

could have been noted that most of the persons now comprising "Man" are excluded from galactic revels and such; they will be dead; as material subjects, finished. They are told instead that the freedom of man will be asserted, against the "definite homeostasis" of the inorganic world, against the "destructive action of entropy" (233). The reader may agree that Strugatskys couldn't have ironically expressed it better.

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Paradoxes: A Study in Form and Predication

JAMES CARGILLE

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Culminating in a bold, tightly argued last chapter that undertakes to resolve the semantic paradoxes, Cargile's book appears in the main to be a leisurely, digressive, informal sheaf of reflections—rather more critical than systematic—in the philosophy of logic. How the two themes that divide the book might be seen to connect with one another—the fastidious argumentation regarding the semantic paradoxes on the one hand the fairly free-wheeling discussion of a miscellany of logical topics featuring Russell, Mill and Frege on the other—the casual reader will not always find easy to determine, even though on a line by line and page by page basis this absorbing book is compellingly readable. The following instructions should indeed be pasted into every copy of the book: begin (and end) with Sections 78 and 79 on "kinds of assertion and predication", proceeding straight into Sections 92 and 93 that are designed to show that "the semantic paradoxes can be answered in terms of my account of assertion and predication".

Assertion and predication emerge as the central themes on the basis of an antecedent inquiry into the "very obscure" question of logical form where it turns out that we can neither abstract entirely from the linguistic features of sentences, attending solely to the propositions they express, nor altogether ignore those propositions in favor of the sentences themselves. Logical form is not to be read off simply from either the one or the other. So the interplay between sentence and proposition comes to be crucial for logic, semantic considerations proving thus to be decisive, and it is in this connection that certain T-sentences are actually found to be false! They are not true simply in virtue of their form. Surprisingly, this new "paradox" admits of being defused, whereupon a classically pure solution to the semantic paradoxes, free of all makeshift devices, begins to appear—for the first time after many years of widespread defeatism—as once again within our reach if not perhaps quite within our grasp.

Consider A. A is the following sentence-token: A is not true. It is in the specific interplay between assertion and predication that the truth value of A comes to sight. To say (assert) something is to attribute truth to a proposition. A must then be seen to attribute truth to the very same proposition of which A predicates being not true. Inconsistent, A proves to be false and hence not true, and the following Tarskian biconditional must now be evaluated: The sentence "A is not true" is true if and only if A is not true. Consider B. B is the following

sentence-token: A is not true. Having ruled that A is not true, we are committed to accepting B as true. Which is itself rather paradoxical seeing that one would suppose that A and B must express the same proposition. That the Tarskian biconditional is now taken by Cargile to be false, ought not to be surprising. It is fair to say, however, that one of our intuitions about truth has been expressed by Tarski when he says (off the record) that every T-sentence must surely be true in virtue of its very form. Apart from the semantic paradoxes, even non-paradoxical token-reflexive sentences can generate deviant T-sentences. One has only to consider C. C is the following sentence-token: The present sentence-token contains less than ten words. The Tarskian schema is thus seen to have only limited validity.

How A and B can differ in truth value remains to be explained, though Cargile is by no means alone in having to face that challenge. Falling in line with the conventional wisdom, we may choose to insist that A says nothing at all on the ground that it fails to express a proposition. On any account it is safe to say that A and B do differ in truth value. The resulting paradox can be stated as follows. The subject-expression of B is a singular term that denotes the same item that is denoted by the subject-expression of A, and the predicate of B certainly expresses the same property that is expressed by the predicate of A. But then according to the Subject-Predicate Principle (as we may style it) that may well be felt to lie at the core of logic itself (it can be readily generalized to cover polyadic predicates) A and B must agree in truth value as well (temporal parameters being conceded to have no relevance). How subject and predicate are to be distinguished, grammatically, as well as logically, is indeed the query with which Cargile launches his study in Section 1, leading him finally to the notion of what it is for a statement to be functionally of the subject-predicate sort. Although it is "all right mathematically" to say that a polyadic predicate is *satisfied* by an ordered set, we learn in Section 10 that "a relation is predicated of more than one thing and is predicated of them in an order".

It might be objected that some question-begging has occurred when it is simply assumed that the grammatical predicate of A does express a property even though we are prepared to suspend judgment as to whether or not A itself succeeds in expressing a proposition. Well, in line with Section 12 I believe that we should reject Frege's maxim, "Never ... ask for the meaning of a word in isolation but only in the context of a proposition." How else can we determine that some string of words fails to express a proposition? Cargile's answer to the paradox I take to go as follows. The Subject-Predicate Principle is indeed false: witness the semantic paradoxes. A and B differ in a decisive respect. A is self-contradictory in the precise sense that it contradicts *itself*, for it attributes truth to a proposition even as it predicates being not true of it. One almost dares to say that the speech-act performed by A, being of the self-contradictory sort, is radically different from that performed by B. No wonder that they differ in truth value. (How to justify this appeal to speech-act theory in an issue of pure semantics will emerge in my comment on Epimenides himself.) Which is not to deny that there is a sense on which B may be allowed to "say the same thing" as A! Although "the teacher of Plato was wise" and "the snub-nosed philosopher was wise" doubtless express different propositions, we are free to concede that they say the same thing: one and the same property is predicated of one and the

same thing. "Saying the same thing" may itself express different properties on different occasions, though a family resemblance may be expected to obtain among them. In that spirit we may venture to allow that A and B do "say the same thing" even though in this more radical case there is a divergence in truth value. If Jones says, "It is raining", and Smith says, "It is raining and it is cold" both have said the same thing, namely that it is raining. That at any rate supplies us with one paradigm. Here is another. If Brown contradicts himself by saying, "It is raining and it is not raining", he has of course said that it is raining, though that is not all he has said.

Whether in fact A does succeed in expressing a proposition has not been settled. The principal stumbling-block lying in the way of my accepting Cargile's account has been my doubt that there is a proposition *to* which A attributes the property of truth and *of* which A predicates the property of being not true. Moreover, even if someone does attribute truth to a proposition of which he predicates being not true one cannot conclude, simply from that, that the proposition is false. Let someone say, "It is both true and not true that $2 + 2 = 4$ ", and though he is certainly inconsistent it is at least plausible to suppose that there is a true proposition featured here, namely that $2 + 2 = 4$, to which he attributes truth and of which he predicates being not true. Prepared to concede that A may well be a "questionable case", Cargile prefers to regard it as saying (1) that A is not true and also (2) that it is not true that A is not true. But the only reason we can have for adjoining (2) to (1) is that A is to be seen as saying that (1) is not true. And that can obtain only if (1) is all that A says, which is of course impossible. Suppose now that (1) is merely part of what A says. Then we have no reason for saying that A predicates being not true of *that*.

Much more accommodating is a closely related case (there is a whole battery of them) that is designated "F". Let us say, then, that F is the following sentence-token: Every proposition asserted by F is false. Here we proceed in piecemeal fashion, giving F the initial benefit of the doubt. Presumed to assert that p, namely that every proposition asserted by F is false, F must also be taken to assert that $\sim p$. As well as that $\sim p$, *ad infinitum*, albeit in a cumulatively redundant fashion. Here indeed the notion of what a sentence (or a speaker) says need not be taken to imply that logically equivalent propositions are identical, as if there could be only one arithmetic truth. The concept of a "proposition" is doubtless polymorphous, varying concomitantly with "the demands we make of the notion" (Kripke), and even in the worst case one ought never to rule that some paradoxical sentence says nothing at all. Even "Close the door" says something. Overlooked by Cargile though very much in the spirit of his inquiry into logical form, the following sort of case is crucial for the systematics of formal logic. Suppose that F is found to be the conclusion of some argument (i.e. some argument-token). How is the argument to be formalized? We can stick to sentential logic. It will not suffice to exhibit the conclusion as being of the form " $p \cdot \sim q \cdot \sim q \cdot q$ ", though that would doubtless serve to bring out the validity or invalidity of the argument, in an informal way.

No rigorous proof of the invalidity of the argument-form " $p \cdot \sim q \cdot \sim q$ " can perform double duty as a rigorous proof of the invalidity of the argument-form " $p \cdot \sim q \cdot \sim q \cdot q$ ". So the argument-forms are distinct if only because the relevant sentence-types are distinct. Different proof-theoretical machinery is brought to

bear in the two cases. Presumably, then, F as the conclusion of an argument-token must needs be formalized as an infinite conjunction whose ordinality is at least ω , and indeed Cargile allows that we cannot expect to unpack "in full" all that F says. But then if F yields an ω conjunction it can be readily argued that it yields the negation of that ω conjunction as well, and on and on, suggesting that no transfinite ordinal can suffice for all that F says, thereby raising the issue whether the totality of what F says may not be an illegitimate totality. That both sentential and predicate logic ought to be standardly liberalized so as to license formulas of infinite length, can be defended on independent grounds. The inconsistent proposition that F expresses is by no means especially obscure, on any view of a "proposition" taken to be a non-linguistic item. Logical form, however, seems to be essentially bound up with language, and we may well insist that there are transfinite ordinals (e.g. ω_1) that no linguistic string could possibly instantiate. How precisely these considerations are to be represented in predicate logic, the logician will not wish to ignore.

Cargile's predication theme comes through most clearly in connection with the Epimenides proper. Cargile follows Mill. According to Mill, a person who affirmed before the Duke of Wellington was born that all men are mortal asserted that the Duke of Wellington was mortal. That "confuses asserting with asserting of, or predicating" but even so "the assertion does achieve predicating mortality of the Duke". That "All men are mortal" predicates mortality of every Tom, Dick and Harry turns out to be the less surprising when one realizes that in standard predicate logic 'Everything is an F, therefore Socrates is an F' is accepted as valid. Better, surely, to say that "Everything is an F" predicates F-ness of Socrates without, however, entailing it. The predicative import of a sentence can thus *supplement* its propositional content, thereby introducing a certain ill-occurantary force into the pure semantics of the sentence (quite apart from its employment in some speech act). When Epimenides the Cretan says, "Every Cretan assertion made at midnight is false" he fails to realize (being deceived by his clepsydra) that he is predicating falsity not only of Clinias' midnight assertion that $2 + 2 = 5$ but also of his own virtual assertion that $2 + 2 \neq 5$. And on and on in that vein *ad infinitum*. Here then is a proposition, namely that $2 + 2 = 5$, of which he predicates falsity even while he unwittingly predicates falsity as well of the negation of that proposition and of the negation of that etc. In this case (the truth predicate *is* special) the predicative import of Epimenides' assertion must not be taken merely to supplement its propositional content. Rather, it must be recognized as being part and parcel of it (224). The general idea here is illustrated by Jones' saying, "What Smith just said is false." Then if Smith just said that $2 + 2 = 4$ it turns out that Jones has said (doubtless unintentionally) that $2 + 2 \neq 4$. That someone can say and even state something unintentionally is nicely shown by Ronald Reagan's *lapsus linguae*, during the recent political campaign, that on being elected president he would certainly raise taxes. He said it.

If Cargile's theory of form and predication is splendidly controversial, there can be no doubt that among the very few absolutely indispensable, classic texts on the semantic paradoxes his discussion must be included.

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