

Copular asymmetries in belief reports

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In one way or another, copular sentences relating referential expressions are often thought of as symmetric in their semantics: on this view, *A is B* expresses that a symmetrical relation holds between the semantic value of *A* and the semantic value of *B*. The coherence of claims like (1) – emphasized by Cumming 2008 -- persuades us that this view is wrong. In this paper, we propose an essentially asymmetric analysis of these kinds of copular sentences, with the goal of accounting for their contribution to belief reports. We motivate the analysis with a treatment of known facts involving copular questions, and then show how it accounts for others.

(1) Mary thinks that Jessica is Sam, but she doesn't think that Sam is Jessica.

The proposal. *The main ingredients:* (i) Copular sentences may involve a relation PRED that relates an individual and an individual concept ((2)). (ii) An individual can be coerced to a concept, and thus an inherently individual-denoting expression can appear in the concept-argument position of PRED ((3)). While the precise nature of the coercion – the precise identity of f in (3) – depends on the context, there is a constraint. Our choice of f on a given occasion will make it the case that, for any individual x in its domain, the value of $f(x)$ at an index i has properties at i that we presuppose x to have uniquely. *Examples:* Two examples appear in (4) (assuming that $[[\text{Jessica}]]^{c,i}$ is a certain individual j and $[[\text{Sam}]]^{c,i}$ a certain individual s). We imagine “PREDPs” like those in (4) as small clauses generated below *be*.

(2) $[[\text{PRED}]]^{c,i} = \lambda k_{\langle s, e \rangle}. \lambda x_e. x = k(i)$

(3) $[[\text{PRED Z}]]^{c,i} = \lambda x_e. x = f([[Z]]^{c,i})(i)$

(4) a. $[[\text{Jessica} [\text{PRED} [\text{the violinist}]]]]^{c,i} = 1$ iff j is the violinist in i

b. $[[\text{Jessica} [\text{PRED Sam}]]]]^{c,i} = 1$ iff $j = f(s)(i)$ (where $f(s)(i)$ is the individual in i who has certain properties that we presuppose s to have uniquely)

Old facts involving questions. As observed by Percus 2003, in a context like (C1) it would make sense for me to whisper (5a) to you but not (5b). We see this as follows, assuming that the name *Jessica* denotes individual j who is standing in front of us. In the case of (5), extraction occurs from the argument position of PRED that is reserved for a concept (cf. (6a)). The question thus poses a choice among elements of (6b), and, given the context, it makes sense to pose a choice among three such elements – these propositions involve concepts that for a given index yield the trio's violinist at that index, or the trio's cellist, or the pianist. By contrast, in the case of (5b), extraction occurs from the position that is reserved for an individual ((7a)). To the extent that the sentence is interpretable at all, it is because *Jessica* is coerced to a concept, and in that case the question poses a choice drawn from (7b). It is clear that the propositions here do not correspond to propositions that we would use (5a) to pose a choice between. Moreover, if we consider the propositions in this set that make reference to salient individuals, arguably the constraints on f make the truth of each settled in the context; it therefore makes no sense to pose the question.

(C1) *The role dilemma scenario.* Having just been introduced to the members of a piano trio, we know their names but are not sure who plays which instrument. They are still standing in front of us.

(5) a. Who do you think Jessica is _ (-- the violinist) ?

b. Who do you think _ is Jessica (-- the violinist) ?

(6) a. ... [Jessica [PRED t_1]]

b. $\{ \lambda i_s. \text{For all } i' \in \text{Dox}_{\text{you}(c),i}, j = k(i') \mid k \in D_{\langle s, e \rangle} \}$

(7) a. ... [t_1 [PRED Jessica]]

b. $\{ \lambda i_s. \text{For all } i' \in \text{Dox}_{\text{you}(c),i}, x = f(j)(i') \mid x \in D_e \}$

New facts involving questions. In context (C2) – a context in which we can take (1) to be true – it would make sense for me to whisper (8a) to you but not (8b). The view above extends naturally to these facts. It makes sense to ask (8a), because, given the context, it makes sense to pose a choice among propositions in (6'b) -- this time, however, the relevant propositions are arguably like what we would get by embedding (4b) under *Mary thinks*, and the concepts at play would be what we get by applying f to some individual. Asking (8b) is inappropriate because it does not seem to be an issue to which individual Mary attributes properties that Jessica has uniquely.

(C2) *The mistaken identity scenario.* Bill is throwing a party in honor of his cousin Sam who has just been awarded his PhD. All the guests know that, but they don't all know Sam (and some of them, like Mary, don't even know his name). When Jessica arrives, Mary, who is already completely toasted, walks up to her with a big smile. "You must be proud to be a doctor now," she says, "Is your wife coming too?" I am in the room (next to Sam) and can see that Mary is very confused, but haven't caught on yet as to the precise nature of her confusion.

- (8) a. Who does Mary think Jessica is _ ?
 b. Who does Mary think _ is Jessica ?

(6') a. ... [Jessica [PRED t₁]] b. { λ_{i_s}. For all i' ∈ Dox_{m,i}, j = k(i') | k ∈ D_{<s,e>} }

(7') a. ... [t₁ [PRED Jessica]] b. { λ_{i_s}. For all i' ∈ Dox_{m,i}, x = f(j)(i') | x ∈ D_e }

Cumming-style sentences. That we take (1) to be true in Context (C2) follows given that the precopular DPs correspond to external arguments of PRED and the postcopular DPs to internal arguments. (C2) makes salient the fact that Mary thinks that *j* -- the individual she is talking to -- has certain properties that *s* has uniquely in actual fact (the property of being the cousin of Bill's who has just been awarded his PhD, the property of being the guest of honor at Bill's party). Nothing about (C2) indicates that Mary thinks that *s* -- the individual next to me -- has certain properties that *j* has uniquely in actual fact.

Complications. We imagined above that the precopular DP always corresponds to the external argument of PRED and the postcopular DP to the internal argument. In that case, statements of the form *Mary thinks that A is B* should systematically express that Mary thinks that A has certain properties that B has uniquely in actual fact. In fact, however, statements of this form are ambiguous. This can be seen from the fact that, even though we can take (1) to be true in (C2), Bill, watching the scene with amusement, could also say (9) truly. A consideration of facts of this sort leads us to the following conclusions, akin to those of other "inversion" approaches to specificational sentences: (i) Copular sentences may contain an additional projection above PRED's projection, to which non-focused material may move; (ii) this additional projection constitutes a focus domain. This means that *Sam is Jessica* can be constructed starting from the ingredients in (10a) (Foc⁰ in (10) is the head of the additional projection and is itself uninterpreted). At the same time, the use of this structure requires there to be a salient question that poses a choice among the propositions in (10b), which express that one individual or another has properties that Sam happens to have in actual fact; we suggest that Bill's utterance evokes a question like "Which one is the guest of honor?" a relevant question in light of Mary's mental state even if it is settled for the discourse participants. Crucially, we maintain that wh-words cannot extract from the higher position, and thus our analysis of (5b) and (8b) above remains unchanged. We argue that ultimately this condition follows from pragmatic principles -- the basic idea is that questioning from the higher position conflicts with the givenness condition on the material in that position.

(9) Look! Mary thinks that SAM is JESSICA!

(10) a. [_{FoCP} Foc⁰ [_{PREDP} Jessica_F [PRED Sam]]] ~C b. { λ_{i_s}. x = f(s)(i) | x ∈ D_e }

Notes. We made several simplifications in this abstract, most notably: (i) On our view, a sentence like *Mary thinks that Jessica is Sam* (if generated without inversion) describes a de re belief of Mary's about Jessica and is more properly paraphrased as *Mary ascribes to Jessica certain properties that Sam has uniquely in actual fact*. We have abstracted away here from the mechanism that yields de re readings. (ii) We actually assume, contrary to the way we presented things here, that predicates have index (world) arguments that are realized syntactically by variables; this opens up further questions. (iii) The use of indexicals like *you* and *I* rather than names adds some interesting additional wrinkles to the data, which we will discuss. Also, beyond what we summarized here: (iv) We will show that facts discussed by Romero 2005 are consistent with our approach and do not force us to posit an additional relational element in copular sentences as Romero does. (v) We will consider question-answer matching and show that an initially puzzling pattern can be described naturally.

References. Cumming 2008, Variabilism, *Philosophical Review*; Percus 2003, Copular questions and the common ground, *Proceedings of CONTEXT '03*; Romero 2005, Concealed questions and specificational subjects, *Linguistics and Philosophy*.