Choice Functions and the Semantics of Interrogatives

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This talk argues for a unified semantics of matrix and embedded interrogatives where an interrogative as a whole denotes a context-sensitive skolemized choice function (cf. Kratzer 1998 for the analysis of specific indefinite along this line) from situations comprised of the attitude holder's intention to choice functions that selects among the set of alternative situations a unique situation held by the attitude holder, a fact that a questioner wishes to find out in the case of matrix interrogatives, and a fact controlled by the attitude denoted by the matrix verb in the case of embedded interrogatives. This analysis allows the intension-extension distinction (Groenendijk & Stokhof 1984) to be dispensed with and also accounts for novel data discussed in Beck and Sharvid (2002) for quantificational variability effects (QVEs) of embedded interrogatives.

1. Interrogatives as Context-Sensitive Skolemized Choice Functions: I propose the interrogative operator Q_i denotes a context sensitive choice function as in (1). Q comes with an implicit argument i interpreted as f(s), where f is the skolem function from situations to choice functions. In this way, Q_i denotes a context sensitive choice function that selects among S, a unique situation and whose value depends on the way i is interpreted. S is derived in three steps: (i) *whether* (silent in matrix interrogatives) in (2a) applies to a proposition p to form a partition in the sense of Groenendijk & Stokhof (1984) in yes-no questions, or *who* for example, to a property P in (2b); (ii) the propositional concept formed in the first step is extensionalized by inserting a situation variable (a topic situation variable in the sense of Kratzer (2007)); (iii) the exemplification operator *EX* in (3) applies to the result binding the variable, yielding the set of alternative situations mapped into the respective propositions such that the former exemplifies the latter.

2. Matrix and Embedded Interrogatives: In the present analysis, whether an interrogative sentence denotes a question or not depends on how the implicit argument i (i.e. f(s)) is interpreted. In matrix interrogatives, s of f(s) refers to a questioner's desire to find out the fact of the matter resulting in the interrogative interpreted as a question. In embedded interrogatives, s is bound by the matrix predicate: in the case of *wonder*, f is the function from the subject's wonderment into a choice function that selects a unique situation that the subject wonders about. In the case of *know*, *report*, f is the function from the subject's knowledge or report into a choice function that selects a unique situation that the subject knows or reports. In this way, the semantic nature of the embedded interrogatives is predicted to depend on the semantic content of the matrix attitude verb. Predicates such as *believe* cannot embed interrogatives, which is also predicted because these predicates cannot embed functions whose value denotes a (potential) fact. This is in agreement with Ginzburg's (1997) 3-way split among interrogative and declarative embedding predicates, namely that resolutives (e.g. *report*) and factives (e.g. *know*) embed an entity that refers to the class of facts, inquisitives (e.g. *wonder*) embeds questions, and truth-functional predicates (e.g. *believe*) embed propositions.

3. The Question-Answer Relation and Context-Change Potentials: Posing a question changes a context in such a way as to restrict how an assertion is made. Given this dynamicity of question-answer relation, I adopt Peregrin and Heusinger's (2003) dynamic semantics with choice functions and propose that questions and answers are interpreted with respect to context change potentials as functions from choice functions into choice functions. In particular, answers are defined as in (4a), where the topic pronoun **s** is an E-type pronoun analyzed as a choice function Φ_c as in (4b) whose referent contextually determined. According to this proposal, a question updates the input choice function Φ to Φ' with respect to its restrictive content and the answer is evaluated with respect to this update from which the topic pronoun receive its referent as in (5).

4. Quantificational Variability Effects (QVEs): Beck & Sharvit (2002) presents an analysis of QVEs of embedded interrogatives in terms of quantification over sub-questions based on examples such as (6) - (10). Beck & Sharvit speculate: (i) QV-reading is available for embedded interrogatives with predicates such as *wonder* and *ask* only when they are topical since being topical it is hypothesized that a complete true answer is defined; however, (ii) QV-reading is available for those with *depend*, *decide*, *find out* whether or not they are topical since these predicates presuppose that a complete true answer is defined. The present analysis predicts all the possible QV-readings discussed in Beck and Sharvit. The contrast in availability of QV-reading follows from (i) the question-answer relation in terms of context change potentials defined and exemplified in (4) and (5), where the quantifier domain is restricted via the topic situation, and (ii) the presupposition of the predicates *depend*, *decide*, *find out* among others that the value of the choice function is defined, which in turn serves for the domain of the quantifier. In all these cases, *for the most part* quantifies over the set of minimal situations that are part of the unique situation the choice function selects among the possible alternatives.

Examples and Definitions

(1) [Q_i S] denotes a choice function Φ_i ranging over the set of alternative unique situations S and i denotes that function *f* from situations to choice functions.

(2) a. ||whether (or not)|| = λp.λs.λs'[p(s) = p(s')])]
b. ||who|| = λP.λs.λs'[λx[person(x)(s) & P(x)(s)] = λx[person(x)(s') & P(x)(s')]])]

(3) λp.λs.[*EX*(s, p)]

(4) a. λs [s ≈ $s_{topic,\ c}$ ∧ ϕ(s)](**s**)], where **s** is a topic pronoun
b. ||**s**|| = Φ_c, where Φ is a choice function and *c* is contextually determined

(5) A: Who cheated? B: John cheated.
a. ||who cheated|| = $\Phi_{f(s)}$(λs*EX*(s, λs'λx[person(x)(s') & cheat(x)(s')] = λx[person(x)(s) & cheat(x)(s)], where tense is ignored.
b. ||John cheated|| = λs [s ≈ s_{topic} ∧ John cheated in s](**s**)], where ||**s**|| = Φ_c
c. There is an update function u_1 with $u_1(\Phi_i)$ = Φ' such that Φ'(||who cheated||) and λs [s ≈ s_{topic} ∧ John cheated in s](Φ')], where Φ_c = Φ'

(6) a. Who will be admitted depends for the most part (exclusively) on this committee. (QV-reading available)
b. For most people, it depends (exclusively) on this committee whether they will be admitted.

(7) a. The committee mostly decides which candidates will be admitted. (QV-reading available)
b. For most candidates, the committee decides whether they will be admitted.

(8) a. #Sue mostly wonders what she got for her birthday. (QV-reading not available)
b. ?For most things that Sue got for her birthday, She wonders if she got them for her birthday.

(9) a. A: Has John found out which students cheated?
B: No. For the most part, he is still wondering. (QV-reading available)
b. For most x, John is still wondering whether x cheated.

(10) a. A: And what did Inspector Jury find out? (QV-reading available)
B: Jury found out, for the most part, who was present at Smith's party.
b. For most x: x was present at Smith's party, Jury found out that x was present at Smith's party.

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