

# Puzzles of attitude ascriptions

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PHIL 43916

November 3, 2014

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## 1 THE PUZZLE OF NECESSARY CONSEQUENCE

Our theory of attitude ascriptions so far holds that the semantic value of a that-clause is the intension of the embedded sentence.

Given that the intension of a sentence is the set of worlds in which it is true (or, equivalently, the characteristic function of this set), it follows from this theory that the following principle is true:

*The closure of belief under necessary equivalence*

If S and S\* have the same intension (are true in exactly the same worlds), then ‘A believes that S’ is true if and only if ‘A believes that S\*’ is.

Can you think of any plausible counterexamples to this principle? What pairs of sentences have the same intension?

This is just the beginning of the problems. First, the following principle appears very plausible:

*The distribution of belief over conjunction*

If ‘A believes that S and S\*’ is true, then so is ‘A believes that S’ and ‘A believes that S\*.’

But now suppose that we have a pair of sentences, S and S\*, and suppose that S entails S\*. Then the following two sentences will have the same intension:

S  
S and S\*

Put all of this together, and what you get is:

*The closure of belief under necessary consequence*

If S entails S\*, then if ‘A believes that S’ is true, so is ‘A believes that S\*.’

Can you see how this follows from the closure of belief under necessary equivalence and the distribution of belief over conjunction?

This closure of belief under necessary consequence is wildly implausible. The problem here (which, in this form, is due to Soames (1985, 1988)) can be brought out in two ways:

(1) Necessary truths are necessary consequences of everything. So, anyone who has any beliefs at all believes all necessary truths. (So, for example, everyone believes every mathematical truth.)

(2) Every proposition is a necessary consequence of a necessary falsehood. So, if anyone believed a necessary falsehood, they would believe every proposition. But no one believes every proposition. So no one believes any necessary falsehoods. (So, for example, no one has ever had any false mathematical beliefs.)

Note that the problems here do not only arise for agents who fail to see what follows from their beliefs. The example of the paradox of the preface.

It seems hard to deny that belief distributes over conjunction. So it seems that we must deny the closure of belief under necessary equivalence. But to do that within a compositional semantics, we have to deny that the semantic value of a that-clause is the set of worlds in which the embedded sentence is true. And to do that, we need to revise our lexical entry for ‘that.’

## 2 STRUCTURED INTENSIONS

We have already discussed non-extensional contexts: nodes which are such that substitution of expressions with the same semantic value can change truth-value. What we have here, it seems, is a node which is such that substitution of sentences with the same *intension* can change truth-value. Such contexts are sometimes called *hyper-intensional*.

Our former view of ‘that’ was:

$$\llbracket [\text{CP that S}] \rrbracket^{M,w,i,g} = \{w^* : w^* \in W \text{ and } \llbracket S \rrbracket^{M,w^*,i,g} = 1\}$$

How might we do better? We already know how to understand the intension of a sentence. But we might also define the notion of a *structured intension*. Take a simple sentence like ‘Pavarotti walks.’ The intension of this sentence is the set of worlds in which Pavarotti walks. But we also know the intensions of the words that make up this sentence:

$$\begin{aligned} \llbracket \text{Pavarotti} \rrbracket^w &= \text{Pavarotti} \\ \llbracket \text{walks} \rrbracket^w &= \text{f:f}(w) = \{x : x \text{ walks in } w\} \end{aligned}$$

(Here for simplicity I ignore the role of time.)

Then we might represent the structured intension of this sentence as the ordered pair

$$\langle \text{Pavarotti}, \text{f:f}(w) = \{x : x \text{ walks in } w\} \rangle$$

This is just a sketch of a theory; it will have to get more complicated to represent the structured intensions of sentences with more than two leaves. But even this simple sketch is enough to show how we might distinguish between the structured intensions of sentences which are true in just the same worlds, and hence share the same intension. And this promises to help with hyper-intensional contexts, if we revise our view that the meaning of ‘that’ so that

$$\llbracket \llbracket \text{CP that S} \rrbracket \rrbracket^{M,w,i,g} = \text{the structured intension of S relative to } M \text{ and } g$$

To state this more precisely, we’d have to come up with some canonical way of deriving and representing structured intensions – the informal sketch above will be enough for our purposes.

To fix the problem, we also have to revise our lexical entry for ‘believes.’ Our former view was that a belief ascription is true iff the embedded sentence is true in every world in the subject’s belief set. But that view of ‘believes’ leads immediately to the problems discussed above, whatever our view of ‘that.’

Can you think of how we might state the lexical entry for ‘believes’ to fit the view that belief is a relation between subjects and structured intensions?

One might object that this view makes *too many* distinctions between beliefs, and hence fails to capture important generalizations which we might want to capture. Suppose, for example, that we want a theory which explains what it is rational for a given subject to believe or do, and suppose that we know that one subject believes the structured intension of ‘S or S\*’ and another believes the structured intension of ‘It is not the case that not-S and not-S\*.’ These will be different structured intensions. But it seems that the rational commitments of the two subjects will be the same. That is something that the ‘intensions’ theory captures but which the ‘structured intensions’ theory does not (at least not without further elaboration).

### 3 FREGE'S PUZZLE

But a problem remains, which was noticed by Frege (1892/1960). The problem is that very similar attitude ascriptions, like

Bob believes that Hesperus is visible in the morning.

Bob believes that Phosphorus is visible in the morning.

or

Lois believes that Superman can fly.

Lois believes that Clark Kent can fly.

seem as though they can differ in truth-value. This is often called 'Frege's puzzle' (though other, related problems also go by that name).

Is this a problem for our attempt to explain that-clauses in terms of structured intensions? It is if two names which refer to the same object have the same intension; and, in the semantic theory we've been using, they will.

Could we revise that theory so that such names differ in intension? What would this involve?

Frege tried to solve this problem by distinguishing between sense and reference, and explained this distinction as follows:

“The reference of a proper name is the object itself which we designate by its means; the idea, which we have in that case, is wholly subjective; in between lies the sense, which is indeed no longer subjective like the idea, but is yet not the object itself. The following analogy will perhaps clarify these relationships. Somebody observes the Moon through a telescope. I compare the Moon itself to the reference; it is the object of the observation, mediated by the real image projected by the object glass in the interior of the telescope, and by the retinal image of the observer. The former I compare to the sense, the latter is like the idea or experience. The optical image in the telescope is indeed one-sided and dependent upon the standpoint of observation; but it is still objective, inasmuch as it can be used by several observers. At any rate it could be arranged for several to use it simultaneously. But each one would have his own retinal image. (“On sense and reference”)

How might we incorporate this distinction into our semantics? One idea, which is close to what Frege thought, is that we can think of the semantic values of that-clauses as structured entities (as the proponent of structured intensions thought) but ones whose constituents are, not intensions, but Fregean senses.

We would then have to revise our view of the lexicon. The lexicon will now assign to expressions, not intensions, but Fregean senses. Those Fregean senses will *determine* intensions — so much of our semantics can continue to work as it has.

It is reasonable to ask for more information about what Fregean senses are, and about when two expressions have the same sense. Frege answered the latter question using (roughly) the following principle:

*Frege's criterion*

If it is possible to understand two sentences  $S$  and  $S^*$  while (after reflection) taking different attitudes toward their truth-values, then  $S$  and  $S^*$  differ in sense.

Then we can say that  $e$  and  $e^*$  differ in sense iff there are two sentences  $S$  and  $S^*$ , which differ only in the substitution of  $e$  and  $e^*$ , and differ in sense.

How would you give the intension of 'believes' and 'that', on a Fregean view?

A problem: Frege's theory might explain 'substitution failures' while failing to explain much more common cases of 'substitution success.'

#### 4 KRIPKE'S PUZZLE

However, even if we make use of Fregean senses, and these are otherwise unproblematic, a puzzle – presented by Kripke (1979) – remains. We can think of the puzzle as based on the following four initially plausible principles:

1. Weak disquotation: If a competent speaker on reflection sincerely assents to  $S$ , then that speaker believes 'that  $S$ '.
2. Reverse disquotation: If a speaker believes 'that  $S$ ' then, on reflection, that speaker will (if given the chance) sincerely assent to  $S$ .
3. Translation: if a sentence expresses a truth in one language, then its translation into another language also expresses a truth (in that language).
4. Contradiction: if you have a pair of contradictory beliefs, it is always possible to discover this on the basis of reflection on those beliefs.

Using the example of puzzling Pierre, Kripke argues that (1)-(3) are inconsistent. By (1), we can derive the truth of

Pierre croit que Londres est jolie.

Then by (3) we can derive the truth of the translation of this sentence, namely

Pierre believes that London is pretty.

But by (2) we can derive the truth of

Pierre does not believe that London is pretty.

which is a contradiction. So one of (1)-(3) must be false.

One might think that this is problem to do with translation, and hence that we can solve the problem by rejecting (3).

There are two problems with this response to the puzzle:

- (3) is very plausible.
- Kripke's example of Peter and Paderewski shows that we can generate the puzzle without (3).

A second version of the puzzle: the case of Pierre shows that (1) and (3) are inconsistent, not just with (2), but with (4).

Kripke does not himself take a stand on how to resolve these puzzles. One plausible reply to the puzzles is to reject (2) and (4).

But if we do this, that weakens the case for a Fregean approach to that-clauses for three reasons:

- (a) It seems that the examples which we used to argue against the structured intensions approach, and for the Fregean approach, relied implicitly on principles like (2) and (4).
- (b) It seems that Frege's criterion is going to lead to the implausible result that 'London is pretty' and 'Londres est jolie' differ in meaning.
- (c) The problem of substitution success returns with a vengeance. Imagine trying to report Peter's 'Paderewski' beliefs.

## 5 RICHARD'S PUZZLE

Richard (1983) gives an example in which Bill is in a phone booth which, unbeknownst to him, is being approached by a steamroller. Sally is talking in the phone to Bill while looking at the phone booth — but does not realize that Bill is the person in the phone booth at which she is looking. Sally accepts "He is in danger but rejects "You are in danger. Then, by Fregean lights, it looks like (i) is true and (ii) false out of Sally's mouth, despite 'he' and 'you' both having Bill as their semantic value:

- (i) I believe that he is in danger.
- (ii) I believe that you are in danger.

But suppose that Bill tells Sally that someone is looking at him gesturing wildly (unknownst to him, this is Sally). Then the following seems true out of Sally's mouth:

- (iii) The person waving at you believes that you are in danger.

But (iii) entails (ii) — which means that (ii) must, contra our earlier view, be true. Does the fact that (ii) is true pose a problem for the Fregean?

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