

Alternatives

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1 Introduction

Research in formal semantics and pragmatics often invokes a notion of alternatives. Consider the following example, picked for the wide range of notions of alternatives it involves (uppercase represents a focus accent):

- (1) Were TWO of your friends at the protest, or THREE? [final rising intonation]

Common analyses of similar examples in the literature reveal at least the following notions of alternative.

- The numerals “two” and “three” have other numerals as their lexical alternatives, forming what is commonly called a *Horn scale* (after Horn 1972): ⟨“one”, “two”, “three”, “four”, ...⟩ – similar scales would exist for, e.g., quantifiers such as ⟨“some”, “many”, “all”⟩ and for adjectives such as ⟨“warm”, “hot”⟩.
- The strong focus accents on “two” and “three” lets each disjunct introduce focus alternatives into the semantics of the form “*N* of your friends were at the protest”, again in a separate dimension of semantics (Rooth 1992).
- The focus alternatives result in a presupposition that the utterance addresses a *Question Under Discussion* (QUD) paraphrasable as “How many of your friends were at the protest?” (Roberts 1996; Beaver and Clark 2009), which can again be modeled as a set of alternatives, i.e., a set of propositions of the form “*N* of your friends were at the protest”.
- The disjunction introduces its disjuncts into the semantics as alternatives, in a dimension of semantics separate from the ordinary, informational content (Alonso-Ovalle, 2006; Ciardelli et al., 2013).
- Because the sentence is an interrogative, its main semantic content would itself be a set of alternatives, containing (depending on one’s analysis) at least the two disjuncts, in some analyses also their joint negation (“neither”; Ciardelli et al. 2015).
- Besides the prior QUD addressed by the utterance, there is also the QUD which it sets up for the next speaker, which contains the two disjuncts along with, in some analyses, their joint negation (“neither”; Ciardelli et al. 2015) or, more correctly, some other alternative from the prior QUD, e.g., that three or perhaps even four of your friends were at the protest (Biezma and Rawlins 2012; Westera 2017b).

Are these various notions of alternative all the same? If not, can they at least be assumed to interact in direct, formally characterizable ways?

Work in formal semantics suggests an affirmative answer to the second question, and a somewhat opportunistic, pragmatic stance with regard to the first. For instance, Questions Under Discussion are often treated as, essentially, implicit interrogatives, suggesting that alternatives from either the prior or the posterior QUD of an interrogative could be conflated with the alternatives in its semantic content. Some work on the semantics of interrogatives assumes that focus alternatives can be picked up by a question operator Q , which would promote the focus alternatives to constitute the main semantic content of the interrogative. For an account of disjunctive interrogatives it has been proposed that the alternatives introduced by a disjunction undergo a similar treatment: a question operator Q would keep the alternatives introduced by disjunction as alternatives in the interrogative's semantic content, whereas in declaratives the disjunction-introduced alternatives would have no role to play. Moreover, it is tempting to use the same set of alternatives for genuine interrogatives and for embedded interrogative-like constructions (e.g., "John knows who was there.").

This somewhat opportunistic stance towards the interactions of various notions of alternative may reflect a lack of conceptual clarity about what the different notions are supposed to represent; and this may be in part to blame on formal semantics' tendency to rely on formalism for formalism's sake, without necessarily asking how our formally defined notions may be independently grounded, e.g., in a broader theory of cognition. Something along these lines has been pointed out before at least with regard to lexical alternatives (or Horn scales), for instance by Russell (2006) who notes that Horn scales don't really explain anything unless one explains why scales are the way they are; and by Geurts (2011) who notes that there is only very little explicit reflection on what scales are supposed to be, and ultimately dismisses them as unnecessarily indirect and somewhat misleading representations of something like QUDs instead. The conceptual relations and differences between QUD alternatives, focus alternatives, alternatives introduced by disjunction and question alternatives have likewise not received the level of attention that the frequency of theoretical appeals to these notions demands.

I hope that this short chapter will encourage some deeper reflection on what the various notions of alternatives really signify and how they can be assumed to interact. I will discuss focus alternatives, alternatives introduced by disjunction, alternatives as used in the specification of QUDs, and alternatives in the semantics of interrogatives. More precisely, I will criticize the conflation of the set of focus alternatives with the meaning of an interrogative, discuss two conceptions of the alternatives introduced by disjunction (algebraic and attention-based), and argue against the predominant view of QUDs as, essentially, linguistic questions that represent discourse goals. I will outline a subtly different understanding of QUDs, according to which they are not goals in and of themselves, but are mere ways of organizing more elementary goals. This invites a view on QUDs as being more fluid and dynamic, and encourages us to think not just about alternative responses to a given QUD, but also about alternative QUDs.

2 Focus alternatives

An influential role of alternatives in semantics and pragmatics is in characterizations of the focus of an utterance, as marked for instance in English and many other languages by means of pitch accents, or by specific particles or syntactic positions. In this section, after a quick introduction to the notion of focus alternatives, I discuss two cases where

a direct formal interaction between focus alternatives and compositional semantics have been assumed: focus sensitive operators such as “only” (e.g., Rooth 1985) and the relation between focus alternatives and the semantics of questions (e.g., Beck 2006). I will argue (and review arguments from the literature) that assuming such an interaction may not be necessary or appropriate, and comes with certain risks.

The focus of an utterance is, intuitively, the part that matters most for advancing the conversation; for instance, it is the part that provides an answer to a preceding question:

- (2) How many of your friends went to the protest?
TWO of them went to the protest.

The numeral “two” carries the most prominent prosodic accent in the sentence, because it is the crucial part of the sentence given the question; indeed, the rest of the answer could have been omitted: “Two.” on its own would have communicated the same. Compare (ignoring the unnatural verbosity of the answer):

- (3) Where did two of your friends go?
Two of them went to the PROTEST.

In each case, the focus is the part of the utterance that *would have been different* had the speaker believed a different answer to the same question. This characterization naturally leads to defining focus formally in terms of the ways in which the utterance could have been different, i.e., a set of focus alternatives. For (2) this could be the set containing the proposition that one of them went, the proposition that two of them went, that three of them went, and so on. For (3) this could be the set containing the proposition that two of them went to the park, that two of them went to the protest, to the pool, home, to school, and so on.

Examples (2) and (3) illustrate the role of focus in determining question-answer congruence. This role can be explained, in outline, by assuming that the focus represents the pragmatically important part of an utterance, and noting that pragmatic importance depends crucially on what constitutes an answer to a contextual question. Under this view, focus alternatives would be merely a convenient way of formalizing ‘pragmatic importance’. However, a more common view on focus alternatives affords them a kind of semantic reality, where other expressions are assumed to be able to qualify and quantify over the set of focus alternatives. This could in some cases illustrate the somewhat opportunistic reuse of formal notions of alternatives which I mentioned in the introduction. I will discuss two examples of this.

The focus-sensitivity of “only” One phenomenon where focus alternatives have been assumed to directly influence the main semantics is the class of apparently focus-sensitive words such as “only”. The primary meaning of a sentence containing “only” changes with the placement of focus in its scope:

- (4) a. Two of my friends only went to the PROTEST together.
b. Two of my friends only went TO the protest together.

(4a) implies that the two friends didn’t go anywhere else together (the protest is the only place), whereas (4b) implies that the two friends were together on the way there but not

on the way back. In the work of Rooth 1985, “only” is assumed to be directly sensitive to the focus alternatives: the set of focus alternatives is passed to the ordinary semantics of “only”, allowing it to state that only one of those alternatives is the case. Focus alternatives would thus be accessible as semantic objects to the ordinary meaning composition channel.

A slightly different perspective is offered by Rooth (1992) and built upon by Beaver and Clark (2009), who argue that there is no such direct interaction between ordinary meaning and focus alternatives. Rather, focus alternatives reflect the structure of the QUD, and it is the QUD to which words such as “only” are directly sensitive, with “only” stating that only one proposition in the QUD is the case. This view makes it possible to conceive of focus alternatives as but a linguist’s convenient tool for formally describing what it means for a constituent to be pragmatically important, i.e., to be the focus of the sentence, rather than as being semantically ‘real’ in the sense of allowing other parts of the semantics to operate on them.

Focus and question semantics Another direct interaction between focus alternatives and ordinary meaning is assumed in the influential approach to question semantics of Beck 2006: the focus alternatives of an interrogative would be promoted to its ordinary meaning. For instance, for a “wh”-question, assuming focus on the “wh”-word, this amounts to the following:

- (5) WHO went to the protest?
Focus alternatives: {John went there, Mary went, Sue went, Bob went, ... }
 ↓
Ordinary meaning: {John went there, Mary went, Sue went, Bob went, ... }

This approach has also been applied to disjunctive questions with focus on the disjuncts (so-called “alternative questions”, but see below), where a crucial assumption is that the focus alternatives of a disjunction are restricted to the disjuncts:

- (6) Did JOHN go to the protest, or MARY?
Focus alternatives: {John went there, Mary went there }
 ↓
Ordinary meaning: {John went there, Mary went there }

(Example (7) below will show that this restriction of the focus alternatives and QUD to only the disjuncts is not adequate; the QUD must be able to contain other alternatives too; but for I will set this criticism aside.) If Rooth’s (1985) analysis of “only” is assumed, which provides the ordinary meaning with direct access to focus alternatives, then the idea that interrogativity (or a supposed interrogative operator) takes the focus alternatives and promotes them to the main meaning does not represent a big leap; instead of quantifying over the focus alternatives (like, supposedly, “only”), interrogativity would simply adopt them unchanged. By contrast, under Beaver and Clark’s view interrogativity would not be directly sensitive to focus alternatives, but only indirectly, via the QUD, which would be a more cautious approach to the possible interactions of different notions of alternative.

Now, let us explore this perspective on question semantics a bit further. This perspective just outlined would imply that the meaning of an interrogative is equivalent to its QUD, which may *seem* like an attractive outcome: QUDs are often treated as, essentially, implicit interrogatives. However, in fact the meaning expressed by an interrogative utterance is not

in general equivalent to its QUD. Just as declarative utterances may offer either a complete or a partial answer, so too may interrogative utterances specify the QUD either completely or only partially. To illustrate, consider again the example with which this paper started, but now comparing a final rise to a final fall:

- (7) a. Were TWO of your friends at the protest, or THREE? [final rise]
b. Were TWO of your friends at the protest, or THREE? [final fall]

The rise in (7a) conveys that there may be other relevant possibilities (e.g., that there were even four or five, or perhaps none), whereas the fall in (7b) conveys the opposite: it's either two or three, nothing else. A straightforward analysis of this contrast treats the final intonation as indicating (non-)exhaustiveness with regard to the QUD, i.e., whether the propositions mentioned in the interrogative (the disjuncts) are the only possible propositions in the QUD (e.g., Biezma and Rawlins 2012; Westera 2017b). Crucially, for this sort of analysis to be possible, to even come to mind, it is crucial that we do not conflate the meanings of interrogatives with the QUDs they serve to address.

Summary Summing up, in two cases where a direct formal interaction between focus alternatives and compositional semantics has been assumed, this may not be necessary or warranted: focus sensitive operators such as “only” (e.g., Rooth 1985) and the relation between focus alternatives and the semantics of questions (e.g., Beck 2006). In the case of questions, one reason for not conflating focus alternatives with question meanings is that, given the close relation between focus alternatives and QUDs, this would amount to conflating question meanings and QUDs. In section 4 I will discuss in more detail what QUDs are, elaborating on the idea that, even though both QUDs and (the meanings of) interrogatives can be characterized in terms of alternatives, they represent very different notions, and we must be cautious when considering their possible interactions.

3 Alternatives introduced by disjunction

It is often assumed that disjunction can introduce its disjuncts as alternatives into the semantics/pragmatics (e.g., ‘alternative semantics’ for disjunction in Alonso-Ovalle 2006; ‘inquisitive semantics’ more recently, Ciardelli et al. 2013). But what are these alternatives? And why would a disjunction introduce its disjuncts as alternatives, but not, e.g., a conjunction its conjuncts? (Why, that is, besides the various empirical facts that seem to require this.) I will consider two perspectives on this issue, one based on the notion of attention and another based on more formal, algebraic considerations. I argue that the former is ultimately more explanatory.

One perspective on introduced alternatives is the idea that (parts of) utterances can draw *attention* to the meanings of their constituents. For instance, in Aloni 2001; Schulz and Van Rooij 2006, disjunction is assumed to introduce its disjuncts as *discourse referents*, a notion closely related to attention. The notion of discourse referent stems from the literature on coreference, where it is assumed that noun phrases make the entities to which they refer attentionally salient in the discourse, thereby making them available as referents for subsequent anaphoric pronouns such as “he”:

- (8) A man walks in the park. He whistles.

Proposals that a disjunction would introduce its disjuncts as discourse referents, as in Aloni 2001; Schulz and Van Rooij 2006, can therefore be understood in attentional terms: a disjunction makes its disjuncts attentionally salient. This attentional perspective on the alternatives introduced by disjunction is made more explicit by Ciardelli et al. (2009), who propose an “attentional semantics” (equivalent in the relevant respects to ‘alternative semantics’ for disjunction in Alonso-Ovalle 2006). While intuitive, this attentional perspective on the alternatives introduced by disjunction fails to explain why disjunction but not conjunction would draw attention to its two coordinates. After all, surely a conjunction, too, draws attention to its conjuncts? I will offer an answer to this question further below, that allows us to maintain the attentional perspective on this notion of alternative. Before giving that answer, let me summarize an alternative perspective altogether, namely the *algebraic* motivation of ‘inquisitive semantics’ (Roelofsen, 2013a).

An algebraic perspective In a classical, information-only semantics, where meanings are propositions, i.e., sets of worlds, conjunction expresses the intersection operation on sets of worlds, and disjunction the union operation. If we enrich our notion of meaning to include alternatives, such that the meaning of an expression is now a *set* of propositions, and if we assume that each disjunct puts forward only a single proposition, i.e., denotes a singleton set, then taking the union of these singleton sets automatically yields a set containing both propositions, one for each disjunct:

- (9) John was at the protest, or Mary.
information: $\{w \mid Pj \text{ is true in } w\} \cup \{w \mid Pm \text{ is true in } w\} =$
 $\{w \mid Pj \text{ is true in } w \text{ or } Pm \text{ is true in } w\}$
alternatives: $\{\{w \mid Pj \text{ is true in } w\}\} \cup \{\{w \mid Pm \text{ is true in } w\}\} =$
 $\{\{w \mid Pj \text{ is true in } w\}, \{w \mid Pm \text{ is true in } w\}\}$

Thus, generalizing the treatment of disjunction as union to sets of alternatives immediately explains why disjunction ends up introducing multiple alternatives, typically one for each disjunct.

But this perspective is not completely satisfactory. For one, it is not obvious that the assumption should be granted that the informational and alternative-introducing contributions of parts of an utterance ought to compose according to the same operation. Although it may seem minimal and elegant, this subjective assessment may well point to wishful thinking rather than truth. But more severely, although the treatment of disjunction as union works well, the analogous treatment of conjunction as intersection requires a constraint on alternative sets, namely that they be *downward-closed* (Roelofsen, 2013a): if the set contains a proposition, it should also contain all propositions that are logically stronger (i.e., all the propositions that entail it). The reason is that, although treating disjunction as union works well if each disjunct is associated with a singleton set, it will not work for conjunction, as the intersection of two distinct singleton sets is the empty set:

- (10) John was at the protest, and Mary (too).
alternatives: $\{\{w \mid Pj \text{ is true in } w\}\} \cap \{\{w \mid Pm \text{ is true in } w\}\} = \emptyset$

Downward closure avoids this empty set: by adding all stronger propositions to the set on each side, and in particular the proposition that both John and Mary were at the protest, their intersection will contain at least this proposition (along with all stronger propositions). Downward closure has its own downside, however. If any stronger propositions are

automatically among the alternatives, then the same set of alternatives is assigned to both of the following variants:

- (11) a. John was there, or Mary.
b. John was there, or Mary, or both.

It is, I take it, highly counterintuitive that these two disjunctions would introduce the same alternatives; intuitively (11) has one more, namely the conjunction (and not just intuitively; see Westera 2017a for empirical consequences of this difference). I conclude that the algebraic is not entirely satisfactory as an explanation for why disjunction but not conjunction can introduce alternatives. Instead, let us return to the attentional perspective with which this section began.

The attentional perspective The challenge faced by the attentional approach was that, intuitively, conjunction draws attention to its conjuncts as much as a disjunction to its disjuncts, so why would only disjunction serve to introduce alternatives? I propose a pragmatic answer to this puzzle in Westera 2017b, by adopting the view in Ciardelli et al. 2009 that drawing attention to introduce alternatives is not merely something that happens, but that happens intentionally, i.e., as a communicative intention, governed by pragmatic rules, or maxims. Crucially, one need not intend the side-effects of one's intention (Bratman 1987). Hence, just as an utterance normally provides more information than what the speaker intended to convey, an utterance normally draws attention to many more things than just the alternatives which the speaker intended to introduce. Accordingly, although both disjunction and conjunction introduce alternatives semantically, in the sense of drawing attention to their disjuncts/conjuncts, perhaps we can explain why, in the pragmatics, only those introduced by means of a disjunction have any role to play.

To explain the latter, we need to make some pragmatic assumptions about what a reasonable speaker can cooperatively intend to draw attention to, i.e., a set of 'attentional' conversational maxims, alongside the usual Gricean ones. I develop such a theory, Attentional Pragmatics, in Westera 2017b, but the various principles on which it builds have been considered in the literature before:

- **Maxims:** A rational, cooperative speaker, addressing a certain QUD, should:
 - assert all and only propositions in the QUD which they consider true (roughly Grice 1975);
 - intend to draw attention to all and only propositions in the QUD which they consider possible.

The intuitive motivation for the second, attentional addition to Grice's original maxims should be clear: the propositions in the QUD being relevant, i.e., worth making common ground, it is generally rational to try to keep track of those propositions in the QUD which are possible, i.e., those immediate discourse goals which might be achievable. Moreover, similar constraints have been proposed in the literature. For instance, that propositions to which one draws attention should be considered possible corresponds in essence to "attentive sincerity" in Roelofsen 2013b (building on Ciardelli et al. 2009), "Genuineness" in Zimmermann 2000 (p.270); and "Viability" in Biezma and Rawlins 2012 (p.46). Biezma and Rawlins moreover assume that the alternatives one introduces (albeit with an interrogative) ought to be relevant to the QUD, Simons (2001) assumes a comparable "relatedness condition" on disjunctions, and in fact the same idea is found already in Grice 1989: that

disjunction serves to specify possibilities “that relate in the same way to a given topic”. For a more precise definition of the attentional maxims, more detailed motivation and a number of applications I refer to Westera 2017b.

What matters for present purposes is that the pragmatic requirements on attention, along with some other assumptions (e.g., that the QUD is closed under intersection), entail that the asserted proposition must always be equivalent to the union of the set of propositions to which the speaker intended to draw attention. This is because, in a nutshell, if something weaker was asserted, they should have drawn attention to more or weaker things, and if something stronger was asserted, they should have drawn attention to fewer or more specific things. In any case, it follows from this fact that a disjunction can be used to draw attention to the disjuncts (because the disjuncts both lie within the information conveyed by the disjunction as a whole), but a conjunction cannot be used to draw attention to the conjuncts (which fall outside of the information conveyed by the conjunction as a whole). What this means is that, if attention-drawing is indeed a type of communicative intention constrained by the pragmatic considerations given above, then even if both disjunction and conjunction intuitively draw attention to their disjuncts/conjuncts, this can only be intentional in the case of disjunctions; in the case of conjunctions, the attention drawn to the conjuncts must be considered a mere side effect. Pragmatics thus provides a possible explanation for why a disjunction but not conjunction has been perceived in the literature as introducing its coordinates as alternatives.¹

I will end this section, on the nature of the alternatives introduced by disjunction, by highlighting an interesting consequence of attentional, pragmatics-mediated conception of introduced alternatives outlined above: it immediately predicts that the ability of disjunction to introduce alternatives depends on focus intonation. That is, when each disjunct bears focus (now indicated by square brackets) these disjuncts are introduced as alternatives, otherwise only the disjunction as a whole is introduced (e.g., Roelofsen and Van Gool 2010; Pruitt and Roelofsen 2011; Biezma and Rawlins 2012):

- (12) a. [ALPH]_F or [BETH]_F attended the conference.
 b. [Alph or BETH]_F attended the conference.

This theoretically postulated difference in introduced alternatives is thought to correlate for instance with the robustness of a “not both” inference (in (12a) but not (12b)) and with the naturalness of certain responses. Drawing inspiration from (Beaver and Clark, 2009), who explain the apparent focus-sensitivity of “only” as a side-effect of its more direct sensitivity to the Question Under Discussion (QUD), a partially isomorphic explanation can be found for the apparent focus-sensitivity of the alternative-introducing behavior of disjunction. The standard view on focus (Roberts 1996; Beaver and Clark 2009, building on Rooth 1992 and before) is compatible with two kinds of QUDs for the example in (12a): a single-wh QUD to which each disjunct provides a possible answer (“Who attended the conference?”), or a disjunctive multi-wh QUD (“Who attended the conference or who attended the conference?”). Although the latter can occur in the right sort of context (e.g., with different implicit domain restrictions on the two wh-words), it is very odd out

¹What exactly is the nature (or thrust) of this kind of explanation? A radical ‘pragmaticist’ interpretation could be that the notion of introducing alternatives is indeed purely pragmatic, i.e., that there is no semantics of alternatives beyond the minimal fact that attention is drawn to basically any constituent. A more ‘semanticist’ interpretation could be that these findings reveal a possible account of the historical pragmatic origins of a notion that has by now fossilized into semantics. Either way, it can provide a satisfactory explanation of where the alternative-introducing behavior of disjunction comes from.

of the blue, so I will be assuming the former QUD for (12a), (i.e., “Who attended the conference?”). For (12b) we can assume that the QUD contains the disjunction as a whole but not the individual disjuncts, given the lack of a contrastive accent on “Alph”. Given this, from the different QUDs it follows directly that (12a) can and should be used to draw attention to each disjunct, while (12b) can be used to draw attention to the disjunction as a whole but not to the individual disjuncts (which are irrelevant).

Summary Summing up, I discussed two conceptions of the alternatives introduced by disjunction. The first, the algebraic perspective, puts this behavior centrally into the semantics, but the explanatory value of the algebraic perspective itself is not entirely clear, and it comes with the downside of imposing downward closure on alternative sets, rendering disjuncts such as “or both” semantically vacuous. The second perspective is based on the more minimal (uninformed) assumption that sentences can draw attention to basically any of their constituents, while relying on pragmatics to explain why disjunction but not conjunction can be used to intentionally introduce alternatives. The choice between the two perspectives concerns the nature of a particular notion of alternative (one of many), namely the alternatives introduced by disjunction, and has implications for the way in which this notion can be assumed to interact (or be conflated) with others. For instance, the attentional-pragmatic perspective is less conducive to treating the alternatives introduced by disjunction as directly available to the compositional semantics.

4 QUDs as ways of organizing discourse goals

A fruitful and influential perspective on discourse and pragmatics has been to conceive of discourse as being organized around the raising and resolution of Questions Under Discussion (QUD; e.g., Carlson 1983; Van Kuppevelt 1995; Ginzburg 1996; Roberts 1996), where QUDs are commonly represented as sets of alternatives: sets of relevant propositions. As we saw before, accounts of focus rely on a notion of QUD, as did the attentional perspective on the alternatives introduced by disjunction outlined in the previous section. It is, therefore, important to be clear about what QUDs are. As in the previous section, I summarize an existing perspective (the predominant one), and a more novel perspective, and present some arguments in favor of the second.

The predominant perspective: linguistic questions as discourse goals QUDs are often talked about as if they are questions in a linguistic sense, i.e., interrogative sentences (Carlson, 1983; Büring, 2003) or the kinds of speech acts or semantic objects typically expressed by means of such sentences (Van Kuppevelt, 1995; Roberts, 1996). This tendency is apparent, for instance, in the way in which QUD annotation typically mixes explicit linguistic questions and supposed implicit QUDs in a single representation. Consider the following constructed example (modified from (1) in Riester 2019), with a possible QUD analysis shown as a discourse tree (Büring 2003) in figure 4:

- (13) A: Max had a lovely evening.
 B: What did he do?
 A: He had a great meal. He ate salmon. He devoured cheese. He won a dancing competition

In the figure, following Riester 2019, questions in curly braces are implicit entities whereas the unbraced question ($Q_{0.1}$) was explicit in the original discourse – thus, explicit and

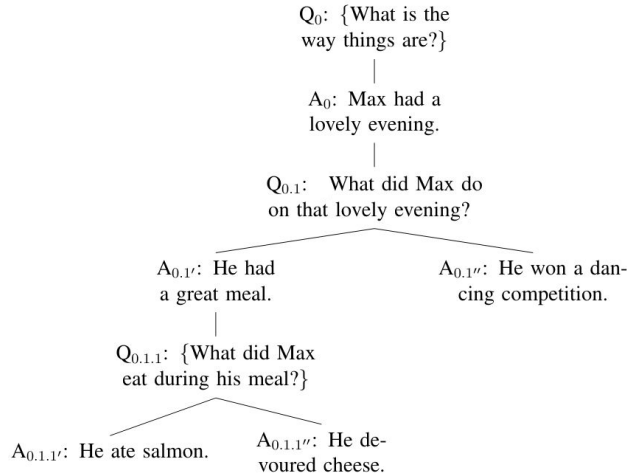


Figure 12.1: A possible QUD structure for (13), slightly modified from Figure 3 in Riester 2019.

implicit questions are assumed to occupy the same kinds of nodes in a discourse tree.

This kind of terminological and perhaps conceptual conflation of discourse goals and linguistic questions is risky, as it may cause us to overlook the fact that discourse goals and the speech acts directed at them are, in principle, very different kinds of things. For instance, in section 2 I argued, illustrated by (7), that the meaning of an interrogative should not be assumed to be equivalent to its QUD: just as declaratives can provide only a partial answer to their QUD, so too can interrogatives highlight only part of their QUD, as indicated for instance by final rising intonation as a marker of non-exhaustivity. Although linguistic questions are a prime instrument for setting discourse goals, we should not conflate the instrument with the goal.

Another characteristic of the predominant perspective on QUDs, besides the aforementioned linguistic stance on QUDs, is that it tends to regard the QUDs themselves, not the propositions they contain, as the ultimate discourse goals. That is, the goal of a given stretch of discourse is identified with the resolution of a particular question, not the making common ground of certain pieces of information. This view on QUDs is in principle independent from the tendency to regard them as linguistic questions, but they fit together nicely: linguistic questions are a prime instrument for setting new discourse goals, so a close relation between linguistic questions and discourse goals seems desirable. Nevertheless, I think that regarding QUDs as discourse goals, rather than the propositions they contain, is conducive to a view on QUDs that does insufficient justice to their dynamicity, i.e., to the ability of speakers to shift from one QUD to another, as I will explain after outlining an alternative perspective.

QUDs as *ways of organizing* discourse goals I propose to conceive of the making common ground of any individual piece of information as a goal in itself, that is, if n pieces of information are worth sharing, let that count as there being n distinguishable conversational goals. QUDs then enter the picture by assuming that a given utterance can potentially serve a number of goals simultaneously, by providing or requesting several pieces of information at once. Of course, not just any arbitrary set of goals is a suitable

combination of goals for a single utterance to serve. The subset of goals that a single utterance can be reasonably aimed at must be chosen on the basis of, among other things, subject matter (goals for a single utterance must be topically related), general importance (important goals first), and orderly discourse (e.g., sets of goals shouldn't be too big or too mixed, and resolving one should naturally lead to the next). We can think of QUDs as sets of goals in this sense, that are grouped together in accordance with certain organizational principles.

Regarding QUDs as ways of organizing goals, instead of regarding the resolution of questions itself as a goal, has a number of advantages. First, it is conducive to a more dynamic view of QUDs, where changing the QUD does not entail changing the discourse goals: the same discourse goals can be organized and re-organized in various ways throughout a conversation. I return to this in the next section.

Second, the proposed perspective makes certain limitations of the QUD-based approach easier to recognize and formulate. One such limitation is that a set of propositions – the typical representation of a QUD – cannot model dependencies between the goals these propositions represent, i.e., the goals of making them common ground. I think so-called *mention-some* contexts are an example where this matters:

- (14) A: Where can I buy an Italian newspaper?
B: In the kiosk around the corner.

If I am looking for a place to buy a newspaper, I may want to know if I can buy one in the kiosk around the corner, and also if I can buy one in the equally nearby bookstore, but I don't need to know both – after achieving one of these goals I will no longer pursue the other. We cannot easily represent such dependencies between the individual pieces of information in the QUD if we only regard the resolution of the entire QUD as the discourse goal, represented as a set of propositions. Accordingly, a QUD-approach is prone to conflate this kind of mention-some context with a *mention-all context*, e.g., where one is compiling an exhaustive list of nearby places that sell newspapers. If, instead, we conceive of QUDs as mere ways of organizing the more elementary goals, i.e., the individual propositions, we are less prone to overlook that these elementary goals can have a life of their own, with interdependencies that cannot be represented at the QUD level.

Third, regarding QUDs as ways of organizing discourse goals, as opposed to treating QUDs themselves as discourse goals, can help decouple the notion of QUD from linguistic notions of question, i.e., one of the characteristics of the predominant approach mentioned above. This is because there is nothing essentially linguistic about organizing our goals in sensible ways: we would organize our goals also when, say, fixing a bike, based in part on something like subject-matter; we would perhaps first pursue all goals related to the chain and gears, then everything related to the position of the cyclist (saddle, handlebars), and so on. Indeed, our assumptions about the organization of discourse goals into QUDs should be, as much as possible, grounded in extralinguistic cognition/behavior, as opposed to, say, a semantics of interrogative sentences.

Summary Whereas the predominant view of QUDs treats them as linguistic questions and regards them as discourse goals in their own right, I have proposed a view of QUDs as mere ways of organizing the more elementary goals, i.e., single propositions that ought to be made common ground. This helps decouple the notion of QUD from the linguistic notion of question, lets us acknowledge that the more elementary discourse goals can have

a life of their own (e.g., dependencies between goals), and invites a more dynamic view of QUDs. I return to the latter in the next section.

5 Alternative QUDs

The view on QUDs described above favors a view of QUDs as being more fluid and dynamic. It is the underlying discourse goals, i.e., the pieces of information worth making common ground, that are relatively stable from one discourse move to the next, while their organization into QUDs can more easily change. Although it is generally acknowledged that QUDs can be strategically decomposed into sub-QUDs in a systematic way (Roberts 2012), I think that this is only one of many permissible QUD-maneuvers, and that the amount of freedom speakers have in changing the QUD tends to be underestimated. I will give three examples of this tendency. Altogether, this section will emphasize that, when theorizing about a given discourse move, we should consider not just the alternative things a speaker might have said given a certain QUD, but also the *alternative QUDs* the speaker might have chosen to address.

Example 1: The Symmetry Problem. It has been argued that, if some proposition is relevant, then so is its negation – closure of relevance under negation. I do not think that all arguments for closure of relevance under negation are equally applicable to natural language, but an argument that I have made for closure of relevance (in a broad sense) under negation (Westera, 2017c) is the following.² If some proposition is relevant, this means establishing it is a conversational goal, and since it is important to keep the discourse focused on those goals which are still achievable, establishing the negation of that proposition will automatically be relevant as well, albeit for discourse-internal reasons. Establishing the negation of a relevant proposition helps to keep the goal set tidy. Besides this reason, there will also be contexts where positive and negative information is genuinely equally relevant, say, if one is compiling an exhaustive list of people that were *and* people that were not at the protest.

Crucially, that relevance in a broad sense is closed under negation for discourse-internal reasons, or that it sometimes is for discourse-external reasons, does not entail that individual QUDs are in such cases closed under negation too. After all, nothing prevents a speaker from dividing the set of all relevant pieces of information, which is arguably closed under negation, into separate QUDs that are not. That is, just as complex QUDs are split up into simpler ones in the discourse strategies of Roberts 2012, a speaker can split a symmetrical set of relevant propositions into a positive and a negative QUD. For instance, even if one cares both about who was at the protest and (therefore, a bit) about who wasn't, one may still decide to split this up into two QUDs paraphrasable as “Who was at the protest?” and “Who wasn't at the protest?” and choose to address only one – or one explicitly and the other implicitly.³

²For instance, Chierchia et al. (2012) cite an argument which assumes that people in conversation can be modeled as agents testing a hypothesis, and a given proposition and its negation change the probability of the hypothesis being true in opposite directions but in equal measures. However, in reality we do not usually care about raw probabilities, but about whether a probability is sufficiently high or low as to warrant a certain action, and this does not exhibit the same symmetry.

³Here I am presupposing that QUDs themselves need not be closed under negation, contrary to approaches that treat QUDs as linguistic questions, and linguistic questions in turn as semantic partitions on the set of worlds (Groenendijk and Stokhof, 1984), a type of structure which in turn entails (something like) closure under negation. But I have already argued against conflating QUDs and linguistic questions, and, moreover, the logico-philosophical arguments given for a partition semantics of interrogatives have recently

This realization is important; for instance, it helps neutralize an influential argument that has been made against pragmatic approaches to exhaustivity implicature. To illustrate, consider the exhaustivity implicature “not four” in example (7n), repeated here:

- (15) Were TWO of your friends at the protest, or THREE? ↔ not four.

If exhaustivity is the exclusion of relevant alternatives, and relevance is closed under negation, then one has to explain why only the positive alternatives end up being excluded, not the negative ones. That is, why does (15) implicate “not four”, not “not *not* four”, i.e., “definitely four”? This question, or rather the presumption that it cannot be answered and hence that pragmatic approaches to exhaustivity are problematic, is known as the Symmetry Problem (Chierchia et al. 2012). Since what matters for exhaustivity is not whatever is broadly relevant but (uncontroversially) only the QUD at hand, a sufficiently dynamic perspective on QUDs unlocks a simple solution: even if the set of broadly relevant propositions is symmetrical, speakers may choose to organize a symmetrical set of relevant propositions into a positive and a negative QUD. Indeed, this maneuver offers an important advantage of brevity and clarity, precisely because it enables exhaustivity implicature: it enables the negative part of the answer to be communicated implicitly (Westera, 2017c).

Example 2: Potentially irrelevant answers. Underestimating the freedom speakers have in choosing their QUD may lead one to unnecessarily give up or relax certain pragmatic constraints. To illustrate, consider the following example, with the intended reading of B’s answer being a mere suggestion, e.g., “maybe this is relevant?”:

- (16) A: Who came to class yesterday?
B: It was raining... [fall-rise intonation]

That is, the intended reading is one where B’s response implies that B is not sure about who came to class, but, since it was raining, considers it probable that not many came. There are at least two possible analyses of potential indirect partial answers such as this.

The first treats speaker B as addressing the QUD that is introduced by A’s interrogative, namely, the question of who came to class. In order to explain why this discourse is coherent, one would need to assume that speaker B’s intent – that it was raining – somehow complies with the maxim of Relation relative to the original QUD about class attendance, i.e., that the Maxim of Relation is permissive in principle of ‘plausible indirect partial answers’ such as B’s response. A maxim of Relation this liberal is not necessarily implausible or counter-intuitive, but allowing such potential non-answers does amount to weakening the maxim of Relation, a core pragmatic constraint, which may in turn weaken the predictions of other accounts relying on it.

The second possible analysis involves a shift in QUD: it seems plausible that speaker B in (16), given their inability to directly address A’s question, can choose to implicitly shift the QUD to something like “Which facts could have some bearing on A’s question?”. Assuming such a QUD shift enables one to maintain a stricter maxim of Relation, one which permits only definite, direct answers to the QUD, because B’s assertion does provide such an answer to the new QUD, even if it falls short relative to the original QUD.

been shown to be formally inconclusive anyway (Ciardelli, 2014).

The two possible analyses just sketched differ in where they put the necessary flexibility: in the relation between the QUD a speaker decides to pursue and the communicative intention by means of which they choose to do so – a relation governed by the maxim of Relation – or in the relation between how one speaker selects and organizes their goals into QUDs and how the next speaker decides to do it. Where to put the pragmatic flexibility to handle potential non-answers is strictly speaking a theory-internal matter, as the auxiliary notions (e.g., meaning, goal, QUD, relevance) do not yield direct empirical predictions, and cannot be assumed to be directly intuitively accessible. Arguing for one resolution of this choice over the other is outside the present scope; what I mean to argue here primarily is that there is such a choice, and that this is easily overlooked if we underestimate the freedom speakers have in choosing their own QUDs.⁴

Nevertheless, for the sake of concreteness, let me try to make a case for the second type of analysis, i.e., one based on a QUD shift. In Westera 2019 I proposed, for independent reasons, that fall-rise intonation, which is a natural option for (16), is a marker of the presence of two QUDs, with some conversational maxim not being complied with in relation to the main QUD (as indicated by the final rise) while a different, focus-congruent QUD is addressed in full compliance with the maxims (as indicated by the pre-final fall). Thus, for (16) the intonation would convey the following:

- (17) B: It was raining... [fall-rise intonation]
- a. Pre-final fall: I have complied with the maxims relative to the focus-congruent QUD of “Which evidence may bear on the main QUD?”.
 - b. Final rise: I have not complied with the maxims relative to the main QUD of “Who was at the protest?”.

The second meaning component of fall-rise intonation, according to this account, fits exactly the type of QUD shift mandated by maintaining a strict maxim of Relation. Again, my point here is not to argue in favor of this particular analysis, but only to illustrate that we should not overlook the possibility of a shift to an alternative QUD.

Example 3: ‘Yes’, ‘no’ and the semantics of interrogatives. Underestimating the fluidity of QUDs can also explain, at least in part, our tendency of drawing conclusions about the semantic contents of interrogatives from what are intuitively their basic responses. Two basic responses to a simple interrogative with final rising intonation are “yes” and “no”:

- (18) Were your friends at the protest?
Yes / No.

Accordingly, common treatments of such interrogatives in the literature would assign to this interrogative, as its semantic content, the set containing the two propositions corresponding to “yes” and “no”, namely, the proposition explicitly mentioned by the interrogative and its negation: that the relevant friends were there, and that they weren’t. But note that “yes” and “no” are natural responses also to a declarative:

- (19) A: Your friends were at the protest.
B: Yes / No.

⁴On a more personal note, in my work I have often relied on a rather strict maxim of Relation, one which permits only direct answers to the QUD. With very few exceptions my reviewers mentioned indirect answers as a counterexample.

And yet, no one (to my awareness) has proposed to put the “no”-proposition inside the meaning of the declarative in the same way. The reason for the latter is that we do not need to: we can explain why “no” is a basic response to a declarative, without hard-wiring this into its semantics, by noting the importance of preventing false information from appearing to enter the common ground. Put differently, speakers can always shift to the QUD “is the asserted information actually false?”, and this explains why they can respond with “no” in (19), which in the given context conveys exactly that the asserted information is actually false, i.e., a direct answer to the new QUD. Similarly, we can explain why “no” is a basic response to an interrogative in terms of the importance of signaling that the conversational goal highlighted by the interrogative is not achievable: a speaker who is unable to affirm any of the propositions in the main QUD is free to shift to a QUD containing their negations. Generalizing: just because a given response to an interrogative is natural (or to a declarative for that matter), it does not mean that the proposition expressed by the response must have been an element of its semantic content or its QUD (this insight is not new of course; e.g., Groenendijk and Stokhof 1984).

The realization that the naturalness of a “no” response to a simple interrogative is easily explained pragmatically, in terms of a shift to a QUD that serves to keep the set of goals tidy, opens a door towards a *singleton* treatment of such interrogatives, i.e., as semantically expressing (a set containing) only the proposition explicitly mentioned, as opposed to the more common ‘doubleton’ treatment involving both that proposition and its negation.

(20) Were your friends at the protest?

Singleton: {your friends were at the protest}

Doubleton: {your friends were at the protest, your friends were not at the protest}

I believe the singleton treatment has certain advantages. For instance, it introduces a tighter parallelism between declaratives and the corresponding interrogatives, which is desirable empirically (e.g., prosody works essentially the same way on both). Moreover, the singleton treatment is easier to reconcile with cases where it is clear that the negated proposition is not relevant to the same extent as the proposition expressed. In fact, proponents of a doubleton treatment of simple interrogatives still acknowledge that the proposition that is explicitly mentioned by the interrogative has a more privileged status; e.g., it would be ‘highlighted’ (Roelofsen and Van Gool, 2010). But the point here is not to argue decisively in favor of a singleton treatment; the point is merely that the fluidity of QUDs means that intuitively ‘basic’ responses do not need to be put into the semantics, making the singleton treatment of simple questions a real possibility. In the remainder of this section I will, however, counter one intuitive argument against a singleton treatment, because it bears directly on the question of how QUDs and interrogatives relate.

Besides the intuitive force of basic responses, what may also be preventing acceptance of the singleton treatment of simple interrogatives is a combination of two ideas. The first idea is that questions would have to be partitions on logical space, or at least sets containing multiple propositions – I will not say much about this, other than that I am skeptical of pre-theoretical intuitions about what questions are and what logical laws they should abide by, and of their usefulness for a theory of language. The second idea is that interrogatives would have to semantically express (say, denote) a question in order to be able to pragmatically *raise* a question. This is not true; by analogy: the main semantic content of your sentence does not need to *be* an assertion in order for it to serve to *make* an assertion; in fact the semantic content often does not even need to be a complete proposition in order for

it to serve to assert one – just expressing something close to it often suffices.⁵ Semantic contents are merely the instruments for achieving various pragmatic effects, and need not be equivalent to those pragmatic effects in order to be suitable instruments. Returning to the examples at hand: even if you assume that singleton sets cannot *be* proper questions, that does not mean they cannot be suitable instruments for *raising* questions. Raising a question is a matter of flagging a QUD and leaving it at least in part unresolved, and this can be done in various ways, for instance by drawing attention to all of its propositions, or by mentioning only one and relying on prosodic focus to indicate the structure of the QUD – and both ways are available for declaratives and interrogatives alike.

Summary. This section illustrated the importance of reasoning about alternative QUDs, i.e., of the freedom speakers have in choosing their QUDs. Conceiving of QUDs as more dynamic and fluid than the underlying discourse goals prevents applying perceived constraints on relevance (such as symmetry) directly to QUDs, lets one maintain a strict maxim of Relation (e.g., in the face of indirect answers), and enables a singleton treatment of yes/no questions.

6 Conclusion

I started by distinguishing two perspectives on focus alternatives, criticizing the conflation of the set of focus alternatives with the meaning of an interrogative. I also discussed two conceptions of the alternatives introduced by disjunction, favoring an explanation in terms of intentional attention-drawing, which predicts that disjunction can (depending on focus) but conjunction cannot serve to introduce alternatives. All of this relied crucially on the notion of QUD, which are predominantly regarded as, essentially, linguistic questions that represent discourse goals. Departing slightly from this predominant perspective, I proposed to regard QUDs as ways of organizing more primitive discourse goals, namely, single propositions, arguing that this perspective has several advantages: it helps decouple the notion of QUD from the linguistic notion of question, lets us acknowledge that the more elementary discourse goals can have a life of their own (e.g., dependencies between goals), and invites a more dynamic view of QUDs. This more dynamic view requires that we reason not just about alternative utterances aimed at a given QUD, but also about alternative QUDs. I illustrated this with the symmetry problem, indirect answers and yes/no questions.

Altogether, I hope that this short chapter encourages us to reflect more deeply on what various notions of alternatives really signify and how they can be assumed to interact, and proceed cautiously when making assumptions about the specific set of alternatives for a given example – what notion of alternatives is being used, and, given how that notion is grounded, are these assumptions really justified?

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⁵A more far-fetched analogy: you don't need to put actual pancakes in your mixing bowl in order to bake one.

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