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THE PHILOSOPHICAL ECONOMY OF THE THEORY OF IDEAS.

The objection with which in the *Metaphysics*¹ Aristotle introduces his criticism of the theory of Ideas expresses a difficulty which has tended to alienate the sympathy of most students who approach the study of Plato. The hypothesis, Aristotle says, is a superfluous duplication of the phenomenal world; it is as if one should think it impossible to count a number of objects until that number had first been multiplied. This objection, even tacitly entertained, distorts the motivation of the hypothesis; that it misrepresents Plato's express attitude toward scientific problems, the well known statement of Eudemus quoted by Simplicius on the authority of Sosigenes amply proves.² The complications of the planetary movements had to be explained, Plato asserted, by working out an hypothesis of a definite number of fixed and regular motions which would "save the phenomena." This same attitude is expressed in the *Phaedo* where Socrates explains the method of "hypothesis" which he used to account for the apparently disordered world of phenomena;³ the result of this method, he says, was the Theory of Ideas.⁴

The phenomena for which Plato had to account were of three kinds, ethical, epistemological, and ontological. In each of these spheres there had been developed by the end of the fifth century doctrines so extremely paradoxical that there seemed to be no possibility of reconciling them with one another or any one of them with the observable facts of human experience.⁵ The dia-

¹ *Metaphysics* 990 A 34 ff. It is repeated almost exactly at 1078 B 34-36.

² Simplicius, in *De Caelo*, p. 488, 18-24 (Heiberg).

³ *Phaedo* 99 D 4-100 A 8.

⁴ *Phaedo* 100 B 1-102 A 1.

⁵ Note the criticism and warning in *Phaedo* 101 E: ἅμα δ' οὐκ ἂν φύροιο ὡσπερ οἱ ἀντιλογικοὶ περὶ τε τῆς ἀρχῆς διαλεγόμενος καὶ τῶν ἐξ ἐκείνης ὠρημένων, εἴπερ βούλοιο τι τῶν ὄντων εὐρεῖν; ἐκείνοις μὲν γὰρ ἕως οὐδὲ εἰς περὶ τούτου λόγος οὐδὲ φροντίς. ἱκανοὶ γὰρ ὑπὸ σοφίας ὁμοῦ πάντα κυκῶντες ὕμω δύνασθαι αὐτοὶ αὐτοῖς ἀρέσκειν. They do not keep the "universes of discourse" clearly defined but think it legitimate, for example, to drag an epistemological difficulty into an ethical problem before they have completely canvassed the ethical phenomena and have set up an hypothesis to explain them. An example of this "childish" confusion is outlined in the *Philebus* (15 D-16 A; 17 A).

logues of Plato, I believe, will furnish evidence to show that he considered it necessary to find a single hypothesis which would at once solve the problems of these several spheres and also create a rationally unified cosmos by establishing the connection among the separate phases of experience.

The interests of Socrates,⁶ the subject-matter of the early dialogues, the "practical" tone of Plato's writings throughout make it highly probable that he took his start from the ethical problems of his day. It is unnecessary to labor the point that he considered it fundamentally important to establish an absolute ethical standard; that the bearing on this point of the "inconclusive," "exploratory" dialogues could not have been obscure to his contemporaries is obvious to anyone who looks at such evidence of the time as is furnished by the *Δισσοὶ Λόγοι* (which discusses the relativity of good and evil, fair and foul, just and unjust, true and false, and the possibility of teaching wisdom and virtue) or by the papyrus fragment of Antiphon the Sophist⁷ (where conventional justice is called adventitious and generally contradictory to natural justice which is defined as that which is truly advantageous to each individual). The necessity for an absolute standard of ethics which would not depend upon the contradictory phenomena of conventional conduct but would be a measure for human activities instead of being measured by them was forcibly demonstrated by the plight into which Democritus had fallen. He had bitterly opposed the relativism of Protagoras;⁸ yet two of his own ethical fragments show how vulnerable he must have been to counter-attack. "They know and seek fair things," he said, "who are naturally disposed to them."⁹ And, attempting to reconcile conventional law and natural good, he remarked, "The law seeks to benefit the life of men but can do so only when they themselves desire to fare well. For to those who obey it it indicates their proper goodness."¹⁰ This bald assertion of a difference between fair and

⁶ Cf. e. g. Aristotle, *Metaphysics* 987 B 1 ff.

⁷ *Oxyrh. Pap.* XI, 1364; Diels, *Fragmente der Vorsokratiker*, 4th ed., vol. II, pp. xxxii ff.

⁸ Plutarch, *Adv. Colot.* 1108 F-1109 A.

⁹ Democritus, *fragment* 56 (Diels): τὰ καλὰ γνωρίζουσι καὶ ζηλοῦσιν οἱ εὐφύεες πρὸς αὐτὰ.

¹⁰ Democritus, *fragment* 248 (Diels): ὁ νόμος βούλεται μὲν εὐεργετεῖν

foul things, virtuous and vicious actions offers no standard whereby to determine the difference, no reason for the similarity of all fair things quâ fair and for their difference from all that are foul. So long as these are only characteristics of material individuals no standard can be found, for to measure individuals against one another is to succumb to relativism. To compare and contrast one must have a definite standard of reference which must itself be underivative lest it become just another example of the characteristic in question and so lead to an infinite regress. The "dialogues of search," by demonstrating the hopelessness of all other expedients, show that the definitions requisite to normative ethics are possible only on the assumption that there exist, apart from phenomena, substantive objects of these definitions which alone are the source of the values attaching to phenomenal existence.¹¹ The possibility of ethical distinctions, then, implies objective differences which can be accounted for only by the hypothesis of substantive ideas.

While this hypothesis makes an ethical system possible in the abstract, the problems raised by conscious human activity involve the construction of a complete ethical theory in the questions of epistemology. That a consistent and practical ethical theory depends upon an adequate epistemology, Plato demonstrates in the *Meno*. The subject of that dialogue is *virtue*, but it is with one of the popular practical questions about virtue that *Meno* opens the discussion. Socrates protests that such questions as the teachability of virtue must wait upon a satisfactory definition of virtue;¹² but *Meno's* failure to produce a definition makes him fall back upon the "eristic argument" that one cannot search for either the known or the unknown.¹³ To the

βίον ἀνθρώπων. δύναται δὲ ἔταν αὐτοὶ βούλωνται πάσχειν εὖ. τοῖσι γὰρ πειθομένοισι τὴν ἰδίην ἀρετὴν ἐνδείκνυται.

¹¹ *Euthyphro* 15 C 11-E 2; *Laches* 199 E (cf. 200 E-201 A); *Lysis* 222 E (N. B. 218 C-220 B 5: necessity of finding a *πρῶτον φίλον* which is the final cause of *πάντα φίλα*); *Charmides* (176 A); *Hippias Minor* (376 B: if *anyone* errs voluntarily, it must be the good man [who, of course, as good would not err at all]). Cf. *Protagoras* (361 C: the difficulties into which the argument has led show that it is necessary first to discover what *ἀρετή* is and *then* discuss its teachability).

¹² *Meno* 71 A 3-7. It is in the light of this that I find the key to the riddles of the *Protagoras* in Socrates' remarks at the end of that dialogue (*Protagoras* 361 C 2-D 2). ¹³ *Meno* 80 E-81 A.

implication here that ethical problems are not susceptible of investigation Socrates answers that one can escape this difficulty only by supposing that learning or discovering is really recollection of that which has already been *directly* known.¹⁴ Here Socrates is not concerned with the details of the process; his contention is simply that, since determination of the characteristics of virtue presupposes a definition of its essential nature and to give such a definition presupposes knowledge of the essence, we must assume that essential virtue exists and has been directly known unless we are to surrender all possibility of considering ethical problems. Socrates is forced by Meno's insistence to discuss his question anyway, but his repeated objection that such questions demand a prior determination of the nature of virtue itself is a warning and an explanation of the paradoxical outcome of the consequent discussion.¹⁵

If men act virtuously without being able to teach virtue (that is, without being able to give a consistent account of the causes of their actions), it is because they have "right opinions" and so are virtuous by a kind of "divine grace."¹⁶ But such right opinions, though having results speciously identical with those of knowledge, are unstable, for they are haphazard, being unconnected by a chain of causality with the final cause. The recognition of this causal relationship, however, is knowledge and this is just recollection.¹⁷ Consequently until one bases his reasoning upon the knowledge of essential virtue, there can be no adequate solution of the problems of ethics.¹⁸ So it is that by argument and example the *Meno* demonstrates how, having to distinguish knowledge and right opinion in order to save the phenomena of moral activity, the ethical philosopher is forced to face the problems of epistemology.

But Plato was not satisfied with having proved that considerations of ethics require the assumption of substantive ideas and an epistemology consistent with such an hypothesis. The pragmatic relativism of Protagoras' ethics was, after all, a necessary result of his subjective realism; and Plato had before him the example of Democritus who, though insisting upon the reality

¹⁴ *Meno* 81 D 4-5. Note the word used for acquiring the knowledge in the first place: *ἐπαρκῖα* (81 C 6).

¹⁵ *Meno* 86 C 6-87 B 5.

¹⁷ *Meno* 97 E-98 B.

¹⁶ *Meno* 99 A-D.

¹⁸ *Meno* 100 B.

of definite moral standards, could not finally refute Protagoras since he had no adequate reason for giving mind the sovereignty over sensations. There is a winsome sadness in his confession of defeat expressed in the reply he makes the sensations give to the strictures of mind: "unhappy Intelligence, with evidence we give you you attempt our overthrow; your victory is your defeat."¹⁹ The saving of the phenomena of intellection and sensation is the primary duty of epistemology; if, however, it should appear that these phenomena can be saved in their own right only by setting up the same hypothesis as was found to be essential for ethics, the coincidence of results would by the principle of scientific economy enunciated in Plato's phrasing of the astronomical problem lend added validity to the hypothesis in each sphere.

The epistemological necessity for the existence of the Ideas is proved by the same indirect method as was used in establishing the ethical necessity. Since the phenomena to be explained have first to be determined, it is essential to proceed by analysis of the psychological activities, to decide the nature of these activities and their objects. In brief, the argument turns upon the determination of intellection as an activity different from sensation and opinion. In the *Timaeus*,²⁰ in an avowedly brief and casual proof of the separate existence of Ideas, it is stated that if intellection is other than right opinion it follows that there exist separate substantive Ideas as the objects of intellection. The indications of the essential difference of intellection and right opinion are there said to be three. Knowledge is produced by instruction, is always accompanied by the ability to render a true account or proof, and cannot be shaken by persuasive means, whereas right opinion is the result of persuasion, is incapable of accounting for itself, and is susceptible of alteration by external influence. The difference here mentioned is vividly exemplified in the myth of Er²¹ by the horrible choice of the soul concerning whom it is said: "he was one of those who had come from heaven, having in his former life lived in a well-ordered city and shared in virtue out of habit without philosophy."²² The

¹⁹ Democritus, *fragment* 125.

²⁰ *Timaeus* 51 D-E.

²¹ *Republic* 619 B ff.

²² In the parallel passage of the *Phaedo* (82 A-B) "philosophy" is glossed by "intelligence": *ἀνευ φιλοσοφίας τε καὶ νοῦ*.

Theaetetus, in its attempt to define knowledge, treats as the last possibility considered the suggestion that "true opinion" may be a constitutive element of knowledge, may in conjunction with a λόγος or "account" be knowledge itself.²³ As this proposal is tested, it is shown that, of the various possible meanings which λόγος might here have, the most satisfactory is "knowledge of the proper difference of the object known."²⁴ But if this "knowledge of the difference" is not to be, in turn, mere "right opinion" about the difference, an empty tautology, the definition is vitiated by a "circulus in definiendo."²⁵ In short, if "true opinion" and knowledge are not identical, the former can not be an essential element of the latter, either. The common assumption of a relationship between "right opinion" and knowledge is due to the external similarity of their results,²⁶ but the rightness of any particular opinion is simply accidental as Plato succinctly shows.²⁷ Right opinion is still essentially opinion; and this, the *Theaetetus* has already proved, cannot be knowledge, for it involves the possibility of error or wrong opinion which can be explained only as a mistaken reference to something known, although it is difficult to see how—if the term of reference be known—a mistaken identification is possible.²⁸ Opinion, then, is different from knowledge and secondary to it, for no satisfactory account of error can be given until the process of intellection has been explained.²⁹ Similarly the earlier part of the *Theaetetus* proved that knowledge can not be sensation or derived from sensation,³⁰ because sensation itself implies a central faculty to which all individual perceptions are referred and which passes judgment on them all.³¹ As in the *Republic*³² the proof that knowledge and opinion are different faculties is conclusive evidence for the fact that the objects with which they are concerned must be different, so here from the observation that the mind functioning directly without any intermediate organ contemplates the notions that are applicable to all things³³ pro-

²³ *Theaetetus* 201 C 8 ff.

²⁴ *Theaetetus* 208 D.

²⁵ *Theaetetus* 209 D 4-210 A 9.

²⁶ *Theaetetus* 200 E 4-6.

²⁷ *Theaetetus* 201 A-C.

²⁸ *Theaetetus* 187 B 4-200 D 4.

²⁹ *Theaetetus* 200 B-D.

³⁰ Cf. *Theaetetus* 186 E 9-187 A 6.

³¹ *Theaetetus* 184 B 5-186 E 10.

³² *Republic* 477 E-478 B 2.

³³ *Theaetetus* 185 E 1-2.

ceeds the conclusion that knowledge is not to be found in the perceptions but in the reflection upon them, since only in this process is it possible to grasp reality and meaning.³⁴ The attempt of the *Theaetetus* to define knowledge fails, and this failure demonstrates that the λόγος, the essential characteristic of knowledge, cannot be explained by any theory which takes phenomena to be the objects of intellection. That this is the purpose of the dialogue is revealed by the *Timaeus* passage above which shows that the λόγος is the δεσμός of the *Meno*,³⁵ the mark which distinguishes knowledge from right opinion in that dialogue and which was there identified with ἀνάμνησις. The *Theaetetus*, then, is an attempt to prove that the theory of Ideas is a necessary hypothesis for the solution of the problems of epistemology; the constructive doctrine of the *Sophist* demonstrates that it is a sufficient hypothesis for that purpose.³⁶ The process of abstraction and generalization which Aristotle thought sufficient to account for knowledge³⁷ was recognized by Plato,³⁸ but he considered it to be inadequate. In the *Parmenides*,³⁹ after advancing all his objections to the hypothesis, Parmenides is made to assert that it is still necessary to assume the existence of Ideas if thought and reasoning are to be saved; and in the *Phaedo*⁴⁰ Socrates outlines the theory of abstraction almost in the very words which Aristotle was to use, connects it with the theories of the mechanistic physics, and rejects it in favor of the theory of separate Ideas. The possibility of abstraction itself, if it is to have any meaning, Plato believes, requires the independent reality of the object apprehended by the intellect. That is the basis of his curt refutation of mentalism in the *Parmenides*.⁴¹ So the process of abstraction and analysis outlined in the *Philebus*, which is there said to be possible because of the participation of the phenomena in real Ideas,⁴² and which in a simple example

³⁴ *Theaetetus* 186 D 2 ff.

³⁵ *Meno* 98 A.

³⁶ Cf. *Sophist* 258 D-264 B and note the triumphant tone of 264 B 5-7.

³⁷ *De Anima* 432 A 3-14; *Post. Anal.* 100 A 3-B 17; cf. *Metaphysics* A, 1.

³⁸ *Charmides* 159 A 1-3; *Philebus* 38 B 12-13.

³⁹ *Parmenides* 135 B 5-C 3.

⁴⁰ *Phaedo* 96 B.

⁴¹ *Parmenides* 132 B C.

⁴² *Philebus* 16 C 10 ff. N.B. 16 D 2: εὐρήσειν γὰρ ἐνοῦσαν.

of its use in the *Republic* ⁴³ is called "our customary method," is in the *Phaedrus* ⁴⁴ designated as ἀνάμνησις and said to require the substantial existence of the Ideas and previous direct knowledge of them by the intellect. The successful "recollection" of the Ideas by means of the dialectical process is in the *Republic* ⁴⁵ said to constitute intellection as distinguished from opinion, and the man who is capable of such activity is there described in terms parallel to the "mythical" description of the "winged intellect" of the *Phaedrus*.⁴⁶

The nature of the mental processes, then, can be explained only by the hypothesis of Ideas. Since no mere addition to right opinion from the sphere with which it itself deals can produce knowledge or make intelligible the fact of error and since no combination of sensations can account for apperception, knowledge cannot be synthetic or derivative. Knowledge as a special faculty dealing *directly* with its own objects must be assumed in order not only to explain the fact of cognition but also to make possible opinion and sensation as they are given by experience. The special faculty of knowledge, however, is characterized by direct contact of subject and object; since phenomena cannot enter into such a relationship with the subject, mediating organs being required in their case, it is necessary that the objects of knowledge be real entities existing apart from the phenomenal world and that the mind have been affected by them before the mental processes dealing with phenomena occur. Only so can one avoid the self-contradictory sensationalism of Protagoras, the psychological nihilism of Gorgias, and the dilemma of Democritus.

The effort to save the phenomena of mental activity leads to the same hypothesis as did the attempt to explain human conduct, and the ethical hypothesis is supported by the independent requirements of epistemology. There is, however, another sphere, naturally prior to knowledge and sensation and by which finally all epistemological theories must be judged. The Ideas are necessary to account for the data of mental processes; but the

⁴³ *Republic* 596 A.

⁴⁴ *Phaedrus* 249 B 5-C 4. Cf. the extended demonstration of *Phaedo* 74 A 9-77 A 5 which is based upon epistemological considerations.

⁴⁵ *Republic* 479 E-480 A.

⁴⁶ *Phaedrus* 249 C.

physical world and its characteristics are not dependent upon these mental processes, and it is no more sufficient to assume an ontology which will fit the requirements of epistemology than it is to construct an epistemology in order to account for the phenomena of ethics. It is with this in mind that Timaeus, when in a physical discourse he uses a résumé of the epistemological proof of the existence of Ideas, apologizes for his procedure with the excuse that the magnitude of his main subject requires him to give the briefest possible demonstration.⁴⁷ The very language of this passage shows that Plato considered it as a requirement of sound method to develop his ontological hypothesis according to the data of the physical world itself. This requirement is explained in the *Theaetetus* where a detailed theory of psychological relativism is expounded⁴⁸ by way of considering the thesis that knowledge is sensation. Such a doctrine, in spite of the objections that can be brought against its epistemological and ethical consequences, may still present a correct account of the nature of existence as nothing but a flux of motions. What seem to be individual objects and characteristics would then be merely the transitory resultants of the component motions. In that case, knowledge would really be vivid sensations which are the functions of clashing and passing movements.⁴⁹ To argue that no practical ethics or adequate epistemology can be developed from such an account is pointless, for there could be no *naturally* valid criterion by which to evaluate the different moments of evidence.⁵⁰ Such a theory as that of Ideas would be a merely pragmatic hypothesis, and distinctions of good and bad, true and false would be at best only conventional and artificial. It is, then, necessary that the study of ontology be undertaken independently of the requirements of ethics and epistemology to discover what hypothesis will explain the data of physical phenomena as such.⁵¹ The data with which the investigation has to work are the constantly shifting phenomena of the physical world, and Plato accepts this unceasing flux as a characteristic of all phenomenal existence.⁵² This flux, however, is the datum which has to be explained, and his contention is simply that

⁴⁷ *Timaeus* 51 C 5 ff.

⁴⁸ *Theaetetus* 156 A-160 E.

⁴⁹ *Theaetetus* 179 C.

⁵⁰ *Theaetetus* 158 B-E.

⁵¹ *Theaetetus* 179 D.

⁵² Cf. *Timaeus* 27 D 5-28 A 4.

change itself is intelligible and possible only if there exist entities which are not themselves involved in the change. The argument in the *Theaetetus*⁵³ attempts to show that the constant flux of phenomena involves alteration as well as local motion but that alteration requires the permanent subsistence of immutable abstract qualities. The relativism that asserts the constant change of everything, however, makes attributes and perceptions the simultaneous resultants of the meeting of agent and patient, while agent and patient themselves are merely complexes of change without independent existence,⁵⁴ with the result that not only are all things constantly changing their characteristics but the characteristics themselves are constantly altering, and "whiteness" can no more be really "whiteness" than any other color.⁵⁵ Similarly, if the qualities themselves are always altering, the sensations which are defined by these constantly altering qualities are undifferentiated.⁵⁶ Such an account of the world involves the denial not only of fixed states and determinable processes but also of the laws of contradiction and the excluded middle.⁵⁷ The data of phenomenal change, then, logically require the hypothesis of immutable and immaterial ideas. The argument occurs again at the end of the *Cratylus* (where, however, it is connected with one form of the epistemological proof);⁵⁸ and Aristotle accuses the Protagoreans, in the same terms as does Plato, of denying the laws of logic.⁵⁹ In a passage obviously influenced by the *Theaetetus*,⁶⁰ he explains the difficulties of the relativists as due to their failure to recognize immaterial existences and to note the distinction between quantitative and qualitative change. Like Plato, Aristotle felt that a logical account of physical nature required some hypothesis of qualitative existence as underived from quantitative distinctions.

The digression on mensuration in the *Politicus*⁶¹ has the same intention. There Plato distinguishes between quantitative and qualitative "measurement," the former being only relative mea-

⁵³ *Theaetetus* 181 C-183 B.

⁵⁴ *Theaetetus* 182 B.

⁵⁵ *Theaetetus* 182 D 1-5.

⁵⁶ *Metaphysics* 1008 A 31-34; cf. *Metaphysics* 1009 A 6-12.

⁶⁰ *Metaphysics* 1010 A 1-37.

⁵⁶ *Theaetetus* 182 D 8-E 5.

⁵⁷ *Theaetetus* 183 A 4-B 5.

⁵⁸ *Cratylus* 439 D 3-440 C 1.

⁶¹ *Politicus* 283 D-287 A.

surement and the latter measurement against a norm,⁶² and castigates those who think all the world susceptible of quantitative measurement; their error lies in the supposition that all difference can be reduced to quantitative distinctions.⁶³ For this reason in the *Timaeus*, where the quantitative determinations of the minima of phenomenal air, fire, water, and earth are elaborated in great detail,⁶⁴ Plato still insists that there must be substantive Ideas of air, fire, water, and earth, apart from phenomena, immutable, the objects of intellection only,⁶⁵ and that phenomenal objects are what they are because they are imitations of these real Ideas.⁶⁶ Indications of the ontological necessity of the hypothesis are not lacking in this dialogue either. The most certain and evident characteristic of phenomena is their instability; they are all involved in the process of generation⁶⁷ and so imply a cause external to themselves.⁶⁸ Apart from the "mythical" form of the explanation to which this leads, the argument is the same as the indirect proof of the *Theaetetus*. The instability of phenomena can be explained only by assuming a world of Ideas as the source of phenomenal characteristics. To dispense with such a superphenomenal world is not only to identify right opinion and knowledge but, in fact, to say that phenomena are stable.⁶⁹ This brief remark of *Timaeus* sums up the results of the demonstration in the *Theaetetus* which shows that the relativistic ontology transgresses the law of the excluded middle and so can no more say that all is in motion than that all is at rest. To do away with stable qualities is tantamount to denying the possibility of change.⁷⁰ Yet it is the possibility of phenomenal alteration that was to be saved, for phenomena have

⁶² *Politicus* 283 D 7-284 B 2.

⁶³ *Politicus* 284 E 11-285 C 2; cf. Rodier, *Études de philosophie grecque*, p. 48, note 1.

⁶⁴ *Timaeus* 53 C 4-55 C 5; 55 D 7-57 C 6.

⁶⁵ *Timaeus* 51 A 7-52 A 4.

⁶⁶ *Timaeus* 50 C, 51 A 7-B 1 (cf. Shorey in *Class. Phil.* XXIII [1928], p. 358).

⁶⁷ *Timaeus* 28 B 8-C 2.

⁶⁸ *Timaeus* 28 C 2-3.

⁶⁹ *Timaeus* 51 D 6-7.

⁷⁰ Aristotle reproduces the argument in his own language in *Metaphysics* 1010 A 35-37.

no stability at all; ⁷¹ they are fleeting phases without persistent substantiality,⁷² but such they can be only if apart from them there are substances of which somehow the phenomena partake.⁷³

The physical phenomena, then, considered in themselves and not as objects of sensation or cognition still can be saved only by the hypothesis of separate, substantive Ideas. That the necessary and sufficient hypothesis for this sphere turns out to be the very one needed for ethics and epistemology makes it possible to consider the three spheres of existence, cognition, and value as phases of a single unified cosmos.

The apparently disparate phenomena of these three orders, like the seemingly anomalous paths of the planets, had to be accounted for by a single, simple hypothesis which would not only make intelligible the appearances taken separately but at the same time establish the interconnection of them all. The problem which Plato set others in astronomy he set himself in philosophy; the resulting theory of Ideas indicates by its economy that it proceeded from the same skill of formulation which charted for all time the course of astronomical hypothesis.

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⁷¹ Cf. *Timaeus* 49 D 4 ff. (βεβαιότητα-D 7) and 51 D 5-7.

⁷² *Timaeus* 49 C 7-50 A 4.

⁷³ *Timaeus* 50 B-C. That the mere configuration of space is not enough to produce phenomenal fire, etc., 51 B 4-6 shows (N.B. καθ' ὅσον ἂν μίμηματα τούτων δέχηται). All this, I think, makes Shorey's interpretation of 56 B 3-5 certain (*Class. Phil.* XXIII [1928], pp. 357-8). To interpret στερεὸν γεγονός here as "having received a third dimension" would be tautological, for the pyramid is *eo ipso* three-dimensional. Cf. also A. Rivaud in his introduction to his edition of the *Timaeus* (p. 26) in the Budé series.