PROPERTIES, AND BELIEFS ABOUT EXISTENCE *

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In formulating a logic of belief-statements with quantifiers, it has been thought to be intuitively desirable, given some appropriate assumptions about the "rationality" of believers, that the following schema be considered valid:

(1) $(\exists x)B_s\varphi x \rightarrow B_s(\exists x)\varphi x$,

where 'B_s' is a statement operator signifying '*s* believes that', 'φx' an arbitrary function or open sentence, and '$\rightarrow$' the strict implication sign [1]. This schema would allow us to say that if there exists an object such that an arbitrary subject *s* believes such-and-such to be true of it, then the same subject believes that there exists an object of which such-and-such is true. However, if no restrictions are imposed on the interpretation of the function 'φx', the acceptability of (1) no longer appears

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[1] See, e.g. J. HINTIKKA, *Knowledge and Belief* (Cornell University Press: Ithaca, N. Y., 1962), p. 162; and, with a somewhat different motivation, R. M. CHISHOLM, "On Some Psychological Concepts and the 'Logic' of Intentionality," read at a Symposium at Wayne state University in 1962 and published in *Intentionality, Minds, and Perception,* edited by H-N. CASTAÑEDA (Wayne State University Press: Detroit, 1967), pp. 11-35, and "Notes on the Logic of Believing," *Philosophy and Phenomenological Research,* XXIV (1963), pp. 195-201. (Chisholm's first paper will henceforth be referred to in the text as [I], his second as [II].)

In this paper I shall assume a nonempty universe and the ordinary (Quinean) interpretation of the quantifiers: i.e., '$(\exists x)$' and '(x)' are to be read as 'There exists an x such that' and 'For all existing x' respectively. I shall also assume that the arbitrary believer *s* has the concepts expressed by '$(\exists x)$' and '(x)'. Other rationality assumptions will be made as needed in the course of the discussion.

unobjectionable. For example, if we wish to talk about the things that *s* believes do not exist and use the function '$\sim(\exists y)(y=x)$' to signify 'x does not exist' ([2]), then, if we allow '$\sim(\exists y)(y=x)$' to be an instance of the function 'φx', we get the statement:

$$(2)\quad (\exists x)B_s\sim(\exists y)(y=x) \rightarrow B_s(\exists x)\sim(\exists y)(y=x).$$

On any reasonable interpretation of belief in which no subject can be said to believe that something exists which is not at least self-identical, the consequent of (2) is obviously inconsistent (it says that *s* believes that there exists an x which is identical with nothing, i.e. which does not exist). If so, the antecedent of (2) would also have to be inconsistent. But the antecedent of (2) says that at least one of the objects which do in fact exist is believed by *s* not to exist — which seems a perfectly sensible and possibly true statement. Hence, if we allow '$\sim(\exists y)(y = x)$' to be an instance of the function 'φx', we seem forced to deny that (1) is a logically valid schema. This is precisely the conclusion that e.g. J. Hintikka has reached, on second thoughts, in view of similar considerations ([3]).

Before we resign ourselves to an unqualified rejection of (1), it is important to explore two alternatives that might still be open to us. In order to uphold (1) we might *either* deny that (2) is a paradoxical statement (that is, we might affirm that the antecedent of (2) is, after all, inconsistent); or deny that a function such as '$\sim(\exists y)(y=x)$' can be an instance of 'φx 'in (1). Both of these alternatives have been suggested by R. M. Chis-

([2]) In order to express symbolically such statements as 'y exists' and 'y does not exist', which are *inexpressible* in a system like Quine's, I shall assume (with forthcoming qualifications) a system without "existential presuppositions," that is, a system where nondesignating individual constants and/or free variables are permitted. Following J. Hintikka, K. Lambert and others, the statement 'y exists' will be expressed by '$(\exists x)(x=y)$' (i.e. 'There exists something with which y is identical').

([3]) See "Individuals, Possible Worlds, and Epistemic Logic," *Noûs*, I (1967), p. 39, footnote 8. In *Knowledge and Belief* was a theorem expressed as '$(Ex)B_a p \supset B_a(Ex)p$', and no restriction was imposed on 'p' that would exclude '$\sim(Ey)(y=x)$' as a possible interpretation of 'p'.

holm in [I] and [II]. I shall now examine each of these alternatives in reverse order.

II

Chisholm's denial that '$\sim(\exists y)(y = x)$' can be an instance of 'φx' in (1) follows from his stipulation that 'φx' must be "logically neutral" — 'φx' being logically neutral if the result of prefixing quantifiers to it is a statement which is neither logically true nor logically false ([I], p. 13). Since the statement '$(\exists x) \sim(\exists y)(y=x)$' is a logically false statement, '$\sim(\exists y)(y=x)$' is not an acceptable instance of 'φx' in (1).

Chisholm's stipulation may have been entirely legitimate in the context of his own inquiry. The purpose of his inquiry was to discover a "logical mark of intentionality", some unique logical characteristic of belief-statements and other intentional statements, and he was therefore free to restrict his attention to whatever class of statements (e.g. quantified statements with logically neutral functions) he judged would exhibit the unique characteristic in question. But if one wishes to defend, quite in general, the validity of a schema such as (1), the stipulation that 'φx' be logically neutral is, surely, entirely *ad hoc,* designed uniquely to forestall some specific paradoxical inference such as (2). What we need, before we can accept the proposed stipulation, is some reason of a general kind, for example, some general assumption about the nature of belief, or about the logical properties of intentional operators or of existential functions, of which assumption the proposed stipulation is a natural consequence.

III

The other alternative for solving the paradox under discussion is to maintain that the antecedent of (2) is also inconsistent and that, therefore, no real paradox results by interpreting 'φx' in (1) as '$\sim(\exists y)(y=x)$': both the antecedent and the consequent of (2) being now inconsistent, the familiar laws of implication would thus be respected.

The inconsistency of the antecedent of (2), namely

(3) $\sim\Diamond(\exists x)B_s\sim(\exists y)(y = x)$

(where '◇' is the possibility operator), is asserted by Chisholm in a thesis about the nature of belief: "No one who is consistent can be said to believe, with respect to any particular thing, that that thing does not exist" ([II], p. 198; cf. also [I], p. 17) [4].

What justification does Chisholm give for his thesis ? He claims that his thesis follows from a general, anti-Meinongian assumption about the nature of belief ([II], .p 198):

> [A] To believe, with respect to any particular thing x, that x has a certain property F is, in part at least, to believe that there *exists* an x such that x is F; [B] to believe that some S are P is to believe that there exists an x such that x is S and x is P; and, more generally, [C] to believe anything at all, with respect to any particular thing, is to believe, with respect to some property, that there exists something exemplifying that property.

Chisholm's assumption consists of three statements. The first statement [A] seems to me entirely unobjectionable: for to believe that an object has some property **is** to believe that that objects exists. (The second statement [B], I assume, adds nothing substantial to the first, so I shall ignore it in what follows.) The first statement may be symbolized as follows:

(4) $(x)\{B_sFx \rightarrow B_s[(\exists y)(y=x).Fx]\}$,

where 'F' designates any arbitrary property [5].

[4] Although Chisholm does not generally express his claims in symbolic notation, I believe that my symbolism correctly formulates the gist of his claims. That (3) and not, e.g. '$\sim\Diamond B_s(\exists x)\sim(\exists y)(y=x)$', is the correct formulation of Chisholm's thesis is clear in the light of the following quotation: "We must not be misled by quantifiers that ... divide up modal prefixes, as in the statement 'It is possible, for every x, that x is material,' where the quantifier comes between part of the modal prefix and the 'that.' A quantifier thus dividing up a modal prefix may be taken out and inserted in front of the prefix" ([I], p. 14). By a "modal prefix" Chisholm means any phrase ending with 'that', including, e.g., 's believes that'. ([I], p. 12).

[5] The weaker thesis '$(x)B_sFx \rightarrow B_s(\exists x)Fx$' might seem to be a more

Now (4), though true, has not the slightest tendency to imply (3). (4) is (trivially) true of those objects believed by *s* to have some property, i.e. believed by *s* to exist; this, however does not preclude the possibility of there being some actual objects (mistakenly) believed by *s* to have *no* properties, i.e. believed by *s* not to exist. Yet this possibility is precisely what is denied by (3). Hence (4) does not imply (3).

It is clear, however, as Chisholm's statement [C] seems to indicate, that Chisholm wishes to defend a statement not as trivial as (4), namely a statement which purports to speak not merely of those objects believed by *s* to have some property, but of any object concerning which *s* has any belief at all. Thus the statement (or schema) which Chisholm would wish to defend (as exhibiting the anti-Meinongian assumption about the nature of belief), and which presumably would provide evidence for (3), is not (4) but

(4') $(x)B_s\varphi x \rightarrow (\exists F)B_s(\exists x)Fx$,

where 'φx' is any arbitrary function and 'F' is a predicate variable ranging over properties. I take (4') to be an adequate formulation of [C].

Two questions need now to be asked: (i) Does (4') imply thesis (3) ? (ii) Is (4'), i.e. [C], itself defensible ? With respect to the first question, I can imagine no plausible system in which it could be shown that (4'), by itself, does imply (3). At most, (4') can be shown to imply, in conjunction with an assumption like (4) (which relates beliefs about having properties with beliefs about existence), a statement like '$(x)B_s\varphi x \rightarrow (x)B_s(\exists y)(y=x)$', which in turn, given some epistemic rule like 'If "$B_s\varphi x$", then "$\sim B_s \sim \varphi x$" ', can be shown to imply '$(x)B_s\varphi x \rightarrow \sim(\exists x)B_s \sim(\exists y)(y=x)$' which, though similar in intent to (3), is *weaker*

straightforward symbolization of [A] than (4). I think, however, that (4) is closer to what Chisholm wishes to hold, and, at any rate, can be shown to imply the weaker thesis (distribute the universal quantifier, allow universal instantiation *across* the belief operator in the consequent (cf. note 7 below), and perform existential generalization *within* the scope of the belief operator in the consequent).

than (3) in that it asserts *conditionally* what (3) asserts *categorically* (and the condition is far from trivial !).

Even if (4′) implied thesis (3), is (4′), that is, [C], itself defensible ? It seems to me that [C] is just as questionable as thesis (3), which it is meant to support. [C], in effect, requires that any function (open sentence) we may use to report someone's beliefs about an object must be a function which expresses a *property*, that is, a function the occurence of which within a given context implies or presupposes, within that context, that there *exists* something satisfying that function (recall Chisholm's [A] above). This requirement can hardly be defended on the general ground that *all* functions, in *all* contexts, express properties. In modal and intentional contexts, if certain logical laws (e.g. Leibniz's law of indiscernibility of identicals) are successfully to be applied, it seems clear that a distinction must be made between those functions which do and those which do not express properties (6). But quite apart from these logical considerations (to which we shall return later), one need not be Meinongian in order to reject [C], as Chisholm believes one must. Suppose, for example, that the monster of Loch Ness, contrary to *s*'s beliefs, exists after all. If [C] is true, *s* cannot be said to have any belief at all about the monster of Loch Ness, for, if he did have any belief at all about the monster, he would believe (as [C] requires) that it has some property, i.e. that it exists — contrary to the hypothesis. But, surely, if *s* believes (mistakenly) that the monster does not exist, he *does* have a belief about the monster: to believe, with respect to an object *a*, that *a* does not exist is not the same as to have no belief at all about *a*.

Chisholm's reply to the foregoing criticism, I gather, would be something to this effect ([II], p. 198; Chisholm's example is different, the point the same): From the supposition that the monster of Loch Ness, contrary to *s*'s beliefs, does exist, we are justified in inferring *not* that there exists something such that

(6) See, e.g. L. Linsky, "Substitutivity and Descriptions," *Journal of Philosophy*, LXIII (1966), pp. 681-682; and my paper "Identity and Existence in Intentional Contexts," *Methodology and Science*. October 1968, pp. 190-209.

s believes it does not exist, but that, with respect to the things which do exist, *s* believes that none of them is the monster of Loch Ness.

Chisholm's reply seems to me obviously unacceptable. From the fact that *s* believes *a* does not exist, Chisholm would have us infer that s has a belief with respect to *all the things that do exist,* namely, the belief that none of them is *a*; i.e.

(5) $B_s \sim (\exists x)(x = a) \rightarrow (x)B_s \sim (x = a)$.

In order to believe that some object does not exist, one would have to believe something about *everything* that does exist! This demand is surely unreasonable, for although *s* may believe that some object does not exist, there will almost certainly exist many things about which *s* has no belief at all (almost certainly no one will ever even **think** about everything there is): *a fortiori,* there will almost certainly exist many things with respect to which it is not the case that *s* believes that none of them is *a*. Moreover, Chisholm's demand is contradictory on his own grounds. For, on the assumption that, despite *s*'s beliefs to the contrary, *a* does exist, then, with respect to everything there is, including *a* (since *a* exists), *s* would have to believe something or other (notably, that is is not *a*) and thus, as [C] requires, *s* would have to believe, with respect to everything there is, including *a*, that it has some property, i.e. that it exists — contrary to the assumption.

What Chisholm may have meant us to infer, from the proposition that *s* believes *a* does not exist, is, perhaps, *not* that with respect to all the things that *do* exist, *s* believes that none of them is *a*, but that with respect to all the things *s believes exist,* he believes that none of them is *a*. If this is what Chisholm meant, then his claim is true but quite trivial, for (5) now becomes:

(5′) $B_s \sim (\exists x)(x = a) \rightarrow B_s(x) \sim (x = a)$.

(5′) is true as soon as we allow *s* to know the meaning of 'some', 'all' and 'not'. Notice also that the consequent of (5′) is true, on the assumption that *s* believes *a* does not exist, *whether or not* a does in fact exist. On the additional assumption that *a* does in fact exist, we must surely be able to infer something stronger than the consequent of (5′) and yet not as strong as the consequent of (5). What can this be ? My suggestion is quite simple: since *a* exists, apply existential generalization to the antecedent of (5) and obtain

(6) $(\exists x)B_s \sim (\exists y)(y=x)$ (7),

which, note, contradicts Chisholm's thesis (3).

IV

Acceptance of theses (3) and (5) has at least one consequence that Chisholm himself would not wish to accept. Consider the following schema:

(7) $B_s(x)\varphi x \rightarrow (x)B_s\varphi x$.

Chisholm, quite reasonably,holds that this schema is not logically valid ([II], p. 199). For, as he explains, *s* may commit the mistake of "defective generalization", that is, "the mistake of believing, with respect to some nonuniversal set of things, that those things comprise everything that there is" ([II], p. 197). For example, though the universe may contain the objects $\alpha_1, \alpha_2, \ldots \alpha_n$, and just one more thing, δ, *s* may mistakenly believe that the universe contains only $\alpha_1, \alpha_2, \ldots \alpha_n$; thus, though he may believe, with respect to $\alpha_1, \alpha_2, \ldots \alpha_n$, that they are φ, it is not the case that he would believe, with respect to $\alpha_1, \alpha_2, \ldots \alpha_n$ and δ, that they are φ; hence, though he would believe that everything is φ, it is not the case that, with respect to everything, he would believe that it is φ.

What assumption would we have to make in order to sanction the validity of (7) ? Obviously, the assumption that *s* avoids the mistake of defective generalization, that is, the assumption

(7) I defend this type of inference in my *op. cit.*, pp. 203-209.

that every object that does *in fact* exist is also *believed* by *s* to exist, i.e.:

(8) $(x)B_s(\exists y)(y=x)$.

But this assumption will always be true on Chisholm's account as soon as we grant that *s* believes that at least one fictional thing (e.g. Pegasus) does not exist. For then, given (5), to which Chisholm, as we have seen, seems to be committed, it would follow that *s* has a belief with respect to all the objects that do in fact exist (namely, the belief that none of them is the fictional thing in question). But, as Chisholm's thesis (3) and assumption [C] require, to have any belief at all, with repect to any particular thing, is to believe that that thing exists; hence, if *s* has a belief with respect to *all* the objects that do in fact exist, he must believe, with respect to all those objects, that they do exist: i.e. *s* cannot commit the mistake of defective generalization. Hence, simply by making the weak assumption that *s* believes that something (e.g. Pegasus) does not exist, we would have to say, on Chisholm's account, that (7) is valid. The obvious alternative, I submit, is to give up Chisholm's theses (5) and (3); but if we do this, then, on the assumption under consideration that '$\sim(\exists y)(y=x)$' can, without paradox, replace 'φx' in (1), Chisholm must also renounce (1).

V

Chisholm's attempts to justify (1) having failed, are we to reject (1) altogether ? If it were true that no restriction could justifiably be imposed on the interpretation of 'φx' in (1) that would preclude our inferring (2), then, surely, the only course left for us would be to deny the validity of (1). It seems to me, however, that a meaningful restriction (in addition, of course, to some minimal "rationality" assumptions for believers; cf. footnote 1) might be something like the following: (1) is valid only if 'φx' in (1) is a function or open sentence that expresses a property. With this restriction, if we came to agree that

'$\sim(\exists y)(y=x)$' is not a function that expresses a property, then we could go on to say, on general grounds, that '$\sim(\exists y)(y=x)$' is not an acceptable instance of 'φx' in (1), and hence that (2) is not a genuine counterexample to (1).

This proposal, however, remains unsatisfactory until a satisfactory answer to this question is forthcoming: "How are we to decide which functions express properties and which do not? That is, why, exactly, isn't '$\sim(\exists y)(y=x)$' a function that expresses a property?" I know of no clear and satisfactory answer to this question either in present or past philosophical literature. (The slogan that existence and nonexistence are not properties, even if true, remains unhelpful in the present context until what counts as a property is specified relative to a *formal* system). However, for those of us who are non-Meinongian, this much, I think, is true: To say that something has a certain property is to say that there exists something exemplifying that property (cf. Chisholm's [A]). Can we make this intuitive idea formally precise, relative to a system in which the function '$\sim(\exists y)(y=x)$' is noncontradictory, that is, in a system which, unlike e.g. *Principia Mathematica*, individual (free) variables may occur as placeholders for terms which may fail to designate?

What I wish to formalize is, essentially, the idea that any (noncontradictory) statement which implies an existential statement asserts that a certain property is being exemplified. This idea is *implicit* in systems with existential presuppositions, that is, in systems where (free) individual variables are placeholders for *designating* terms alone. In these systems, any (noncontradictory) function 'φx' will express something which can be true or false only of existent individuals. If 'φx' is true of anything then it is true of some existent individual, and if 'φx' is false of anything then it is false of some existent individual. In either case, the occurrence of a (noncontradictory) function guarantees that that function expresses a property, for whatever satisfies that function will have to be an existent individual; and to exist *is* to exemplify properties.

Now the existential *presuppositions* of a system (such as Quine's) cannot be *stated* in the system: 'y exists' is *inexpres-*

sible. These presuppositions, however, are revealed by the schema

(9) $\varphi y \rightarrow (\exists x)\varphi x$,

sanctioned by the rule of existential generalization [8]. Notice, however, that 'y' in (9) is a placeholder only for purely *designating terms* ("logically proper names"); definite descriptions are not, in general, allowed to occupy the position of 'y'. For example, the schema '$\psi(\iota x\varphi x) \rightarrow (\exists x)\psi x$' is not an *instance* of (9). The reason, of course, is that systems which, like *Principia*, have existential presuppositions with respect to individual constants and/or free variables, do not have existential presuppositions with respect to definite descriptions. There are contexts, e.g. '$\sim[\iota x\varphi x]\psi(\iota x\varphi x)$', where the description has a secondary occurrence, in which the thing described may fail to exist. Whether the thing described exists or not is *expressed* in the system by the statements '$E!(\iota x\varphi x)$' and '$E!(\iota x\varphi x)$', defined in the familiar manner. In particular, the following are valid schemata in a Russellian logic of descriptions:

(10) $[\iota x\varphi x]\psi(\iota x\varphi x) \rightarrow E!(\iota x\varphi x)$
(11) $[\iota x\varphi x]\sim\psi(\iota x\varphi x) \rightarrow E!(\iota x\varphi x)$
(12) $\sim[\iota x\varphi x]\psi(\iota x\varphi x) \not\rightarrow E!(\iota x\varphi x)$
(13) $\sim[\iota x\varphi x]\psi(\iota x\varphi x) \not\rightarrow \sim E!(\iota x\varphi x)$,

where the symbol '$\not\rightarrow$' means 'does not imply'. These schemata can be paraphrased as follows: (10)-(11) That the so-and-so ψ's (does not ψ) implies that the so-and-so exists; but (12)-(13) that it is not the case that the so-and-so ψ's neither implies that the so-and-so exists nor that it does not.

The Russellian theory of individual variables as placeholders for "pure designators" or "logically proper names" seems to me an unfortunate byproduct of a profoundly mistaken meta-

[8] Note that this rule is entirely general and unrestricted. 'φy' in (8) may be replaced by any function whatsoever without affecting the validity of the schema. For example, '$\sim\varphi y \rightarrow (\exists x)\sim\varphi x$' as well as '$\sim(\exists x)(x=y) \rightarrow (\exists x)\sim(\exists y)(y=x)$' are instances of the same schema. (Note that in the latter statement *both* the antecedent *and* the consequent are contradictory.)

physics (logical atomism, knowledge by acquaintance, etc.) which unnecessarily restricts the scope of applicability of a logical system. It is questionable whether there are, in any natural language, any logically proper names, and if there are, being they formally undetectable, it is undesirable to expect the logician, *qua* logician, to be concerned with the *factual* question of which expressions are, and which are not, purely designating expressions (9).

Without any further apologies, let me proceed with the stipulation that free individual variables are placeholders for *singular terms*, where a singular term is understood as any expression in a language which *purports* to designate an individual. In English, for example, singular terms comprise all *grammatically* proper names ('Nixon' as well as 'Pegasus') and all definite descriptions ('the author of *Waverley*' as well as 'the present king of France').

In addition, let me stipulate (contrary to common practice among proponents of "free logics") that a truth-condition for a sentence '$\psi\alpha$', where 'α' is any singular term, is that 'α' designate an existent individual. (Hence, 'Pegasus is a winged horse' is *false*.) Given these stipulations, it follows that '$\psi\alpha$' can be false *either* if 'α' fails to designate an existent individual *or* if 'ψx' is not true of the existent individual designated by 'α'. Thus, unlike systems with existential presuppositions, a truth condition for the contradictory of '$\psi\alpha$' is *not* that 'α' designate an existent individual, for the contradictory of '$\psi\alpha$' is ambiguous in the way just indicated. In order to eliminate the ambiguity, it will be helpful to specify the scope of the singular terms, by analogy with Russellian descriptions, by prefixing a bracketed instance of the singular term to the sentence, as in '$[\alpha]\psi\alpha$', and by allowing the negation sign to occur either before or after the bracketed term, thus specifying either a secondary or a primary occurence of the sigular term (10).

(9) For amplificatory remarks on this point, see, e.g. H. S. Leonard, "The Logic of Existence," *Philosophical Studies*, VII (1956), pp. 53 ff.

(10) The scope prefix may be omitted when no negation sign occurs.

If we now symbolize 'y exists' as '$(\exists x)(x=y)$', as we have done throughout this paper, we can express the above stipulations in summary form by affirming the validity of the following schemata (which, note, are entirely parallel to (10)-(14) above):

(14) $[y]\psi y \rightarrow (\exists x)(x=y)$
(15) $[y]\sim\psi y \rightarrow (\exists x)(x=y)$
(16) $\sim[y]\psi y \nrightarrow (\exists x)(x=y)$
(17) $\sim[y]\psi y \nrightarrow \sim(\exists x)(x=y)$,

where 'y' is a placeholder for *any* singular term.

Let us now return to our original question: When can we say that a function 'φx' expresses a property? My suggestion, in view of what has been said, is simply that a function 'φx' expresses a property only if it can be *truly* predicated of existent individuals alone, though it can be *falsify* predicated of existent as well as nonexistent individuals. In other words, a function 'φx' expresses a property only if '... [x] ... φx' meets the conditions specified by (14)-(17).

It can now be seen that the function '$\sim(\exists y)(y=x)$' as well as its contradictory do not express properties. Though a scope distinction can in general be drawn between '$\sim[x](\exists y)$ ...' and '$[x]\sim(\exists y)$ ...', no difference in truth conditions is discernible when '$(y=x)$' fills the blank in the two schemata (hence, for simplicity, we omitted the scope symbol in the consequent of (17)). Thus we can say that '$(\exists y)(y=x)$' is not a function that expresses a property since its being so implies that (17) is false; and '$\sim(\exists y)(y=x)$' is not a function that expresses a property since its being so implies that (14) is false. Hence, to return to our starting point, '$\sim(\exists y)(y=x)$' is not a proper substitution instance of 'φx' in (1).

Postscript

Existence is sometimes defined in terms of self-identity: to say that y exists is to say that y is self-identical. This definition of existence is compatible with our results. For if the biconditional '$(\exists x)(x = y) \equiv (y = y)$' is true, it can be seen that the functions '$(y = y)$' and '$\sim(y = y)$' do not express properties: '$(y = y)$' does not express a property because if it did (17) would be false, and '$\sim(y = y)$' does not express a property because if it did (14) would be false. This result should not be surprising since being self-identical, rather than a property, is more properly a *condition* for having any properties at all (i.e. for existing).

Conditions (14)-(17) have important implications with respect to the question whether modal and intentional predicates ('being possibly φ', 'being believed by *s* to be φ', etc.) express properties. I hope to show these implications in a future paper.

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