to ‘or not’ alternative questions (see Larson, 1985; Han and Romero, 2002).7

Both Pruitt and Roelofsen (2011) and Biezma and Rawlins (2012b) attempt to make do with just two operators: a question operator and a ‘closure’ operator corresponding to the intonational contour found on alternative questions. We will return to the role of intonation and the closure operator in §4.2. In both cases, this reduction comes with a cost. Pruitt and Roelofsen (2011) propose that there is a question operator (which they identify as a polar question operator) that when scoped over disjunction leads to a polar question, and when scoped into the disjunctions and combined with the closure operator, leads to an alternative question. The cost is a complicated, multi-dimensional treatment of both the question operator and disjunction. Biezma and Rawlins (2012b) argue similarly that there is just a single Hamblin question operator, and when combined with a ‘closure’ operator that signals exhaustivity relative to the context, the right meaning for ALTQs is derived (see also Biezma, 2009). The cost for Biezma and Rawlins (2012b) is not incurred in the complexity of the operators, but in their non-standard treatment of polar questions, and consequent more elaborate discourse assumptions. Rather than the alternative structure seen in (7), they propose that polar questions denote a singleton alternative, and answering a question amounts to choosing between the proposed alternatives (ALTQs) or the proposed alternative and other contextually available (POLQs).

AnderBois (2012), dealing with Yucatec Maya, takes an even more reductionist approach: he argues that whether a move is a question in this language is determined by the alternative structure itself – not by any sort of semantic operator, and that the Yucatec Maya analogue of alternative questions involve a focused disjunction. Hence, the only operator present in a disjunctive question is a general focus operator. AnderBois shows that this language does not have a grammaticalized polar question operator at all, reducing polar questions to alternative questions. It remains to be seen whether such an analysis could be applied in some way to languages with richer interrogative morphosyntax; AnderBois’ (2012) analysis also raises the important question of whether there could be cross-linguistic variation in cross-linguistic variation in the operator structure of ALTQs.

Han and Romero (2004a), Beck and Kim (2006), and Roelofsen and van Gool (2009) also make a case for the compositional importance of focus, indicated by pitch accents on the individual disjuncts; on several of these proposals, this involves a focus operator in the LF of an ALTQ distinct from a POLQ. We address proposals for the contribution of focus in §3.3 and 5.

In summary, the polar–alternative distinction may involve (i) either specialized or more general question operators, (ii) an intonation-marked closure operator, and (iii) the contribution of focus. It remains open which of these are necessary or sufficient, and in what role. What is clear is that whatever question operators (or pragmatic principles) there are must interact with disjunction, and it is this that we turn to next.
3. The Role of Disjunction

Disjunction in ALTQs has received a substantial amount of attention from a wide range of perspectives. Perhaps the most important and basic question is how this instance of disjunction relates to ‘normal’ uses of disjunction. Can the TSCALTQ ‘or’ be treated compositionally as a classical \( \lor \)? The answer in the literature has largely been negative. On a purely classical account of ‘or’ as \( \lor \), a systematic distinction between alternative and polar disjunctive questions is quite surprising. To resolve this tension, there have been three broad strategies. The earliest accounts provided non-compositional clause-level (essentially, construction-specific) rules for interpreting ‘whether… or…’ clauses without reference to the standard entry for ‘or’. The second strategy involves introducing (non-classical) complexity into the compositional semantics for ‘or’; we present two ways in which this complexity can be exploited, in Hamblin semantics and in inquisitive semantics.

3.1. Clause-Level Approaches

The first accounts provided non-compositional clause-level rules for interpreting ‘whether… or…’ clauses that build a question structure from the disjuncts, conditioned on the presence of ‘or’ in this context (see Karttunen, 1977; ex. 24, Groenendijk and Stokhof, 1984: 104–5, rule ‘T:WHC’, ex. 9). Groenendijk and Stokhof’s translation rule is shown in (10).

Here, \( i \) and \( a \) are variables of type \( s \). While the details are not important for the present discussion, what is important is the form of the rule in (10): no reference to the independent item ‘or’, or to the logical operator \( \lor \), is made.

\[
\text{(10) If } \phi_1 \ldots \phi_n \text{ then whether } \phi_1 \text{ or } \ldots \text{ or } \phi_n \text{ is made.} \\
\lambda_i[\phi_1 = [\lambda a \phi_1](i) \land \ldots \land \phi_n = [\lambda a \phi_n](i)] \\
\]

A strong prediction of this kind of account, though seldom discussed in these terms, is that the ambiguity of ‘or’ is ‘accidental’. That is, on a clausal account, we would expect to find languages where the conjunction morpheme used in alternative questions is not the ordinary disjunction in the language. There are in fact many such languages (Moravcsik, 1971; Haspelmath, 2007; Alonso-Ovalle, 2006; Pruitt and Roelofsen, 2011; Uegaki, 2012, 2014). A Finnish example (Haspelmath, 2007, ex. (69)) is given in (11); this point about Finnish was first noted by Karttunen (1977).

\[
\text{(11) Finnish (Uralic:Finnic)} \\
a. \text{Mene-t-kö teatteri-in vai lepo-puisto-on?} \\
\text{go-2SG-Q theater-ILL or rest-garden-ILL} \\
\text{‘Are you going to a theater or to a park?’} \\
b. \text{Anna-n sinu-lle kirja-n tai albumi-n.} \\
\text{give-1SG you-ALL book-ACC or album-ACC} \\
\text{‘I'll give you a book or an album.’} \\
\]

This data point would also be compatible with accounts where the disjunct is interpreted compositionally in ALTQs but is still distinct from the normal disjunctor; fewer such accounts exist, but see Uegaki (2014) for a recent non-unified account for Japanese. There do remain many languages where the morpheme used as a conjunction in ALTQs is apparently the ordinary disjunction, as in English, and this pattern has led authors to move away from non-unified/non-compositional accounts. We return briefly to the importance of this data in §6.2 — there we suggest that any analysis of alternative questions that attempts to reject an ambiguity approach to disjunction will eventually need to explain data such as (11).
3.2. HAMBLIN SEMANTICS APPROACHES

The bulk of the literature has attempted to unify ‘or’s, providing some account that generates an ‘ambiguity’ in disjunctive questions with one entry. That there should be a unified account is supported by the fact that in a range of languages from different families, the conjunction used in ALTQs is the same as the ‘normal’ disjunction in the language: for example English, Bulgarian (Han and Romero, 2001, ex. 8), German (Beck and Kim, 2006, §2.1.2), Modern Greek (Han and Romero, 2002, ex. 6), Hindi (Han and Romero, 2004b, §5.1.1), Hungarian (Beck and Kim, 2006, §2.4.2), and Spanish (Han and Romero, 2002, ex. 7).

Recent work has converged on the idea that natural language disjunction does have a unified account, but not a classical one: certain items in natural language manipulate sets of alternatives (Hamblin, 1973; Rooth, 1985), and disjunction is interpreted as a (set-theoretic) union operation on such alternatives. This idea was first proposed for ‘or’ in alternative questions by von Stechow (1991) §5.2, recently developed for free choice disjunction (in declaratives) by Alonso-Ovalle (2005, 2006) and Simons (2005), and re-introduced into the questions literature by Beck and Kim (2006) Rawlins (2008) Groenendijk and Roelofsen (2009), Pruitt and Roelofsen (2011), and Biezma and Rawlins (2012b). In (12), we give the interpretive rule for disjunction from Alonso-Ovalle (2005), which is developed in the framework of a compositional Hamblin semantics (Kratzer and Shimoyama, 2002). This account of disjunction, combined with the question operator above in (9b), derives the baseline alternative set in (13) (cf. (8)). See Roelofsen (2013) for a generalization of this analysis in an algebraic framework.8

(12) Alternative semantics disjunction
\[
\llbracket X \text{ or } Y \rrbracket = \llbracket X \rrbracket \cup \llbracket Y \rrbracket
\]

(13) \[Q \text{Does Bill want coffee or tea?}_{H^*} = \{\lambda w_s. B \text{ wants coffee in } w, \lambda w_s. B \text{ wants tea in } w\} \]

As seen above, the standard Hamblin account of polar questions involves a specialized polar operator that builds two alternatives, constructed from the content proposition and its negation (Hamblin, 1973). The entry for disjunction in (12) can account for disjunctive polar questions as well, if a Hamblin existential operator scopes immediately over the disjunction (Rawlins, 2008; Biezma and Rawlins, 2012b).

(14) Disjunctive declaratives
\[
\exists B \text{ wants coffee}_{H^*} \text{ or tea}_{H^*} = \{\lambda w_s. \exists p \in \{B \text{ wants coffee in } w, B \text{ wants tea in } w\} : p(w) = 1\} 1\}
\]

(15) Polar disjunctive questions following Hamblin
\[
\llbracket [Q_{\text{polar}} \exists \text{ Does Bill want coffee or tea?}]_{L^*} \rrbracket = \llbracket [Q_{\text{polar}}] (\{\lambda w_s. (B \text{ wants coffee in } w \lor B \text{ wants tea in } w)\})
\]
\[
= \{\lambda w_s. (B \text{ wants coffee in } w \lor B \text{ wants tea in } w), \lambda w_s. \neg(B \text{ wants coffee in } w \lor B \text{ wants tea in } w)\}
\]

The conclusion of these recent proposals, then, is that disjunction in an ALTQ contributes directly to the alternative structure of the question it appears in, and not to the content of any particular alternative; in a disjunctive polar question, disjunction contributes to each alternative.
3.3. INQUISSITIVE SEMANTICS

In the inquisitive semantics literature, Groenendijk and Roelofsen (2009), Roelofsen and van Gool (2009) and Pruitt and Roelofsen (2011) have presented accounts of alternative questions that adopt a Hamblin-like view on alternative sets and Hamblin-like account of disjunction but provide a different account of the polar/alternative distinction. We focus our presentation here on Roelofsen and van Gool (2009) for reasons of simplicity, but the reader should be aware that this account has developed in subsequent work (Pruitt and Roelofsen, 2011). There are three ingredients we must explicate in order to develop an example: highlighting, the question operator, and the role of focus. On (recent) inquisitive semantics, meanings are two-dimensional, consisting of a ‘highlighting’ dimension, and what Roelofsen and van Gool (2009) term a ‘proposal’ dimension. The highlighting dimension very intuitively corresponds to the idea that a move can highlight certain distinct possibilities, as in questioning. In responding to questioning, a ‘yes’ answer (licensed only with one highlighted alternative) accepts the unique highlighted alternative, whereas a ‘no’ answer rejects all highlighted alternatives; answers more generally choose among highlighted alternatives.

The question operator, therefore, projects alternatives to the highlighting dimension and, in the proposal dimension, ensures that their complement alternative is also included, generating an alternative set that covers \( P \).

\[
\begin{align*}
\langle Q \alpha \rangle^P &= [\alpha]^P \cup (W - \bigcup [\alpha]^P)) \\
\langle Q \alpha \rangle^H &= [\alpha]^H
\end{align*}
\]

Roelofsen and van Gool (2009) suggest that focus plays a role in determining what exactly gets highlighted. In particular, focus forces alternative sets to be collapsed.

\[
\begin{align*}
\langle a_F \rangle^H &= \bigcup [a]^H
\end{align*}
\]

Roelofsen and van Gool (2009) assume a close variant of the Hamblin disjunction we have sketched in (12) (see Pruitt and Roelofsen, 2011, for the issue of how this might work in the non-highlighting dimension). The interaction of these four pieces comes together in disjunctive questions, which Roelofsen and van Gool (2009) suggest can have either wide or narrow scoped focus relative to disjunction. When focus is on the entire disjunction, the alternative set introduced by disjunction is collapsed to a singleton and so contributes only one alternative to the highlighting dimension. When disjunction is narrow, the end result is that two alternatives are highlighted, one corresponding to each disjunct.

\[
\begin{align*}
\langle Q-Does \text{Ann or Bill play?} \rangle^H &= \{ \lambda w. \text{play}_w(\text{Ann}) \} \\
\langle Q-Does \text{Ann} \text{ or Bill play?} \rangle^H &= \{ \lambda w. \text{play}_w(\text{Ann}) \} \\
\langle Q-Does \text{Ann} \text{ or Bill play?} \rangle^H &= \{ \lambda w. \text{play}_w(\text{Bill}) \}
\end{align*}
\]

As Roelofsen and van Gool (2009) point out, their focus operator is similar to a Hamblin existential closure, and thus, this view can be seen as motivating an LF like that seen in (15) above. However, Pruitt and Roelofsen (2011) develop this account further with different assumptions about focus, more in line with Han and Romero (2004b), where focus mainly determines the syntax and it is the scope of the Q operator that varies with respect to disjunction.

Roelofsen and van Gool (2009) and Pruitt and Roelofsen (2011) further combine this proposal with an exclusivity operator cued by the final fall; see §4.2 below. See also Ciardelli et al. (2010), AnderBois (2011, 2012), Farkas and Roelofsen (2012), Roelofsen (2013) and Ciardelli et al. (2013) inter alia for further discussion of alternative questions, polar questions, and inquisitive semantics.
4. Closure Intonation and the Answer Space

In §1, we raised the possibility that the alternative set corresponding only to the disjoined propositions might be incomplete. We return now to this issue in two parts. First, we examine responses to ALTQs that appear to go outside this constrained set. We then turn to the role of the final falling intonation contour in ALTQs; there is consensus in recent work that this contour is responsible for limiting the alternative structure in some way, though debate about exactly how.

4.1. How Many Answers?

We have so far focused on the core of alternative questions, i.e. the alternative structure corresponding to the disjuncts. However, an ALTQ can receive certain other responses that operate outside the disjuncts proper:

(20) Did Sue go to the dinner or the talk?

B ’: Actually, she stayed home.
B ’’: Actually, she went to both.

The B ’ response denies both disjuncts (corresponding to a ‘no’ answer to a POLQ) and the B ’’ response affirms both disjuncts (corresponding to a ‘yes’ response to a POLQ). The status of such responses is an area of current debate. Under many classical treatments, such responses are treated as ‘answers’ in some sense (Karttunen, 1977; Groenendijk and Stokhof, 1984). In Hamblin terms, this involves the alternative structure in (8) being enriched with two additional alternatives, the intersection and the complement of the union. However, many accounts do not treat these responses as answers, and argue that they operate outside the alternative structure of the question. The two extreme possibilities along this range of alternative structures are shown in (21), where shading represents worlds that are not part of the alternative structure.

(21)

What would it mean for these responses to operate outside the alternative structure of the question? The predominant view is that one or both of these response types is a presupposition denial, rather than a semantic answer (Belnap and Steel, 1976; Karttunen and Peters, 1976; Higginbotham, 1991; Bartels, 1999, a.o.). The ‘both’-type response would deny a presupposition that the disjunction’s alternatives are mutually exclusive (do not overlap), and a ‘neither’-type response would deny a presupposition that these alternatives exhaust the space of possibilities. In contrast, an account like that of Pruitt and Roelofsen (2011) takes the contribution of closure to be a conventional implicature in the sense of (Potts, 2003), for them,
involving only mutual exclusivity, and therefore, a ‘both’-response is a denial of a CI. Finally, Groenendijk and Roelofsen (2009) take the ‘neither’-proposition to be part of the alternative structure but argue that there is a conversational implicature against that alternative, and so a ‘neither’-response would be an implicature denial.10

On all of these views, something must lead to implications of exhaustivity and/or mutual exclusivity, and the question then is what. Most recent approaches have associated these implications with intonation, and we turn to these proposals in detail below in §4.2. The prime competing view, though often implicit, is that they follow from either question marking generally, or from an alternative question operator; see Rawlins (2008).

There is broad agreement in the literature that has examined this issue that such responses are marked, compared to the core responses discussed above (Belnap and Steel, 1976; Rawlins, 2008; Groenendijk and Roelofsen, 2009; Roelofsen and van Gool, 2009), thus motivating the non-answering accounts above. We will not review all the evidence here; see Biezma and Rawlins (2012b) inter alia. One piece of evidence is the presence of markers like ‘actually’, that appear only with marked responses (Groenendijk and Roelofsen, 2009; Biezma and Rawlins, 2012b). A second, related argument is that ALTQs can be used to block such responses. Bartels (1999) (ch. 4 note 4) gives the example in (4A), attributed to Barbara Partee; this question directly attempts to force B to stay within the listed options and consequently affects possible responses. If ‘neither’-responses and ‘both’-responses had the same semantic status as responses regarding the individual disjuncts, we would not expect this behavior but would expect these other responses to be always available, and/or more overt exclusion of these possibilities to be necessary.

(22) Scenario: A is a parent, B their child.

A: Do you want to drink this medicine from a glassH* or take it with a spoon?H* L/C0 L%
B: #both/#neither

If both mutual exclusivity and exhaustivity are in play, we expect a four-way difference between the questions in (23):

(23) (Discussing conference planning.)

a. Did Bill review abstract 5H* or abstract 6?H* L%
b. Did Bill review abstract 5H*, abstract 6H*, or both abstract 5 and 6?H* L%
c. Did Bill review abstract 5H*, abstract 6H*, or neither of the two?H* L%
d. Did Bill review abstract 5H*, abstract 6H*, both abstract 5 and 6H*, or neither of the two?H* L%

Empirically, these questions differ both in their felicity conditions, and in their possible answers, in exactly the predicted fashion. Without explicit mention, the ‘neither’ and the ‘both’ alternatives seem to be excluded as possible answers, and the question intuitively presupposes that the speaker thinks those aren’t possibilities. But as explicit alternatives, they become possibilities and correspond to possible answers. The (d) question intuitively places no constraints on the set of possibilities in context. The open question is what exactly contributes this effect; a main candidate is intonation, which we turn to now.

4.2. CLOSURE INTONATION

We turn now to the interpretation of closure intonation and its interaction with the alternative structure of ALTQs. This issue has received much less attention in the literature than disjunction, though we believe it to be equally central. The first question is what, if anything, is contributed
semantically by this intonational contour. There are two basic possibilities that have been explored: exhaustivity and exclusivity. As seen above, both of these at least can be involved in the meaning of ALTQs.

The first exhaustivity proposal we are aware of is that of Bartels (1999), who argues that the final fall (like the falling tone in declaratives) signals to the addressee that an answer move will commit the addressee to the content of the alternative question – ‘content’ here refers to the disjunctive proposition. A simpler version of this is that the closure intonation signals that an ALTQ presupposes its disjunction.11 (For simplicity, we will talk in terms of presuppositions in this section; see discussion above for the alternatives.) While this approach is not immediately consistent with the treatment of disjunction discussed above, the presupposition in question, or one much like it, is one that a number of authors (Belnap and Steel, 1976; Karttunen and Peters, 1976; Higginbotham, 1991; Rawlins, 2008; Biezma, 2009; Biezma and Rawlins, 2012b) have associated with alternative questions, though earlier accounts did not connect this with intonation per se.12 Bartels’ proposal (and its successors) makes an immediate prediction about possible responses in discourse: responses that go outside the disjunctive alternatives will not be licensed as answers. The list is exhaustive with respect to the contextual possibilities.

Pruitt (2008) (followed by Pruitt, 2008; Rawlins, 2008; Biezma, 2009; Pruitt and Roelofsen, 2011; Biezma and Rawlins, 2012b) observes that the intonational contour on English alternative questions appears to be identical to the contour that Zimmermann (2000) observes on other instances of disjunction (and conjunction structures in general). Zimmermann’s generalization is that this intonation corresponds to a closure operator that applies to a list w.r.t. some property and implies that ‘nothing but the list items has the property in question’. The formalization there is not directly applicable to alternative questions (Roelofsen and van Gool, 2009; Biezma and Rawlins, 2012b), and a unified analysis of closure intonation across all conjunction structures has not yet appeared, but nonetheless, this description is suggestive. In fact, Bartels’ exhaustivity proposal entails a version of it – nothing but the elements in the list provided by disjunction has the property of being an (epistemic) possibility.

A second possibility is that closure intonation on alternative questions conveys exclusivity – that at most one of the alternatives is true. Once again, it is a long-standing idea that this implication is part of the meaning of an alternative question (Belnap and Steel, 1976; Karttunen and Peters, 1976; Higginbotham, 1991; Rawlins, 2008; Roelofsen and van Gool, 2009; Biezma and Rawlins, 2012b). Roelofsen and van Gool (2009) and Pruitt and Roelofsen (2011) are the main advocates of this idea and propose explicitly that it is this implication (only) that is associated with closure intonation. Another prediction about answerhood arises from the exclusivity proposal: certain responses will not be licensed as answers – those that conjoin two (or more) alternatives.

A third possibility is that closure intonation could contribute both of these implications; this possibility is instantiated by Biezma and Rawlins (2012b). They propose, following Zimmermann’s generalization, that closure intonation in alternative questions indicates that the list is complete with respect to the current Question Under Discussion in discourse (Ginzburg, 1996; Roberts, 1996; Büring, 2003, inter alia). That is, an alternative question is a means of making explicit the full list of alternatives that might have been partially or completely implicit in prior discourse; alternatives here correspond to answer strategies. Biezma and Rawlins (2012b) propose further that the QUD is always exhaustive relative to the current context set, and constructed from mutually exclusive alternatives, so presupposing that the list exhausts the QUD amounts to presupposing both exhaustivity and exclusivity. This view places the account of the four-way distinction in (23) entirely on the role of (closure) intonation. Biezma and Rawlins, following Pruitt (2008), put all of the work in the final fall; this leaves open the question of whether the focus structure of disjunction in general, or the pitch accents on disjuncts, may be contributing to either exhaustivity or exclusivity.
We turn now from the question of what closure intonation contributes to the question of how it contributes it. Here, there is very little consensus, and few detailed proposals; the answer to this question must span the syntax, semantics, and pragmatics of these questions. It also isn’t clear what the empirical consequences of the differences might be, but given that there are substantial differences, we present the existing proposals. Roughly three views about the compositional contribution of intonation can be seen. The first is that this intonation is lexicalized in the form of a specialized ALTQ operator in the CP domain this operator is only present in this construction. This view is perhaps implicit in many analyses that do not directly address intonation but involve either exclusivity or exhaustivity presuppositions and is spelled out in detail by Rawlins (2008). At the other extreme is the idea that there is an independent ‘intonational morpheme’ that is to some degree compositionally general and thus shows the same behavior outside of ALTQs. Pruitt (2008), Biezma (2009), and Biezma and Rawlins (2012b) suggest that the closure operator should be unified with list closure in general, but do not give a complete account (Biezma and Rawlins, 2012b, take the practical middle ground of implementing it as a compositionally independent operator, that is licensed only in ALTQs). Bartels (1999) attempts a unification of this operator instead with the falling contour found in assertions, and Roelofsen and van Gool (2009) and Pruitt and Roelofsen (2011) argue that it contributes an exclusivity operator. Despite this array of views, a broad conclusion about closure intonation is that the intonational contour represents a compositionally distinct operator deserving of analysis in its own right, and that it has the effect, in one way or another, of limiting the alternative structure of an ALTQ, and consequently the answer space.

5. Focus and the Individual Disjuncts

While proposals such as Bartels (1999), Pruitt (2008), and Biezma and Rawlins (2012b) take the final falling pitch to be the key intonational marker of an alternative question for semantic purposes, as we have seen above, several proposals suggest that the pitch accents on the disjuncts are crucial (Han and Romero, 2004a; Pruitt and Roelofsen, 2011). Han and Romero (2004a) provide convincing evidence that these accents signal focus marking (example from Han and Romero, 2004a).

(24) a. Did John drink coffee or tea? (neutral intonation, yn-reading only)
   b. Did John drink COFFe or TEA? (focus in capitals, alt-reading only)

The alternative question intonation, in a more articulated description, is characterized by a pitch accent and a H phrasal boundary tone on the first disjunct, creating a rising intonation impression, and a H pitch accent and a L phrasal boundary tone on the second final disjunct, creating the effect of final falling intonation (we abbreviate this with H-L) (Bartels, 1999).

Focus seems to play a role on identifying ALTQs in other languages. For example, Lee (2003) suggests that focus plays a role in Korean ALTQs. (Examples from Lee, 2003, (25) is an ALTQ for which (26) is an appropriate answer, whereas (27) is a POLQ):”

(25) aki-ka ton-ul mence cip-ess-ni (ttonun/animyen) phen-ul mence cip-ess-ni?
   baby-NOM money-ACC first pick-PAST-Q (or/if.not) pen-ACC first pick-PAST-Q
   ‘Did the baby pick the money first, or did she pick the pen first?’

(26) (aki-ka) tonp-ul/*ton-un mence cip-ess-e.
   baby-NOM money-ACC/money-CT first pick-PAST-DEC
   ‘The baby picked the money first/*/money_CT first’
(27) aki-ka tōn-ttonun phen-ul cip-ess-n?
    baby-NOM bill-or pen-ACC pick-PAST-Q
  ‘Did the baby pick a bill or a pen?’

On Lee’s (2003) description, focus is indicated in Korean with case marking; the presence of a case marker (together with a pitch accent) is triggered by a contrastive focus interpretation. In ALTQs, we find accusative case on all non-final disjuncts, indicating focus marking, in contrast to POLQs; see also Han and Romero (2004b) for a slightly different interpretation of these facts that involves the same case structure, with much cross-linguistic evidence. Additionally, an answer must have accusative case/pitch accent, rather than the contrastive topic marker -mun (in complementary distribution with case).

Focus in or on disjunction can also be important for identifying questioning altogether. This is the case in Yucatec Maya (28), in which focus on disjunctive clauses, together with context, triggers a question interpretation (data and description from AnderBois, 2012).

(28) Scenario: There are two trees in the yard: a mango tree and a papaya tree.
    [le kuul maangooj wáa le kuul puut]e t-u ch’ak-aj Juan
    DEF plant mango OR DEF plant papaya PFV-A.3 chop-STATUS Juan
  ‘Was it the mango tree or the papaya tree that Juan chopped?’

Out of this kind of context, or without focus marking (which is in the form of the ‘focus/cleft construction’; see AnderBois for discussion), this utterance is interpreted as a disjunctive assertion. In this context, this utterance obtains an ALTQ-like interpretation (see AnderBois, 2012, for details). Here, aside from focus marking and disjunction, there appear to be no formal markers of the ALTQ-type. In this language, it appears that the entire disjunction is focused, in contrast to the case of English, where individual disjuncts are what is focused on the surface; it remains open how this kind of focus construction relates to the English case.

In Han and Romero (2004a), focus intonation in ALTQs is argued to be a cue that ALTQs involve ellipses (see also Pruitt and Roelofsen, 2011). In their account of the semantics of ALTQs, the question operator associates with the focused elements in the disjunction phrase. In fact, they convincingly show that the alternative reading in questions involving disjunction is lost when there is preposed negation or an extra focus marking on polarity, and derive this from focus. Beck and Kim (2006) (building on von Stechow, 1991) further generalizes this claim by arguing that the ALTQ reading disappears when an intervener prevents association of the disjunctive phrase with a licensing interrogative complementizer.

In sum, focus and focus marking in ALTQs has been argued to play several important roles across several languages: accounting for distributional properties, intervention effects, and even whether an utterance has the force of a question. This leaves several open questions regarding the role of intonation: (i) How can we reconcile the focus facts in Han and Romero (2004b), Beck and Kim (2006), von Stechow (1991), and Pruitt and Roelofsen (2011) with Pruitt (2008) result that focus marking is not a sufficient condition for English ALTQs? (ii) Do ALTQs across the full range of languages in fact have the same focus structure? It is clear from the intervention literature that focus structure is important in the licensing of ALTQs; a major open question is (iii) whether the role of focus goes beyond this.

6. Moving Forward

In this section, we illustrate some of the open questions in the investigation of ALTQs that we think are crucial to understanding ALTQs: the limits of truth-conditional analyses, §6.1, and the need of full cross-linguistic studies, §6.2.
In the preceding sections, we have reviewed the main semantic features in analyses of ALTQs: question operator(s), disjunction, closure intonation, and focus marking. A semantic analysis of questions leads to predictions in the pragmatics; for discussion purposes, we have been using the informal pragmatics of Hamblin semantics where alternative propositions correspond to possible answers. For example, all viable theories of ALTQs predict that the alternatives provided by the disjuncts correspond to possible answers, and we showed that theories vary (and there is debate) about the status of responses that go outside the disjunction. It is therefore necessary to understand the semantics of ALTQs in the context of pragmatics.

A first example is the use of ALTQs and POLQs as same-speaker continuations to questions. Biezma and Rawlins (2012b) have recently drawn attention to examples like (29). Intuitively, the ALTQ here does not ask a new question but rather further specifies the previous constituent question—the two are not answered independently. Biezma and Rawlins (2012b) suggest that at the discourse level, ALTQs function to make explicit (via disjunction) a complete set of alternatives that was previously implicit in discourse. This makes ALTQs particularly suitable as follow-up questions to constituent questions (they make explicit what exactly are the alternatives that the questioner entertains). POLQs make explicit some alternatives, but not a complete set, and thus have a different effect following a constituent question: in (30), the POLQ highlights a particular part of the larger question that they are interested in but does not limit the discussion to that. The account thus predicts that ALTQs can be used to eventually follow up POLQs exhaustively, as in (31).

(29) A: What did Sue do yesterday evening? Did Sue go to dinner or the talk?
(30) A: What did Sue do yesterday evening? Did Sue go to dinner or the talk?
(31) A: Are you making pasta or fish?… I really need to know, I have to plan the rest of the meal, are you making pasta or fish?

A second set of data that highlights the importance of understanding ALTQs in context involves alternative questions formed by opposite alternatives (ALTQVNs), first seen in §1:

(32) Said out of the blue:

  a. # Will you marry me or not?
  b. # Do you want something to drink or not?

ALTQVNs have often been analyzed as having the same alternative structure as corresponding POLQs (i.e. \{λw.you marry me in w, ̸λw.you marry me in w\}). The prediction for the intuitive Hamblin pragmatics is therefore that there should be no difference between ALTQVNs and POLQs, but Bolinger (1978) noticed that such analysis makes the wrong predictions: the two question types are not discursively interchangeable, as illustrated by (32) above.

There are several recent attempts to explain Bolinger’s (1978) data. Van Rooy and Safarova (2003) propose a game-theoretic approach: the discursive differences between POLQs and ALTQVNs follow from differences in the ‘utility values’ of their possible answers. While it is non-trivial to define a utility value in an appropriately general way, for our purposes, it is sufficient to know that it is higher for propositions that facilitate some conversational goal, e.g. gaining information. An ALTQ signals that its possible answers have the same utility value, whereas the positive answer to a (positive) POLQ has a higher utility value than a negative one. The infelicity in (32) and other examples in Bolinger (1978) follows from the clash between the discourse situation and the speaker’s use of a question: if an answer has a higher utility value, the speaker should indicate that by asking the right question type to signal so. Hence,
reasoning about what answer has a higher utility value in a contextual situation predicts the appropriateness of questions.

Biezma (2009) proposes an account of Bolinger’s (1978) data based on the interaction between the semantics and the discourse structure (Ginzburg, 1994; Roberts, 1996; Büring, 2003; Beaver and Clark, 2008). Biezma (2009) notices that the discourse behaviour of ALTVN is different from regular ALTQs. In particular, ALTVN are the last possible questioner’s discourse move to solve an open issue. After a regular ALTQ is uttered, follow-up questions regarding the individual disjuncts can be asked in an attempt to obtain an answer, but this is not possible after an ALTVN. This is what Biezma (2009) dubs the cornering effect: after an ALTVN, the only move left for cooperative participant is to provide an answer (33).

(33) A: Do you want coffee?  
B: Hum…, I don’t know…  
A: Do you want coffee or not? I need to know how much to grind.

In Biezma’s (2009) system (see also Biezma and Rawlins, 2012b), the interaction between semantics and discourse predicts that ALTVN are the last possible discourse move regarding a particular alternative and are hence unsuitable in other discourse situations. This explains both Bolinger’s (1978) data and the cornering effect.

Finally, we highlight four further ALTQ-like constructions here that require further investigation of the pragmatics. First, ‘or what’ questions as in (34) replace one disjunct with ‘what’; this particular example illustrates a rhetorical question form that would be impossible with an ordinary ALTQ. The elliptical question in (35) has the properties of an ALTQ except for overt interrogative morphology but seems to act as a question. Krifka’s (2001a) example in (36) involves a disjunct with ‘preposed’ negation: in general, ALTQs cannot be formed with preposed negation (Han and Romero, 2001, 2004a), except when full interrogative clauses are disjoined. Finally, the discourse in (37) is similar to an alternative question, except triggered by the prefaced ‘or’.15

(34) Is John crazy or what? (Biezma and Rawlins, 2012a)  
(35) (Pointing at a book) Good H* or bad H*+L?  
(36) Did Mary read Die Kinder der Finsternis, or didn’t she? (Krifka, 2001a, ex. 49)  
(37) A: Did John talk to Mary? B: Or to Sue?

6.2. THE CROSS-LINGUISTIC PUZZLE AND OTHER COMPLICATIONS

Much of the growing body of work on ALTQs focuses on alternative questions in English. While there are exceptions (Han and Romero, 2004b, 2004a; Beck and Kim, 2006; Haida, 2011; AnderBois, 2012; Uegaki, 2014), there is still a great deal to be learned from and about cross-linguistic variation in ALTQ/POLQ-question systems. One key area that we have already touched on is the use of specialized coordinators for ALTQs in some languages (Karttunen, 1977; Haspelmath, 2007; Alonso-Ovalle, 2006; Mauri, 2008; Uegaki, 2014).16 A Finnish example was provided earlier in (11); below is a Mandarin Chinese example.17

(38) Mandarin (Sino-Tibetan: Chinese)  
a. N1 yào wǒ bang n1 háishi yào zìj1 zuò  
you want I help you or want self do  
‘Do you want me to help you, or do you want to do it yourself?’
We can either eat here or eat out.

A more complicated set of data comes from Chadic languages (Haida, 2011, ex. (14)):

(39) Tangale (Afro-Asiatic: West Chadic)
   a. Mairo ed-go-n om ya lakikoro (ya)?
      M. eat-FPERF-FOC beans or rice Q
      ‘Did Mairo eat beans or rice?’

Haida (2011) describes Tangale ALTQ-coordinator as sharing its segmental phonological properties with the regular disjunctive coordinator but treats them as different particles (compare with Korean ex. (25) in §5). Furthermore, the coordinator ya can only appear in questions. Furthermore, Mauri (2008) discusses languages that can leave out a coordinating marker altogether in questions, as long as there is what Mauri characterizes as an irrealis marker (note that for Mauri, ‘irrealis’ includes interrogative clause marking). These examples appear to only scratch the surface of what is possible across languages.

In sum, systematic cross-linguistic work on alternative questions is lacking, despite typological work on polar and constituent questions. In work on polar questions, typological research has focused on the opposition to declarative sentences, and corresponding strategies for marking polar questions. Among these strategies are the use of final rising intonation, word order (in particular inversion), and the use of question particles (and its distribution in the sentence). No comparable discussions exist for ALTQs. However, we suggest that polar and alternative questions form a single system, and this kind of typological work cannot be complete without considering the full polar/alternative/declarative paradigm we began with in (1)–(3); for example, AnderBois (2012) provides a paradigm case (Yucatec Maya) where polar and alternative questions cannot be treated separately.

The three main themes of this paper (interrogative marking, disjunction, and intonation) provide a starting point for where typological generalizations might be found. We have mentioned a range of languages where disjunction uses a distinct morpheme in ALTQs (Haspelmath, 2007; Alonso-Ovalle, 2006). We are aware of one important generalization about these cases: Haspelmath (2007) notes that in languages where polar and alternative questions have a different disjunction morpheme, the disjunction marker used in declarative sentences is also the one used in polar questions, whereas alternative questions use a different one. However, beyond this, there are many open questions about the marking of ALTQs in the languages of the world. No systematic study correlates the use of disjunction (and whether or not the disjunction morpheme is different from the one used in polar questions) with other strategies, such as intonation.

For example, are there languages in the world in which alternative and polar questions differ in their disjunctive marker but not intonation? Karttunen (1977) (fn. 9) hints that Finnish might be such a case, suggesting that the role of the English intonation pattern can be carried by the specialized coordinating morphology, but much further work is needed. A similar question, already implied in §5, arises with non-final intonation and focus: do ALTQs across the full range of languages have the same focus structure?

7. Conclusion

We have focused in this paper on three key issues in the semantics and pragmatics of ALTQs. The interrogative marking on these question types corresponds, on most accounts, to one or more question operators and provides a central locus for the study of what question operators
there might be, and what their properties are. Disjunction in ALTQs has provided one of the major arguments for a non-classical, alternative-based account of disjunction, though substantial debate remains about exactly the shape of that account and where in the grammar (or elsewhere) it is located. Finally, the intonational properties of ALTQs provide a key area for investigating the compositional or pragmatic contribution of intonational ‘morphemes’, as well as the properties of focus marking.

While this compositional work is important, it has its limits, and we have touched on a variety of areas where the behavior of ALTQs suggests that purely ‘semantic’ or truth-conditional approaches will not provide all the answers; in this way, ALTQs are also an important focal point for investigating the interaction between truth-conditional semantics and pragmatics or discourse structure.

An understanding of the semantics and pragmatics of ALTQs involves phenomena whose importance extends well beyond this empirical domain. We have seen above that ALTQs provide a privileged vantage point from which to study the semantic and pragmatic contributions of disjunction, intonational meaning, question marking, and questioning, and we expect that the debates surrounding alternative questions will continue to have a direct impact on how we understand these more general phenomena, both within and across languages.

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Short Biographies

María Biezma’s main research interests lie in linguistics, in particular in the areas of semantics and pragmatics. Her focus is in understanding the richness and complexity of the mechanisms that interact in the production of semantic and pragmatic meanings, bringing together semantics, pragmatics, discourse theory, syntax and psycholinguistics. Her research has focused on questions, conditionals and ellipsis, considering data from both Romance and Germanic languages and paying particular attention to cases in which there is an apparent mismatch between structure and meaning (e.g. optatives). She is currently a Juniorprofessor at the University of Konstanz. She holds a Licenciatura in Hispanic Philology from the Universidad Complutense de Madrid, an MA in linguistics from the University of Ottawa and a PhD in Linguistics from the University of Massachusetts Amherst.

Kyle Rawlins’s research is in linguistics and cognitive science, especially semantics and pragmatics. His main empirical focuses are on the interpretation of questions, conditionals, and modifiers more generally, and on bringing together converging evidence from syntax, semantics, pragmatics, and experimental/computational linguistics in the investigation of these topics. He is currently an Assistant Professor in the Cognitive Science Department at Johns Hopkins University. He holds a BA and BS in Linguistics and Computer Science from the University of Massachusetts, Amherst, and a PhD in Linguistics from the University of California, Santa Cruz.

Notes

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2 This review will neglect important syntax/semantics interface issues. One of such issues concerns the dependency between disjunction and question marking in ALTQs (Schwarz, 1999, shows that such dependency applies to ‘or’ in general). There is
a large debate regarding what kind of dependency this is, either an ‘A’ dependency sensitive to island boundaries (Larson, 1985; Han and Romero, 2002, 2004b) or something else. In particular, Beck and Kim (2006) (building on Beck, 2006) and Rawlins (2008) argue that the phenomena observed in ALTQs is different from the phenomena found in islands in general, being sensitive to intervention effects. A second axis of the syntactic debate, closely related to the long-distance dependency issue, is whether there is ellipses in ALTQs with non-clausal disjuncts (Larson, 1985; Han and Romero, 2002, 2004b); we touch on this briefly in Section 5.

3 See Biezma and Rawlins (2012b) p. 384 for a discussion of an elliptical analysis of this structure. An alternate word order, whose syntactic analysis is unclear, involves ‘or not’ immediately following ‘whether’, as in ‘whether or not Sue wants coffee’.

4 A reviewer raises the question of whether this has been experimentally verified. The only study we are aware of is reported by Kramer and Rawlins (2012): their results are that plain ‘yes/no’ responses are clearly acceptable (well above ‘bad’ fillers for example); however, they were very slightly but significantly worse than ‘yes/no’ responses to polar questions. It is not clear why this should be so.


6 Similarly, it is common to assume that declarative morphosyntax corresponds to an assertion operator. See Rawlins (2013) for one recent compositional account of such operators in an alternative semantics.

7 A cautionary note is that reductionist accounts can run up against arguments introduced by Bolinger (1978). See Section 6.1.

8 In our notation, we will write aPL→L: bracketed at the edge of a clause, analogous to Pruitt and Roelofsen (2011b). This is not intended as a deep statement about the alignment of intonational phonology and syntax, and arguably, the H* should be aligned inside the brackets; it remains unclear to us where exactly to place the rest. See Pruitt and Roelofsen (2013) for more detailed discussion and examples.

9 Note that while Karttunen and Peters (1976) use the term ‘conventional implicature’, they mean this in the sense of Karttunen and Peters (1979), where it means something close to the modern sense of ‘presupposition’.

10 Other approaches are possible if more layers of meaning are assumed; see e.g. Eilam and Lai (2009).

11 Bartels considers but does not ultimately adopt this simplification, as her goal is to unify assertions with ALTQs.

12 On several multi-dimensional accounts of alternatives questions, what might be called the ‘ordinary’ meaning involves classical disjunction (von Stechow, 1991; Beck and Kim, 2006; Pruitt and Roelofsen, 2011; Farkas and Roelofsen, 2012). These accounts differ as to the multi-dimensional meaning, but broadly speaking, it is analogous to the non-classical treatment of the Hamblin account developed here. Thus, Bartels’ proposal could be integrated with a more current account of disjunction, in a multi-dimensional account.

13 See also Haida (2011) for a discussion of focus marking in West Chadic languages.

14 van Rooy and Safarová (2003) build on Büring and Gunlogson’s (2000) proposal that PólQs have a bias toward the spelled out proposition.

15 Similar data are discussed in same-speaker discourse by Roelofsen and van Gool (2009) and Pruitt and Roelofsen (2011) under the term ‘open’ questions: there they treat such questions as being a single sentence, with a distinct doubly rising intonational contour.

16 A partial list of languages that have been claimed to have a specialized interrogative coordinator includes the following: Amharic, Buriat, Finnish, Gothic, Japanese, Kannada, Korean, Latin, Lithuanian, Mandarin Chinese, Persian, Syrian Arabic, and Vietnamese (Moravcsik, 1971; Haspelmath, 2007; Alonso-Ovalle, 2006; Pruitt and Roelofsen, 2011; Uegaki, 2012).

17 This example is cited from Haspelmath (2007), ex. (11); the data are credited to Liand Thompson (1981).

18 See for example König and Siemund (2007) and Dryer and Haskelmath (2011).

19 This strategy is common enough to motivate Greenberg’s universal #8: when a yes–no question is differentiated from the corresponding assertion by an intonational pattern, the distinctive intonational features of each of these patterns are reckoned from the end of the sentence rather than from the beginning (Greenberg, 1963a).

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