

Intentionality and Existence

Judged by the number of recent articles on the topic of “existence”, this hoary problem in analysis is as controversial as ever. It is my suspicion that much of the difficulty which has arisen here stems from two roots—an undercritical and unwarranted use of certain formal transformations of expressions, and a confounding of two very different semantical concepts. I shall try to establish the following points: (a) Singular existence-statements of the form ‘ A exists’ (not to be confused, when ‘ A ’ is a predicate, with the general existence form ‘ A ’s exist’) or ‘ A does not exist’ are *intentional* in that sense (Brentano) where ‘John believes that all swans are white’ and ‘John is thinking about centaurs’ are intentional while ‘John is tall’ is not. (b) There appears to be a non-intentional, or “objective”, analogue of ‘ A exists’, but not of ‘ A does not exist’. (c) There is no quicker way to overpopulate one’s ontology than by confusing “meaning” with “reference”, a point which has already been forcibly argued on several occasions by Quine.

The present account of existence-statements will concern only those which arise in regard to expressions which syntactically are substitution instances of variables. Whether there are meaningful singular existence-statements which are not of this kind is problematic. By the phrase, “‘ A ’ is a descriptive term of language L ” let us mean that there is a variable, ‘ Φ ’, in L such that if ‘ $F(A)$ ’ is a sentence in L , the syntactical rules of L authorize passage from ‘ $F(A)$ ’ to ‘ $(\exists \Phi)F(\Phi)$ ’ or, what amounts to the same, from ‘ $(\Phi)F(\Phi)$ ’ to ‘ $F(A)$ ’. (Note that “‘ A ’ is a descriptive term of L ,” so defined, is a purely syntactical concept which says nothing about the *semantical* properties of ‘ A ’.) Then our present concern is with statements of form ‘ A exists’ when ‘ A ’ is a descriptive term. Since the analysis applies as well to the existence of abstract entities as to that of particulars, it is convenient to assume that the language under consideration contains variables of more than one logical type. However, this is not to assume that *all* well-formed expressions are syntactically substitution instances of variables. In particular, we leave open the question whether or not compound expressions such as complex predicates and entire sentences are descriptive terms as here defined.

The above declaration of intent to structure problems of existence in terms of the use of bound variables may lead the reader to anticipate similarities between the present views and those already aired by Quine. This suspicion will be substantially confirmed; however, the Quinian account has certain lacunae which the present discussion will try to fill.

A terminological explanation: It will be noted that with a few special exceptions, the term ‘intentional’ (in its non-teleological sense pertaining to meaning and aboutness) is used throughout this paper rather than the more familiar ‘intensional’. While the latter term is frequently imbued with the sense of the former—some philosophers, for example, explicitly equate “intensions” with “meanings”—the various definitions that ‘intensional’ has received in related but significantly different contexts have made this a dangerously ambiguous word which is likely to confuse, rather than clarify, at critical junctures in an ontological or semantical analysis. An example of this confusion will be pointed out in Section V, below.

I

I shall launch my argument with the contention, to be justified only much later, that subject to one possible reservation, a satisfactory objective version of “*A* exists” is

$$(1) \quad (\exists \Phi)(\Phi = A),$$

where ‘*A*’ is a syntactically permissible substitution instance of the variable ‘ Φ ’. Formula (1) is applicable (with appropriate adjustments of ‘ Φ ’) to descriptive terms of all logical types, and in the case where ‘*A*’ is a predicate, implies *not* that *A* is *exemplified* (as would be expressed by the form ‘ $(\exists x)Ax$ ’ but that *A* has existence in its own right—e.g. not that there are red objects, but that Redness exists. I have chosen (1) as an objective assertion of existence because it may be read, “There is something which is identical with *A*”, and has thus a good, solid existential feel. Actually, as will be seen, a number of other forms would do as well.

Now, at first blush, (1) might seem immediately open to the fatal criticism that it attributes existence not only to real entities, but to imaginary ones as well. For cannot we deduce

$$(2) \quad \text{Pegasus} = \text{Pegasus}$$

from the logical truth

$$(3) \quad (x)(x = x)$$

and from thence infer

$$(4) \quad (\exists x)(x = \text{Pegasus}),$$

thus showing that if (1) implies that *A* exists, then Pegasus exists? But this attack is invalid. What it actually reveals, I shall argue, is that a statement ‘ $F(A)$ ’ is logically entailed by a universal generalization ‘ $(\Phi)F(\Phi)$ ’ *only conditional on the*

existence of A. That is, ‘ $(\Phi)F(\Phi)$ ’ is not in itself a sufficient condition for the conclusion ‘ $F(A)$ ’; a sentence which implies that *A* exists is also needed.

It is easy for the modern philosopher, well versed in the intricacies of formal logic and appreciative of its powers as a conceptual tool, to fall into the trap of assuming that a sentence which is formally *valid* must also be *true*. But the definition of “formal validity”, roughly speaking, is that a sentence is valid if and only if it comes out true under any assignment of designata to its non-logical terms. This is a purely *syntactical* property of a sentence, and is wholly independent of whether or not all its non-logical terms *have* designata, or even of whether or not the sentence is meaningful. That is, formal validity is a truth-disposition—if a sentence is formally valid, a sufficient condition for it to be true is that all its non-logical terms designate. Thus

(5) Bik = Bik,

(2) Pegasus = Pegasus,

and

(6) Chicago = Chicago

are all formally valid and *would* be true *if* ‘Bik’ (a nonsense-syllable), ‘Pegasus’, and ‘Chicago’ all were to designate something. But while (6) is hence unquestionably true, (5) is meaningless and (2), I shall argue later, is false.

Precisely the same situation obtains for formal deducibility. Roughly speaking, a sentence S_2 is validly deducible from a sentence S_1 if and only if S_2 is never false when S_1 is true under an assignment of designata to their descriptive constants. Hence if $S_1 \vdash S_2$, the truth of S_1 guarantees the truth of S_2 only if the truth of S_1 also guarantees that all non-logical terms of S_2 meet certain minimal semantical standards. Hence we cannot *logically* (contrasted to *formally*) deduce (2) from (3) alone, but only from (3) and some additional premise which implies, though it need not assert, that the sign design ‘Pegasus’ possesses those minimal semantic properties, whatever these may be, necessary for a well-formed formula containing ‘Pegasus’ to be capable of truth.

Before plunging into more controversial matters, let me review the argument so far. It has been pointed out that a *formal* deduction is not a *logical* deduction, which vouches for the truth of the conclusion given the truth of the antecedents, unless the truth of the antecedents also insures that all non-logical terms of the conclusion satisfy a certain semantic requirement. (From this, we see that the fact that (4) is formally deducible from (3) does not prove that (4) is *true*, and hence does not testify against the acceptability of (1) as an objective analysis of “*A* exists”.) Now to this there can surely be no objection, for obviously we must exclude meaningless sentences such as (5) from the logical truths. But it is one

thing to recognize that a descriptive ‘ A ’ must possess a certain minimal semantic property, Σ , where

- (7) $\Sigma(s) \equiv s$ is syntactically a descriptive term such that for any matrix ‘ $F(\)$ ’, if ‘ $(\Phi)F(\Phi)$ ’ is a true sentence in which ‘ Φ ’ is a variable of which s is syntactically a substitution instance, the sentence formed by replacing ‘ Φ ’ by s throughout ‘ $F(\Phi)$ ’ is true,

in order that ‘ A ’ be able to occur in a true sentence, and entirely another to say what the property Σ is. I believe that an unexpressed premise of practically everyone who has discussed the problem of existence, with the notable exception of Quine, has been that any formally tautological sentence, if meaningful, must be true, and hence that ‘ $\Sigma(A)$ ’ must have the force of

- (8) ‘ A ’ is a meaningful descriptive term.

But if this assumption is not justifiable—if (8) is *not* a sufficient condition for $\Sigma(A)$ —then it is plausible that $\Sigma(A)$ obtains in just those instances where it is correct to say that A exists. That the latter is indeed the case is what I shall now attempt to show.

My first contention to this end is that if ‘ $F(A)$ ’ is a sentence in which ‘ A ’ occurs descriptively, then a necessary condition for ‘ $F(A)$ ’ to be true is for ‘ A ’ to have a referent. That is, I suggest that

- (9) $(s)[\Sigma(s) \equiv (\exists \Phi)(s \text{ designates } \Phi)]$.

There are at least two lines of argument which may be adduced to support (9), one negative and the other positive. The first is that what formal logic tells us about a formally valid sentence S is only that S must be true *if* all its non-logical terms have designata. Formal considerations give no reason for presupposing that S need be true when this semantical condition is unfulfilled; in fact, classical formal analyses have deliberately avoided discussion of this contingency by, e.g. arranging for a definite description always to have a unique referent. The second argument is one which I shall exhibit but not attempt to develop here in detail. Recent analyses of the pragmatic force of concepts have given increasing weight to the possibility that the very use of concepts entails certain empirical commitments. Thus certain contemporary philosophers, notably W. Sellars, have insisted that adoption of a concept is correct or incorrect according to the way in which the world is put together, and I have elsewhere (Rozeboom, 1962) tried to show that a necessary condition for the truth of any statement using theoretical terms introduced by a scientific theory is the existence of entities which do, in fact, exemplify the observational properties ascribed by the theory to the alleged referents of its theoretical terms. When a term, s , has such built in existential commitments—and it is not impossible that this is true of *all* meaningful descriptive terms—assertion of *any* statement, not excluding tautologies, of which s is a constituent embodies

commitment to the additional premises supporting s , and must hence be in error if these premises are not realized. And since the effect of such failure is to deprive s of a referent, we thus have a semantical situation in which a necessary condition for the truth of a statement containing s is that s have a designatum.

The direction of this argument may be illustrated through a somewhat controversial example. Suppose that ‘Pegasus’ has been defined as ‘the winged horse [that, etc.]’—i.e.

$$(10) \quad \text{Pegasus} =_{\text{def}} (\iota x)(Wx \cdot Hx).$$

Then, if we accept Russell’s analysis of definite descriptions, namely,

$$(11) \quad \Psi[(\iota x)\Phi x] =_{\text{def}} (\exists x)(\Psi x \cdot (y)[\Phi y \equiv y = x]),$$

we see from (10) and (11) that

$$(12) \quad (\text{Pegasus} = \text{Pegasus}) \equiv (\exists x)(Wx \cdot Hx),$$

and hence that (2) is false. Now as it stands, this is not very exciting philosophically, for (11) claims that statements incorporating definite descriptions are not in logically proper form and that in particular, definite descriptions are abbreviatory ellipses rather than proper descriptive terms and hence not syntactically substitution instances of variables. Thus under (10) and (11)

$$(2) \quad \text{Pegasus} = \text{Pegasus}$$

is not a substitution instance of

$$(3) \quad (x)(x = x).$$

However, it can also be maintained (Rozeboom, 1962) that while ‘ $\Psi(\text{Pegasus})$ ’ and ‘ $(\exists x)(\Psi x \cdot (y)[Wy \cdot Hy \equiv y = x])$ ’ have the same *truth conditions*, the latter is not an *analysis* of the former, but that the logical form of ‘ $\Psi(\text{Pegasus})$ ’ is ‘ Ψx ’ and that ‘Pegasus’ is a meaningful descriptive term which *designates* an entity x if and only if $(y)(Wy \cdot Hy \equiv y = x)$. If this be granted, it follows that ‘Pegasus = Pegasus’ is formally valid, but commits its believer to a falsehood, namely ‘ $(\exists x)(Wx \cdot Hx)$ ’, and hence cannot itself be *true*.

I thus conclude—not merely in virtue of unsatisfied definite descriptions, but on the basis of more general considerations which this case merely illustrates—that a descriptive term s , even though meaningful, may be a constituent of a *true* statement only if s has a referent—i.e. that (9) is the case. However, before contending further that A exists when and only when ‘ A ’ has a designatum, it would first seem desirable to say a little more about the distinction between Meaning and Reference, for confusion between these two notions, even by philosophers who have been acutely aware that a distinction must be made, has been responsible for a great deal of philosophical perplexity.

II

There appears to be substantial agreement among serious students of the philosophy of language that at least two distinct semantical concepts are necessary for an adequate analysis of the aboutness of symbols. We need to speak of the “sense”, “meaning”, “concept”, “connotation”, or “intension” associated with a descriptive term on the one hand, and its “nominatum”, “denotatum”, “extension”, “designatum”, or “referent” on the other. It is by no means the case that these terms are all unambiguous, or are fully inter-synonymous within each cluster; in fact, I will argue later that the grouping as I have given it, though in accord with contemporary usage, contains a serious ontological error. Nonetheless, the necessity for drawing some such distinction seems inescapable.

The distinction between the meaning and the referent of an expression was first made explicit by Frege (1952) who pointed out that while ‘The morning star’ and ‘The evening star’ are two expressions with the same *referent*—namely, Venus—they differ from each other (and also from ‘Venus’) in their *meanings*, as demonstrable by their failure to be interchangeable in certain “indirect” contexts such as ‘John, doubts that ____ is identical with the evening star’. More generally, if ‘A’ is a singular descriptive term of the language we are using, then the referent of ‘A’ is given by the statement

(13) ‘A’ designates A,

which is true so long as ‘A’ *has* a referent. Thus,

(14) ‘Venus’ designates Venus,

(15) ‘The morning star’ designates the morning star,

and

(16) ‘Triangularity’ designates Triangularity.

The need to stipulate that ‘A’ has a referent is to exclude cases such as

(17) ‘Pegasus’ designates Pegasus,

the truth of which would necessitate the existence of a winged horse. If certain *non-singular* expressions, such as adjectives, are also regarded as descriptive terms, the grammar of ‘designates’ dictates that assertions about their referents be obtained from the associated singular forms; for example,

(18) ‘Triangular’ designates Triangularity,

the truth of which, of course, still presupposes the existence of the abstract entity, Triangularity. (This transition from the non-singular to the singular form of a predicate is a tricky business which warrants substantially more discussion than is practical here. One way to support (18) is to contend that if ‘triangular’ is

syntactically descriptive, the true logical form of ‘*a* is triangular’ is ‘*a* exemplifies Triangularity’ or some variation thereof, and that to quantify over ‘triangular’ is really to quantify over ‘Triangularity’.) Further, we note that for any *x*, *y*, and *z*, if *x* designates *y* and *y* = *z*, then *x* designates *z*. Thus given that the evening star is identical with the morning star, we have from (15) that

(19) ‘The morning star’ designates the evening star.

On the other hand, while meaning-talk bears a superficial resemblance to reference-talk, a little reflection shows there to be something a bit queer about the form, ‘*x* means *y*’. We generate a true statement about the meaning of *any* meaningful expression ‘*A*’ in our language, whether ‘*A*’ is a singular descriptive term or not and without additional assumptions about empirical reality, by asserting that

(20) ‘*A*’ means **A**,

where the second substitution in ‘*x* means *y*’ is an *exact* transliteration of the first except for (a) the absence of quotes, and (b) the presence of a contextual signal (the boldface in (20), the italics subsequently) that the expression is being used in a special way.¹ Thus,

(21) ‘Venus’ means *Venus*,

but also

(22) ‘Pegasus’ means *Pegasus*,

(23) ‘Triangular’ means *triangular*,

and

(24) ‘And’ means *and*.

It is clear that despite the identity of the morning star with the evening star, ‘The morning star’ does not mean *the evening star*. Nor does the truth of (22) or (24) presuppose, respectively, the existence of a winged horse or an abstract entity, And-hood, designated by ‘and’. The conclusion is inescapable that the italicized expressions in (21)–(24) are not playing their normal roles. In particular, the referent, if any, of ‘*Venus*’ in (21) is not the referent of ‘Venus’ in (14), nor is the referent of ‘*Pegasus*’ in (22) the winged horse that would be designated by ‘Pegasus’ in (17) if there were such a creature. Whatever ultimate interpretation we wish to make of the sentence-form ‘*x* means *y*’, there can be little doubt that the meanings of descriptive terms are *not* their referents.

What can we say about the relation between meanings and referents? It seems

¹The writings of Wilfred Sellars, too numerous to cite individually, are very important for clarifying the grammar of ‘ ____ means ____’.

to me to be obvious that a descriptive term has a referent, if any, *because* of its meaning, while the relation between symbol and meaning is not a relation of aboutness. A symbol does not *refer* to its meaning, it *has* a meaning, *in virtue of which* it may refer to something else. (That it is the meaning of a term which determines its referent, if any, may be seen by reflecting that two terms with the same meaning must necessarily have the same referent.) This point becomes especially clear if we replace ‘meaning’ with ‘concept’, for we customarily say that a term *expresses* a concept *of* something. The semantical picture sketched by such a formulation portrays a symbol as *producing, bringing forth or arousing* (i.e. “pressing out”) its meaning, while it is the latter which does the actual referring. Since the primary relation of aboutness would thus seem to make its appearance between the meaning and the referent of a term, I shall henceforth allow myself to speak without apology of entities being referred to by meanings. We may then say that when a linguistic expression E refers to an entity e , it is because there exists a meaning m such that E has (i.e. produces, arouses, expresses) m , and m refers to e .

This description of the relations among symbols, meanings, and referents is, in fact, very suggestive as to the nature of meanings. For it is evident on other grounds that a stimulus-pattern of shapes or sounds is a full-blooded cognitively meaningful symbol for a person only if that person has acquired certain language habits with respect to that stimulus-pattern. We may take it to be an empirical fact that a language user’s transactions with linguistic entities produce (arouse, activate) in him certain behavioural (or mental) states which are, in some sense still very much in need of clarification, “appropriate” or “relevant” to the referents of the expressions in question, or to what *would* be their referents were the latter to exist. It is therefore most tempting to identify the meaning, m , of a symbol s as some aspect of an internal state characterized by the linguistic role of s , such that s designates an entity e if and only if e stands in a certain pragmatic relation to m . In fact, unless there are good reasons to the contrary, such an identification would seem to be dictated on grounds of parsimony alone, for consideration of the facts of language behaviour lead inexorably to the (scientific, not philosophical) conclusion that there *are* internal states generated by the use of language, and it is an unnecessary multiplication of entities to introduce the meaning of a term as something which differs *both* from its referent and from part of the internal state produced by its use.

For present purposes, however, it is unnecessary to argue for any particular interpretation of meanings, so long as it is agreed that the meaning of a term *is* different from its referent (though, of course, the meaning of one expression may be the referent of another), or, phrased somewhat differently, that the relation between a term and its meaning is not a relation of reference. For then it becomes wholly gratuitous to assume, as seems to be implicit in the views of a great many

philosophers, that a meaningful descriptive expression must necessarily designate something. Not only can no *reason* be given for such an assumption, it entails such bizarre ontological commitments as to the existence of Square-circleness, and “possible” but not real facts designated by false statements (see Section V below). I strongly suspect that it is primarily the desire to disavow this “torrent of universals” that drives the nominalist to the (in my opinion) logically inconsistent position that no abstract entities exist at all. But neither of these unpalatable extremes has any intuitive plausibility. It is easy to conceive that from a set of meaningful descriptive terms, all of which, say, have designata, one might construct a complex descriptive expression which has meaning because its constituents have meaning, but which need not itself designate anything. This is a much more natural interpretation of, e.g. a definite description than to assume that descriptions do not *really* refer, and that sentences containing them are syntactical anomalies. Similarly for descriptive expressions of higher logical type: it does not follow that because we can construct the meaningful expression, “the class of red circles”, or “the property of being a red circle”, there must necessarily *be* such a class or property.

III

In light of these remarks, let us examine the force of saying

(25) A exists,

or

(26) A does not exist.

Such statements have puzzled philosophers because while (25) and (26) seem to have empirical content, if we try to interpret them as we would ‘John is tall’, namely, as assertion that the entity A exemplifies a certain property, then either (25) is tautologous and (26) self-contradictory, or we have to assume that entities come in two styles—those which “exist” and those which do not. However, we have just argued that given a meaningful descriptive expression ‘ A ’, it is empirically significant to ask whether or not ‘ A ’ designates anything. Thus it is very tempting to suppose that (25) is an elliptical way to assert

(27) $(\exists \Phi)(‘A’ \text{ designates } \Phi)$,

and that (26) is to be analysed as the negation of (27).

But this will not quite do. For as Church’s translation test shows, (27) is a statement about the symbol ‘ A ’, whereas if (25) is a descriptive statement at all, it is not *about* ‘ A ’, but *uses* ‘ A ’ to talk about something else. Yet if we hold that

‘John’ in ‘John exists’ refers to the same entity that it refers to in ‘John is tall’, we are hard pressed to know what to make of ‘Pegasus does not exist’, since if there were exactly one winged horse, ‘Pegasus’ would then refer to it and hence in fact does not have a referent in this sense.

But there is no reason to suppose that a given symbol always has the same referent, if any, no matter what its context of usage. Actually, the evidence strongly suggests that there are two basic kinds of declarative linguistic contexts, the “intentional” and the “objective”, such that the *referent* of an expression in an intentional context is its *meaning* in an objective context, whereas the latter contexts are simply those in which the expressions play their normal roles—i.e. where their meanings are what we would understand by them in the absence of cues for special usage. Thus ‘John believes that all swans are white’ and ‘John is thinking about centaurs’ are to be understood, given the aforementioned interpretation of meanings, as statements about John’s behavioural (or mental) state. Similarly, the peculiarity of ‘ x means y ’ is no longer mysterious; ‘ y ’ here simply marks an intentional context and the italicized terms in (22) and (24) do not attempt to refer to a mythical Pegasus or an even stranger And-hood, but instead designate, respectively, the meanings of ‘Pegasus’ and ‘and’. There is, of course, nothing new about this theory of contexts. Frege (1952) said as much, and the only reason for adopting the present terminology, rather than his, is that “intentional-objective” more clearly characterizes the nature of the distinction than does “indirect-direct”. But what I now want to suggest is that statements of forms (25) and (26) are also intentional contexts of ‘ A ’. What (25) then asserts is that a certain meaning, specifically, the one possessed by the term ‘ A ’ when used in objective English contexts, stands in a referential relation to some other entity—hence implying, though not asserting, that any symbol, ‘ A ’ in particular, which has this meaning also has a designatum. Similarly, (26) denies this claim. Thus (25) and (26) are empirically significant, though they *mention* no symbols nor do they presuppose a realm of “possible but not actual” beings.

IV

In my opening remarks, I contracted to find an objective analogue of ‘ A exists’, and moreover, alleged that (1) might be such a statement. We are now in position to see why this should be so. By an “objective analogue” of (25), I mean a statement with roughly the same force as (25) but which uses the expression ‘ A ’ objectively. Now, we have just seen that ‘ A exists’ and ‘‘ A ’ designates’ seem to be equivalent in so far as it is possible for a statement which uses an expression to be equivalent to one which mentions it. Hence any sentence ‘ $F(A)$ ’, which uses ‘ A ’ objectively,

is an objective analogue of (25) if a necessary and sufficient condition for ‘ $F(A)$ ’ to be true is that ‘ A ’ have a referent. Now, it was argued earlier—specifically, it follows from (7) and (9)—that if ‘ $F(\Phi)$ ’ is any formally valid formula in which ‘ Φ ’ is the only free variable, and ‘ A ’ is syntactically a substitution instance of ‘ Φ ’, then ‘ $F(A)$ ’ is true if and only if ‘ A ’ has a designatum. Hence, any formal tautology in which ‘ A ’ occurs objectively as its only descriptive term is an objective analogue of ‘ A exists’. If Identity is an objective context of its arguments, then (1) is such a sentence. Presumably, there are many others, such as ‘ $A = A$ ’.

Similar considerations show there can be no objective analogue, ‘ $G(A)$ ’, of ‘ A does not exist’. For ‘ $G(A)$ ’ must then be a sentence in which ‘ A ’ occurs objectively and which is true when and only when ‘ A ’ has no designatum. But this is impossible, since it is a *condition* for the truth of ‘ $G(A)$ ’ that ‘ A ’ have a referent. In particular, if identity-assertions are objective in their subject-terms, the negation of (1), say in the case of Pegasus,

$$(28) \quad (x)(x \neq \text{Pegasus}),$$

cannot be analogous to

$$(29) \quad \text{Pegasus does not exist}$$

because (29) is presumably true and (28) cannot be—in addition to the arguments by which (9) was supported, we would have, if (28) were true, the curious instance of a sentence which is true, but formally invalid.

V

While this concludes the body of my argument, there are still a couple of loose ends which need to be tied off. The first has to do with the truth-status of meaningful statements which contain descriptive terms which have no designata. Traditionally, meaningful declarative statements are classified as either true or false. But statements such as ‘Pegasus is winged’, containing designatum-less descriptive terms, cannot be true. May we then consider them to be false, or must we introduce a new truth-category to deal with this case? This is probably for the most part a matter of terminological convenience; however, rather than create a special semantic limbo for such lost souls, I would pass a sterner judgment and damn them as simply false. For a sentence containing meaningful descriptive terms which fail to designate usually if not always implies a belief which is orthodoxly false. Thus a person who believes ‘Pegasus is winged’ is thereby committed to belief in the existence of a winged horse. Moreover, the designata of true statements are undoubtedly facts. (The view that sentences refer to truth-values will not stand up

under close analysis of discourse about events, causal relations, happenings, etc. This error stems from the mistaken identification of facts with true propositions. But surely it is more correct to say that propositions are intentional entities, specifically, that they are the *meanings* of declarative sentences, whereas facts are objective, specifically, that they are what true sentences are *about*.) If so, then what is a false sentence if not simply a meaningful sentence which fails to designate a fact? But containing a descriptive term which has no referent is a sufficient condition for a sentence not to designate a fact. Hence I submit that ‘Pegasus is winged’ and others of its ilk are unqualifiedly false.

The other loose end hangs from the existence of abstract entities; for while I have alleged that the present views provide the tools with which to give the Augean stables of platonistic ontology a good scrubbing without sacrifice of essential livestock, I have so far done little to justify this claim. Since somewhat different things need to be said about different categories of abstract entities, the present remarks will be limited to the problem of *properties* or *attributes*, commitment to the existence of which is presumably carried by the use, as descriptive terms, of singular expressions formed from predicates—e.g. ‘Triangularity’, ‘Sweetness’, ‘Hardness’, ‘Red-squareness’. I would like to suggest that the existence of Hardness, Red-squareness, etc., may be an *empirical* question in precisely the same way that the existence of Chicago or Pegasus is empirical.

To begin with, we recall that discourse about “properties” differs from that about “classes” in that two properties, Φ and Ψ , may be distinct even though co-extensive—i.e. that $(x)(\Phi x \equiv \Psi x)$ does not entail that $\Phi = \Psi$. Further, we assume that if non-singular predicates are to be treated as descriptive terms, they are to be considered ontologically equivalent to their singular form. Thus ‘ x is red’ is to be taken as equivalent to ‘ x exemplifies Redness’ or ‘ x exemplifies Being Red’. (Note that this assumption is justified by ordinary usage in that if one were asked to list the properties of a hard, red object, the grammatically correct answer would be ‘Hardness and Redness’, rather than ‘Hard and red’.) The property-commitments of a compound predicate in informal discourse are likely to be ambiguous. Thus ‘ x is a red square’ can be interpreted either ‘ x exemplifies Redness and x exemplifies Squareness’ or ‘ x exemplifies Red-squareness’. Formally, the scope of the abstraction operator (λ) easily distinguishes these alternatives, the ontological differences of which will be pointed out below.

We now ask what the semantical relation is that a property bears to its corresponding predicate in ordinary contexts. At first glance, the answer would appear to be obvious—the earlier discussion of Reference seems to show without further ado that ‘Redness’ *designates* the property Redness if the latter exists. However, there is another interpretation which holds that properties are the *meanings* of predicates, while the referent of the predicate is then taken to be the class of

entities which exemplify the corresponding property. This view, our legacy from Conceptualism, is reflected and insidiously propagated by classical terminology, which applies the term ‘intensions’, with its strong mentalistic connotations, to properties. Despite its widespread acceptance, the conceptualistic interpretation of properties seems to me to be wholly untenable:

(i) We have already seen that the sentence-form ‘____ designates ____’ apparently calls for the mention of a descriptive expression in the first blank, and the use of its singular form in the second. If properties are no exception to this rule, then ‘Redness’ designates Redness. Hence if what a singularized predicate designates is a class, then Redness must be the *class* of red entities. But this is just what property-talk does *not* allow us to say—if there is any point to the property-class distinction at all, it is that in some important sense, the property Redness is distinct from the class of red entities. However while this urges that singularized predicates do not designate classes, it does not suffice to prove that properties are not meanings; for it could be suggested that while, e.g. Redness is indeed a meaning, it is not the meaning of the singular term ‘Redness’, but of some other expression. This possibility will be discussed further in (iv).

(ii) If properties are the meanings of predicates, then either the properties of objects are internal states of a language user, or meanings are shadowy extralinguistic beings lying around in wait to be grasped by the mind’s hand.

(iii) We saw earlier that it does not seem correct to say that an expression is about its meaning. Rather, an expression *expresses*—i.e. calls forth, produces, arouses—its meaning, while it is the latter which does the business of referring. If so, the thesis that properties are meanings entails that predicates are not *about* properties, but *arouse* properties which then refer to the corresponding classes. Now it must be admitted that some philosophers apparently find this to be a congenial way of speaking. Church (1951), for example, has defined a property to be the concept *of* a class. Nonetheless, I submit that there is something a little strange in saying that a property is *about* a class. Such a view, moreover, would entail that the relation of an entity to its properties is a semantical relation, for then ‘ x exemplifies Φ ’ could be analyzed as ‘ $(\exists c)(\Phi$ refers to c and x is a member of c)’.

(iv) It is clear that at least *some* occurrences of singularized predicates refer to properties (if these exist) and not to classes. Consider, for example,

(30) Redness is a colour.

If ‘Redness’ in (30) designated the class of red things, then (30) would assert that the class of red things is a colour. Worse, it would follow that if the class of red things were identical with the class of square things, Squareness would be a colour. Moreover, that the property Redness (if it exists) is the referent, not the meaning,

of the first word in (30), may clearly be seen by reflecting that ‘Redness’ may be replaced in (30) without change of factual reference by the expression ‘The colour of ripe tomatoes’, which differs in meaning but not in referent from ‘Redness’. (To show that ‘Redness’ and ‘The colour of ripe tomatoes’ do, in fact, have the same referent in this context would call for greater discussion than is necessary here.) Once it is established that ‘Redness’ in (30) refers to Redness, it is then not difficult to show that except for obviously modal or mentalistic contexts, most if not all occurrences of singularized predicates apparently *refer to*, rather than *mean*, the corresponding property. For example, the fact that we would regard the conjunction of (30) and

(31) a exemplifies Redness

as logical grounds for concluding that a has a colour—i.e. our belief that (30) and (31) logically entail

(32) $(\exists \Phi) (a \text{ exemplifies } \Phi \text{ and } \Phi \text{ is a colour})$ —

reveals our belief that ‘Redness’ has a common referent in (30) and (31), and hence that the term refers to the property Redness, not the class of red things, in (31). Now, it is incumbent upon anyone who wishes to hold that properties are meanings to specify just what *are* the expressions whose meanings properties are. In view of the present remarks and the similar conclusion from (i), above, properties cannot be the meanings of the singular forms of predicates. Hence if predicates *refer to* classes and *mean* properties, it must be the adjectival form of the predicate which has a property as its meaning. If so, it is incorrect to assume, as we have done here, that ‘ x is red’ has essentially the same force as ‘ x exemplifies Redness’; instead, we should consider the possibility that while the singular term ‘Redness’ means *Redness* and designates Redness, the adjective ‘red’ (or perhaps the full sentential function, ‘ x is red’) may mean Redness and designate the class of red things. But this seems most peculiar, for surely ‘ x is red’ is closer in meaning to ‘ x exemplifies Redness’ or ‘ x has the property Redness’ than it is to ‘ x is a member of the class of red things’. Moreover, to say that ‘red’ (or ‘ x is red’) means Redness, constitutes a flagrant violation of the transliteration rule for filling the matrix, ‘____ means ____’.

It seems to me, therefore, that the reasons are overwhelming for concluding that if properties exist, they must be the referents of predicates rather than their meanings. Coupled with the interpretation of “existence” developed earlier, the ontological implications of this view are immediate and profound. Since whether or not a meaningful descriptive term has a referent is an empirical matter, *even if properties exist generically, the fact that we can construct a meaningful predicate from simpler expressions does not entail that there must correspondingly exist a property which is designated by that predicate*. Such considerations expose an acute need for sharpening a number of distinctions in the logic of properties which are

frequently blurred. To illustrate this through a specific case, let us examine the compound predicate, ‘ x is a red-square’. We may take

$$(33) \quad \exists \Phi[\Phi = (\lambda x)(Rx \cdot Sx)]$$

as an objective assertion that the abstract entity Red-squareness exists. Now, an existence assertion such as (33) must carefully be distinguished from one such as

$$(34) \quad (\exists x)(Rx \cdot Sx).$$

or, more explicitly,

$$(34') \quad (\exists x)[(\lambda y)(Ry)(x) \cdot (\lambda y)(Sy)(x)]$$

What (33) asserts is that Redness and Squareness are fused into a *single* property, whereas (34) merely claims that Redness and Squareness are co-exemplified. But it is unnecessary to assume that for every set of properties, there also exists an *additional* property which is somehow an amalgam of the set. There is nothing—or is there?—in the belief that certain abstract entities exist which commits one also to believe that they are endowed with reproductive capacities. Moreover, both (33) and (34') must be distinguished in turn, from

$$(35) \quad (\exists \Phi)(x)(\Phi x \equiv Rx \cdot Sx).$$

While (34') implies the existence of no abstract entities other than Redness and Squareness, (35) asserts the existence of a third property which differs from both Redness and squareness in that it is exemplified by exactly those particulars which are both red and square. On the other hand, (35) is weaker than (33) in that a property in virtue of which (35) is true need not be identical with Red-squareness. Thus if all hard objects were both red and square, and conversely, (35) would be justified by the existence of Hardness. Finally, we must—or must we?—distinguish (33) from what appears to be an even stronger hypothesis,

$$(36) \quad \exists \Phi[(\Phi = (\lambda x)(Rx \cdot Sx)) \cdot (\exists x)\Phi x],$$

or

$$(36') \quad (\exists x)[(\lambda y)(Ry) \cdot Sy)(x)],$$

which implies not only that Red-squareness exists, but also that it is exemplified.

It is important to note that although (35) appears to assert an ontological commitment beyond that implied by the descriptive use of ‘Redness’ and ‘Squareness’, most higher logical calculi would permit inference to (35) from the tautology

$$(37) \quad (x)(Rx \cdot Sx \equiv Rx \cdot Sx),$$

which is necessarily true if Redness and Squareness exist, by existential generalization over the compound predicate to the left of the biconditional. Similarly, it is customary to authorize inference of (36') from (34'). But if it is true that a mean-

ingful compound predicate need not itself designate a property even though all its descriptive constituents have referents, then it is surely an ontological blunder to employ inference rules which construe *every* predicate, no matter how complex, as a descriptive term in the present sense. More generally, while it does not seem unreasonable to assume that a language user is committed to the existence of entities designated by the *primitive* extra-logical terms of all logical types in his approved vocabulary, it should be possible for him to assert non-atomic sentences without necessarily assuming any further ontological commitments (except, of course, to the existence of a fact corresponding to the asserted sentence.) Formally, this means that if the scope of the λ -operator is the criterion for the property-commitments of an assertion—i.e. if ‘ $\dots(\lambda x)(\Phi x)\dots$ ’ is construed to entail ‘ $(\exists \Psi)[\dots \Psi \dots]$ ’—then postulates or inference rules by which the scope of the λ -operator may be widened should be regarded not as logical principles but as ontological assumptions which may, or may not, be justified by empirical reality. One need feel only the tamest platonistic yearnings to maintain that the assertion, ‘There is something which is both red and square’ entails commitment to the existence of Redness and Squareness, and even this can be questioned without denying the generic existence of abstract entities if it can be argued that ‘red’ or ‘square’ is not a primitive predicate. On the other hand, blithely to infer from ‘There is something which exemplifies both Redness and Squareness’ the further assertion ‘There is something which exemplifies Red-squareness’—i.e. to assume that (34’) in itself justifies (36’)—is to leave oneself defenceless against both the importunities of the metaphysician and the ravages of the nominalist.

My point in all this is not to make any particular ontological contention, but to drive home the realization that once one sees clearly that not every meaningful predicate need be assumed to designate an abstract entity even when some may do so, one may not only assuage anti-metaphysical qualms about the generic existence of abstract entities, but may begin to ask a number of very interesting questions about such existences. I do not believe that such speculations are metaphysical gibberish. It seems to me that at the very least, questions about possible differences in the ontological force of, e.g. (33)–(36), find empirical significance in the rules of inference we are willing to adopt (e.g. existential generalization over compound predicates), which surely make a difference for the conclusions we draw from premises which we believe to be factually true. What would now seem to be called for is not breast-beating avowal of personal ontological faith, but meticulous study of alternate sets of ontological postulates to see exactly what testable differences they do make; or, if they *don’t* make any testable difference, why don’t they, and what, then, *is* the cognitive content of ontological speculation?

St. Olaf College

References

- Church, A. (1951). Abstract entities in semantic analysis. *Proceedings of the American Academy of Arts and Sciences*, 80, 100–112.
- Frege, G. (1952). On sense and reference. In P. Geach & M. Black (Eds.), *Translations from the philosophical writings of gottlob frege*. Oxford: Basil Blackwell. (Original work published 1892)
- Rozeboom, W. W. (1962). The factual content of theoretical concepts. In H. Feigl & G. Maxwell (Eds.), *Minnesota studies in the philosophy of science* (Vol. 3). Minneapolis: University of Minnesota Press.