



Quine on intensional entities: Modality and quantification, truth and satisfaction

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ARTICLE INFO

Article history:

Available online 12 April 2012

Keywords:

Analyticity
Essentialism
Intensional logic
Modal logic
Quantification
Quine
Satisfaction
Truth

ABSTRACT

In this paper, I reconstruct Quine's arguments against quantified modal logic, from the early 1940's to the early 1960's. Quine's concerns were not technical. Quine was looking for a coherent interpretation of quantified-in English modal sentences. I argue that Quine's main thesis is that the intended objectual interpretation of the quantifiers is incompatible with any semantic reading of the modal operators, for example as expressing analytic necessity, unless the entities in the domain of quantification are intensions, i.e. definitional entities. The difficulty is that it makes no sense to say of an ordinary object that it bears a property necessarily or contingently when the necessity or contingency in question is analytic. However, starting in 1960, Quine claims that quantified-in modal sentences can be coherently interpreted only as essentialist predications. When we say about an object that it necessarily *F*'s, we can only coherently mean that it essentially *F*'s. In the paper, I argue that adequately qualified the thesis is plausible. Two important qualifications are needed. The first is the assumption that satisfaction is an irreducibly predicative notion, making any explication of satisfaction in terms of truth inadequate. The second is the ontological rejection of purely semantic, i.e. merely definitional, entities. With these qualifications in place, Quine's rejection of the combination of objectual quantifiers and semantic modalities can be upheld. In this way, we vindicate a *qualified version* of Quine's conjecture that quantified modal logic is committed to essentialism.

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1. Introduction

Quine's stand against the interpretability of modal discourse is well known. Quine's main target is quantified modal logic, specifically quantification across modal operators. Sentences like "Something is possibly blue" or "Everything is necessarily self-identical", which are symbolized with a quantifier binding a variable in the scope of a modal operator, as in " $\exists x \Diamond Fx$ " and " $\forall x \Box (x = x)$ ", are claimed to be nonsensical.¹

In this paper, I reconstruct Quine's arguments against modal logic, and argue that Quine's main thesis is that the *intended objectual* interpretation of the quantifiers as ranging over entities, i.e. as "There is something such that" and "Everything is such that", is incompatible with any *semantic* reading of the modal operators. Semantic readings are interpretations that make modal operators express at the object level corresponding meta-linguistic predicates of sentences. The following are examples of semantic interpretations: Carnap's interpretation of "Necessarily *P*" as "The sentence '*P*' is analytically true"; Kaplan's notion of logical necessity reading "Necessarily *P*" as "'*P*' is logically true"; but also Quine's own favorite semantic

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¹ Concerning the interpretability of quantified modal logic, Barcan Marcus [13], Parsons [15] and [16], Kaplan [9], and Fine [6] and [7] argue that Quine is wrong. Burgess [1] and Neale [14] reverse the predominant trend and defend Quine.

ascent from “Necessarily P ” to “‘ P ’ is proof-theoretically valid in system S ”.² For Quine, the difficulty in interpreting this sort of sentence is that it makes no sense to say of an object that it bears a property necessarily or contingently when the necessity or contingency in question is semantic. Objects cannot suitably bear properties ‘semantically’.³ It is incoherent, not just false, to say about an object directly, i.e. independently of any characterization, that it is analytically, logically, provably, or a priori blue or self-identical. The underlying suggestion seems to be that while there are clear notions of logical, provable, or even analytic *truth*, there are no clear corresponding notions of logical, provable, or analytic *satisfaction*.

In what follows, I reconstruct Quine’s arguments for his famous thesis that quantification across a modal operator imposes an *essentialist*, as opposed to semantic, reading of the operator. When we say of an object that it necessarily F ’s, we can only coherently mean that it essentially F ’s. We will see how in its most general formulation this thesis can be, and has been,⁴ successfully rebutted. However, I will argue that *adequately qualified* the thesis is plausible. Two important qualifications are needed. The first is the assumption that satisfaction is an irreducibly *predicative* notion, making any explication of the same in terms of truth inadequate. The second is the ontological rejection of purely semantic (for example, merely definitional) entities. With these qualifications in place, we will see that Quine’s rejection of the combination of objectual quantifiers and semantic modalities can be upheld. In this way, we will vindicate (a qualified version of) Quine’s conjecture that quantified modal logic is committed to essentialism.

2. Substitutivity, quantifying-in, and modal contexts

Starting in 1943, in “Notes on existence and necessity” [18], Quine charges that it is incoherent to quantify into contexts not open to substitution. Failure of substitutivity of co-referential expressions and incoherence of quantifying-in are the two marks of non-purely referential, opaque contexts.⁵ In particular, Quine claims that when the modalities are understood as strict logico-analytic, modal contexts are opaque.

Quine also argues against existential generalization (EG) on non-purely designative occurrences of terms: “There is no such thing as Pegasus” is true, but “ $(\exists x)$ (there is no such thing as x)” is false. The *existence* of non-existents does not follow from the *non-existence* of Pegasus. Similarly, EG fails in quotation contexts and when propositional attitudes are involved. For example, according to Quine, from “Philip is unaware that Tully denounced Catiline” it does not follow that “ $(\exists x)$ (Philip is unaware that x denounced Catiline)”. This last sentence however is importantly different from “ $(\exists x)$ (there is no such thing as x)”, which is false but perfectly meaningful. EG fails on empty names like “Pegasus”. Yet co-referential terms can still be substituted *salva veritate* in the context “There is no such thing as $_$ ”. Quine connects *incoherence* of quantification-in to failure of substitutivity of co-referential terms, because this failure is seen as indicative of a problem affecting the entire linguistic context in which the terms are set, not just the terms. EG holds on occurrences of terms that (i) have a reference, and (ii) occur in a purely referential context. It is the failure of the second requirement that results in semantic incoherence.

Concerning necessity, Quine writes:

Among the various possible senses of the vague adverb ‘necessarily’, we can single out one—the sense of *analytic* necessity—according to the following criterion: the result of applying ‘necessarily’ to a statement is true if, and only if, the original statement is analytic.⁶

According to the analytic interpretation of necessity, “9 is necessarily greater than 7” is true if and only if “‘9 is greater than 7’ is analytic”; but then, given the paradigmatic opacity of quotational contexts, it is only to be expected that contexts of necessity be opaque too.⁷ Hence, substitutivity and existential generalization fail in modal contexts, and quantification-in makes no sense. “Nine” and “the number of planets” may well refer to the same object, however they do not have the same meaning. This is why a statement containing one of these expressions may be analytic, while the other need not be. Consequently, from “9 is necessarily greater than 7” and “9 is the number of planets” it does not follow that “The number of planets is necessarily greater than 7” or that “ $(\exists x)$ (x is necessarily greater than 7)”.

3. The problem of interpreting modal logic

At the time of “Notes on existence and necessity”, only propositional systems of modal logic had been developed, as in Lewis and Langford [10]. Quine’s considerations in 1943 must have sounded, and might have been meant, as a warning to

² See Carnap [2], Kaplan [9], and Quine [22].

³ Unless they are semantic objects themselves, as will become clear in the course of the paper.

⁴ See [9,6,7].

⁵ Quine’s terminology evolved from the 1943 “non-purely denotative” to “non-referential” and “opaque” starting in 1953. The term “opacity” and its cognates are introduced in contrast to the Russellian term “transparency”, as it appears in Appendix C to [29], 2nd ed., vol. 1.

⁶ [18, p. 121].

⁷ However, the mere equivalence of a sentence P in which an expression A occurs with some other sentence Q in which A occurs surrounded by quotes, is not sufficient to make A ’s occurrence in P non-referential. After all, a sentence can always be rephrased meta-linguistically, as in Quine’s Giorgione example in [21, p. 141]: (i) Giorgione played chess, which is equivalent to both (ii) “Giorgione played chess” is true, and (iii) “Giorgione” named a chess player.

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