

Exhaustive answers and polarity-mismatch

The puzzle

- When can the answer to a constituent question be exhaustive and when can't it?

- Relationship between **exhaustivity** and **polarity**.

- Intuition:

(1a), **but not (b)** can be interpreted exhaustively (Uegaki 2013, Spector 2003 i.a.)

- Which of the men have beards?
 - Ryan does. (*can be interpreted 'only Ryan does'; complete ans.*)
 - Ryan doesn't. (*cannot be interpreted 'only Ryan doesn't'; partial ans.*)

while both (c) **and (d)** are relatively felicitous.

- Only Ryan does.
- Only Ryan doesn't.

- Step 1:** develop the puzzle (\leadsto Exp. 1)

Step 2: analysis – (b) and (d) involve accommodation of a negative question; (a) vs. (b) vs. (d) follows from a proposed constraint on accommodation ('Avoid Redundant Accommodation').

Step 3: test additional consequences of the analysis (\leadsto Exp. 2+3)

Exp. 1: Developing the puzzle

- Know* and *tell* in A's prompt solicit a strongly exhaustive answer; B affirms that *yes* he will give such an answer. (Groenendijk & Stokhof 1984; for complications with *know*, see e.g. Spector 2005, Cremers & Chemla to appear)

(2) A: I need to know something. Which of the men have beards? Can you tell me?

B: Yes. [Ryan]_{F/#RFR} does.

- Diagnostic to determine whether or not an answer is felicitous and can be interpreted as exhaustive – is a dialog like (2) with B giving that answer natural?

Stimuli

- Q/A dialogs, 2 x 2 design, crossing **presence vs. absence of only** in the answer with the **polarity** of the answer.

- Paradigm:

I need to know something. Which of the men have beards? Can you tell me?

- Yes. Ryan does.* (no *only*, positive)
- Yes. Ryan doesn't.* (no *only*, negative)
- Yes. Only Ryan does.* (*only*, positive)
- Yes. Only Ryan doesn't.* (*only*, negative)

- 12 experimental items; 36 fillers interleaved; Latin Square.

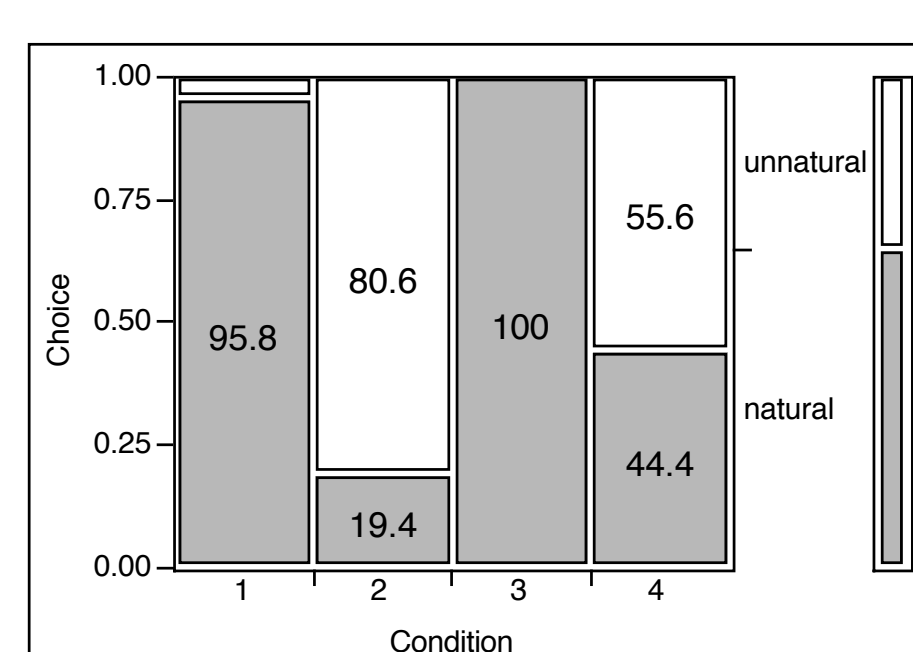
Task

- Forced choice: participants indicated whether each dialog was **natural** or **unnatural**.

- Data analyzed in a logit MEM with random effects for item/participant.

- 24 participants (Amazon Mechanical Turk), \$0.40/HIT.

Results



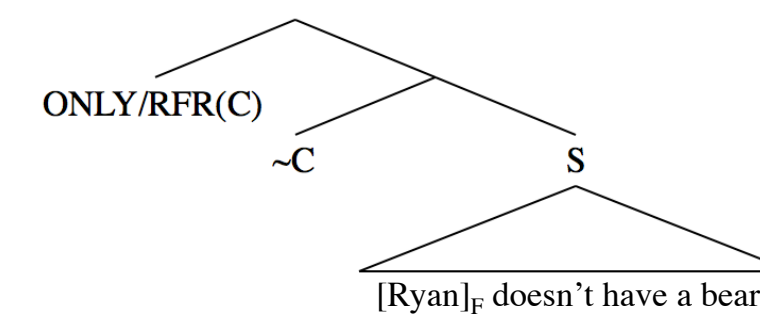
- Positive answers with and without *only* rated natural roughly at ceiling.
- Negative answers with *only* more likely to be rated natural than without *only* ($|z| = 2.60$).

Analyzing Exp. 1

The negative answers in Cond. 2+4 are not congruent to the positive question, and trigger accommodation of an unasked negative question (\leadsto 1). For economy reasons, accommodation is licensed only if the answer conveys something which couldn't be conveyed with an answer congruent to the original question (constraint: Avoid Redundant Accommodation, ARA; \leadsto 2). The ARA is responsible for (i) the answer without 'only' in Cond. 2 being interpreted as partial and so # in the dialog (\leadsto 3), and (ii) the variability in naturalness of the answer with 'only' in Cond. 4 (\leadsto 4).

- 1: Cond. 2+4 require accommodation** (Uegaki 2013)

- Roothian (1985, 1992) focus structure for neg. answers (adopting Constant 2012):



- C is an anaphor; the antecedent for C is the Hamblin set of the question. $[[\sim C] S]$ presupposes that C is a set of propositions that is a subset of $[[S]]^f$.

- Focus semantic value of S:

(3) $[[S]]^f = \{p: \exists x [p = \lambda w . x \text{ doesn't have a beard in } w]\}$

- Hamblin set for positive question (HS+):

(4) Which of the men have beards?

(5) $HS+ = \{p: \exists x [p = \lambda w . x \text{ has a beard in } w]\}$

- Presupposition not satisfied with HS+ antecedent for C!

(6) $HS+ \not\subseteq [[S]]^f$

- To satisfy the presupposition, a negative question must be accommodated.

(7) Which of the men don't have beards?

(8) $HS- = \{p: \exists x [p = \lambda w . x \text{ doesn't have a beard in } w]\} \subseteq [[S]]^f$

- Cond. 4 e.g. is interpreted:

(9) Which of the men have beards? (*asked positive q.*)
 <Which of the men don't have beards?> (*accommodated negative q.*)
 Only Ryan doesn't.

- 2: A constraint on accommodation (following from economy considerations)**

- Avoid Redundant Accommodation (ARA):*
 An answer A to a question Q can trigger accommodation of a new question Q' only if there is no A' such that (i) A and A' are contextually equivalent, and (ii) A' is congruent to the original question. (cf. effects of *Proper Subquestionhood* in Uegaki 2013)

- 3: What happens without only in Cond. 2?**

- The answer, (10), is ambiguous between a complete and partial answer.

(10) Ryan doesn't (have a beard).

- (10) as a complete answer expresses the same information as (11) as a complete answer, and (11) is congruent to the original positive question.

(11) Zack and Nino and ... do (have a beard).

\leadsto (10) as a complete answer violates the ARA.

- No way to convey partial answer that Ryan doesn't have a beard with a positive answer congruent to the original question.

\leadsto (10) as a partial answer respects the ARA.

- ARA disambiguates in favor of partial answer, which is # in the dialog in Exp. 1.

- 4: Why is Cond. 4 with only relatively felicitous?**

- With overt *only*, the answer, (12), is unambiguously complete.

(12) Only Ryan doesn't (have a beard).

- As a complete answer, (12) is compatible with the dialog in Exp. 1.

- Variability in naturalness rating is due to the ARA.

- Two (not exclusive) possibilities:

1. *Only* optionally introduces a scalar presupposition, which satisfies the ARA.

Scalar presupposition in (12): $\lambda w . \text{Ryan doesn't have a beard in } w$ is ranked relatively low among alternatives according to some scale (van Rooij 2002, Beaver 2004, Klinedinst 2004; cf. *John only won the bronze/gold.*)

rank \downarrow $\{\dots, \lambda w . \text{Nino and Zack and Ryan don't have beards in } w, \lambda w . \text{Zack and Ryan don't have beards in } w, \lambda w . \text{Ryan doesn't have a beard in } w\}$

\leadsto No way to convey that presupp. with answer congruent to original question.

With scalar presupposition, (12) = natural; without, (12) = unnatural.

2. The ARA can sometimes be violated *if explicitly signaled in the sentence* (as overt *only* does) *and* other factors make it advantageous to violate.

Exp. 2: Blocking accommodation

- How can we tell that Cond. 2+4 involve accommodation?
- Block accommodation, and see if Cond. 2+4 are both equally unnatural.

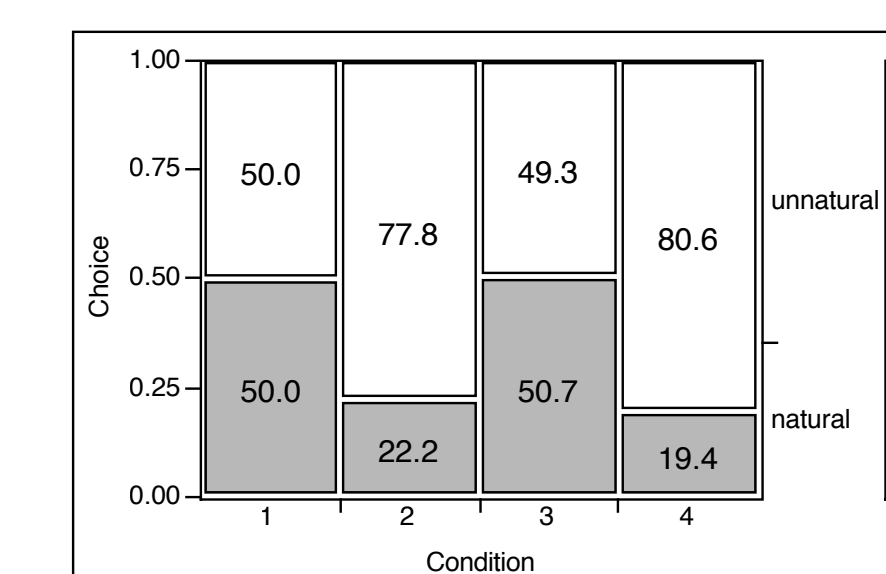
Method

- Same as Exp. 1 with change to stimuli, illustrated for Cond. 1:

I need to know something. Which of the men have beards?

1. *Let me tell you the answer to that very question. Ryan does.*

Results



- Positive answers more likely to be rated natural than negative answers.
- No effect of whether or not there is *only* in negative conditions ($|z| = 0.44$).

- Another way to block accommodation: focus.

(13) A: Which of the men DO have beards?

B: Only Ryan has a beard.

#Only Ryan doesn't have a beard.

Exp. 3: Manipulating context

- Are there contextual factors that affect how natural *only* + negative answer (Cond. 4) is? Are these effects consistent with the ARA?

- Hypothesis: *only* + negative answer is more natural in a context where the *wh* word in the question quantifies over a large domain than a small domain.

Method

- Same as Exp. 1+2, new paradigm:

There are 8 men in the unit – Ryan, Zack, Nino, Sid, Peter, Brian, Ray, Theo.

1. *Which of the men have beards?*
Only Ryan does. (8-membered, positive)

2. *Which of the men have beards?*
Only Ryan doesn't. (8-membered, negative)

There are 2 men – Ryan and Zack.

3. *Which of the men have beards?*
Only Ryan does. (2-membered, positive)

4. *Which of the men have beards?*
Only Ryan doesn't. (2-membered, negative)

- Two factors motivating hypothesis:

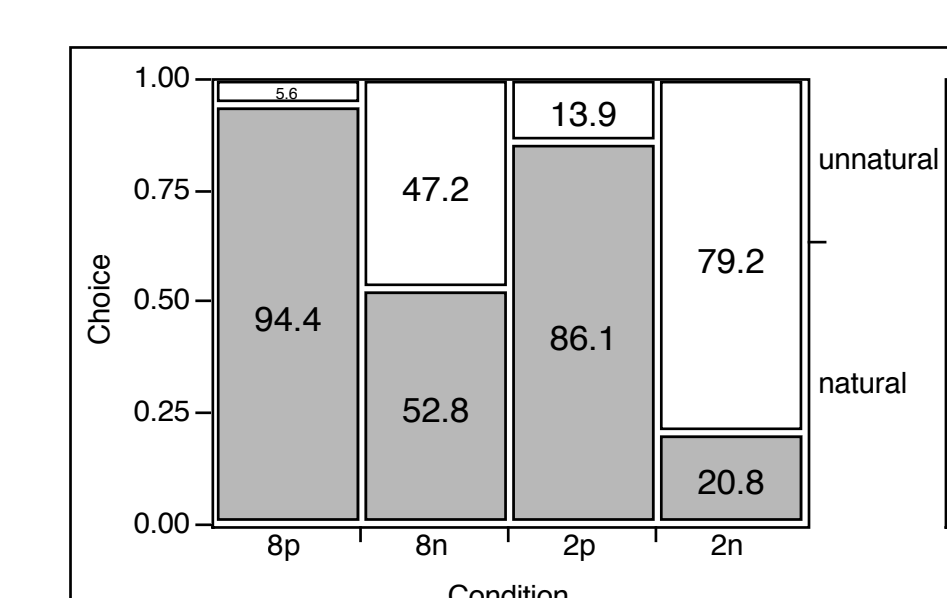
1. Scalar presupposition may be more likely with a large domain.

2. Pressure to respect the Maxim of Manner may license a violation of the ARA with the large domain; expressing neg. answer as pos. answer requires (14) in 8-membered context vs. (15) in 2-membered context.

(14) (Only) Zack, Nino, Sid, Peter, Brian, Ray, and Theo do.
 \leadsto neg. answer less prolix than (14)

(15) Only Zack does.
 \leadsto neg. answer not less prolix than (15)

Results



- Positive answers rated natural in both 8-membered and 2-membered contexts roughly at ceiling.
- Negative answers more likely to be rated natural in 8-membered than 2-membered ($|z| = 3.50$).