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SPINOZA ON GOD (I).

THE Definitions of Substance, Attribute, and Mode.—Spinoza's doctrine on God has engaged the attention of a long and distinguished line of commentators; and all possible varieties of interpretation, so it would seem, have at one time or another been advanced. Disagreement is not a new thing in philosophy, but it does assume a stranger aspect than usual when it is over a text like the *Ethics*—demonstrated *ordine geometrico*. It would be folly to expect that all disagreement will ever be overcome even on so restricted a phase of Spinoza's system as his doctrine on God. But after allowances are made for the possible legitimate divergences of reading and interpretation, it does seem that the geometrical order of demonstration should furnish the ground for agreement on, at any rate, some of the elementary parts of the doctrine. Having in mind this ultimate hope of reaching some agreement, this study approaches the task of interpretation by analyzing the formal logical structure of Spinoza's argument as that structure is exhibited in the geometrical order of demonstration. It is impossible, of course, to avoid all discussion of interpretation of content even in a purely formal analysis, but such discussion will here be reduced to a minimum.

Spinoza chose the geometrical order of demonstration because it is the perfect embodiment of his logic of procedure. Following Descartes, he believed in the logic of starting with simple ideas which can be clearly and distinctly understood, and then, by means of these simple ideas, building up, by carefully graduated and easily verifiable steps, the complex ideas which constitute the whole structure of philosophical knowledge. The complex ideas so obtained and carefully buttressed will be as clear and distinct and as readily intelligible (or as nearly so) as the simple ideas out of which they are constructed. The 'geometrical order of demonstration' is beautifully adapted to this type of procedure because it plainly exhibits in its literary form the interdependence of ideas, the internal logical articulation of the system of propositions.

The definitions and axioms constitute the simple ideas on which the system is based; they describe, in other words, the limits of the subject-matter. And all propositions within the range of the subject-matter they define are demonstrated by their means either directly or indirectly. The type of proof or demonstration employed is in essence analytical. In the case of a simple proposition, the demonstration consists in showing that it is implied by the elements which have been posited as definitions or axioms. The demonstration of a complex proposition differs from this only in the respect that the given complex proposition is shown to be the logical conclusion not only of definitions and axioms but of other propositions already demonstrated. Since simple propositions which serve as analytical premisses for complex propositions have been demonstrated by or analyzed into definitions and axioms, all propositions are *ultimately* demonstrable by, or analyzable into, the definitions and axioms.

Analytical demonstrations of the kind Spinoza uses throughout the *Ethics* are chiefly of the nature of logical verifications. The demonstrations verify the right of each of the propositions to form part of the system of ideas delimited by the definitions and axioms. The demonstrations verify, that is, the internal logical consistency of the system. But they hardly do anything more. They do not add to the meaning of the propositions, and they clarify them—with rare exceptions—only to the extent that they show their systemic interrelationships. That this sort of clarification is very meagre students of Spinoza have long justly complained. Spinoza too must have recognised the largely uninformative character of his demonstrative syllogisms, for he very often goes through them quite perfunctorily.

It is not at all fortuitous that Spinoza's propositions analytically imply the definitions and axioms. The definitions and axioms have a certain function to perform and they have been designed to perform that function. Although the definitions and axioms come first in the order of presentation, in the order of discovery they come, theoretically, last. Good fortune may discover the final definitions very early in the enquiry, but only after all the propositions of the system have been formulated can it be definitively determined whether or not a given idea is one that must be

formally defined and made part of the foundations of the system. The necessity and adequacy of a fundamental definition is determined in a formal system when it is established that by means of that definition all *can be* demonstrated which the subject-matter requires *should be* demonstrated by it. We have no record of the labor that went into the *Ethics*, but the *Short Treatise* makes it quite evident to us that Spinoza was far from knowing at the start just what his set of definitions and axioms had to be.

The definitions and axioms are not a magical dialectical device out of which Spinoza by logical legerdemain makes his propositions emerge. From the definitions and axioms to the First Part of the *Ethics* he does not educe the propositions of the book. As well might one believe that the Pythagorean theorem was educed from the definitions of line and angle. The definitions and axioms to the First Part are the ultimate constitutive elements into which Spinoza found he could logically resolve his subject-matter; and which therefore were the necessary and sufficient means for the analytical demonstration of his system of metaphysics. The definitions and axioms are crystallized out of the propositions, rather than the propositions extracted from the definitions and axioms. However, in giving our analysis, we shall follow the order of presentation in the *Ethics*—considering first Spinoza's definitions and axioms, and then the propositions for which they have been designed. We have found, by experimentation, that any other procedure involves, in writing, too much appearance of artificiality and far too much repetition.

In the definitions and axioms of the First Part of the *Ethics* are to be found all the terms and ideas Spinoza needs for the demonstration of his metaphysical propositions. As we are not concerned here with his entire metaphysical system, but only with the logical development of his doctrine on God, it is to our purpose to restrict our examination mainly to his definitions of substance, mode, attribute and God; and to his first two axioms. The four definitions enumerated constitute, as Pollock long ago pointed out, the complete foundations of the Spinozistic system.

Spinoza fundamentally divides all things into the uncreated and the created; the uncaused and the caused. In the *Ethics* he states this division to be axiomatic: "Everything which is, is either in

itself or in another ”; ¹ but in one of his letters he briefly presents the arguments which justify this classification or division. “The more recent Peripatetics”, he writes to Meyer, “as I at least think, misunderstood the argument of the Ancients by which they strove to prove the existence of God. For, as I find it in the works of a certain Jew, named Rab Chasdai, it reads as follows. If there is an infinite regression of causes, then all things which exist will be things that have been caused. But it cannot pertain to anything that has been caused that it should necessarily exist in virtue of its own nature. Therefore there is in Nature nothing to whose essence it pertains that it should exist necessarily. But this is absurd; and therefore also that. Therefore the force of the argument lies not in the idea that it is impossible for the Infinite actually to exist, or that a regression of causes to infinity is impossible, but only in the impossibility of supposing that things which do not exist necessarily in virtue of their own nature, are not determined to existence by something which does exist necessarily in virtue of its own nature, and which is a Cause, not an Effect.” ²

What is true of things in the order of existence is correspondingly true of ideas in the order of knowledge; those things which are in other things must be conceived through those other things in which they are; and those things which are in themselves must be conceived through themselves. As Spinoza again axiomatically puts it: “That which cannot be conceived through another must be conceived through itself”. ³

The division of all things into the uncaused and the caused, and of all ideas of things into those that can be conceived through themselves and those that need the ideas of other things through which alone they can be conceived, gives Spinoza his two basic metaphysical entities, namely, substance and mode. The terms substance and mode, which designate the two primary classes into which all things can be divided, are defined in strict accordance with what is laid down in the first two axioms. By substance he understands: “That which is in itself and is conceived through

¹ *Ethics*, I, Ax. 1. White's translation.

² Letter XII; A. Wolf's translation.

³ *Ethics*, I, Ax. 2.

itself ; in other words, that the conception of which does not need the conception of another thing from which it must be formed.”⁴ And by mode he understands “ the modifications of substance, or that which is in another thing through which also it is conceived ”.⁵ The definition of mode in terms of substance follows clearly from the argument quoted above, since that which is in another (*in alio*) must be in that which is in itself (*in se*) ; hence mode must be in substance.

Mr. Joachim has stated that “ the antithesis of substance and its states or modifications is a more precise formulation of the popular antithesis of thing and properties ”.⁶ This view is seriously wrong. The popular antithesis of thing and properties is the antithesis of subject and predicate, particular and universal. But substance and mode are *both* particulars ; they are related as whole to part, as infinite particular to finite particular. Spinoza speaks of a finite body (mode) being a part of infinite body (substance) ; he speaks of a finite idea being part of the infinite idea ;—of the finite human mind being part of the infinite divine mind.⁷ A mode is not a predicate of substance ; it is, to use Martineau’s term, a “ sample ” of substance.

Spinoza has defined substance and mode in such a way that there can be no question that they exist ; they have, by definition, a secure and indisputable reality. But just what specific particulars are substances and modes cannot be determined merely by an examination of the definitions. What particulars will as a matter of fact answer to the descriptions is something that must be discovered independently of the definitions. This is especially clear in the case of mode ; there is more than one class of things that fulfil the requirements of the definition.

Mode denotes finite particular existents. This is its most important meaning ; but it is used by Spinoza to designate more than that. It is characteristic of his terminology that terms have various ranges of application. Any kind of existent whatsoever that is dependent upon another without which it can neither be nor be conceived is by definition necessarily a mode. Thus motion, for

⁴ *Ethics*, I, Def. 3.

⁵ *Ethics*, I, Def. 5.

⁶ Joachim : *A Study of Spinoza’s Ethics*, p. 15.

⁷ See especially Letter XXXII.

example, is, and is conceived, through something else. Apart from the necessity for there being something which moves, motion involves transition from one position to another; *i.e.*, it involves the existence of extension. Without extension it can neither be nor be conceived. Hence it is a mode of extension. When it is considered absolutely, that is, when motion of infinite body or corporeal substance is considered, then it is infinite and must be an infinite mode; when the motion of any particular finite body is considered, then it must be a finite mode. Thus by logical development of the definition of mode, Spinoza arrives at the distinction between finite and infinite modes. The secondary relation of a finite mode of motion to the infinite mode of motion is identical with the relation of a finite body to infinite body; it is the relation of part-whole. What is true of modes of extension is similarly true of modes of thought; within thought too Spinoza distinguishes between finite modes and infinite modes.

With the definitions of substance and mode it would seem that Spinoza has defined the two terms which denote the two fundamental metaphysical existents which divide the universe between them. For all existents must belong either to the class of independent existents (*in se*) or to that of dependent existents (*in alio*); and whatever is known must be known either through itself or through something else. By virtue of the basal axioms there is no possibility of there being any other type of fundamental metaphysical existent; and therefore also no possibility of there being any other fundamental category of ideas. If we need further evidence in support of this conclusion we have Spinoza's own unambiguous statement, which he repeats on every appropriate occasion, that "in nature there is nothing but substances and their modes".⁸ And yet, besides the definitions of substance and mode, he has definitions of attribute and God. How can these additional definitions be accounted for?

Let us first consider his definition of attribute. An attribute must, by force of axiom, be either in itself or in another; and the idea of attribute must, again by force of axiom, be conceived either through itself or through the idea of something else. If attribute

⁸ *Ethics*, I, Props. 4, 6, 15, 28.

is in itself and is conceived through itself then it is, by definition, substance; if it is in another, and is conceived through that other, then, by definition, it is mode. When we examine Spinoza's definition of attribute we find indeed that he does not tell us whether it is in itself or in another; or whether it is conceived through itself or through the idea of something else. What we do find is that in this definition he is really talking about the nature, not of a new metaphysical entity (different from substance and mode), but of substance, which has already been defined. By attribute he understands "that which the intellect perceives of substance as constituting its essence".⁹ This definition, it is quite clear, does not define a third type of metaphysical existent; it re-defines the essence of substance from the point of view of the intellect perceiving it.

The essence of a thing is the innermost nature of that thing, its inalienable core of being; it is that which makes a thing what it is, marking it off from all other things, and from which all of its properties necessarily flow. The essence of a thing is "that which being given the thing is necessarily given, and which being taken away, the thing is taken away; or, that without which the thing, and vice versa, which without the thing, can neither be nor be conceived".¹⁰ Consequently, if the intellect perceives truly, Spinoza must mean by attribute the innermost nature of substance, that which makes substance what it is, without which it could neither be nor be conceived. For if the essence of a thing can no more be or be conceived without the thing than the thing can either be or be conceived without its essence, then substance without attribute, or attribute without substance, can neither be nor be conceived. Or, if the essence of a thing is that which when given the thing is given, and which when taken away the thing is taken away, then when attribute is given substance is given, and when attribute is taken away substance is taken away. The difference between attribute and substance, if the intellect perceives truly, can therefore be only a difference of connotation; denotatively the two terms must be equivalent.

That the intellect, according to Spinoza, does truly perceive the

⁹ *Ethics*, I, Def. 4.

¹⁰ *Ethics*, II, Def. 2.

nature of attribute—and that therefore attribute is what substance most inalienably is—can be demonstrated *more geometrico* without any lengthy examination of his theory of knowledge. This form of demonstration is both appropriate to and sufficient for our purposes here.

The object of the intellect, whether finite or infinite, is, Spinoza says “to comprehend the attributes of God and the modes of God and nothing else”.¹¹ Infinite intellect, or the idea which constitutes God’s mind, is the “idea of His essence and of all things which necessarily follow from His essence”,¹² that is, it is the idea of the “infinite things in infinite ways”¹³ which necessarily follow from the divine Nature. Of these infinite things, attributes are those things which are, as Spinoza puts it, equally in a part and in the whole; the attribute of extension, for example, is equally expressed in its infinite and eternal essence in a single finite body and in infinite body, since “individual things are nothing but modes of God’s attributes, expressing those attributes in a certain and determinate manner”.¹⁴ Now “those things which are common to everything, and are equally in the part and the whole, can only be adequately conceived.”¹⁵ And an idea which is necessarily adequate is also necessarily true;¹⁶ therefore, the intellect can only truly perceive the nature of attribute.

It would not do to rest the case for the denotative equivalence of the two terms attribute and substance upon this one argument alone, even though there is no reason for minimizing its strength. There are other considerations that force us to the same conclusion. The cumulative power of the several arguments—each one independent of the other—we may justly take, I believe, to be decisive.

When we read the *Ethics* by itself, we have to arrive at the denotative equivalence of attribute and substance by a process of inference. The fact that these conceptions are separately defined and the definitions separately numbered has been a great obstacle in the

¹¹ *Ethics*, I, Prop. 30.

¹² *Ethics*, II, Prop. 3.

¹³ *Ethics*, I, Prop. 16.

¹⁴ *Ethics*, I, Prop. 25, corol.

¹⁵ *Ethics*, II, Prop. 38.

¹⁶ *Ethics*, II, Prop. 34.

way of understanding Spinoza's real intention. Fortunately, there is a passage in one of his letters that makes plain to us that at one time, in the composition of the *Ethics*, he included his definition of attribute in his definition of substance, explicitly stating that the two terms had equivalent meaning. Writing to Simon de Vries, he says: "But I do not yet see what this has to do with the understanding of the third *definition*. . . . For the *definition* as I gave it you, unless I am mistaken, reads as follows: By substance I mean that which is in itself and is conceived through itself, that is, whose conception does not involve the conception of some other thing. I mean the same by attribute, except that it is called attribute with respect to the intellect which attributes such and such a nature to substance. This definition, I say, explains clearly enough what I wish you to understand by *substance* or *attribute*. You however wish me to explain by means of an example, which it is very easy to do, how *one and the same thing* can be called by two *names*. But, not to seem niggardly, I will supply two examples. First I say that by the name of Israel I mean the third Patriarch; I also mean the same Patriarch by the name Jacob, since the name Jacob was given to him because he had seized his brother's heel. Secondly, by plane I mean that which reflects all the rays of light without change; I mean the same by white, except that it is called white in relation to a man who is looking at the plane (surface)." ¹⁷

This letter, taken by itself, does not, of course, prove anything more than that at the time of writing to de Vries Spinoza held the views he there expresses. This is what Mr. Joachim contends. He maintains that by the time Spinoza perfected the *Ethics*, he had changed his views on the relation of attribute to substance. According to Mr. Joachim—who may be taken as representative of a whole school of interpreters—the identification of substance and attribute is characteristic of Spinoza only while he was a follower of the Cartesian philosophy; only then did he speak indifferently of extended substance and the attribute of extension, of thinking substance and the attribute of thought; when he fully developed his own metaphysics, so the argument runs, he distinguished rigorously between the two. The force of Mr.

¹⁷ Letter IX, A. Wolf's translation; italics mine.

Joachim's contention is somewhat weakened by his admission that "traces of the older inaccurate terminology" survive not only in the letters but also in the scholium to Proposition 15 of the First Part. It must be granted, of course, that if there were to be found in the *Ethics* only the one reference to the "older inaccurate terminology" this interpretation would not be seriously invalidated, for it is quite easy to understand how Spinoza could lapse once into an antiquated and inexact form of expression, especially in a scholium where the writing is controversial. But when we examine the text of the *Ethics* very closely, we find that the "older inaccurate terminology" does not survive only in the controversial scholium referred to; it survives throughout the propositions and demonstrations of the metaphysical portions of the *Ethics*, that is, throughout Spinoza's whole constructive argument. This being the case, as will be shown in detail below, there is of course nothing for us to do but to accept the denotative equivalence of the two terms. And when we do so, we are not faced with the impossibility of reading the text in a straightforward and intelligible manner; indeed it is they who seek in one way or another, to distinguish radically between substance and attribute who find themselves in this unhappy predicament. The interpretation here advanced makes possible a consistent reading of the *Ethics*, a reading that does not require us, as so many other readings do, to render some propositions in a strict, and some in a loose fashion. And at no point are we forced to condemn the logicity of the sequence of the propositions, but are enabled to see in them a rigid continuity and development of thought.

(a) There is one place in the *Ethics* where the author states, almost as plainly as he does in his letter to de Vries, that by substance and attribute he means the same thing: "There is nothing therefore outside the intellect by which a number of things can be distinguished one from another, but *substances* or (*which is the same thing* by Def. 4) their *attributes* and affections."¹⁸

(b) Spinoza does not, in his definition of attribute, tell us whether attribute is in itself or in another; whether it must be conceived through itself or through the idea of something else. If attribute is a distinct metaphysical entity he should have done

¹⁸ *Ethics*, I, Prop. 4, dem.; italics mine.

this, because it is by these characteristics that metaphysical entities, according to his axioms, are alone distinguished. Instead of defining attribute in the manner in which he defined substance and mode, he *proves* that attribute is in itself and is conceived through itself; and he *proves* this by means of the definition of attribute, which asserts that it is the essence of substance and therefore what is true of substance must be true of it. This is clear beyond any misconception in the demonstration of *Ethics*, I, Prop. 10. The proposition to be proved is that "each attribute of a substance must be conceived through itself"; the proof is as follows: "for an attribute is that which the intellect perceives of substance as constituting its essence (Def. 4) and therefore (Def. 3) it must be conceived through itself."

Furthermore, in the scholium to the same Proposition, Spinoza draws the consequence that necessarily follows from the fact that each attribute must be conceived through itself, namely, that each attribute is causally independent of every other "nor could one be produced by another". Now it is characteristic of all modes, infinite and finite, that one mode can produce another;¹⁹ it is characteristic only of substance that "one substance cannot produce another substance"²⁰—so that in this vital respect there is again complete identity between attribute and substance. It cannot be argued against this conclusion that although one attribute cannot produce another, and although modes could not produce attributes, still substance produces attribute. If this argument were valid attributes would have to be conceived through substance, not through themselves, because "the knowledge of an effect depends upon and involves the knowledge of the cause".²¹ But since attributes are demonstrated to be conceived through themselves, they must also *be* in themselves. Spinoza does not state in so many words that attributes are in themselves (*in se*), but, apart from the arguments for this conclusion just presented, we have the propositions in which he proves that attributes involve *necessary existence*, or are eternal. And, by definition, that

¹⁹ *Ethics*, I, Props. 23, 28.

²⁰ *Ethics*, I, Prop. 6.

²¹ *Ethics*, I, Ax. 4.

whose nature involves necessary existence²² is a *causa sui*, that is, it is in itself. His demonstration of the eternity of attributes is worth citing because it reveals once more in how matter-of-fact fashion he takes it that what is true of substance is also true of attribute. "By the attributes of God is to be understood that which (Def. 4) expresses the essence of the divine substance, that is to say, that which pertains to substance. It is this, I say, which the attributes themselves must involve. But eternity pertains to the nature of substance (Prop. 7). Therefore each of the attributes must involve eternity, and therefore all are eternal."²³ There is no special purpose served in citing many examples; almost the whole First Part could be cited to prove the contention that Spinoza constantly uses the definition of substance as a means for proving propositions about the nature of attribute. I will cite however one more case, the demonstration of the second proposition. This proposition reads: "Two substances whose attributes are different have nothing in common"; the demonstration reads as follows: "This is evident from Def. 3. For each substance must be in itself and must be conceived through itself, that is to say, the conception of one does not involve the conception of the other." Unless substance and attribute denote one and the same thing, the demonstration of the proposition would not only be invalid; it would be totally irrelevant. Because if attributes are not in themselves and conceived through themselves, it does not follow that two substances whose attributes are different have nothing in common. The validity of the demonstration depends upon the nature of attribute, at least as much as upon the nature of substance. Yet in the demonstration the definition of attribute is not even referred to. What Spinoza does is to prove something about attribute by exclusively using the definition of substance. This he can validly do only if he considers the two to be denotatively equivalent, only if he considers attribute really to be the essence of substance.

(c) Spinoza tells us in his definition of attribute what relation it bears to substance; but he does not tell us what relation it bears to mode; nor does he, in his definition of mode, tell

²² *Ethics*, I, Def. 1.

²³ *Ethics*, I, Prop. 19 dem.

us what relation mode bears to attribute. If attribute were a metaphysical entity distinct from substance he could not be guilty of such a far-reaching omission—at least not with impunity. When we reach the corollary to I, 25, however, we discover that Spinoza there states that modes bear precisely the same relationship to attribute that they have been defined to bear to substance. This corollary reads: “Individual things are nothing but affections or modes of God’s attributes. This is evident from Prop. 15 and Def. 5.” Definition 5 contains no reference to attribute, but defines mode solely as affection or modification of substance; and when we examine the demonstration of Proposition 15 we find that there too nothing whatever is said of the relation of mode to attribute; in fact nothing whatever is said about attributes in that proposition. The only thing discoverable there that bears upon the issue is a reference to Definition 5. Actually, therefore, Spinoza establishes that modes are affections of attribute by means of the definition of mode alone. He could validly do this only if by attribute and substance he means denotatively the same thing; then whatever applies to the one necessarily applies also to the other. And that he does take this stand we have no room to doubt. In subsequent propositions of the *Ethics* we find that he speaks of modes as being indifferently modifications of attribute or modifications of substance.

To summarize the results we have reached so far concerning the nature of attribute. Attribute is the real essence of substance, that which substance is in its innermost being. For this reason Spinoza can justly use the definition of substance to demonstrate propositions about attribute. If substance and attribute were anything other than the same thing, this procedure would violate the most elementary rules of logic, and the whole argument of the *Ethics* would be vitiated, since the later propositions depend upon the earlier ones. Also, we have discovered that attribute is stated and proved to have precisely the same basic characteristics as substance: attribute is in itself and is conceived through itself; it is *causa sui*; and it bears the relation to mode which the definition of mode ascribes to substance. If these arguments still do not prove the denotative equivalence of attribute and substance, then the principle of the identity of indiscernibles, which Spinoza es-

tablishes in I, 5, could be invoked, as proving on the ground of a general principle that two things which differ from one another in no essential respect are essentially one and the same thing. However, our conclusion will receive its final test and confirmation in Part II, where we analyze particularly the first fifteen propositions of the *Ethics*, for it is in these propositions that Spinoza presents the chief features of his doctrine of God.

It is not at all a strange thing that Spinoza should use two terms to denote the same thing. It is a well-established practice of his. Besides substance and attribute, we have such pairs of terms as God and Nature, Perfection and Reality, Virtue and Power. The only peculiarity of the extra term attribute is that it is separately defined and numbered. In the other cases cited this procedure is not followed; the terms are plainly stated to be equivalent; and, in the instances of Perfection and Reality, Virtue and Power, these pairs of terms are included within the same definition. At one time, as we have seen, the same was true of attribute and substance; they too were included in one definition. The question arises, therefore, what made Spinoza make an exception in the case of attribute. Why did he not leave it as a part of the definition of substance? Why, in the completed form of the *Ethics*, did he find it necessary to have two definitions when only one would seem to be needed?

The answer to these questions cannot be found, as we have seen, in any change in doctrine concerning the nature of attribute that took place between the time of the letter to de Vries and the completion of the *Ethics*. All attempts to find the answer in such supposed change have resulted in the conclusion that there is a fundamental contradiction, of one sort or another, in Spinoza's metaphysical system; and what is even more revealing, that the propositions of the First Part of the *Ethics* are formally defective, abounding in lacunæ, repetitions and inconsistencies. There is, of course, no *a priori* reason why a philosopher should not harbor in his system fundamental contradictions; philosophers have all too frequently been guilty of doing just that. But an interpretation that would convict a philosopher of serious elementary formal deficiencies in the presentation of his basic propositions, propositions that are formulated in the rigorous fashion of the geometrical

order of demonstration,—such interpretation has at least the presumption against it, and ought not to be accepted unless absolutely no other solution is possible.

When we turn to inquire into the requirements of the logical form of the geometrical order of demonstration, instead of into the philosophical content of the system, we are able to find an answer which satisfies the questions that force themselves upon us, and satisfies them without compelling us to accuse Spinoza of elementary confusion and contradiction, without invalidating his powers of logical and systematic thought.

The separate definition of attribute is evidence of the technical perfection, in the *Ethics*, of the geometrical order of demonstration. One can appreciate Spinoza's technical development in this respect when one studies comparatively Appendix I to the *Short Treatise* and the *Ethics*. The difference between the two is amazing. In the *Short Treatise* Spinoza is struggling very confusedly with definitions and axioms and propositions, unable very clearly or effectively to distinguish between them. In the *Ethics* he shows himself to be a master of his method, to have thought it through, and to have developed the ability of applying it to philosophy.

The geometrical order of demonstration that Spinoza uses is obviously modelled on Euclid. We must therefore turn to Euclid to get a clue to the answer we seek. In Euclid we discover a characteristic type of theorem, and a characteristic method of demonstrating it. The theorem is that two triangles equal in given respects are equal in another respect or in all respects. If the triangles are equal in all respects—to consider only one case of this type of problem, since what applies to it applies *mutatis mutandis* to all similar cases—if the triangles are equal in all respects they are not two different triangles but one and the same triangle. We may feel sure that Euclid knew that the triangles which were preliminarily given to be equal in only certain respects were, from the start, actually equal in all respects. Nonetheless it is necessary for him to ignore this, and to start with two triangles, because otherwise his formal geometrical demonstration would be impossible. He was, I maintain, guided by the example of Euclid in defining attribute separately. By doing this he really

had two definitions of substance, one stating what it is in the order of existence, and the other what it is in the order of knowledge. And having these two definitions he could, like Euclid, proceed *more geometrico* to demonstrate what he wished about the nature of substance. For, in the order of nature, there are, besides substance, only modes. But the definition of mode can only serve to demonstrate what relation modes bear to substance and *vice versa*; by its means nothing can be demonstrated of the nature of substance as it is in itself. And to demonstrate what substance is in itself is the object of Propositions 2 to 20 of the First Part. It was therefore necessary for Spinoza to have another definition that would be equal to the definition of substance, and yet be sufficiently different in *form* to allow him to consider substance in different ways, to make analyses and comparisons, and to demonstrate his results in the manner of the geometer. The definition of attribute allows for just this. It is formally independent of the definition of substance and hence there is no formal begging of the question when it is employed. It defines the essence of substance and hence enables him to treat of substance. The two definitions can be used, in a sense, interchangeably; that is, as we have seen, the definition of attribute can be used to demonstrate propositions about the nature of substance, and the definition of substance to demonstrate propositions about the nature of attribute.

The necessity Spinoza was under of having a separate definition of the essence of substance, in order to be able to demonstrate in the geometrical order propositions about the nature of substance, can be illustrated by two of the fundamental propositions in the *Ethics*. The Second Proposition is to prove that "two substances having different attributes have nothing in common with one another". Without a separate definition of attribute this proposition could hardly be even significantly stated, let alone geometrically proved. Spinoza would have been forced to say, without a separate definition of attribute, that "two substances (or what is the same thing, two attributes) which are different have nothing in common". This statement is not very significant; it is an obvious tautology; there would be nothing to demonstrate geometrically and it could not be so demonstrated. The same is true

of the Fifth Proposition, that "in nature there cannot be two or more substances of the same nature or attribute". This proposition without a separate definition of attribute would have to be formulated something like this: "there cannot exist in nature two or more substances (or what is the same thing, two or more attributes) which are the same." This proposition does, it is true, make sense; but, what is equally true, it does not admit of formal geometrical demonstration. In a system geometrically demonstrated it would have to stand as a dogmatic statement.

Even if Spinoza did not require a separate definition for any other propositions, it would be quite sufficient that these propositions need for their geometrical demonstration a separate definition of attribute, to make such separate definition imperative. For unless these two propositions can be geometrically demonstrated, the remaining essential propositions of the First Part cannot be geometrically demonstrated, since—to trace the interdependence of the first fifteen propositions—I, 6, depends upon I, 5, and I, 2; I, 7, upon I, 6; I, 8, upon I, 7, and I, 5; I, 11, upon I, 7; I, 12, upon I, 2, 5, 6, 7, and 8; I, 13, upon I, 5, and I, 11; I, 14, upon upon I, 5, and I, 11; I, 15, upon I, 14. All fifteen propositions would be incapable of being geometrically demonstrated; which simply means that the First Part could not be so demonstrated, since—to trace the interdependence of the propositions subsequent to I, 15—I, 17, depends upon I, 15; I, 18, upon I, 14, and I, 15; I, 19, upon I, 7, and I, 11; I, 20, upon I, 19; I, 21, and I, 22, upon I, 11, and I, 20; I, 23, upon I, 15, I, 19, and I, 21; I, 25, upon I, 15; I, 26, upon I, 16, and I, 25; I, 28, upon I, 21, 22, 24, 25, and 26; I, 29, upon I, 11, 15, 16, 21, 24, 26, and 27; I, 30, upon I, 14, and I, 15; I, 31, upon I, 15, and I, 29; I, 32, upon I, 23, and 28; I, 33, upon I, 11, 14, 16, 29; I, 34, upon I, 11, and I, 16; I, 35, upon I, 34; I, 36, upon I, 16, 25, and 34. And if the First Part could not be geometrically demonstrated, the whole of the *Ethics* would have to be cast into another form, since the succeeding Parts are dependent to greater or lesser extent upon the First Part.

(To be concluded.)

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