Philosophia Mathematica (III) **20** (2012), 143–169.
doi:10.1093/phimat/nks005 Advance Access publication March 7, 2012

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Recollection and the Mathematician's Method in Plato's *Meno*

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I argue that recollection, in Plato's *Meno*, should not be taken as a method, and, if it is taken as a myth, it should not be taken as a *mere* myth. Neither should it be taken as a truth, *a priori* or metaphorical. In contrast to such views, I argue that recollection ought to be taken as an *hypothesis* for learning. Thus, the only methods demonstrated in the *Meno* are the elenchus and the hypothetical, or mathematical, method. What Plato's *Meno* demonstrates, then, is that we cannot be philosophers if we fail to make use of the mathematician's hypothetical method.

> *I wouldn't support every aspect of the argument [for recollection] with particular vigour, but there's one proposition that I'd defend to the death, if I could, by argument and by action: that as long as we think we should search for what we don't know we'll be better people — less faint-hearted and less lazy — than if we were to think that we had no chance of discovering what we don't know and that there's no point in even searching for it.* [*Meno*, 86b–c][1]

A recurring question about Plato's *Meno* is: what is the status and role of recollection? For philosophers of mathematics, in particular, this is an important question. Typically, and more often dismissively, recollection is offered up as the platonist's 'mysterious' method, akin to intuition, whereby we come to grasp both mathematical objects and philosophical Forms (see [Shapiro, 2000]). In the more general philosophical literature, we find three detailed responses to this question. In line with the typical interpretation noted above, Guthrie [1956], Benson [1990], and Scott [2009] argue that we ought to take recollection as a *method for* knowledge and interpret the slave-boy situation as, respectively, an experiment in, or demonstration of, this method. On the other hand, Sternfeld and Zyskind [1986] suggest that recollection be taken as a *mere myth* that Socrates uses to motivate inquiry. Against both of these interpretations, Moravcsik [1971] claims that, whereas Plato intended recollection to be an *a priori truth*, we ought to view it as lying somewhere between a *very general empirical theory* about the structure of the mind and a *metaphor* for how we learn.

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[1] Unless otherwise noted, I am using Waterfield's [2009] translation.

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The problem with the above interpretations, however, is they leave open the investigation of how the slave-boy situation fits in with other structural aspects of the dialogue. In particular, such accounts fail to deal with those questions that serve to underwrite the intended impact of the slave-boy situation on the benefits *and* limits of *both* the elenchus and the hypothetical method. And, in so doing, they fail to consider the status and role of the mathematician's method adequately.

In this paper I argue that recollection, in Plato's *Meno*, should not be taken as a method, and, if it is taken as a myth, it should not be taken as a *mere* myth. Neither, however, should it be taken as a truth, *a priori* or metaphorical. In contrast to such views, I argue that recollection ought to be taken as an *hypothesis* for learning. I then argue that the only methods demonstrated in the *Meno* are the elenchus and the hypothetical, or mathematical, method. Against [Robinson, 1971], I show that the hypothetical method cannot be taken as *part of* the elenchus, but this does not mean, as [Vlastos, 1983] claims it does, that the elenchus is *abandoned*. Rather, I show that the elenchus is being *supplemented by* the hypothetical method. Beyond, however, supplementing the limits of the elenchus with the benefits of the hypothetical method, the limits of the latter are also clearly noted. Thus, *contra* [Vlastos, 1988], I conclude that Plato, in the *Meno*, is well aware of *both* the virtues *and* the deficiencies of the mathematician's hypothetical method.

What Plato's *Meno* demonstrates is that we cannot be philosophers if we fail to make use of the mathematician's hypothetical method, *i.e*., we cannot be 'industrious and inquisitive' [81d] seekers after knowledge if we fail to seek after the qualities, aspects, kinds, *etc*., of an object of knowledge just because we do not know what the object, itself, is. Furthermore, it also demonstrates that we, as philosophers, will not be any better than poets, prophets, *and* mathematicians unless we recognize the limits of the hypothetical method, *i.e*., unless we see the need for yet another method of seeking after knowledge of what the object, itself, is. This dialogue, then, as much as it demonstrates the benefits of the mathematician's hypothetical method, also sets out its limits, and, in so doing, sets the stage for the introduction, in the *Republic*, of the philosopher's *dialectical* method.[2]

[2] As to the status of hypotheses more generally, and, too, of their specific relation to myths and methods, the following helpful observations and distinctions have been offered by an anonymous referee: 'It's one thing to start with an hypothesis, but eventually it has to be justified or rejected. Methods and myths can last forever, but an hypothesis … must eventually … earn its keep.' Understood in this way, the hypothesis of recollection is *justified* in so far as it dissolves Meno's Paradox (MP), but it is *rejected* as a method for knowledge, both mathematical and philosophical knowledge. And so it remains as a myth, though, again, not as a *mere* myth. The hypothetical method, itself taken as an hypothesis, is *justified* as a method for mathematical knowledge, but is *rejected* as a method for philosophical knowledge. The hypothetical method, unlike recollection, is never rejected *tout*

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1. Recollection as an Hypothesis

Plato's *Meno* opens with the following questions:

> … whether excellence is teachable or, if not teachable, at least a product of habituation. Or perhaps it isn't the kind of thing one can practice or learn, but is a natural human endowment. If not, how do people become good? [70a].

Socrates' response brings to the fore what is at issue in this dialogue:

> So far from knowing whether or not it's teachable, I don't even have the faintest idea of *what excellence is*. [71a] … . And if I don't know *what a thing is*, how can I know *what sort of thing it is*? [71b; emphasis added]

There are two aspects to Socrates' question. The first is: 'What is the essence or nature of an object itself such that its *essential* qualities are common to all its particular instances?'. This *ontological* question, I hold, is not the focus of the *Meno* but rather seems to be taken up in the *Phaedo*.[3] What is at issue, in the *Meno*, is the corresponding *methodological* question, namely: 'What is the method whereby I can go *from* the object *to* knowledge of its *qualities*, *sorts*, *kinds*, *aspects*, *etc*., *without* having to claim that I know what *the object*, *itself*, *is*?'.

At the beginning of their discussion Socrates asks Meno to provide him with the *single characteristic* of excellence such that it extends itself over all aspects, kinds, or parts of excellence [72c–d]. Meno, however, cannot seem to keep this request straight: he keeps giving Socrates *instances*, or parts, of excellence. For example, when Meno says '… justice is excellence', Socrates responds 'Is it excellence, Meno, or *an* excellence?' [73d–e]. Socrates' next strategy is to make a 'point of universal application' [73e] and so request of Meno that he stop working up *from* instances and instead that he *begin with* a *definition* of excellence, like Socrates'

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court, however, and so is never taken as a myth because, as explained in greater detail in the *Republic*'s 'Analogy of the Line', the mathematician's hypothetical method is needed for the philosopher's dialectical method. This, then, is the sense in which mathematical knowledge is a necessary precursor for philosophical knowledge. I thank this referee for pushing me to make these points explicit.

[3] See Scott [2009] who claims that 'the priority of definition at issue in this passage needs to be distinguished from a different principle, *viz*., in order to know whether a particular thing is *F*, you must know what *F*-ness is …' (p. 22). Scott too takes this *F*-ness principle as *the* principle underlying the introduction of the Forms in the *Phaedo*; though he does have it playing a role in the *Meno*, see, for example, p. 25.

definition of shape,[4] that covers all its instances, but which is, itself, not an instance or part, *e.g.*, is not *a* shape, like roundness. He directs Meno as follows:

> … if you cast your mind back a few moments to when I gave you my answer about shape … But then you shouldn't think, my friend that while we're looking into the question of what excellence as a whole is, an answer in terms of its parts will elucidate it for anyone. That kind of answer won't work with anything … [79d]

Meno, in spite of this direction, still cannot understand how one can go *from* the object *to* its qualities[5] and continues to give Socrates parts (or instances) of excellence. Meno, it seems, is of the belief that one must start with knowledge of the parts and through the enumeration of the qualities of such parts one will end up with a *summative knowledge*[6] of the object itself as a whole.

The cause of Meno's troubles appears to be his belief that one cannot separate the ontological requirements for knowledge — those that require the *object itself* as an *object of* knowledge — from the methodological requirements for learning or knowing — those concerning the *activity* of

[4] It is important to note what Socrates says here about definition, *viz.*, that it is not just true but makes 'use of points [terms] to which the questioner too has given his assent' [75d]. This is why Socrates asks Meno of the slave-boy 'He is a Greek, isn't he, and speaks Greek?' [82b]. It must be presumed that, while having no geometrical knowledge, the slave-boy has at least some understanding of geometrical terms like 'square', 'double', *etc.*; only then can he come to understand the 'technical name' for the term 'diagonal'. (See notes 27, 28, and 30 for more on the significance and role of definitions). See also [Scott, 2009, pp. 39–45], for a convincing argument that the English translation 'shape' ought to be 'schema' or 'surface'.

[5] Keeping in mind what I pointed out in note 3, nothing of an 'ontological' nature ought to be read into my use of the term 'qualities'. The Greek text, and, indeed, Waterfield's [2009] translation, uses various terms, *e.g.*, qualities, sorts, kinds, aspects, *etc.* It is only for brevity sake that I make my more general analysis in terms of qualities. I note too, that while Guthrie [1956] uses the term 'property' to translate '*hopoion*', I have chosen to use the term 'quality'. This for two reasons:

1. 'property' may be thought to include *essential* attributes more readily than 'quality' would (thanks to John Malcolm for clarifying this difference) and, perhaps as a consequence of the first reason,
2. the relation of properties to things that have them, as investigated in the *Phaedo* and at least as contemporarily considered, is an ontological question.

Thanks to an anonymous referee for pushing me to make these points clearer.

[6] I use the term 'summative' in an arithmetical sense and too with intention. This is important for understanding the status and role of the slave-boy situation; as we will see, the answer to the question that Socrates asks of the slave-boy cannot be given by such arithmetical methods and so a new, geometrical, method is needed.

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searching for *qualities of* an object by, in some sense, beginning with the object, *without* setting it up as an *object of* knowledge. It is this belief that leads Meno to state his paradox (MP):

> And how will you search for something, Socrates, when you don't know *what it is* at all? I mean, which of *the things* you don't know will you take in advance and search for, and when you don't know what it is? Or even if you *come right up against it*, how will you know that it's the unknown *thing* you're looking for? [80d; emphasis added]

To get the point of the *Meno*, one must note how Socrates' version of the paradox differs from Meno's.[7] Socrates' changes reflect the shift from Meno's ontological concerns to Socrates' methodological ones.

Socrates is not concerned here with 'setting-up' the object as an object of knowledge, but rather is concerned with the activity of learning, *e.g.*, the philosophical activity of searching, in this case for the qualities of an object. Socrates' version of the paradox (SP) highlights Meno's 'conjured and controversial' conflation of ontological with methodological considerations:

> Do you realize what a controversy you're conjuring up? The claim is that it's *impossible for a man to search* either for what he knows or for what he doesn't know: *he wouldn't be searching for what he knows*, since he knows it and that makes the search unnecessary, and *he can't search for what he doesn't know* either, since he doesn't even know what it is he's going to search for. [80e; emphasis added]

More notably, it is as an answer to the 'conjured and controversial' MP (as opposed to SP) that Socrates presents us with the myth of priests, priestesses, and poets [81a], which includes the theory of recollection.[8]

[7] Moravcsik [1971] also points out the distinction between MP and SP. He says: 'In Meno's version the paradox is about inquiring into that of which we are *altogether* ignorant. Socrates' restatement omits this strong qualification. The reason for this is presumably that the intended solution covers only those cases in which we in a sense know what we are searching for' (p. 57). While I agree with the distinction, I disagree with the reason he provides for it. I will argue that, in the *Meno*, we do not in *any* sense know *what* we are searching for; we come to know the *qualities of* an object via the use of the hypothetical method, but neither by the elenchus nor by the hypothetical method do we ever come to know *the object itself*.

[8] The claim that recollection is given as a response to Meno's paradox is, itself, far from uncontroversial. Sharples [1985], like me, sees the paradox as fundamental. He says: 'Plato expressly makes Socrates say that it is the possibility of achieving knowledge and the refutation of Meno's paradox that is the important point, not the proof of the immortality of the soul.' (p. 7) While Nehamas [1986] agrees with this interpretation, he also notes (p. 1) various views to the contrary: Shorey's reference to it as the eristic and lazy argument,

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What the myth is intended to do is quell the ontological concerns that underlie MP; 'the soul has seen *things* here on earth and *things* in the underworld too — *everything,* in fact — there's nothing it hasn't learnt' [81c; emphasis added]; so now Socrates can get on with the refutation of SP by demonstrating, by use of the slave-boy situation, that seeking and learning are not impossible activities. That is, if we chose not to accept the theory of recollection then we must, in light of both MP and SP, accept the conclusion that '… it's impossible for a man to search…'. It is these arguments that convince Socrates of the need for accepting the myth.[9] That is, I take it that there are two arguments here. The first is:

1. If learning is recollection, then if recollection is possible, then it is possible for the soul to recall what it knew before.
2. If it is possible for the soul to recall what it knew before, then ∼MP.
3. Recollection is possible. (We know this from the myth of the priests, priestesses and poets.)

Therefore, ∼MP. The second is:

1. If searching is by the method of hypothesis, then if the method of hypothesis yields knowledge, then searching is possible.
2. If searching is possible, then ∼SP.
3. The method of hypothesis yields knowledge. (We know this from the slave-boy demonstration.)

Therefore, ∼SP.[10]

Taylor's belief that Meno is presenting irrelevant issues in his sophistic puzzle, Klein's thoughts on the negative influence of the paradox, and Bluck and Philip's insistence that it is merely a dodge.

[9] As I will show, it is not that recollection must be an *a priori* truth; rather, it must be accepted as an hypothesis if learning is possible. That is, *if* we accept recollection, *then* we can avoid MP and so can then seek after/learn about the *qualities of* an object via the hypothetical method, even though we do not in any sense know the *object itself* that we are searching for.

[10] Note that both of these arguments fit Vlastos' [1988] description of the scheme of the hypothetical method:

> When faced with a problematic proposition *p*, to 'investigate it from hypothesis', you hit on another proposition *h* (the 'hypothesis'), such that *p* is true iff *h* is true, and then shift your search from *p* to *h*, and investigate the truth of *h*, undertaking to determine what would follow (quite apart from *p*) if *h* were true and, alternatively, if it were false. (p. 380)

In the first argument the proposition *p* is 'learning is possible' and the hypothesis *h* is 'recollection', so *p* iff *h* is 'learning is recollection'; in the second *p* is 'searching is possible' and the hypothesis *h* is 'the method of hypothesis', so *p* iff *h* is 'searching is by the method of hypothesis'. There appears to be some circularity here, but it is not vicious. The hypothesis of recollection and the hypothesis of the hypothetical method are used to underpin *the*

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What is important is, given the theory of recollection, the ontological requirement for knowledge (Meno's requirement that we know *what* the object of our search is) is no longer a methodological requirement for the search for the qualities of such objects (the only requirement is that we are guaranteed 'that', in some sense, the object of our search is). Recollection, then, is put forth as a meta-epistemic hypothesis of learning.[11] In light of MP, this myth answers *why* we should learn or seek: we can assume *that* there are such objects whose qualities can be known because from the vantage point of this myth 'the soul has learned everything' [81d], this with the result that

> … since all nature is akin … there's nothing to stop a man recovering everything else by himself, once he has remembered — or 'learnt', in common parlance — just one thing; all he needs is fortitude not to give up the search. The point is that the search, the process of learning, is in fact nothing but recollection. *So* we shouldn't trust that controversial argument of yours: it would make us lazy, and appeals to faint-hearted people, but the doctrine I've just expressed makes us industrious and inquisitive. [81d; emphasis added]

However, in the *Meno*,[12] the *how* of learning or seeking is *not* answered by recollection. The how is accounted for by the hypothetical (or *geometrical*) method in so far as this method makes use of hypotheses in such a way as to allow one to go, via either deduction or construction,[13] *from* the object *to* knowledge of its qualities, *without* our having to know what the

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motivation for *our use* of the method of hypothesis; it is not taken as *part of* the method itself. See [Scott, 2009, pp. 138–140; 221–224] for a discussion of the debates surrounding the exact formal schema for the method of hypothesis.

[11] While I have not encountered other written evidence to support my claim that recollection is, itself, not a method but a meta-epistemic hypothesis of learning (though [Benson, 2003] comes close; see note 19), I note that Sternfeld and Zyskind [1986] refer to recollection as 'a myth and hypothesis that Socrates uses to motivate inquiry' (p. 36). Where we part ways is, while they claim that acting on this trust thus becomes genuine action in the search for knowledge, I hold that such 'genuine' action (that is, action leading to knowledge) occurs only in those domains, like mathematics, where the hypothetical method is used to search after knowledge of *qualities of* objects (as opposed to those domains, like philosophy, where one is ultimately required in addition to search after knowledge of the *object itself*).

[12] I am not making the bolder claim that recollection, in early dialogues, is not presented as a method of knowledge.

[13] I include both deduction and construction as acceptable means of tethering hypotheses, all the while aware of Plato's supposed criticism, in the *Republic* [527a–b], of geometer's use of 'constructions'. I see no conflict here, however, since I take Plato's point in the *Republic* to be that it is not constructions themselves that are the problem, rather the problem is that geometers '*talk about* "squaring" and "applying" and "adding" and so on, *as if they were doing something* and their reasoning had *a practical end*, and the subject were

object, itself, is. This, we note, is in opposition to the *arithmetical* method of Meno, which attempts to go *from* the qualities of parts or instances, via enumeration and summation, *to* the essential or common quality of the object. Thus, as we will see, the slave-boy situation is not an experiment in, or demonstration of, the method of recollection:[14] it is a demonstration of *both* the need for the hypothesis of recollection and the use of hypothetical method itself.

Recall that the hypothesis of recollection functions to create energetic learners, seeking after the qualities of an object, not knowers of the object itself. Moreover, it does not aim to answer *how* knowledge of the qualities of an object is obtained, but instead answers *why* we should believe that such knowledge *is possible*. It is a meta-epistemic condition for learning; an hypothesis that allows us to accept that seeking and learning are possible. When confronted with MP, recollection allows us to assume *that* the object is, but it remains silent as to *what* the object is. In other words, using a distinction found in the *Theaetetus*, it guarantees that we 'possess' objects for knowledge but it does not justify or explain how we came to *have* them.[15]

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not, in fact, pursued for the sake of knowledge' (emphasis added). That is, such mathematicians, in construing talk of constructions literally, mistakenly assume that mathematics is pursued solely for the sake of some practical or applied purpose, as opposed to its being pursued for the 'pure', and perhaps even philosophical, end of coming to have knowledge of qualities of objects, so that their reasoning has both an end in itself as regards mathematical knowledge and a purpose on the path to philosophical knowledge.

[14] Guthrie [1956] is a prime example of one who holds that the slave-boy situation is an 'experiment' in the method of recollection. A decisive refutation of Guthrie's claim can be found in [Vlastos, 1965]. [Scott, 2009] also holds that the slave-boy situation demonstrates recollection as a method of philosophical discovery. Scott, however, presumes that the method of hypothesis is *only* exemplified by the more 'complicated' example [86e–87b]; claiming that 'It [the method of hypothesis] makes no appearance in the slave-boy demonstration…'. (p. 204) In contrast to Scott, I believe that the method of hypothesis is exemplified by the slave-boy's example of what length will double the area. Indeed *both* this and the more complicated examples are of the same type, that is, are 'questions about an area' [86e]. This with the consequence that in both cases 'When someone asks them [geometricians] a question about an area… a typical geometrician's reply might be: 'I don't know whether this is the sort of area that can do that, but I think I can come up with an hypothesis, so to speak, which will prove useful in this context …" [86e–87a]. Much has been made of the question of why Plato here choses a more complicated example, I point the interested reader to Scott's interesting and detailed discussion. For what it is worth, my explanation is that Plato wants to show that the same hypothetical method applies in 'simple' cases, like the slave-boy's, where non-mathematicians, like Socrates and Meno, know the answer, and in 'complicated' cases where Plato himself, and perhaps even mathematicians themselves, do not know the answer.

[15] This is the point where I disagree with Moravcsik's [1971] claim that we 'in some sense *know* the objects of knowledge'. Thanks to the myth of recollection, we *possess* them, *i.e*., we are guaranteed *that* such objects of knowledge are had by our soul, but we do not *have* them, *i.e*., there is no sense in which we know *what* they are. Again, I take

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To make *use* of the hypothesis of recollection, and so to respond to SP, the learner, as the geometer, must *act* to construct his knowledge using the hypothetical method. He must first assume *that* the object is, then he must posit an hypothesis as to *what* the object is; only then can he construct or deduce its possible qualities. If the construction or statement of these qualities agrees with other opinions that are held to be true, then one accepts the hypothesis; if not, then one rejects it.[16] Recollection, although it allows one to *begin* this activity, is not *part of* the method by which we undertake the activity of searching: by allowing us to assume *that* the object is, recollection only (but not merely) serves to allow us to sidestep the 'conjured and controversial' [81e] ontological concerns of the 'lazy and faint-hearted' [86c] that underwrite MP and so that appear to forestall SP.

Taking recollection as an hypothesis allows us to resolve another problematic aspect of both MP and SP. This aspect considers how Socrates, as one who disavows knowledge, can nonetheless act to direct our search. The philosopher need not, and indeed ought not, be a teacher or knower of what the objects of knowledge are (see [81e–82a]); he need only be a questioner or tester of consistency of claims about what the qualities of an object are. The *Meno*, then, more than demonstrating the benefits and

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this distinction from that found in the *Theaetetus*'s 'aviary analogy' where Socrates likens possessing versus having knowledge to possessing a bird, say in a cage, versus having a bird, say in your hand. I note too that Plato introduces this distinction in the *Theaetetus* in a circumstance similar to the introduction of the theory of recollection, that is, when confronted with a version of MP. Though he is here concerned with the problem of false knowledge (false opinion) equally as with the problem of knowledge itself. In any case, it is in light of Socrates' observation that 'it is shameless to explain what knowing is like, when we don't know what knowledge is . . . . The truth is, Theaetetus, that for some time past there has been a vicious taint in our discussion' [196d–e]. And so we 'suppose that every mind contains a kind of aviary stocked with birds of every sort, some in flocks apart from the rest, some in small groups, and some solitary, flying in any direction among them all' [197e]. But interestingly, here Plato also considers a *tabula rasa* view of the mind: 'When we are babies, we must suppose this receptacle empty, and take the birds to stand for any piece of knowledge. Whenever a person acquires any piece of knowledge and shuts it up in his enclosure [possesses it], we must say he has learned or discovered the thing of which this is the knowledge, and that this is what "knowing" means.' In this way, talk of possessing (as opposed to having) objects of knowledge, replaces the theory of recollection: in any case 'the man was setting about learning again from himself what he already knew' [198e]. Now we know that this aviary account of knowledge fails since, in the case of considering false opinion, it requires 'birds of ignorance' as well as 'birds of knowledge', but my point here is that the myth of recollection serves the same role as does the aviary account's notion of possessing, *viz*., in light of MP it guarantees *that* the objects of knowledge are, but tells us nothing of *what* the objects of knowledge are.

[16] I take as accurate Vlastos's [1988] description of the scheme of hypothetical method as quoted in the middle of note 10.

limits of methods, lays out for us the role of the learner, both philosopher and student, as 'industrious and ingenious' *seeker after knowledge*.

If recollection itself is an hypothesis, the philosopher who considers himself both a learner and seeker, as Socrates does, cannot *know* that recollection is true. Socrates, himself, makes it clear that he does not hold recollection to be a truth, either *a priori* or metaphorical;[17] rather, he, himself making use of the hypothetical method,[18] accepts it, and indeed is ready to 'defend it to the death' [86b], as an hypothesis, because without it there can be no philosophy — there can, in light of SP, be no desire to know:

> *I wouldn't support every aspect of the argument [for recollection] with particular vigour*, but there's one proposition that *I'd defend* to the death, if I could, *by argument* and by action: *that as long as we think we should search for what we don't know we'll be better people* — less faint-hearted and less lazy — than if we were to think that we had no chance of discovering what we don't know and that there's no point in even searching for it. [86b–c; emphasis added]

[17] Here I am referring to Moravcsik's [1971] claim that 'Plato intended the thesis to be an *a priori* truth' (p. 69). On Moravcsik's interpretation of the *Meno*, however, Plato's arguments do not warrant such a supposition. Thus, he concludes: 'As an hypothesis about the structure of the mind the recollection thesis seems to fall between a very general empirical theory and being a metaphor' (p. 69). Against this interpretation of what Plato intended, and the conclusion that Moravcsik draws, I argue that Plato never intended the thesis to be an *a priori* truth about the structure of the mind. As the structure of the dialogue witnesses, Plato intended it to be an hypothesis about the possibility of learning. My suspicion is that Moravcsik's confusion lies in his previously noted claim (see note 7) that we must in some sense know *what* we are searching for. If this were the case then recollection might have to be a truth about the structure of the mind, *i.e.*, it might have to account for why we already *have* [as opposed to *possess*] objects of knowledge. But no such account is required if we assume that the only role that recollection plays in this dialogue is to guarantee *that* we have objects to search after. Indeed, Scott [2009], who also holds recollection as a method of philosophical discovery, claims, '… there is no evidence, at least from 86b, that Socrates is signalling to us not to take his theory literally' (p. 121). I disagree; I think that the fact that an appeal is made to priests, priestess, and poets as the source of this myth, together with what Socrates says at 86d, *viz.*, 'I wouldn't support every aspect of the argument with particular vigour …', clearly shows this. I think this myth, like Gorgias' Empedoclean definition of color [76c], is supposed to be 'attractive' [81a] to Meno just on the basis of Meno's believing the source to be reliable. In both cases, however, Socrates (who constantly warns Meno that he ought not rely on the 'truths' of others but rather must state what he himself believes) remains doubtful of its truth, even if he takes it as needed to reply to MP. Waterfield [2009] also disagrees; he believes that at 86d Plato is indicating to us that recollection is doubtful. However, since Waterfield takes *both* recollection and the method of hypothesis as providing a reply to MP and so as providing for a method of philosophical inquiry (see [Waterfield, 2009, p. 176], he contends that what is to be held as doubtful is one or more aspects of recollection, not recollection itself [*ibid.*, p. 178].

[18] See note 10 for an account of how Socrates' arguments fit the schema of the hypothetical method.

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If recollection is neither a method, a mere myth, nor a truth, but rather serves as an hypothesis that underpins the motivation, and subsequent argument by demonstration, for using the new hypothetical method to seek after and learn, then we are left to face the question: what has happened to the Socratic elenchus? It is my claim that, in the *Meno*, the Socratic elenchus, as a method for learning the qualities of objects, is being *supplemented by* the hypothetical method. Note, however, that I am not claiming that those preparatory steps of the elenchus, *i.e.*, those that create conflict so as to cleanse the mind in preparation for learning, are being abandoned or replaced.[19] Rather, I hold that, once our mind is so cleansed by the elenchus, the answer to *how* we search for the knowledge of qualities of an object is given by the hypothetical method *alone*.[20]

The geometrical method, in so far as it relies on the learner's initial claim being *hypothetical* in nature, cannot be *part of* the elenchus which relies on the learner (student and philosopher) initially *stating what he truly believes*.[21] Likewise, the role of the philosopher as questioner changes depending on whether he uses the elenchus or the hypothetical method. His role in the former is set at showing the *internal* inconsistency of the student's opinions.[22] His role in the latter, however, is set at showing the *external* consistency (or external inconsistency) between what are

[19] I do not agree with the view of Vlastos [1988] that *all* of the steps of the elenchus are being cast aside. Rather, I agree with Benson's [1990] view that 'Plato's attitude toward the elenchus in the *Meno* has not changed . . . [T]he *Meno* suggests that Plato is simply advancing beyond it. He is advancing beyond the Socratic/elenctic goal of eliminating false conceit to provide, for the first time, a substantive view about what might be obtained' (p. 130). Where Benson [1990] and I diverge in opinion, however, is that he takes this substantive view to be given by *both* recollection *and* the hypothetical method, whereas I take it to be given by the hypothetical method *alone*. I note, however, that more recently Benson (see his [2003; 2006; 2008]) has dropped the close connection between the theory of recollection and the method of hypothesis and, in so doing, has presented a view closer to the one I am suggesting. For example, in his [2003], he characterizes the theory of recollection as a psychological/epistemological explanation for the possibility of inquiry. Yet too, while the hypothetical method comes to be taken as *the* method of the *Meno*, in [Benson 2003; 2006; 2008], we are led to a characterization of the method of hypothesis as a *part of* the dialectical method. This, as I will claim (see also note 36), is a mistake.

[20] This I suggest in contrast to Guthrie's [1956], Benson's [1990], and Scott's [2006] view of recollection as a method and Robinson's [1971] view that the hypothetical method is *part of* the elenchus.

[21] Here I refer the reader to [Vlastos, 1988] which says: 'To adopt this [hypothetical] procedure as a methodological model for research . . . is *to scuttle the elenchus*: adherence to the model would entail systematic violation of the "say only what you believe" rule, which forbids debating an unasserted premise, while "investigating from a hypothesis", requires it' (p. 380).

[22] More precisely, the role of the philosopher in the elenchus is, as Vlastos [1988] states, 'to compel his interlocutors to "witness against themselves", *i.e.*, to induce them to see that the falsehood of their theses is entailed by propositions embedded *within their own system* of belief-propositions they themselves consider true' (p. 7).

deduced as qualities from the hypothetical definition and what is believed to be true *on independent grounds*.[23] Finally, the elenchus, in so far as it equally reduces man and boy to a state in which their 'mind and mouth are literally torpid' [80b], cannot be part of a method whose aim is to produce 'industrious and inquisitive' [81d] seekers after knowledge. For these reasons we see why the elenchus should be seen as needing to be supplemented by the hypothetical method.

If I am right in my analysis of the elenchus, of recollection, and of the hypothetical method, then what the *Meno* shows us, *i.e.*, what Plato intends to show us through Socrates' interactions with *both* Meno and the slave-boy, are the benefits *and* limits of *both* the elenchus and the hypothetical method. Thus, as noted, the problem with the standard interpretations of Plato's *Meno* is that they leave open the investigation of how the slave-boy situation fits in with other structural aspects of the dialogue. In particular, such accounts fail to deal with those questions that serve to underwrite the intended impact of the slave-boy situation on the benefits *and* limits of *both* the elenchus and the hypothetical method.

2. The Benefits and Limits of the Methods of the *Meno*

When we consider the structure of the *Meno*, we see that there is a *triadic* analogical relation between Socrates and Meno, Socrates and the slave-boy, and Plato and ourselves.[24] Corresponding to each of these relations is a question of the form: what is *x* such that one can seek after and learn the *qualities of x*, *without* having to know what *x is*? Socrates and Meno's

[23] This reference to truth 'on independent grounds' is important. It brings to the fore yet another important difference between the elenchus and the hypothetical method. In the employment of the elenchus *all* opinions, both the student's and the philosopher's, must be left open for testing. For the hypothetical method, however, it is only the hypothesis that is open for testing and this testing is done with respect to *opinions* which are *presumed true for the sake of argument*. For example, when Socrates tests the hypothesis that excellence is knowledge, he does so against the presumption that 'there are no teachers of excellence' is true. I am *not* saying that Socrates must *know* that there are no teachers of excellence, rather I am merely pointing out the positive role that opinions play in the employment of the hypothetical method.

[24] Indeed, it is here that my interpretation is importantly distinct from any that have come before it. Certainly, most, if not all, readings of the *Meno* have considered, to a greater or lesser extent, the *diadic* analogical relationship between Meno and Socrates and the slave-boy and Socrates (see especially [Scott, 2009]), and some have considered the consequences of the respective questions being asked of each, *viz.*: what does the slave-boy situation tell us about learning or seeking after the qualities of excellence, without our having to know what excellence itself is? But none has investigated the *triadic* analogical structure and considered the question of what *we* are to learn from our interaction with Plato by considering the question: 'What do both the Meno and Socrates interaction and the slave-boy and Socrates situation tell *us* about learning or seeking after the *qualities of* knowledge, without our having to know what *knowledge itself* is.

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question is: what is excellence such that one can determine whether it is teachable, *etc*., *without* having to know what excellence *is*? Socrates and the slave-boy's question is: what is the length of the side such that one can double the area of the given square, *without* having to know what the length *is*? Finally, Plato's question to us is: what is knowledge such that one can seek after and learn the qualities of knowledge, *without* having to know what knowledge *is*? This three-way analogy, I claim, is meant to demonstrate to us the benefits *and* limits of *both* the elenchus *and* the hypothetical method.

Plato shows us, through Socrates' initial 'arithmetical' interaction with both Meno and the slave-boy, that the elenchus is beneficial in that, by cleansing the mind of false opinions, it prepares one for the search for knowledge, but it is limited in that, in light of both MP and SP, it cannot provide either the motivation, the method, or the objects of such a search. He then shows us, through Socrates' subsequent 'geometrical' interaction with both the slave-boy and Meno, that any search for knowledge of a quality of an object, once false opinion has been removed and motivation has been restored, must begin anew with the hypothetical method. The benefit of the hypothetical method is thus demonstrated by Socrates' interaction with both the slave-boy and Meno: we *can*, if we make use of the hypothetical method, have knowledge of the *qualities of* an object, *without* having to know what the object *is*.

But the hypothetical method is also limited. As witnessed by Socrates' final interaction with Meno, Plato shows us that this method, while it allows us to search after and learn the qualities of knowledge, cannot provide the means for searching after the objects of knowledge themselves. What Socrates' discussion with Meno, after the slave-boy demonstration, shows is that since we can only come to know the deduced qualities of an hypothesis, we can, maximally, only come to have *true opinions* about the qualities of object of our search. This because, so long as we tether *from an hypothesis* (as opposed to tether *to an object*), we might, in our deductions or constructions, assume a questionable premise which will then require that we question our conclusion and so too our hypothesis. As Socrates shows Meno with respect to the nature of excellence, so Plato shows us with respect to the nature of philosophical knowledge: our *true opinions*, in so far as they are tethered *from* an hypothesis via the mathematician's method, though they might be a guide for *acting as if* we know the object itself, so that we can construct or deduce its qualities, cannot provide a tether *to* the object itself, and so cannot provide a means for *knowing* the object itself. Thus, while the hypothetical method is beneficial in that it can yield *mathematical knowledge* (which aims only to tether *from an hypothesis*), it is limited in that it cannot yield *philosophical knowledge* (which aims to tether *to the object itself*).

At the end of the dialogue Plato warns us of the dangers of ignoring this limit, of becoming someone, like the statesman, who, in his employment of excellence, makes use, as does the mathematician, of only true opinion, or well-aimed conjecture.

> If knowledge isn't responsible, the only remaining possibility is that it's sound belief. That is what politicians use to steer their communities aright, since as far as knowledge is concerned they're in the same state as soothsayers and inspired diviners. I mean, these men too often speak the truth when they're possessed by some god, but they don't understand anything they say. [99c]

Socrates here tells Meno, and Plato tells us, of the great danger of ignoring the limits of the mathematician's hypothetical method and so of confusing it with the philosopher's method. Once this happens we have closed off any access we might have had to philosophical knowledge because we have lost any motivation for rationally seeking after or learning the object of knowledge itself: 'No, the excellence of good people comes to them as a dispensation awarded by the gods, *without knowledge* [*i.e.*, without making use of the faculty of reason]' [99e–100a; emphasis added].[25]

I now turn to consider in greater detail what Plato shows us about the benefits and limits of both the elenchus and hypothetical method. The first step of the Socratic elenchus is the interlocutor's assertion of knowledge. This assertion is not presented as an hypothesis but rather is stated, by both Meno and the slave-boy, as a truth. Meno, in response to Socrates' request '… Meno, please do tell me in your own words what you think excellence is' [71d], says: 'Well, it's not hard to put into words … If you'd like me to start with masculine excellence, that's easy …' [71e]. Similarly, the slave-boy begins with the confident assertion of knowledge. In response to Socrates' question 'What about the line of our new figure, which is double in size?' [81e], he says: 'Obviously, Socrates, each line must be double in length' [82e]. Witnessing the intended analogy, Socrates reminds Meno, as Plato reminds us, that he is taking the slave-boy down the same elenctic path as he took Meno: 'Do you see, Meno … At this moment he thinks he knows what the length of line will produce a figure of 8 square feet' [82e]. The second step of the Socratic elenchus is marked by a stage of perplexity wherein one realizes that what one has stated to be true is, in fact, false or at least internally inconsistent. It marks the point

[25] Note that since the Greek text employs the term *nous*, I have glossed Waterfield's translation from simply '… without knowledge' to include '… without making use of the faculty of *reason*'. This is important because, if I am right that the *Meno* is continuous with the *Republic*, then we can recover the point made in the *Republic* that whereas the mathematician uses the faculty of thought to *tether from hypotheses*, he is still yet distinct from the philosopher, who uses the faculty of reason to *tether to the objects*.

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of conflict between what can be consistently believed, given the premises first asserted.

It also marks the point of conflict, between both Socrates and Meno and Socrates and the slave-boy. It is this stage that frustrates the most since it is on one's own terms that one is defeated. Meno, when taken to this stage, is still not ready to admit that he does not know; he instead blames Socrates for his perplexity:

> Before I met you, Socrates, I'd heard that all you do is infect other people with the bewilderment you suffer from yourself. And that seems to me to be what you're doing to [me] now too: you're using magic and witchcraft on me. It's hardly an exaggeration to say that you're casting a spell on me, to make me utterly stuck. If you allow me a little joke, I think I know the perfect image for you: in appearance and all other respects you're just like one of those flat sea-fish torpedoes. I mean, the torpedo numbs anyone who comes near enough to touch it, and I think you've done the same kind of thing to me. [80a]

This is also the point where Plato tells us of the role of the philosopher as a learner or questioner, and not a teacher. Although Socrates disavows knowledge, he must, as a learner or questioner, be involved in the search without, as a teacher must, knowing the answer:

> As for me, if the torpedo numbs other people by excellence of the fact that it's numb itself, I am indeed like it, but otherwise I'm not. It's not that I make other people stuck while being clear myself; no, I make other people stuck by virtue of the fact that I'm stuck myself. [80c]

This conflict and frustration witnesses the benefit of the elenchus, wherein one realizes that one does not know what one first claimed to know; it marks the cleansing of the mind that is needed to *begin* the search for knowledge. Socrates says to Meno of their elenctic experience:

> In the present instance, I don't know what excellence is, and although you probably did know before you came into contact with me, you seem not to know now. But I'd be happy if the two of us together could investigate the issue and try to find out what it is. [80d]

Likewise, when the slave-boy finally comes to admit that he does not know, saying: 'By Zeus, Socrates, I just don't know.' [84a], Socrates here points out:

> Meno, can you see where our friend here has got to on his journey towards recollection? At first, he didn't *know* which line would produce the figure with an area of 8 square feet — just as he doesn't

> know the answer now either; but he still *thought* he knew the answer then, and he was answering confidently, as if he had knowledge. He didn't think he was stuck before, but now he appreciates that he *is* stuck and he also doesn't think he knows what in fact he doesn't know. [84a]

Note, however, that we have not yet reached the point at which the hypothesis of recollection is required; we are still using the method of elenchus, not that of hypothesis. Socrates reminds Meno, as Plato reminds us, that we are on the *journey towards* recollection [84a]. The benefit of the Socratic elenchus, as shown to us by Plato's *Meno* is this: it clears away what may have otherwise hindered our search for knowledge of the qualities of an object, *but* it is not *part of* the search itself. This fact is noted by Socrates who says to Meno, of the slave-boy's elenctic experience:

> At any rate, it would seem that we've increased his chances of finding out the truth of the matter, because now, given his lack of knowledge, *he'll be glad to undertake the investigation*, whereas before, he was only too ready to suppose that he could talk fluently and well to numerous people on numerous occasions about how a double-sized figure must have double-length sides. [84c; emphasis added]

As noted, the introduction of both MP and SP in Meno's discussion with Socrates, marks the limits of the Socratic elenchus as a method for seeking or learning. As previously stated, this is also the point at which Socrates brings in the hypothesis of recollection which accounts for *why*, in light of our having been 'utterly stuck' and silenced by the elenctic method, we should still desire to seek or learn. Recall, if we chose not to accept the theory of recollection then we must, in light of both MP and SP, accept the conclusion that 'it's impossible for a man to search . . . '. Thus, even if it is *not a method*, it certainly is needed to *motivate* us to be 'industrious and inquisitive' seekers after knowledge.

Recollection, while underwriting our philosophical motivation, cannot account for the method of learning: it cannot answer *how* we should seek or learn. Rather, the account of the method of seeking or learning is to be found in the slave-boy demonstration where it is shown that it is the geometrical method which moves us from an hypothesis to knowledge of the qualities of an object, without our having to know what the object is. So when Socrates says to Meno 'I'll use him [the slave-boy] to prove the point to you' [82b], the point he is referring to is *both* the need for the hypothesis of recollection *and* use of the geometrical method. This with the aim of showing that, to respond to both MP and SP, and in so doing motivate the

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use of the hypothetical method, one, neither student nor philosopher, need not know what the object of the search, itself, is. To motivate the search one only needs to assume *that* the object is; thereby demonstrating that 'there's no such thing as teaching (which requires that we know *what* the object of knowledge is), only recollection (which allows us to assume *that* the object of our search is)' [82a].

Again, following the analogical structure of the dialogue, we note how the slave-boy, like Meno, initially relies on arithmetical, or summative, qualities, of the parts of the squares to answer the question: 'what is the length of the side?'. Using this strategy, however, will not work; since the length of the side is the irrational number $2\sqrt{2}$, there can be no arithmetical answer.[26] What we require, then, is what we require with Meno, namely, a new method that will allow us to know the qualities of the object, *without* our having to *begin with* the qualities of its parts and 'sum' to the essential or common quality of the object itself, and *without* our having to know 'what' the object, itself, is.[27] The slave-boy situation, then, demonstrates the shift from the elenctic method, of giving arithmetical answers

[26] This reading is also noted by Vlastos [1988]. He says: 'Elenchus is good for this, and only this [convincing the slave-boy of his error]. It does not begin to bring him to the truth he seeks. He could have gone on until doomsday trying out different integers … The problem admits of no arithmetical solution. But it does admit of a geometrical one. No elenctic badgering could have elicited it from the boy' (p. 375). This reading is in contrast to Waterfield [2009] who claims that 'nothing significant hinges on the fact that Plato gives a value to the length of the side; it saves him having to talk in the abstract about equal lines, lines double in length, half as long, and so on' (p. 176). But he does, rightly, continue '… it suggests [and other evidence proves (see [Fowler, 1999])] that at this stage Greek mathematics was geometrized rather than arithmetized…' (p. 176).

[27] This I offer against Benson [1990] who, claims that 'Socrates and Meno know the answer to the question "What is the length of the side?"' (p. 135). This also indicates another of the problems of taking recollection as, or as part of, the method of the *Meno*: such an interpretation must not only suppose that Socrates has some kind of knowledge (as Moravcsik's and Benson's interpretations do) but it must, as a consequence, also suppose that he accepts something that no Greek mathematician would, *viz*., the existence of irrational numbers. Vlastos [1988] too notes this fact: 'In Greek mathematics, which recognizes only integral numbers, no integer or ratio of integers could yield the answer to Socrates' question' (p. 375). Note, however, that Vlastos too is not quite on point here: Greek mathematicians *did accept* at least some of those 'irrational' ratios that were 'geometrical'. That is, as Benson [2003] notes, using definitions and terms found in Book X of Euclid's *Elements* (see, in particular, [Fowler, 2003, p. 162]), they accepted those straight lines, squares so constructed from them, and areas so produced, that were incommensurable and yet *rhētos*, or 'expressible' (or given with an account or *logos*), as opposed to those that were *alogos*, or 'inexpressible' (or given without words or given without an account or *logos*). And indeed, the example given in the *Meno*, is of an expressible line, square, and area. Thus, the issue here is not the rationality or irrationality of numbers *qua* 'arithmetical' *objects*; it is the expressibility, or ability to give an account or *logos*, of lines, squares, and areas *qua* 'geometrical' *qualities*, *i.e*., qualities that can be given an account of, or expressed, as a result of a definition.

on the basis of the enumeration of the qualities of the parts, to the new hypothetical method of giving geometrical answers by beginning with an hypothesis, from which one can construct an 'object' and then deduce its qualities.

This shift in method, I claim, is marked both by Socrates' advice to the slave-boy, after he has given several mistaken answers, to shift from arithmetical considerations to geometrical ones: 'If you don't want to use numbers, at least point to the line that would produce it' [84a] and by his returning to the figure as initially drawn: 'Tell me, then. This is our [initial] figure with an area of 4 square feet, isn't it?' [84d]. He is likewise, I argue, noting that we have reached the limit of the elenctic method and so we must begin our search anew by *supplementing it* with the geometrical approach to questions of the form: what is *x* such that one can seek after and learn the *qualities of x*, *without* having to know what *x is*?. What we are shown is that in answering the question 'What is the length of the side such that one can double the area of the given square, *without* having to know what the length *is*?', the slave-boy must not rely on the arithmetical qualities of the parts (arithmetical qualities of the smaller squares) but rather must rely on a geometrical quality of the object itself, that is, he must rely on the definition of the diagonal of the larger square itself.[28] The length of the diagonal, then, is the length out of which we can construct the 'object' of our inquiry (the larger square of doubled area) and so represents the hypothesis[29] that we must accept in order to deduce the qualities

[28] One must note the special role that this mathematical definition plays. It represents *both* the existential hypothesis, *that* the object is, which we recollect, *and* the hypothesis, from which we employ our methods of deduction or construction. In this way a mathematical definition bridges the 'ontological' gap between recollection and the hypothetical method by allowing us to take our hypothetically defined 'object' as an *object of thought*, as explained further in the *Republic*. That is, as an hypothetically defined object that allows us to give an account or *logos* without our having first to tether from the object itself (as would be required of an *object of understanding*, for example). As Hare [1965] explains: 'a definition had in Plato's thought an ontological as well as a logical role to play … [T]his explains Plato's insistence on the three-way connection between a thing's existing, its being knowable, and the ability of the knower to give a *logos*' (p. 30). In this light, we can further make sense of Sternfeld's and Zyskind's [1978] remark that 'the diagonal is discovered as the generative cause that constitutes a new entity' (p. 40).

[29] Again, following Vlastos's [1988] schema, where *p* is 'the length of the side that doubles the area', *h* is 'the length of the diagonal', and *p* iff *h* is 'the length of the side that doubles the area is the length of the diagonal', the argument is as follows:

1. If the length that doubles the area is the length of the diagonal, then if the diagonal is 'expressible' and so allows us to construct the large square as 'expressible' (see note 27), then we can know the length that doubles the area.
2. The diagonal allows us to construct the larger square. (We know this by the actual construction.)

Therefore, we can come to know the length that doubles the area.

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of this newly constructed 'object'; the qualities which we appeal to then to answer the question.[30]

So what has the slave-boy demonstrated to Meno and *to us* about seeking and learning? He has shown that by making use of an hypothesis, *i.e.*, by assuming *that* there is a length of the side, as now represented by the hypothesis of the length of the diagonal, he has been able to begin his search for knowledge of the qualities of the length of the side of that will double the area. Specifically, he has shown that one can learn that the length of such a diagonal will produce a square with double the area, *without* having to know what the length of the side *is*. Thus, the slave-boy situation has shown Meno and us that it is possible to have knowledge of the *qualities of* an object, *without* having to know *what* the object *itself* is.

Returning, then, to Meno's initial questions, we see that the discussion of excellence between Meno and Socrates is a situation, like that between Socrates and the slave-boy, where there is no knowledge of the object (no knowledge of *what* excellence *is*) but one wants to know its qualities (whether or not excellence is teachable, *etc.* . . .). With the newly demonstrated method of hypothesis in hand, Socrates, after the slave-boy demonstration, is now ready to reconsider Meno's question, he says:

> Well, Meno, if I could regulate not just myself, but you too, we wouldn't investigate whether or not excellence is teachable until we'd first looked into the question of what it is in itself. But since you're not even trying to regulate yourself . . . and since you're trying, successfully, to tell me what to do, I'll give in to you. What else can I do? And so it seems that we've got to consider what sort of thing excellence is before we know what it is. But please relax your control of me just a little, at least, and let us get away with making use of an hypothesis,[31] as we consider whether it's teachable or whatever. What do I mean by 'making use of an hypothesis'? Think of how geometricians go about their investigations. When someone

[30] Notice here that the diagonal is not, itself, an hypothetical object; it is a definition or a *name* that we *use* to construct the square that has double the area. Socrates says: 'The *technical name* for this line [that runs from corner to corner] is a 'diagonal', so — *making use of this term* 'diagonal' — what you're saying, boy, is that it is the diagonal that will produce the double-sized figure we are after' [85b, emphasis added]. So though Socrates does not know what the length is, he does know how to name it, or define it, so they can get on with answering their question. Note too that the term 'diagonal' is introduced by Socrates himself; as Waterfield [2009] notes, 'it is hard to see how the slave could have come up with the diagonal on his own . . . This is where Socrates goes beyond eliciting replies and seeds new information . . . ' (p. 177).

[31] Note that while [Waterfield, 2009] uses the term 'assumption' here, and elsewhere in the translation, I use the term 'hypothesis'. This to remain in line with what is standardly termed the 'method of hypothesis'.

> asks them a question about an area[32] … a typical geometrician's reply might be: 'I don't yet know whether this is the sort of area that can do that, but I think I can come up with an hypothesis, so to speak, which will prove useful in this context … So if I can make an hypothesis, I'm prepared to tell you what follows, in terms of whether or not it's possible …' … We should do the same where excellence is concerned … [86e–87b]

What, then, is the hypothesis with which they begin their search after one of the qualities of excellence, *viz*., whether it is teachable? It is the hypothesis that only knowledge is teachable: 'Above all, we should ask whether or not it's teachable … so let's ask whether it's teachable if it's *different* from knowledge or if it's *similar* to knowledge. But perhaps it's perfectly clear that no one is taught anything except knowledge' [87b–c]. The problem with this hypothesis is that if excellence is knowledge and if only knowledge is teachable, then, indeed, it could be taught, but there are no teachers of excellence (at least, none amongst the sophists, statesmen, and poets that he considers in his conversation with Anytus) [90a–96c]. Thus, we are left to conclude that excellence cannot be taught and so '… we were wrong to agree that good guidance is impossible without knowledge' [97a].[33]

What Socrates' interaction with both Meno and the slave-boy shows, then, is that the hypothetical method of searching after or learning the qualities of an object does not demand that we know *what* the object of our search is. We can, in our search for knowledge of qualities, *begin with* an hypothesis and then tether its qualities through reasoning (deduction or construction) *from* the hypothesis. If, however, we want knowledge of *what* the object is, as opposed to hypothetical knowledge of its qualities, then we must concern ourselves with those questions of *ontology* or *reality*

[32] I leave out the details of the particular example here but note that some take this to be *the only* example of the hypothetical method and others too have debated the possible reasons for the 'obscurity' of this example. See [Scott, 2009, pp. 129–137, 225–226] for an interesting and detailed discussion of both of these issues. See also [Waterfield, 2009, p. 178].

[33] Note too that this argument again fits Vlastos's [1988] description of the scheme of hypothetical method (again, see note 10). The argument is as follows:

1. If excellence is knowledge, then if it is knowledge, then it is teachable.
2. If it is teachable, then there are teachers.
3. There are no teachers. (We know this from Socrates' discussion with Anytus.)

Therefore, excellence is not knowledge.
Again, we follow Vlastos' [1988] scheme; here *p* is 'excellence is teachable', *h* is 'only knowledge is teachable' and *p* iff *h* is 'excellence is knowledge'.

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to the same extent as we have concerned ourselves with those of *methodology* or *learning*; which is something that neither recollection nor the hypothetical method can assist with.

Let us now return to consider the benefits and limits of the hypothetical method as witnessed by the structural aspects of the dialogue. Specifically, let us turn to investigate the impact that the slave-boy situation has on those questions that correspond to the triadic analogical relations between Socrates and Meno, Socrates and the slave-boy, and Plato and ourselves, *viz*., the questions: 'What is excellence such that one can determine whether it is teachable, *etc*., without having to know what excellence is?'; 'What is the length of the side such that one can double the area of the given square, without having to know what the length is?'; and, 'What is knowledge such that one can seek and learn its qualities, without having to know what knowledge is?'.

The slave-boy has learned that if he takes 'the diagonal is the length' as an hypothesis then the square constructed along the diagonal will have double the area, but he has not learned what the length of the side *is*. After their interaction, Socrates is careful to point out that the slave-boy has *knowledge*:

> At the moment, these beliefs have only just been stirred up in him and it all feels like a dream, but if he were to be repeatedly asked the same questions in a number of different ways, he'd certainly end up with knowledge of these matters that is as good and as accurate as anyone's. [85d]

Meno, likewise, has learned that if he takes 'if excellence is knowledge then it will be teachable' as an hypothesis, then, he can further reason to the *true opinion* that excellence will not be teachable, but he has not learned what excellence *is*.

As he did with the slave-boy situation, Socrates here again takes the opportunity to note the relation between true opinion and knowledge, now, however, with the aim of questioning the truth of the hypothesis they made that only knowledge is a guide to right action, and, in so doing, he explores the nature of the distinction between true opinion and knowledge. He says:

> As long as he [the person with true belief] correctly believes what the other person knows, he'll be just as good a guide as the one with knowledge … True belief, then, is just as good a guide as knowledge, when it comes to guaranteeing correctness of action. That is what we were overlooking before, during our enquiry into the nature of excellence, when we were saying that knowledge is the *only* good guide of our actions. In fact, though, there's true belief as well. [97b–c]

We have learned, then, that if we accept 'learning is recollection' as an hypothesis then, by use of the hypothetical method, knowing or coming to have true opinions of the qualities of an object is possible, but we have not sought after nor learned *what* knowledge itself is. Thus, although the hypothetical method allows one to have knowledge or true opinions of the qualities of an object, it cannot thereby lead us to knowledge of knowledge itself.

These considerations leave us asking why the slave-boy has, or can come to have, *knowledge* of the length of the side that doubles the area, whereas at the end of their search Meno and Socrates have only a *true opinion* as to whether excellence is teachable or not. Of the gap between knowledge and true opinions, we are further told of the difference in the *stability* of their tether:

> As long as they stay put, true beliefs too constitute a thing of beauty and do nothing but good. The problem is that they tend not to stay for long; they escape from the human soul and this reduces their value, unless they're anchored by working out the reason. And this anchoring is recollection, Meno, my friend, as we agreed earlier. When true beliefs are anchored, they become pieces of knowledge and they become stable. That's why knowledge is more valuable than true belief, and the difference between the two is that knowledge has been anchored. [97e–98a]

Simply put, what explains this disanalogy is the fact that the direction of Meno's search, as opposed to that of the slave-boy, is wrong.[34] Philosophical knowledge requires that we *tether to* and so *begin with* the object itself: the objects of philosophical knowledge, like the statues of Daedalus, 'must be anchored, or else they run away and escape. They stay put only if they're anchored' [97d]. Note, however, that this *tether to* the object itself is *not* required of the slave-boy or, indeed, of the mathematician.[35]

[34] This exact point is made in the *Republic* 533a–e, where Plato states that the mathematician travels downwards from (undisturbed and unaccounted [533c]) hypotheses to his conclusions whereas the philosopher must use 'some further procedure which sets out systematically to determine what each thing essentially is in itself' [533a] and so must travel upwards proceeding, via dialectic, 'by the destruction of hypotheses to the very first principle, so as to give itself a firm base' [533c–d].

[35] *I am* here making the much bolder claim that mathematics, for Plato, *does not* require objects themselves, *e.g.*, does not require Mathematical Forms. In the *Meno*, it is clear that mathematical knowledge is knowledge of *the qualities* that one can deduce or construct by *beginning with* hypotheses. It is also clear that mathematical knowledge is held as distinct from philosophical knowledge. Thus, against Vlastos's [1988] belief that Plato changed his view of mathematics from the *Meno* to the *Republic* I believe there is, in the *Meno* a glimpse of what Plato intends to claim in the *Republic*. I further believe, though certainly this needs arguing for, that Plato's 'mature epistemology', as developed in the *Republic*,

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This explains why Plato, in the slave-boy demonstration, purposely chose a quality of an hypothetically defined length which has no corresponding object: it explains why the length of the diagonal of the square is an irrational number which no Greek mathematician would have accepted as a number, let alone as an object. But the geometrical qualities of this length, nonetheless, allow us to give an account, or *logos*, that answers the question posed. Thus, the slave-boy has, or can come to have, *knowledge* because *mathematical knowledge* demands only a *tether from* an hypothesis *to* an 'expressible' quality. Socrates and Meno, by contrast, have only a *true opinion* as to whether excellence has the quality of being teachable or not because *philosophical knowledge* demands first a *tether to* the object itself,[36] otherwise all we have tether to is an hypothesis *qua* a possibly unstable, or even mistaken, opinion.

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requires only that mathematical objects, as objects of the faculty of reason or thought, are *intermediates* between the objects of the faculty of understanding (Forms) and the objects of the faculty of opinion or belief (physical objects). For a more detailed argument of this claim see [McLarty, 2005]. For arguments that Plato's view of mathematics requires objects as Mathematical Forms, see [Tait 1996; 2002; 2005].

[36] A similar distinction between *tether from* an hypothesis *to* a quality of an object and *tether to* the object itself is found in Benson [2003; 2006; 2008] who distinguishes between arguments *from* hypothesis and arguments *to* the hypothesis. As witnessed by the *Republic*'s 'Analogy of the Line', the first is taken, by Benson, to characterize the method of *dianoetic*, wherein the aim is to reason from some hypothesis to consequences which one tests for consistency against opinions or background beliefs, and the first and second together are taken to characterize the method of *dialectic*, wherein the aim is to justify the hypotheses themselves by tethering them to a higher-level hypothesis with the aim of providing a tether to an 'unhypothetical first principle' (to a Form). Benson further claims that dianoetic is *part of* the dialectic; I disagree. As Benson himself notes of what Plato claims in the *Republic*, their faculties are different: mathematical knowledge arises from thought (*dianoia*) and philosophical knowledge from understanding (*epistēmē* or *noēsis*). But too, their aims are different: dialectic, while it works to and from hypotheses, does not seek a tether to an hypothesis; it seeks tether to an 'unhypothetical first principle' (to a Form) and ultimately, 'by *the destruction of hypotheses* to the very first principle (the Good), so as to give itself a firm base' [533c–d; emphasis added]. Thus, I hold that, just as in the *Meno* the elenchus is being *supplemented by* the hypothetical method *without* being part of it, so too, in the *Republic*, the hypothetical method is being *supplemented by* the dialectical method *without* being part of it. Just as the elenchus, in so far at it reduces a man to a mass of helplessness, cannot be part of a method requiring energetic seekers after knowledge, so too the hypothetical method, in so far as it seeks to *tether from* an hypothesis *to* a quality of an object, *without* our having to know what the object itself is, cannot be part of a method that seeks to *tether to* the object itself. Cast in the terms that I have been using: the hypothetical method seeks after the *qualities* of an object by tethering from an hypothesis, *without* first asking *what* the object is; the dialectical method, by the *destruction* of hypotheses, seeks after the *nature* of an object and so, by contrast, must *begin with* a tether *to what* the object is. Thus, I disagree with Waterfield's [2009] claim that knowledge only requires a 'working out the reason', this with the result that '[i]t is very important to notice that the difference between knowledge and true belief in *Meno*

For example, in their use of the hypothetical method Socrates and Meno begin with the hypothesis *qua* unstable opinion that 'excellence is knowledge'. This is decidedly unlike the slave-boy situation, which begins with the hypothesis *qua* stable opinion that 'the length is the diagonal'. Mathematical hypotheses, in so far as they are founded upon *mathematical definitions*, that themselves arise from the correct use of mathematical terms, have a *stability* to them that philosophical hypotheses, in so far as they are founded upon *opinions*, do not.[37] This is why we can take those things constructed on the basis of mathematical hypotheses as 'objects', not objects of philosophical knowledge, but perhaps, as suggested in the *Republic*, as objects of mathematical thought. This difference in stability between tethers from mathematical hypotheses *qua* stable opinions or definition and those from philosophical hypotheses *qua* unstable opinions, further explains why Socrates' and Meno's philosophical hypothesis, that 'excellence is knowledge' [87b], falls apart; because, as noted, it is itself founded on the unstable, and even mistaken, opinion that 'good guidance is impossible without knowledge' [97a].

What, then, have *we* learned about the qualities of knowledge, without our having to know what knowledge itself is? We have learned that the mathematician, so long as he tethers from an hypothesis founded upon a stable definition, can use the hypothetical method to come to have *knowledge* of the qualities of an object, without having to know what the object is. We have also learned that the philosopher, so long as he tethers from an hypothesis founded upon a stable opinion, can use the hypothetical method to come to have *true opinions* of the qualities of an object, without having to know what the object is. We have further learned, that in the domain of 'good guidance', the domain say of the statesman, true opinion and knowledge are equally directive [99a]. Finally, we have learned that the philosopher, in his quest after philosophical knowledge itself, can neither rest with the mathematician's method nor with the statesman's good guidance. This is why the philosopher, who in making use of the mathematician's method,

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does not depend on their object (as in Plato's middle-period theory of Forms, in which Forms are the only objects of knowledge), but on their degree of certaintly' (p. 183). As I hope I have convincingly shown, mathematical knowledge requires only a 'working out of reason' beginning from hypotheses, but this is not the case for philosophical knowledge, which requires a 'working out of reason' from objects themselves.

[37] That Plato wanted us to be aware of the difference in stability between a mathematical *definition* founded on mathematical terms (again, what Socrates refers to as a 'technical name' [85b]), and an *opinion*, even those founded on 'philosophical' terms, is witnessed by Socrates' assessment that his geometrical definition of 'shape' [76a] 'is better' [76e] than the first, 'too simplistic' [75c], definition of 'shape' [75b] as founded on the 'definition' of 'color' and the next, 'grandiose' [76e], definition of 'color' as given by Empedocles' theory of effluences [76c–d].

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and so tethering from an hypothesis founded upon either true, or a possibly unstable or mistaken, opinion, is like the statesman;

> … since as far as knowledge is concerned they're in the same state as soothsayers and inspired diviners. I mean, these men too often speak the truth when they're possessed by some god, but they don't understand anything they say. [99c]

Such a philosopher, like the statesman characterised above, might be 'just as good a guide' in our quest after philosophical knowledge, but he will only believe the truth without understanding it. The only way the philosopher can 'stabilize' his opinions, and so come to have knowledge of what he truly believes, is by tethering these hypotheses, *qua* true opinions, *to* an object.

We have learned, then, that the activity of doing mathematics itself motivates us, in light of our being reduced to one that is 'stuck and silenced' by the elenctic method, and so vulnerable to being persuaded by 'conjured and controversial' arguments like Meno's, to remain, by undertaking the hypothetical method, 'industrious and ingenious' seekers after knowledge.[38] Yet if, as philosophers *or* mathematicians, we do not appreciate the limits of the hypothetical method, (if we confuse 'objects' of true opinion, constructed out of philosophical hypotheses based on unstable opinions, with objects of knowledge, or confuse 'objects' of thought, constructed out of mathematical hypotheses based on stable definitions, with objects of knowledge), then we too will be left to conclude that if anyone, like the sophist, statesman, oracle priest, poet, prophet, *and* the mathematician[39] has, and not merely possesses, any object of knowledge,

[38] This speaks to why the philosopher's education is to include ten years of advanced mathematical study and too explains the sense in which mathematics is good for the soul (see especially *Republic* 527–537). Not only does the study of mathematics move us away from the world of change to the world of being, from the faculty of the senses to the faculty of reason, but, by motivating us to remain energetic seekers, 'it would tend to draw the soul to truth, and would be productive of a philosophical attitude of the mind, directing upward [towards the Good] the faculties that now wrongly are turned earthward' [527b]. See also [Burnyeat, 2000] for an excellent and thorough analysis of the role of mathematics in Plato's account of the philosopher's development.

[39] Against Vlastos [1988], who holds that Plato does not come to see the limit of the hypothetical method until he comes to *Republic*, I argue that Plato has realized this limit in the *Meno*. As evidence for this I refer to, and agree with, Robinson [1971] who argues that Plato is sending a message to mathematicians as well as philosophers. That is, if we grant Robinson's claim that 'the word "hypothesis" is Plato's interpretation of their [the mathematicians'] procedure … [but] that contemporary mathematicians did not describe themselves as starting from hypotheses' (p. 104), then the message that he is sending to them is: 'mathematicians, who usually proceed dogmatically, … ought to proceed always hypothetically, because in reality they never know their ultimate premises to be true [they never know *what* their object is]' (pp. 104–105). The message he is sending to philosophers

he must get this knowledge through divine dispensation [100b]. This is because the mathematician, or the philosopher making use of the hypothetical method, only tethers from an hypothesis; he does not, and cannot, tether to an object. Thus, when it comes to the philosopher's task of seeking after knowledge itself and not just its qualities, he needs to seek after a tethering to the objects of knowledge themselves. Thus, he needs a new method (like the dialectical method of the *Republic*), which aims its tether to objects of knowledge (for example, to the Forms).[40] This explains Socrates' closing counsel to Meno:

> We'll confirm this, however, only by undertaking an enquiry into *what excellence is in itself* before asking how men come to get it. [100b, emphasis added]

Likewise, Plato's counsel to us is, in the case of philosophical knowledge, before asking what the qualities of knowledge are, we must seek to discover what knowledge is in and by itself. But too, lest we fail to appreciate the limits of the hypothetical method, let us not be pulled by this counsel to confuse the demands of philosophical knowledge with those of mathematical knowledge. That is, let us not conclude that mathematical knowledge, like philosophical knowledge, requires a tether to objects themselves. This may be platonism, but it is not Plato!

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likewise is: philosophers, when they want to know the qualities of an object, without having to know *what* the object is, ought to proceed as the mathematician, hypothetically, *but* when they want to know *what* the object itself is, they ought to use another method, which can provide for the tethering to the object itself.

[40] Recall that recollection in the *Meno* is required, for both mathematical and philosophical knowledge, to guarantee that we in some sense possess the 'objects' of knowledge, but the 'objects' of knowledge for the mathematician are the 'objects' which we can construct out of the qualities of 'objects' that we deduce from hypotheses. Once, however, both the hypothetical and dialectical methods are further developed, together with the theory of Forms, in the *Republic*, recollection will not be needed. In the *Republic*, the hypothetical method itself will be taken to motivate and produce those 'industrious and ingenious' seekers after knowledge that are required for philosophical inquiry; that are required for reasoning from and reasoning to hypotheses. Again (see note 38), this explains why, in the *Republic*, philosophers require first an in-depth mathematical education.

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