

A REALIST SEMANTICS FOR COCCHIARELLA'S T^*

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0 Introduction Russell's paradox has two versions. The first version concerns "the set of all sets which are not members of themselves". The second version concerns "the property of being a property which is not a property of itself": the so-called *Russell property*. This second version of Russell's paradox is called *Russell's paradox of predication*.¹

Nino Cocchiarella* designed a logistic system, which he christened T^* , whose purpose was to represent the original ontological context behind Russell's paradox of predication [10]. The grammar of T^* is essentially that of standard second-order logic but goes beyond it by allowing predicate terms to occupy subject positions in the formulas of T^* . Cocchiarella generated the axioms and inference rules of T^* by explicitly and appropriately generalizing the axioms and inference rules of Church's formulation of standard second-order logic [1] to the extended grammatical context of T^* and by adding a new axiom schema whose effect is to represent the realist assumption implicit in the ontological background of Russell's paradox of predication that every relation² is an individual.

It is a remarkable fact that T^* is consistent. It even turns out that T^* is a conservative extension of standard second-order logic. Thus, Russell's "paradox" of predication is not really a paradox after all—at least not in the logistic context of T^* . These discoveries signify the genesis of a radically new, important, and fruitful approach to predication theory.³

Be forewarned, however, that T^* is not without its (apparent) ontological oddities. One particularly interesting example of such an oddity concerns identity. Cocchiarella [10] showed that indiscernibility cannot be construed as identity in T^* since, in the ontology of T^* , there must be properties which are indiscernible and yet not co-extensive. Going further, Meyer [14] showed that there is no binary relation in the ontology of T^* satisfying full substitutivity.⁴

Many other nonstandard second- (and even higher-) order theories of predication have grown up around T^* , and we will call these logistic

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