IN DEFENSE OF THE SQUARE OF OPPOSITION

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THE SQUARE OF OPPOSITION IN TRADITIONAL LOGIC is thought by many contemporary logicians to suffer from an inherent formal defect. Many of these logicians think that universal propositions in both affirmative and negative modes (traditionally called A and E propositions) do not have “existential import” for at times they can refer to a “null class”. Particular propositions (i.e. “Some S is P”) are held to clearly refer to actual existence and so the very notion of subalternation, where from, “All S is P” it is inferred that at least “Some S is P”, is erroneous.

But the reasons behind this charge are dubious at best, and in this essay I will examine a typical instance of this criticism and then offer what amounts to a traditional logician’s response from a scholastic perspective. It seems to me that with the scholastic understanding of supposition, there is nothing new in these charges that was not already explicitly or at least implicitly addressed by scholastic logicians.

The Objection

We should first get a clear notion of precisely what the problem is. Below we see a diagram of the traditional logician’s square of opposition. The arrangement is intended to show how the four main types of categorical propositions relate to one another by various modes of opposition. It is understood that inferences can be made from the truth or falsity of various propositions, and the diagram of the square is a tool by which one map out these relations. The basic idea here is this. One proposition can imply or include another. It is simply a matter of common sense that if one knows that “All birds are things that lay eggs” one also knows that “Some birds are things that lay eggs”. People who have never studied logic intuit this sort of reasoning and do in fact make these acts all the time. This process is called inference. The inferences with which we are concerned here is subalternation and contradiction. With contradiction, if something is true then its contradictory is false and vice versa. If the proposition “Every Greek philosopher is wise” is true, then its contradictory, “Some Greek philosophers are not wise” is false, and vice versa. Subalternation occurs when two propositions agree in quality but not in quantity, and moves from the universal to the specific. If “Every Greek philosopher is wise” is true, then a smaller set of that subject, viz., “Some Greek philosophers are wise” is also true. If the universal proposition is true, then so is the particular version of that proposition. The reverse however is not the case, just because the particular, “Some Greek philosophers are wise” is true, it does not follow that the universal, “Every Greek philosopher is wise,” is also true. Yet, if the particular is false, then it must be the case that the universal is also false. If “Some Greek philosophers are wise” is false, then the universal “All Greek philosophers are wise” is also false. Hence, the rule of thumb for subalternation is that one may descend with truth but rise with falsity. It will help to take a look at a diagram of the square:
As we said above, the falsity of one proposition on the square entails the truth of its contradictory. But suppose we consider a proposition such as this:

“George Washington is wearing a wig”

Of course, we know this proposition can’t be true; after all, George Washington is no longer alive. So the subject of the proposition doesn’t exist and hence cannot be wearing a wig. But no sooner do we call this false, and, if we are going to keep to our rules on the square, we are forced to say the contradictory; “George Washington is not wearing a wig” is true. But this cannot be the case either, and for the same reason. Not only is he not wearing a wig, he is not anything at all. There seems to be a problem here and indeed it is precisely this problem that gives rise to the condemnation against the square. A good representative of this criticism is Irving M. Copi and Carl Cohen’s widely acclaimed *Introduction to Logic*. According to Copi and Cohen, a proposition is said to have existential import if typically is uttered to assert the existence of objects of some kind. Particular propositions “surely do have existential import” and “plainly assert” that certain classes are not empty. For example, if we say, “Some soldiers are heroes” we mean there are at least one who is and “Some soldiers are not heroes” we mean there is at least one who is not.

But this leads to problems because if particulars do have existential import, what about universal statements? We could have a situation such as “Every sea monster lives in the sea”. But sea monsters do not exist, much less live in the sea, therefore this proposition involves an “empty class” and is false for that reason. But this empty set issue raises two big problems. First, any falsity of one proposition is supposed to entail the truth of the contradictory, and

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2 Ibid, p.241
3 Ibid
4 Ibid, p. 242
on the traditional square of opposition that means “Some sea monsters do not live in the sea” must be true. Firmly holding that particulars have existential import, this statement, as true, must be asserting the existence of sea monsters and since sea monsters do not exist, the particular must be false! To use Copi and Cohen’s own example: “All Martians are blonde” and “Some Martians are not blond” are contradictories. If one is true the other must be false and vice versa. But if this class of Martians is a null class, we have an impossible case where contradictory assertions are simultaneously false.

But suppose the traditional logician simply said that universal propositions do not refer to existence. That would solve the contradiction inference problem above, but then another problem arises. Since the square of opposition holds that through subalternation one can validly infer the particular from the “Every sea monster lives in the sea” to “Some sea monsters live in the sea” (going from an A to an I) it must be then that universal propositions too have existential import. And if that universal set were empty, one could not infer the particular subset that asserts the existence of members of the set.

So according to the modern logician, the traditional square of opposition is a complete mess. If the square is right about subalternation, then A and E propositions must have existential import, but if A and E propositions have existential import, then we are forced into surrendering another rule of the square that says given the falsity of one statement we may infer the truth of the contradictory. In short, the square can’t be right about both subalternation and contradiction. Symbolic logicians argue that traditional logic is not correct about subalternation. But suppose we try to “fix” the square by presupposing existence and allowing no null classes, in other words make a blanket presupposition that there are no empty classes. Will that save the poor old square? Well, not really, because according to Copi and Cohen, there are three other problems arise:

1. One could never formulate a proposition that denies members of a class. We could never make a proposition such as “Martians do not exist”
2. Sometimes we make propositions where we do not want to presuppose existence of any members in a class- “All trespassers will be prosecuted”
3. Sometimes we may just wish to reason about things without asserting existence. A physicist may want to discuss and explain Newton’s First Law of Motion without having to presuppose the existence of any real bodies that are not acted upon by external forces

The remedy then for the modern logician is to permanently get rid of the idea of existential import for all universal propositions and reserve it only for particular propositions. The Boolean interpretation eliminates existential import from universal propositions. With this, “All Martians are blond” would simply mean, “If there are any Martians, they are blond,” and likewise “Every sea monster lives in the sea” is now construed to mean, “If there are any sea monsters, they live in the sea.” Consequently with this reformulation, both the square of opposition and the categorical syllogism of traditional logic are downgraded to mere historical curiosities, and the whole of traditional logic along with them.

Supposition: The Traditional Logician’s Response

Logic was traditionally understood to be the science of correct thinking about things. Scholastic logicians, such as John of St Thomas, are insistent that the formal objects of logic are beings of reason or second intentions. So the traditional view is that the principles of logic are not laws of thought per se, but reproduce principles of existence via these second intentions that must be observed if our thought is to apply to reality. Thus this logic deals with the instruments of thought (concepts, judgments and arguments) as intrinsically intentional and referential and how they are to be correctly applied, not just at forms without reference. Hence, traditional logic has no use for propositions which are not about anything (have no existential import). But how does this play out in response to the objection?

5 Ibid, p. 244
6 Perhaps the easiest place to see this is in the notions of truth employed. Traditional logic, being realist, sees truth in terms of applicability to reality, while modern logic speaks of “truth value” as an abstract variable that need have no reference to reality. This leads to Jourdain’s and related logical paradoxes. The traditional solution is that the two statements taken jointly make no reference to facts, and so truth or falsity cannot be properly predicated of them. In modern logic on the other hand, the principle of excluded middle is applied without reference to reality, and so either side of the paradox should have a value of either true or false, but of course the paradox does not allow a set of truth-values to be consistently assigned.
This foundation of the modern logician’s critique hinges on an ignorance of what medieval logicians called suppositio. As put by Maritain:

The logicians of the Middle Ages had long since probed into all the elements of the problem which the logicians [modern logicians] claim to have unearthed and had very clearly indicated its solution. The theory of the suppositio and ampliatio, especially as developed by the Aristotelio-Thomist school in its controversy with the Terminists (school of Occam) contains, among many other remarks, all that is needed to answer the difficulties…

Unknown to both ancient and modern logic, supposition is a original development of scholastic logic, originating to the second half of the 12th century. The doctrine was well known and widely used by scholastic logicians (with philosophical backgrounds that sometimes differed drastically) like Peter of Spain, Thomas Aquinas, Walter Burley, and William of Ockham. While the details and divisions of supposition varied somewhat, the central concept was the same. Supposition is “the acceptance of a term for something of which it is verified”. Simply speaking, supposition is the substitution of a term for a thing; and this substitution must be done in conformity with the requirements set forth by the copula. Supposition is a property belonging to terms only as they occur in a proposition. A term can have a property by itself, such as significatio (meaning), but when placed in a proposition the term acquires this new property. Terms within propositions are about beings of some sort because propositions always contain a copula verb “is”. But existence is said of many ways. So the verb “to be” can refer to different modes of existence, and these various modes of existence are what constitute the various demands of the copula. So before determining what the substitutive value will be, we must first see whether there is any substitution at all and to do this we need to know what kind of “existence” are we talking about:

So in saying that “the suppositio is the property of a term by which it stands for, or takes the place of, a thing in discourse, this substitution being legitimate considering the copula,” we do not mean that this substitution is true in the nature things, but only that: the sort of existence - actual (past, present, or future), possible or “imaginary” denoted by the copula permits this substitution.

Hence, supposition is not to be confused with significatio (meaning), which a term has outside of a proposition. In fact, supposition presupposes significatio. A term can have meaning independent of a proposition because significatio is the nature or that from which the giving of the name springs (first act of the mind) while supposition is the things to which the term applies in a proposition (second act of the mind). So a new property of a term is picked up when joined with a copula. Both supposition and significatio are forms of substitution, and so John of St Thomas says that substitution can be either representative (sounds making present the thing signified) or applicative (where the intellect, after accepting the sound’s representation and significatio, applies the noun in a proposition so that it stands for the thing to which it applies). Proper supposition (as opposed to metaphorical) is divided into material, simple, and personal:

Material supposition is the acceptance of a term for itself. For example, the statement, “Man” is a three letter word” supposits simply for “man”.

Simple Supposition is the acceptance of a term for what it primarily signifies, not mediately. For example, “man is a species” man supposes by simple supposition. “Man” in this proposition stands only or “simply” for the nature without passing on to the individuals that have the nature. To put it another way, simple supposition prescinds from extension and restricts itself to comprehension. It is “simple” in that it stops with the immediate and doesn’t pass on to individual things.

Personal Supposition is the acceptance of a term for individuals, i.e., those things that are signified mediately. It is called “personal” because it carries through or extends to the individual instances of some

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10 Maritain, p. 61
11 John of St Thomas, p. 61
nature. To say, “Every man is an animal” supposits primarily for the comprehension or nature of “man” and then mediately by extension to any individual that has this nature:

A universal proposition such as “every man is mortal” has a double signification: it bears first and immediately upon the universal nature man taken in all its universality, and mediately upon the separate individuals taken one by one who possess the nature.12

There are two basic rules regarding supposition. The first is the static rule of supposition, that given any affirmative proposition, if the subject of the proposition does not refer to anything, the proposition is false. The proposition, “Socrates is a Greek” is false because it has a non-supposing subject. Socrates does not exist anymore and so to say Socrates is anything means that subject cannot refer to anything and cannot meet the demands of current existence indicated by the copula. The same is true for statements like “Socrates will be a great philosopher” or “World War VI was a terrible event”. These are propositions with non-supposing subjects, and so they are false. To be legitimate, the substitution of a term for thing must fit what is intended by the verb to be. This does not mean the proposition will be true, only that it will really stand for something.13

Yet we must realize that the reference can be intellectual and not of the senses. It suffices to demonstrate something to the intellect alone since, for example, past and future things are not sense perceptible, yet they are intelligible. The same is true for hidden things:

For instance if I say The gold is not being pointed out – viz., the gold in the ground – gold has supposition because it is verified by saying: This (gold pointed out by means of the intellect) is gold. And it is not pointed out through the senses; otherwise the proposition would be false, just as it would be false if “not pointed out” also meant not pointed out to the intellect.14

It is also the case that the subject can also be suppositionally legitimate by referring to possible existence. We may say that if it is essences we are talking about, say things like “lions”, “men” or the nature of “triangularity” in general, this will always have supposing subjects, regardless if there are any individuals of that nature. This is true because of the nature of personal supposition that refers primarily to comprehension and secondarily to extension. The concept is a mental sign of the nature of a thing and does not need individuals once grasped. Understanding a nature does not depend upon the current existence of something that has that nature, since the concept is not a collection or aggregate of individuals.

The second rule is the dynamic rule of supposition; an argument is invalid if the mode of existence understood by the supposition varies in the premises or conclusion. Consider this classic example:

Man is a species
Socrates is a man
Therefore Socrates is a species

Something is clearly wrong here, yet it is not the signification of the term “man”. In each case “man” means “rational animal” but what differs is the mode of existence or supposition of the term. The term in the first premise is said with simple supposition while in the second premise is said with personal supposition, and such a shift is invalid.15

Such distinctions in supposition are useful in theology as well. Consider this example from Aquinas:

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12 Maritain, p. 118
13 This rule does not apply to negative propositions, for these propositions may be true if the subject does not exist.
14 John of St Thomas, p. 62
15 This is also the error behind the famous “ontological argument” for God’s existence: The Greatest Conceivable being must exist, God is the Greatest Conceivable Being, Therefore God must exist. The supposition in the first premise is only mental existence. Likewise the supposition of the second premise, if it has not been proven otherwise, is only mental existence as well. The conclusion however refers to actual existence and so the shift in supposition makes the argument invalid.
This proposition, Man was made God [homo factus est], may be understood in three ways... it may be so understood that the word "made" determines the composition, with this meaning: "Man was made God, i.e. it was brought about that Man is God." And in this sense both are true, viz. that "Man was made God" and that "God was made Man." But this is not the proper sense of these phrases; unless, indeed, we are to understand that "man" has not a personal but a simple supposition. For although "this man" was not made God, because this suppositum, viz. the Person of the Son of God, was eternally God, yet man, speaking commonly, was not always God. 16

Aquinas says in a sense, this is a true proposition, “man was made God”, but “man” here has only simple supposition and not personal because the term refers simply to a human nature and does not extend to a human person. In other words, only a human nature (simple supposition), not an actual individual man (personal supposition) was made God.

How Supposition Answers the Charge
There are three problems with the null class charge. First, many examples used to highlight a supposed formal defect in the syllogism themselves are guilty of their own suppositional shift and are invalid. To violate the second rule of supposition does nothing to prove that universal propositions are in need of a Boolean hypothetical interpretation. A second but immediately related issue is the lack of recognition that there are modes of existence other than actual to which the logician can refer. This broader notion of existence, such as the possible existence when referring to a nature, shows that many instances of classes alleged to be null are only apparent. Thirdly, if and when a non-supposing subject does occur, still the square is valid when a) either we only allow true propositions on the square or b) the reason for falsity is maintained because it is simply false that particular propositions always intend real existence.

As regards to the first, a distinguished modern logician like Bertrand Russell provides a case in point:

“All golden mountains are mountains, all golden mountains are golden, therefore some mountains are golden,” my conclusion would be false, though in some sense my premises would be true. If we are to be explicit, we must therefore divide the one statement “all Greeks are men” into two, one saying “there are Greeks,” and the other saying “if anything is a Greek, it is a man.” The latter statement is purely hypothetical, and does not imply that there are Greeks. 17

There are two problems with Russell’s argument. First, this example is clearly a fallacious altering of supposition. If existence in the premises means only mental existence, and the conclusion supposit real existence, the conclusion does not follow and such fallacious reasoning proves nothing against the syllogism or universal propositions. 18 The second problem is Russell’s “solution” to something that should not have been a problem to begin with. Seeing the problem as formal, Russell recommends a hypothetical correction of the universal affirmative. But we may wonder if such a correction even succeeds. Take the universally quantified form of “All Greeks are men”. As it goes, ∀x (Gx → Mx) = “For every x, if x is Greek, x is man”. But does this hypothetical non-existential reformulation get around presupposing a categorical universal proposition? I don’t think so. Nor is it really the equivalent of merely saying, “All Greeks are men”. Rather it seems that ∀x (Gx → Mx) is not merely a proposition at all, but an enthymematic syllogism. The suppressed major premise is a categorical “All Greeks are men” and then the stated conditional itself is the minor premise and conclusion. The minor is expressed hypothetically, “if x is Greek” with the following conclusion “x is a man”. If the universal affirmative is not presupposed (or at worse denied) the stated conditional seems incoherent. 19 And if this conditional is always based on another conditional, we are off on an infinite regress and the modern logician perhaps should have paid more heed to ch. 3 of Aristotle’s Posterior...

16 ST III.16.7
18 Russell’s syllogism here is fallacious in the same way as the ontological argument is, one cannot infer a conclusion that supposit real existence from premises that only supposit beings of reason.
19 That is when speaking of real things and not merely from a set of abstract rules.
To the second, many traditional logicians were universal realists in one sense or another. This was implied above when speaking of simple and personal supposition. Natures and kinds are real facts about the world. Hence, the logician can speak about a nature and that is something that transcends individual instances. When we know the nature of “man” we know something about every man, yesterday, today, and tomorrow. Once grasped, knowledge of the nature is not dependent upon individual instances. In other words, the nature is not a collection, class, or aggregate of individuals. With such a metaphysical underpinning, one can make propositions such as “man is rational” and have it be true and not null in spite of whether or not any actual men exist at that time. This understanding of real natures is important because this is one way of speaking of possible existence. “All squares are rectangles” does not refer to a null class if there are no actual squares. The statement, at the very minimum, refers to beings of reason and possible existence and is necessarily true. Thus, the point here is that when the various modes of existence are accounted for, many propositions alleged to be of a null class, are in fact not null at all. Consequently, the traditional logician’s allowance of various modes of being brings us to an immediate problem with the objection of the modern logician. What exactly is a “null” class? It’s not clear what the modern logician means by really “null” but it seems that they usually mean only real existence. But the traditional logician allows for much more, and this broader notion of existence drastically reduces when and if a class is null:

The whole notion of the null class, which is often claimed to be a peculiar discovery of the new logic, and which is at root of the present difficulty, is really a very fuzzy notion indeed. Sometimes a class is considered null merely if it contains no actual members, albeit it may have possible members. Again a class may be considered to be null if it contains no real members (whether actual or possible) but only fictive members. Nevertheless, as soon as one takes account of the differing senses in which things may be said to be, then classes that are made up of possibles, as well as classes made up of mere beings of reason, would certainly not be null. True, in going from one such proposition to another (say in the square of opposition), one would have to be careful not to change the designation. However, so long as one kept the same designation, all the traditional inferences based on the square of opposition could be maintained intact.

So by allowing propositions about various modes of existence; past, present, future, possible, mental, etc., there are not many openings left for a class to be really null and not refer to anything, and this recognition can answer most of the criticisms against the square. I say “most” because it is true that we have seen one way in which something like a null class can happen, and that is when a proposition has a non-supposing subject. What if the proposition is intended to be actual, but is not? What if someone thought sea serpents were really real? If there are no such things actually existing as intended by the proposition then we have the null class problem or what the traditional logician

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20 For more on this line of criticism, see Henry B. Veatch’s, *Intentional Logic: A Logic Based on Philosophical Realism* (New Haven: Yale University Press, 1952) pp. 343-4. In Veatch's analysis, modern logic is not really about thought referencing reality at all, because there is no essential use of intentionality. Instead, Veatch argues, it is a science of systems of relations (WFFs). These relations may be instantiated into thinking about reality, but to make use of this fact, we still need to make use of the syllogism in Barbara: All cases such that X are such that the relationship R applies, C is a case such that X, C is a case such that the relationship R applies. Thus, Veatch concludes, symbolic logic does not dispense with traditional logic, but covertly builds upon it and is inapplicable without it.

21 Objections that there are no such natures are not themselves logical objections but reveal a metaphysical bent of nominalism. Although I find nominalism to be untenable, the metaphysical underpinnings of logic and issues of realism vs. nominalism are beyond the scope of this essay. As an example of my point however, Aquinas thought “man is rational” was necessarily true whether or not any men actually existed or not, “[…] that which is prior, is always the reason of the posterior; and the posterior having been removed the prior remains, but not the converse; and thence it is because this which applies to the nature absolutely considered, is the reason why it may apply to one or another nature according to the existence which it has in the singular, but not from the converse. Therefore for instance Socrates is rational, because man is rational, and not the converse; whence by having granted that Socrates and Plato would not exist; still rationality would apply to human nature. Similarly, the divine intellect is the reason for the nature absolutely considered, and in singulars, and the nature itself absolutely considered and in singulars is the reason of the human intellect, and in a certain way the measure of itself.” (*Quodlibet* VIII, q. 1 a. 1 emphasis added)

22 Veatch, p. 252
called a proposition with a non-supposing subject. So even with a broader notion of existence, it can still be the case that a proposition can still have a null class or a non-supposing subject. What then?

This brings us to the third issue above. Since the null class is really nothing other than a suppositionally false proposition, the traditional logician can treat null classes and non-supposing subjects the same way. Suppose we take Bertrand Russell’s famous example, “The present king of France is bald”. Given that the speaker is intending real existence and not some character in a novel, then it is clear that subject cannot meet the demands (current existence) of the copula. The proposition has a non-supposing subject and hence is immediately false. But what is involved in saying this proposition is not about anything? There are two things, 1) the “present King of France” is recognized as something, a being of reason, and because we know what this being of reason is, we can say that 2) there is no actual King of France and so the subject is a mere being of reason when the proposition intended it to be an actual being. The proposition is not intending or suppositing a being of reason, it is suppositing a real king, the “is” here is a copula requirement of real existence, ens reale, and such a thing does not exist.

What is distinctive about the traditional subject/predicate proposition is that is always an intention of existence. Propositions by their very nature have existential import and if they fail to suppose a subject, they fail to be propositions in the true sense. A proposition not about anything is not really a proposition at all. It is like saying, “___ is worthless” or “___ is bald”. These are not true propositions because they do not really have a subject, and propositions are susceptible to truth and falsity because they are inherently about something. So the first solution to the null class objection is when there is truly a non-supposing subject, then such an alleged “proposition” can be denied as being a proposition. It is false in the sense of a suppositional failure and in this case we are not obligated to adopt the truth of its contradictory. So either the proposition successfully supposits for at least something (say at least a being of reason) or it does not. If it does, then we have existential import. If it does not, we do not have a true proposition and only true propositions belong on the square. Mere utterances do not apply to the square of opposition, and a fortiori cannot show the square to be formally defective.

If it is the case that one does like saying propositions with non-supposing subjects are not really propositions at all, the traditional logician has a second rejoinder. Suppose one flat out denies the dogmatic assertion that all particular propositions have actual existential import. In other words, suppose we say the modern logician is simply wrong about particular propositions. After all, there seems to be no reason to uncritically accept the mandate that all particular propositions entail real being. These particular proposition seem all to be more or less true, regardless if any real physical instances exist:

“Some vices are not exemplified”
“Some rectangles are squares”
“Some of my thoughts are funny”
“Some shapes have over one thousand sides”
“Some rules of logic are difficult to understand”
“Some governments are tyrannical”
“Some genera are broader than others”

All of the above are perfectly meaningful, can intend either possible beings or merely beings of reason, yet they are all particular propositions. So having liberated ourselves from the modern canon that all particular propositions imply real existence, we can say that inference on the square still works when the reason for the falsity, viz., a non-supposing subject, is maintained throughout. How might this work? Well take for example:

“All of the present King of France’s soldiers are bald”

This is false because the propositions contains a non-supposing subject, and in this case happens to entail the corresponding E to be true:

“None of the present King of France’s soldiers are bald”

This is true because there are no such soldiers, which therefore by subalternation entails the truth of O:

23 The same twofold distinction is applicable to “Plato’s beard” and talk about non-existents.
“Some of the present King of France’s soldiers are not bald”

Which is true because again, there are no such soldiers in existence. So if A is false because no such soldiers exist, E and O are true for the same reason, no such soldiers exist. These propositions are not devoid of meaning (if we didn’t know their meaning we couldn’t say they were false) and so in short: A is false because they don’t exist and O is true because they don’t exist.24

With the above analysis, it seems then we can agree wholeheartedly with Veatch that this entire null class charge is based on two oversimplifications that accounts for what we have said generates three oversights. At bottom, not only is the notion of existence much broader in traditional logic than in modern logic, but also we may deny the assertion that all particular propositions imply real existence:

Viewing the mathematical logician’s account of the existential import of propositions against this background, it would seem that his account is vitiated by two serious oversimplifications. In the first place, he apparently just brushes aside all distinctions between kinds of designable existence. Instead, for him, a thing may be spoken of as being or existing actually in rerum natura, but in no other way. In the second place, given this severe restriction, upon the ways in which things may be said to be, the mathematical logician then dogmatically insists that only in particular (or singular) propositions may things be asserted to be... True, particular propositions are peculiarly fitted for the intention of actual existence, just as universal propositions are for the intention of possible existence. But as the subjects of universal propositions may often be used to designate actual existents, so also the subjects of particular propositions may be used to designate merely possible existents.25

Conclusion

In conclusion, we have shown that the charge against the square of opposition by modern logicians is based on a threefold error:

1. Arguments employing fallacious changes in supposition, which were always recognized by the scholastic logicians as invalid, demonstrate nothing against universal propositions or the syllogism.
2. Many cases of an alleged null class are dispelled because unlike modern logic that seems to take existence univocally, traditional logic allows reference to natures that include possible existence, beings of reason, etc.
3. True cases of null classes were understood as propositions with non-supposing subjects and hence were suppositionally false. These cases do not militate against the square for two reasons 1) Only true propositions (viz., ones that have supposing subjects) belong on the square and 2) Opposition on the square can still work when the reason for the originally false proposition is maintained. This latter is possible because it is simply false that all particular propositions must refer to actual existence

So in the end, there simply is no real problem for the traditional logician because there is nothing really new in these charges. Either the stated problems were specifically addressed (such as non-supposing subjects), or the tools and understanding available to the traditional logician were sufficient to handle it (such as allowing only true propositions on the square). Sure, at this point objections to the contrary will likely involve both a different understanding of the philosophical underpinnings of logic, which in itself would be a debate over metaphysics, a different understanding of logic itself, etc., all of which are beyond the scope of this essay. But as to that latter issue, Maritain’s point is quite apt:

24 In passing we should note the obvious that having a non-supposing subject is not merely an issue for universal affirmative propositions, but particular propositions can fail in supposition as well. “Some of the present King of France’s soldiers are bald” (false by non-supposing subject) can still entail the truth of the contradictory, “None of the present King of France’s soldiers are bald” (because they don’t exist).
25 Veatch, pp. 244 and 246 respectively.
If the logisticians [modern logicians] claim the contrary, and congratulate themselves upon a
discovery that is neither new nor true, it is because the very principle from which their method
proceeds requires that everything be expressed, and that there be nothing in the reasoning that is
not in the signs of the reasoning…But in this very principle, Logistics, if it professes to be a
system of Logic, is the negation of Logic. For Logic is an art made to serve the intelligence, not to
replace it…

Finally, since we have said true propositions are inherently existential, the traditional logician should answer Copi
and Cohen’s three arguments specifically. To the first, it must be said that the traditional logician can refer to classes
of being’s that don’t actually exist because such beings are beings of reason and beings of reason suffice for the
supposition of propositions, i.e., “Martians (in my mind) do not exist (in reality)”. To the second, possible existence
via a nature also suffices for the suppositional requirement of the classical proposition, i.e., “Trespassers (given that
anyone is such) will be prosecuted.” To the third, we can say the answers to the first two suffice, but the given
example of Newton’s Law of Motion is a bad one because the law refers to the nature of real things antecedent to
any influence from other bodies.

Thus, it seems that the modern logician’s attack against the traditional square of opposition is not new, does not
succeed, and is really much ado about nothing.

26 Maritain, pp. 231-2