

PLING228 Semantics Research Seminar

de re reference and quantifying in

1 Introduction

1.1 Two kinds of modal claims / two readings of modal claims

de re

- (1) a. (There is) someone who John believes to be a spy.
The person who John believes to be a spy
- b. We questioned everyone who might be guilty.
- c. There is someone who must clean the bathroom.
- d. There is someone who is likely to win the lottery.

de dicto (and *de re* **readings**)

- (2) a. John believes that someone is a spy.
John believes that the person standing next to me is a spy.
- b. Everyone might be guilty.
- c. Someone must clean the bathroom.
- d. Someone from New York is likely to win the lottery.

1.2 De re / de dicto as a scope ambiguity

Many properties of the two types of modal statement can be elucidated under a standard possible-worlds semantics for modals/attitude verbs (see next week), and the ambiguous cases can be explained in parallel given that there is a (covert) ambiguity of scope. In fact the second point can be appreciated in abstraction from the particular analysis of the semantics of modals, as follows.

- Fixing scope fixes reading.

As shown above and as Quine noticed – though surely not first? – *de re* readings can be paraphrased unambiguously by using syntax that forces “wide” scope for the expression read *de re* relative to the modal. Conversely narrow scope can sometimes be forced on syntactic grounds, which forces a *de dicto* reading – e.g. ‘John might get upset when everyone leaves’. See below however for caveat.

In some cases the syntax or lexical semantics (?) permits only one reading (‘Nobody may leave’), sometimes somewhat surprisingly. E.g. epistemic ‘may’ claimed to allow only *de dicto* reading in ‘Everyone may be guilty’ in contrast with examples differing minimally in the type of modality, such ‘Everyone can fit in the car’. von Stechow & Iatridou 2003 suggest an underived, blanket constraint on quantification across epistemic modals, but (1-b) (and (2-b)?) suggest this could at most be lexically specific to ‘may’.

- Substitution of co-extensive terms always ok on *de re*, but not *de dicto*; substitution generally ok outside modal contexts but not within.

example: ‘someone from the largest city in the northeast’ on *de re* reading of (2)-d); *de dicto* reading of Quine’s Ortcutt examples (below)

- (3) a. The US President / Obama believes that Pierre is lazy.
- b. Pierre believes that the US President is a woman $\nRightarrow$ Pierre believes that Barack Obama is a woman

- Existence entailments go through on *de re* but not necessarily *de dicto*; existence entailments often blocked in modal/attitude contexts.

example: *de re* reading of definite description in (2)-a;

‘John is guilty’ vs. ‘John might be guilty (or maybe nobody is)’, ‘John is riding a unicorn’ vs. ‘John wants (to have) a unicorn’

2 Overview of topics to be covered

While a scopal account of *de dicto/de re* is widely accepted, the details are not straightforward in many respects. We will look at some of the complications focusing on areas of current interest in the semantics and philosophy, which connect to broader questions of interest in each.

2.1 Implementing Kaplan's theory of de re attitudes

Quine noted that although de re modal claims, and de re readings, appear to involve quantification into modal contexts (wide scope) this appears to be in conflict with other linguistic data given standard assumptions about quantification. Quine and Kaplan suggested solution strategies which we consider below. Next week we look at semantic and more general linguistic issues about implementing Kaplan's strategy.

2.2 Mixed readings

In the 70s and 80s it was noticed that there are further readings which defy the de re / de dicto distinction as one of scope (of a nominal phrase). In particular, readings in which the quantificational force of a term is "de dicto" but other diagnostics line up with de re. Example:

- (4) John believes that someone in the room is guilty.
context: John believes that Daniel or Nathan or Yasu or ... is guilty (but has no idea about our current location).
- (5) Everyone who is rich might have been poor.
"there is counterfactual possibility in which Bill Gates, Oprah, etc. are all poor"

Issues to be explored about these readings: To account for mixed readings powerful semantic machinery was assumed. This machinery brings questions of explanatory adequacy since it may not derive only the correct readings. Cf. Yasu Sudo's work.

2.3 De re quantification and epistemic modals

A further puzzle about de re quantification appears to arise with epistemic modals ('might', 'must'). Under familiar truth-conditional accounts it would seem that the following kinds of examples are wrongly predicted to be coherent/non-contradictory

- (6) a. #There is a German student who might be Swiss.

- b. #A student who might be Swiss is German.

- (7) There is a German student who the available evidence does not rule out as being Swiss.

As noted above it cannot be because quantification across epistemic modals ('might' at least) is for some reason impossible.

Some traction on the problem may be provided by recent dynamic and expressivist accounts of epistemic modals, which can possibly assimilate the above to a broader phenomenon that these accounts address:

- (8) a. #It is sunny but it might not be.
b. #Imagine that it is sunny but it might not be.
c. Imagine that it is sunny but the evidence available is compatible with it not being sunny. (You'd take an umbrella.)

They do this by associating an incompatible meaning with a) [in addition, on some accounts, to a consistent truth condition], derived by forcing 'might' to be interpreted "dynamically" – relative to a body of information/evidence to which the first conjunct is already added,

We will try to determine if such a move is in correct and generalisable to related cases, after introducing the recent accounts of epistemic modals.

3 Kaplan and Quine on Quantifying into Attitudes

3.1 Quine's on de re belief

? notes that we intuitively want to distinguish two readings of:

- (9) Ralph believes that someone is a spy.

As follows:

- (10) a. $\exists x(\text{Ralph believes that } x \text{ is a spy})$.
b. $\text{Ralph believes } \exists x(x \text{ is a spy})$.

He considers the following story:

There is a certain man in a brown hat whom Ralph has glimpsed several times under questionable circumstances on which we need not enter here; suffice it to say that Ralph suspects he is a spy. Also there is a gray-haired man, vaguely known to Ralph as rather a pillar of the community, whom Ralph is not aware of having seen except once at the beach. Now Ralph does not know it, but the men are one and the same. Can we say of this man (Bernard J. Ortcutt, to give him a name) that Ralph believes him to be a spy? If so, we find ourselves accepting a conjunction of the type:
 (11) w sincerely denies ‘...’. w believes that ‘...’.
 as true, with one and the same sentence in both blanks.

What is the issue here? One way of putting the problem is as follows: with respect to the man with the brown hat it seems to be evidently true that:

(11) $\exists x(\text{Ralph believes that } x \text{ is a spy}).$

On the other hand with respect to the the grey-haired man it seems that we can also says:

(12) $\exists x(\text{Ralph believes that } x \text{ is not a spy}).$

From this it seems reasonable to infer:

(13) $\exists x \text{NOT}(\text{Ralph believes that } x \text{ is a spy}).$

But in this story the existential witness is the same for both cases so:

(14) $\exists x((\text{Ralph believes that } x \text{ is a spy}) \wedge \text{NOT}(\text{Ralph believes that } x \text{ is a spy}).$

But this is clearly a contradiction!

Quine considers three options:

- (1) Reject any analysis of quantifying into beliefs. (This is what Quine suggested for those other pesky intentional operators, the dreaded modals)

- (2) Using two forms of belief one being liberal allowing quantifying in, but another not allowing it. Different treatment of negation across two uses to avoid contradiction. In particular we rule out (13) for the liberal ‘belief’.
- (3) Allow variable polyadicity in belief.

The third option is preferred so worth spelling out:

Believe_0 takes as argument a proposition. Example: John believes₀ $[\exists x(x \text{ is a spy})]$

Believe_1 takes as arguments a function from individuals to propositions as well as an individual. Example $\exists x(\text{John believes}_1 (y.[y \text{ is a spy}], x))$

Quine’s thought: nothing is unkosher here as we are not quantifying into an intension (the function from individual(s) to propositions). We are quantifying into the second argument of ‘believe₁’ which is just an normal objectual argument, not a creature of darkness.

In the Ralph/Ortcutt case, we now have the following:

(15) John believes₁ $(y.[y \text{ is a spy}], \text{Ortcutt})$

And:

(16) John believes₁ $(y.[y \text{ is a spy}], \text{Ortcutt})$

However we do not infer either:

(17) NOT John believes₁ $(y.[y \text{ is a spy}], \text{Ortcutt})$

or

(18) John believes₁ $(y.[y \text{ is a spy and } y \text{ is not a spy}], \text{Ortcutt})$

3.2 Kaplan

Quantifying into Intensions

Quine, of course, does not actually allow quantification into intensions. Nice things like quantifiers and variables need to stay away from creatures of darkness like intensions.

This seems to force the (perhaps) undesirable polyadicity of belief, rather than maintaining the relatively simple idea that the main difference between *de re* and *de dicto* beliefs is just a scope difference.

But there is an obvious problem with quantifying in: the problem of putting the value of a variable inside an intensional context. Assume now a vaguely Fregean viewpoint, so that sentences express senses, we'll use corner quotes for this.

$$(19) \quad \ulcorner \text{Ralph is a spy} \urcorner$$

(19) designates the sense of the sentence 'Ralph is a spy', we allow greek variables to be inside corner quote expressions as follows:

$$(20) \quad \exists \alpha (\ulcorner \alpha \text{ is a spy} \urcorner \text{ is a true proposition})$$

If Ralph is a spy, then this will be true for the instance $\alpha = \ulcorner \text{Ralph} \urcorner$ (or any other expression that designates Ralph).

But if this is how we understand quantification into intensional contexts (and it is how a Fregean must it seems) then there is an obvious problem with this:

$$(21) \quad \text{Ralph is such that John believes him to be a spy.}$$

$$(22) \quad \text{John believes } (\lambda \alpha (\ulcorner \alpha \text{ is a spy} \urcorner) \text{ Ortcutt})$$

The problem is, of course, that individuals like Ortcutt are not *senses* they do not quantify in well to corner quotes, which are at the intensional level. Rather this should be:

$$(23) \quad \text{John believes } (\lambda \alpha (\ulcorner \alpha \text{ is a spy} \urcorner) \ulcorner \text{Ortcutt} \urcorner)$$

This however is uninteresting: it is just equivalent to John believes $\ulcorner \text{Ortcutt is a spy} \urcorner$, what we want is the peculiarly relational reading.

So quantifying out here is of no use:

$$(24) \quad \exists x \text{ John believes } (\ulcorner x \text{ is a spy} \urcorner)$$

What we have is a problem of mismatch: we want to quantify over individuals, but we need to quantify into senses with other sense not individuals.

The obvious solution: is to note the relationship of *designation* between a sense and its referents of designation $\Delta(\alpha, x)$ iff α is a sense which designates x .

Now we can treat quantifying in as follows:

$$(25) \quad \exists x \exists \alpha [\Delta(\alpha, x) \text{ and Ralph believes } \ulcorner \alpha \text{ is a spy} \urcorner]$$

What about the problem of 'double vision', well we have both these in the Ortcutt case:

$$(26) \quad \exists \alpha [\Delta(\alpha, \text{Ortcutt}) \text{ Ralph believes } \ulcorner \alpha \text{ is a spy} \urcorner]$$

$$(27) \quad \exists \alpha [\Delta(\alpha, \text{Ortcutt}) \text{ Ralph believes } \ulcorner \alpha \text{ is not a spy} \urcorner]$$

But these do not entail:

$$(28) \quad \exists \alpha [\Delta(\alpha, \text{Ortcutt}) \text{ Ralph believes } \ulcorner \alpha \text{ is not a spy} \urcorner \text{ and } \alpha \text{ is not a spy} \urcorner]$$

Since there are different existential witnesses for the prior two in Quine's case.

Unrestricted exportation problems

There is a big problem here that it might seem now that *de re* belief is too easy. Suppose Ralph believes that there are some spies and they are different heights.

$$(29) \quad \text{Ralph believes } \ulcorner \text{The shortest spy is a spy} \urcorner$$

So we can quantify out as follows:

$$(30) \quad \exists x \exists \alpha [\Delta(\alpha, x) \text{ and Ralph believes } \ulcorner \alpha \text{ is a spy} \urcorner]$$

References

Thus we get an existential witness where x = the shortest spy and α = 'the shortest spy'.

This is meant to be undesirable as Ralph does not have a de re belief. Kaplan proposes the following fix:

$$(31) \quad \exists x \exists \alpha [R(\alpha, x, \text{Ralph}) \text{ and Ralph believes } \ulcorner \alpha \text{ is a spy } \urcorner]$$

Where, R means that “(i) α denotes x , (ii) α is a name of x for Ralph, and (iii) α is (sufficiently) vivid.” Being a name ‘of x for Ralph’ is meant to enforce a causal condition of acquaintance. Note names are not really names, and vividness is really a condition requiring a certain grain of descriptive information.

Comparing views

Kaplan notes as we did above that Quine’s view does not allow him a sense in which Ralph doesn’t believe of Ortcutt that he is a spy.

That is we have:

$$(32) \quad \text{John believes}_1 (y.[y \text{ is not a spy}], \text{Ortcutt})$$

But we cannot have:

$$(33) \quad \text{NOT John believes}_1 (y.[y \text{ is a spy}], \text{Ortcutt})$$

On pain of contradiction.

On Kaplan’s view there is a kind of higher scope negation without inconsistency, namely:

$$(34) \quad \exists x \exists \alpha [R(\alpha, x, \text{Ralph}) \text{ and Ralph doesn't believe } \ulcorner \alpha \text{ is a spy } \urcorner]$$

This isn’t inconsistent with

$$(35) \quad \exists x \exists \alpha [R(\alpha, x, \text{Ralph}) \text{ and Ralph believes } \ulcorner \alpha \text{ is a spy } \urcorner]$$

Since even if witness for x is same, witness for α may be distinct.