

7. Focus in Questions and Answers

7.1 Introduction

The role of focus in the determination of coherent question-answer pairs has been noticed since Hermann Paul (1880):

- (1) a. A: Where will Karl drive tomorrow?
 B: Karl will drive [to Berlín]_F tomorrow.
 B': *[Kárl]_F will drive to Berlin tomorrow.
- b. A: Who will drive to Berlin tomorrow?
 B: *Karl will drive [to Berlín]_F tomorrow.
 B': [Kárl]_F will drive to Berlin tomorrow.

(1.a.B) is called a **congruent** answer to (1.a.A) (Stechow 1990). The role of focus in felicitous question-answer pairs provides a good test bed for identifying focus: The focus of an answer to a constituent question (categorical question, *wh*-question) is the part of the answer that corresponds to the *wh*-constituent of the question.

7.2 The Semantic Representation of Questions

There are two general strategies for the semantic representation of questions: Questions are analyzed as **functional expressions** or **sets of propositions**.

7.2.1 Questions as functional expressions

Cf. Hull (1975), Hausser and Zaefner (1979), von Stechow and Zimmermann (1984), Ginzburg (1994, 1995).

Basic idea: A constituent question can be answered by a term (**term answer**), and then forms a proposition. Hence the question is an incomplete (= functional) expression.

- (2) A: Who read 'Ulysses'? $x[\text{READ}(\text{ULYSSES})(x)]$, x restricted to persons.
 B: Mary. MARY
- Question applied to answer: $x[\text{READ}(\text{ULYSSES})(x)](\text{MARY})$
 $= \text{READ}(\text{ULYSSES})(\text{MARY})$

This approach can be extended to yes/no questions by assuming lambda abstraction over a sentential operator that varies over negation (the complement operation) and the identity function:

- (3) A: Did Mary read 'Ulysses'? $f[f(\text{READ}(\text{ULYSSES})(\text{MARY}))]$,
 f restr. to $p[p]$, $p[\neg p]$
 B: No. $p[\neg p]$

Question applied to answer: $f[f(\text{READ}(\text{ULYSSES})(\text{MARY}))](p[\neg p])$
 $= \neg \text{READ}(\text{ULYSSES})(\text{MARY})$

7.2.2 Proposition set analysis

Cf. Hamblin (1958, 1973), Karttunen (1977), Groenendijk & Stokhof (1984).

Basic idea: A question is interpreted as the set of propositions that would constitute felicitous answers (Karttunen: true answers, Groenendijk & Stokhof: complete (exhaustive) answers).

- (4) A: Who read 'Ulysses'? $\{\text{READ}(\text{ULYSSES})(x) \mid x \text{ PERSON}\}$
 $= \{\text{READ}(\text{ULYSSES})(\text{JOHN}), \text{READ}(\text{ULYSSES})(\text{MARY}), \dots\}$
- B: Mary read 'Ulysses'. $\text{READ}(\text{ULYSSES})(\text{MARY})$.

Yes/no questions, with the help of truth value operators:

- (5) A: Did Mary read 'Ulysses'? $\{f(\text{READ}(\text{ULYSSES})(\text{MARY})) \mid f \{ p[p], p[\neg p] \}\}$
 $= \{\text{READ}(\text{ULYSSES})(\text{MARY}), \neg \text{READ}(\text{ULYSSES})(\text{MARY})\}$
- B: Mary did not read 'Ulysses'. $\neg \text{READ}(\text{ULYSSES})(\text{MARY})$

Notice:

- The functional analysis takes term answers as basic,
- the proposition set analysis takes full sentential answers as basic.

7.2.3 The role of focus in answers in the functional analysis

The role of focus in answers is evident in the functional analysis (cf. e.g. Stechow 1990). The focus item in a sentential answer corresponds to the term answer (which is the argument of the question function):

- (6) A: Who read 'Ulysses'?
 B: Mary.
 B: [Máry]_F read 'Ulysses'.

Let us assume that focus leads to a partition between a focus part and a background part (given as a pair, a **structured meaning**, B, F). Let us assume that the question is analyzed similarly, as a pair consisting of the question function and the restriction of the arguments expressed by the *wh*-constituent, Q, R . Then a question-answer sequence $Q, R - B, F$ is congruent iff $Q = B$ and $F R$. Example:

- (7) a. A: Who read 'Ulysses'? $x[\text{READ}(\text{ULYSSES})(x)]$, PERSON
 b. B: [Máry]_F read 'Ulysses'. $x[\text{READ}(\text{ULYSSES})(x)]$, MARY
 c. B: *Mary read ['Ulysses']_F. $x[\text{READ}(x)(\text{MARY})]$, ULYSSES
 d. B: *[The scanner] read 'Ulysses'. $x[\text{READ}(\text{ULYSSES})(x)]$,
 THE SCANNER

Example (d) illustrates a violation of the wh-expression *who*, which comes with the presupposition that the answer term is a person. A somewhat better example of this phenomenon:

- (8) A: Who fell down?
 B: *The vase fell down.
 B: Noone fell down. Just the vase fell down.

Term answers can be seen as short forms of sentential answers that only specify the focus and presuppose that the background is the same as the background of the question.

7.2.4 The role of focus in answers in the proposition set analysis

The role of focus in answers in the proposition set analysis can be captured as follows (cf. Rooth 1992). The meaning of a question is a set of propositions Q. Focus in the answer leads to the creation of ordinary meanings and alternatives, O, A . (cf. Alternative Semantics, Rooth 1985). The alternatives of the answer and the question meaning have to correspond to each other. Rooth (1992) suggests that we have as a condition $Q \vdash A$.

- (9) a. A: Who read 'Ulysses'? $\{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\}$
 b. B: [Máry]_F read 'Ulysses'. $\text{READ(ULYSSES)(MARY)}$,
 Alternatives: $\{\text{READ(ULYSSES)(x)} \mid x \text{ D}_e\}$
 D_e: Domain of discourse of type e (entities).
 Notice: $\{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\} \vdash \{\text{READ(ULYSSES)(x)} \mid x \text{ D}_e\}$
 c. B: *Mary read ['Ul_sses']_F. $\text{READ(ULYSSES)(MARY)}$.
 Alternatives: $\{\text{READ(x)(MARY)} \mid x \text{ D}_e\}$

A problem with this specific implementation: The focus alternatives are all meanings of the type of the focus expression (here, D_e). But then the oddity of the answer [*The scánner*]_F read 'Ulysses' (or [*The vase*]_F fell down, as an answer to *Who fell down?*) cannot be explained. Hence we should work with a more restricted set of focus alternatives, e.g. ALT(MARY), where plausibly ALT(MARY) PERSON. Then the criterion for congruent question-answer pairs should be that $A \vdash Q$:

- (10) a. A: Who read 'Ulysses'? $\{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\}$
 b. B: [Máry]_F read 'Ulysses'. $\text{READ(ULYSSES)(MARY)}$,
 Altern.: $\{\text{READ(ULYSSES)(x)} \mid x \text{ ALT(MARY)}\}$
 $\{\text{READ(ULYSSES)(x)} \mid x \text{ ALT(MARY)}\} \vdash \{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\}$
 c. B: *Mary read ['Ul_sses']_F. $\text{READ(ULYSSES)(MARY)}$.
 Altern.: $\{\text{READ(x)(MARY)} \mid x \text{ ALT(ULYSSES)}\}$

$\{\text{READ(x)(MARY)} \mid x \text{ ALT(ULYSSES)}\} / \{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\}$

- d. B: *[The scánner]_F read 'U.'. $\text{READ(ULYSSES)(the scanner)}$
 Alt: $\{\text{READ(ULYSSES)(x)} \mid x \text{ ALT(the scanner)}\}$

$\{\text{READ(ULYSSES)(x)} \mid x \text{ ALT(the scanner)}\} / \{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\}$

Term answers may be explained as a kind of ellipsis of non-focused material:

- (11) A: Who read 'Ulysses'?
 B: [Máry]_F read 'Ulysses'.

7.3 Problems for the analyses of questions and answers

7.3.1 A problem of the functional analysis: Variable types for questions

The most serious objection against the functional analysis (cf. e.g. Groenendijk & Stokhof 1994) is that it leads to a variable categorization of questions:

- (12) a. Who came? $x[\text{CAME}(x)]$ e,t
 b. Did Mary come? $f[f(\text{CAME}(\text{MARY}))]$ t,t,t
 c. Who read what? $x y[\text{READ}(x)(y)]$ e, e,t

This leads to certain complications for the categorization of conjoined questions, and for the categorization of question-embedding verbs:

- (13) Who came, and who read what?
 (14) a. John knows whether Mary came.
 b. John knows who came.
 c. John knows who read what.

This problem does not arise in the proposition set analysis — the meaning of a question is always of the same type, a set of propositions. However, this is not a knock-down argument against the functional analysis: the semantic types of questions are related (they are always derived from type t), and such type variation can be handled by type flexibility (cf. Ginzburg 1994).

7.3.2 Over/underfocused answers

A problem for the proposition set analysis is to rule out answers that are either over-focused or under-focused, depending on the type of theory.

Assuming the version where we have a requirement that $A \vdash Q$, we have the problem that underfocused answers are not excluded:

- (15) a. Who read 'Ulysses'? $\{\text{READ(ULYSSES)(x)} \mid x \text{ PERSON}\}$
 b. [Máry]_F read 'Ulysses'. $\text{READ(ULYSSES)(MARY)}$,
 Alternatives: $\{\text{READ(ULYSSES)(x)} \mid x \text{ ALT(MARY)}\}$
 (16) a. Who read what? $\{\text{READ(y)(x)} \mid y \text{ object, } x \text{ PERSON}\}$

- d. [Máry]_F read ['U_L_sses']_F. READ(ULYSSES)(MARY),
 Alt.: { READ(y)(x) | y ALT(ULYSSES), x ALT(MARY) }

We find that the condition for congruent question-answer relations rightly predict that (15.b) is a congruent answer to (15.a) and that (16.a) is a congruent answer to (16.b). But they also wrongly predict that (15.b) is a congruent answer to (16.a), as we have the following relationship:

- (17) { READ(ULYSSES)(x) | x ALT(MARY) } { READ(y)(x) | y OBJECT, x PERSON }

In the original reconstruction of congruent answers of Rooth (1992), in which the question meaning is a subset of the alternatives of the answer (Q ⊆ A), we have the opposite problem of overfocused answers:

- (18) [Máry]_F read ['U_L_sses']_F. READ(ULYSSES)(MARY),
 Alt.: { READ(y)(x) | x, y D_e }

This wrongly predicts that (18) is a possible answer to (15.a), as we have the following relationship:

$$\{ \text{READ(ULYSSES)(x) | x PERSON} \} \{ \text{READ(y)(x) | x, y D}_e \}.$$

The problem of overfocused answers can be solved following a suggestion by Schwarzschild (1993), namely, that focus should be used as sparingly as possible for pragmatic reasons. The extra focus on *Ulysses* in (18) is not needed to establish the relation Q ⊆ A, and therefore should be avoided.

But the principle “use focus as sparingly as possible” does not rule out underfocused answers for the other version with the requirement A ⊆ Q, which we have found superior on independent grounds.

The problem of underfocused or overfocused answers does not appear in the functional analysis:

- (19) a. Who read what? x·y[READ(x)(y)], OBJECT·PERSON
 b. [Máry]_F read ['U_L_sses']_F x·y[READ(x)(y)], ALT(MARY)·ALT(ULYSSES)
 c. [Máry]_F read 'Ulysses'. x[READ(ULYSSES)(x)], ALT(MARY)

(b) is a congruent answer to (a), but (c) is not a congruent answer, as the backgrounds of question and answer are not identical:

- (20) x·y[READ(x)(y)] x[READ(ULYSSES)(x)]

Literature:

von Stechow (1990), Krifka (2001).

Krifka, Manfred: 2001, 'For a structured account of questions and answers', in C. Féry & W. Sternefeld (Eds.), *Audiatu vox sapientiae. A Festschrift for Achim von Stechow*, Berlin, Akademie-Verlag, pp. 287-319.

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