

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

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[Based on joint work with Andrea Beltrama and Erlinde Meertens]

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## **1. INTRODUCTION**

### ■ Three main question types:

- (1) Wh-question:  
Where are you giving a talk?
- (2) Polar question (PQ):  
Are you giving a talk at ELM? PQ
- (3) Alternative question (AltQ):  
a. Are you giving a talk at SALT or at ELM? run-of-the-mill AltQ  
b. Are you giving a talk at ELM or not? *or-not*-AltQ / NAQ

### ■ PQs like (2)/(4a) and NAQs like (3b)/(4b) give rise to the same issue or partition:

- (4) a. PQ: Are you giving a talk at ELM?  
b. NAQ: Are you giving a talk at ELM or not?
- (5) Hamblin-style denotation for both (Hamblin 1973):  
{  $\lambda w. \text{you are giving a talk at ELM in } w, \lambda w. \neg(\text{you are giving a talk at ELM in } w)$  }
- (6) Groenendijk & Stokhof's (1984) pragmatic partition for both:

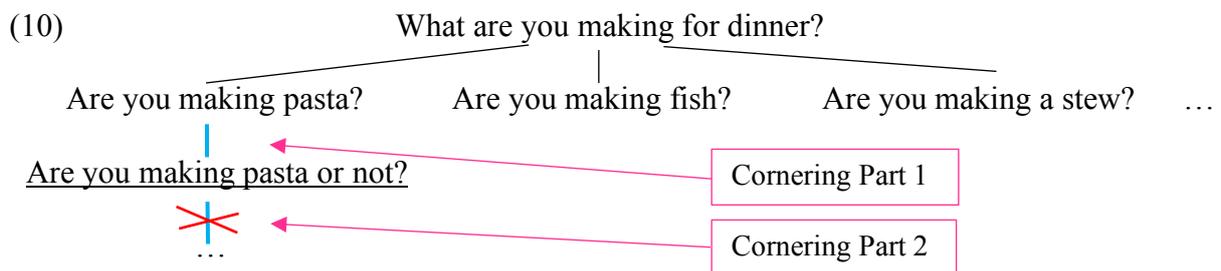
$\lambda w. \text{you are giving a talk at ELM in } w$	$\lambda w. \neg(\text{you are giving a talk at ELM in } w)$
--	--

### ■ Nevertheless, PQs and NAQs differ in their use-conditions: Cornering effects (Biezma 2009)

- Intuitively, NAQs are characterized by a sense of insistence, as if the speaker is trying to “corner” the addressee into answering the question. PQs are not so characterized.
- Two parts of cornering effects in terms of discourse distribution:

- (7) **Cornering effects:**
- i. **Part 1:** PQs can occur discourse initially whereas NAQs cannot: (8)
  - ii. **Part 2:** PQs allow for follow-up questions whereas NAQs do not: (9)
- (8) 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 you discussed the issue before)
- (9) S: Are you making pasta?  
 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  
 NAQs are only adequate in a particular position in the discourse tree (D-tree), namely, as closing up an entire line of inquiry or discourse strategy in the D-tree. Given this mandatory position in the discourse tree, NAQs are...
  - infelicitous discourse initially, and
  - do not allow for follow-up questions / sub-questions, since they close the strategy.



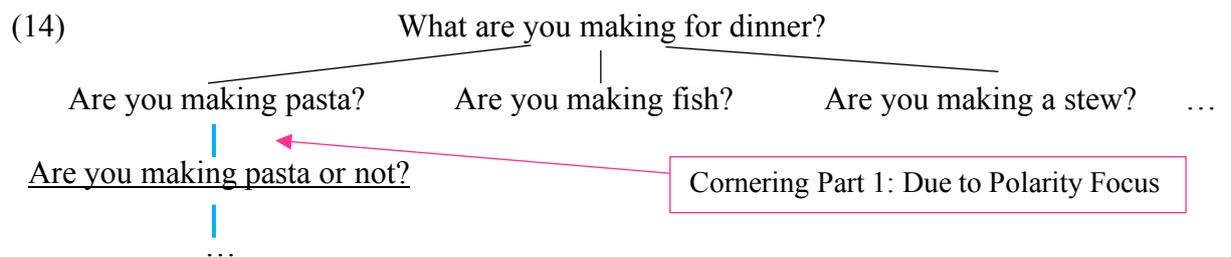
- But... why do NAQs mandatorily occupy that position in the D-tree???
  - Approach **A** (Biezma 2009, Biezma & Rawlins 2012)  
 Because their disjuncts exhaust together the logical space of possibilities.
  - Approach **B** (Biezma & Rawlins 2017)  
 Because (a) their disjuncts exhaust together the logical space of possibilities and  
 (b) other than the first alternative *p*, all remaining alternatives *q, r, s ...* are bundled in the second disjunct under a negative description.
  - A third question form: Complement Alternative Questions (CAQs):
- (11) a. PQ: Is the light on?  
 b. NAQ: Is the light or not?  
 c. CAQ: Is the light on or off?

- The PQ, NAQ and CAQ in (11) give rise to the same issue or partition:
- (12) Hamblin-style denotation for the three question forms (Hamblin 1973):  
 $\{ \lambda w. \text{the light is on in } w, \lambda w. \neg(\text{the light is on in } w) \}$   
 $(= \lambda w. \text{the light is off in } w)$
- (13) Groenendijk & Stokhof's (1984) pragmatic partition for the three question forms:

$\lambda w. \text{the light is on in } w$	$\lambda w. \neg(\text{the light is on in } w)$ $(= \lambda w. \text{the light is off in } w)$
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- How do CAQs compare to PQs and NAQs in Cornering Effects? As we will see, PQs, NAQs and CAQs each display a different pattern (Beltrama, Meertens & Romero 2020), challenging previous accounts.
- Goal of this talk:  
 Taking as point of departure the experimental results and discussion in Beltrama et al. (2020), the goal is to develop a novel account of **Cornering Part 1** for NAQs and the lack thereof for PQs and CAQs.

- Idea in a nutshell:
  - We (partly) keep Biezma's idea that NAQs –but not PQs (and CAQs)– are limited to a certain position in the discourse tree: they function a continuation move within a strategy or line of inquiry (albeit they do not need to close that line of inquiry).
  - We derive NAQs' limitation to that position in the tree from Polarity Focus.

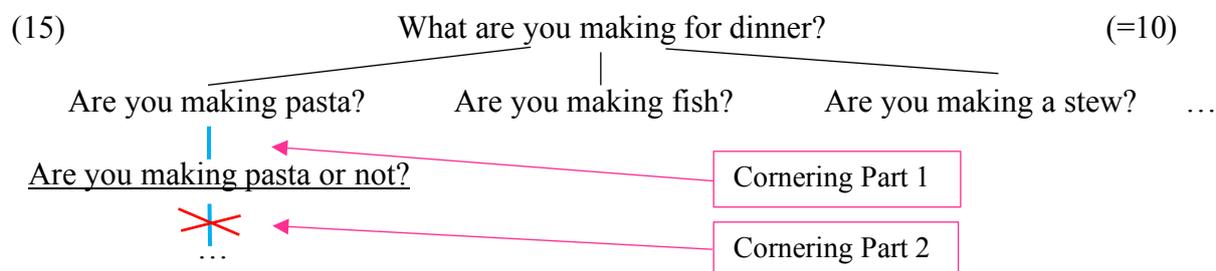


- Roadmap:
  - §2 Comparing PQs, NAQs and CAQs (experimental studies in Beltrama et al. (2020))
  - §3 Ingredients of the proposal
    - §3.1. NAQs carry Focus-marking on the polarity head
    - §3.1. Roberts (1996/2012) and Büring (2003) Discourse Structure framework
  - §4 Applying the proposal to PQs, NAQs and CAQs discourse initially
  - §5 Conclusions

## 2. COMPARING PQS, NAQS AND CAQS

### 2.1. Previous approaches and their predictions for CAQs

- Back to Biezma's (2009) intuitive idea:



- Approach A (Biezma 2009, Biezma & Rawlins 2012): PQs vs. NAQs  
NAQs occupy that particular position in the D-tree because their disjuncts exhaust together the logical space of possibilities.

More specifically:

- PQs present one alternative  $p$  among other possible alternatives  $q, r, s, \dots$ , granting the addressee a high degree of freedom in discourse.
- NAQs, by presenting two alternatives that exhaustify the possibility space, force the listener to choose one of them, crucially restricting room for maneuvering
  - ⇒ too forceful to begin a strategy: # discourse initial (cornering **part 1**)
  - ⇒ signal end of strategy: # follow-up questions (cornering **part 2**)

- Approach A: Predictions 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:

- (16) Predictions for CAQs according to Approach A:

- # discourse initial (cornering **part 1**)
- # follow-up questions (cornering **part 2**)

- Approach B (Biezma & Rawlins 2017): PQs vs. NAQs

NAQs occupy that particular position in the D-tree because...

- their disjuncts exhaust together the logical space of possibilities and
- other than the first alternative  $p$ , all other alternatives  $q, r, s, \dots$  are bundled in the second disjunct under a negative description: not being the first alternative.

As a consequence:

- PQs involve no bundling of alternatives  $p, q, r, s, \dots$ ; thus, no constraints
- NAQs convey a relevance asymmetry due to bundling under negation: the speaker signals that they are merely interested in the content proposition  $p$  and eliminates the remaining alternatives  $q, r, s, \dots$  from future relevance to the discourse.
  - ⇒ peremptory feeling good for ending a strategy (cornering **part 2**)
- NAQs provide no cues as to what alternatives are bundled under negation
  - ⇒ in discourse initial contexts it typically matters what the other alternatives are (**factor (a)** for cornering **part 1**)

- NAQs involve bundling several alternatives together; bundling has a cost (it's an accommodation move) and thus needs a motivation
  - ⇒ no motivation for bundling in discourse initial contexts (**factor (b)** for cornering **part 1**)

■ Approach B: Predictions for CAQs

Like PQs and unlike NAQs, CAQs involve no bundling of alternatives. Thus, NAQs are predicted to pattern like PQs and unlike NAQs:

- (17) Predictions for CAQs according to Approach A:
- ✓ follow-up questions (cornering **part 2**)
  - ✓ discourse initial (cornering **part 1**)

■ Summary of predictions

(18)

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

## 2.2. Experimental study 1 in Beltrama, Meertens & Romero (2020): Cornering Part 1

■ Design

- 2×4 design
- First factor: 2 context types:
  - Ask first time (question asked discourse-initially) vs.
  - Ask again context (asked for the third time after two failed attempts)
- Second factor: 4 question forms: PQ, NAQ, CAQ and a control
- Sample items:

- (19) a. Ask first time:

Context: Mark checks in at a hotel. After the receptionist hands him the room keys, the following exchange ensues:

Receptionist: Sir, would you like to have breakfast directly served in your room?

Mark: Is there a charge for it? PQ  
 Is there a charge for it or not? NAQ  
 Is there a charge for it or is it free? CAQ  
 Is there cable TV in the room? Control

- b. Ask again

Context: Mark checks in at a hotel. After the receptionist hands him the room keys, the following exchange ensues:

Receptionist: Sir, would you like to have breakfast directly served in your room?

Mark: Is there a charge for it?

Receptionist: It's a great service. Our customers love it.

Mark: Ok, but is there a charge for it?

Receptionist: You can also order food from the special menu.

Mark: Is there a charge for it?  
 Is there a charge for it or not?  
 Is there a charge for it or is it free?  
 Is there cable TV in the room?

PQ  
 NAQ  
 CAQ  
 Control

■ Procedure and statistical analysis

- Participants: 96 native speakers of English from MTurk (5 excluded for not completing the task)
- Task: Assign a naturalness value to the target question form between 1 (completely unnatural) and 7 (perfectly natural)
- Stats: We ran a linear mixed-effects model with Question Type and Context as fixed effects and random intercepts and slopes for Subjects/Items with *lmer* test R package.

■ Results

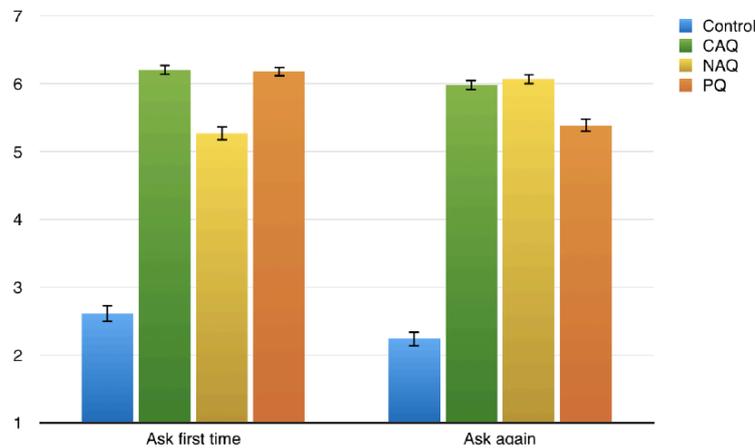


Fig. 1: Average naturalness ratings for Exp 1

Level	Ask first time			Ask again		
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>
Intercept	5.26	0.12	<.0001	6.06	0.12	<.0001
PQ	0.91	0.12	<.0001	-0.67	0.12	<.0001
CAQ	0.95	0.12	<.0001	-0.08	0.12	.47
Control	-2.64	0.11	<.0001	-3.82	0.12	<.0001

Table 1: Mixed-effects model summary for Exp 1.

■ Discussion

- Biezma's (2009) intuitive contrast between PQs and NAQs discourse-initially (ask first time contexts) is replicated experimentally
- CAQs are felicitous discourse-initially, rated as natural as PQs.

(20)	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	✓	#	#	✓	#	✓			

### 2.3. Experimental studies 2A and 2B in Beltrama, Meertens & Romero (2020): Cornering Part 2

■ Design: 2×2(+1)

- Each trial consisted of a dialog in which a speaker asks three questions, the first one always being a PQ.
- First factor: the second question was NAQs vs. CAQs
- Second factor: the third question was  
identical to the first PQ vs. different from the first PQ



- 1 (felicitous) control condition with a wh-question as first question
- Sample items:

(21) Exp2A

Sophia and Rachel are about to play chess. The following exchange ensues.

<u>Sophia</u> : Are you playing with black?	PQ
<u>Rachel</u> : Well, I can't wait to play	
<u>Sophia</u> : Are you playing with black { or not? / or white? }	NAQ/CAQ
<u>Rachel</u> : I'm going to crush you!	
<u>Sophia</u> : Are you playing with black? / ARE YOU PLAYING WITH BLACK?	Ident/Diff

(22) Exp2B

Sophia and Rachel are about to play chess. The following exchange ensues.

<u>Sophia</u> : Are you playing with black?	PQ
<u>Rachel</u> : Well, I can't wait to play	
<u>Sophia</u> : Are you playing with black { or not? / or white? }	NAQ/CAQ
<u>Rachel</u> : I'm going to crush you!	
<u>Sophia</u> : Are you playing with black? / What color do you want to play with?	Ident/Diff

(23) Control: same across Exp 2A and 2B

Sophia and Rachel are about to play chess. The following exchange ensues.

<u>Sophia</u> : What color do you want to play with?	WhQ
<u>Rachel</u> : I can't wait to play	
<u>Sophia</u> : Are you playing with black?	PQ
<u>Rachel</u> : I'm going to crush you!	
<u>Sophia</u> : Are you playing with black or not?	NAQ

■ Procedure and statistical analysis

- Participants: 48 native speakers of English from MTurk for each sub-experiment
- Task: Assign a naturalness value to the final question form between 1 (completely unnatural) and 7 (perfectly natural)
- Stats: We ran separate linear mixed-effects models with 2ndQ and 3rdQ as fixed effects and random intercepts and slopes for Subjects/Items, using the *lmer* package.

## ■ Results

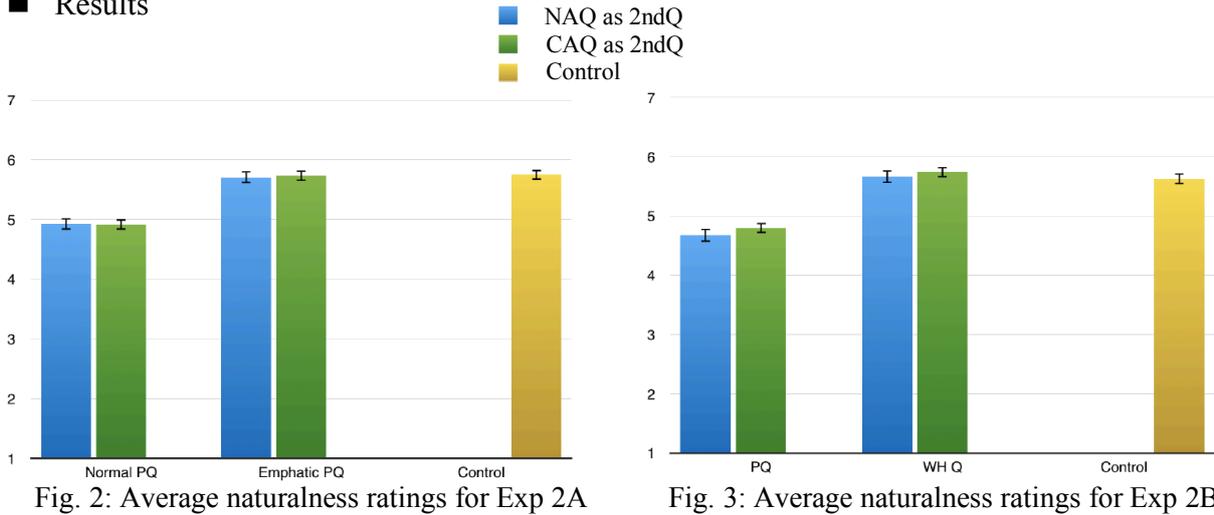


Fig. 2: Average naturalness ratings for Exp 2A

Fig. 3: Average naturalness ratings for Exp 2B

Level	Expt 3A: Non-match=CAPS			Expt 3A: Non-match=Wh-Q		
	Coeff.	SE	<i>p</i>	Coeff.	SE	<i>p</i>
Intercept	4.92	0.21	<.0001	4.67	0.16	<.0001
CAQ	-0.05	0.08	0.94	0.12	0.11	.27
Non-match	0.78	0.22	<.001	0.99	0.11	<.0001
CAQ*Non-match	0.03	0.11	0.76	-0.04	0.15	0.77

Table 2: Mixed-effects model summary for Exp 2A and 2B.

## ■ Discussion

- NAQs sometimes allow and sometimes disallow/disprefer follow-up questions, contra approaches A and B.
- CAQs pattern exactly like NAQs, contra the predictions of approaches A and B.
- The key factor determining the un/acceptability of follow-up questions is not the question form itself (2ndQ), but rather the relation between the original question (1stQ) and the final follow-up question (3rdQ):
  - # when the same form is used
  - ✓ when a different form is used

Beltrama et al. (2020) suggest a general constraint along the lines of (25), applicable not just to NAQs but to questions (or strategies) in general.

(24)	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	✓	#	# / ✗	✓	#	✓ / ✗	✓	# / ✓	# / ✓

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

## 2.4. Approach B for Cornering Part 1?

- The only approach that fits some portion of our experimental results is Approach B (Bundling) concerning Cornering Part 1.
- Approach B (Biezma & Rawlins 2017 + predictions): PQs / CAQ vs. NAQs
  - PQs and CAQs involve no bundling of alternatives  $p, q, r, s, \dots$ ; thus, no constraints
  - 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 (**factor (a)** for cornering **part 1**)
  - NAQs involve bundling several alternatives together; bundling has a cost (it's an accommodation move) and thus needs a motivation
    - ⇒ But no motivation for bundling in discourse initial contexts (**factor (b)** for cornering **part 1**)
- While we cannot fully exclude it, there are (at least) two reasons arguing against a bundling account of Cornering Part 1.
- First, bundling under negation is argued to be one of the factors leading to Cornering Part 1 because it obscures what the bundled alternatives  $q, r, s, \dots$  are and such alternatives typically matter in discourse initial contexts. But:
  - Some discourse initial contexts *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: PQs with a falling final contour like (26) (Bartels 1999, Westera 2017; see also Roelofsen & van Gool 2010, Biezma & Rawlins 2012).
  - In this kind of discourse initial contexts, the effects of bundling under negation should bring no infelicity. However, NAQs are infelicitous in such contexts: (27)

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

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

- Second, the cost of bundling alternatives per se is argued to be a factor affecting Cornering Part 1. Roughly, there has to be a motivation to use a bundled question strategy like (29) over the unbundled counterpart (28). Since discourse initial context does not (typically?) provide such motivation, question forms that involve bundling are infelicitous.

(28)

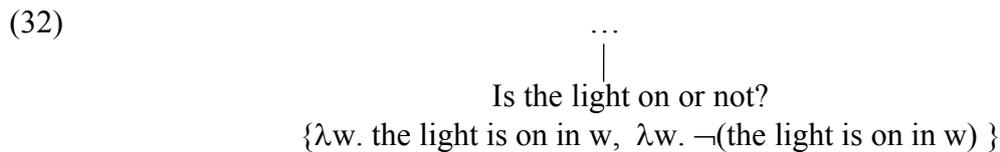
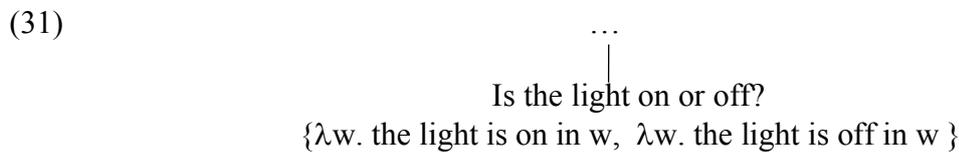
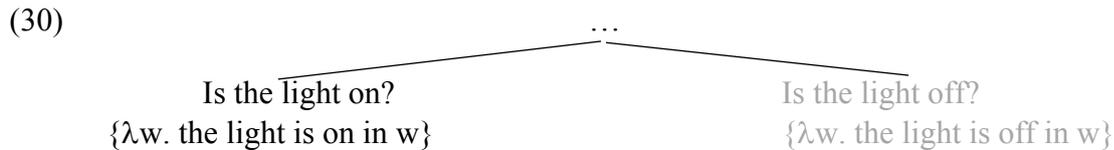
...		...
Are you making pasta?	Are you making fish?	Are you making broccoli?
{ $\lambda w$ . you make pasta in $w$ }	{ $\lambda w$ . you make fish in $w$ }	{ $\lambda w$ . you make brocc. in $w$ }

(29)

...
Are you making pasta or not?
{ $\lambda w$ . you make pasta in $w$ , $\lambda w$ . you make fish in $w \vee$ you make broccoli in $w$ }

But:

- In order to (correctly) predict that CAQs are felicitous discourse initially, approach B needs to assume that using strategy (31) instead of (30) requires no motivation.
- If so, NAQs with only one alternative other than  $p$  are predicted to behave exactly like their CAQs counterparts in requiring no motivation, since the CAQ-version and the NAQ-version denote the very same set of propositions (since  $[\lambda w. \text{the light is off in } w] = [\lambda w. \neg(\text{the light is on in } w)]$ ) and thus introduce the very same strategy (31)/(32). However, our experimental results showed a contrast between the CAQ-versions (✓) and the NAQ-versions (#).



### 3. INGREDIENTS OF THE PROPOSAL

■ Two ingredients:

- ① NAQs carry F(ocus)-marking on the polarity heads of the two disjuncts
- ② Roberts (1996/2012) and Büring (2003) Discourse Structure framework for licensing Focus (among other markings)

#### 3.1. NAQs carry Focus-marking on the polarity head

- It is known that Q/A pairs like (33) require the F-marked element in the Answer to match the wh-element in the Questions, and that contrastive structures like (34) require the F-marked –and the C(ontrastive) T(opic) marked– constituents in the two conjuncts to be parallel (Rooth 1992, Büring 2003).

(33) Q: Who did Betty see yesterday?  
 A: Betty saw ALI<sub>F</sub> yesterday.  
 A': # Betty saw Ali YESTERDAY<sub>F</sub>.

(34) a. BETTY<sub>CT</sub> saw ALI<sub>F</sub> yesterday and TERRY<sub>CT</sub> saw MARTHA<sub>F</sub> yesterday.  
 b. # BETTY<sub>CT</sub> saw ALI<sub>F</sub> yesterday and TERRY<sub>CT</sub> saw Ali/him TODAY<sub>F</sub>.

- Focal stress on the lexical verb –or on the main predicate-- in ambiguous in (at least) two ways:

- F-marking on the stem: as disambiguated by the Q/A (35) and the contrastive structure (37)
- F-marking on the polarity head: as disambiguated by the Q/A (36) and the contrastive structure (38)<sup>1</sup>

(35) Q: What did James do with his parents last Xmas?

A: He VISITED them.

b. [He Pol<sup>+</sup> visit<sub>F</sub> them]

(36) Q: Did James visit his parents last Xmas?

A: (Yes,) he VISITED them.

b. [He Pol<sup>+</sup><sub>F</sub> visit them]

(37) KATE<sub>CT</sub> LOVES Monty Python sketches and PAUL<sub>CT</sub> DESPISES them.

a. [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]

(38) KATE<sub>CT</sub> LOVES Monty Python sketches and PAUL<sub>CT</sub> DOESN'T.

a. [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]

- Similarly, in AltQs the two disjuncts must bear focus stress on parallel constituents (Bartels 1999, Han & Romero 2004, Truckenbrodt 2013)

(39) 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>?

- The ambiguity of focal stress on lexical verb is resolved in AltQs via the second disjunct:

- F-marking on the stem: (40)

- F-marking on the polarity head: (41)

(40) Does Kate LOVE Monty Python sketches or does she DESPISE them?

a. [ Q [ [ Kate Pol<sup>+</sup> love<sub>F</sub> MT sketches ] or [ she Pol<sup>+</sup> despises<sub>F</sub> them ] ] ]

(41) Does Kate LOVE Monty Python sketches or NOT?

a. [ Q [ [ Kate Pol<sup>+</sup><sub>F</sub> love MT sketches ] or [ ~~she~~ Pol<sup>-</sup><sub>F</sub> ~~love~~ ~~them~~ ] ] ]

<sup>1</sup> Focus stress on an inserted auxiliary might be considered to signal F-marking on the polarity as well: (i.B') and (ii). Two notes about this. First, some authors consider that this construction is degraded as an answer to a PQ, as in (i.B'), unless there PQ is biased towards the negative answer, as in (ii) (Gutzmann et al. 2020, Wilder 2013); other authors find (i.B') perfectly acceptable (Goodhue 2020). I side with the former for the Spanish translation in (iii). Second, some authors take the construction to signal the presence of a VERUM operator (Gutzmann et al. 2020); others argue for F-marking on the polarity (Goodhue 2020). Here I tentatively side with the latter for Spanish, since the locution *de verdad* 'of truth' signaling VERUM and the Spanish construction at issue do not give rise to parallel intuitions in (iv). Given this additional complexity, we leave this construction aside.

(i) A: Did Chris submit her paper yesterday?  
B: Yes, she submitted her paper.  
B': % Yes, she DID submit her paper.

(ii) A: Did Chris really submit her paper yesterday?  
B: Yes, she DID submit her paper.

(iii) Sí que entregó su artículo.  
Yes that submitted her article.  
'She DID submit her article.'

(iv) a. De verdad entregó Cristina su artículo?  
Of truth submitted C her article  
b. Sí que entregó Cristina su artículo?  
Yes that submitted C her article

■ Up-shot:

- (42) a. PQ: Is the light ON? [Q Pol<sup>+</sup> [the light be-on<sub>F</sub>]] OR  
           b. NAC: 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><sub>F</sub> [the light be-on]]

**3.2. Roberts (1996/2012) and Büring (2003) Discourse Structure framework**

■ *InfoStr<sub>D</sub>* (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):

- (43) 1. 'Who<sub>{j,p}</sub> call whom<sub>{a,b}</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 incorporating 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 certain properties of the D-tree hosting *m*.

- (44) Givenness Condition:  
 An utterance [CP C<sup>0</sup> [IP β]] can realize a move *m* within a d-tree *D* only if, for every constituent *C* in β, there is a salient antecedent *A* in the explicit realization of a move preceding *m* in *D* such that:  
 a. if *C* is of type *e*, then *C* and *A* corefer;  
 b. otherwise, modulo ∃-type shifting, *A* entails the existential F-Closure of *C*.
- (45) Existential F-Closure of a constituent *C* =<sub>df</sub>  
 the result of replacing F-marked phrases in *C* with variables and ∃-binding them.
- (46) ∃-type shifting of a constituent *C* =<sub>df</sub>  
 the result of existentially binding unfilled arguments of *C*.

■ Within this framework, one can account for *Q...Q* sequences:

- (47) a. Who called Amy? Did JOHN<sub>F</sub> call Amy?  
       b. #Who called Amy? Did John call AMY<sub>F</sub>?
- (48) ∃-type shifting of *Who called Amy?*:  
 λw. ∃x[call<sub>w</sub>(x,amy)]
- (49) [IP [JOHN<sub>F</sub> call Amy]]  
 ☺ a. [NP Amy]: coreferential  
 ☺ b. [VP call Amy]: λw. ∃x[call<sub>w</sub>(x,amy)]  
 ☺ c. [NP JOHN<sub>F</sub>]: λw. ∃P∃x[P(x)(w)]  
 ☺ d. [IP JOHN<sub>F</sub> call Amy]:  
       λw. ∃x[call<sub>w</sub>(x,amy)]
- (50) [IP [John call AMY<sub>F</sub>]]  
 ☺ a. [NP AMY<sub>F</sub>]: λw. ∃P∃y[P(y)(w)]  
 ☺ b. [VP call AMY<sub>F</sub>]: λw. ∃x∃y[call<sub>w</sub>(x,y)]  
 ☹ c. [NP John]: not coreferential  
 ☹ d. [IP John call AMY<sub>F</sub>]:  
       λw. ∃y[call<sub>w</sub>(john,y)]

#### 4. APPLYING THE PROPOSAL TO PQs, NAQs AND CAQs DISCOURSE INITIALLY

■ Reminder of results:

(51)	Exp results		
	PQ	NAQ	CAQ
Part 1: Discourse initial	✓	#	✓

■ Discourse initial example and corresponding D-tree:

- (52) A: Jane got a new car!  
 a. B: ✓ Is it autoMATIC? PQ  
 b. B: # Is it autoMATIC or NOT? NAQ  
 c. B: ✓ Is it autoMATIC or a STICK shift? CAQ

- (53) 1. 'What is new with Jane?'  
 1.1. 'Did Jane get a new car?'  
 a. 'Jane got a new car.' ← move realized by (52A)  
 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?'** ← move to be realized by a choice of (52B)  
 ii. 'Is Jane's new car a stick shift?'  
 b. 'What color is Jane's new car?'  
 ...  
 c. 'What brand is Jane's new car?'  
 ...  
 1.3. 'What is Jane going to do with her old car?'

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

■ Deriving the infelicity of NAQs

- (54) A: Jane got a new car!  
 B: # Is it autoMATIC or NOT?  
 c. [Q [ [Pol<sup>+</sup><sub>F</sub> it be-automatic] or [Pol<sup>-</sup><sub>F</sub> it be automatic] ] ]

- (55) [Pol<sup>+</sup><sub>F</sub> it be-automatic] / [Pol<sup>-</sup><sub>F</sub> it be-automatic]  
 a. [NP it<sub>1</sub>]: coreferential ☺  
 b. [VP be-automatic]:  $\lambda w. \exists y[\text{automatic}_w(y)]$  ☹  
 c. [IP it<sub>1</sub> be automatic]:  $\lambda w. [\text{automatic}(g(1))(w)]$  ☹  
 d. [IP Pol<sup>+</sup><sub>F</sub> [it<sub>1</sub> be automatic]] / [IP Pol<sup>-</sup><sub>F</sub> [it<sub>1</sub> be automatic]]:  
 $\lambda w. \exists Z_{\langle \text{st}, \text{st} \rangle} [Z(\lambda w. [\text{automatic}_w(g(1))])]$  ☺ (tautological)

■ Deriving the felicity of CAQs

- (56) A: Jane got a new car!  
 B: Is it autoMATIC or a STICK shift?  
 c. [Q [ [Pol<sup>+</sup> it be-automatic<sub>F</sub>] or [Pol<sup>+</sup> it be-a-stick-shift<sub>F</sub>] ] ]
- (57) [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>I</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>I</sub> be-automatic<sub>F</sub>] / [<sub>IP</sub> it<sub>I</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>I</sub> be-automatic<sub>F</sub>]] / [<sub>IP</sub> Pol<sup>+</sup> [it<sub>I</sub> be-a-st-shift<sub>F</sub>]]:  
 $\lambda w. \exists P [P(g(1))(w)]$  ☺

■ Deriving the felicity of PQs

- (58) A: Jane got a new car!  
 B: Is it autoMATIC?  
 c. [Q [Pol<sup>+</sup> it be-automatic<sub>F</sub>] ]  
 d. [Q [Pol<sup>+</sup><sub>F</sub> it be-automatic] ]



Although the parse (56d) as Polarity Focus will not satisfy congruence –see (55)–, the parse (56c) as predicate focus will –as in (57).

#### 4. CONCLUSIONS

- The experimental results in Beltrama, Meertens & Romero (2020) led to the following empirical conclusions:
- The inability to appear discourse initially –Cornering Part 1– characterizes NAQs and not PQs and CAQs.
  - The ban on follow-up questions –Cornering Part 2– is not an inherent characteristic of NAQs (nor of CAQs); it rather seems to be a general prohibition on reusing unsuccessful and previously abandoned strategies.
- Problems for previous accounts:
- Approach A on exhaustive disjuncts is problematic in view of the experimental results on Cornering Parts 1 and 2
  - Approach B on bundling is problematic in view of the experimental results on Cornering Part 2 and faces conceptual challenges with respect to Cornering Part 1.
- As an alternative explanation to Cornering Part 1, we have developed a proposal that maintains Biezma’s (2009) intuitive D-tree idea but derives it in a different. Two main ingredients:
- ① NAQs carry F(ocus)-marking on the polarity heads of the two disjuncts
  - ② Roberts (1996/2012) and Büring (2003) Discourse Structure framework

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