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REVIEWS

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References such as 247***18*** or 418***2*** are to entries so numbered in *A bibliography of symbolic logic* (this JOURNAL, vol. 1, pp. 121–218). Similar references containing the fraction $\frac{1}{2}$ or a decimal point (such as 70$\frac{1}{2}$***1*** or 3827.***1*** are to *Additions and corrections to A bibliography of symbolic logic* (this JOURNAL, vol. 3, pp. 178–212).

TERENCE PARSONS. ***Nonexistent objects.*** Yale University Press, New Haven and London 1980, xiii + 258 pp.

Philosophers and logicians since Russell have subscribed almost universally to a certain doctrine of realism, namely, that whatever is, *exists* or *is real.* This realism is a consequence of a slightly more technical thesis that statements about what *is* are just statements about what *exists.* According to this thesis, Alexius Meinong's anti-realist doctrine that there is something that does not exist amounts to a logical falsehood—that there exists something that does not exist. To avoid this difficulty, most contemporary Meinongians insist that there is a difference in semantic import between 'there is' and 'there exists.' This makes it possible to hold consistently that, for example, there are legendary figures and fictional characters but they do not exist. Since intuitions in this area are inconclusive, Meinongians usually support this move by reminding us of our philosophically uncritical beliefs, say, that Odysseus is a legendary figure but he does not really exist, that Hamlet is a fictional character but he does not really exist, and so on. The classical realist response is to hold that such uncritical beliefs are not strictly speaking true, and to offer realist paraphrases that are strictly speaking true though logically more complex. The appeal of this response is its well-known ontological simplicity. The appeal of the Meinongian approach, by contrast, is that it promises to keep our uncritical beliefs intact and, by taking them at face value, it appears to yield a logically simple account of their truth: They are simply about objects that do not exist.

Moved by such considerations, Terence Parsons sets out to clarify the nature of non-existent objects by means of techniques of mathematical logic. The book unfolds in a clear, lively fashion, and it is virtually free of technical errors. The centerpiece of the book is an axiomatic theory and its formal semantics. In addition, Parsons constructs a Montague-style fragment of English and examines fictional discourse and several traditional issues in metaphysics and epistemology. Considerable ingenuity and effort have gone into the work. It comes as a surprise that Meinong's theory can be formulated with this degree of success. Meinongians with an interest in logic are certain to make use of this book as a point of departure for some time to come.

Parsons's construction derives from two heuristic principles: (1) the identity of indiscernibles, i.e., no two objects have exactly the same properties, and (2) for any set of properties, there is an object having exactly those properties. Principle (2) is found to be in need of qualification, for if (2) were true in its present form, then associated with the set $\{(\lambda y)(Fy), (\lambda y)(\sim Fy)\}$ would be an object that has both $(\lambda y)(Fy)$

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and $(\lambda y)(\sim Fy)$—a contradiction in classical logic. And associated with the set {existing, round, square} would be an object that is an existing round square—another contradiction in classical logic given that there exists no round square. This leads Parsons to posit what seems to be an otherwise unmotivated distinction between *nuclear properties* (e.g. tall, clever, average, exceptional, seen by *y*, existent, etc.) and *extranuclear properties* (e.g. not tall, tall and clever, not exceptional, not average, thought about by *y*, existing, etc.). He in turn modifies principles (1) and (2) by restricting the properties mentioned there to nuclear properties. Programmatic considerations then force Parsons to introduce an unfamiliar primitive logical operation *w*: For every extranuclear property *F*, there is an associated nuclear property $w(F)$ whose extension agrees with that of *F* for at least all existing objects. For example, associated with the extranuclear property of being not tall is the nuclear property *w*(being not tall). All existing short objects have the latter property, but certain non-existing short objects lack it since, unlike existing objects, non-existing objects can be "incomplete." Finally, relations demand a special treatment. For example, even though Sherlock Holmes has the property of having lived in London, London does not have the property of having been lived in by Holmes. Parsons represents this *prima facie* contradiction thus: $h[Ll]\ \&\ \sim\lfloor hL\rfloor l$. Contradiction is avoided because Parsons's special brackets do not obey an associative principle.

The above informal theory is formalized in a special second-order language having one sort of variable for individuals, another sort for nuclear properties, and a third sort for extranuclear properties. The quantifier 'there is' is represented in the usual way, but 'exists' is represented by a primitive one-place predicate. Standard comprehension axioms provide extranuclear properties, and axioms for the primitive operation *w* provide associated nuclear properties. Finally, there are special axioms governing the distinction between $\alpha[R\beta]$ and $[\alpha R]\beta$. This theory is proved consistent relative to type theory, and a Henkin-style second-order "completeness" result is obtained. To this core theory Parsons then adjoins modal operators, property abstracts, class abstracts, definite descriptions, names, predicates for propositional attitudes, and terms for propositions. The presentation is exceptionally clear. Nevertheless, the resulting theory is extremely complex in its details. For example, there are in the neighborhood of one hundred separate requirements that a model must satisfy.

The extreme complexity of Parsons's theory calls into question one of the primary motivations for pursuing Meinong's position, namely, its promised logical simplicity. This is the place to point out that there exists an equally simple—and indeed a simpler—realist theory that is fully as successful in keeping our uncritical beliefs intact. To see that there exists an equally simple realist theory, one need only note that Parsons's theory can be translated into a realist theory, e.g. a realist part/whole calculus (akin to the one in Nelson Goodman's ***The structure of appearance***, XVII 130), that treats clusters (fusions, sums) of properties as individuals. The translation is guided by the heuristic principle that each of Parsons's real objects is to be identified with itself and each of Parsons's unreal objects is to be identified with the cluster of its nuclear properties. The other details of the translation may be patterned after those used in Parsons's relative-consistency proof. (Parsons's proof shows that his theory can be translated into type theory. Beginning on page 92, however, Parsons stresses that his translation does not yield an intuitively acceptable realist theory, for on the translation individuals turn out implausibly to be entities of higher logical type. The above translation is free of this kind of defect. And it will not do for a Meinongian to complain—and here see page 95—that a thought about, for example, a round square is not a thought about a cluster of properties, for how could anyone know this?) Now, to obtain a construction that is outright simpler than Parsons's, consider a naïve second-order Meinongian theory that does not mark Parsons's distinctions between nuclear and extranuclear properties and between $\alpha[R\beta]$ and $[\alpha R]\beta$. One may translate this Meinongian theory into a realist theory according to the heuristic principle that each ordinary real object is to be identified with itself and each Meinongian unreal object is to be identified with the fusion of its properties (nuclear or extranuclear). The translation is achieved by replacing $\ulcorner f\alpha \urcorner$ with $\ulcorner(\alpha$ is an ordinary concrete object $\supset f\alpha)$ & $(\alpha$ is not an ordinary concrete object $\supset f$ is part of $\alpha)\urcorner$, where *f* is any one-place predicate term. But what about the threat of elementary contradictions that led to the complicated apparatus in Parsons's theory? To the realist, these problems are illusory, for they vanish upon translation. For example, the naïve Meinongian claim $(\exists x)((\lambda y)(Fy)x\ \&\ (\lambda y)(\sim Fy)x)$ translates into a realist sentence equivalent to $(\exists x)$ (x is not an ordinary concrete object & $(\lambda y)(Fy)$ is a part of x & $(\lambda y)(\sim Fy)$ is part of x). The latter sentence not only is consistent with classical logic but is true given the realist theory. (By the way, even the most radical Meinongian claim $(\exists x)(Fx\ \&\ \sim Fx)$ can be made to come out true upon translation into a realist language if appropriate conventions governing scope are invoked. Consider an analogy: In Russell's no-class theory the apparent contradiction

$\{y:Gy\} = \{y:Gy\}$ & $\sim \{y:Gy\} = \{y:Gy\}$ is derivable; however, there is no contradiction once this sentence is written out in the primitive notation giving $\sim$ narrow scope.) The moral is this: If one insists on accepting at face value our philosophically uncritical talk about non-existent objects, then one is forced to accept either the elementary contradictions present in the naïve Meinongian position or else the significant complications present in a sophisticated Meinongian position like that of Parsons. If, however, one instead treats such talk as shorthand for realist talk (e.g. about clusters of properties), one can avoid these contradictions and complications.

But this is not the end of the story. Internal problems beset Parsons's theory, and these problems seem so fundamental that they call into question not just Parsons's theory, but the feasibility of treating our uncritical talk about the non-existent as true at all, either at face value or upon realist translation. If these problems cannot be solved, it would appear that one ought to count this talk as strictly speaking untrue; in this event, one should retreat to the classical realist position—the position of Russell and of Plato, according to whom fictional discourse is not about beings at all but rather is a false weaving together of ideas distinguished by its special purpose.

The first of these internal difficulties concerns principle (1), the identity of indiscernibles. Given that Meinong's theory is designed to treat impossible as well as possible objects, on what basis can an advocate of the theory rule out there being two impossible objects that share all their (nuclear) properties? For example, consider a fantastic extension of the little piece of fiction Kant offered in opposition to Leibniz: Two different actual droplets of water a and b come to share all their (nuclear) qualities and then, *per impossibile*, are stripped one by one of all of their (nuclear) historical and relational properties. By the end of the story, the only surviving (nuclear) properties of a and b are (nuclear) qualities, and each of these a and b have in common. The philosophical point of this *prima facie* counterexample is that if we take *all* fictional discourse at face value, we evidently must give up the principle that objects are always distinguished by their (nuclear) properties. Now even if principle (1) could be saved from such counterexamples, there would remain a related epistemological difficulty concerning our ability to single out non-existent objects. The book creates the impression that we can single out non-existent objects simply by knowing their properties. It turns out, however, that the requisite properties often include special non-constructive *de re* relational properties. (For example, Sherlock Holmes has the property of talking to someone who knows Sherlock Holmes himself; see pp. 194 ff.) In order to single out these special properties, one must first know what non-existent objects have them. So one just goes around in a circle. The seriousness of this epistemological problem may be brought out as follows. Once one opens the door to non-existent objects having these non-constructive *de re* relational properties, it seems arbitrary to rule out the possibility of structurally similar yet numerically distinct systems of non-existent objects. (As an example of a degenerate case, one system consists of a single impossible object x whose only nuclear property is $w(\lambda v)(v = x)$ and a structurally similar system consists of a second impossible object y whose only nuclear property is $w(\lambda v)(v = y)$.) But how then does anybody ever successfully single out—and in turn refer to—a non-existent object in one such system rather than a corresponding non-existent object in another such system? Obviously not by first singling out the object's properties. Without a satisfactory answer to this epistemological question the theory is unsuited to its primary purpose, namely, the explication of the referential apparatus in fictional discourse.

The next internal problem concerns principle (2). According to this principle the power set of the nuclear properties can be mapped one-to-one into the set of individuals. It follows by Cantor's theorem, therefore, that the set of individuals cannot be mapped one-to-one into the set of nuclear properties. Though Parsons is prepared to accept this consequence of principle (2), it seems unacceptable when one takes into account the intended range of application of the theory. To see that in the intended model there ought to be a one-to-one map from the individuals into the nuclear properties, let u and v be any distinct individuals. Then believing of u that it is self-identical is not the same as believing of v that it is self-identical, for in the intended model there ought to be a being who has no beliefs about v and who believes of u that it is self-identical. (Whether such a being might be impossible makes no difference despite the remarks on pages 235–239, for Meinongians wish to treat impossible beings.) At the same time, believing of u that it is self-identical and believing of v that it is self-identical are nuclear properties in the intended model. Therefore, the relation holding between any individual and the property of believing of it that it is self-identical is the desired one-to-one map. Thus, principle (2)—which perhaps is the essence of Meinongianism—generates a new version of Cantor's paradox.

The threat of a Cantor paradox within Meinongianism is considered briefly in the closing chapter of the book. The claim is made there that the problem is a species of a general problem. But this seems misleading. There are several standard resolutions of Cantor's paradox in settings where all individuals are ordinary real individuals; none of these resolutions seems to carry over to settings where there are non-existent individuals having the special non-constructive character Parsons claims is needed in an adequate Meinongian account of fictional discourse (cf. pp. 194 ff.). (Furthermore, it seems inappropriate to restrict principle (2) in the way contemplated on page 239, for several fictional stories—including certain stories about paradoxical objects—would then fall outside the intended range of application of the theory. To retreat from principle (2) in this way seems to be unfaithful to the spirit of the Meinongian approach.)

The theory is also beset by a variant of the liar paradox when the following auxiliary premisses are adopted: $u \neq v \supset$ believing that $Pu \neq$ believing that Pv, and $P \neq Q \supset$ believing that $Pu \neq$ believing that Qu. Even though these premisses are not theorems of the theory, considerations similar to those given two paragraphs above show that they ought to be true on the intended interpretation of the theory. Now we can prove in the theory that there is an individual x whose nuclear properties p are exactly those of the following sort (where y is any individual): $p =$ the nuclear property of believing that y lacks every extranuclear property Q that y believes himself to have. In Parsons's symbols, $(\exists x)(\forall p)(px \equiv (\exists y)(p =$ believing $(\forall Q)(y$ believes $(Qy) \supset {\sim} Qy)))$. Using this theorem and the above auxiliary premisses, we can prove by a diagonal argument that x both does and does not lack every extranuclear property that x believes himself to have (i.e., we can prove both $(\forall Q)(x$ believes $(Qx) \supset {\sim} Qx)$ and its negation). This paradox is not taken up in the book. Given the special non-constructive character attributed to many non-existent objects (cf. pp. 194 ff.), the standard resolutions of the liar paradox (e.g. ramified type theory) evidently cannot be adapted to resolve it.

There are further issues as well. For example, the theory treats non-existent individuals but not non-existent properties (e.g. the fifth cardinal virtue). To treat these would probably require a complete overhauling of the theory, and the threat of paradox would become extreme. Secondly, $(\lambda y)(\ldots y \ldots)x = (\ldots x \ldots)$ is an axiom laying down an identity condition for propositions. Let $(\ldots x \ldots)$ be any first-order formula. Then the axiom implies that the second-order comprehension principle $(\forall x)((\lambda y)(\ldots y \ldots)x \equiv (\ldots x \ldots))$ is synonymous with the trivial first-order validity $(\forall x)(\ldots x \ldots \equiv \ldots x \ldots)$. But there are many people who do not doubt the first-order proposition and yet doubt the corresponding second-order proposition. Hence the original identity condition seems mistaken. Thirdly, according to the theory, when the astronomer Leverrier used the name 'Vulcan' with sincere referential intent, there was no planet Vulcan—not even a non-existent one—to which he successfully referred (cf. pp. 228–229). It would seem, therefore, that there was no planet—not even a non-existent one—to which Leverrier intended to refer and about which he had beliefs. If so, it would seem that remarks such as 'Today Vulcan is believed not to exist, but it was believed by Leverrier to exist' are literally false on the theory. But this goes against the very kind of intuition that initially motivated Meinong's theory. Fourthly, the standard puzzles about the failure of substitutivity of co-referential names in belief sentences are solved by invoking Fregean senses; nevertheless, it is acknowledged that ordinary proper names probably are not synonymous with definite descriptions (see pp. 122–123). There is no inconsistency in this position, but it makes the identity of the sense of a proper name an enigma. Fifthly, in the account of what it takes for something to be "true in a story" an appeal is made to what "a normal attentive reader" would understand upon reading the story (pp. 175 ff.). But for certain works of individual genius and works preserving a culture's cumulative wisdom, the extraordinarily profound and ingenious reader is the appropriate arbiter. Indeed, for truly sublime works, are we in any position to know the limit on what is required of the reader? Finally, though the book takes as fundamental a distinction between being and existence, little is said about what existence is. What is it for a being to come into existence and to pass out of existence? What difference does it make? Concerning God's existence, the suggestion is made that it could be of no rational importance except perhaps in making certain religious attitudes and practices of people less "inappropriate" (pp. 216–217). A more sympathetic position would take into account the bearing that God's existence has been thought to have on first causes, final causes, and our own fate.

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PETER THOMAS GEACH. ***Reference and generality. An examination of some medieval and modern theories.*** Third edition. Contemporary philosophy series. Cornell University Press, Ithaca and London 1980, 231 pp.

In this third edition of his book, originally published in 1962, Geach has taken the opportunity to effect some "radical repairs" (p. 12). I shall not comment on those repairs in my brief review; but I find it