

## ***Or not* Alternative Questions, Focus and Discourse Structure**

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**Abstract.** *Or not* alternative questions like *Are you coming or not?* give rise to so-called ‘cornering effects’ (Biezma 2009), consisting of two parts: (i) they cannot appear discourse-initially, and (ii) they do not allow for follow-up questions. Building on recent experimental data (Beltrama, Meertens & Romero 2020), the present paper raises problems for current analyses (Biezma 2009, Biezma & Rawlins 2012, 2018), reframes the second part of cornering as not specific to NAQs but as a general constraint on questions in general, and develops a novel proposal for the first part of cornering. The key ingredients of the new proposal are the intrinsic focus structure of *or not* questions and its effects on discourse trees.

**Keywords.** Alternative question; polar question; cornering; focus; polarity; negation; discourse structure

**1. Introduction.** Consider the polar question (PQ) in (1) and the *or not* alternative question (Negative Alternative Question, NAQ) in (2). The two interrogative forms raise the same issue. In terms of possible answers in the Hamblin-style denotation, they denote the set (3) containing the prejacent proposition and its negation. In terms of Groenendijk & Stokhof’s (1984) pragmatic partitions, they trigger the same partition (4). That is, the two forms are informationally equivalent:

- (1) Are you giving a talk at ELM? **PQ**
- (2) Are you giving a talk at ELM or not? *or-not*-AltQ /Negative AltQ (**NAQ**)
- (3) {  $\lambda w.$  you are giving a talk at ELM in  $w$ ,  $\lambda w.$ ¬(you are giving a talk at ELM in  $w$ ) }
- (4) 

$\lambda w.$ you are giving a talk at ELM in $w$	$\lambda w.$ ¬(you are giving a talk at ELM in $w$ )
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Nevertheless, PQs and NAQs differ in their use-conditions. A well-known difference concerns so-called Cornering Effects, first discussed by Biezma (2009).<sup>1</sup> Intuitively, NAQs convey a sense of insistence, as if the speaker was trying to “corner” the addressee into answering the question. PQs, in contrast, do not engender this effect. More concretely, Biezma (2009) formally characterizes Cornering Effects as two constraints that apply to the discourse distribution of NAQs but not of PQs. The first constraint –Part 1 of Cornering in (5a)– precludes NAQs but not PQs from discourse-initial position, as illustrated in (6). The second constraint –Part 2 of Cornering in (5b)– prohibits follow-up questions to NAQs but not to PQs, as exemplified in (7):

- (5) **Cornering Effects:**
  - i. **Part 1:** PQs can occur discourse initially whereas NAQs cannot: (6)
  - ii. **Part 2:** PQs allow for follow-up questions whereas NAQs do not: (7)

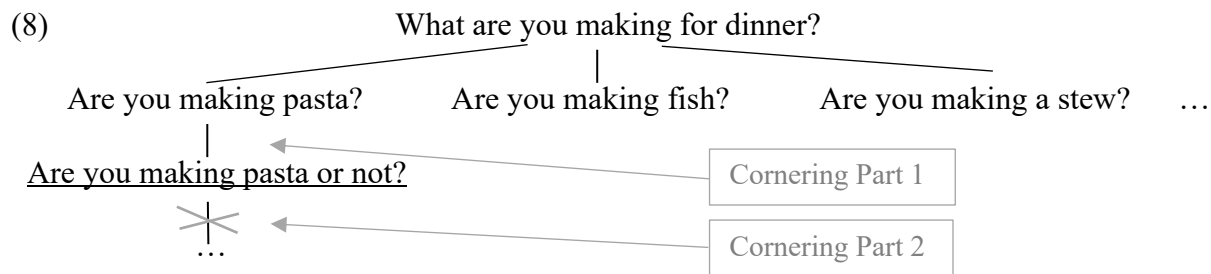
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<sup>1</sup> For differences between PQs and NAQs in terms of illocutionary acts and alike, see Bolinger (1978).

- (6) a. S: Hi dad! I'm hungry. ✓ Are you making pasta?  
 b. S: Hi dad! I'm hungry. # Are you making pasta or not? (# unless the issue was discussed before)
- (7) S: Are you making pasta? (based on Biezma 2009)  
 A: (Silence and dubitative faces)  
 S: Are you making pasta?  
 A: Hmm...  
 S: ✓ Are you making pasta or not?  
 A: (Silence and dubitative faces)  
 S: # Are you making pasta?

Biezma's (2009) intuitive idea is that NAQs are only adequate in a particular position in the discourse tree (D-tree) representing the Question Under Discussion (QUD) structure of discourse (Roberts 1996/2012): NAQs close up an entire line of inquiry or discourse strategy in a D-tree. A sample D-tree is given in (8). Given this mandatory position in the D-tree, NAQs are (i) infelicitous discourse initially (Cornering Part 1), since there is no line of inquiry to close off, and (ii) do not allow for follow-up questions or sub-questions (Cornering Part 2), since by definition they close the strategy they are part of:



The question is, then, why NAQs must mandatorily occupy this position in the D-tree. The literature currently offers two (subsequent) answers to this question. Under approach A (Biezma 2009, Biezma & Rawlins 2012), this position in the D-tree results from the logical exhaustivity of the disjuncts in NAQs. Under approach B (Biezma & Rawlins 2017), it follows from the combination of logical exhaustivity and bundling of alternatives under a negative description.<sup>2</sup>

These two approaches aimed at deriving the contrast in discourse distribution between PQs and NAQs despite their informativity equivalence. Interestingly, besides PQs and NAQs, there is a third question form that gives rise to the very same issue or partition: Complement Alternative Questions (CAQs), in which the main predicate in the second disjunct is a (lexical or phrasal) complement of the predicate in the first disjunct. To see this, consider the triple in (9). The three question forms give rise to same set of possible answers in the Hamblin-style denotation (10) and to the same pragmatic partition (11). Hence, they can be seen as informationally equivalent:

- (9) a. PQ: Is the light on?  
 b. NAQ: Is the light or not?  
 c. CAQ: Is the light on or off?
- (10) {  $\lambda w. \text{the light is on in } w, \lambda w. \neg(\text{the light is on in } w) (= \lambda w. \text{the light is off in } w) \}$

<sup>2</sup> Biezma & Rawlins (2017) are mostly concerned about bundling under *what* in questions like (i). They only tackle NAQs in passing.

(i) Are you cooking pasta or what?

(11)	$\lambda w. \text{the light is on in } w$	$\lambda w. \neg(\text{the light is on in } w)$ (= $\lambda w. \text{the light is off in } w$ )
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As we will discuss, Beltrama, Meertens & Romero (2020) experimentally tested PQs, NAQs and CAQs and found that each question type displays a different pattern in terms of Cornering Effects, raising issues for both existing approaches A and B. In the present paper we take a new approach the two constraints on the distribution of NAQs underlying Cornering. The idea, in a nutshell, is the following. First, we follow Beltrama et al. (2020) in suggesting that Part 2 of Cornering is not an inherent property of NAQs, but rather reflects a broader constraint on discourse moves, from which NAQs can indeed be exempt once the proper discourse conditions are met. Second, we develop a novel account of Part 1 of Cornering which partially retains Biezma’s appealing idea that NAQs but not PQs –and not CAQs either– are limited to a certain position in the discourse tree. We derive this limitation from two ingredients: Polarity Focus and discourse structure.

The paper is structured as follows. Section 2 reviews previous approaches, summarizes the main results from Beltrama et al. (2020) and raises additional challenges for existing approaches. Section 3 presents the key ingredients of the proposal on Part 1 of Cornering. Section 4 applies the proposal to PQs, NAQs and CAQs. Section 5 concludes.

## 2. Comparing PQs, NAQs and CAQs.

2.1. PREVIOUS APPROACHES AND THEIR PREDICTIONS FOR CAQs. Recall Biezma’s (2009) idea: The limited distribution of NAQs –parts 1 and 2 of Cornering in (5)– stems from the fact that, given some property of their form, they must occupy a particular position in the D-tree, as in (8).

According to **approach A** (Biezma 2009, Biezma & Rawlins 2012), the determining property of NAQs is the fact that their disjuncts exhaust together the logical space of possibilities. More specifically, the contrast between PQs and NAQs is derived as follows. PQs asks about one alternative (e.g. *Are you making pasta?*) while leaving other potential implicit alternatives open (e.g., *Are you making fish?*, *Are you making a stew*, etc.), as in the D-tree (8). With this, the speaker is granting the addressee a high degree of freedom in discourse. In contrast, NAQs, by presenting two alternatives that exhaustify the possibility space, force the listener to choose one of them, crucially restricting their room for maneuvering. It is argued that this blatant limitation of the hearer’s maneuvering space is too forceful to begin a strategy, thus prohibiting NAQs in discourse initial position (Cornering **Part 1**); and that this forcefulness signals that the strategy comes to an end, hence disallowing follow-up questions (Cornering **Part 2**).

What predictions does approach A make for CAQs? Like NAQs and unlike PQs, the disjuncts in CAQs exhaust together the logical space of possibilities. Thus, NAQs are predicted to pattern like NAQs and unlike PQs for both parts of Cornering, as noted in (12):

- (12) Predictions for CAQs according to approach A:
- a. # discourse initial (Cornering **Part 1**)
  - b. # follow-up questions (Cornering **Part 2**)

According to **approach B** (Biezma & Rawlins 2017), NAQs occupy that particular position in the D-tree because their disjuncts exhaust together the logical space of possibilities and, crucially, other than the first alternative *p*, all other alternatives *q*, *r*, *s* ... are *bundled* in the second disjunct under a negative description, namely, under the description of not being the first alternative. This

is argued to derive the discourse behavior of PQs and CAQs as follows. On the one hand, PQs involve no exhaustivity of the logical space and no bundling of alternatives  $p, q, r, s$ , etc. Thus, no discourse constraints arise. On the other hand, bundling in general and bundling under negation in particular has several consequences for NAQs. First, NAQs convey a relevance asymmetry due to bundling under negation: the speaker signals that they are merely interested in the content proposition  $p$ , thus eliminating the remaining alternatives  $q, r, s \dots$  from future relevance to the discourse. This imbues CAQs with a peremptory feeling, which is appropriate for ending a strategy (Cornering **Part 2**). Second, NAQs provide no cues as to what alternatives are bundled under negation. But in discourse initial contexts it typically matters what the other alternatives are. This undermines NAQs' felicity in discourse-initial position (**factor (a)** for Cornering **Part 1**). Third and finally, NAQs involve bundling several alternatives together. Bundling has a cost (it is an accommodation move) and thus needs a motivation. No motivation is available in discourse initial contexts, jeopardizing again their felicity in this position (**factor (b)** for Cornering **Part 1**).

What predictions follow from approach B for CAQs? Like PQs and unlike NAQs, CAQs involve no bundling of alternatives. For instance, in example (9c), there are only two states that the light might be in: on and off. This means that the second disjunct *the light is off* is not a cover term bundling together several possible states. Therefore, NAQs are predicted to pattern like PQs and unlike NAQs for both parts of Cornering, as in (13):

- (13) Predictions for CAQs according to approach B:
  - a. ✓ discourse initial (Cornering **Part 1**)
  - b. ✓ follow-up questions (Cornering **Part 2**)

The predictions of the two existing approaches for CAQs are summarized in Table 1.

	Approach A			Approach B		
	PQ	NAQ	CAQ	PQ	NAQ	CAQ
Part 1: Discourse initial	✓	#	#	✓	#	✓
Part 2: With follow-up questions	✓	#	#	✓	#	✓

Table 1: Predictions of existing approaches A and B

2.2. EXPERIMENTAL FINDINGS FROM BELTRAMA ET AL. (2020). In two rating experiments, Beltrama et al. (2020) compare the behavior of PQs, CAQs and NAQs with respect to Part 1 and Part 2 of Cornering respectively.

To test Part 1 of Cornering, they compare the naturalness of these three questioning strategies in discourse initial position, asking participants to provide a judgment on a 7 point scale (1 = completely unnatural; 7 = perfectly natural; see Beltrama et al. 2020, Section 4 for details on the materials, procedure and analysis). Two aspects of their findings are especially relevant to our purposes (see Beltrama et al. 2020: for a more exhaustive discussion). First, NAQs turned out to be significantly less natural than PQs, replicating Biezma's (2009) intuitive contrast between PQs and NAQs discourse-initially (see (6) above). Second, contrary to NAQs, CAQs were as felicitous as PQs discourse-initially, and significantly more felicitous than NAQs. Taken together, these results fail to support the prediction (12a) of approach A with respect to Part 1 of Cornering, while providing support to the prediction (13a) of approach B.

To compare the behavior of NAQs and CAQs with respect to Part 2 of Cornering, and therefore shed light on each of these question's ability to license follow-up moves, they carried out a further rating study, which came in two different versions. In this study, they constructed

dialogues containing a sequence of three questions. The first question was always a PQ; the second question was either a NAQ or a CAQ; and the third question was either a question identical to the opening PQ, or different from it –i.e., a PQ question asked with emphatic tone in one version of the experiment or a Wh-Question in another version of the experiment. A sample item is provided in (14) (see Beltrama et al. 2020, Section 5 for details about materials, procedure and analysis):

- (14) Sophia and Rachel are about to play chess. The following exchange ensues.
- Sophia: Are you playing with black? PQ
  - Rachel: Well, I can't wait to play
  - Sophia: Are you playing with black { or not? / or white? } NAQ/CAQ
  - Rachel: I'm going to crush you!
  - Sophia: Are you playing with black? / ARE YOU PLAYING WITH BLACK?
  - Sophia: Are you playing with black? / What color do you want to play with?

The findings from this study highlight three crucial takeaways. First, contra Biezma’s (2009) original characterization and contra approaches A and B, NAQs do not uniformly disallow follow-up questions. In particular, when the intended follow-up question (3rdQ in the dialog) is identical to the original PQ question (1stQ in the dialog), the ratings are significantly lower than when the intended follow-up question (3rdQ) is different from the original PQ (1stQ) –i.e., it is an emphatic PQ in study 2A or a wh-question in study 2B. Second, CAQs pattern exactly like NAQ when it comes to the ability to license follow-up questions in discourse: similar to what is observed for NAQs, follow-up questions to CAQs are considerably more natural when they have not been used in discourse yet than when they have already been used. Third, no effect of the previous question type was found on the naturalness of follow-up questions: follow-up questions to NAQs and CAQs were equally natural when they had not been deployed in previous discourse yet; and equally degraded when they had been used already. This contradicts the prediction (13b) of approach B, which expects difference tolerance for follow-ups between NAQs –due to bundling– and CAQs –since they involve no bundling.

2.3. EMPIRICAL SUPPORT FOR CORNERING: TAKING STOCK. Table 2 summarizes the results of the experiments and compares them with the predictions made by the two approaches to Cornering.

	Approach A			Approach B			Exp results		
	PQ	NAQ	CAQ	PQ	NAQ	CAQ	PQ	NAQ	CAQ
Part 1: Discourse initial	✓	#	#	✓	#	✓	✓	#	✓
Part 2: With follow-up questions	✓	#	#	✓	#	✓	✓	# / ✓	# / ✓

Table 2: Predictions of existing approaches A and B plus results of Exp1 and Exp1A/B

The findings from these experiments support two important conclusions. First, while the degraded status of NAQs in discourse-initial position confirms that they are indeed subject to Part 1 of Cornering, the same degrading is not observed for CAQs, suggesting that this particular question type is not subject to this part of Cornering. Second, the results from the studies exploring the behavior of PQs, NAQs and CAQs with respect to Part 2 of Cornering show that the key factor determining the un/acceptability of follow-up questions is not the question form itself (2ndQ) preceding the intended follow-up, but rather the relation between the original question (1stQ) and the final follow-up question (3rdQ): using the same form leads to infelicity whereas using a different form leads to felicity. This leads Beltrama et al. (2020) to conclude that Part 2 of Cornering is not a distinctive property of NAQs per se but rather the result of a more general

constraint on discourse. They suggest a constraint along the lines of (15), applicable not just to NAQs but to questions (or strategies) in general:

- (15) \* Repeat: Do not use a question form that has been unsuccessfully used and abandoned in previous discourse.

For the present paper, this means that Cornering Part 2 does not need to be derived from any property arising from the specific form of NAQs, but can instead be captured in terms of broader constraints governing when a discourse move is pragmatically admissible. What remains to be derived, however, is Part 1 of Cornering, which we now turn to discuss.

2.4. AGAINST APPROACH B FOR CORNERING PART 1. Should we maintain approach B to derive the infelicity of NAQs in discourse initial position? We present two arguments against this move, one for each of the factors (a) and (b) impacting discourse initiality according to approach B.

We start with **factor (a)**, bundling under a negative description. This factor has been argued to lead to Part 1 of Cornering in that it obscures what the bundled alternatives  $q, r, s \dots$  are and such alternatives typically matter in discourse initial contexts. We note, though, that there exist discourse initial contexts which *do* allow for question forms that deliberately signal that the only relevant live possibility is the content proposition  $p$  and that no other alternative  $q, r, s \dots$  matters. This is the case e.g. of PQs with a falling final contour like (16) (H\*L-L% in ToBI notation) (Bartels 1999, Westera 2017; see also Roelofsen & van Gool 2010, Biezma & Rawlins 2012). In such permissive discourse initial contexts, the effects of bundling under negation should bring no infelicity. However, NAQs are still infelicitous in such contexts, witness (17):

- (16) U.S. immigration officer to the next traveler in line:  
Are you a U.S. citizen<sub>H\*L-L%</sub>?

- (17) U.S. immigration officer to the next traveler in line:  
# Are you a U.S. citizen or not?

We turn to **factor (b)**, the cost of bundling alternatives. Bundling is a costly move, which means that a motivation is required to use a bundled question strategy like (19) instead of its unbundled counterpart (18). It is argued that, since discourse initial contexts do not (typically?) provide such motivation, question forms that involve bundling are infelicitous in that position.

- (18)
- |                           |                          |                            |
|---------------------------|--------------------------|----------------------------|
| ...                       |                          | ...                        |
| Are you making pasta?     | Are you making fish?     | Are you making broccoli?   |
| {λw. you make pasta in w} | {λw. you make fish in w} | {λw. you make brocc. in w} |

- (19)
- |  |
|--|
| ...  |
|  |
| Are you making pasta or not?   |
| {λw. you make pasta in w, λw. you make fish in w ∨ you make broccoli in w} |

But consider a minimal pair of a CAQ and the corresponding NAQ, e.g. (9c) and (9b). In order to (correctly) predict that CAQs are felicitous discourse initially, approach B would need to assume that using the CAQ strategy (21) instead of the PQ strategy (20) requires no motivation. But, then, NAQs with only one alternative other than  $p$  are predicted to behave exactly like their CAQ counterparts in requiring no motivation, since the CAQ-version and the NAQ-version denote the



- (25) Q: What did James do with his parents last Christmas?  
 A: He VISITED them.  
 LF of (25A): [He Pol<sup>+</sup> visit<sub>F</sub> them]
- (26) KATE<sub>CT</sub> LOVES Monty Python sketches and PAUL<sub>CT</sub> DESPISES them.  
 LF: [Kate<sub>CT</sub> Pol<sup>+</sup> loves<sub>F</sub> MP sketches and Paul<sub>CT</sub> Pol<sup>+</sup> despises<sub>F</sub> them]
- (27) Q: Did James visit his parents last Christmas?  
 A: (Yes,) he VISITED them.  
 LF of (27A): [He Pol<sup>+</sup><sub>F</sub> visit them]
- (28) KATE<sub>CT</sub> LOVES Monty Python sketches and PAUL<sub>CT</sub> DOESN'T.  
 LF: [Kate<sub>CT</sub> Pol<sup>+</sup><sub>F</sub> loves MP sketches and Paul<sub>CT</sub> Pol<sup>-</sup><sub>F</sub> love them]

When it comes to AltQs in general, it has been noted that the two disjuncts must bear focus stress on parallel constituents (Bartels 1999, Han & Romero 2004, Truckenbrodt 2013), as in (29):

- (29) a. Did you see ALI<sub>F</sub> yesterday or RASHMI<sub>F</sub>?  
 b. # Did you see Ali YESTERDAY<sub>F</sub> or RASHMI<sub>F</sub>?

Just like in the cases above, focal stress of the lexical verb –or main predicate– in AltQs is ambiguous between F-marking on the stem or on the polarity. This ambiguity is resolved in AltQs via the second disjunct, yielding F-marking on the stem in (30) and on the polarity in (31):

- (30) Does Kate LOVE Monty Python sketches or does she DESPISE them?  
 LF: [ Q [ [ Kate Pol<sup>+</sup> love<sub>F</sub> MT sketches] or [she Pol<sup>+</sup> despises<sub>F</sub> them] ] ]
- (31) Does Kate LOVE Monty Python sketches or NOT?  
 LF: [ Q [ [ Kate Pol<sup>+</sup><sub>F</sub> love MT sketches] or [~~she Pol<sup>-</sup><sub>F</sub> love them~~] ] ]

Using, thus, the second disjunct as diagnostic of the underlying location of F-marking, we arrive at the following conclusion. While the sentences in (32) all raise the same issue, they differ in F-marking possibilities: the PQ (32a) is ambiguous between F-marking on the verbal stem or on the polarity; the NAQ (32b) unambiguously involves F-marking on the polarity; and the CAQ (32c) unambiguously features F-marking on the predicate's stem. We argue that it is this difference in F-marking that determines their felicity in discourse initial position.

- (32) a. PQ: Is the light ON? [Q Pol<sup>+</sup> [the light be-on<sub>F</sub>]] OR  
 [Q Pol<sup>+</sup><sub>F</sub> [the light be-on]]  
 b. NAQ: Is the light ON or NOT? [Q Pol<sup>+</sup><sub>F</sub> [the light be-on]]  
 c. CAQ: Is the light ON or OFF? [Q Pol<sup>+</sup> [the light be-on<sub>F</sub>]]

3.2. ROBERTS (1996/2012) AND BÜRING (2003) DISCOURSE STRUCTURE FRAMEWORK. Following Roberts (1996/2012), the structure *InfoStr<sub>D</sub>* of a discourse *D* includes a hierarchically ordered set of implicit or explicit moves (questions and answers, viewed as semantic objects), as in (33):

- (33) 1. 'Who<sub>{john,paul}</sub> call whom<sub>{amy,betty}</sub>?'  
 a. 'Who called Amy?'  
     i. 'Did John call Amy?'  
     ii. 'Did Paul call Amy?'  
 b. 'Who called Betty?'  
     i. 'Did John call Betty?'

ii. 'Did Paul call Betty?'

Building on Roberts (1996/2012) and Schwarzschild (1999), Büring (2003) proposes that an utterance  $U$  can serve as the realization of a given move  $m$  in a D-tree  $D$  if and only if  $U$  is congruent with the D-tree hosting  $m$  in the way described by the conditions (34)-(36):

- (34) Givenness Condition: [slightly simplified here]  
 An utterance  $[_{CP} C^0 [_{IP} \beta]]$  can realize a move  $m$  within a d-tree  $D$  only if, for every constituent  $C$  in  $\beta$ , there is a salient antecedent  $A$  in the explicit realization of a move  $\alpha$  preceding  $m$  in  $D$  such that:  
 a. if  $C$  is of type  $e$ , then  $C$  and  $A$  corefer;  
 b. otherwise, modulo  $\exists$ -type shifting,  $A$  entails the existential F-Closure of  $C$ .
- (35) Existential F-Closure of a constituent  $C =_{df}$   
 the result of replacing F-marked phrases in  $C$  with variables and  $\exists$ -binding them.
- (36)  $\exists$ -type shifting of a constituent  $C =_{df}$   
 the result of existentially binding unfilled arguments of  $C$ .

Within this framework, one can account not just for Q/A pairs, but also for  $Q...Q$  sequences like (37), as follows. We start with the explicitly realized preceding move –the question *Who called Amy?* in (37)– and its  $\exists$ -type shifting (38). Now we want to realize the question move ‘Did John call Amy?’. If we realize this move using the corresponding interrogative with F-marking on *John*, each constituent  $C$  in this interrogative will be entailed (modulo  $\exists$ -type shifting and existential F-Closure) by the  $\exists$ -type shifting in (38), as sketched in (39). In contrast, if we realize this move using F-marking on *Amy*, the constituent(s) (40c,d) in this interrogative will fail to be entailed (modulo  $\exists$ -type shifting and existential F-Closure) by (38):<sup>4</sup>

- (37) a. Who called Amy? Did JOHN<sub>F</sub> call Amy? / Did JOHN<sub>F</sub> or PAUL<sub>F</sub> call Amy?  
 b. #Who called Amy? Did John call AMY<sub>F</sub>? / Did John call AMY<sub>F</sub> or SUE<sub>F</sub>?
- (38)  $\exists$ -type shifting of *Who called Amy?*:  
 $\lambda w. \exists x[\text{call}_w(x,amy)]$
- (39)  $[_{IP} [_{JOHN}_F \text{ call Amy}]]$  (40)  $[_{IP} [_{John} \text{ call AMY}_F]]$   
 a.  $[_{NP} Amy]$ : coreferential a.  $[_{NP} AMY_F]$ :  $\lambda w. \exists P \exists y [P(y)(w)]$   
 b.  $[_{VP} \text{ call Amy}]$ :  $\lambda w. \exists x [\text{call}_w(x,amy)]$  b.  $[_{VP} \text{ call AMY}_F]$ :  $\lambda w. \exists x \exists y [\text{call}_w(x,y)]$   
 c.  $[_{NP} JOHN_F]$ :  $\lambda w. \exists P \exists x [P(x)(w)]$  × c.  $[_{NP} John]$ : not coreferential  
 d.  $[_{IP} JOHN_F \text{ call Amy}]$ :  $\lambda w. \exists x [\text{call}_w(x,amy)]$  × d.  $[_{IP} John \text{ call AMY}_F]$ :  
 $\lambda w. \exists y [\text{call}_w(john,y)]$

In the following section, we combine the two ingredients introduced in this section and apply them to PQs, CAQs and NAQs to derive their behavior with respect to Cornering Part 1.

<sup>4</sup> One could in principle think that the foci in the disjuncts of *Did JOHN or PAUL call Amy?* in (37a) and of *Did John call AMY or SUE?* in (37b) can license each other, having the elliptical structures in (i) and using Rooth (1992) without appeal to QUD structure (as in e.g. Han & Romero 2004). This, however, would not derive the contrast between the felicitous  $Q...Q$  sequence (37a) and the infelicitous (37b).

(i) a. Did  $[_{JOHN} \text{ call Amy}]$  or  $[_{PAUL} \text{ call Amy}]$ ?  
 b. Did  $[_{John} \text{ call AMY}]$  or  $[_{John} \text{ call SUE}]$ ?

**4. Applying the proposal to PQs, NAQs and CAQs discourse initially.** Recall the crucial empirical result in Table 2: In discourse initial contexts, PQs and CAQs are felicitous while NAQs are not. A sample triple is given in (41) below, where focal stress is now explicitly marked:

- (41) T(ess): (Guess what!) Jane got a new car!  
 B(ob): a. ✓ Is it autoMATIC? PQ  
 b. # Is it autoMATIC or NOT? NAQ  
 c. ✓ Is it autoMATIC or a STICK shift? CAQ

A partial discourse structure for (41) is given in (42). The utterance (41T) has realized move (1.1.a), underlined in the D-tree (42), and has provided the proposition (43), against which the entailment patterns of the upcoming move will be checked. Now speaker B wants to realize move (1.2.a.i), boldfaced in the D-tree (42). The options for the overt realization of this move are the interrogative forms in (41a,b,c). We will see each in turn.

- (42) 1. 'What is new with Jane?'  
 1.1. 'Did Jane get a new car?'  
 a. 'Jane got a new car.'  
 b. 'Jane did not get a new car.'  
 1.2. 'What properties does Jane's new car have?'  
 a. 'What transmission system does Jane's new car have?'  
 i. '**Is Jane's new car automatic?**'  
 ii. 'Is Jane's new car a stick shift?'  
 b. 'What color is Jane's new car?'  
 ...

- (43) Propositional content of A's utterance *Jane got a new car!*  
 $\lambda w. \exists x [\text{new-car}_w(x) \wedge \text{have}_w(\text{jane}, x)]$

We start with NAQs. To the infelicitous (44B) corresponds an LF with F-marking on the polarity heads  $\text{Pol}^+$  and  $\text{Pol}^-$ . We see that constituent (45a) is coreferential with a previously realized NP and that the (tautological)  $\exists$ -type shifted existential F-Closure of constituent (45d) is (trivially) entailed by the previous proposition (43). Hence, these two constituents satisfy the Givenness Condition (34). But now consider constituent (45b). Its  $\exists$ -type shifted existential F-Closure  $\lambda w. \exists y [\text{automatic}_w(y)]$  is not entailed by the only previously available proposition (43). The same fate awaits constituent (45c), whose  $\exists$ -type shifted F-Closure  $\lambda w. \text{automatic}(g(1))(w)$  is not entailed by the previous discourse. Hence, these two constituents violate the Givenness Condition (34) and, as a result, the NAQ realization of move (1.2.a.i) in this D-tree is infelicitous:

- (44) T: Jane got a new car!  
 B: # Is it autoMATIC or NOT?  
 LF of (44B):  $[Q [ [\text{Pol}^+_F \text{ it be-automatic} ] \text{ or } [ \text{Pol}^-_F \text{ it be automatic} ] ] ]$
- (45)  $[\text{Pol}^+_F \text{ it be-automatic} ] / [ \text{Pol}^-_F \text{ it be-automatic} ]$   
 a.  $[\text{NP it}_1]$ : coreferential  
 × b.  $[\text{VP be-automatic}]$ :  $\lambda w. \exists y [\text{automatic}_w(y)]$   
 × c.  $[\text{IP it}_1 \text{ be automatic}]$ :  $\lambda w. \text{automatic}(g(1))(w)$   
 d.  $[\text{IP Pol}^+_F [\text{it}_1 \text{ be automatic}]] / [\text{IP Pol}^-_F [\text{it}_1 \text{ be automatic}]]$ :  
 $\lambda w. \exists Z_{\langle \text{st}, \text{st} \rangle} [Z(\lambda w'. [\text{automatic}_w(g(1))])]$

Next, we tackle CAQs. They give rise to the felicitous (46B), whose LF has F-marking on the main predicate. The  $\exists$ -type shifted existential F-Closure of each constituent is provided in (47). Crucially, each of these constituents is either coreferential with a previous NP or entailed by the previous proposition (43). This renders the CAQ realization of move (1.2.a.i) in the D-tree felicitous:

- (46) T: Jane got a new car!  
 B: Is it autoMATIC or a STICK shift?  
 LF of (46B): [Q [ [Pol<sup>+</sup> it be-automatic<sub>F</sub>] or [Pol<sup>+</sup> it be-a-stick-shift<sub>F</sub>] ] ]
- (47) [Pol<sup>+</sup> it be-automatic<sub>F</sub>] / [Pol<sup>+</sup> it be-a-stick-shift<sub>F</sub>]  
 a. [<sub>NP</sub> it<sub>1</sub>]: coreferential  
 b. [<sub>VP</sub> be-automatic<sub>F</sub>] / [<sub>VP</sub> be-a-stick-shift<sub>F</sub>]:  $\lambda w. \exists P \exists y [P(y)(w)]$   
 c. [<sub>IP</sub> it<sub>1</sub> be-automatic<sub>F</sub>] / [<sub>IP</sub> it<sub>1</sub> be-a-st-shift<sub>F</sub>]:  $\lambda w. \exists P [P(g(1))(w)]$   
 d. [<sub>IP</sub> Pol<sup>+</sup> [it<sub>1</sub> be-automatic<sub>F</sub>]] / [<sub>IP</sub> Pol<sup>+</sup> [it<sub>1</sub> be-a-st-shift<sub>F</sub>]]:  $\lambda w. \exists P [P(g(1))(w)]$

Finally, we come to the PQ realization in (48B), where the prosodic stress naturally falls on *autoMATIC*. Recall from section 3.1 that, when the stress falls on the main predicate, the sentence is ambiguous between F-marking on the polarity head, as in the LF1 below, and F-marking on the predicate stem, as in the LF2. The former structure contains the same problematic constituents (45b,c) that we saw in NAQs and, thus, will be ruled out in this discourse initial context. But the parse (48d) gives us the same underlying structure as the first disjunct of the CAQ version, which we saw in (47) satisfies the Givenness Condition for all its constituents. The availability of this second parse makes PQs well-suited for discourse initial uses.

- (48) T: Jane got a new car!  
 B: Is it autoMATIC?  
 LF1 of (48B): [Q [Pol<sup>+</sup><sub>F</sub> it be-automatic] ]  
 LF2 of (48B): [Q [Pol<sup>+</sup> it be-automatic<sub>F</sub>] ]

In sum, the structure with F-marking on the main predicate underlying CAQs and (a parse of) PQs satisfies Givenness in discourse initial contexts like (44), while F-marking on the polarity in NAQs does not. This derives the contrast among the different interrogative forms for Part 1 of Cornering: PQs and CAQs are exempt from Cornering Part 1, while CAQs are subject to it.

**5. Conclusions.** The experimental results in Beltrama, Meertens & Romero (2020) led to the following empirical conclusions. First, the inability to appear discourse initially –Cornering Part 1– characterizes NAQs and not PQs and CAQs. Second, the ban on follow-up questions – Cornering Part 2– is not an inherent characteristic of NAQs; rather, NAQs (and CAQs) disallow already used interrogative forms as follow-ups but allow novel interrogatives as follow-ups.

This posits problems for previous accounts. On the one hand, approach A on exhaustive disjuncts is problematic in view of the experimental results on Cornering Part 1 and Part 2. On the other, approach B on bundling is problematic in view of the experimental results on Cornering Part 2. Additionally, approach B faces conceptual challenges with respect to Cornering Part 1.

Following Beltrama et al. (2020), we have reframed Cornering Part 2 as non intrinsic to NAQs *per se*, but as a general constraint on question strategies in general.

To capture Cornering Part 1, we have developed a proposal that maintains Biezma’s (2009) intuitive D-tree idea but derives it in a different way. It features two main ingredients: (i) NAQs mandatorily carry F(ocus)-marking on the polarity heads of the two disjuncts whereas CAQs and

(a parse of) PQs do not; and (ii) F-marking must be suitably licensed by the previous discourse, e.g. as in Roberts (1996/2012) and Buring (2003) Discourse Structure framework. This derives the empirical pattern attested in our experimental results: PQs and CAQs can be used in discourse initial contexts while NAQs cannot.

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