Aristotle on the Principle of Contradiction : Book Gamma of the *Metaphysics*

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Having argued that there is a science which studies being as being, Aristotle goes on to inquire, at the beginning of Chapter 3 of Book Gamma of the *Metaphysics*, whether it also pertains to that science to study those truths "which are in mathematics called axioms."[1] His answer is given in the second sentence of the chapter, and is in the affirmative; the same science which considers being also considers the axioms: "Evidently, the inquiry into these also belongs to one science, and that the science of the philosopher; for these truths hold good for everything that is, and not for some special genus apart from others."[2] The clue to the meaning of this sentence is to be found at the opening of Book Gamma. There, it was explained that the science of being as being, the "science of the philosopher" referred to above, is distinguished from the special sciences in that the latter study only the attributes peculiar to different parts of being. Thus it is left to the philosopher to study that which is common to all beings, viz., being itself. The quotation above, then, is to be understood as saying that the axioms, since they hold good for all beings, fall within the province of the science which considers all beings; they cannot fall within the province of any of the special sciences, for they do not pertain solely to any special genus or part of being.

The argument against including the study of the axioms in any of the special sciences is quite clear. The text has not yet adequately indicated, however, just why the axioms are to be included in the science of being as being. This does not follow merely from the impossibility of including the study of the axioms in any special science. The sentence quoted above suggests, however, although it does not explicitly state, that the science of being as being is *the* science which considers all that is, i.e., that it is the only such science. But the science of being as being does not consider what is peculiar to any part of being, as has been said. Therefore, if we are to make the assumption (not stated in the sentence quoted) that the science of being as being considers *everything* about all beings except that which is peculiar to the various parts of being, it follows that that science considers all that which is common to all beings. But the axioms are common to all beings,

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in that they hold good for all beings. Therefore, the science of being as being considers the axioms. To put the argument more simply, if the science of being as being considers all that which is common to all beings, and is the only science which does so, then the science of being as being considers the axioms, for they are, in a sense, common to all beings. This argument, however, is merely suggested by the text, so far as it has been examined. What support does the text give to the thesis that the science of being as being considers all that which is common to all beings, and is the only such science? The answer is that this thesis completes the argument Aristotle gives in the sentence quoted. Admittedly, however, the premises suppressed in that argument might not be these, a possibility which must be borne in mind.

If one science studies all that which is common to all beings, the question arises why this should be so. In the first paragraph of Chapter 3, it is stated that this one science inquires into primary substance, as well as into the axioms. Why, then, to ask a more specific question, should not the study of the axioms be distinguished from the study of primary substance, and the former or the latter alone be identified with the Wisdom introduced in Book Alpha? A possible answer is that these two studies are both prefectly, and therefore equally, universal, in that they both pertain to *all* things. This maximum universality was presented in Book Alpha, however, as the ultimate criterion for Wisdom. Therefore, the study of the axioms and the study of primary substance must equally be considered Wisdom.

A further problem is this. The axioms are true of being as being, as may be learned from the third sentence of Chapter 3. Is this why they hold good for all beings? This hypothesis must be borne in mind in examining the rest of the text.

Aristotle goes on to say, in the third and fourth sentences of Chapter 3, that all men use the axioms in demonstration "as far as the genus to which their demonstrations refer extends."[3] The meaning of this is fairly clear. The axioms hold good for everything that is. Consequently, they hold good for whatever men choose to study. Men always, or usually, choose to study only part of everything that is, i.e., only a part of being. Consequently, men use the axioms in their reasonings about the parts of being which they study. The axioms are applied, however, only to what is included in those parts of being. Exactly what Aristotle means by a part or genus of being, and whether these two are strictly the same, is not entirely clear. Nor is it clear what his motive is in bringing up the rather obvious fact that men use the axioms "just so far as to satisfy their purposes."[4] A possible answer is that this is just Aristotle's way of emphasizing his thesis that the axioms, although they are

usually used in reasoning about a part of being, nevertheless hold good for all beings.

The fifth sentence of Chapter 3 suggests an answer to the question whether the axioms hold good for all beings because they are true of being as being. This sentence runs as follows: "Therefore since these truths clearly hold good for all things *qua* being (for this is what is common to them), to him who studies being *qua* being belongs the inquiry into these as well."[5] Let us impute the following argument to Aristotle. The axioms are true of being *qua* being. Being *qua* being is common to all beings. Therefore, the axioms are true of all beings, since whatever is chosen, the axioms are true of the being of that which has been chosen. Therefore, the axioms hold good for all beings. This argument relies upon the equation of the expressions "is true of" and "holds good for." What is the justification for this equation? It lies in the quotation above. There, it is said that the axioms hold good for all things *qua* being, *because* being is what is common to all things. Now the argument above, the one imputed to Aristotle, explains the connection between the axioms' being true of being as being, and their holding good for all beings, and also serves as the completion of the argument of the sentence quoted, if the phrases "is true of" and "holds good for" are equated. The justification for making this equation, then, and for imputing this argument to Aristotle, is that doing so is consistent with what he says, and appears to bring out some of what is implicit in what he says.

Aristotle continues that what has been said explains why he who is conducting a special, as opposed to a universal inquiry, the geometer for example, never inquires into the truth or falsehood of the axioms. He uses the axioms, for they hold good for what he is study-ing, but he does not inquire into their truth or falsehood, because they are not principles unique to his field of study. Some natural philosophers, indeed, inquired into the truth of the axioms, which is quite understandable, since these philosophers thought that they alone were inquiring into the whole of nature and into being. Aristotle implies that their mistake lay in thinking that all of nature and all of being are identical, whereas actually "nature is only one particular genus of being."[6] Therefore, it is possible to study all of nature without studying all of being. There is a type of philosopher who is above the natural philosopher, however, and the study of the axioms does belong to him, for "the discussion of these truths also will belong to him whose inquiry is universal and deals with primary substance."[7] Leaving aside the problem of how the study of primary substance can be universal, the question remains why the philosopher studies the axioms, aside from the fact that no one else can study them, and the fact, suggested earlier, that the science which considers the axioms and that which considers primary substance must both be identified with Wisdom,

i.e., the science of the philosopher. The question, then, is why Aristotle does not recognize two Wisdoms, neither prior to the other, and two types of philosophers. An answer is provided in the second paragraph of Chapter 3: "But he who knows best about each genus must be able to state the most certain principles of his subject, so that he whose subject is existing things *qua* existing must be able to state the most certain principles of all things. This is the philosopher."[8] The principles of a given subject here are evidently the principles *peculiar* to given subject, and do not include principles which might be included also in other subjects. Otherwise, there would be no reason to expect the philosopher in particular to be able to state universal principles, the principles of all things. The phrase "be able to state" in this quotation has the import of "know." That is, he who knows best about each genus knows the most certain principles of his subject. This again could be stated: he who knows best what is peculiar to each genus knows the most certain principles which are peculiar to his subject. A special case of this formula is : he who knows best about what is peculiar to all beings, i.e., about what is common to all beings, knows the most certain principles which are peculiar to his subject. But the subject of this investigator, the philosopher, is all things. Therefore the philosopher knows the most certain principles of all things, given the fact that he studies primary substance, because from this it follows that he studies all things. This is why there is only one Wisdom, and only one type of philosopher who does not stand below other philosophers.

It has been established, then, that the philosopher studies the most certain principles of all things. The most certain principles of all things are now identified with the most certain of all principles. Aristotle proceeds to prepare his audience for the statement of the most certain single principle of all. What is the nature of this principle? Aristotle claims that for the principle to be the most certain of all, several things must be true of it. To begin with, it is impossible to be mistaken with regard to it. It is the best known of principles. Anyone who knows anything at all must know it. Therefore, it is nonhypothetical, because that which is prerequisite for knowing anything is not a hypothesis. It follows that anyone approaching any special study, i.e., a study confined to a limited part of being, must know beforehand this most certain of all principles.

Towards the middle of the second paragraph of Chapter 3, Aristotle states the principle to which he has been alluding: "It is, that the same attribute cannot at the same time belong and not belong to the same subject and in the same respect."[9] It is admitted that qualifications might have to be added to this statement of the principle. Today, it is known as the principle of contradiction.

Having introduced this principle, Aristotle goes on to say that it is impossible even to believe the same thing to be and not to be, i.e., that it is impossible to believe that the principle of contradiction does not hold true universally. This follows from the assumption of the truth of the principle. For suppose a person was and was not of a certain belief, which is to say that this person both believed and did not believe such and such to be the case. Now if it is impossible in general for anything both to be and not to be, then it is impossible in particular for a person both to be and not to be of a certain belief. That is, contrary beliefs are contrary attributes of the person who entertains them, and so to maintain contrary beliefs at one time is to be oppositely qualified, in violation of the principle of contradiction. The soundness of this argument might well be questioned; my purpose, however, is exposition.

Following upon the argument just related, Aristotle concludes Chapter 3 by stating: "It is for this reason that all who are carrying out a demonstration reduce it to this as an ultimate belief; for this is naturally the starting-point even for all the other axioms."[10] Why is the principle of contradiction *naturally* a starting point for all demonstration? Evidently because it is the most certain of all principles. Did it follow from another principle, the latter would have to be even more certain, but there is no more certain principle than that of contradiction. That Aristotle thinks a principle follows properly only from a more certain principle may be gathered from the following statement, in Book Kappa, Chapter 5, in which the "truth" to which reference is made is in fact the principle of contradiction: "It is not possible to infer this truth itself from a more certain principle, yet this is *necessary* if there is to be completed proof in the full sense."[11]

This last quotation appears to explain, at least in part, the transition noted above from "most certain principles of all things" to "most certain of all principles." In making this transition, it is open to Aristotle to employ the following argument. The most certain principles of all things, being the most certain of the principles common to all things, are prior to the principles peculiar to any part of being, and to the other principles (if there are any) common to all things, and thus are prior to all other principles, and thus must be the most certain, since all other principles must follow from them. Why must a principle common to all things be prior to a principle peculiar to a part of being? Perhaps because any principle from which a principle common to all things followed would have to be equally, or more, general than that principle, and thus would itself have to be common to all things.

What is the source of the certainty of the principle of contradiction? Aristotle speaks, in the second paragraph of Chapter 3, in such a way as to suggest that this certainty is iden-

tical with, or a consequence of, the impossibility of being mistaken with regard to the principle: "... the most certain principle of all is that regarding which it is impossible to be mistaken."[12] Now why is it impossible to be mistaken with regard to the principle of contradiction? One reply has already been given: The principle is true, and this, as has been argued, makes its denial impossible. Following this line of reasoning, we ask why the principle is true, or what is the meaning of saying it is true. Again, a possible reply is that it is true as a matter of fact. That is, beings are such that the principle is true. This suggests several further questions: How do we know that beings are such that the principle is true? Is the principle contingently or necessarily true? That is, is the fact that beings are such that the principle is true a contingent or a necessary fact? What is of interest is this: what answers to these questions, supposing them to be appropriate, does Aristotle give, and, if he is silent on the subject, what answers are consistent with and suggested by what he says?

Having solved to his satisfaction the aporia of Book Beta, concerning whether the axioms "on which all men base their proofs" are to be considered by the science which deals with substance,[13] Aristotle is ready, in Chapter 4 of Book Gamma, to give whatever proof can be given of the principle of contradiction. He opens Chapter 4 by pointing out again that some people have denied this principle (in word, of course, not in fact). Among these are many writers about nature. These include, as appears from the last part of Chapter 3, the Heracliteans. It is worth bearing in mind that perhaps these writers were overly impressed with the phenomenon of change, or movement. The third sentence of Chapter 4 is a statement deserving of special attention, as it is rendered comprehensible only by what has gone before: "But we have now posited that it is impossible for anything at the same time to be and not to be, and by this means have shown that this is the most indisputable of all principles."[14] How can the indisputability of a principle be *shown* merely by positing it? Evidently, Aristotle has in mind the argument given above: that if the principle is true, then it is impossible to judge its denial to be the case, to use the language of the first sentence of Chapter 4. In this sense, the principle must be admitted to be indisputable, once it has been posited to be true. The sentence quoted above, it should be noted, tends to bear out the view, suggested above, that the fact that it is impossible to be mistaken about the principle of contradiction follows simply from its truth.

Aristotle continues that it is impossible to give a demonstration of everything, since this would involve an infinite regress, since no principle could be first. Such a demonstration as this, according to Aristotle, is really no demonstration at all. This concept of demonstra-

tion is parallel to the modern definition of a proof in logic as a *finite* column of sentence forms having certain characteristics, if this observation be not beside the point. Aristotle does not remark that the attempt to demonstrate eveything might also result in a great circular argument, if there is only a finite number of propositions capable of entering into any demonstration. But obviously, this also would fail to be true demonstration.

Some principles, then, are indemonstrable. It argues what of education, i.e., want of training in logic, which is preparatory to other studies, not to know which principles are indemonstrable. Aristotle defies anyone to name a principle more certain than that of contradiction, from which that principle could follow.

Immediately following this challenge, in the first sentence of the second paragraph of Chapter 4, Aristotle says: "We can, however, demonstrate negatively even that this view is impossible."[15] What view is intended? Evidently the view that the indemonstrable principle is not that of contradiction, or that the indemonstrable principles, if there be more than one, do not include this principle. Aristotle promises to establish the principle of contration by negative demonstration, provided that his opponent will agree to say something, i.e., something having meaning both for himself and another. If he will not do this, then there is no basis for rational discourse with him. If he does comply, then he can be gotten to admit the principle of contradiction. On the assumption that Aristotle is correct in think- ing that the principle of contradiction is prior to all other principles, he cannot employ demonstration proper, for then he must assume what he is trying to prove. Nor can he demand that his opponent say that something *either* is *or* is not, for again, this would, in a sense, be assuming what he is trying to prove. He wants to conclude that if what we say is to have meaning, then we must say of what we are talking about that it *either* is *or* is not qualified in a certain respect. Therefore he cannot assume to begin with that this is the case; but this assumption is all that could justify his demanding of his opponent that he say that something either is or is not. That is, he cannot make this demand unless the principle is true, and he cannot assume the truth of the principle. If Aristotle's opponent complies with his request that he say something that has meaning both for himself and for another, then "demonstration is possible; for we shall already have something definite."[16] What does this mean? Perhaps the meaning is that we will have a definite starting point for reasoning. Or perhaps, by "something definite," Aristotle means something which either is or is not qualified in a certain respect, his idea being then that the truth of the prin- ciple of contradiction will somehow appear in whatever his opponent says. The person re- sponsible for the proof is the opponent of the principle, "for while disowning reason he

listens to reason."[17] The method, evidently, is to get the opponent of the principle to admit that he is resorting to it, and he must resort to it if he is to say anything meaningful.

It appears, from the way Aristotle has introduced his defense of the principle of contradiction, that he believes the following to be the case. If it is possible to make meaningful statements, or if it is possible to reason, then the principle of contradiction is true. Several questions arise if it is true that Aristotle accepts this implication. Would he say, more generally, that if it is possible to know anything, then the principle of contradiction holds true? Secondly, does he take the occurrence of meaningful statements, or of reason, or of knowledge, to be a *fact* which establishes the truth of the principle?

Let us now try to determine the sense of Aristotle's arguments in Chapter 4, of which there are eight. He states his first argument as follows: "First then this at least is obviously true, that the word 'be' or 'not be' has a definite meaning, so that not everything will be 'so and not so.' "[18] The import of this statement appears to be that the expressions "be" and "not be," since they have definite meanings, have definite natures, and thus may serve as examples of things to which the principle of contradiction applies. The missing premiss could be that that which has a definite nature is "so" while not being "not so." Evidently the sentence quoted is to be regarded as a separate, incomplete, argument for the principle of contradiction, incomplete in that it does not show the principle to be true universally.

Aristotle's next argument is the longest of them. He begins: "Again, if 'man' has one meaning, let this be 'two-footed animal'; by having one meaning I understand this: — if 'man' means 'X', then if A is a man 'X' will be what 'being a man' means for him."[19] Now later on in this paragraph, Aristotle says, "... not to have one meaning is to have no meaning."[20] From this it follows that if what Aristotle's opponent says is to have any meaning, it must have one meaning. But what follows if what this person says has one meaning? What is involved in someone's saying something and meaning one thing by it? Suppose that Aristotle's opponent uses the term "man" and means one thing by it. Suppose that he means by it "two-footed animal." Now if "two-footed animal" is the meaning of "man" for Aristotle's opponent, then the latter must admit that "two-footed animal" is what "being a man" means for a man, in accordance with the opening sentence of Aristotle's argument. Evidently, then, Aristotle's opponent, without being aware of it, is taking "two-footed animal" to be what man essentially is. To complete the argument, it follows that man has an essence. But an essence is something that is "so," and hence is something to which the principle of contradiction applies. To restate the argument: If a word means anything, it means one thing, and that one thing is the essence of that which the word names. So say-

ing anything meaningfully involves the assumption of essences, which, however, are "so," and to which therefore the principle of contradiction applies. This statement of the argument is not what Aristotle says, but an attempt to complete what he says. It will have to be checked against his own completion of the argument. As to what has been said so far, the questions arise why, to mean anything, a word must mean one thing, and why that one thing is the essence of that which is named.

Aristotle continues that if the name "man" has one meaning, then "being a man" cannot mean precisely "not being a man." Why is this? Perhaps the following reasoning can explain what is involved. If "man" has one meaning, then man has an essence, for this essence is the one meaning of "man," (or perhaps this meaning is the statement of this essence; it is hard to tell from the sentence quoted at the head of the immediately preceding paragraph). Call this essence "two-footedness." Then being two-footed is being a man. But being two-footed is the essence of man, and hence it is "so" and is not "not so." Hence, being a man, since it is the same as being two-footed, is also "so" and not "not so." That is, being a man is not also not being a man. There seems no guarantee that this is what Aristotle has in mind, however, since his argument is cryptic at this point.

The question at issue, Aristotle continues in the fifth paragraph of Chapter 4, is whether in fact (not whether in name) the same thing can at the same time be and not be a man. This appears to answer some questions asked earlier. Why is the principle of contradiction true? Because it is true *of* beings. That is, because it is true of facts. But the facts upon which the principle is grounded are not contingent facts. Aristotle is asking how things must necessarily be. The fact that beings are such that the principle is true is a necessary fact. Besides the question of contingency, the question also arose how we know that beings are such that the principle is true. It follows from what has been said that a partial answer is that we can show that they must be so.

Aristotle concludes this part of his second argument as follows. If "man" means anything, it must mean one thing. Let that one thing be "two-footed animal." Then anything which is a man cannot not be a two-footed animal. This is the meaning of "being necessarily."

The essential point in the second half of the present argument is that those who deny the principle of contradiction must "do away with substance and essence."[21] This is for the reason anticipated above, that substance and essence are *so*. But if there is no such thing as substance, and all attributes are accidental, of what can these accidents be predicated? An accident can be an accident of an accident only when both are accidents of the same subject. For example, the white can be musical when both are accidental to man. But

Socrates is musical in a different sense. The former sense reduces to the latter, in that in the former case, "white" and "musical" must be attributed to a substance in the same sense in which "musical" is attributed to Socrates in the latter case. Hence, even if we start out affirming that all attributes are accidental, we arrive at the necessity of substance. But the principle of contradiction holds true of substance.

In his third argument, Aristotle claims that if it is true to say of a man even that he is not a man, then surely we can also say of him that he is not a trireme, and therefore, consistently denying the principle of contradiction, that he is a trireme. But according to the followers of Protagoras, if anyone thinks that a man is not a trireme, then he is not a trireme. Thus, the denial of the principle of contradiction, taken along with the Protagorean doctrine that all appearances and opinions are true, compels us to admit that all things are one: "And thus we get the doctrine of Anaxagoras, that all things are mixed together; so that nothing really exists. They seem, then, to be speaking of the indeterminate, and while fancying themselves to be speaking of being, they are speaking about non-being; for it is that which exists potentially and not in complete reality that is indeterminate."[22] He argues later that the Protagoreans must deny the principle of contradiction. In speaking of the indeterminate, Aristotle might be thinking of the material cause. The determinate, then, would appear to be the formal cause. Definiteness appears to be equated with reality (in the sense of actuality) in this passage.

The fourth argument is that those who deny the principle of contradiction must also deny that of excluded middle, i.e., they must maintain that "it is not necessary either to assert or to deny." The argument runs as follows: "For if it is true that a thing is a man and a not-man, evidently also it will be neither a man nor a not-man. For to the two assertions there answer two negations, and if the former is treated as a single proposition compounded out of two, the latter also is a single proposition opposite to the former."[23] What is the meaning of this argument? He who denies the principle of contradiction says the following: $f(x) \& -f(x)$, or, something is and is not of a certain description. But, since he said $f(x)$, he must say $-f(x)$, and since he said $-f(x)$, he must say $--f(x)$. But then he is committed to $-f(x) \& --f(x)$, the denial of the principle of excluded middle.

The fifth argument is interesting in that it indicates more clearly why Aristotle associates indefiniteness with nonbeing and definiteness with being. This argument may be summarized as follows. One can deny the principle of contradiction in all or only in some cases. If it be denied only in some cases, then it is allowed to hold true in others. If it be denied in all cases, then either (a) whatever can be affirmed can be denied and what-

ever can be denied can be affirmed, or (b) whatever can be affirmed can be denied, but some things that can be denied cannot be affirmed. If alternative (b) is chosen, it must be admitted that something definitely is not. If alternative (a) is chosen, then the opponent of the principle, according to Aristotle, is saying that nothing has any definite nature, i.e., that nothing is. But if nothing is, how comes it that the opponent of the principle is talking? Aristotle seems first to be taking the verb "to be" in a copulative, and then in an existential sense. But then being, and being something definite, are for Aristotle inseparable. That which is indefinite can be only potentially, as was said above.

The sixth argument manifests the virtues of brevity and clarity: "Again, if when the assertion is true, the negation is false, and when this is true, the affirmation is false, it will not be possible to assert and deny the same thing truly at the same time. But perhaps they might say this was the very question at issue."[24] This argument is valid, but it presupposes what it is trying to prove, viz., that statements of the form $f(x) \& -f(x)$ must be negated to be true.

The thrust of the seventh argument is that men, even those who deny the principle of contradiction, do not *behave* as if the principle did not hold true. They act, for example, as if they believed some things to be better than others. In addition, at the very beginning of this argument, Aristotle makes one of his clearest and strongest objections against those who deny the principle. He asks "what they can mean by saying that the nature of existing things is of this kind."[25] For this is just the type of statement that they cannot make.

There are a number of ways of interpreting the claim that a thing can be both so and not so. It can be taken to mean that a thing can have a certain quality to the fullest extent and at the same time lack that quality to the fullest extent. But it might also be taken to mean that a thing can have a certain quality to some extent, and lack it to some extent. The purpose of Aristotle's eighth argument is to point out that on the latter interpretation, definiteness comes into the picture because the degree to which a thing has a certain quality is definite in fact, and may be more or less definitely specified. Even supposing that the number 2 is partially even and partially not, still it is more even than the number 3. This view denies the equal sharing in all attributes of all things which would (supposedly) make all things indistinguishable.

The eight arguments related above are designed to refute those who deny the principle of contradiction by showing that in denying it they must assume its truth. Aristotle goes on, in Chapter 5 of Book Gamma, to try to show that the original grounds for denying the principle are inadequate. This chapter is easier to comprehend than those so far considered.

I shall now explain some of the main points that Aristotle makes.

Some early thinkers, basing their conclusions upon their observation of natural processes, maintained that contraries can issue from the same thing. Therefore, so their argument runs, since "that which is cannot come to be,"[26] contraries must coexist in some things. Aristotle objects that a thing may potentially be two contraries at the same time, but may not actually be so. He objects to that part of the argument just related which stands in quotation marks, on the grounds that that which is actually *can* have come into being from that which was not actually, but was potentially. He also remarks that not all existing things are subject to change.

Sensible things, Aristotle continues, should not be identified with all of reality. This identification results from equating knowledge with sensation (an equation inconsistent with what he asserts at the beginning of Book Alpha).[27] Those who conclude from the movement they see in what they sense that no knowledge is possible, should remember several things: that what is losing a quality still has some of that quality, and that of that which is coming to be, something must exist already; that things may change in quantity while remaining the same in quality (but changes in quantity make a thing no less knowable, for it is in virtue of the form of a thing that we know it); that the world of constant change is but a small part even of the physical universe; and again, that there is, in addition to the changing, "something whose nature is changeless."[28]

Furthermore, no sense gives contradictory information about its proper object at a given time. Even at different times, no sense gives contradictory information about a sensible quality like sweetness, but only connects it with different objects. The sensible quality of sweetness is something *so*, and of necessity *so*. In general, sensation gives no support to those who deny the principle of contradiction, for the same thing does not appear different to the same sense, in the same respect, under the same conditions, at the same time.

From what has been said, it appears that according to Aristotle, the truth of the principle of contradiction is entailed by a characteristic necessarily exhibited by all existing things, viz., their definiteness. To exist, for Aristotle, is to be *so* but not at the same time and in the same respect not so. For a thing to exist, then, is for it to be such that the principle of contradiction is true of it.

Now let us examine the brief discussion of the principle of contradiction that is to be found in Plato's *Republic* at 43 ff. (Stephanus pagination). Here, Socrates asserts that "the same thing will not at one and the same time, in the same part of it, and in the same relation, do two opposite things or be in two opposite states; so that if we find such con-

junction of opposites in these elements, we may be sure that they are not one, but sever-al."[29] It is denied that a given thing can be at rest and in motion "at one and the same time, and in the same part of it." It is agreed that if a man is moving a part of his body while otherwise remaining at rest, then it is proper to say that "one part of him [is] at rest and another in motion," and improper to say that "the same man [is] at the same time at rest and in motion." Again, consider a spinning top with fixed, perpendicular axis of rotation. It is not true to say that the whole top is at once at rest and in motion, for, to speak accurately, the axis is at rest while the circumference is in motion. The final statement of the principle in this text runs as follows: It is not the case that "one and the same thing [can] at one and the same time, in the same part of it, and in the same re-lation, be acted upon in two opposite ways, or be two opposite things, or produce two opposite effects."

How does Plato resolve apparent violations of the principle of contradiction as he has stated it? It appears that he tends to resort to distinguishing between the different parts of a thing. His examples all have to do with rest and motion, and all are resolved in this way.

How might Aristotle deal with examples of this type? Take the case of a man waving his arms, but otherwise remaining still. Plato, in this case, minimizes, or, in effect, denies the wholeness or unity of the man, and takes the position that certain parts of him, as individual things, move, while another part of him, as a distinct individual, remains at rest. This appears to be his thinking in refusing to speak of the man as a whole, and in resolv-ing the apparent contradiction simply by making a sharp distinction between the various parts of the man. Aristotle, in contrast, cannot minimize much less deny the wholeness of the man. This wholeness is the same as his existence, for to be is to be one, and to be one is to be, according to Aristotle. Aristotle identifies the man with his substance. The substance, that is to say, is what preserves the identity of the man. The man is a sub-stance having certain attributes as accidents. This being Aristotle's view, it would seem that he must resolve the contradiction in question by showing that the movement and rest of the man are noncontradictory accidents of him. Plato, on the other hand, at least in the passages quoted above, does not appear to be concerned with the problem how it can be one man which both moves and does not move.

The problem that arises out of these considerations would appear to be of some impor-tance. It is said that *no thing* can be oppositely qualified. But what is to count as a thing in this context? Aristotle's answer appears to be: an individual identifiable by its separate

substance. Plato, however, in the passages quoted above, gives no independent criterion of individuality. Apparently, in these passages, he presupposes that individuality is to be defined in terms of amenability to the principle of contradiction. How does this criterion of individuality, if indeed such it be, relate to any other such criteria that might be found in Plato? Does Aristotle, for his part, offer any ultimately satisfactory answer to the question what is to count as an individual with respect to the principle of contradiction? What, moreover, speaking in general, is the proper criterion of individuality with respect to this principle? Another, broader, question suggests itself. What, really, is the place or role of the principle of contradiction in human thought and discourse? Surely Aristotle was mistaken to suggest that it is to be regarded as a first principle from which various important truths follow. Perhaps he came closer to an accurate view when he linked the principle with the problem of linguistic meaning. I shall let these questions form the conclusion of this paper.

NOTES

1. Aristotle's *Metaphysics*, trans. W. D. Ross; in *The Basic Works of Aristotle*, ed. Richard McKeon, Random House (New York: 1941); 1005a.
2. *Ibid.*, 1005a.
3. *Ibid.*, 1005a.
4. *Ibid.*, 1005a.
5. *Ibid.*, 1005a.
6. *Ibid.*, 1005a.
7. *Ibid.*, 1005a–1005b.
8. *Ibid.*, 1005b.
9. *Ibid.*, 1005b.
10. *Ibid.*, 1005b.
11. *Ibid.*, 1062a.
12. *Ibid.*, 1005b.
13. See *Metaphysics*, 995b.
14. *Ibid.*, 1006a.
15. *Ibid.*, 1006a.
16. *Ibid.*, 1006a.
17. *Ibid.*, 1006a.
18. *Ibid.*, 1006a.
19. *Ibid.*, 1006a.
20. *Ibid.*, 1006b.
21. *Ibid.*, 1007a.
22. *Ibid.*, 1007b.
23. *Ibid.*, 1008a.

24. *Ibid.,* 1008a–1008b.

25. *Ibid.,* 1008b.

26. *Ibid.,* 1009a.

27. See *Metaphysics*, Book Alpha, Chapter 1: especially 981b 10 ff. and 25 ff.

28. *Metaphysics*, 1010a.

29. Plato's *Republic*, trans. A. D. Lindsay; Everyman's Library, J. M. Dent (London: 1969). All quotations from 436 ff.