

## **PY4613: ANALYTICAL PHILOSOPHY IN THE LATER 20th CENTURY: QUINE**

### **Lecture Eight: Modality and Modal Logic** Semester Two, 2005-6

#### **Recap:**

Quine rejects:

- abstract objects and universals – other than sets
- intensionality / modal talk (necessity / possibility)
- analytic-synthetic distinction
- synonymy
- meanings
- truths that are *c* / // analytic / necessary
- ...

Quine reclaims some of the ground lost by the rejection of these notions by employing a notion of logical truth based on substitution and ordinary truth, and a notion of truth by convention. These are not truths set in stone as the “offending” notions were supposed to be, but as close as it gets.

## What is so bad about intensionality and modality?

*g K fco g cn gl el n hlf l D*

substitutivity *gcn c l c*

Quine takes that to be the same as the indiscernibility of identicals. In any case it says that

“given a true statement of identity, one of its two terms may be substituted for the other in any true statement and the result will be true.”

*g g(Quine, The web of belief, p. 139)*

Cases are easily found, however, where this principle is violated:

Giorgione = Barbarelli

Giorgione was so-called because of his size

✎ Barbarelli was so-called because of his size

Cicero = Tully

‘Cicero’ has six letters

✎ ‘Tully’ has six letters

'Cicero' has six letters', however, is not about Cicero, but about the word 'Cicero', while 'Cicero = Tully' is an identity statement concerning Cicero and not his name.

Quotation marks create *di* contexts. A name occurring within quotation marks is not purely referential: the truth of the statement does not depend solely on the referent of the name, but on the name or description that is used.

We say that such contexts are *h gcm c*, or – for brevity's sake – we just call them *c A*

The first example is resolved in the same way:

Giorgione was so-called because of his size

is really, according to Quine, short for

Giorgione was called 'Giorgione' because of his size

A substitution that results into:

Barbarelli was called 'Giorgione' because of his size

is fine, while substitution into the quotation marks is not.

There are other opaque context than those created by quotation marks, e.g. sentences in the scope of phrases like `believes that', `is unaware of', `knows that', `hopes that', `fears that', etc.

Philip believes that Tegucigalpa is in Nicaragua

Tegucigalpa = the capital of Honduras

✎ Philip believes that the capital of Honduras  
is in Nicaragua

Quine (1943) suggested that, like the in Giorgione-case, these contexts can be construed as derivative of quotations. He suggested to understand the first belief-statement as

Philip believes `Tegucigalpa is in Nicaragua'

Alonzo Church points out in his review of Quine's paper that the original statement does not have the consequence that Philip understands English, while the statement involving the quotation marks does. They should thus not be construed as equivalent.

Church (1950) further argues that attempts to save this account must involve the notion of analyticity.

Quine (1961) – which is partly based on his (1943) – states that:

“Suffice it to say that there is certainly no *f* to re-construe [such sentences in this way]. What *f* imperative is to observe merely that the contexts ‘is unaware that...’ and ‘believes that...’ *o dn* the context of the single quotes in that respect: a name may occur referentially in a statement *V* and yet not occur referentially in a longer statement which is formed by embedding *V* in the context ‘is unaware that...’ or ‘believes that...’.”

*g g(Quine, The web of Belief, p. 142)*

## Modality

Quine thereby prepared the ground to argue that modality and the “so-called modal logic” (which is not really logic, but rather something incomprehensible) create such opaque contexts, too, and are thus unworkable.

One solution, to construe necessity in terms of analyticity, is already ruled out since the notion of analyticity is bankrupt according to Quine.

Arguing from referential opaqueness, Quine wants to establish that there is *c* to make the notion of necessity respectable (and with it possibility and impossibility which are definable in terms of it and negation).

Examples that show that necessity-contexts are opaque:

9 is necessarily greater than 7

Necessarily, if there is life on the Evening Star then there is life on the Evening Star

The number of planets is possibly less than 7

Evening Star = Morning Star

9 = the number of planets

- ✦ The number of planets is necessarily greater than 7
- ✦ Necessarily, if there is life on the Evening Star then there is life on the Morning Star
- ✦ 9 is possibly less than 7

Quine now observes that these statements involve singular terms, but in the properly regimented language of first-order predicate logic, which Quine endorses, statements involving singular terms are eliminated in favour of existentially quantified statements.

The behaviour of opaque contexts in the presence of existential quantification thus has to be investigated.

Also, Quine sides with Carnap that a logic without quantification is uninteresting. Specifically,

“[a]ny system of modal logic without quantification is of interest only as a basis of a wider system including quantification.” (Carnap, 1947, p. 196)

Thus, Quine argues, if there cannot be a system of modal logic with quantification, modal logic has to be abandoned.

Necessity, hence, becomes a notion without a logic. It is thereby incomprehensible and is thus to be abandoned, too.

Quine's strategy is to (1) show that quantification does not straightforwardly mix with opaque contexts in general, and necessity in particular, and (2) that attempts to solve the problem for necessity by tinkering here or there lead into very unwelcome consequences.

## Historical Note:

Technical developments in modal logic – most probably in particular Kripke's possible worlds semantics – have led most philosophers and logicians nowadays to completely ignore Quine's criticism.

### **(1) Quantification into opaque contexts is a no-no**

'Cicero' contains six letters

✎  $\exists$  (' contains six letters)

The quantified statement is meaningless, according to Quine. What might it say? Any of the below?

There is something such that 'it' contains six letters

'Something' contains six letters

' ' is not a variable, but refers to the 24<sup>th</sup> letter of the alphabet. So,

' ' contains six letters

means

The 24<sup>th</sup> letter of the alphabet contains six letters

which is nonsense, or at best false.

Quine also thinks that quantifying into

Giorgione was so-called because of his size

Leads to a nonsensical sentence

✎  $\exists$  ( was so-called because of his size)

He considers it “clearly meaningless” (1961, p. 145) because there is nothing anymore that the ‘so-called’ refers back to.

For belief and similar contexts consider Philip again, who does not know that Cicero = Tully.

Philip is unaware that Tully denounced Catiline

Philip believes that Cicero denounced Catiline

✎  $\exists$  (Philip is unaware that denounced Catiline)

✎  $\exists$  (Philip believes that denounced Catiline)

In both cases the instance that would make the existentially quantified statement true, presumably, would have to be Cicero, i.e. Tully. But then either seems to contradict the respective other unquantified sentence.

(Note, that on all the examples the names can be quinzied and then russelled away.)

The same problems occur, according to Quine, when one attempts to quantify into modal contexts:

✎  $\exists$  (  $x$  is necessarily greater than 7 )

✎  $\exists$  (necessarily, if there is life on the Evening Star then there is life on  $x$  )

What, e.g., is the number, that is necessarily greater than 7? The number of planets (= 9)?

(Note that also the numerals can be replaced by definite descriptions to avoid the use of these singular terms. 9, e.g. is the  $x$  such that  $x = \sqrt{x} + \sqrt{x} + \sqrt{x} \neq \sqrt{x}$ . For every number there are infinitely many definite descriptions.)

Note also, that the statements above must not be confused with statements where the quantifier is within the scope of the necessity operator, rather than the other way around, like:

Necessarily,  $\exists$  (  $x$  is greater than 7 )

Such statements might be rendered meaningful.

We speak today of the distinction between  $f$  (‘‘about the thing’’; quantifier on the outside) and  $f$   $f$   $e$  (‘‘about what is said’’; ‘necessarily’ on the outside) statements.

## (2) Sliding into Essentialism

Consider taking a way out going back to something that already Frege (1892) suggested:

In opaque context, the reference of a singular term is not the object it usually refers to (like Venus in the case of 'Morning Star'), but its sense.

For the Quinean regimented language that would mean that the range of the quantifiers would be restricted to / / *c*objects, like attributes.

This was (apparently) first suggested by Church (1943), and, according to Quine (1953), also implemented by Carnap (1947) – whether Carnap did indeed exactly this is a matter of debate and need not concern us here; but Carnap's approach certainly is close to this.

According to Quine, determining the identity conditions for these intensional objects can only go via the notion of analyticity (two descriptions uniquely determine the same object if, and only if, they are analytically equivalent, Quine (1961), p. 153).

Analyticity is out, though, ever since *W J i o c* .

The only other way Quine sees to allow quantification into modal contexts is by determining the necessary, or *in* properties of objects. If that route were followed, one then would tinker in one way or other with the logic to allow only these quantifications that get the essences right.

“To defend Aristotelian essentialism, however, is not part of my plan. Such a philosophy is as unreasonable by my lights as it is by Carnap’s or Lewis’s. And in conclusion I say, as Carnap and Lewis have not: so much the worse for quantified modal logic.”

(Quine 1961, p. 156)

“[I]t leads us back into the metaphysical jungle of Aristotelian essentialism.”

(Quine 1953, p. 176)

## References

Quine, W.V. (1943) "Notes on Existence and Reference" in *Wk L cn hSkln k* 40, 1943, pp. 113-127.

Quine, W.V. (1953) "Three Grades of Modal Involvement", reprinted in his *Wk a c hSc of g c f k c* . Revised edition. Cambridge, MA: Harvard University Press, 1976, pp. 158-176.

Quine, W.V. (1961) "Reference and Modality", in his *K o c N i lec g S l h Zl* . 2<sup>nd</sup> edition. Cambridge, MA: Harvard University Press, 1961, pp. 139-159.

Carnap, Rudolf (1947) *P of lgi c f R e l* . Chicago: Chicago University Press, 1947.

Church, Alonzo (1943) Review of Quine (1943), in *L cn hV o d ne N i le* 8, 1943, pp. 45-47.

Church, Alonzo (1950) "On Carnap's Analysis of Statements of Assertion and Belief", in *Fcn l* 10, 1950, pp. 97-99.

Frege, Gottlob (1892) "Ueber Sinn und Bedeutung", in *b l ek lh h g Skln kl f gln kl ek M l lm* 100, 1892, pp. 25-50; translated as "On Sense and Reference", or "On Sense and Denotation", or "On Sense and Nominatum", or ..., and published in many, many place.