

SPINOZA SEMINAR ONE — METHOD

True Wisdom is simply the knowledge [*scientia*] of truth in every subject. Since it derives from the remembrance of things, which is prompted by their fixed and definite names, it is not a matter of momentary flashes of penetrating insight, but or right Reason, i.e. of Philosophy. For Philosophy opens the way from the observation of individual things to universal precepts.... In treating of figures it is called Geometry, of motion Physics, of natural law, Morals, but is all Philosophy just as the sea is here called British, there Atlantic, elsewhere Indian, so called from its particular shores, but all is Ocean. The Geometers have managed their province outstandingly. For whatever benefit comes to human life from observation of the stars, from mapping of lands, from reckoning of time and from long-distance navigation; whatever is beautiful in buildings, strong in defense-works and marvelous in machines, whatever in short distinguishes the modern world from the barbarity of the past, is almost wholly the gift of Geometry. For if the pattern of human action were known with the same certainty as the relations of magnitudes in figures, ambition and greed, whose power rests on false opinions of the common people of right and wrong [*jus et iniuria*] would be disarmed, and the human race would enjoy such secure peace that (apart from conflicts over space as population grew) it seems unlikely that it would ever have to fight again. [Hobbes, *De Cive*, 25]

**1. WHERE DO TRUE DEFINITIONS & AXIOMS COME FROM?
DISCOVERED? INTUITED? PROVISIONAL/STIPULATED?**

A. From here we can derive in another way that there cannot be but one [substance] of the same nature, and I think it worthwhile to set out the proof here. Now to do this in an orderly fashion I ask you to note:

1. The true definition of each thing involves and expresses nothing beyond the nature of the thing defined.¹ Hence it follows that—
2. No definition involves or expresses a fixed number of individuals, since it expresses nothing but the nature of the thing defined. For example, the definition of a triangle expresses nothing other than simply the nature of a triangle, and not a fixed number of triangles.
3. For each individual existent thing there must necessarily be a definite cause for its existence.

¹ IID2 I say that there pertains to the essence of a thing that which, when granted, the thing is necessarily posited, and by the annulling of which the thing is necessarily annulled; or that without which the thing can neither be nor be conceived, and, vice versa, that which cannot be or be conceived without the thing.

4. The cause for the existence of a thing must either be contained in the very nature and definition of the existent thing (in effect, existence belongs to its nature) or must have its being independently of the thing itself. (E IP8S)

B. The third objection which you proceed to raise against what I have set down is this, that the axioms should not be accounted as ‘common notions’ (*notiones communes*). This is not the point I am urging; but you also doubt their truth, and you even appear to seek to prove that their contrary is more probable. But please attend to my definition of substance and accident, from which all these conclusions follow. For by substance I understand that which is conceived through itself and in itself, that is, that whose conception does not involve the conception of another thing; and by modification or accident I understand that which is in something else and is conceived through that in which it is. Hence it is clearly established, first, that substance is prior in nature to its accidents; for without it these can neither exist nor be conceived. Secondly, besides substance and accidents nothing exists in reality, or externally to the intellect; for whatever there is, is conceived either through itself or through something else, and its conception either does or does not involve the conception of another thing. Thirdly, things which have different attributes have nothing in common with one another; for I have explained an attribute as that whose conception does not involve the conception of another thing. Fourth and last, of things which have nothing in common with one another, one cannot be the cause of another; for since in the effect there would be nothing in common with the cause, all it would have, it would have from nothing. (Letter 4 to Oldenburg 1661)

C. Next, in order that I may know which out of many ideas of a thing will enable all the properties of the object to be deduced, I follow this one rule, that the idea or definition of the thing should express its efficient cause. For example, in order to investigate the properties of a circle, I ask whether from the following idea of a circle, namely, that it consists in an infinite number of rectangles, I can deduce all its properties; that is to say, I ask whether this idea involves the efficient cause of a circle. Since this is not so, I look for another cause, namely, that a circle is the space described by a line of which one point is fixed and the other moveable. Since this definition now expresses the efficient cause, I know that I can deduce from it all the properties of a circle, etc. So, too, when I define God as a supremely perfect Being, since this definition does not express the efficient cause (for I take it that an efficient cause can be internal as well as external), I shall not be able to extract therefrom all the properties of God, as I can do when I define God as a Being, etc. (see Ethics, Part 1, Definition 6). (Letter 60 to Tschirnhaus 1675)

D. As to what you add, that from the definition of any thing, considered in itself, we can deduce only one property, this may hold good in the case of the most

simple things, or in the case of mental constructs (*entia rationis*), in which I include figures, but not in the case of real things. Simply from the fact that I define God as an Entity to whose essence existence belongs, I infer several properties of him, such as that he necessarily exists, that he is one alone, immutable, infinite, etc. I could adduce several examples of this kind, which I omit for the present. (Letter 83 to Tschirnhaus 1686)

E. From the necessity of the divine nature there must follow infinite things in infinite ways [*modis*] (that is, everything that can come within the scope of infinite intellect). Proof This proposition should be obvious to everyone who will but consider this point, that from the given definition of any one thing the intellect infers a number of properties which necessarily follow in fact from the definition (that is, from the very essence of the thing), and the more reality the definition of the thing expresses (that is, the more reality the essence of the thing defined involves), the greater the number of its properties. Now since divine nature possesses absolutely infinite attributes (Def. 6), of which each one also expresses infinite essence in its own kind, then there must necessarily follow from the necessity of the divine nature an infinity of things in infinite ways (that is, everything that can come within the scope of the infinite intellect). (E IP16)

2. THE VICES (& VIRTUES) OF GEOMETRY: SYNTHESIS & ANALYSIS

A. As for the method of demonstration, this divides into two varieties: the first proceeds by analysis and the second by synthesis.

Analysis shows the true way by means of which the thing in question was discovered methodically and as it were *a priori*, so that if the reader is willing to follow it and give sufficient attention to all points, he will make the things his own and understand it just as perfectly as if he had discovered it for himself. But this method contains nothing to compel belief in an argumentative or inattentive reader; for if he fails to attend even to the smallest point, he will not see the necessity of the conclusion. Moreover there are many truths which — although it is vital to be aware of them — this method often scarcely mentions, since they are transparently clear to anyone who gives them his attention.

Synthesis, by contrast, employs a directly opposite method where the search is, as it were, *a posteriori* (though the proof itself is often more *a priori*) than in the analytic method). It demonstrates the conclusion clearly and employs a long series of definitions, postulates, axioms, theorems and problems, so that if anyone denies one of the conclusions it can be shown at once that it is contained in what has gone before, and hence the reader, however argumentative or stubborn he may be, is compelled to give his assent. However this method is not as satisfying as the method of analysis, nor does it engage the minds of those who are eager to learn, since it does not show how the thing in question was discovered.

(Descartes, “Second Replies”, CSM 111)

B. Although both kinds of demonstration afford a certainty that lies beyond any risk of doubt, not everyone finds them equally useful and convenient. There are many who, being unacquainted with the mathematical sciences and therefore completely ignorant of the synthetic method in which they are arranged and of the analytic method by which they were discovered, are neither able themselves to understand nor to expound to others the things that are discussed and logically demonstrated in these books. Consequently, many who, either carried away by blind enthusiasm or influenced by the authority of others, have become followers of Descartes have done no more than commit to memory his opinions and doctrines. (Meyer “Preface” PP)

3. THE VIRTUES OF GEOMETRY

A. SECURITY It is the unanimous opinion of all who seek wisdom beyond the common lot that the best and surest way to discover and to teach truth is the method used by mathematicians in their study and exposition of the sciences, namely, that whereby conclusions are demonstrated from definitions, postulates, and axioms... because all sure and sound knowledge of what is unknown can be elicited and derived only from what is already known with certainty, this latter must first be built from the ground as a solid foundation on which thereafter to construct the entire edifice of human knowledge," (Meyer “Preface” PP).

B. TRANSPARENCY AND FORCE He was forty yeares old before he looked on Geometry, which happened accidentally, being in a Gentleman's Library in ..., a Euclid's *Elements* lay open, and 'twas the 47th Element liber I. He read the Proposition. 'By G--,' sayd he, 'this is impossible.' So he reads the Demonstration of it, which referred him back to such a Proposition: which proposition he read: that referred him back to another which he also read, and sic deinceps [slowly but surely], that at last he was demonstratively convinced of that trueth. This made him in love with Geometry.[Aubrey — Life of Hobbes]

C. SENSE INDEPENDENCE & GENERALITY I should like my readers here to observe that I have opposed Zeno's reasonings with my own reasonings, and so I have refuted him by reason and not by the senses, as did Diogenes. For the senses cannot produce for the seeker of truth anything other than the phenomena of Nature, by which he is determined to investigate their causes; they can never show to be false what the intellect clearly and distinctly grasps as true. This is the view we take, and so this is our method, to demonstrate our propositions with reasons clearly and distinctly perceived by the intellect, disregarding whatever the senses assert when that seems contrary to reason. The senses, as we have said, can do no more than determine the intellect to enquire into one thing rather than another; they cannot convict the intellect of falsity when it has clearly and distinctly perceived something. (PP II6S)

D. SCALE, COMPACTNESS, SCALE

4. DEMONSTRATION

IP1 Substance is by nature prior to its affections.

Proof This is evident from Defs. 3 and 5.

IP2 Two substances having different attributes have nothing in common. Proof This too is evident from Def. 3; for each substance must be in itself and be conceived through itself; that is, the conception of the one does not involve the conception of the other.

IP3 When things have nothing in common, one cannot be the cause of the other. Proof If things have nothing in common, then (Ax. 5) they cannot be understood through one another, and so (Ax. 4) one cannot be the cause of the other.

IP4 Two or more distinct things are distinguished from one another either by the difference of the attributes of the substances or by the difference of the affections of the substances. Proof All things that are, are either in themselves or in something else (Ax. 1); that is (Defs. 3 and 5), nothing exists external to the intellect except substances and their affections. Therefore, there can be nothing external to the intellect through which several things can be distinguished from one another except substances or (which is the same thing) (Def. 4) the attributes and the affections of substances.

IP5 In the universe there cannot be two or more substances of the same nature or attribute. Proof If there were several such distinct substances, they would have to be distinguished from one another either by a difference of attributes or by a difference of affections (Pr. 4). If they are distinguished only by a difference of attributes, then it will be granted that there cannot be more than one substance of the same attribute. But if they are distinguished by a difference of affections, then, since substance is by nature prior to its affections (Pr. 1), disregarding therefore its affections and considering substance in itself, that is (Def. 3 and Ax. 6), considering it truly, it cannot be conceived as distinguishable from another substance. That is (Pr. 4), there cannot be several such substances but only one.

5. RESPONSE TO THE PUZZLE: SELF-CORRECTION, EXTENSION, EQUILIBRIUM, AND SATISFACTION

A. When the mind attends to a thing that is both fictitious and false by its very nature, so as to ponder over it and achieve understanding, and then deduces from it in proper order what is to be deduced, it will easily detect falsity; and if the fictitious idea is by its own nature true, when the mind attends to it so as to

understand it, and begins to deduce from it in proper order the conclusions that follow from it, it will proceed smoothly without any interruption. (TIE §61)

B. Later, when we shall be speaking of fictions concerning essences, it will be manifest that fiction never invents or prevents to the mind anything new; it recalls to mind only things that are in the brain or imagination, and the mind attends to all these together in a confused way. For example, the uttering of words and a tree are called to memory, and when the mind attends to them in a confused way without distinction, it forms a notion of a tree speaking. The same applies to existence, especially when, as we have said, it is conceived in a very general way as entity, for it is then liable to be attached to all things that occur in memory. This is a very important point. (TIE Note U).

C. Although I seem to infer this from experience, and someone may deny its cogency because no proof is attached, he may take this if he wants one. Since there can be nothing in Nature contrary to her laws and all things happen in accordance with her fixed laws, so that definite effects are produced by definite laws in unalterable sequence, it follows that when the soul conceives a thing truly (*ubi rem verè concipit*), it will proceed to produce in thought those same effects. (TIE Note X)

D. I do not doubt that for those who judge things confusedly and are not accustomed to know things through their primary causes it is difficult to grasp the proof of Proposition 7.² Surely, this is because they neither distinguish between the modification of substances and substances themselves, nor do they know how things are produced. And so it comes about that they ascribe to substances a beginning which they see natural things as having; for those who do not know the true causes of things confuse everything. Without any hesitation they imagine trees as well as men talking and stones as well as men being formed from seeds; indeed, any forms whatsoever are imagined to change into any other forms. So too, those who confuse the divine nature with human nature easily ascribe to God human emotions, especially so long as they are ignorant of how the latter are produced in the mind. But if men were to attend to the nature of substance, they would not doubt at all the truth of Proposition 7; indeed, this Proposition would be an axiom to all and would be ranked among universally accepted truisms. For by substance they would understand that which is in itself and is conceived through itself; that is, that the knowledge of which does not require the knowledge of any other thing. By modifications they would understand that which is in

² Existence belongs to the nature of substance. Proof Substance cannot be produced by anything else (Cor. Pr. 6) and is therefore self-caused [*causa sui*]; that is (Def. 1), its essence necessarily involves existence; that is, existence belongs to its nature. (E IP7)

another thing, and whose conception is formed from the thing in which they are. Therefore, in the case of nonexistent modifications we can have true ideas of them since their essence is included in something else, with the result that they can be conceived through that something else, although they do not exist in actuality externally to the intellect. However, in the case of substances, because they are conceived only through themselves, their truth external to the intellect is only in themselves. So if someone were to say that he has a clear and distinct— that is, a true— idea of substance and that he nevertheless doubts whether such a substance exists, this would surely be just the same as if he were to declare that he has a true idea but nevertheless suspects that it may be false (as is obvious to anyone who gives his mind to it). Or if anyone asserts that substance is created, he at the same time asserts that a false idea has become true, than which nothing more absurd can be conceived. So it must necessarily be admitted that the existence of substance is as much an eternal truth as is its essence. (E IP8S)

E. “demonstrations are the eyes of the mind, by which the mind sees and observes things” (E VP23S)

6. ETHICS I: DEFINITIONS

1. By that which is self-caused I mean that whose essence involves existence; or that whose nature can be conceived only as existing.
2. A thing is said to be finite in its own kind [*in suo genere finita*] when it can be limited by another thing of the same nature. For example, a body is said to be finite because we can always conceive of another body greater than it. So, too, a thought is limited by another thought. But body is not limited by thought, nor thought by body.
3. By substance I mean that which is in itself and is conceived through itself; that is, that the conception of which does not require the conception of another thing from which it has to be formed.

[For my part, when I reflect that definitions contain no more than conceptions of our mind, and that our mind conceives many things that do not exist.... Indeed from the mental accumulations of all the perfections I discover in men, animals, vegetables, minerals and so on, I can conceive and form one single substance which possesses in full all those qualities; even more, my mind is capable of augmenting them to infinity, and so of fashioning for itself a most perfect and excellent Being. Yet the existence of the Being can be no means inferred from this. (Letter 3 Oldenburg to Spinoza 1661)

To your first objection, then, I say that it is not from the definition of any thing whatsoever that the existence of the defined thing follows, but only (as I demonstrated in the Scholium which I attached to the three propositions) from the definition or idea of some attribute; that is (as I explained clearly in the

case of the definition of God), from the definition of a thing which is conceived through itself and in itself. The ground for this distinction I have also stated in the aforementioned Scholium with sufficient clarity, I think, especially for a philosopher. A philosopher is supposed to know what is the difference between fiction and a clear and distinct conception, and also to know the truth of this axiom, to wit, that every definition, or clear and distinct idea, is true. Once these points are noted, I do not see what more is required in answer to the first question. (Letter 4 Spinoza to Oldenburg 1661)]

4. By attribute I mean that which the intellect perceives of substance as constituting its essence.
5. By mode I mean the affections of substance, that is, that which is in something else and is conceived through something else.
6. By God I mean an absolutely infinite being, that is, substance consisting of infinite attributes, each of which expresses eternal and infinite essence. Explication I say “absolutely infinite,” not “infinite in its kind.” For if a thing is only infinite in its kind, one may deny that it has infinite attributes. But if a thing is absolutely infinite, whatever expresses essence and does not involve any negation belongs to its essence.

7. ETHICS I: AXIOMS

1. All things that are, are either in themselves or in something else.
2. That which cannot be conceived through another thing must be conceived through itself.
3. From a given determinate cause there necessarily follows an effect; on the other hand, if there be no determinate cause, it is impossible that an effect should follow.
4. The knowledge of an effect depends on, and involves, the knowledge of the cause.
5. Things which have nothing in common with each other cannot be understood through each other; that is, the conception of the one does not involve the conception of the other.
6. A true idea must agree with that of which it is the idea [*ideatum*].
7. If a thing can be conceived as not existing, its essence does not involve existence.

8. AN EXAMPLE

A. By conatus to motion we do not understand some thoughts, but only that a part of matter is thus placed, and stirred to motion, that it truly would go somewhere, if it were not impeded by any cause. [Descartes, *Principia Philosophiae* III:56-60]

B. Each thing (*unamquamque rem*), insofar as it is simple and undivided, remains, *quantum in se est*—always in the same state, never changing unless as the result of external causes [Descartes’ First Law of Motion *Principia Philosophiae*, II:37].

C. Each thing (*unaquaeque res*), insofar as it is simple and undivided, and it is considered in itself alone (*& in se sola consideratur*), *quantum in se est*, always perseveres in the same state (*in eodem statu perseverat*). [PP IIID3]

D. Each thing (*unaquaeque res*), *quantum in se est*, endeavours to persevere in its being (*in suo esse perseverare conatur*). [E IP6]

9. GEOMETRICAL METHOD AS COGNITIVE METAPHYSICAL THERAPY

REFERENCES

CSM — Cottingham, J & Murdoch, D & Stoothoff R (trans.) 1985, *The Philosophical Writings of Descartes*, Cambridge, Cambridge University Press. 2 v.

De Cive — Hobbes, T 1998, *On the Citizen*, R. Tuck ed. & M. Silverthorne trans. Cambridge, Cambridge University Press.

E — Spinoza, *Ethics*

PP — Spinoza, *Principles of Descartes’s Philosophy*

TIE — Spinoza, *Treatise on the Emendation of the Intellect*