ON AN ENDURING *NON SEQUITUR* OF QUINE'S

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Among Quine's numerous and varied attacks on the viability of modal logic is to be found one which we may call "the ontological criticism of quantified modal logic". This is the claim that a substitution interpretation of the quantifiers "leads us to hold that there are no concrete objects (men, planets, etc.), but rather that there are only, corresponding to each supposed concrete object, a multitude of distinguishable entities (perhaps "individual concepts," in Church's phrase)." ([1], p. 271) The argument for this criticism is to be found in "The Problem of Intrepreting Modal Logic," and it embodies a very basic mistake which renders Quine's conclusion a *non sequitur*. Subsequent to Quine's statement of the ontological criticism attempts were made to show how this (and his other attacks) did not really constitute insurmountable problems in the interpretation of modal logic. Examples of such counterattacks are Church's appeal to an ontology of individual concepts and Marcus' discussion of alternative identity (or at least *equivalence*) relations among the entities to be found in the ontology of modal logic. And while each of these attempts has its advantages, so far as I am able to discover no one has faced the ontological criticism with a specific counterattack. Thus although modal logic seems to have been unaffected by the ontological criticism, the criticism itself has remained unscathed for the past thirty years. In fact, it is often repeated as a standing criticism of quantified modal logic (see, for example, pp. 36-37 of [2]) and seems to be universally accepted as something with which modal logicians must learn to live. After thirty years, then, it is time that we see how Quine's argument does not support his conclusion of the ontological criticism.

Quine begins by adopting a version of the substitution interpretation of the quantifiers:

> (ii) An existential quantification holds if there is a constant whose substitution for the variable of quantification would render the matrix true. ([1], p. 271).

He then argues that modal logic repudiates material objects as follows: