Focus alternatives in alternative questions[*]

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1 How many alternatives?

Semanticists often make reference to different types of alternatives. Today I focus on three of them:

[1] **q-alternatives**
Answers/resolutions as alternatives in questions (Hamblin, 1973, 1976; Ciardelli, Groenendijk, & Roelofsen, 2013)
[2] **i-alternatives**
Inherent alternatives of disjunction and indefinites (Simons, 2005; Alonso-Ovalle, 2006; Aloni, 2007; Aloni & Ciardelli, 2013; Ciardelli et al., 2013)
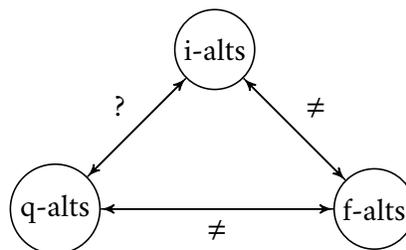[3] **f-alternatives**
Focus alternatives (Rooth, 1992; Büring, 2003; Beck, 2006; Beck & Kim, 2006)

▷ Broad conceptual question: Should or could any of these distinctions be collapsed?

To look into this, I focus on the contrast between alternative questions (AltQs) and (disjunctive) polar questions (PolQs).

- AltQs differ from disjunctive polar questions in terms of focus marking (f-alternatives)
- They also differ in terms of their possible answers (i.e. q-alternatives)
- But they both contain disjunctions (i.e. i-alternatives).

I argue that the PolQ-AltQ contrast in fact shows that we need to keep f-alternatives separate from q-alternatives and i-alternatives.

1.1 Roadmap

§2 introduces the crucial contrast between AltQs and PolQs

§3 discusses the syntactic approach and its limitations.

§4 discusses a Roothian focus approach and its limitations.

§5 then argues for a discourse congruence approach

§6 concludes.

2 The PolQ-AltQ contrast

Disjunctive questions are questions that contain a disjunction phrase, as in (1):

(1)   Did Mary drink mineral water or lemonade?   ✓PolQ, ✓AltQ

Disjunctive questions are ambiguous: the question in (1) can be interpreted as a polar question (PolQ) or as an alternative question (AltQ)—depending on how it is pronounced.

2.1 Prosodic differences

- An AltQ is a question like (2a) below, where two alternatives are mentioned in the question in the form of a disjunction.
- The availability of the AltQ reading depends on intonation: it seems that both disjuncts must be pitch accented in order for it to be present (Bartels, 1999).
- The example in (1b) without pitch accents on each disjunct is interpreted as a polar question (PolQ):

(2)   a.   Did Mary drink MINERAL WATER or LEMONADE?
                        H*/L*   H-   H* L-L%

        b.   Did Mary drink mineral water or lemonade?
                                    H*/L* H-H%

2.2 Interpretational differences

Semantically, (2a) and (2b) differ from in each other in that:

- Acceptable answers to an AltQ are any of the disjuncts.
- Acceptable answers to a PolQ are either "yes" (Mary drank either water or lemonade) or "no" (Mary drank neither).
- AltQs come with an inference that exactly one of the disjuncts is true—they have both an exclusive and exhaustive flavour that is absent in PolQs.

L $\overline{\text{L}}$ L $\overline{\text{L}}$

MW w_1 w_2 MW w_1 w_2

$\overline{\text{MW}}$ w_3 w_4 $\overline{\text{MW}}$ w_3 w_4
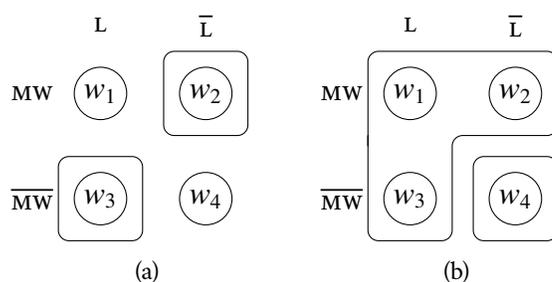
(a)   (b)

Figure 1: Interpretation of an AltQ and disjunctive PolQ respectively

▷ Naive question: how do these prosodic differences give rise to different interpretations?

- AltQs prosodically differ from PolQs in terms of both their boundary tone and the presence of pitch accents on the disjuncts
- I assume that the presence of pitch accents is crucial.

2.3   Different approaches

1 **Syntactic approach: collapsing i-alternatives with q-alternatives**

- Differences in meaning of AltQs and PolQs are derived from differences in underlying syntactic structure.
- Pitch accents are a reflex of deletion: AltQs with a surface subclausal disjunction involve gapping (Farkas & Roelofsen, 2017; Han & Romero, 2004a; Uegaki, 2018).
- Disjunction introduces i-alternatives by default, which express themselves as q-alternatives in AltQs but not in PolQs due to a flattening operator at the clausal level.
- We will see that this approach is problematic for syntactic reasons.

2 **Roothian approach: collapsing i-, f- and q-alternatives**

- Pitch accents indicate focus marking.
- The q-alternatives of an AltQ come from focus marking (Beck & Kim, 2006).
- We will also see that this assumption is problematic if we want to accunt for the effect of f-marking across different question types.

I will therefore instead argue that we need to consider a third approach (cf. Meertens, Eggers, & Romero, 2018):

3 **Discourse congruence approach: focus affects congruence conditions**

- F-alternatives are kept separate from both q-alternatives and i-alternatives.

- Focus marking affects the specific shape of the QUD that the utterance must be congruent to.
- Questions and their answers must be congruent to the same QUD.
- The QUD signalled by a question therefore determines congruence conditions for its answers as well.
- What it means to be a proper answer becomes a more complex notion:

> Answerhood conditions = resolution conditions + congruence conditions

    (3)   **Answerhood conditions.** A proposition P is an answer to a question Q iff
        1. P resolves Q, and
        2. P is congruent with the QUD signalled by Q

- PolQs and AltQs have similar resolution conditions, but have different answerhood conditions.

Below, I first go into the problems associated with the approaches in $\boxed{1}$ and $\boxed{2}$. Then I present a way of working out the proposal in $\boxed{3}$

3   Syntactic approach

I-alternatives of disjunction percolate up and express themselves as q-alternatives at the matrix level in AltQs, but not in PolQs (Roelofsen, 2015; Uegaki, 2018; Han & Romero, 2004b).

> q-alternatives = matrix level i-alternatives

- Disjunction as union, so a full clausal disjunctive phrase will always denote a proposition with multiple alternatives.
- Generalized to higher types:

    (4)   a. $[\![or]\!]_{inq} = \lambda P_\tau \lambda Q_\tau \lambda R_{\tau 1}.P(R) \curlyvee Q(R)$
           b. $[\![or]\!]_{alt} = \lambda P_\tau.\lambda Q_\tau.\{P,Q\}$

- Default flattening at the clausal level by a flattening operator ($\exists$ or !):

    (5)   a. $[\![C^o]\!]_{inq} = \lambda P_T.\neg\neg P$
           b. $[\![C^o]\!]_{alt} = \lambda P_{\langle st \rangle}\lambda w.\exists p \in P : P(w) = 1$

Differences in scope of the disjunction are crucial in distinguishing PolQs from AltQs. AltQs are clausal disjunctions, PolQs may only contain subclausal disjunctions (Roelofsen, 2015).

(6)
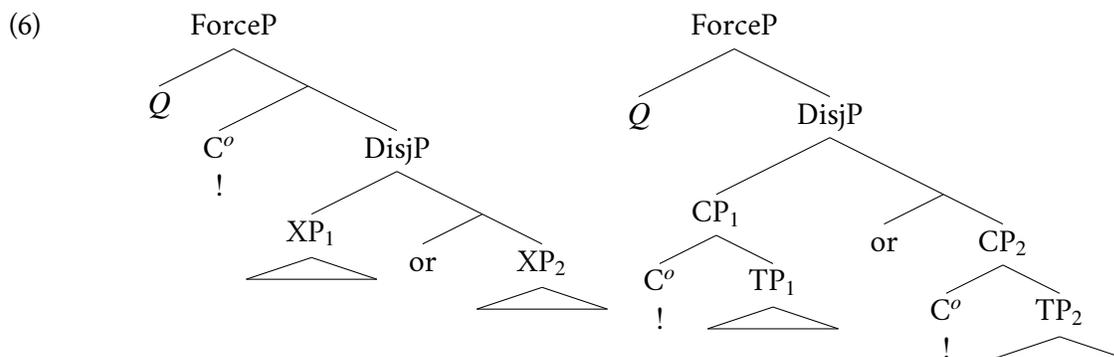
In inquisitive semantics:

(7) a. $PolQ \rightsquigarrow ?!(P \vee Q)$
      b. $AltQ \rightsquigarrow !P \vee !Q$

3.1 Problem # 1: We still need different question operators

- To turn (7a) into a question like in Figure 2(b), we need to assume the following operator:

  (8) $[\![Q_{pol}]\!] = \lambda P_T.?P$

- Q in AltQs instead needs to be vacuous.
- There are several ways to approach this problem: by assuming that PolQs do not involve Q_{pol} either (cf. Biezma & Rawlins, 2015), or by assuming a question operator $\langle ? \rangle$ that is conditional on the inquisitiveness of its prejacent (Roelofsen, 2015)

3.2 Problem #2: Deletion in AltQs is not always as plausible

- The AltQ in (9) would have the underlying structure in (9a):

  (9) Did JOHN or MARY drink coffee?
      a. Q_{alt} [! [Did John ~~drink coffee~~] or ! [(~~did~~) Mary drink coffee]]

- This means that AltQs of this form (i.e. *all* AltQs with non-final disjunctions, like subject disjunctions) would always have to involve backwards gapping.
- But English seems to have a very strict ban on backwards gapping in coordinations (Hankamer, 2018):

  (10) a. *I don't ~~like coffee~~ and/or Bill likes coffee.
        b. *Ann ~~likes~~ coffee and/or Bill likes tea.

3.2.1 Right node raising?

- A possible workaround: Right node raising, i.e. (9) has the following structure:

(11) Q_{alt} [! [Did John ~~drink coffee~~] or ! [(~~did~~ Mary ~~drink coffee~~]]   [drink coffee]

- However, AltQs do not have the typical prosody that RNR constructions usually exhibit (e.g. a pause after each disjunct)
- Moreover, AltQs seem to pattern with constructions for which no RNR parse is available:

(12)   *[John ~~drank coffee~~] or [Mary ~~drank coffee~~]] [drank coffee]

- We know that (9) does not involve RNR as in (12), because just like VPE (as in (13)) RNR parses generally allow for 'sloppy' readings as shown in (14).

(13)   I didn't pass my exam, but I'm sure that Hana will ~~pass her exam~~.

(14)   I didn't ~~pass my exam~~, but Jonathan will ~~pass his exam~~, pass his exam.

(15)   Perhaps I will, or else Hana is definitely going to, pass her exam.

- This is impossible for AltQs like (9): (16a) cannot be interpreted as asking whether Jonathan or Hana passed their respective exams.

(16)   #Will JONATHAN or HANA, pass her *Structures for Semantics* exam?

- The AltQ in (16) instead patterns with declaratives with small disjuncts, which also do not allow for RNR:

(17)   #Jonathan or Hana, will pass her *Structures for Semantics* exam.

- We cannot construct an RNR parse for sentence like (17) which has such small remnants (see e.g. Swingle, 1993), suggesting that such a parse is impossible for (9) too.

3.3   Syntax won't help us

- In short, ellipsis approaches cannot account for the full range of AltQ constructions.
- At least for English, we cannot rely on differences in the underlying syntax of PolQs and AltQs.
- It seems that we instead have to derive these difference directly from their differences in prosody, for instance by relying on the semantics of focus.

4 Focus marking

I therefore assume the crucial difference between a disjunctive PolQ and an AltQ to be as follows:

(18)   a.   Did Mary drink [MINERAL WATER]$_F$ or [LEMONADE]$_F$?   ✓AltQ ✗ PolQ
        b.   Did Mary drink mineral water or lemonade?   ✗ AltQ ✓PolQ

Languages that mark foci in a more overt way show that the PolQ-AltQ contrast is indeed about focus (Kamali & Büring, 2011; Meertens et al., 2018):

- In Turkish, PolQs and AltQs are formed using the question particle *-mI* which attaches to the constituent in focus.

     (19)   a.   Ali iskambil oynadi mi?
                 Ali play   cards   *Q*
                 'Did Ali play cards?'   broad focus PolQ
        b.   [ALI]$_F$ mi iskambil oynadi?
                 Ali   *Q* play   cards
                 Is Ali the one who played cards?   narrow focus PolQ

- AltQs always involve *-mI* inside each disjunct:

     (20)   a.   *Ali iskambil oynadi mi yoksa Beste iskambil oynadi mi
                 Ali played   cards   *Q* (or)   Beste played   cards   *Q*
                 Intended: 'Did Ali play cards or did Beste play cards?'   *broad focus AltQ
        b.   [ALI]$_F$ mi (yoksa) [BESTE]$_F$ mi iskambil oynadi
                 Ali   *Q* (or)   Beste   *Q* played   cards
                 'Is it Ali or Beste who played cards?'   narrow focus AltQ

▷ Next question: how does focus marking in particular affect the interpretation of these questions?

4.1 Roothian approach

A second approach is to derive the interpretational differences between these questions from focus marking alone.

> q-alternatives = matrix level f-alternatives

- Beck and Kim (2006) use a Roothian account of focus to account for the semantics of AltQs.
- Expressions have both an ordinary and a focus semantic value (Rooth, 1992).

- Focus marking triggers the introduction of alternatives in the focus semantic value. For instance:

(21)   a. $[\![\textsc{Ann}_F]\!]^o = a$
       b. $[\![\textsc{Ann}_F]\!]^f = \{x \in D_e \mid human(x)\}$

- In AltQs, the f-alternatives that are introduced in the f-value are pulled into the o-value by the question operator (Beck & Kim, 2006).
- For instance, the f-value and o-value of the disjunction as a whole would have to be:

(22)   Does John like $[_{DisjP}$ $\textsc{Ann}$ or $\textsc{Bill}]$?
       a. $[\![(22)_{DisjP}]\!]^o = |\lambda P.P(a) \vee P(b)|$
       b. $[\![(22)_{DisjP}]\!]^f = \{[\![Ann]\!]^o, [\![Bill]\!]^o\}$

- The alternatives introduced by the disjunction percolate up the tree, and get interpreted by the question operator, which is defined as in (23):

(23) $[\![Q_{B\&K} \, \varphi]\!]^o = [\![\varphi]\!]^f$ Q flips the o- and f-value of its prejacent.

- This is illustrated in (24):

(24)

$$\left\langle \begin{array}{l} \{|L(j)(a)|, |L(j)(b)|\}, \\ |L(j)(a) \vee L(j)(b)| \end{array} \right\rangle$$

C^o
Q Does $\left\langle \begin{array}{l} |L(j)(a) \vee L(j)(b)|, \\ \{|L(j)(a)|, |L(j)(b)|\} \end{array} \right\rangle$

John

like $\left\langle \begin{array}{c} |\lambda P.P(a) \vee P(b)| \\ \{a, b\} \end{array} \right\rangle$

$\textsc{Ann}_F$ or $\textsc{Bill}_F$

Under such this account, disjunction introduces alternatives, but only in its f-value.

4.2   A problem: comparison to PolQs and WhQs

- In PolQs, the presence of a disjunction should not result in the presence of q-alternatives.
- To account for this, we have two options:

   1. **No i-alternatives without focus marking**

- Non-f-marked disjunctions don't introduce alternatives in their f-value:

  (25)   Does John like $[_{DisjP}$ Ann or Bill]?
      a. $[\![(25)_{DisjP}]\!]^o = |\lambda P.P(a) \vee P(b)|$
      b. $[\![(25)_{DisjP}]\!]^f = \{[\![(22)_{DisjP}]\!]^o\}$

- This would allow us to adopt the same question operator as for AltQs, i.e. an operator that pulls the singleton set in the f-value into the o-value.

- An additional question operator would then have to add the complement alternative.

2. I-alternatives are only introduced in the f-value

- The inherent alternatives of a disjunction are only introduced in the f-value, but independently of f-marking:

  (26)   Does John like $[_{DisjP}$ Ann or Bill]?
      a. $[\![(26)_{DisjP}]\!]^o = |\lambda P.P(a) \vee P(b)|$
      b. $[\![(26)_{DisjP}]\!]^f = \{[\![Ann]\!]^o, [\![Bill]\!]^o\}$

- The difference between PolQs and AltQs is that PolQs do not make reference to their f-value, i.e. they do not contain $Q_{B\&K}$.

- Again, PolQs would have to contain a question operator Q_{pol}, but under this approach this operator appears *instead of* $Q_{B\&K}$.

In short, to account for the lack of alternatives in PolQs, we would have to assume that somehow i-alternatives are f-alternatives.

4.3   Why i-alts ≠ f-alts

Under either approach, i-alternatives are only available in the presence of f-marking on each disjunct. This makes several incorrect predictions.

- We predict free choice readings or simplification readings become unavailable without contrastive prosody.
- No relevant difference between the (a) and (b) examples:

  (27)   a.   If Hana or Jonathan came to the party, it would be fun
         b.   If HANA or JONATHAN came to the party, it would be fun

  (28)   a.   You may have cake or ice-cream
         b.   You may have CAKE or ICE-CREAM

4.4   Why q-alts ≠ f-alts

- This approach makes incorrect predictions for PolQs with f-marking outside the of the disjunction:

    (29)   Did JOHN like Ann or Bill?

- If the presence of f-marking is linked to the presence of $Q_{B\&K}$, this question ends up being equivalent to a wh-question, i.e. *Who liked Ann or Bill?*
- The pitch accent on *John* seems to signal something about the overarching structure of the discourse instead.
- This is generally the case, even in simple PolQs:

    (30)   Does JONATHAN like to play foosball?
              L*H   H-H%

- F-alternatives in (30) should not enter the denotation of this question: we would end up with a wh-question meaning.
- Instead, in (30), prominence on *Jonathan* is often referred to as a contrastive topic.
- Intuitively, it signals that there are *parallel questions* that could be asked as well:
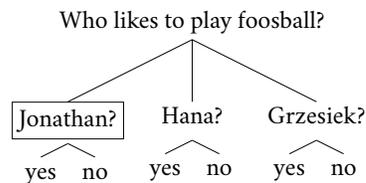
- The same can be said about f-marking in WhQs:

    (31)   Who does JONATHAN like to play foosball with?
                  L*H

- Prosodically however, *Jonathan* is pronounced in a very similar way as the first disjunct of an AltQ:

    (32)   Does JONATHAN like to play foosball, or DEAN?
              L*H   H*L-L%

- If we thus take the idea seriously that f-marking in PolQs and WhQs signals the presence of parallel questions, a uniform account of f-marking would lead us to conclude that f-marking in AltQs has the same effect.

The dilemma

- Relying on differences in the underlying syntax to account for the interpretational differences between PolQs and AltQs won't work.
- We therefore need to make reference to the semantics of focus to account for the interpretation of AltQs: the alternatives in AltQs would have to be introduced via f-marking.
- On the one hand, disjunctive i-alternatives should not be equated to f-alternatives: we need the introduction of i-alternatives even in the absence of f-marking.
- On the other hand, deriving the alternatives of AltQs from f-alts directly would require a crucially different effect of f-marking in non-AltQs: f-alts should never enter into the denotation of PolQs and WhQs.
- Instead, f-marking in PolQs and WhQs signals how these questions are substrategies to resolve a higher level QUD.
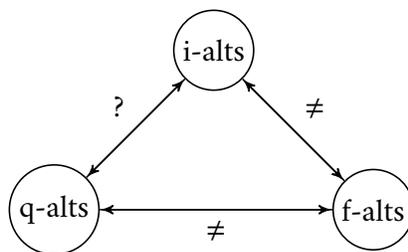
A uniform treatment of the effect of f-marking across different types of questions seems desirable, but such an account crucially cannot equate i-alts to f-alts.

- The goal of the final section is to explore to what extent we can think of the effect of f-marking in AltQs and other questions in a uniform way.
- I will do so by thinking of f-marking in questions as contrastive topic marking.

5   Discourse congruence approach

In this section:

- I will first look into the effect of focus marking in PolQs in more detail.
- I will show how the mechanism that derives the meaning of ct-declaratives can be applied to PolQs and WhQs with f-marking to derive their discourse effects as well.
- I will then extend this to AltQs and show that the same mechanism derives the correct discourse effects of these questions too.

- Finally, I will show that we can derive the correct answerhood conditions for AltQs by imposing congruence conditions between the QUD invoked by a question and its answers.

5.1 Focus and congruence

Focus in (33b) triggers the presence of f-alternatives in the f-value of this expression:

(33) a. A: Who ate the beans?
      b. B: $\textsc{Fred}_F$ did.

(34) $[\![(33b)]\!]^f = \{x \text{ ate the beans} : x \in \textsc{people}\} =$ "Who ate the beans"

The effect of f-marking is that it presupposes that the context contains a salient antecedent which has the form of a question:

- We assume that $\sim$-operator takes wide scope:

    (35) $\sim[\textsc{Fred}_F \text{ did}]$

- This operator is responsible for the presupposition that there is a salient question $Q \subseteq [\![(34b)]\!]^f$. We assume (Rooth, 1992):

    (36) $[\![\sim \varphi]\!]$ presupposes that the context contains a salient question $Q \subseteq [\![\varphi]\!]^f$

In (33) this condition is met because there is indeed such an antecedent, i.e. the preceding question *Who ate the beans*.

5.2 What are contrastive topics?

In declaratives, ct-marking usually occurs together with f-marking:

(37) A: Who ate what?
      B: $\textsc{Fred}_{CT}$ ate the $\textsc{beans}_F$

In Büring (2015), it is argued that this combination of ct- and f-marking informally signals that the discourse has the following structure:
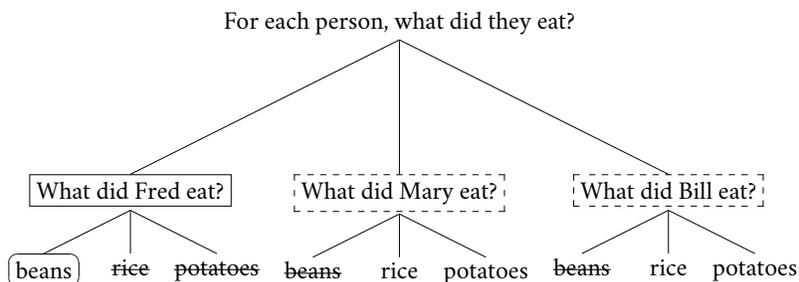
- The question that this statement directly addresses is *What did Fred eat* (as indicated by the square box)
- The answer to this question is *(only) beans* (in box with round corners)
- There is at least one question parallel to the question *What did Fred eat* (dashed squares)
- This question has to be "independent from *What did Fred eat*" meaning that is has an answer that is different than *beans* (strike-through).

In Büring (2015), this is informally captured by the following congruence constraint:

(38) **Contrastive topic congruence:**
An utterance U with CT-marking answers a question within a strategy containing ≥ 2 questions from the set $[\![U]\!]^{ct}$.

- The assumption is that f-values denote sets of propositions, i.e. questions, while ct-values denote sets of questions.
- In (38), $[\![U]\!]^{ct}$ therefore denotes a set of questions.

To derive this effect of ct-marking, I follow Constant (2016) and Wagner (2014) in assuming a more fine-grained focus value in which alternatives can be nested sets.

- Foci trigger alternatives: sets of propositions.
- Contrastive topics trigger a nested focus structure: they generate a set of alternatives which consists of sets of propositions (i.e. questions)
- For simplicity I won't treat ct-values as distinct from f-values: contrastive topics will simply be trigger an f-value which is a set of questions:

(39) **f-value calculation**
  a. Replace f-marked phrases with variables $\rightarrow$ a question
  b. Replace ct-marked phrases with variables $\rightarrow$ a set of questions
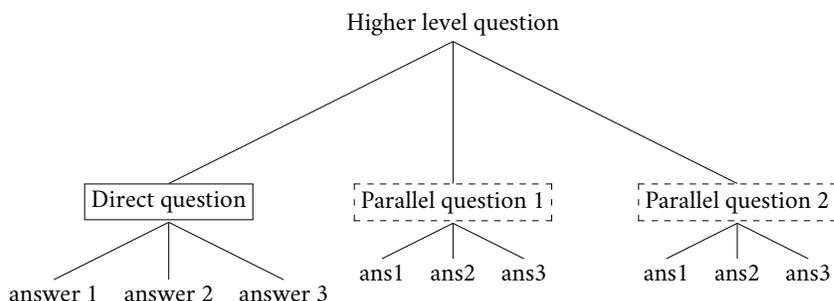
- The alternatives introduced by the f-marking feed into the alternatives triggered by the ct-marking
- For the example in (37) above, ct- and f-marking together will provide the following f-value:

(40) $[\![(37)]\!]^f = \{\{|y\ \text{ate}\ x| \ : \ x \in \text{FOOD}\} \ : \ y \in \text{PEOPLE}\}$

- We can derive this set of questions compositionally assuming a standard semantics for focus augmented with contrastive topic abstraction (Constant, 2014):

(41)

(42) a. $[\![CT\text{-}\lambda_i.\varphi]\!]^o_g = \lambda x.[\![\varphi]\!]^o_{g[i \to x]}$
  b. $[\![CT\text{-}\lambda_i.\varphi]\!]^f_g = \{\lambda x.[\![\varphi]\!]^f_{g[i \to x]}\}$
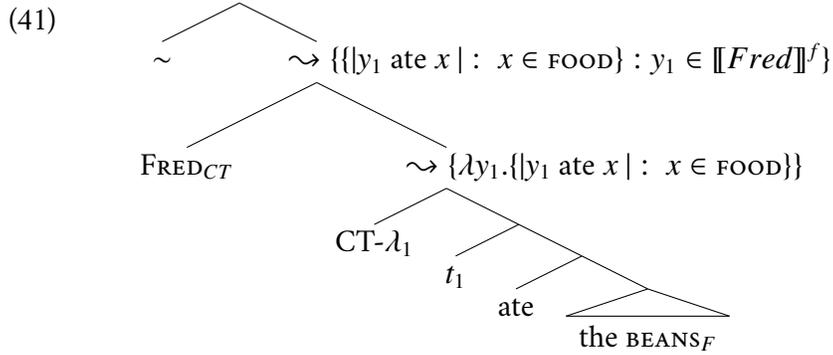
- Instead of presupposing a question, $\sim$ then presupposes a set of parallel questions.
- I will refer to this sorted question antecedent as the QUD as it represents a strategy of answering a question (Büring, 2003).
- We therefore get the following (Meertens et al., 2018):

(43) $[\![\sim \varphi]\!]$ presupposes that the context contains a salient antecedent $QUD \subseteq [\![\varphi]\!]^f$

- To account for focus exhaustivity and "independence" inferences of contrastive topics, I assume that both ct- and f-marking comes with a uniqueness presupposition:

(44) FRED_{CT} ate the BEANS_F

  a. Presupposes: $\exists_1 x.$ Fred ate x
  b. Presupposes: $\exists_1 x.x$ ate beans

5.3 Foci in questions are contrastive topics

I will extend the above to questions, analyzing the prominence on *Fred* in both (45a) and (45b) as a contrastive topic:

(45) a. And what about Fred—what did FRED_{CT} eat?
  b. And what about Fred—did FRED_{CT} eat the beans?

- It signals that there is an alternative to Fred of whom we can ask the same question (Büring, 2015; Constant, 2014).
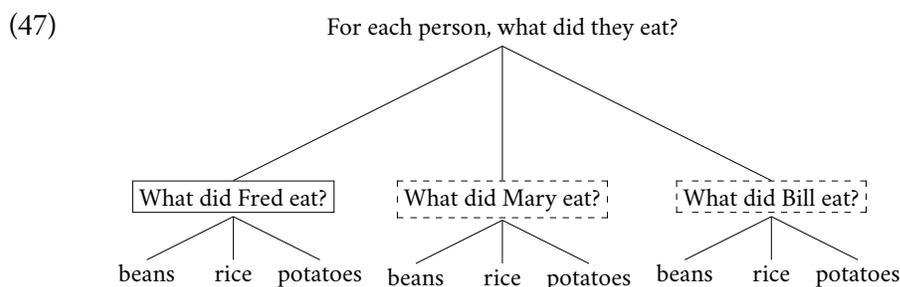
14

- I argue that here too, ct-marking creates a nested set of alternatives, similar to the one for ct-f declaratives.
- It does so by making use of the q-alternatives of the wh-question in (45b) and of the polar question in (45a).

5.3.1 Contrastive topics in WhQs

Because f-alternatives to *beans* are the same as the alternatives introduced by the wh-item *what*, we get the same f-value as for the ct-f example above:

(46) $[\![(45a)]\!]^f = \{\{|y \text{ ate } x| \ : \ x \in \text{FOOD}\} \ : \ y \in \text{PEOPLE}\}$

Schematically this looks like the following d-tree:

(47)

For each person, what did they eat?

What did Fred eat? What did Mary eat? What did Bill eat?

beans rice potatoes   beans rice potatoes   beans rice potatoes

Again, we then interpret $\sim$ taking widest scope:

(48) $\sim$ [What did FRED_{CT} eat$]_{CP}$
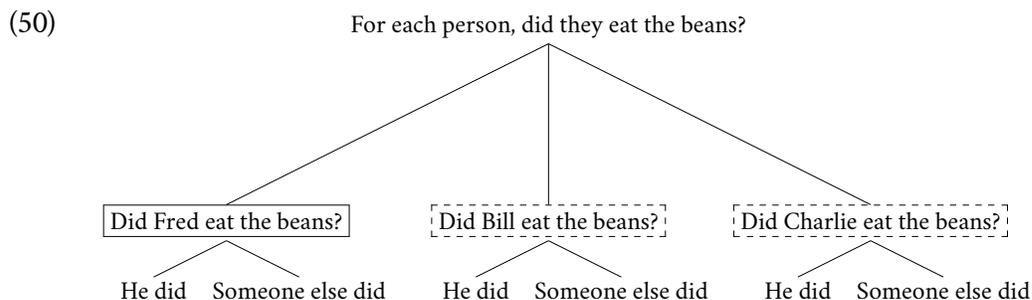Presupposes: $QUD \subseteq [\![CP]\!]^f$,
i.e. $QUD \subseteq \{\{ |x \text{ ate } y| : y \in \text{FOOD}\} \ : \ x \in \text{PEOPLE}\}$

5.3.2 Contrastive topics in PolQs

For the PolQ in (45b) we follow the same recipe, so we get:

(49) $[\![(45b)]\!]^f = \{\{ |x \text{ eat the beans}|, |\neg x \text{ eat the beans}| \} \ : \ x \in \text{PEOPLE}\}$

Due to presuppositions triggered by ct-marking, this ends up looking like the d-tree below:

(50)

For each person, did they eat the beans?

Did Fred eat the beans?   Did Bill eat the beans?   Did Charlie eat the beans?

He did   Someone else did   He did   Someone else did   He did   Someone else did

We then interpret $\sim$ taking widest scope:

(51)   ∼ [Did FRED$_{CT}$ eat the beans]$_{CP}$
        Presupposes: $QUD \subseteq [\![CP]\!]^f$,
                i.e. $QUD \subseteq \{\{ |x \text{ eat the beans}|, |\neg x \text{ eat the beans}| \} : x \in \text{PEOPLE}\}$

5.4   Answer congruence

Answers to (45b) and (45a) respectively could be:

(52)   a.   A: And what about Fred—what did FRED$_{CT}$ eat?
              B: he ate the BEANS$_F$
        b.   A: And what about Fred—did FRED$_{CT}$ eat the beans?
              B: Yes, he did.

- In (52a) and (52b), we see that the o-value of the answer is a member of the o-value of the question.
- Moreover, we also see that the o-value of the answer resolves a member in the f-value of the question:

    (53)   a. $[\![(52a\text{-}A)]\!]^o \in \alpha$ for some $\alpha \in [\![(52a\text{-}B)]\!]^f$,
                  i.e. $|\text{Fred ate the beans}| \in \{|\text{Fred ate} x| : x \in \text{FOOD}\}$
            b. $[\![(52b\text{-}A)]\!]^o \in \alpha$ for some $\alpha \in [\![(52b\text{-}B)]\!]^f$,
                  i.e. $|\text{Fred ate the beans}| \in \{|\text{Fred ate the beans}|, |\neg\text{Fred ate the beans}|\}$

This is perhaps remniscent of Büring's original ct-congruence condition, repeated here in (54) below:

(54)   **Contrastive topic congruence:**
        An utterance U with CT-marking answers a question within a strategy containing ≥ 2 questions from the set $[\![U]\!]^{ct}$.

Perhaps we can therefore make the following generalization:

(55)   a.   **Resolution condition:** an answer φ is a resolution to a question ψ iff $[\![\varphi]\!]^o \subseteq \alpha$ for some $\alpha \in [\![\psi]\!]^o$
        b.   **Congruence condition:** an answer φ is congruent to a question ψ with ct-marking iff φ resolves some $Q \in QUD_\psi$

Here QUD_ψ is that salient discourse antecedent s.t. $QUD_\psi \subseteq [\![\psi]\!]^f$.

Intuitively, this means that an answer to a question with ct-marking has to resolve a substrategy to the overall strategy the question presupposes.

- For AltQs, I will then argue that in order to meet the congruence condition, we need to give an answer that is not a least informative resolution.
- To see how this works, we first need to add one more ingredient.

## 5.5   An additional ingredient: closed contrastive topics

Ct-f sentences can also be given in the form of a list, in which multiple parallel questions are addressed in turn:

(56)   FRED$_{CT}$ ate the BEANS$_F$, MARY$_{CT}$ ate the RICE$_F$...

When the accent on the final CT is falling, the inference that there is a parallel question beyond the ones already mentioned seems to disappear:

(57)   FRED$_{CT}$ ate the BEANS$_F$ and MARY$_{CT}$ ate the RICE$_F$.
        $\rightsquigarrow$ No one else ate anything else

- This statement now addresses two questions directly: *What did Fred eat?* and *What did Mary eat*.
- It does so in answering them with *(only) beans* and *(only) rice* respectively.
- The falling accent on the final CT marks that no one else ate anything: there is no other individual *x* of which we can ask *What did x eat?*
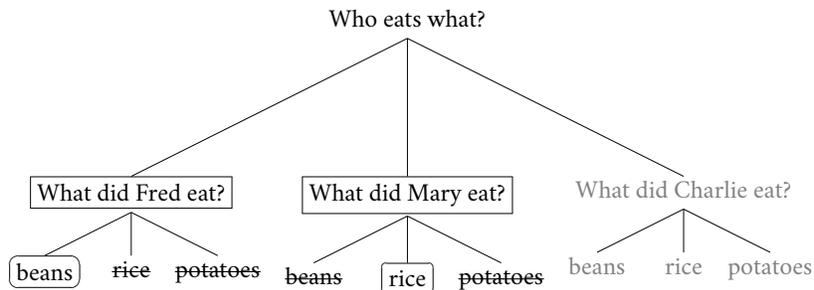
This can be derived by assuming that:

- Closed CT-marking indicates the right edge of a closed list:[1]

    (58)   [FRED]$_{CT}$ ate the BEANS$_F$ and [MARY]$_{CT}$]$_{closed}$ ate the RICE$_F$

- The alternatives introduced by contrastive topic marking are restricted to only those in the list (Meertens et al., 2018):

    (59) $\{\{y \text{ ate } x \mid x \in \text{FOOD}\} \mid y \in \text{PEOPLE}_{f,m}\}$

- both ct- and f-marking is associated with uniqueness presuppositions again:

    (60)   (58) $\rightsquigarrow$ it is Fred who ate only the beans and it is Mary who ate only the rice.
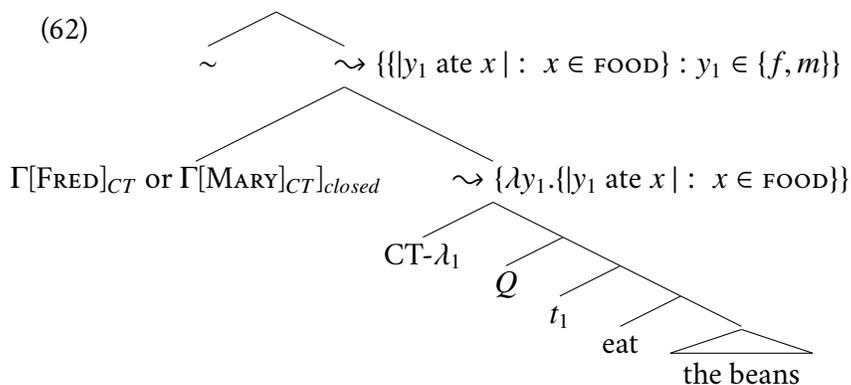
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[1]This means that I assume list closure to be signalled by falling *pitch accents*, not a falling *boundary tone*—contra many proposals in the literature (cf. Biezma, 2009; Zimmermann, 2000 a.o.)

5.6 Back to AltQs

I now assume that AltQs involve closed ct-marking as well:

(61)   Did FRED_{CT} or MARY_{CT} eat the beans?

- Again a nested f-value is built by making use of ct-abstraction.
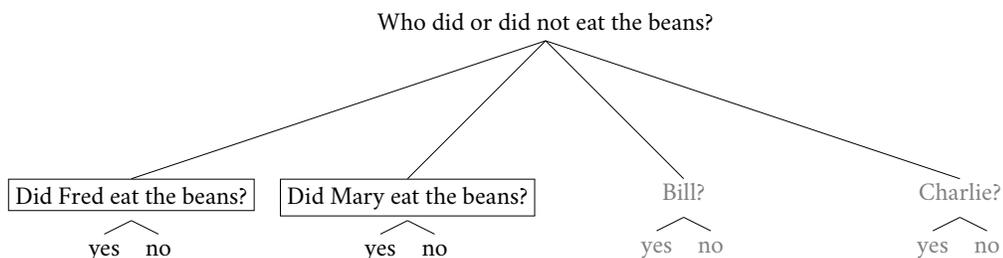- In particular, I assume the following underlying structure for AltQs:

(62)

$\sim$ $\quad$ $\rightsquigarrow \{\{|y_1 \text{ ate } x| :\ x \in \text{FOOD}\} : y_1 \in \{f, m\}\}$

$\Gamma[\text{FRED}]_{CT}$ or $\Gamma[\text{MARY}]_{CT}]_{closed}$ $\quad$ $\rightsquigarrow \{\lambda y_1.\{|y_1 \text{ ate } x| :\ x \in \text{FOOD}\}\}$

CT-λ_1

Q

t_1

eat

the beans

- Perhaps this has the additional advantage that it correctly predicts AltQs are sensitive to island constraints (Han & Romero, 2004b; Larson, 1985):
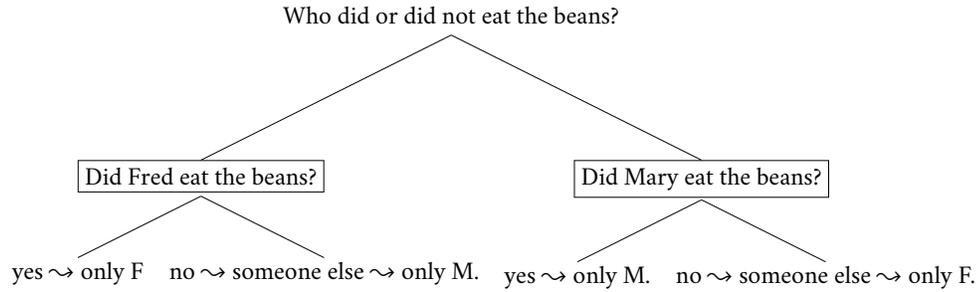
(63)   *Did Bill believe the claim that John RESIGNED or RETIRED?

This means that the discourse structure is signalled to be as follows:

- There are two questions that are being addressed in turn: *Did Fred ate the beans?* and *Did Mary eat the beans?*
- There is no other relevant individual of whom we can ask a parallel question.

Who did or did not eat the beans?

| Did Fred eat the beans? | | Did Mary eat the beans? | | Bill? | | Charlie? |

yes   no   yes   no   yes   no   yes   no

- Because of list closure and the existential presupposition triggered by ct-marking then gives us:

Who did or did not eat the beans?

Did Fred eat the beans?   Did Mary eat the beans?

yes ⤳ only F   no ⤳ someone else ⤳ only M.   yes ⤳ only M.   no ⤳ someone else ⤳ only F.

5.7 Answer congruence for AltQs

- Now we can say that AltQs allow for only two answers because those are the answers that are congruent with the QUD that is signalled by the question itself.
- For instance, we can assume that AltQs have the same basic denotation as disjunctive PolQs: although the answer "Fred or Mary" resolves the question, it will not be congruent with it.

  (64) a. A: Did FRED_{CT} or MARY_{CT} eat the beans?
        b. B: FRED_F did.

- We derive the following f-value for (64a) and (64b):[2]

  (66) a. $[\![(65a)]\!]^f = \{\, \{\, |(only)\ F.\ ate\ the\ beans|,\ |(only)\ M.\ ate\ the\ beans|\,\}\,\}$
        b. $[\![(65b)]\!]^f = \{\, |(only)\ F.\ ate\ the\ beans|,\ |(only)\ M.\ ate\ the\ beans|,\ |(only)\ C.\ ate\ the\ beans|...\,\}$

- Wide-scope $\sim$ then gives us:

  (67) a. $QUD \subseteq [\![(64a)]\!]^f$
        b. $Q \subseteq [\![(64b)]\!]^f$

- Discourse congruence demands that the answer to a question addresses a substrategy to the QUD the question itself presupposes, i.e. it has to resolve some $Q \in QUD$.
- This means that to be congruent with an AltQ, an answer has resolve a member of:

  (68) $\{\, \{|(only)\ Fred\ ate\ the\ beans|,\ |(only)\ Mary\ ate\ the\ beans|\}\, \}$

- This means that the only proper answers to AltQs are *(only) Fred* and *(only) Mary*

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[2]Note that this means that there is a mismatch between the f- and o-value of an AltQs, i.e.: we do not have that:

(65) $[\![AltQ]\!]^o \in [\![AltQ]\!]^f$

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- This is shown in (69a), where solid lines indicate q-alternatives, and dashed lines indicate answers that address the QUD.

- For disjunctive PolQs, I assume broad focus, which does not signal anything in particular about the structure of the QUD: in (69b) resolutions therefore automatically are proper answers
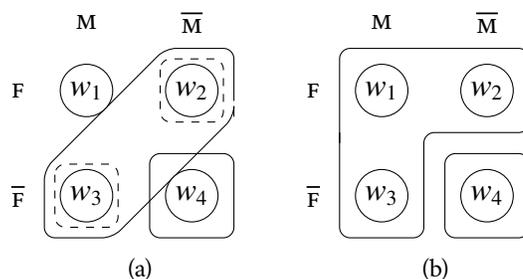

Figure 2: Q-alts and f-alts of an AltQ respectively

- If we assume *-mI* in Turkish signals focus as well, we can capture the Turkish data in the exact same way.

6 Conclusion

In short, I argued that:

- We cannot relying on differences in the underlying syntax to account for the interpretational differences between PolQs and AltQs.

- We need to make reference to the semantics of focus to account for the interpretation of AltQs.

- To derive the q-alts of AltQs from f-marking, we need to explain why f-alts do not turn into q-alts in PolQs and WhQs, however.

- In these questions, f-marking signals how they are substrategies to resolve a higher level QUD.

- Here I showed what it would take to think of f-marking in AltQs in the same way:

  - Ct-marking in questions results in a presupposition that this question is part of a bigger discourse strategy.

  - Answers to such questions need to address at least one substrategy signalled by the question.

- In AltQs, not all resolutions address the QUD signalled by these questions themselves.

- Modeling the effect of f-marking in terms of discourse congruence, allows us to keep f-alternatives sufficiently separate from q- and i-alternatives, but perhaps it commits us to the idea that the resolutions do not have to be congruent to the QUD.

> It seems that we either have to model the effect of f-marking in terms of discourse congruence, or we have to live with the fact that f-marking in AltQs plays a crucially different role than in other types of questions.

References

Aloni, M. (2007). Free choice, modals and imperatives. *Natural Language Semantics, 15*, 65–94.

Aloni, M., & Ciardelli, I. (2013). A logical account of free-choice imperatives. *The dynamic, inquisitive, and visionary life of ϕ, ?ϕ and ◇ϕ: a festschrift for Jeroen Groenendijk, Martin Stokhof, and Frank Veltman*, 1–17.

Alonso-Ovalle, L. (2006). *Disjunction in alternative semantics* (Unpublished doctoral dissertation). University of Massachusetts, Amherst.

Bartels, C. (1999). *The intonation of english statements and questions: A compositional interpretation*. Routledge.

Beck, S. (2006). Intervention effects follow from focus interpretation. *Natural Language Semantics, 14*(1), 1–56.

Beck, S., & Kim, S.-S. (2006). Intervention effects in alternative questions. *The Journal of Comparative Germanic Linguistics, 9*(3), 165–208.

Biezma, M. (2009). Alternative vs polar questions: the cornering effect. In *Semantics and linguistic theory* (Vol. 19, pp. 37–54).

Biezma, M., & Rawlins, K. (2015). Alternative questions. *Language and Linguistics Compass, 9*(11), 450–468.

Büring, D. (2003). On d-trees, beans, and b-accents. *Linguistics and philosophy, 26*(5), 511–545.

Büring, D. (2015). A theory of second occurrence focus. *Language, Cognition and Neuroscience, 30*(1-2), 73–87.

Ciardelli, I., Groenendijk, J., & Roelofsen, F. (2013). Inquisitive semantics: A new notion of meaning. *Language and Linguistics Compass, 7*(9), 459–476.

Constant, N. (2014). Contrastive topic: Meanings and realizations.

Farkas, D. F., & Roelofsen, F. (2017). Division of labor in the interpretation of declaratives and interrogatives. *Journal of Semantics, 34*(2), 237–289.

Hamblin, C. L. (1973). *Questions in montague english, foundations of language 10, 41–53, reprinted in b. partee (ed.), 1976, montague grammar*. Academic Press, NY.

Hamblin, C. L. (1976). Questions in Montague English. In *Montague grammar* (pp. 247–259). Elsevier.

Han, C.-h., & Romero, M. (2004a). Disjunction, focus, and scope. *Linguistic Inquiry, 35*(2), 179–217.

Han, C.-h., & Romero, M. (2004b). The syntax of whether/Q... or questions: Ellipsis combined with movement. *Natural Language & Linguistic Theory*, *22*(3), 527–564.

Kamali, B., & Büring, D. (2011). Topics in questions. In *Workshop on the phonological marking of focus and topic: Glow* (Vol. 34).

Larson, R. K. (1985). On the syntax of disjunction scope. *Natural Language & Linguistic Theory*, *3*(2), 217–264.

Meertens, E., Eggers, S., & Romero, M. (2018). *The role of multiple accent in alternative questions* [Talk at Sinn & Bedeuting].

Roelofsen, F. (2015). *The semantics of declarative and interrogative lists* [Manuscript].

Rooth, M. (1992). A theory of focus interpretation. *Natural language semantics*, *1*(1), 75–116.

Simons, M. (2005). Dividing things up: the semantics of *or* and the modal/*or* interaction. *Natural Language Semantics*, *13*(3), 271–316.

Uegaki, W. (2018). A unified semantics for the japanese q-particle" ka" in indefinites, questions and disjunctions. *Glossa: a journal of general linguistics*, *3*, 45.

Zimmermann, T. E. (2000). Free choice disjunction and epistemic possibility. *Natural language semantics*, *8*(4), 255–290.