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Class 3 (1/28)

I start with a brief summary of our class discussion.
Then, I have a summary of some of the important points in the readings, which might be useful.

I. Jazmine's paper

Jazmine did a nice job of discussing the difference, for Plato, between knowledge and belief, and the worlds of being and becoming.
We talked also about the problems of perception, the inconsistencies, that lead to Plato's denigration of the world of becoming.
I mentioned Heraclitean problems, and worries about properties like tallness and shortness, of which most of us seem to have both at the same time.
These worries were derided as merely semantic.

We did not talk about what role the forms play in explanation, which is the subject of the *Phaedo*.
I wonder if there is anything to be salvaged there.

We discussed Plato's reasons for thinking that mathematics was important to study.
Jazmine argued, I think, that it helps us to analyze more difficult problems in terms of more simple ones.
I was concerned that the methodological worry that Plato has about geometry (the one about which I talked briefly at the end of class) is in tension with this view.

Lastly, I mentioned my unhappiness with demonstration of the doctrine of recollection in the *Meno*.
Jonathan mentioned that he thought it depended on the doctrine of the eternal soul.
I thought Plato might allow the argument to go in the other direction.
If Plato could show that the slave could only be described as having recollected the theorem, then he would have evidence that the soul is eternal.
My concern is that it seems clear that Socrates taught the slave.
Jazmine rightly pointed out that if we describe Socrates as having taught the slave, then we need some account of how he could have learned about perfect mathematical objects, given that the diagram is imperfect.

The word 'abstraction' was used to describe how one could come to mathematical ideas.
We will encounter this approach repeatedly through the course, including Wednesday, when we discuss Aristotle.

II. Jonathan's paper

Jonathan talked briefly about the good questions for Plato he raised in his paper.
Then, I ranted borderline-inappropriately about Kitcher.
And then I ranted about the divided line, Jonathan's "functionally irrelevant category quibble."
(See also below, my notes on the *Republic.*)
Jonathan wrote that Plato doesn't explain why he does not group mathematical objects with the forms.
In class, he made it clear that there is an explanation, one which he does not like; see p 7-8, 510b-511d

510b starts with a difference based on images, but there is also the methodological problem at 510c-d.
We did not have time to discuss this fecund matter in appropriate depth, but I did mention that the geometer starts with assumptions.
It looks like geometry might be true by definition, rather than because it describes a realm of existing forms.
There also ay be an ontological distinction between mathematical objects and the forms; see 527a
I mentioned the overlapping circle problem: If we want a one, unchanging form, we can not use geometric items.

We unfortunately did not have time to discuss others of the difficulties Jonathan raised.
But, his paper is worth some time.

III. Two more topics you might ponder

Are there important differences between Plato's accounts of geometry and arithmetic?

Does Plato's distinction between the philosopher's number and the common number (See the *Philebus* passage cited by Shapiro at p 58) correspond to other distinctions he makes, e.g. between mathematical objects and forms, or between the intelligible and sensible realms.

IV. A summary of the main points in Plato

Knowledge must be of eternal objects. (*Phaedo, Republic*)
The world we receive in sense perception, the sensible world, is constantly changing. (*Timaeus, Phaedo*)
So, we can not have knowledge of the world we receive in sense perception. (*Theaetetus*)
Our best explanation of the changes in the sensible world involves the interactions of eternal forms. (*Phaedo, Republic*)
So, there is a sensible realm and an intelligible realm. (*Republic*)
We do not receive mathematical objects via sense perception, so they must belong to the intelligible realm. (*Republic*)
Mathematical objects undergo some sorts of changes, so they can not be perfectly eternal and unchanging forms. (*Republic*)
The intelligible realm is known via recollection. (*Phaedo, Meno*)

V. Notes on the readings

Timaeus
Characterizing the distinction between being, which is eternal and true, and becoming, which is created and transient, and apprehended by sensation.
The world of becoming is like the shadows on the wall of the cave.
The world of being is the real world, outside the cave.
As being is to becoming so is truth to belief.
The being is apprehended by reason.
Note the underlying Pythagoreanism in *Timaeus*: "The world has been framed in the likeness of that which is apprehended by reason and mind and is unchangeable..."

Phaedo
Socrates starts with the assumption of the forms, which we saw implicitly in Timaeus.
He explicitly aims at a proof of the immortality of the soul, which we ignore, and a characterization of causation.
The forms are used as causes: things are tall because they participate in tallness.
We see that objects in the world of becoming participate in both of opposite forms.
But the forms themselves never do.
Similarly, mathematical objects are like the forms in not participating in opposites.
Things are odd or even because of their participation in particular forms.
But three can never be even, although it is not a form itself of odd, it is not itself the opposite of even.
So, mathematical objects are like the forms in their eternal existence and properties.

Theaetetus
Knowledge is not perception, but making judgments.
These judgments may be made on the basis of our perceptions, but maybe otherwise, as well.
Here, Socrates is engaged in epistemology: how do we know about anything, including the forms, and mathematical objects?
There must be a mind, independent of the body, to unify and compare the input from the senses.

Republic
The first selection starts with an analogy: the light of reason.
The good is to objects of reason as the light is to objects of vision.
But, here we see that mathematics does not admit of the highest form of reasoning.
It is understanding, rather than pure intellect, which grasps mathematics.
Plato provides two arguments to the conclusion that mathematics is not of the highest order of reasoning.
The first argument is that the geometer uses diagrams, whereas the dialectician uses only ideas.
The second argument is that the mathematician makes assumptions, but does not trace everything back to first principles.
The geometer has to start with assumptions, and can never get rid of them.
There is also a third argument denigrating geometry, which comes a bit later.
Socrates calls the geometer's use of language "most ludicrous" (527a).
The forms are eternal and unchanging, yet we talk about constructing and adding, etc.

These both seem like methodological inferiorities that could be resolved.
But, there may also be an ontological difference.
Are the objects of mathematics different?
The division of the lower part of the line is of images and those things of which they are images.
So, maybe geometric forms are images, in some sense, of the superior forms.
Note that Plato elevates arithmetic above geometry, in the second selection from the *Republic*.
There is a question in Plato scholarship about whether there are two kinds of mathematical objects.
The first are ideal numbers and geometrical ideas, forms of mathematical objects.
The second are mathematical numbers, and geometrical figures, which would pattern themselves after the ideal numbers and geometric ideas.

Go back to the good as that which shines light on the rest of the forms.
The good is not in any way perceivable.
The circle is not perceivable, but has a more intimate connection with the perceivable.

It is more like the perceivable than the good, or the true.
How about the beautiful? Or the equal?
Aren't these forms tied to what is perceivable?
Here is a question: what does Plato's classification of mathematical objects mean about picture proofs?

Meno
We saw in the *Phaedo* that Socrates wanted to argue for the immortality of the soul.
We ignored those arguments, but, at least we know that he believes the soul to be eternal.
Further, as in the beginning of the *Meno*, Socrates argues that knowledge is recollection.
Here, again, Socrates is doing epistemology.
He says that we can see that the knowledge is inside of Meno, since he was only asked questions, and not taught.
Is this a satisfying argument?

The problem is how to interpret the dialogue charitably.
We do not want to impute stupidity to Plato.
But, it seems awfully difficult to avoid it here.

VI. For Wednesday

Aristotle is difficult to read.
The criticisms he makes, mainly of Plato's work, are not of our selections, mostly.
They are mostly not even of anything in the dialogues, but of teachings in the Academy that may never have been written down.
Read only Chapters 1-6 of Book M.
Chapter 3 contains Aristotle's positive account of our knowledge of mathematics.
Look more closely at Shapiro.
And read the selection from Lear, which I gave out in class.