Existential Import and Logic

By a "doctrine of existential import" I shall mean, in this paper, any doctrine which holds (in whole or part) that *If a statement "Some x is F" is true then, necessarily, the statement, "There exists an x, such that x is F" is true.* In relating such doctrines to logic, I shall have in mind primarily the logic of the Russell and Whitehead's *Principia Mathematica*, as refined or presented by various authors or logic texts. Presentations of this logic, which I shall call simply "modern logic", usually contain a doctrine of existential import. The doctrine is usually introduced by semantic stipulations which permit the "existential" quantifier to be interpreted as *either* (1) "*Some* x" *or* (2) "There exists an x such that ", so that those two interpretations are treated as semantic equivalents. In addition to modern logic and *its* doctrine of existential import, I shall have occasion to speak about "traditional logic",and the so-called "traditional doctrine" of existential import. By the term, "traditional logic", I shall mean primarily the Aristotelian treatments of the syllogism and immediate inference, as developed and presented up to recent times.

The main thesis this paper is intended to support is that all doctrines of existential import should be eliminated from modern logic. This thesis can be argued on various grounds. One man attack the doctrine of existential import from a semantical point of view, arguing its infidelity to ordinary language usage. One may attack it on philosophical grounds, pointing to a variety of strange and confusing dicta which have arisen in philosophy as a result of its introduction. Or one might attack it on the grounds of its pragmatic disutility in the analysis of scientific methodology. But in the end, if the modern doctrine of existential import is to be attacked successfully, it is crucial that philosophers and logicians be disabused of the notion that this doctrine is required by or even useful for, the purposes of logic itself. For, since 1881, it has been widely argued and believed that the doctrine of existential import is an indespensable adjunct of modern logic, and in particular that this doctrine justifies modern logic, as against traditional logic, at those main points at which modern and traditional logic diverge. As long as this mistaken assumption persists, complaints about its semantic infidelity, or its philosophical trouble-making, will fall on deaf ears. Thus the central purpose of this paper is to make clear that modern logic not only does not require the doctrine of existential import, but that modern logic itself, let alone modern philosophy, would be better off better off without it.

II

Lest it be suggested that the proposal to eliminate existential import is an inconsequential matter of senmantic convent-

ions, let us consider a few of the consequences it can or has had in logic and philosophy.

We begin by noting the following chain of deductions:

(1) "Some x is F" implies "There exists at least one x, such that x is F". (The doctrine of existential import.) Let us suppose this a logical law.

(2) Hence, replacing `F' by `does not exist', "Some x does not exist" implies "There exists some x such that x does not exist".

(3) But "There exists some x such that x does not exist" is obviously a contradiction.

(4) Hence "It is false that there exists an x which does not exist" is a logical truth.

(5) Hence (by (4) and (2), modus tollens) "It is false that some x does not exist", or "It is false that some things don't exist" is a logical truth.

(6) Hence, by stnadard equivalences relating universal and particular quantifiers, "(x) x exists" or "Everything exists" is a logical truth.

(7) Hence, by (6) and the principle of universal instantiation, "Santa Claus exists", "Pegasus exists", "God exists" and "Europe exists" are all truths derivable from logic.

Now the last result is clearly intolerable, and no one who wishes logic to be taken seriously would be satisfied with it. The only question is how to avoid it.

One way to avoid it, and the method I advocate, is to reject the first step, the doctrine of existential import. We need not deny steps (3) and (4), that the statement "There exists an x such that x does not exist" is a contradiction and that its denial is a logical truth. In fact, we could, if we wished, express these statements in semi-logical symbolism as follows: `(x)(x exists . -(x exists))', and `(x)(x exists ∂x exists)', and prove them to be a contradiction and a logical truth, respectively, by conventional tests. But having rejected the doctrine of existential import in step one, steps (2), (5) and (6) will no longer follow; the statement "Something does not exist" is not a contradiction, and "Everything exists" is not a logical truth. On the contrary, we can hold that these are contingent statements and that in fact some entities do not exist, for example, Pegasus and Santa Claus, and that the statement "everything exists" is in material fact, false.

This is a simple solution to our problem, and it is all that needs to be done. We treat "exists" as a predicate like any other contingent predicate, and we remove all assertions of existence or non-existence from our interpretations of quantifiers.

This unorthodox solution requires further study, of course. Whether it can be defended against all the questions and objections which lie in wait, as I am convinced it will be, remains to be seen. But it is worthwhile to point out what some of the consequences have been of not adopting this solution.

Quine, for example, in his Mathematical Logic, presents essentially the same chain of deductions given above, as an

illustration of what he calls "difficulties in the notion of existence", which must somehow be gotten around. But instead of rejecting the doctrine of existential import, he accepts this implicitly and introduces a restriction to break the chain at the very last step. He bars all primitive names, like "Pegasus", "God", "Europe" from his ideal language, requiring in their places abstracts or definite descriptions, (e.g., `(x) x is Pegasus') wherever a primitive name might otherwise be used under the rule of universal instantiation. This succeeds in avoiding the difficulty although the results are more cumbersome. "Pegasus exists" must be expressed in his logical language as "There exists some y such that for all x, x is identical with y if and only if x is pegasus" (where `pegasus' is treated as a predicate, not a name). Since the latter statement is contingent, and in fact false, and is not derivable from "(x)x exists", his mission is accomplished. Of this device, Quine says,

> "The artifical dodge of dispensing with primitive names in favor of descriptions or other abstracts is a way of maintaining control over questions of vocabulary independently of questions of fact... (and) has incidently the further advantage of making the quantification theory of Chapter II adequate for all extra-logical as well as purely logical applications of quantification".1

The same objectives could be acconmplished by the simpler and more natural device of eliminating existential import, and treating `exists' as a non-universal predicate.

As Quine points out, other devices have been used. "Russell undertook to solve the anomalies of existence" he says, by the refusal to admit "exists" as a predicate, i.e., by refusing to sanction step (2) of the argument above in which the predicate variable `F' is replaced in `(Ex)Fx' by the word `exists'. By this refusal Russell excludes from his logical language every one of the statements mentioned in steps (2) through (7), and by this bit of surgery the offending results are cut out. There are other arguments that have been advanced against the use of "exists" as predicate, but the only other ones I know that claimed to be based on modern logic, have been shown to be mistaken.2

Now there are other devices, and other principles, many of which have been presented as profound discoveries of the logical or philosophical analysis of language, which I believe to be little more than devices to avoid the intolerable results mentioned above, or else elaborations and defenses of some other consequences of existential import. I believe these results have made logic unnecessarily cumbersome, and philosophy unnecessarily confusing. At the same time, not a few neo-real-

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[1] Quine, W.V.O., Mathematical Logic, Harvard, 1958, pp 150, 151

[2] G. Nakhnikian and W. Salmon, ""Exists" as a predicate", Philosophical Review, Oct. 1957.

istic philosophers have extracted pay dirt from the connection between existential import and modern logic, for it suggests a basis in logic itself (as in Russell's distinction between knowledge and acquaintance coupled with his theory of descriptions) for the claim that we can have knowledge of existence by description that we cannot gain by acquaintance. Even Strawson, attacking Russell's theory of descriptions from the vantage point of ordinary language, still draws metaphysical nourishment for his own neo-realistic "descriptive metaphysics", from the doctrine of existentiao import, when he says,

> "... whenever something of the form `Fx' is asserted, then the corresponding statement of the explicitly existential form, `(3x)Fx' can be inferred...And since `(3x)Fx is to be read `There exists something which is F', it follows that a thing which can be referred to by logical subject-expression is the sort of thing which we can say exists; and conversely."3

The logical complications, the philosophical confusions and the perverted use of logic to support metaphysical conclusions, seem to me equally undesirable consequences of the modern doctrine of existential import. For these reasons I do not think that the proposal I am advancing is a trivial matter of semantic conventions.

III

Now let us ask, as the first question, "Is it necessary, in order to provide formal logic with a complete and adequate semantic interpretation, to interpret quantifiers as either affirming or denying existence?" Let us agree that a formalized logic should be provided with a complete and adequate interpretation. Apart from the semantic rules, we have only an uninterpreted calculus, and whether or not a given uninterpreted calculus is acceptable as a formalization of logic, quite properly depends on whether each of its well-formed symbols have a semantic interpretation appropriately related to the accumalated body of discourse about logic. Thus we do but question the legitimacy of the demand for an adequate interpretation.

The issue before us is whether the withdrawal of the specific semantic rule which introduces existential import would leave this demand unsatisfied.

The fact is that if all rules associating quantifiers with assertions or denials of existence were eliminated, quantifiers would still be amply supplied with semantic rules providing an adequate interpretation to each well-formed formula. The universal quantifier would continue to be read "For all x", or "No matter what x may be"; the particular quantifier would continue to be interpreted as "For some x .." or "At least one

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[3]Strawson, P.F., Individuals, An Essay in Descriptive Metaphysics, Anchor Books, 1963, pp. 242-3.

entity x is such that". That these quantifiers should be interpretable in terms of the words "some" and "all" is, indeed, essential. Were the rules associating the quantifiers with "some" and "all" withdrawn, we should indeed say that the symbolism was losing its contact with the accepted corpus of formal logic in which these terms occupy a central position. But no such considerations justify the semantic rules which would associate quantifiers with assertions or denials of existence. Aristotelian discussion of the syllogism seldom introduced the word "existence", and when it did introduce it, it did so by way of illustration or ancillary argument. The expression "There exists an A" does not occur in the delineation of the forms or structures of A, E, I or O propositions, or in the discussion of their relationships or in the discussion or syllogistic. The words "all" and "some", "not" and "it is false that" by contrast, are ubiquitious, and constantly occurr as criteria in determining the forms of propositions, relationships between propositions, and the validity or invalidity of syllogisms. Mention of `existence;' occurred in discussions of modal logic and of terms, not of quantifiers. Indeed,most contemporary logicians and philosophers affirm that logic says nothing about "existence", even though, as we shall see existential import turns half the theorems of the predicate calculus into assertions of the existence of some kind of entity. In summary, (1) the semantic rule associating the particular quantifier with associations of existence is not <u>needed</u> to get an adequate interpretation in formalized logic; (2) it is not <u>essential</u> since formal logic has never assigned to "exists", the central role which it assigned to "if...then..", "not", "either...or", "all" and "some" in logic; and (3) the interpretation of the particular quantifier as asserting existence, runs counter to a principle, more widely held today than ever before, that logical truths say nothing about what exists or does not exist. We shall return to the last point later.

IV

It is conceivable, however, that a semantic rule which is <u>not needed</u> to fill out the interpretation, or to identify the formalized system with a traditional body of subject matter, even though it be in conflict with widely accepted views, might still be necessary or helpful to preserve the consistency of the system, or to justify its departures from other widely accepted systems.

Now there is no possibility that the <u>doctrine of existential import</u> could serve the function of saving modern logic from <u>formal</u> inconsistency. Russell's theory of types, which was in effect an <u>ad hoc</u> formal rule coupled with a semantic theory, did in fact perform the function of saving modern logic from inconsistencies. The semantic part of this theory was not required to provide an interpretaation for formulas of logic; but it was helpful in making plausible Russell's restrictions concerning meaningful formulae. It did not establish any needed connections with earlier logic. But it was required because without formal

restrictions, Russell's logic would have been inconsistent; and the formal restrictions Russell introduced required some sort of justification in intuitive or semantic terms. The demands of consistency hold priority over all other demands. Thus we shall grant that *if* the doctrine of existential import were necessary to help preserve consistency in a meaningful way, *then* all of our previous objections would be to no avail.

The impression is sometimes received that the doctrine of existential import *is* justified in this sort of way. But such an impression is mistaken. Proofs of the formal consistency of the predicate calculus can proceed just as happily by reference to domains of individuals and expansions of quantified expressions with quantifiers interpreted in terms of "all" or "some", whether or not the term `existence' occurs. Existential import makes no distinct contribution at all to proofs of consistency, or to the interpretation of any device necessary to preserve consistency.

V

But how, then, do we account for the *impression* that existential import is somehow required to maintain the consistency of modern logic? The impression, no doubt, comes from arguments holding that modern logic would be inconsistent if the so-called "traditional doctrine of existential import" were maintained. These arguments are occasioned by the fact that the four standard forms of categorical propositions, A, E, I and O propositions did in traditional logic. Nine of the twenty-four traditionally valid categorical syllogisms are not valid in modern logic. These nine, and only these nine, of the traditional twenty-four, have a particular conclusion and two universal premisses. In the *Traditional* Square of Opposition, representing traditional patterns of logical relationships between A, E, I and O propositions having the same subject term and the same predicate term, the A proposition implies the I, the E implies the O, the A and E propositions are contraries, and the I and O propositions are sub-contraries. In the *modern* square of opposition, none of these relationships hold; only the contradictories, A and I, E and I, remain as before. Now these discrepancies demand some sort of explanation; if one wishes to defend modern logic, the explanation must amount to a justification of the results of modern logic as against those attributed to traditional logic. The standerd solution since John Venn (in his *Symbolic Logic*, 1881) has been to say that the discrepancies are accounted for by two different doctrines of existential import, the so-called traditional doctrine and the modern doctrine, and that the modern doctrine is preferable since if the traditional doctrine were retained modern logic would become inconsistent.

But this account is thoroughly mistaken on at least four points. First, there is no evidence that what is *called* the traditional doctrine of existential import was in fact held by traditional logic at all; second, the *apparent* plausibility of this account derives from a principle -- that existence statements cannot be derived from statements which do not assert existence -- which contradicts other principles of modern logic itself, when modern existential import is introduced. Third, the

differences between modern and traditional theories can be proven formally independent of the doctrine of existential import, varying with the admission or elimination of the material conditional instead. And finally, remaining arguments attempting to justify the modern doctrine are unsound since they wrongly assume that the only alternative to traditional logic or the so-called traditional doctrine, is the modern doctrine of existential import.

VI

The first point in question in the history of logic: whether or not, in fact, Aristotle, Boethius, and other notable exponents of traditional logic, held the doctrine which modern logicians have attributed to them. This so-called traditional doctrine of existential import asserts that both universal propositions and particular propositions imply existence, or more exactly, that A and E propositions, as well as I and O propositions, imply that entities denoted by their subject terms exist. Now I have never, myself, found anything in Aristotle that suggests that he held any such position; nor have I found any quotations, cited by modern logicians, which provide evidence that Aristotle or any other traditional logician held this view. This account of what traditional logic held is not based on documentation but on an inference drawn by modern logicians; an inference which, it happens, begs the question. The standard reason for inferring that traditional logic holds that both universal and particular propositions imply existence, is that in the traditional square of opposition an A proposition implies an I, and an E proposition implies an O proposition. This is true, but does not in itself imply that either universal or particular propositions imply existence. It only implies this if we already presuppose a doctrine of existential import; that is, if we hold that "Some A is B" means or implies , "There exists an x such that x is A and x is B". If traditional logic held the latter position, then, of =course, taken together with the traditional principles that A propositions imply I propositions and E imply O propositions, we would have to admit that traditional logic must hold that both universal and particular propositions imply existence. But I know of no evidence that traditional logicians held the view that particular propositions imply only assertions of existence. This view is distinctly a modern view, first suggested, so far as I know, by Leibnitz, and only gaining wide currency with the advent of modern logic since 1880. All that the traditional logicians said was that universal propositions imply particular propositions; and this is not at all the same thing. Thus what thw modern logician calls the traditional doctrine of existential import, and then inferring that they must also have believed in something more, namely the existential import of universal propositions because they held that A propositions implied I propositions and so on. On the contrary, it seems to me, traditional logic did not have any doctrine of existential import at all. The so-called traditional doctrine was invented by Peirce and Venn and others to help rationlize modern departures from traditional logic.

VII

We come then to our second point, which is quite independent of the first. The comfortable feeling of plausibility which attaches to the standard explanation of discrepancies comes from the apparent plausibility of such statements as,

"It is clear that a proposition which asserts existence cannot validly be inferred from a proposition which makes no such claim."[4]

Obviously, if we agree that from statements which make no assertions of existence we cannot infer validly any statements which do contain assertions of existence -- and this does indeed seem a plausible principle -- then we can see why traditional syllogisms with particular conclusions that asserts existence, would not validly follow from two universal premsses, and why I and O propositions would not follow from A and E propositions. But the untenability of this explanation, which more careful exponents of modern logic seduluously avoid, is quickly shown. For the principle that existential assertions cannot be derived-from non-existential assertions contradicts the very interpretation of modern logic the speaker is defending. One of the more rudimentary theorems of Principia Mathematica is,

$$*10.25 \qquad (x)\phi x \supset \phi x$$

and from this theorem, with the rule of modus ponens, it follows that every universally quantified truth implies an existentially quantified truth with the sane propositional function. If one holds that modern logic is correct, and that universal quantifiers are denials of existence while existential quantifiers are assertions of existence, as the modern doctrine of existential import does, then one must hold quite the opposite of the principle quoted above. In short, the defender of modern logic with existential import must hold that every denial of existence logically necessitates an assertion of existence. And this renders untenable the apparently plausible principle that denials of existence cannot entail assertions of existence, which had made their account of the discrepancies seem initially so plausible.

More careful exponents of modern logic with existential import do not appeal to the principle mentioned above. But what have they left? They must say, more cautiously, that A and E propositions do not entail the existence of their subject terms, whereas I and O propositions do. But this lacks the intuitive appeal of the principle above which they must reject; and it fails to locate the precise source of the differences anyway.

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[4]Copi, Irving I., Introduction to Logic, 1953, p. 146. This statement is not made in subsequent editions.
[5]Cf. PM (1925), Vol. 1, p. 143, also p. 20.

This is our third point; that the differences between modern and traditional logic are altogether independent of existential import, but vary instead with the admission or elimination of the material conditional. The proof, which I can only sketch out here, proceeds by a sort of joint method of agreement and difference.

Let us begin with a standard first order predicate calculus of modern logic in which `and', `not' and `all' are the meanings assigned to the primitive symbols and tha usual axioms, definitions and rules of inference are expressible in those symbols. "Existential import" is present if and only if the senmantic rule that `(%x)' can be interpreted as "There exists at least one x such that ..." is present. To allow for the presence or absence of the material conditional, we shall withdraw the interpretation of "If p then q" from `p⊃q'and apply it instead to a new primitive `p q'. The expression "p q" will continue to be viewed as an abbreviation of "not both p and not q". Then we shall add the following axioms, to give a minimal content to p^q.

A1 ((p^q).(q^r))⊃(p^r)

A2 (p^q)⊃(q^-p)

A3 --p^p

A4 (p^q)⊃(p⊃q)

These principles will be sufficient, with the rest of the predicate calculus, to give us the modern theories of the syllogism and of immediate inference, without necessarily excluding the addition of traditional principles. So far, the system had not included material conditionality. If we add the axiom

A5 (p⊃q⊃(p^q)

then (p^q) becomes equivalent to (p⊃q) and hence is a material conditional. But, if instead of A5, we add the plausible but non-classical axiom

A5' -(p^p)

then we shall have a system which is consistent and complete with respect to the classical predicate calculus[6], but will not have the material conditional.

Now it turns out that as long as Axiom 5, which makes `p^q' a material conditional is maintained, and we translate "All A's are B's" as`(x)(Ax^Bx)' the discrepancies between traditional and modern logic must be retained to avoid inconsistency.

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[6]Cf. Angell, R.B. "A Propositional Logic with Subjunctive Conditionals", JSL, Vol. 27, No. 3 (1962).

Whether we retain or withdraw the doctrine of existential import,however, makes not the slightest bit of difference. On the other hand, if A5 is not added, it is possible to have all the traditional relationships re-instated without affecting the rest of the logic. For with the addition of A5, interpreting "All A's are B's" as (x)(Ax^Bx) (but not as `(x)(Ax∂Bx)'), I's and O's will be, as usual, the contradictories of A and E propositions respectively, but also A and E propositions will entail I and O propositions respectively, A and E propositions are provably contraries, I and O propositions are provably subcontraries, and all nine traditionally valid syllogisms excluded from modern syllogistic will be re-instated. The details of this proof have been provided in another paper.

Thus the presence of the modern doctrine of existential import is not sufficient to prevent the consistent re-introduction of traditional relationships, nor is its absence sufficient to allow their re-introduction. Rather, the discrepancies between modern and traditional logic depend on whether "not both p and not q" entails "if p then q"; that is, on the material conditional.

I am not arguing here either for or against modern logic's departures from traditional logic; I am arguing only that a defense of these departures must be based on a defense of the material conditional, and that discussions of existential import in this connection are misleading, confusing and irrelevant.

IX

Finally, quite apart fron the previous points, the standard pattern of arguments in favor of introducing existential import in modern logic to preserve consistency, is quite simply unsound-. Roughly the pattern has looked like this:

If modern logic were to accept the traditional doctrine of existential import, then it would be inconsistent (or have absurd results)
Modern logic must not be inconsistent (or have absurd results)

Hence, modern logic must accept the modern doctrine of existential import.

As it stands this is clearly a non-sequitur. The conclusion would follow only if there were only two alternatives open: to accept the modern doctrine or to accept the traditional doctrine. But in fact there are a variety of alternatives, among them the one we are proposing, namely that all doctrines of existential import be eliminated from modern logic. Therefore, as an argument for the modern doctrine of import, this argument or strategy is unsound since it is either a non-sequitur, or else contains a false alternation in its premisses.

It will be worthwhile to examine at least one typical argument in defense of existential import, in order to show how our various points apply. I shall take what appears to me to be the strongest kind of argument presented.

Let it be granted that according to modern logic it is possible to find at least one predicate F, such that `-(Ex)Fx' (read "It is false that some x is F") is a theorem. Let it further be granted that we can form A, I, and O propositions with the same predicate term and with `Fx' to represent its subject term. Let us also agree that according to modern logic, the following four assumptions, then would have to stand

(1) `-O^A' is a theorem. (Since O and A are contradictories)

(2) `I^(Ex)Fx' is a theorem

(3) `O^(Ex)Fx' is a theorem

(4) `-(Ex)Fx' is a theorem. (For the assumed sort of predicate, F).

We next ask what would follow if we added the traditional relationship, that

(5) `(A^I) is a theorem.

What happens is quite clear. By (4) and (2) and Modus Tollens we get the denial of I, which with (5) gives us the denial of A; but by (4) and (3) and Modus Tollens we get the denial of O, which with (1) gives us the assertion of A. Thus a logic which included all five principles above would be inconsistent. But it remains to be seen whether this proof justifies the modern doctrine of existential import.

This proof is usually coupled with the following notion of existential import: A, E, I or O have existential import if and only if they imply the existence of their subject terms. That I and O have existential import, is then said to be expressed by the logical formulae for (2) and (3) above, i.e., by

(2) `(Ex)(Fx.Gx)@(Ex)Fx' and (3) `(Ex)(Fx. -Gx)@(Ex)Fx'

And from these, with (5) (which makes A imply I), it is said to follow that A has existential import, and by similar considerations that E has existential import. But the first thing to note is that the statement "`(Ex)(Fx.Gx)' implies `(&x) 4Fx'" cannot be interpreted as asserting that "An I proposition entails the existence of its subject term", <u>unless</u> `(Ex)' is already interpreted as "There <u>exists</u> an x such that...". Without this semantic stipulation, the formulae above permit only the reading "`Some F is G" implies `Something is F`". Whether the something that is F exists, or, like Pegasus, does not exist, is left an

open question. Thus the first sort of mistake to avoid is that of begging the question by assuming that the symbolism of modern logic must be interpreted so that the particular quantifier has existential import. To avoid this mistake is to acknowledge the possibility of a third alternative, beyond either the modern or the so-called traditional doctrine of existential import. And this was our fourth point above.

If this mistake is avoided, we shall also avoid the mistake of assuming that the addition of the traditional principle, that A implies I, entails that A has existential import. We need not deny that if A implies I, and I implies (Ex)Fx, then A implies (Ex)Fx. But "A implies ` x)Fx'" does not imply that A has existential import without prior assumption that (Ex)Fx has existential import. If we avoid this assumption we shall avoid attributing to traditional logic a doctrine which, so far as I can see, it did not have. This was our first point.

Having avoided these mistakes, we can admit that the five assumptions above do lead to an inconsistency, but the source of this inconsistency can no longer be laid to existential import. Rather, it appears to come from the principle of simplification, that `(p.q)' entails `p', together with standard principles for affixing and distributing quantifiers (regardless of how quantifiers are interpreted).

But even the principle of simplification is dispensable here. We need not proceed from entailments between I and O and their subject terms. The manner in which the inconsistency arises from the material conditional can be made quite clear as follows. Let us grant only that

(1) -(Ex)((Fx.-Fx).Gx) is a theoren of any good logic.

(2) (x)((Fx.-Fx)^Gx) is a theorem of modern logic when `^' is the material conditional.

It then follows, that if we now add that A implies I, then (2) above yields

(3) (Ex)((Fx.-Fx).Gx)

which is contradictory of (1). Thus it is not necessary to refer to entailments between I or O propositions and quantifications of its subject term, to show the incompatibility of A's implying I with modern logic. But also it is not possible to appeal to the principle that propositions which deny existence do not entail assertions of existence (our second point). Hence the source of the difficulty is the material consitional, and not existential import at all. This was our third point.

XI

In conclusion, we wish to return to the point that existential import is not only necessary, or even helpful, in the defense of modern logic, but that it has positive disadvantages for logic itself. Not only would the elimination of existential import render unnecessary various cumbersome logical devices now employed to avoid its consequences; it would permit an unequivocal stance with regard to two poinciples which are important to

the integrity of logic itself.

The first of these is the principle that from truths of logic nothing can be inferred about existence. In Russell's words,

"All knowledge which asserts existence is empirical and the only a priori knowledge concerning existence is hypothetical, giving connexions between things that exist, or may exist, but not giving actual existence."[7]

This principle has gained wide acceptance among both logicians and critical philosophers. But as long as the existential quantifier is given existential import, and PM theorem *10.25, "If all x is $ then some x is $" holds, logic itself must be taken as disproving this principle; for then every truth of pure logic will entail a flat assertion beginning "There exists an x such that...". If the doctrine of existential import is dropped, logic is formally the same, but the separation of statements of existence from statements of logic is preserved.

The second principle, the principle that we cannot infer assertions of existence from true premisses which contain no such assertions, is likewise subverted, as we have seen, by the doctrine of existential import. If, however, "exists" is treated as any other contingent predicate is -- and this is clearly possible as soon as we drop existential import from the quantifiers -- then this principle may be re-instated, making the theory of predication more general and coherent.

Thus the elimination of existential import would contribute to the greater integrity of logic itself.

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[7]Russell, B Problems of Philosophy, p. 75.