

Handout 8: questions

Obligatory reading: Beck and Gergel (2014) ch. 6, section 1 (from *Intro to Semantics*)

Optional reading: <https://wals.info/chapter/92>, Krifka (2011) sections 1-3

1 What do questions mean?

To know the meaning of a sentence is to know under what conditions the sentence is true

Declarative sentences can be judged true or false

(1) John snores

We have designed a model of semantic competence based on truth (and falsity). But questions cannot be judged true or false!

(2) Does John snore?

(3) Who snores?

Today's argument: to know the meaning of question is to know what counts as a possible answer to the question. Answers are declarative sentences, so, indirectly, the meaning of a question is also based on truth

2 Review of sentence-level semantics (from *Intro to Semantics*): intensions and extensions

(4) For any sentence S , $\llbracket S \rrbracket$ = set of possible situations in which the sentence S is true
intension

(5) $\llbracket \text{John snores} \rrbracket$ = set of situations in which John snores
= $\{s: \text{John snores in } s\}$
= $\{s_1, s_{56}, s_{678}, \dots\}$

(6) For any sentence S , $\llbracket S \rrbracket^s$ = the meaning of the sentence in a particular situation s
extension

(7) $\llbracket \text{John snores} \rrbracket^{s_{56}} = 1$ if John snores in s_{56}

If for every possible situation we know $\llbracket S \rrbracket^s$, then we know $\llbracket S \rrbracket$. If we know $\llbracket S \rrbracket$, then we can determine $\llbracket S \rrbracket^s$ for any s . The meaning of a sentence is both its intension and its extension, and we can get from one to the other

3 The meaning of questions: hypothesis 1

Hypothesis 1: questions are hidden assertions/imperatives

I.e., questions never stand alone, they are always embedded, and it is the whole expression which is assigned a truth-value

(8) **Who snores?**

(9) $\llbracket \text{Who snores?} \rrbracket^s = \llbracket \text{I ask who snores} \rrbracket^s$ or $\llbracket \text{Tell me who snores} \rrbracket^s$

(10) **Does John snore?**

(11) $\llbracket \text{Does John snore?} \rrbracket^s = \llbracket \text{I ask whether John snores} \rrbracket^s$ or $\llbracket \text{Tell me whether John snores} \rrbracket^s$

But we're *just shifting the problem away, not solving it*: what is the meaning of the embedded part? What do imperatives mean?

4 The meaning of questions: hypothesis 2

Hypothesis 2: the meaning of a question is the set of its possible answers

Because answers are statements, we can use truth-values and truth-conditions indirectly in the meaning of questions

(12) **Does John snore?**

(13) $\llbracket \text{Does John snore?} \rrbracket^s = \{ \llbracket \text{John snores} \rrbracket, \llbracket \text{John doesn't snore} \rrbracket \}$

(14) **Who snores?**

(15) $\llbracket \text{Who snores?} \rrbracket^s = \{ \llbracket \text{John snores} \rrbracket, \llbracket \text{Luisa snores} \rrbracket, \llbracket \text{Stella snores} \rrbracket, \llbracket \text{Luisa and Stella snore} \rrbracket, \llbracket \text{Luisa, Stella and John snore} \rrbracket, \dots \}$

Answering a question: choosing the member of $\llbracket Q \rrbracket^s$ which is true in s :

(16) Luisa: **Does John snore?**

Coppe: **No, John doesn't snore** ($\llbracket \text{John doesn't snore} \rrbracket^s = 1$ in s)

(17) Luisa: **Who snores?**

Coppe: **John snores** ($\llbracket \text{John snores} \rrbracket^s = 1$ in s)

Question-embedding verbs are sensitive to the truth of the members of the embedded question:

(18) $\llbracket \text{whether/if John snores} \rrbracket^s = \llbracket \text{does John snore?} \rrbracket^s$, differences between them syntactic

(19) $\llbracket \text{Lisa wonders whether/if John snores} \rrbracket^s = 1$ if Lisa wants to know which member of $\llbracket \text{whether/if John snores} \rrbracket^s$ is true

(20) $\llbracket \text{Lisa wonders who snores} \rrbracket^s = 1$ if Lisa wants to know which member of $\llbracket \text{who snores?} \rrbracket^s$ is true

- (21) x wonders $Q = 1$ if x wants to know which member of $[[Q]]^s$ is true
- (22) $[[\text{Lisa knows whether/if John snores}]]^s = 1$ if Lisa knows which member of $[[\text{whether/if John snores}]]^s$ is true
- (23) $[[\text{Lisa knows who snores}]]^s = 1$ if Lisa knows which member of $[[\text{Who snores?}]]^s$ is true
- (24) x knows $Q = 1$ if x knows which member of $[[Q]]^s$ is true

Possible answers

(25) Coppe: **Which student snores?**

Luisa:

- a. **John snores**
- b. **John**
- c. **John does**
- d. **Mary doesn't snore**
- e. **I don't know**
- f. **#I'll have salmon**

(25)b/c: short versions of (25)a. (25)a is basic, (25)b/c are derived (e.g., with VP ellipsis)

(25)b Coppe: **Which student snores?**

Luisa: **John snores**

(25)d: intuitively a partial answer, since it at least helps to reduce ignorance (we know of at least one member of $[[\text{Which student snores?}]]^s$ that is false, i.e., $[[\text{Mary snores}]]$), though we don't yet know which member of $[[\text{Which student snores?}]]^s$ is true)

(25)e: not really an *answer*, but a *reply*. Lots of things can be replies without being answers. We don't include it in $[[\text{Which student snores?}]]^s$

(25)f: not an answer or a reply, pragmatically ill-formed because irrelevant

A possible, complete answer stays close to the form of the question and reduces ignorance completely. To answer a question is to assert one of its possible answers

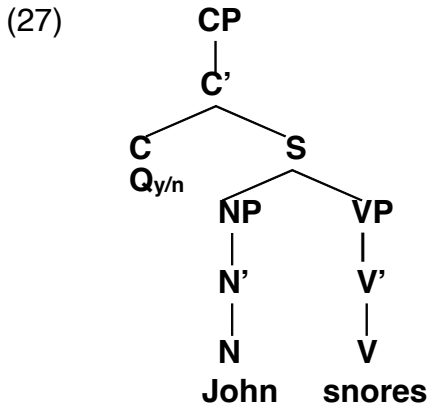
Argument for the similar treatment of yes/no questions and content questions

There are verbs that take only declarative complements (*believe*), those that take only interrogative complements (*ask, wonder*), and those that take both (*know, tell*). But there is no verb, with a very small number of exceptions that can be explained away (\rightarrow Puzzle 8 for an example), that takes only yes/no questions and not content questions, or only content questions and not yes/no questions. Yes/no questions and content questions are treated as a natural class in this account, and they actually behave like a natural class empirically

5 Implementing hypothesis 2: the composition of the meaning of yes/no questions

Source of question meaning: a question particle $Q_{y/n}$ that creates question meanings out of sentence meanings, and which is null in English

(26) **Does John snore?**



(28) Rule for $Q_{y/n}$
 If $X = [C' Q_{y/n} S]$, $\llbracket X \rrbracket^s = \{\llbracket S \rrbracket, \llbracket \text{not } S \rrbracket\}$

(29) Rule for negation
 If $X = [\text{not } Y]$ and Y denotes a truth-value, $\llbracket X \rrbracket^s = 1$ if $\llbracket Y \rrbracket^s = 0$

(30) $\llbracket \text{not } S \rrbracket^s = 1$ if $\llbracket S \rrbracket^s = 0$ extension

(31) $\llbracket \text{not } S \rrbracket = \{s: \llbracket S \rrbracket^s = 0\}$ intension

(32) $\llbracket \text{John snores} \rrbracket = \{s: \text{John snores in } s\}$ intension

(33) $\llbracket \text{not John snores} \rrbracket = \{s: \llbracket \text{John snores} \rrbracket^s = 0\} = \{s: \text{John doesn't snore in } s\}$ intension

(34) $\llbracket \text{Does John snore?} \rrbracket^s = \{\llbracket \text{John snores} \rrbracket, \llbracket \text{John doesn't snore} \rrbracket\} =$
 $= \{ \{s: \text{John snores in } s\}, \{s: \text{John doesn't snore in } s\} \}$

Support for $Q_{y/n}$: languages with overt question particles

Polish

(35) Czy Marta lubi koty?
 Q Martha like.PRES.3SG cat.ACC.PL
 'Does Martha like cats?'

Japanese

(36) Taro-ga sono hon-o yomimasita ka?
 Taro-NOM that book-ACC read Q
 'Did Taro read that book?'

(37) Watasi-wa kare-ni *The lord of the Flies*-wo yonda ka tazuneta?
 1SG-NOM him-DAT *The lord of the Flies*-ACC read.PST Q ask.PST
 'I asked him if he had read *The lord of the Flies*'

Sinhala (Indo-Aryan, Sri Lanka)

(38) Chitra ee potə kienwa də?
 Chitra that book read Q
 'Did Chitra read that book?'