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EXCESS AND DEFICIENCY AT *STATESMAN* 283C-285C

## I

Having just concluded at 283A what he suggests might appear to be an overly long definition of weaving, the Stranger recommends to Young Socrates that they undertake an inquiry into “the art of measurement” (ἡ . . . μετρητική: 283D1) before returning to the interrupted account of statesmanship. The form to be taken by this inquiry is described as an examination of “excess and deficiency in general” (πᾶσαν τὴν τε ὑπερβολὴν καὶ τὴν ἔλλειψιν: 283C3-4). This examination centers around a distinction between two ways in which excess and deficiency can be measured. In the course of the section under discussion (283C-285C), this distinction is formulated in several different ways, some of which bear little surface resemblance to the others. My task in the present study is to show how these disparate formulations, despite their apparent divergences, all refer to the same distinction between types of measurement.

A translation of the section in question is provided below, with six separate formulations of the distinction marked off in the left-hand margin.

283C3                    So let us begin by examining excess and deficiency in general, in order that we may reasonably praise what is said on a given occasion in discussions like this, or else censure it for being longer than it should be or just the opposite.

Then let's do so.

It would turn out auspiciously, I think, if we began by talking about these things.

What things?

283D                    About length and brevity, and excess and deficiency in general. I suppose the art of measurement pertains to all these.

Yes.

Then let us divide it into two parts. For this is what our present task requires.

Do say how the division goes.

(1)                    Like this: on the one hand according to the association of greatness and smallness with each other, on the other according to the being [that is] necessary for generation (τὴν τῆς γενέσεως ἀναγκαίαν οὐσίαν).

What do you mean?

283E Undoubtedly it seems to you that the greater ought to be termed greater in comparison with nothing other than the smaller, and the smaller in turn smaller than nothing other than the greater?

It does.

(2) But what of this? Wouldn't we say, rather, that there are things exceeding the condition of due measure (τὴν τοῦ μετρίου φύσιν), or exceeded by it, whether in word or in deed, and that the chief difference between bad and good among us lies in this?

So it seems.

(3) Then we must lay it down that the Great and the Small both have being and are judged in these two ways, not just in relation to each other as we said a moment ago. As was said just now, we should speak rather of their existing relative to each other on the one hand and relative to due measure on the other. Would you like to know why?

Yes, why?

284A If someone admits the greater in relation to none other than something smaller by nature, it will never relate to due measure. Agreed?

That's so.

284B But with this account, wouldn't we destroy the arts themselves and all their products; and in particular wouldn't we obliterate the art of statesmanship we are now seeking and the art of weaving just mentioned? For it seems to me that all such arts guard against exceeding due measure or falling short of it, not as something nonexistent but as something hard to deal with in their practice. It is by preserving measure (μέτρον) in this way that everything good and fair is produced.

What then?

Well, if we obliterate the art of statesmanship, the search for the knowledge of kingship from then on will be impracticable.

Very much so.

(4) So just as in the case of the sophist we proved it necessary for non-Being to exist, lest the argument elude us on this issue, what alternative is there now to rendering it necessary that the larger and smaller be

284C measured not only with respect to each other but also with respect to the inception of due measure (τὴν τοῦ μετρίου γένεσιν)? For if there is no agreement on this, it certainly is not possible for the statesman indisputably to have gained existence, nor anyone else with knowledge of practical subjects.

Then we certainly must do the same in the present case.

This task will be even greater than the previous one, Socrates—and we remember how lengthy that was. But it is entirely fair to venture the following assumption about the topic.

What?

284D That sometime we will need what we have been speaking of just now for an exhibition of exactness itself. Regarding what has now been well and sufficiently proved, however, I believe that it comes to the aid of our argument in a magnificent fashion; namely, one should regard it to be the case equally that all the arts exist and that at the same time greater and smaller are measurable not only with respect to each other but also with respect to the inception of due measure. For if the latter is the case, the former exist also; and if the former exist, then the latter is the case as well. But if either is not, then neither of them will ever be.

284E This is correct. But what comes next?

(6) It is clear that we should divide the art of measurement, cutting it in two as we said. As one part of it we lay down all those arts measuring number (ἀριθμόν), length, depth, width, and speed according to opposites; as another, those measuring according to the mean, to the fitting, the timely, and the proper—all that has been withdrawn from the extremes to the middle.

Each of the sections you speak of is vast, and differs widely from the other.

285A What we have been saying just now, Socrates, turns out to be the same as what is said from time to time by many clever people, thinking themselves to be saying something profound—that the art of measurement pertains to everything that comes to be. For everything in the province of art shares in measurement in some manner or other. These people, however, are not accustomed to studying things by dividing them according to Forms. Thinking such different things as these to be alike, they throw them together straightaway into the same bin. In other cases, they do the opposite—dividing, but not according to parts. What one ought to do, upon first perceiving a community among some plurality,

- 285B is not desist until discerning within it all the differences that rest in Forms. When manifold unlikenesses are noticed among numerous things, once more, one should not allow oneself to give up in shame short of having captured all kindred things within a single likeness, enclosing them by an existing kind. But this is enough to say about these topics, and about what is deficient and excessive. Only let us bear in mind that two kinds of measurement have been discovered in relation to these, and remember what we say they are.
- 285C

We'll remember.

## II

Problems of two sorts arise in an attempt to pull these six different formulations together. One has to do with making sense of several phrases which are initially perplexing when taken by themselves. An example is τῆν τῆς γενέσεως ἀναγκαίαν οὐσίαν appearing in (1) at 283D8-9, which has been read in widely divergent ways by careful translators. The other concerns apparent disparities in content among different formulations. Whereas (4) and (5) speak of measurement according to the γένεσιν of the mean, for example, (2) talks about comparison with the φύσιν of due measure, and (3) about comparison with due measure itself. Problems of these two sorts obviously interact with each other. Let us see how they play out in the six formulations distinguished above.

Formulation (1). An obvious disparity between (1) and the other formulations is that it contains no reference to due measure (or the mean, τὸ μέτριον), but cites instead something referred to enigmatically as “the being necessary for generation” (my translation). A question that arises immediately is how due measure is related to this mysterious “being.”

Little help is offered by commonly available translations of the Geek phrase in question. Among translators of the entire dialogue, Jowett paraphrased “without which the existence of production would be impossible.”<sup>1</sup> Diès offered “les nécessités essentielles du devenir,” suggesting that the necessity in question is that of the laws governing the whole universe.<sup>2</sup> Skemp expanded the text to read “the fixed norm to which [objects] must approximate if they are to exist at all.”<sup>3</sup> Benardete opted for “the necessary (indispensable) being of becoming.”<sup>4</sup> Rowe chose “what coming into being necessarily is.”<sup>5</sup> And Waterfield settles for “the fact that there does exist something which is a necessary prerequisite for qualities to occur.”<sup>6</sup> With the possible exception of

<sup>1</sup> Macmillan, 1892.

<sup>2</sup> Budé edition, Paris, 1936; p. 44, n. 1.

<sup>3</sup> Routledge and Kegan Paul, London, 1952.

<sup>4</sup> Seth Benardete, *The Being of the Beautiful* (University of Chicago Press, Chicago, 1984).

<sup>5</sup> In *Plato: Complete Works* (Hackett Publishing Company, Inc., Indianapolis; 1997), ed. by J.M. Cooper and D.S. Hutchinson.

<sup>6</sup> *Plato Statesman*. (Cambridge University Press, 1995), Julia Annas (ed.), Robin Waterfield (trans.).

Skemp's, none of these renditions suggests any connection with the mean mentioned in the other five formulations; and Skemp leaves us in the dark about how approximation to a norm might be necessary for existence.

Among piecemeal translations by commentators on this particular passage, in turn, we find Rosen's "the necessary being of genesis,"<sup>7</sup> apparently attributing the necessity to the existence of the process of generation. Santa Cruz translates γενέσεως "production" and adds a universal quantifier to come up with "la réalité qui est nécessaire a toute production."<sup>8</sup> Lafrance offers a non-committal "l'essence (nature, réalité) nécessaire du devenir."<sup>9</sup> And Miller reads οὐσίον as "essential being," coming up with "the essential being necessary to coming-into-being."<sup>10</sup> In commenting on the passage, Miller explains that the "essential being" he has in mind is that of the Forms, that the coming-into-being is that of particular human deeds and speeches, and that the mean is an intermediate term spanning "the ontological gap between form and particulars."<sup>11</sup> A consequence of Miller's reading is that (1) appears to draw a different distinction between types of measurement than that drawn by other formulations (notably (4) - (6)) which are concerned with the products of the creative arts.

Unless the "being" that the Stranger describes as "necessary for generation" can be clearly related to the mean of the other formulations, the characterization of the second kind of measurement in (1) will remain at odds with the other characterizations. I attempt to show how these characterizations can be reconciled below.

Formulation (2). As itemized above, (2) refers directly to the second kind of measurement involving the mean, in contrast with the comparison of the greater and the smaller with each other mentioned just previously at 283D11-E1. This is the only formulation that relates the second kind of measurement to human speech and deeds specifically. The "condition of due measure" (my translation) is normative within human affairs in being chiefly responsible for the difference between bad and good action. What this means, presumably, is that human words and deeds are assessed as bad when they deviate from an appropriate mean, and count as good when the mean is realized.<sup>12</sup>

The only terminological problem in this formulation comes with the phrase τὴν τοῦ μετρίου φύσιν. While it seems straightforward to characterize human action

<sup>7</sup> Stanley Rosen, *Plato's Statesman: The Web of Politics* (Yale University Press, New Haven; 1995), p. 123.

<sup>8</sup> María Isabel Santa Cruz, "Méthodes d'explication et la juste mesure dans le politique," in *Reading the Statesman*, Christopher J. Rowe (ed.) (Academia Verlag, Sankt Augustin; 1995), p. 193.

<sup>9</sup> Yvon Lafrance, "Métrétique, mathématiques et dialectique en *Politique* 283C-285C," in Rowe (ed.), p. 94.

<sup>10</sup> Mitchell Miller, *The Philosopher in Plato's Statesman* (Martinus Nijhoff Publishers, the Hague; 1980), p. 65.

<sup>11</sup> Miller, *op.cit.*, p. 66. Rosen and Santa Cruz seem to agree; see pp. 124 and 195 respectively of the works cited above.

<sup>12</sup> Comparison with Aristotle's doctrine of the mean seems to be in order. As characterized at *Nicomachean Ethics* 1106B36-1107A8, the mean falls between two vices, one due to excess (ὑπερβολήν), the other to defect (ἐλλειψιν). An example given in this context is courage, standing at the mean (μεσότης: 1107a33) between fear and excessive confidence.

as falling short of or exceeding a relevant mean, it is unclear how words and deeds might be compared with the *nature* (so rendering φύσιν) of the mean in question. A more suitable reading of the term may be “condition,” in the sense of inherent state. The sense of (2) under this reading is that human actions count as bad or good according to whether they deviate from or match the state of a relevant mean.

Formulation (3). Whereas (1) is formulated with reference to a certain kind of *being* (one necessary for generation) and (2) with reference to a standard of normative *assessment* (the relevant mean), (3) refers simultaneously to a mode of being and to a manner of assessment. In addressing these topics, moreover, (3) focuses on the factors (Great and Small) that get assessed, as distinct from the measures involved in the assessment. As the Stranger puts it, the Great and the Small both have being and are judged (κρίσεις) in these two ways—first, just in relation to each other and, second, in relation to the mean or due measure.

As far as being is concerned, the Great and the Small might exist just in itself. Or it might exist in a condition where its constitutive opposites have been reconciled by the imposition of an appropriate measure (τὸ μέτριον). Needless to say, what this distinction between modes of being amounts to is not self-evident. Not only does the distinction itself require clarification, but we need to understand why it has been introduced in the first place. A reasonable guess is that it has something to do with the being necessary for generation in formulation (1). As far as judgment is concerned, the Great and the Small might be gauged relative to each other (one greater, the other smaller), or might both be assessed relative to an appropriate mean. The distinction between kinds of measurement here presumably is the same as in (1) and (2); but if so, the relation needs clarifying between the Great and the Small and particular opposites like greatness and smallness at 283D7-8 and greater and smaller at 283D11-12.

The only issue of terminology to be dealt with in this passage concerns the use of capitals in the expression ‘the Great and the Small’. For reasons to be discussed below, I read this expression as referring to the principle (τὸ μέγα καὶ τὸ μικρόν: *Metaphysics* 988a13-14, *passim*) said to cooperate with the One in the constitution of sensible things, according to Aristotle’s rendition of Plato’s thought in the *Physics* and the *Metaphysics*. In this reading, the dual principle of the Great and the Small is the general form of opposition covering more specific opposites like greatness and smallness in (1) and greater and smaller in (2).

Formulation (4). In the passages leading up to this formulation, the Stranger makes several remarks bearing directly upon the distinction at hand. One is that if the greater and smaller never relate to the mean (τὸ μέτριον), the arts themselves will be destroyed with all of their products. Statesmanship and weaving are mentioned specifically as arts that must guard against exceeding or falling short of the mean for this reason. It is only by preserving measure (τὸ μέτρον: 284B1) in this way (τούτῳ ... τῷ τρόπῳ), he goes on to say, that all things good and fair (ἀγαθὰ καὶ καλὰ) are produced.

One terminological point to be noted here is that holding to the mean, on the part of arts like statesmanship and weaving, is alluded to as a way of preserving measure (τὸ μέτρον, as distinct from μέτριον). This suggests that there might be other ways of preserving measure as well. Hand in hand with this suggestion goes the possibility that the being necessary for generation in formulation (1) might include not only due measure (the mean applicable to human action in formulation (2)) but other forms of measure as well.

Inasmuch as the art of statesmanship depends for its existence upon the preservation of measure (as sophistry was shown to depend upon the existence of not-Being), it is necessary to ensure that the larger and smaller can be measured not only with respect to each other but also with respect to the inception of due measure. In this fourth formulation of the distinction, the larger and smaller appear as a further opposition falling under the Great and the Small of formulation (3). A link with (1) is established by the occurrence of γένεσιν at 284C1 (recalling γενέσεως at 283D8).

Translators differ significantly in their renditions of τὴν τοῦ μετρίου γένεσιν in this passage (the phrase is repeated at 284D6). Among translators of the entire dialogue canvassed above, Diès, Skemp, and Rowe offer readings according to which the generation in question is of things that exhibit the mean, whereas Benardete has the mean itself being generated. Jowett wants it both ways, rendering the phrase differently in its two occurrences. And Waterfield gives a translation not mentioning generation. Among recent piecemeal translators, Rosen<sup>13</sup> and Lafrance<sup>14</sup> opt for the generation of the mean itself, and Santa Cruz represents the mean as something that ought to come about in each case of generation.<sup>15</sup>

There is of course a big difference between the coming-into-being of due measure itself and that of products generated according to it. Given the emphasis on the generation of “good and fair” products a few lines earlier, it seems clear that something akin to the latter reading ought to be preferred. The only problem is that the Greek as it stands seems to invite the former reading, and that various circumlocutions seem required to secure the latter. The intent of the translation given here (“the inception of due measure”) is that it be read in the latter way without need for grammatical embellishment.<sup>16</sup> Whereas measure of some sort is alluded to as necessary for generation

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<sup>13</sup> Rosen, *op. cit.*, p. 127.

<sup>14</sup> Lafrance, *op. cit.*, p. 97.

<sup>15</sup> Santa Cruz, *op. cit.*, p. 194.

<sup>16</sup> Skemp’s ‘the realization [at 284D6, ‘attainment’ at 284C1] of a norm or due measure’ imports a teleological dimension not present in τὴν τοῦ μετρίου γένεσιν. Both Diès and Santa Cruz parse the phrase by adding modal terms (‘il faut’ and ‘doit’ respectively) not represented in the Greek. And Rowe’s ‘the coming into being of what is in due measure’ adds an extra phrase for τοῦ μετρίου to modify. While all these renditions fit the context, in my judgment, ‘the inception of due measure’ seems more direct. Another possible translation is ‘the generation stemming from due measure,’ reading τοῦ μετρίου as genitive of source.



at 283D8-9, here at 284C1 that necessity is reflected in the need for “good and fair” products of the arts to exhibit due measure as a requirement of their being generated.

Among terminological issues to be resolved before (4) can be integrated with the other formulations are the relation between the mean and what is generated according to 284D6, and that between the mean and measure (τὸ μέτρον) more generally, which according to 284B1, needs to be preserved for the production of good and fair things.

Formulation (5). The formulation immediately preceding occurs in a context stressing the dependency of arts like statesmanship and weaving upon the kind of measurement gauging larger and smaller with respect to the inception of the mean. Formulation (5) generalizes this dependency to all the arts (τὰς τέχνας πάσας: 284D4), and points out that a reciprocal dependency exists as well. As the Stranger puts it, if greater and smaller are measurable not only with respect to each other but also with respect to the inception of the mean, then all the arts exist; and if the arts exist, then greater and smaller are measurable in this latter fashion. The second kind of measurement goes hand in hand with arts generating products that are good and fair. If either does not exist, then neither will the other.

This mutual dependency requires explanation. The dependency of the productive arts upon the second kind of measurement seems to tie in with the characterization of this second kind in formulation (1) with reference to something that is necessary for generation. In any case, the interaction between these two characterizations needs further clarification. And what are we to make of the claim that the existence of the second kind of measurement is dependent upon the existence of the arts in turn? The sense of the claim may be that the productive arts and the second kind of measurement came into being simultaneously. If so, we are faced with the question how the arts responsible for generating good and fair products might themselves have come into being.

Regardless of how these issues are resolved, we should note at this point that the examination of “excess and deficiency in general,” which was initiated with the disingenuous suggestion that the definition of weaving might have been excessively long, has been extended to a discussion of conditions necessary and sufficient for the existence of the productive arts. It is abundantly clear that the examination of excess and deficiency underway has to do with far more than the length appropriate for a dialectical discussion.<sup>17</sup>

Formulation (6). In all previous formulations, the *first* kind of measurement has been described simply as a measurement of relevant opposites in comparison with or with respect to (πρός) each other. Most of the differences we have been discussing among these formulations concern various ways in which the *second* kind of measurement has

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<sup>17</sup> Julia Annas, in her edition of the *Statesman* with Robin Waterfield (Cambridge University Press, 1993), treats 283C-287A as a digression on the length of philosophic digressions “which is itself lengthy and not obviously relevant” (see her footnote to the sentence ending at 287A6). This reaction unfortunately is typical of commentators eager to get on with the definition of statesmanship resumed at 287B. Nothing could be more relevant to the art of dialectic than a discussion of the conditions of its very existence.

been depicted. In formulation (6), however, there are salient differences to be noted in the characterizations of both kinds of measurement.

Beginning with the first kind, we find it described here as a measurement according to opposites (πρὸς τούναντίον: 284E5) as before, but without explicit mention of specific opposites (corresponding, e.g., to greater and smaller at 284D5). Instead of specific opposites, the Stranger cites several dimensions along which relevant opposites might be encountered. In order of mention, there are the dimensions of number (ἀριθμόν), of length, of depth, of width, and of speed. This tells us that the first kind of measurement covers not only greater and smaller (283D12-E1, 284D5) and other opposites of size, but also longer and shorter, deeper and shallower, broader and narrower, and faster and slower. The dimension of number poses a particular problem of interpretation. Given the evident concern of this kind of measurement with comparison of opposites, ἀριθμόν here presumably refers not to specific numbers (no two of which are opposites of each other) but rather to general numerosity. In this application, accordingly, the first kind of measurement compares more or less numerous only with respect to each other, leaving it to the second kind to assign specific numerical values.

According to this sixth formulation, the second kind of measurement also is considerably broader than indicated in the previous formulations (with the possible exception of (1)). Whereas (2) through (5) focus on some aspect of the mean (τὸ μέτριον), formulation (6) mentions not only measurement according to the mean but also measurement pertaining to what is fitting, timely, and proper (τὸ πρέπον καὶ τὸν καιρὸν καὶ τὸ δέον).<sup>18</sup> Here is another and more explicit indication that measurement of the second sort is not limited to concern with the mean. It was noted in connection with formulation (4) that good and fair things can be produced only by preserving measure (τὸ μέτρον), of which the mean is but one specific kind. The present formulation suggests that the fitting, the timely, and the proper may be other kinds of measure involved in bringing good and fair products into being.

In this section we have noted several questions that need to be answered before we can fully understand the two kinds of measurement distinguished within this set of passages. We need to find out more about how the Great and the Small of formulation (3) relates to the more specific opposites of the other formulations. We need to know more about the being identified as necessary for generation in formulation (1), and about how it relates to the mean mentioned in the other characterizations of the second kind of measurement. And we need to understand how the existence of this second kind of measurement and that of the productive arts generally might be mutually dependent. These are all questions with an ontological bearing. What is needed to address such questions is some sense of the ontology underlying this section of the dialogue.

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<sup>18</sup> It may be noted that there is yet another formulation of the distinction at 286C8-D2 (beyond the scope of this paper) describing the second kind of measurement as relating to what is fitting (τὸ πρέπον), with no mention of the mean as such.

## III

The section of the dialogue we are studying begins with a call to examine excess and deficiency in general (πάσαν τήν τε ὑπερβολήν καὶ τήν ἔλλειψιν). The same expression ὑπερβολήν καὶ ἔλλειψιν occurs at the close of the section (285B7). This expression thus frames the section in question (which incidentally stands in the very middle of the dialogue). With the exception of an unrelated occurrence in the *Protagoras*, these are the only occurrences of that expression in the authentic Platonic corpus.<sup>19</sup>

An equivalent designation ὑπεροχὴ καὶ ἔλλειψις (with ὑπεροχὴ for ὑπερβολή) occurs at 283C11-D1, where the Stranger identifies length and brevity as a particular case of excess and deficiency. This is the only occurrence of that particular designation in Plato's extant writings. In view of the infrequency of this terminology for excess and deficiency in the corpus, it is not surprising that it has received little attention by recent scholars.

Considerably more importance was assigned the expression ὑπεροχὴ καὶ ἔλλειψις by ancient authors writing on Plato's philosophy. The authors in question include first Aristotle himself, and then a group of writers between the 2<sup>nd</sup> and 6<sup>th</sup> Centuries A.D. who are generally known as the Greek commentators on Aristotle.<sup>20</sup> Although the immediate concern of the latter was exegesis of various Aristotelian texts, most of these writers approached Aristotle with an extensive knowledge of Plato's works. This, and the fact that they had access to materials bearing on Platonic interpretation that are no longer available to us today, makes them a valuable source of insight into how Plato was understood by his early readers. Particularly useful for present purposes is what these authors have to say about excess and deficiency in relation to other key factors in Plato's late metaphysics.

One thing we learn about the expression ὑπεροχὴ καὶ ἔλλειψις from these sources is that Plato used it in a general sense covering a variety of more specific contraries. Another is that it can serve as an alternative designation for Plato's (the) Great and (the) Small. At *Physics* 187a14-17, for example, Aristotle mentions dense and rare as contraries that can be generalized into excess and defect (the term used in the Oxford translation), in the manner of the Great and the Small of Plato (τὸ μέγα . . . Πλάτων καὶ τὸ μικρόν: 187a17). Essentially the same message is repeated at *Physics* 189b8-11 (without direct reference to Plato), with more and less (μάλλον καὶ ἥττον: 189b10) added to dense and rare as contraries that may be generalized into excess and

<sup>19</sup> There are occurrences also in the spurious *Definitions*, suggesting that the expression had currency in the early Academy.

<sup>20</sup> An informative account of the early history of Aristotelian commentary in the Greek language is provided by Richard Sorabji's general introduction to the series of translations currently being produced under his editorship, first appearing in *Philoponus Against Aristotle on the Eternity of the World* by Christian Wildberg (London and Ithaca, Cornell University Press, 1987) and reprinted in subsequent volumes of the series.

defect. In his wide-ranging criticism of the Forms in *Metaphysics* A.9, moreover, Aristotle likens the Great and the Small of Plato to the rare and dense of the physical philosophers, inasmuch as these are excess and defect (992b1-7). Another text in which Aristotle refers to excess and defect as a general form of contrariety is the *History of Animals* (486b6-9 and 16-17).

Aristotle's reference at *Physics* 187a16-17 to excess and defect as a generalized form of contrariety is mentioned by each of the three Greek commentators whose works on the *Physics* have survived to the present. Themistius (4<sup>th</sup> Century A.D.) paraphrases Aristotle's remark, observing that excess and defect are the most general contrary qualities, like Plato's principle of the Great and the Small. In their comments on *Physics* 187a16, moreover, both Philoponus and Simplicius (alike 6<sup>th</sup> Century A.D.) repeat Aristotle's claim verbatim about excess and defect being a generalized form of contrariety, just as was Plato's Great and Small.

The equivalence of ὑπεροχὴ καὶ ἔλλειψις to Plato's Great and Small is also alluded to in the commentary by Alexander (2<sup>nd</sup>, 3<sup>rd</sup> Century A.D.) on the *Metaphysics*. Commenting on 987b25-29, Alexander says that Plato's dyad was called excess and defect, and goes on to equate excess and defect with the Great and the Small (*On the Metaphysics*, 54.8-11). Excess and defect are also mentioned several times in apposition with the Great and the Small in Alexander's comments on 992a24 (*On the Metaphysics*, 122.23).

Here are five philosophers from antiquity, no less qualified than we are to pronounce on Plato's views, who have gone on record affirming that Excess and Defect are equivalent to Plato's the Great and the Small.<sup>21</sup> It seems unlikely in the extreme that Plato's own sole use of the expression ὑπεροχὴ καὶ ἔλλειψις at *Statesman* 283C11-D1 was intended in a radically different sense.

Another expression for the Great and Small is ἡ ἀόριστος δυάς (the Indefinite Dyad), frequently used by Aristotle in the *Metaphysics* while discussing the views of Plato and like-minded members of the Academy.<sup>22</sup> Interestingly enough, this phrase also appears over a dozen times in Simplicius' commentary on the *Physics*, even though it is not used in the *Physics* itself. In most of these occurrences it is used in conjunction with other expressions for the Great and the Small, and attribution is usually made to Plato explicitly. The phrase is also used more than a dozen times in Alexander's commentary on the *Metaphysics*, again with Plato usually mentioned by name. Another occurrence is in Philoponus' commentary on the *Physics*, where Plato once again is explicitly cited.

A fourth synonym for Plato's principle appears at *Metaphysics* 1091b32, where Aristotle refers to the "contrary element" of the Great and the Small or the Unequal (τὸ ἄνισον) as bad itself. The Unequal is also spoken of as equivalent to the Great and

<sup>21</sup> From this point on, synonymous expressions for Plato's principle of the Great and the Small will be capitalized.

<sup>22</sup> Exact locations for references in this section are given in Appendix A.

Small explicitly at 1087b11, with an indirect reference to Plato, and identified with it by implication at 1088a15 and 1091a24. Commenting on these and other passages, Alexander several times pairs the Unequal with the Great and the Small, as well as with Excess and Defect and the Indefinite Dyad, sometimes mentioning Plato by name as the thinker responsible.

Yet a fifth synonym used by Aristotle is ἄπειρον (Unlimited) itself, which in contrast with πέρους (Limit) is mentioned as first in the Pythagorean list of contraries at *Metaphysics* 986a23. This term τὸ ἄπειρον is then associated with the Platonic principle in question at 987b26, where Aristotle remarks that Plato differed from the Pythagoreans in constructing his Unlimited out of Great and Small. In commenting on this and subsequent passages, Alexander describes Plato's Unlimited not only as the Great and the Small, but as Excess and Defect as well. In a parallel remark at *Physics* 203a10-16, Aristotle says that whereas the Pythagoreans identified the Unlimited with the even, Plato has two ἄπειρα, the Great and the Small. In their comments on this particular passage, both Philoponus and Simplicius affirm that Plato's Unlimited was the Great and the Small, Simplicius also mentioning the Indefinite Dyad as an equivalent formula. Themistius agreed in his paraphrase, adding that the Unlimited was Plato's "other nature" (ἑτέρον φύσει, matching the description of Plato's dual principle at *Metaphysics* 987b33).

We have learned so far, in this brief survey, that Aristotle referred to Plato's principle of the Great and the Small alternatively as the Indefinite Dyad, the Unequal, and the Unlimited, in addition to Excess and Defect. Alexander and Simplicius use all five expressions as co-referential as well (see Appendix A). All four commentators mentioned above join Aristotle in referring to this principle as the Unlimited. All save Themistius use the expression ἄοριστος δυάς to the same effect. And all save Themistius and Philoponus refer to it both as the Unequal and as the Unlimited Nature.

Two other expressions used by the commentators but not by Aristotle in reference to the Great and the Small are ἡ ἀπείρου φύσις (the Nature of the Unlimited, sometimes rendered the Unlimited Nature) and τὸ μᾶλλον καὶ τὸ ἧττον (the More and the Less). The former occurs in the commentaries both of Alexander and Simplicius. As part of his remarks on *Metaphysics* 987b25, Alexander reports Aristotle's claim that Plato made an underlying substance of Excess and Defect, also called the Great and the Small. Alexander then observes that these contain the Nature of the Unlimited, repeating an expression appearing three times in the *Philebus* (18A8, 24E4, and 28A2).

Alexander is also paraphrased by Simplicius, in commenting on *Physics* 202b36, as stating that Plato said that the Dyad was of the Nature of the Unlimited, since the Great and the Small engage the More and Less which go on without limit. Two other uses of the expression occur in an apparent quotation by Simplicius of Porphyry. In one, Porphyry reports that Plato held certain opposites, including the More and the Less, to be of the Unlimited Nature. In the other, he suggests that the Indefinite Dyad is exhibited by a repeated segmenting of part of a cubit into increasing smaller halves, adding the portion

removed at each stage to the part remaining undivided. In this manner, Porphyry claimed, the Unlimited Nature is disclosed as one portion proceeds toward the Great and the other toward the Small. Simplicius prefaces this quotation with the remark that within it Porphyry is expounding on Plato's enigmatic discourses on the Good, as recorded by Aristotle, Heracleides, and Hestiaeus, and that the passages quoted are from Porphyry's writing on the *Philebus* (Simplicius, *On the Physics*, 453.25-31). Simplicius follows the quote by repeating that it pertains to Plato's conversation on the Good, and adds that Porphyry thought Plato's utterances on this occasion probably fit in with what he wrote in the *Philebus* (ibid., 454.17-19). At this point in the history of Platonic studies we can be almost certain that Porphyry was right.

The other expression, τὸ μᾶλλον καὶ τὸ ἥττον (the More and the Less), has been encountered already in Simplicius' quotations from Porphyry and Alexander, both associating the More and Less with the Unlimited nature. Simplicius also uses the expression several times in his own account of Plato's doctrines. Commenting on *Physics* 189b8, for instance, he mentions the More and Less and the Great and Small as contraries that sustain Excess and Defect (ibid., 204.7-9). Other passages connecting the More and the Less with the Great and the Small appear in his comments on *Physics* 189b8 and 207a18. This expression for the More and Less, of course, is used time and again in the *Philebus*, in association with both the Nature of the Unlimited and the Unlimited itself.

To bring the tally up to date, we have five co-referential expressions for Plato's indeterminate principle used both by Aristotle and by his commentators, and two others used by Simplicius, Porphyry, and Alexander. Each appears with sufficient frequency in relevant contexts to show that its association with the others is more than coincidental. Less frequently occurring locutions that may be noted in passing are τὸ τῆς ἀπειρίας ἄοριστον (the Indefiniteness of the Unlimited), which appears twice in Simplicius' commentary on *Physics* 202b36, and τὸ ἄνισον δυάδα (the Unequal Dyad) in Alexander's comments on *Metaphysics* 1087b4.

Up to the final decades of the 20<sup>th</sup> Century, modern Plato scholars were almost unanimous in assuming that the views attributed to Plato in *Metaphysics A* could not be found in Plato's dialogues. Given that assumption, some readers may still be surprised to learn that no less than five of these seven frequently used expressions for the Great and the Small play major roles in the *Philebus* and the *Statesman*. The More and Less, the Nature of the Unlimited, and the Unlimited itself, all figure prominently in the *Philebus*. The same principle of indeterminacy appears in the *Statesman* under the nomenclature of Excess and Deficiency and the Great and the Small.

The roles played by these expressions in their respective dialogues, moreover, correspond closely to the claims made by Aristotle about Plato's views.<sup>23</sup> Two claims that concern us directly are (a) that sensible things are constituted by the Forms and the

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<sup>23</sup> This is argued at length in K. Sayre, *Plato's Late Ontology: A Riddle Resolved* (Princeton University Press, Princeton, 1983).

Great and the Small (*Metaphysics* 988a11-14), and (b) that Forms are numbers (*Metaphysics* 987b22, 991b9-10).<sup>24</sup> A consequence of (a) and (b) together is that numbers are the cause of the existence of sensible things (expressly stated at *Metaphysics* 987b24-25).

As might be expected, the roles given these expressions in the two dialogues are directly related. Let us review briefly how the indeterminate principle figures in the *Philebus*, by way of preparation for a return to the two kinds of measurement in the *Statesman*.

#### IV

*Philebus* 23C-31A deals with four kinds of constituents making up “all that exists in the present universe” (Πάντα τὰ νῦν ὄντα ἐν τῷ παντί : 23C4). In order of discussion, there are the Unlimited, Limit, Mixture of the first two, and Cause of mixture. Limit and the Unlimited had been mentioned earlier in the prelude to the god-given method laid out at 16D-17A, where Socrates repeats the Pythagorean dictum that things always said to exist are composed of one and many, having “Limit and Unlimited within themselves connaturally” (πέρας δὲ καὶ ἀπειρίαν ἐν αὐτοῖς σύμφυτον: 16C10). This earlier reference is behind the remark with which discussion of the four kinds begins, to the effect that god “had revealed both the Unlimited and the Limit as parts of things” (τὸ μὲν ἀπειρον δεῖξαι τῶν ὄντων, τὸ δὲ πέρασ: 23C9-10). Our concern in this section is to epitomize what Socrates has to say about those two constituent factors, and to pin down the sense in which they are brought together in Mixture.

Socrates’ portrayal of the Unlimited is arrived at in the following manner. Having cited a number of opposites qualified in terms of “more” and “less,” like hotter and colder, and strong and mild, he proposes looking for a common feature by which the class of the Unlimited can be collected together. The “mark of the Nature of the Unlimited” (τῆς τοῦ ἀπείρου φύσεως...σημεῖον: 24E4-5) that he and Protarchus settle

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<sup>24</sup> The sense of the thesis that Forms are numbers cannot pertain to mathematical numbers, as commentators generally assume, for the simple reason that Aristotle also says that Plato located mathematical numbers between Forms and sensible things (*Metaphysics* 987b12-16). Forms cannot be identical with things on a different ontological level than themselves. In Attic Greek, the term ἀριθμός had a variety of meanings, comparable in range to meanings that might be conveyed by ‘number’ in English. Notable among them, in addition to mathematical number, are grammatical number, number as a measure of rank or station, number in the sense of general quantity, and number signifying fullness or completion. Aristotle himself employs the term in a closely allied sense in the *Physics*, where he speaks of time alternatively as the number or measure of motion. His preferred terminology (at 219b1-2 and 220a24-25) seems to be “time is number of motion in respect of before and after.” This understanding of numbers as measures also accords with several passages in the *Philebus*, including 17D4-6 where Socrates observes that the bodily motion of a dancer should be measured by numbers called rhythms and meters. On the basis of such considerations, it is argued in *Plato’s Late Ontology* (p. 110) that Plato conceived of Forms as numbers in the sense of measures.

upon is “becoming more or less” (μάλλον τε καὶ ἥττον γιγνόμενα: 24E7-8), or admitting “strong and mild,” “very much,” and other qualifications of that kind.<sup>25</sup>

Other examples of the Unlimited mentioned in the dialogue are high and low of musical sound, and fast and slow of musical rhythm (26A2), along with stifling heat and bitter cold of intemperate weather (26A7), pleasure and pain in general (27E5-6), and hedonic gratification in particular (26B9). With regard to the latter, we should note Socrates’ remark that pain and pleasure belong to the Unlimited for the specific reason that they admit the More and the Less (41D8-9), thus exhibiting “the mark of the Nature of the Unlimited” (24E4-5). The designations the More and the Less, the Nature of the Unlimited, and the Unlimited itself, as we have seen, all are ways of referring to the Great and the Small used by the ancient commentators.

In contrast with the Unlimited, characterized as everything admitting qualification in terms of More and Less, Limit is characterized initially as what does not accept these qualifications but admits their opposites. Opposites mentioned specifically are “first the equal and equality” (πρῶτον . . . τὸ ἴσον καὶ ἰσότητα: 25A8), “after the equal the double” (μετὰ . . . τὸ ἴσον τὸ διπλάσιον: 25A9), and then more generally “every relation of number to number or measure to measure” (πᾶν . . . πρὸς ἀριθμὸν ἀριθμὸς ἢ μέτρον ἢ πρὸς μέτρον: 25A9-B1). All such things, Socrates says, might happily be counted under the class of Limit.

There are several things to note about this initial characterization of Limit before moving on to a second that follows shortly. One is that there appears to be some kind of priority among the factors mentioned. The equal comes first, and after that the double and other relations. Another thing to note is that the expressions “number to number” and “measure to measure” occur in seeming apposition,<sup>26</sup> suggesting that they should be interpreted as referring to relations of similar or equivalent nature. Yet another is that, while all the relations mentioned obviously pertain to arithmetical number, measure might plausibly be construed as referring to other things as well.<sup>27</sup> These reflections about the significance of measure here are especially relevant in view of what the Stranger says about measure at *Statesman* 283D7-9, a passage to which we shall return presently.

The second characterization of the class of Limit is worth quoting verbatim. Limit, says Socrates, is the kind:

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<sup>25</sup> Socrates’ terminology here matches almost exactly that of Porphyry who is quoted by Simplicius as saying that Plato held the More and the Less, and the strong and the mild, to be the Nature of the Unlimited (Simplicius, *op. cit.*, 453.31-33), and as saying that the principle in question is the Great and the Small (453.36). These observations, Simplicius observed, were made by Porphyry by way of propounding the “enigmatic utterances” (ῥηθέντα αἰνιγματωδῶς 454.18) of Plato’s Lecture on the Good, and were thought by Porphyry probably to agree with what was written in the *Philebus*.

<sup>26</sup> As, for example, at *Laws* 848C3 where μέτροις τε καὶ ἀριθμῶ appears pleonastic. This accords with our earlier observation that Plato probably thought of Forms as numbers in the sense of measures.

<sup>27</sup> Consider “man is the measure of all things” at *Cratylus* 385E6-386A1, or the “rhythms and measures” of bodily movement at *Philebus* 17D6.



containing the equal and double, and whatever puts an end to opposites (τάναντία: 25E1) being at variance with each other, making them commensurate and harmonious by the introduction of number (σύμμετρα δὲ καὶ σύμφωνα ἐνθεῖσα ἀριθμὸν ἀπεργάζεται: 25E1-2)

In this passage, the priority of the equal over double and other relations is maintained, these together are said to have the effect of ending the conflict among opposites, and the result overall is described as making the opposites commensurate and harmonious by the introduction of number.

Despite its brevity, this passage extends the initial characterization of Limit in several respects. Whereas initially a point was made about the priority only of the equal over double and other arithmetical relations, here there is mention of a third sort of relation—typified by commensurability and harmony—brought about by the introduction of number and of numerical relations. Another difference from the initial characterization is that nothing is said here about measure or relations in respect to measure. The reason surely is not that measure is incidental to the topic under discussion. To the contrary, in an adjacent passage (26D9-10) dealing with the interaction of Limit and the Unlimited, measure is mentioned as a prime product of Limit. What seems to be happening instead is that the relations of numbers and measures cited in the first characterization are now being described in terms of numbers alone, as if numbers and measures in this context are basically equivalent.

A further development is that, while the initial characterization could be read as applying to arithmetical relations exclusively, it seems clear that the relations of commensurability and harmony in this later passage apply to nonarithmetical factors as well. To be sure, in the examples of commensurate and harmonious products resulting from the introduction of number given by Socrates in the passages following, there is no mention of mathematical properties at all. What we hear about instead is the coming into being of health out of sickness, the completion (ἀπηργάσατο: 26A4) of music in its perfection by the introduction of the Limit, and the production (ἀπηργάσατο: 26A9) of moderation and harmony that results in fair weather and “all sorts of fair things” (ὅσα καλὰ πάντα at 26B1; also πάγκαλα at 26B7). This open-ended listing of benefits to be derived from the imposition of Limit on the Unlimited is neatly paraphrased in the reference at *Statesman* 284B1 to the production (ἀπεργάζονται) of “everything good and fair” (πάντα ἀγαθὰ καὶ καλὰ) by the arts employing the second kind of measurement.

Health, music, and fair weather, of course, are products of the “right association” (ὀρθὴ κοινωνία: 25E7) of Limit and the Unlimited, which makes them members of the class of Mixture. While this third class is characterized throughout as a product of mixture,<sup>28</sup> however, equal stress is given the fact that the process of mixture involves

<sup>28</sup> See also 23D1, 25D2, 25E3, 26B3, and 27B8-9.

generation. Protarchus' first impression of this class, which Socrates approves, is that the mixture of Limit and the Unlimited brings something into being in every case (25E3-4). When further understanding eludes him, Protarchus' problem is diagnosed as being overwhelmed by the vastness of the third kind of generation (τῆς τοῦ τρίτου γενέσεως: 26C8-D1). And when the fourth kind finally comes under consideration, its role is summed up as the Cause of mixture and generation (27B9).

Most revealing in this respect, perhaps, is Socrates' "official definition" of the Mixed class at 26D8-10. What he means by this third class, he says, is:

the unity constituted by all the progeny (ἔκγονον) of the two other classes, which come into being (γένεσιν εἰς οὐσίαν) as a product (ἀπειργασμένων) of the measures that come with Limit.

In point of fact, this pronouncement by Socrates seems to say as much about coming into being as about the Mixed class as such. The way things come into being is by the imposition of appropriate measures upon some form of the Unlimited. And since the imposition of measure is the introduction of Limit, the upshot is that things come into being by a mixture of Limit and the Unlimited. The sense in which things in the Mixed class are progeny of these other two classes is a matter of their being engendered by the commingling of the latter.

To put it another way, one thing that is necessary for something to come into existence is a measure capable of bringing Limit to the particular form of the Unlimited that happens to enter into its make-up. A form of the Unlimited involved in the make-up of fair weather, for instance, is stifling heat alternating with bitter cold; and the type of measure that brings Limit to such extremes is that imposed to bring about more moderate climatic conditions. In like fashion, the measure that brings moderation to our unruly pleasures comes with the law and order imposed by the goddess to bring them within appropriate limits (26B7-10). Whatever manner of indeterminacy is involved in a given sensible thing, some appropriate type of measure is required for that thing to come into being.

This should remind us of the initial formulation of the distinction between the two kinds of measurement at *Statesman* 283D7-9, where the second kind is described as measurement according to the being that is necessary for generation. The being depicted as necessary for generation in the *Philebus* is Limit in one or another of its various forms. Among forms of Limit discussed there are "the equal and equality," "the double" that comes after equality, and more generally "all relations of number to number and measure to measure." Prominent among specific types of measure mentioned there, in turn, is due measure (the mean, τὸ μέτριον at 24C8) which is said to impose a halt on the progression of the More and the Less. And due measure, as we have noted, is the type of measure that figures explicitly in each of the other formulations of the distinction in the section of the *Statesman* with which we are primarily concerned.

There are of course other matters of interest deserving attention in Socrates' discussion of the four constitutive kinds, as well as in the section outlining the god-given method. But we have extracted enough from these passages in the *Philebus* to erase any reasonable doubt about their relevance to the Stranger's distinction between the two kinds of measurement. Let us return to this latter topic.

## V

Under the pretext of some possible concern about the length of their previous discussion of weaving, the Stranger leads Young Socrates into an investigation of Excess and Deficiency in general. After our brief survey in section III of reports on Plato's views by Aristotle and his commentators, we can now identify Excess and Deficiency as a generalized form of contrariety, equivalent to the indefinite principle of the Great and the Small. When the Stranger remarks at 283C11-D2 that the art of measurement has to do with Excess and Deficiency in general, his sense is that the Great and the Small will be involved in the examination of measurement that follows.

The examination of measurement is centered around a division of measurement into two distinct parts. Within the next two Stephanus pages, the distinction between these parts is formulated in six different ways. Our initial consideration of these several formulations (section 2) turned up a number of apparent disparities which must be resolved to arrive at a secure grasp of the distinction at hand. To resolve these disparities, let us return to the six formulations with the constitutive principles of the *Philebus* (section 4) firmly in mind.

Formulation (1). In this initial formulation, the first kind of measurement is described as a comparison of greatness and smallness (283D7-8) with each other. Taken together, greatness and smallness comprise a specific dimension of contrariety falling under the Great and the Small as a general principle. This specific reference to greatness and smallness reflects a particular concern at this stage in the discussion with length and brevity (283C11) in connection with the immediately preceding definition of weaving.

The second kind of measurement is described in this formulation as relating to the being that is necessary for generation. In our brief review of the constitutive principles laid out in the *Philebus*, we noted that things in the class of Mixture are brought into being by the imposition of some determinate form of Limit upon the Unlimited. Limit thus provides a fixed being of the sort required for the generation of things in the class of Mixture. Among specifically mentioned forms in which Limit can be brought to the Unlimited are equal and double (25D11), number and measure (25B1), and the mean or due measure (24C8). The point to carry forward is that the mean (τὸ μέτριον) is one form that might be taken by Limit—a form that might be necessary for the generation of one or another particular kind of thing. An example is indicated in the next formulation, where adherence to an appropriate mean is deemed necessary for good to come about in the domain of human action.

Formulation (2). Young Socrates finds it natural that the greater and the smaller (283D11-12) can be compared directly with each other. Such comparison is typical of the first kind of measurement. What he does not see at first is that greater and smaller also can be compared with respect to the condition of due measure. To make this latter more apparent, the Stranger points out that human words and deeds are judged good and bad according to whether they measure up to or deviate from this condition. Human action might deviate from the mean in either direction (exceeding or being exceeded by it), in which case the words or deeds involved are marked off as bad. Action is constituted as good, on the other hand, when it matches the mean. In the normative assessment of human action, good and bad are measured with respect to their adherence to an appropriate mean. Assessment of this sort is typical of the second kind of measurement.

It was noted previously that this sort of normative assessment invites comparison with Aristotle's doctrine of the mean. An example of a good act for Aristotle is one exhibiting courage, which stands as a mean between fear and excessive confidence. Another example is an act of magnificence (*Nicomachean Ethics* 1122a28-31), in contrast with niggardliness (which falls short of the mean) and vulgarity (which exceeds it). To make a normative assessment in this regard involves more than comparing greater and smaller expenditures with each other, which would be an instance of the first kind of measurement. A normative assessment would compare a man's expenditures with a relevant mean, counting as bad those that either exceed or fall short of that particular standard.

Formulation (3). This formulation differs from its predecessors in two significant ways. Whereas (1) and (2) mention particular opposites that might be compared with each other (greatness and smallness, greater and smaller), (3) deals with opposition in its most general form (the Great and the Small). And whereas (1) and (2) are aimed primarily at distinguishing ways in which their respective opposites might be compared (the two kinds of measurement), (3) is concerned with different ways in which the Great and the Small might have being as well (two modes of existence).

With respect to comparative measure, the Stranger says in effect that Great and Small can be judged relative to each other; he then adds that they can also be judged relative to an appropriate mean. Apart from its more general focus, this description of the two kinds of measurement differs little from those of the two previous formulations.

With respect to mode of being, a parallel distinction is drawn between ways in which the Great and the Small might exist. For one, this general principle of indeterminacy might exist as a class of opposites relating to each other solely as more or less. Thus considered, the Great and the Small is equivalent to the Unlimited of the *Philebus*. The other mode of being is that in which the opposites involved have been subjected to some appropriate measure. This manner of existence is tantamount to being a constituent of something that has been generated by the imposition of Limit on the Unlimited. In this second mode of being, the Great and the Small exists not just in itself but as a constitutive part of things falling under the class of Mixture in the *Philebus*.

Formulation (4). As noted in our previous discussion of this formulation, the Stranger leads up to it with the observation that arts like statesmanship and weaving would not exist unless greater and smaller can be brought into relation with the mean. This he finds evident in the fact that all such arts guard against either exceeding or falling short of due measure. It is by preserving measure (τὸ μέτρον: 284B1) in this way, he goes on to say, that everything good and fair is produced.

While this latter remark seems obviously related to the reference in (1) to a being necessary for generation, there is a distinction to be drawn between producing things generally and producing things that are good and fair. The generation of products generally is due to the mixture of the Unlimited (the variable principle) with Limit (the fixed being necessary for generation). The generation of particular products that are good and fair, on the other hand, is due to what in the *Philebus* is called “the right combination” (25E7) of these two factors. A mixture is right when a form of Limit is brought to bear that renders the opposites of the Unlimited commensurate and harmonious (25E1-2). As Socrates puts it in that dialogue, it is by the establishment of moderation and harmony (26A8-9) that “all sorts of fair things” (26B1) are brought into being. This is directly parallel to the Stranger’s remark at 284A10-B1 that preserving measure by adhering to the mean is responsible for the production of things that are good and fair.

It is for reasons such as this, the Stranger then suggests, that larger and smaller must be measurable not only with respect to each other but also with respect to the inception of due measure. As far as statesmanship itself is concerned, a practical mastery of that art goes hand in hand with the ability to achieve due measure in political arrangements brought about under its guidance. It is in this manner that the statesman must be able to exercise his art in a manner achieving due measure.

Formulation (5). This formulation returns to greater and smaller as a particular form of opposition, and duly notes that these opposites can be measured both with respect to each other and with respect to the inception of the mean. What needs clarification in this formulation is how the existence of the productive arts and the existence of the second kind of measurement might be mutually dependent.

To the extent that the arts in question yield products that are good and fair, it seems easy enough to understand how they could be dependent upon forms of measurement that take due measure into account. People who practice these arts would have to keep some normative standard in view during the process of fashioning their products, and would have to refer to such standards in assessing the worth of these products when finished. A general way of summarizing this dependency is to say, with the Stranger, that arts of this sort can exist only if they have types of measurement available that evaluate their products with respect to relevant norms—i.e., with respect to due measure. Such dependency of art upon measure, we may note, seems compatible with the measures existing (e.g., as Forms) before humankind acquired the skills (arts) that employ them.

It is more difficult, however, to determine a sense in which measurement of the second kind might be dependent upon the corresponding arts. Given the reverse dependency of art upon measure acknowledged above, an art could not exist before the measures it employs. The only possibility left open here is that the arts and their corresponding measures came into existence simultaneously. The sense in which a given art and its corresponding measures are mutually dependent, that is to say, must be that both arrived on the human scene together. How might this sort of codependence be understood?

Help in understanding this two-way dependency is at hand with the story in the *Philebus* of the demigod, Theuth, who is credited with the invention of the art of literacy by way of illustrating the god-given method. As Socrates recounts the story, Theuth's achievement began with the observation that vocal speech is Unlimited, and that in this indeterminacy there can be perceived a plurality of vowels. He next discerned a certain number (ἀριθμόν: 18C1) of sounds other than vowels that do not require articulation, after which he set apart (διεστήσατο: 18C3) what are now called mutes. His next move, as Socrates describes it, was to divide (διήρει: 18C3) each of these classes down to the individual unit until he had found the number (ἀριθμόν: 18C5) of each. At this point, he gave the name "letter" (στοιχεῖον: 18C6) to all of them together. Having constructed the whole system in such a fashion that no element could be understood apart from the rest, his final step was to give the unified system a single name, the "art of literacy" (γραμματικὴν τέχνην: 18D2).

Although this story about Theuth has been interpreted in various ways, it seems clear that the art of literacy and the measures upon which it depends are both initiated as parts of the same creative act. The measures upon which "good and fair" speech depends are the vowels, semivowels, and mutes that Theuth marked off by number along the continuum (the Unlimited) of articulable vocal sound with which he began. To employ the art of literacy, once it has been brought into being, is to articulate one's speech with respect to these measures; and to apply these measures is to employ the art of literacy. In this sense, the measures and the art are mutually dependent. As Socrates tells the story, the art of literacy and the measures it applies came into existence simultaneously. A codependency of this sort may well lie behind the Stranger's statement at 284D8-9 that if either the second kind of measurement or the productive arts did not exist, then neither would the other.

Formulation (6). At the beginning of the section under consideration (283C-285C), the Stranger observed that the task about to be undertaken requires dividing the art of measurement into two parts. In all five characterizations preceding (6), the difference between kinds of measurement has been described in terms of how relevant opposites are compared, either with respect to each other or with respect to an appropriate form of Limit or measure. The present description is the first to focus on the two distinct arts of measurement directly. In this respect as well as others, (6) serves as a summary of the first five formulations.

The first part of the art of measurement, the Stranger proclaims, comprises all the arts (τέχναις: 284E4) measuring number, length, depth, width, and speed according to opposites. The other part comprises those measuring according to the mean, the fitting, the timely, and the proper. Several observations are in order regarding the use of the plural τέχναις at 284E4.

One thing to note is that, while the art of measurement overall has been divided into two parts, each of these parts is now further divided in turn. There is an art measuring number according to opposites, one measuring length in that manner, and so forth. In all, five subdivisions of the first kind of art are specified. As far as the second kind is concerned, there is measurement according to the mean, measurement according to the fitting, and likewise according to the timely and to the proper. While the text leaves it open how many subdivisions are being mentioned (the latter three might be considered subdivisions of the mean, in which case there are only three), it is clear that the second kind of measurement is also being broken down into parts.

Another thing to note is that these several arts of measurement are not themselves among arts yielding good and fair products, of which latter statesmanship and weaving have been mentioned as typical instances. A specific art that measures opposites according to what is timely may cooperate with the productive art of strategy in producing military victory, for example, and the two arts may depend upon each other for existence in the manner alluded to in formulation (5). But the art of measuring timeliness is not itself a productive art. Despite their interdependence, arts involved in producing things and arts of measurement are skills of quite different sorts.

There are also problems regarding the application of measuring arts dealing with opposites only. Formulation (5) makes it quite clear that measuring arts of the first kind are not bound up with the productive arts generally, which are said to be essentially involved with the second kind of measurement instead. One possibility is that measurement of the first kind comes into play in practical applications relying on guesswork and habit. An example might be flute-playing, which is said at *Philebus* 55E-56A to proceed by “the hit and miss of practice” (μελέτης στοχασμῶν: 56A4) and to lack precision. Another case in point might be found in Socrates’ oblique allusion at *Republic* 522D to Agamemnon’s inept deployment of troops at Troy, due to his inability to count. This would be an example of inexperienced assessment with regard to general numerosity (sense V of ἀριθμός in LSJ (1968)). Another example might be sounding the depth of a harbor with an unmarked line and judging the results as more or less than the draft of a ship. In the absence of specific help from the text, these illustrations give us some idea of how measuring arts of the first kind might be employed.

A mistake to be avoided in connection with this formulation is to assume that measurement of the first kind pertains to quantity exclusively.<sup>29</sup> While the five

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<sup>29</sup> Lafrance defends this assumption in *op. cit.*, p. 95, citing Diès, Souilhé, and Kucharski as maintaining the same view.

dimensions of comparison listed at 284E4-5 are quantitative, to be sure, there are other comparisons of opposites with opposites that are unmistakably qualitative. An example is hotter and colder at *Philebus* 24D2-4, which in media like air or water might be compared merely with regard to how they feel to one's finger. A parallel mistake is to assume that second kind of measurement pertains only to quality. This assumption is disqualified immediately with the observation that the alleged purpose of the inquiry into measurement underway in these passages is to find an appropriate measure for the length of a philosophic discussion. Length unquestionably is a quantitative dimension.

Questions outstanding at the conclusion of our first examination of these six formulations in section 2 concerned the hitherto uncertain nature of the being described in formulation (1) as "necessary for generation," the relation between this being and the mean figuring in formulations (2) through (6), and the manner in which the second kind of measurement might be mutually interdependent with the productive arts generally. I think it is fair to say at this point that, by drawing on parallel passages in the *Philebus*, understood in light of terminological resources provided by Aristotle and his Greek commentators, these questions have been answered in a credible fashion. Other questions regarding this section of the dialogue of course remain, which hopefully can be addressed on other occasions.

Kenneth SAYRE  
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Appendix A  
Equivalents for the Great and the Small in Aristotle and his Commentators

	Aristotle: <i>Physics</i> , <i>Metaphysics</i>	Alexander: <i>on</i> <i>Aristotle's</i> <i>Metaphysics</i>	Themistius: <i>Paraphrase of</i> <i>Aristotle's</i> <i>Physics</i>	Philoponus: <i>on</i> <i>Aristotle's</i> <i>Physics</i>	Simplicius: <i>on</i> <i>Aristotle's</i> <i>Physics</i>
(the) Great and (the) Small -- (τὸ) μέγα καὶ (τὸ) (σ)μικρόν	187a16-17 (pl) 203a15 (pl) 987b26 (pl) 988a13-14 (pl) 988a26 (pl) 992b1-7 1083b24 1083b32 1085a9 1087b7-10 1088a15-16 1089a35-36 1091a10 1091a24 1091b32	54.12 54.7-11 (pl) 56.13-18 60.4-5 (pl) 117.26-27 122.10 (pl) 122.19-23 203.29-32 (pl) 228.13-14 (pl) 796.12-17 796.36-38 (pl) 797.3-6 (pl) 797.14-15 800.29-30 801.8-12 808.1-2 (pl) 809.15-16 809.32-33 (pl)	13.13-15 (pl) 80.25-26 (pl) 93.31	91.28-29 (pl) 92.27-30 (pl) 123.15 (pl) 388.10 (pl) 389.17-18 (pl) 395.1-7 (pl) 473.5-9 (pl) 480.12-13 (pl)	150.12-15 (pl) 151.7 (pl) 151.12-15 (pl) 189.9-11 (pl) 204.6-8 204.14 (pl) 248.1 (pl) 248.5-8 453.25-36 (pl) 454.6-13 454.32-36 (pl) 455.5 (pl) 455.9-11 (pl) 455.15-16 (pl) 458.11-15 (pl) 493.17-18 (pl) 499.4-6 (pl) 503.13-17 (pl)
The Indefinite Dyad -- ἡ ἀόριστος δύαξ	1081a14-15 1081a22 1081b21 1081b26 1082a13 1082b30 1085b7 (pl) 1088a15-16 1088b28-29 1089a35-36 1091a5	58.2-3 (pl) 70.7 (pl) 117.26-27 122.10 (pl) 123.3 203.27-32 (pl) 228.13-14 (pl) 705.24-25 780.19 (pl) 796.36-38 (pl) 797.14-15 800.29-30 808.1-2 (pl) 809.32-33 (pl) 817.35-36 (pl)		92.27-30 (pl)	150.12-15 (pl) 151.7 (pl) 151.12-15 (pl) 181.28 453.25-36 454.6-13 454.32-36 (pl) 455.5 (pl) 458.11-15 (pl) 499.4-6 (pl) 503.13-17 (pl)

(pl) – Plato mentioned by name

	Aristotle	Alexander	Themistius	Philoponus	Simplicius
The Unlimited -- τὸ ἄπειρον	203a15 (pl) 987b26(pl) 988a26 (pl)	54.1-2 54.7-11 (pl) 58.2-3 (pl) 60.4-5 (pl)	80.25-26 (pl) 80.28 (pl) 93.31	388.10 (pl) 389.17-18 (pl) 395.1-7 (pl) 473.5-9 (pl) 480.12-13 (pl)	248.5-8 453.25-36 (pl) 455.9-11 (pl) 455.15-16 (pl) 458.11-15 (pl) 493.17-18 (pl) 499.4-6 (pl) 503.13-17 (pl) [247.35 (pl): Unlimited and Indefinite]
The Unequal -- τὸ ἄνισον	1087b7-10 1088b28-29 1091a24	56.13-17 228.13-14 (pl) 750.24-25 (pl) 796.12-17 796.36-38 (pl) 797.3-6 (pl) 800.29-30 801.8-12 809.15-16 809.32-33 (pl)			150.12-15 (pl) 248.10-13 (pl)
(the) More and (the) Less -- (τὸ) μᾶλλον καὶ (τὸ) ἥττον					204.6-8 248.1 (pl) 248.5-8 248.10-13 (pl) 453.25-36 (pl) 454.25-36 (pl) 455.9-11 (pl) 503.26-27 (pl)
The Nature of the Unlimited -- τὴν ἀπείρου φύσιν		54.7-11 (pl)			453.25-36 (pl) 454.6-13 455.9-11 (pl)
Excess and Defect -- ὑπεροχὴ καὶ ἔλλειψις	187a16-17 (pl) 189b8-11 992b1-7	54.7-11 (pl) 56.13-18 122.19-23 123.2-3	13.13-15 (pl) 22.17 (pl)	91.28-29 (pl)	150.12-15 (pl) 189.9-11 (pl) 204.6-8 204-14 (pl) 454.6-13 454.32-36 (pl) 503.26-27 (pl)

(Preliminary – subject to addition and correction)