

Knowledge and Measurement: *Philebus* 55c-59d¹

Jessica Moss

Penultimate Draft – Forthcoming in the *Proceedings of the Plato Dialogue Project*

ABSTRACT:

The *Philebus* ranks different kinds of knowledge in order of purity, with dialectic at the top. It is clear that at the lower levels the criterion of rank involves measurement: the more and purer measurement used, the higher a species of knowledge is on the epistemic hierarchy. I argue that Plato continues to use this criterion when he comes to the highest level. Dialectic is pure measurement: it is the art of grasping the measures – or, equivalently, limits – within all things. Moreover, this conception of knowledge is a specification and elaboration of the much more famous epistemology of the *Republic*, and can help illuminate some of its mysteries.

The *Philebus* argues that the best human life will contain both pleasure and knowledge, but with an important caveat: there are better and worse species of knowledge and of pleasure, and the quality of each species will determine its place in the best life. Only the best species of pleasure will be let in; in the case of knowledge, the better species will play a larger role than the inferior ones.

This means that in the case of both pleasure and knowledge, Socrates needs a procedure for distinguishing the better species from the worse. The most general criterion he employs is evidently the same in both cases: the best species of both pleasure and knowledge are those that are most *pure* (*katharôtaton*, 55c7, 57b1), or most *true* (*alêthesteton*, 61e4).

¹ I am grateful for very helpful discussion from the participants at the Plato Dialogue Project *Philebus* conference at Spetses, and for excellent comments on earlier drafts from Gabriel Lear and Mary-Louise Gill.

My focus here is knowledge: what makes knowledge pure and true? To ask this however is also to ask what knowledge *is*, on the *Philebus*' account: although the dialogue does not explicitly seek definitions, it strongly implies that a pure and true species of *x* is one that best exhibits the qualities that make something an *x*, with no admixture of the opposite of *x*; therefore discovering what makes something a pure and true species of knowledge is also discovering what knowledge really is.

The project of this paper is thus to investigate the *Philebus*' criteria for distinguishing between the higher and lower species of knowledge, with the aim of determining what this reveals about its overall epistemology. I will argue that the *Philebus* implies that knowledge is in its essence a matter of measurement – of grasping the measures within objects. I will also argue that this conception of knowledge can fruitfully be seen not as a radical new theory, but instead as a specification and elaboration of the much more famous epistemology of the *Republic* – a specification, furthermore, that can illuminate some of the mysteries in the *Republic*'s account.

I. The epistemic hierarchy

After concluding his discussion of pleasures, Socrates turns to investigate the different kinds of knowledge (*epistēmē*), ranking them from least to most pure (55c-59c).² What emerges is a clear hierarchy, strongly although not perfectly resembling what we find in other dialogues:

² He begins with a distinction between knowledge that is productive (*dēmiourgikon*) and knowledge that is concerned with education and nurture (*paideia, trôphê*) (55d2-3), but never returns explicitly to this distinction. Perhaps he intends to echo it with his distinction between knowledge like rhetoric that is merely useful and knowledge like dialectic that is pure (58c-d), in which case the first three levels I go on to list count as productive, and the last two as educational.

(1) Lower crafts (music, medicine) (55e).

(2) Higher crafts (carpentry) (56b-c)

(3) Popular arithmetic, measuring, weighing and calculation (56c-d)³

(4) Philosophical arithmetic, measuring, weighing, and calculation (56d-e)

(5) Dialectic – the study of what is (57e-58a)

At the bottom are experience-based knacks (*empeiriai*); at the top is dialectic. Dialectic is the purest species of knowledge, experience the least pure.

Presumably what it is to be a pure species of knowledge is to be one with no admixture of the opposite of knowledge – a species of knowledge which exhibits only the qualities that make something count as knowledge, and none of the qualities that do not. (For this account of purity see 53a.) But what are those qualities?

Put this way, the question looks very like one prominent in other dialogues: what is the difference between genuine knowledge and pretenders to the claim? Or, to introduce some imperfect but

³ The practices in group 3 partially constitute those in group 2, but are not I think identical: carpentry, for instance, is presumably a combination of measurement and arithmetic on the one hand with physical cutting, joining and the like on the other. As far as their epistemic status goes, however, the two levels are equivalent, since the level 3 practices constitute the epistemic components of the level 2 practices.

helpful terminology, what is the difference between better and worse epistemic powers?⁴ The *Apology* distinguishes genuine human wisdom from the pseudo-wisdom of pseudo-experts; the *Meno*, *Republic*, and *Theaetetus* each argue for a distinction between knowledge (*epistêmê*) and mere opinion (*doxa*); the *Gorgias* sets craft (*technê*) above mere experience (*empeiria*).

Moreover, the *Philebus* shares with several of these dialogues the markers of better and worse epistemic powers: the higher ones are more precise, more stable, more clear, and more true (56a-c, 57b-d, 58c). There is however a notable innovation here: the *Philebus* seems to introduce a new basis on which to draw the line – a new explanation for the differences between epistemic powers.⁵

⁴ I mean ‘power’ here to pick up *dunamis*: Socrates calls dialectic (the highest level in the epistemic hierarchy) a *dunamis* at 57e7, and in the *Republic* famously uses the term for both *doxa* and *epistêmê* (477b-78b). I will press *dunamis* into service to provide what the *Philebus* does not, a genus-term to cover all the epistemic phenomena that it will rank as superior and inferior members of a single kind; in some cases ‘state’ would be more idiomatic for us, and perhaps more faithful to Plato’s intentions.

⁵ One might think the most important difference is that Plato is now willing to count the inferior powers as species of knowledge (*epistêmê*), albeit impure and less than true ones. (This is at least strongly implied; for discussion see Carpenter 2015, p. 184-5.) Either this is a significant expansion of his concept of knowledge or a mere terminological or pragmatic shift. I will not investigate that issue here, for it is clear in either case that the *Philebus* agrees with other dialogues in maintaining a sharp line between the superior powers and the inferior ones, whether or not it dignifies the worse ones with the name of knowledge, and my aim is to investigate the basis on which it draws that line.

In the *Meno*, the superior power is secured by *logismos* of the cause (98a); in the *Gorgias* it is secured by a *logos* of the cause and nature (501a); in the *Theaetetus*, too, it is secured by a *logos* (with candidates for the nature of the *logos* considered and rejected (201c ff.)). The *Republic* mentions various distinctions: here too the superior power includes a *logos* (511b); it also differs from the inferior powers in having as its objects “what is” rather than what is between being and not being (478b). Our *Philebus* passage makes no mention of *logos*, and while it does eventually claim that the best power studies what *is* rather than what comes to be (59a-c), this comes only at the culmination of the argument after the epistemic hierarchy is established.

What our passage emphasizes throughout, I shall argue, is something different: the superior epistemic powers are marked by their use of *measurement*.⁶ Plato has of course associated knowledge with measurement before, most prominently in the *Protagoras* (see especially 356e), but now he elevates that suggestion to a systematic theory. Impure species of knowledge are those that use no measurement; pure species are those that consist in the purest kind of measurement – or perhaps, that exhibit the qualities for which measurement is Plato’s best metaphor. This claim is explicit in the discussion of the lowest levels of the hierarchy; I will argue that it is implicit at the higher levels as well, and will then turn to investigate the significance of this development for understanding the *Philebus*’ account of knowledge.

II. Ranking knowledge: the role of measurement

In ranking the species of knowledge Socrates begins at the bottom, with manual crafts (*cheirotechnikai*). Within this class, he says, we can distinguish a species that has a greater share

⁶ *Logismos* is included as one kind of measurement, but only in the narrow sense of mathematical calculation: there is surely some connection to the *Meno*’s use, but not a straightforward one.

of knowledge, and so is more pure (level 2 on our list above), from a species that is inferior and so less pure (the very lowest, level 1) (55d). This lowest species is inferior because of the epistemic method it uses: guesswork. What elevates the superior species is its use of superior methods, namely arithmetic, measurement, and weighing:

If arithmetic and the sciences of measurement and weighing were taken away from all the crafts, what was left of any of them would be, so to speak, pretty worthless...All that would be left for us would be to imagine/conjecture (*eikazein*) and to drill the perceptions by experience and routine, with the additional use of the powers of guessing ...Take music first; it is full of this; it attains harmony by guesswork based on practice, not by *measurement*⁷; and flute music throughout tries to find the measure of each note as it is produced by guess, so that much of the unclear is mixed in with it, and little of the stableAnd we shall find that medicine and agriculture and navigation and generalship are all in the same condition. (*Philebus* 55e1-56b2)

Most of the charges against the lowest species look familiar from other dialogues (although the demotion of medicine comes as a surprise to readers of the *Gorgias*.) As in the *Gorgias*, the inferior practices use experience, routine, and guesswork (*empeiria, tribê, stochastikê*, 55e; cf. *Gorg.* 464b-65a); as in the *Republic*, the lower powers lack clarity (*Rep.* 511e); as in the *Meno* they lack stability (*Meno* 98a); as in the *Republic*, the lowest powers use both perception and imagination or conjecture (*eikazein, Philebus* 55e; cf. *eikasia, Rep.* 511d). What is new here however is the claim that all these deficiencies result from the failure to use a certain method: measurement. Practices like music are what result when we strip away “arithmetic and the sciences of measurement and weighing”; music is unclear and unstable because it uses guesswork

⁷ *Ou metrôî all meletês stochasmôî.*

rather than these. I will use the term ‘measurement’ in a broad sense to cover all these methods, since arithmetic, weighing, and measurement in the narrow sense (presumably measurement of size) are all forms of quantitative assessment.

Superior to these guesswork-based crafts then are those that employ some form of measurement, a point Socrates illustrates in his discussion of carpentry:

But the craft of carpentry, I believe, employs the greatest number of measures and instruments, which give it great precision and make it more craft-like than most kinds of knowledge⁸... For the artisan uses a rule, I imagine, a lathe, compasses, a chalk-line, and an ingenious instrument called a vice... Let us, then, divide the crafts, as they are called, into two kinds, those which resemble music, and have less precision in their works, and those which, like carpentry, have more. (56b4-c6)

Carpentry is superior to medicine and music – is more precise – because it uses tools for measuring, rather than guesswork. We can plausibly generalize the thought beyond this one example: measurement guarantees the hallmarks of knowledge – clarity, precision, and stability – because by measuring rather than guessing we come closest to the truth and are most reliable.

Next Socrates turns to consider directly the practices whose presence or absence determined the rank of all these manual crafts as level 1 or level 2: the practices of measurement. It now emerges that the kind of measurement employed at level 2, in carpentry and the like, is itself impure.

There are two kinds of arithmetic, two of magnitude-measurement, two of calculation (*logismos*), and presumably also two of weighing and of any other form of measurement: the popular kind,

⁸ *Technikôteran tôn pollôn epistêmôn.*

that which is employed in carpentry and the other crafts (level 3), and the philosophical kind (level 4). This distinction is illustrated as follows:

[Popular] arithmeticians reckon unequal units, for instance, two armies and two oxen and two very small or incomparably large units; whereas [philosophical arithmeticians] refuse to agree with them unless each of countless units is declared to differ not at all from each and every other unit. (56d9-e3)

Philosophical measurement (arithmetic or any other kind) works with equal units, and that is what makes it more precise than popular measurement, and also more *pure* – higher on the epistemic hierarchy.

What I want to emphasize is that the criterion Plato employs for elevating level 4 above level 3 is very similar to the criterion he earlier employed for elevating level 2 (carpentry and the like) above level 1 (music and the like): once again, the status of an epistemic power is determined by its approach to measuring. The claim is not now that the lower kind fails to use measurement at all, but that its measurements are inferior *qua* measurements – are imprecise and unclear and unstable – because they work with inferior units. Measuring with abstract, imperceptible, wholly uniform units yields better measurements than measuring with any messy perceptible thing.⁹

Indeed, we might say, although Plato does not make this explicit, that measurement with perfect

⁹ The contrast between these abstract units and obviously messy units like oxen and armies is a bit confusing: we might expect the salient contrasts to be between (a) oxen and armies on the one hand and (b) inches or meters as measured by craftsmen's measuring tools on the other, and then at a higher level between (b) on the one hand and (c) the genuine abstract imperceptible units themselves. But this is not how Plato does it, and we can grant the general point: imperceptible perfectly identical units are better standards of measurement than messy perceptible ones.

units is more purely measurement than measurement with messy ones: measuring by oxen, for example, is not *really* measuring, or not purely measuring.

Finally Socrates comes to the highest, purest form of knowledge, the top of the hierarchy (level 5). This he describes in terms familiar from the *Republic*: it is dialectic, the study of what always and truly is (57e-58a). The hallmarks of knowledge which he used to rank the lower forms are all emphasized: dialectic is clear, precise, stable, and true (57e, 58c). There is however no mention of measurement. What featured so prominently in distinguishing and ranking the lower three powers seems to play no role in characterizing the highest. And yet the lower three powers were presented as increasingly good approximations – increasingly pure versions – of the highest.

Is Plato simply abandoning his former criterion of rank? It may seem that he is. Consider a pessimistic assessment of Plato's coherence here, from Gosling's commentary on the epistemic hierarchy:

“It is not altogether clear just what the principle of grading is. It seems that there are two, one according to the method employed [i.e. measurement],¹⁰ the other according to the subject-matter studied [what always is vs. what comes to be]...There is now a problem. Plato wants to put dialectic above all others...But it does not seem to employ more [measurement]...*It seems a mistake to look for a single scale here.*” (Gosling, commentary, 222-3, emphasis mine)

In what follows I will argue that it is not a mistake to look for a single scale. We can give a unified account of Plato's epistemic hierarchy if we take him to hold that pure measurement is the best approximation of pure knowledge – or even that pure knowledge is the purest form of

¹⁰ Gosling identifies it more narrowly as arithmetic.

measurement. Epistemic powers or practices are ranked on the hierarchy by the degree that they employ nothing but measurement, and nothing to make the measurement impure; the highest form of knowledge is either itself pure measurement or something even better, which pure measurement closely resembles. Knowledge, in short, is measurement – or something that measurement approximates.

But what is the basis of that resemblance – in what way is dialectic, the study of what *is*, akin to the kind of measurement employed in carpentry or arithmetic? To answer this question and get to the heart of the *Philebus*' distinctive epistemology we will need to consider the *Philebus*' distinctive ontology. I will argue that this ontology supports the idea that pure knowledge is like quantitative measurement in that it is a matter of discovering determinately how things are. It also arguably supports the stronger claim that pure knowledge *is* itself a matter of finding the measure in things, although not necessarily the quantitative measure.

II. Crafts and measurement

I will begin by showing why measurement plays the role it does in determining the rank of the lower levels of the epistemic hierarchy. This follows fairly clearly from a picture of the difference between crafts and lower practices that is at work in several dialogues (this section), and given a particular twist in the *Philebus* (section III). Once we understand the role of measurement in the *Philebus*' theory of crafts, we will also be able to see how the dialogue extends that theory to higher kinds of knowledge (section IV).

In a number of dialogues Plato characterizes craft (*technê*) as essentially concerned with bringing raw material into good condition through the imposition of ratio, harmony, and order. In the *Gorgias* the business of crafts is to bring about the good condition of the things in their domain

(464a-c); they do this by producing order and harmonious arrangement (*taxis, kosmos* 506d-e): medicine for example brings about health by imposing order on bodies. The *Republic* implies a similar account: crafts aim at the good of their subjects (345c-346b), and a good body, soul, or city is one unified by good order and harmony (*Rep.* IV).

In the *Statesman* – thought to date from around the same period as the *Philebus* – Plato presents a similar view of crafts, but now using the language of measure. There is a kind of measurement that considers whether things are excessive, deficient, or just right, relative not to one another but to “due measure” (*to metrion*) (284a); the business of crafts is to impose and preserve due measure in their products (“it is by preserving due measure (*to metrion*) in this way that [crafts] produce all the good and fine things they do” (284b)). Indeed this is so central to the function of crafts that if there were no such thing as due measure there would be no crafts (284d); therefore all craft-related things (*entechna*) share in measurement (*metrêsis*) (285a).

It is easy to see connections between this account of craft and the *Gorgias*’ or *Republic*: to say that a sturdy shoe, healthy body, just city, or virtuous soul exemplifies due measure seems to be a way of getting at the idea that it has been well crafted so as to have a good or correct internal structure, just as does saying that it displays order or harmonious arrangement. Nonetheless, the *Statesman*’s description is different at least in emphasis, for its talk of measure, symmetry, excess and defect strongly implies that the good produced by crafts consists in quantitative features: not too much of this nor too little of that, but just the right amount of everything. There is a legitimate question as to whether Plato thinks this is always a matter of literal quantitative measure, or instead uses talk quantitative talk as a metaphor for getting things just right in a non-quantitative way. The *Statesman*’s emphasis on quantitative language suggests the former, but I am inclined to leave the question open here. One thing is clear: Plato, like Aristotle with his own doctrine of the *metron* between excess and defect, found talk of the right quantitative measure to be at the

least an illuminating metaphor for goodness in certain realms, and perhaps a literal description of it.

Now consider an epistemological consequence of the *Statesman*'s view: insofar as the aim of each craft is to produce due measure, each craft must be able to *identify* due measure in its domain – that is, it must be able to perform the right kind of measurements. It will of course sometimes be possible to hit on due measure without knowledge, even fairly reliably: recall the *Philebus*' claim that music hits on the measured (*metron*) through practiced guesswork (56a). Clearly however a systematic, knowledge-based method – a method of measurement – will be more reliable, and also more precise, and must therefore be central to the exercise of the really craft-like crafts. If the function of carpentry is to bring pieces of wood into harmonious ratios, for example, then a carpenter who estimates or intuits an angle rather than measuring it is not being a good carpenter, not using his craft.

Thus we have a picture of crafts as essentially arts of finding and imposing measure. If Plato means the *Statesman*'s talk of quantitative measure literally, then crafts will be arts of literal quantitative measurement; if he means it instead as an illuminating metaphor for goodness in craft products, then crafts will be arts of something illuminatingly compared to quantitative measurement: getting things just right.

Turning now to the *Philebus*: if Plato is working with this a similar conception of craft in this dialogue, we have a ready explanation of the role measurement plays in distinguishing the lowest level of the epistemic hierarchy from the second level – in elevating measurement-based crafts like carpentry (level 2) above guesswork-based crafts like music (level 1). In the next section I will show that *Philebus* does indeed have a theory of craft very similar to that of the *Statesman*,

on which the main business of a craft is to identify, impose, and preserve measure in its domain. This emerges somewhat indirectly from the *Philebus*' famous fourfold ontology.

III. Measure in the *Philebus*' ontology

I will not give a detailed account of the *Philebus*' ontology; a brief review should suffice to draw out the features of this account that will help illuminate the role of measurement in craft – and, below, in knowledge more generally.

The main claim is that things that come to be – craft-products as well as natural things – are mixtures (*meixeis*) of limit (*peras*) and unlimited (*apeiron*), mixtures created when a cause imposes limit on the unlimited (26e-27b). The cause is always wisdom (*sophia*) and intellect (*nous*), either human or divine (30b-c). Thus the *Philebus* gives an account of how crafts create their products that is at the same time an account of all creation.

Although the initial presentation of this ontology makes no mention of *taxis*, *kosmos* or *to metrion*, later descriptions reveal clear analogies between the *Philebus*' account of creation and the accounts we saw above of how crafts create their products by imposing good structure on messy matter. In a striking echo of *Statesman* 284a-b, the *Philebus* describes the imposition of limit on the unlimited as “removing the excess and unlimited, fashioning the measured and harmonious (*emmetron kai hama summetron*)” (26a; cf. *summetra kai sumphôna*, 25e); in a passage to which we will return below it gives the chief role in making good the mixture that is a good human life to “measure and the measured (*metron kai to metrion*) and all things similar to these” (66a). In a striking echo of *Gorgias* 506d-e it describes divine intellect as “ordering and arranging” (*kosmoussa kai suntattoussa*) the universe for the good (30b-c). In other words, the *Philebus*' craftsmen are, like those of the *Gorgias* or *Statesman*, creators who impose order and arrangement on messy material to produce a harmonious whole. Moreover, the *Philebus*' divine

intellect is like the *Timaeus*' demiurge who does the same, creating the cosmos by imposing order (*taxis*), equal ratios (*ton auton logon*) and proportion (*analogia*) on the material elements (*Tim.* 30a, 32b-c). Like these other dialogues then the *Philebus* presents intelligent creation – human or divine – as imposing good structure on messy material.

How do the notions of order, harmony and measure wind up playing this role in the *Philebus* if they are absent from the fourfold ontology? The key lies in that ontology's notion of limit (*peras*), for this turns out to be very closely connected with order and harmony – and most especially with measure.

Although Socrates never defines limit in the *Philebus* (see Gill, this volume), from the start he strongly associates it with measurable quantities. He introduces the contrast between limit and unlimited as the contrast between the one and the many (16c), and goes on to describe finding the limit in things as counting the number of species (*ideai*) (16d) (although, as Gill emphasizes, this process also includes saying “what sort” the species are). When he returns to the notion of limit in laying out the fourfold ontology, the examples he provides of limit are the equal, the double, and “any thing that is number in relation to (*pros*) number or measure (*metron*) in relation to measure” (25b) – that is, presumably, any ratio. He goes on to describe the third kind, mixture – what results from the imposition of limit on the unlimited – as containing measure (*enmetron* and *summetron* (26a, cited above), and then as “a coming toward being out of the measures fashioned with limit (*ek tôn meta tou peratos apeirgasmênôn metrôn*)” (26d). To limit an unlimited mass is to impose some ratio on it, some determinate and quantifiable relation between its components. What is limited is thus what is measurable. Like the *Statesman*, then, the *Philebus* emphasizes the idea of measure in its characterization of the harmonious order produced by crafts – and also by divine intellect.

Are *all* limits quantitative? A widespread interpretation holds that they are; Gill questions it (this volume). What makes something a limit, she argues, is that it imposes definiteness or determinateness onto the unlimited, at a minimum differentiating one distinct thing from all else. (This is a point that Aristotle would put by saying that limits provide *horismos*, definition or boundary or determination – a notion obviously close if not identical to the *Philebus*' *peras*, and certainly ambiguous between narrowly quantitative and wider uses.) If this is correct, then quantitative limits are paradigmatic but not exhaustive of the class of limits.

I find this an appealing view: 'definite' and 'determinate' (common translations of *perata echon*, having limit) can function to convey the notion that a thing can be pinned down, accounted for, and understood, where being quantifiable is only one particularly obvious way to fit this profile. A definite idea or determinate plan need not be quantifiable in order to contrast clearly with one that is vague or open-ended. Thus Plato's thought may well be that the clearest cases of limits are quantities, while some limits are not. At any rate, we saw above that the same can be said of his notion of measure in the *Statesman*, and so we need not decide the quantitative question in order to accept the *Philebus*' strong association or even near-equation of measure with limit.

Now for the epistemological upshot concerning crafts: as in the *Statesman*, in the *Philebus* too craft-knowledge must involve the ability to identify the measure within things. (If we take the strict quantitative reading this means that craftspeople measure the quantities and ratios of things in order to find and impose the right ones; if we take the broader reading we will say instead that craftspeople determine precisely and reliably and clearly how things are in their products, in the service of rendering those products determinate, precise, reliable and clear.)

One way to see how central measurement is to crafts on this conception is to note that insofar as things do not admit of measure, they lie outside the purview of craft. The *Gorgias* implies that

there is no craft of pastry-baking, or of cosmetics, or of popular rhetoric (the kind that aims at pleasure) – not just that there happen to be no such crafts, but that such things are the province of lowly empirics. The *Philebus*' conception of crafts suggests a principled reason for this claim: these all deal in low pleasures, and such pleasures are intrinsically without order or measure or limit – they are *apeira* (52c) – and therefore there is nothing there for craft to get a hold of. If craft is a matter of identifying and imposing and preserving due measure, then there is no craft of the unmeasured. (There is a craft of imposing health on sick bodies, of course, but there is no craft of sickness itself – no study of sickness in its own right.) What can be known by crafts is what is measured, and craft is knowledge of measure.

Now we have a clear account of why Plato makes measurement the criterion of rank for the lower stages of the *Philebus*' epistemic hierarchy: carpentry is better than music insofar as it uses measurement, because the business of the crafts is to identify and impose measure in its domain. We are also ready however to explain the wider implication of that hierarchy we saw above: that measurement-based crafts are purer species not just of craft but of knowledge *simpliciter*, and therefore that the more purely a species of knowledge deals in measurement, the more akin it is to the highest kind of knowledge, dialectic. We will find the key in the *Philebus*' assimilation of all creation to craft-products.

IV. Dialectic as an art of measurement

The basic idea is this: just as the products of human crafts are characterized by measure, and therefore knowledge of them is *inter alia* knowledge of measure, so too is the whole of reality characterized by measure, and therefore knowledge of reality – dialectic – is a kind of knowledge of measure. Knowing the knowable things in the universe, just like mastering the knowable in the domain of a particular craft, is a matter of grasping the measure in things. That is the

important similarity between the highest form of knowledge (level 5) and all the lower ones that makes it possible to rank them according to a single criterion. (I will also consider an alternative reading on which dialectic is not literally a form of measurement, but measurement is Plato's best metaphor for it.)

If dialectic is measurement, there will be two main differences between it and lower members of the hierarchy. First, dialectic is the purest species of measurement, because the measures it identifies are the purest measures. (I return to this claim in the final section). Second, dialectic – like philosophical measurement (level 4), but unlike popular measurement and the crafts that employ it (levels 2 and 3) – does not aim to *do* anything with the order it identifies. It is simply the cognition (*gnôsis*) of what truly is; its whole aim is truth and precision (58c-d). Unlike crafts, then, dialectic is not concerned to impose measure on anything, nor to preserve it; identifying or grasping or contemplating the measures is the whole point.¹¹

This picture of dialectic – or at least of a method Socrates describes as dialectical (17a); we will consider below whether or not it is dialectic proper, the highest kind of knowledge – emerges clearly from Socrates' discussion earlier in the dialogue of the "divine method." Every discovery ever made in any *technê* (16c), Socrates explains, results from finding limit (*peras*) in the unlimited (*apeiron*):

All things that are always said to be consist of a one and a many, and have in their nature a conjunction of limit and unlimited...[So to get knowledge in any arena we must] start with a single form and search for it...then...go on from one

¹¹ Mary-Louise Gill suggests to me that dialectic can produce products, products such as the *Philebus* itself.

form to look for two...until we come to see not merely that the one that we started with is a one and an unlimited many, but also *just how many it is...*[i.e.] until we have discerned the total number between the one and the unlimited ...It is the recognition of those intermediates that makes all the difference between discourses being dialectical and eristical. (16c9-17a5)

We become wise in each arena when we find the species or types or forms (*ideai*) which constitute the order in what to the untutored mind seems a disordered, undifferentiated, or infinitely complex mass. For example, we are wise (*sophoi*) about letters not when all the verbal sounds sound the same to us (an undifferentiated one), nor when we think that are an indefinite number and variety of sounds with no organizing principles (a limitless, definitionless many), but when we know “how many and what sort” of verbal sounds there are – when we know the types that classify and thus bring order to the mass (17b). The practitioner of the divine method, then, like the *Statesman*’s craftsman, works by finding the order in things, or more precisely the limit. Moreover, as we saw above, limit is equivalent to measure, and thus finding the limit in things means finding the measure in them: the divine method is a matter of measurement.

Is this always a quantitative affair? Just as we did above with crafts, we can remain neutral between two possibilities. Either the divine method is always an art of literal quantitative measurement, or Plato is using quantitative measurement instead as a paradigm of and metaphor for the kind of knowledge he has in mind, which we could call measurement in a broader sense: discovering the definiteness in things. In either case, having knowledge of things means being able to give a precise account of precisely how things are.

If the divine method is indeed identical with the highest form of knowledge identified in the epistemic hierarchy, we now have a clear explanation for the importance of measurement in that

hierarchy: the very highest form of knowledge is itself an art of measurement. There is however an important complication here. Although Socrates describes using the “divine method” as arguing dialectically (*dialektikôs*, 17a, noted above), scholarly opinion is divided about the relation between the divine method and dialectic understood as the highest form of knowledge, the study of what always is. The divine method is used by all genuine crafts – music, grammar, and so on. In the ranking of knowledge passage, however, dialectic as the study of what always is gets sharply contrasted with the study of what comes to be and passes away – and thus presumably with worldly crafts:

Most crafts, and the people who labor at them, make use of opinions (*doxais*) and constantly investigate things which have to do with opinion... things of *this* world...not what always is (*ta onta aei*), but what becomes and will come to be and has come to be...There is no truest *nous* or knowledge (*epistêmê*) about such things...Instead the stable and pure and true and what we call unmixed knowledge is about these other things, the things which are eternally the same without change or mixture, or with that which is most akin to them... (58e5-59c5)

If dialectic in this highest sense is only of what always is, then surely (one might think) it is the study of Forms, those items familiar from the *Republic* and other dialogues.¹² Indeed, when summarizing the difference between dialectic and lower species of knowledge a few pages later Plato gives as his first example of the objects of dialectic Justice (62a). The other two examples he gives are mathematical: the divine Circle and the divine Sphere (62a). But if dialectic is the study of Forms, while the divine method is used by worldly crafts, how can dialectic have anything to do with finding limits? How indeed can it be the study of any items described in the

¹² For the question of whether Plato here means to refer to Forms, see for example Shiner 1979.

Philebus' ontology, which does not seem to include Forms? Has Plato now with his description of dialectic simply abandoned the ontology he laid out earlier in the dialogue, and moved back to the ontology of the *Republic*?

One part of the worry is fairly easily resolved: although Plato does not make the point explicit, the fourfold ontology *does* contain an item that “always is,” and this is limit.¹³ The ratios and numbers that inhere in worldly mixtures are themselves abstract, stable, unchanging, purely intelligible items that at the very least resemble the Forms we find in other dialogues both in these ontological qualities and – crucially for our purposes – in their resulting fitness to be objects of knowledge. This is confirmed by other dialogues that describe something similar to the *Philebus*' divine method: the *Sophist* seems to equate the classes that dialectic identifies with Forms (253d), and arguably the *Timaeus* does too (30c-d).¹⁴

¹³ Clearly the unlimited is out: it is described as constantly moving and changing until brought to a halt by limit (24d). Mixtures look more promising because they are stable by comparison with the unlimited, but they are created things, things that come into being (see especially 26d; some take it that they are themselves processes of generation, *geneseis* – see Gill, this volume). The cause is *akin* to human knowledge (28c), which means that barring a special argument about knowledge being self-reflective it is unlikely that Plato meant it also to be the object of such knowledge.

¹⁴ For this interpretation of the *Timaeus* see Cornford (1937), note *ad* 30c-d. Concerning the *Philebus*, Hackforth argues that limits cannot be Forms because they “go forth into” things (1958, 40). I see no reason however to think Plato thought of limits as any more dynamic than the Forms are when they cause perceptibles to be beautiful or just or large, as in the *Phaedo* or *Republic* or *Parmenides*. The ratio of the double, for example, can remain always the same even when the mixtures which instantiate it at one point fade or change.

Perhaps then Plato means us to understand the highest member of the epistemic hierarchy, dialectic, as the study of limit. When he characterizes its objects as eternal beings in language reminiscent of the middle dialogues' descriptions of the Forms (“what is and truly is and is by nature always the same (*to on kai to ontôs kai to kata tauton aei pephukos*)” (58a2-3)), he is not introducing new objects into the *Philebus*' ontology but instead referring back to something it already introduced, limits. Justice itself, along with the divine Circle and Sphere, are limits imposed on the unlimited – Justice, perhaps, on the unlimited mass of people in a city or of desires in a soul, Circle and Sphere on the unlimited mass of shapes.¹⁵ We saw Plato refer to the limits to be found in the unlimited as forms, *ideai*, earlier in the dialogue (16d-17a). And Aristotle mentions the association between limit and form, plausibly intending to refer back to this dialogue or to the Pythagorean tradition that underlies it:

‘Limit’ (*peras*) means...[among other things] the being of each thing, or the what-it-is-to-be of each thing, for this is said to be the limit of knowledge (*gnôseôs*); and if of knowledge then of the thing also. (Aristotle, *Metaphysics* Δ.17, 1022a4-10)¹⁶

¹⁵ This may sound plainly wrong: surely Justice would be in the category of mixture, along with health – the *result* of the imposition of proportion rather than the proportion itself? I see the pull of this argument, but as is often noted the *Philebus*' line between what has limit and limits themselves is at best blurry. Or perhaps the idea is that Justice as a form is the ratio imposed on worldly things to create the mixture that is one particular just city or soul or so on.

¹⁶ Many thanks to Tom Marre for the reference; see his MS on limit and *telos* in Aristotle and predecessors.

If all this is right, our case is straightforward: the highest species of knowledge is itself a species of measurement. Moreover, the Aristotle passage suggests a nice summary of Plato's metaphysically grounded epistemology: knowledge is essentially a matter of grasping the reality and being and truth of things; things are real and true insofar as they are what they are (have form); form is itself a kind of limit; thus things are knowable insofar as they are limited; thus knowledge is itself a matter of grasping the limit in things, an art of measurement.

Some think however that when Plato describes dialectic in the *Philebus* as the study of "what always is," i.e. of items like Justice, he means to refer to something never mentioned in the fourfold ontology, nor anywhere else in the *Philebus*. The Forms familiar from the *Republic* and other dialogues are distinct from and superior to all the items in the fourfold ontology, for all these have traffic with the world of becoming. If this is right, then we have no reason to think that dialectic is a matter of grasping limits. What then was the relevance of the lower stages of the epistemic hierarchy to the top, and in particular of the role of measurement in it?

All we can say is that the model he has offered us in this dialogue for knowable entities is the model of limit, and therefore the model he has offered us for knowledge is measurement: the impure measurement of levels 2 and 3, the pure measurements of level 4, and the finding of limit in all things involved in the divine method, wherever in the hierarchy that fits. If the highest kind of knowledge (level 5) is not itself a kind of measurement, then Plato's thought must be that measurement is a very good analogy, metaphor, or approximation for this kind of knowledge. And we have seen a compelling explanation for *why* measurement would play this role.

Measurement is a paradigm or metaphor for knowledge because knowing, on Plato's view, is a matter of grasping precisely how things are – a matter of being able to give an account that is itself precise, clear and stable because it is an account of something itself precise, clear, and stable.

Recall Gosling's complaint, quoted above, that the *Philebus*' epistemic hierarchy lacks unity: Plato begins by ranking powers by their use of measurement, but then at the top level abandons this criterion and simply asserts that dialectic is the highest power because it studies the highest beings. Now however we have two possible interpretations, closely related, on which Plato is giving us a unified explanation of the epistemic hierarchy, and a unified epistemology.

On one, the two criteria of rank – method and subject-matter – very closely coincide: the higher epistemic powers employ more precise measurement because they study more precisely measured entities. The highest level, dialectic, is an art of the most precise measurement, because it studies the most precisely measured things of all, measures themselves.¹⁷

On the other interpretation, measurement is Plato's best metaphor for the method employed at the highest level of the epistemic hierarchy, because measured-ness is his best metaphor for the nature of the highest entities in his epistemology. The Forms are perfectly determinate entities, and so grasping them is a matter of having completely determinate knowledge – where that is not a matter of literal measurement, but something closely akin to it, and surpassing it in the features that elevate such measurement over lower epistemic methods: stability, clarity, and precision.¹⁸

¹⁷ I am copying Plato's own conflation of things that have limit with limits – measured things with measure. This is presumably an instance of his doctrine of self-predication.

¹⁸ Above I argued that Plato may think of *quantitative* measurement as exhausting the category of measurement or only as the paradigm case of it. The former reading fits better with the second interpretation we are now considering: measurement is only a metaphor for dialectic because measurement is always quantitative.

V. The knowable, the measured, and the good

On the *Philebus*' view, then, things are knowable to the extent that they are definite and determinate. The more measured something is, literally or figuratively, the more knowable it is.

This is particularly clear in Plato's claim that what is thoroughly without limit is thoroughly unknowable:

When you have [performed the divine method in some realm, and grasped the limits], then you have become wise (*sophos*)...But the unlimited in each thing and in the quantity of each thing makes *you* unlimited/indefinite (*apeiron*) in your thought, and able neither to calculate nor to count, when you have not yet fixed your sight on any number in anything. (17e3-6)

Unlimited things – such as impure pleasures, to take a salient example,¹⁹ but indeed *any* worldly things that have not been worked up into a good mixture through the imposition of limit – are unknowable: there is no limit there to grasp, and since knowledge is a matter of grasping measures, there is nothing there to be known.

The general idea is roughly familiar from the *Republic*. The *Republic* seems to say that perceptibles are too messy to be the objects of knowledge (*epistêmê*): too subject to change, contingency, relativity, and in general impurity, the presence of opposites (see especially *Rep.*

¹⁹ “Now that we have fairly well separated the pure pleasures and those which may be pretty correctly called impure, let us add the further statement that the intense pleasures are without measure (*ametrian*) and those of the opposite sort have measure (*emmetrian*); those which admit of greatness and intensity and are often or seldom great or intense [that is, the impure kinds] we shall assign to the class of the unlimited” (52c1-6).

479a-d and 529b-530b). Recent years have seen a number of attacks on this reading.²⁰ The *Philebus* explicitly claims that changing, unstable things cannot be subjects of the highest kind of knowledge (59a-b),²¹ however; this should encourage us both in accepting that this is a view Plato could have held in the *Republic*, and in using the two dialogue's views to illuminate one another. Here in the *Philebus* Plato has new vocabulary to express the idea, and a new ontology to explain it, but the underlying idea is similar: not everything that exists is knowable, but only things whose nature renders them liable to precise determination. (If we follow many interpreters in equating the unlimited in the *Philebus*' divine method passage with particulars, the comparison is especially strong.)

There is another idea from the *Republic*'s epistemology which the *Philebus* echoes and can help explain: that things are knowable only insofar as they are good. In the *Republic* it is the Form of the Good that makes things knowable, illuminating them with truth just as the sun makes physical things visible by illuminating them with light (507d-508e). The *Republic* leaves these claims radically under-explained. But the *Philebus*, if my account is correct, provides a clear explanation. Measure is the good: things are good insofar as they exhibit measure (64d-66a, quoted in part above). On the first interpretation canvassed above, on which Forms *are* limits, measure is also the knowable, since what knowledge is, in its essence, is grasping the measure within things. Thus things are knowable only insofar as they are good: it is sharing in goodness that allows things to be known. On the second interpretation, measure is the best approximation of the purely knowable, and measurement the best approximation of pure knowledge. Thus

²⁰ See especially Fine 1990.

²¹ "How could we ever get anything stable (*bebaion*) about things that have no stability?...Therefore one can have no *nous* nor *epistêmê* possessed of the highest truth about these things" (*Philebus* 5911a-b8).

measure is the worldly good (the best thing in human life – which is indeed the explicit claim Plato makes for it in the *Philebus*), and as such must closely approximate the true, divine good. Thus the closest approximations of goodness and of knowability coincide, and the real good is really knowable because it exhibits the determinateness that measure best approximates.

Thus the *Philebus*' emphasis on measurement in its examination of knowledge turns out to be a refinement but not radical revision of the *Republic*'s more famous epistemology, corresponding to its refinement of the *Republic*'s ontology. And thus the two dialogues' theories can be used for mutual illumination. The common ideas are these:

- The best things are the most knowable.
- The quality that makes them most knowable is the very quality that makes them best.
- This quality is, broadly speaking, *being a determinate way*.
- This makes these best things most knowable because knowledge is, on Plato's conception, a matter of knowing exactly how things are – a notion captured best or approximated best by the notion of measurement.