

*Can Science Ignore Plato? Yes, almost as much as Bob!*

The title of this paper is meant to be a bit tongue-in-cheek, but truly, that sums up much of the paper. Lucas says in the introduction that the paper will have two parts: the first showing how issues that Plato raised regarding natural science are valid, and the second looking at the implications these issues have "on how science functions as a knowledge[-]acquiring discipline." This is an inaccurate description of the paper's layout.

Lucas opens with a discussion on science, specifically the scientific community (as it relates to the foundations of science), and the way science is conducted. He seems to refer to science as simultaneously a knowledge-gathering *process* and as a particular type of knowledge. The former seems to be the more frequently used of the two (and more accurate!), but care needs to be taken on this front. The discussion on the way science is conducted gets at the distinction between induction and deduction. This is a good segment, one that needs to be featured a bit more prominently. I particularly liked the domino example, but the quick pivot to objectivity needed to be both sign-posted and filled out more. There's also an underlying assumption that science aims – or claims – at absolute predictive power, placing the emphasis on *outcomes* rather than *causes and their resulting effects*. This is a very, very important distinction and one that isn't addressed until much later in the paper (and even then, not to the degree that it should be.) The former lines up with the discussion on true opinion vs. knowledge – one may be able to correctly predict an outcome every time, but the knowledge one has about what *causes* those outcomes may be fundamentally flawed. Again, I'd like to see this expounded on.

After this discussion, Lucas turns to Plato. He first describes the scene which is seen as Plato's critique of natural science. His interpretation of the segment strikes me as fundamentally flawed (or my own knowledge is, and I readily confess this may be the case). In context, Plato is differentiating between knowledge of our reality (the world) and higher reality (the world of Forms). Bob takes this passage and rightly qualifies it by saying "natural science cannot be used to understand the cause in which he is interested." However, this is taken—mistakenly—as saying "natural science is unable to answer this question which it and philosophy aim at" rather than "natural science is fundamentally unable to answer the questions philosophy aims at." Admittedly, Plato's discussion on addition and division, the means by which men grow, etc., can potentially lend itself to this interpretation. However, my reading of the dialogues suggests this isn't the case. Page six is where the discussion finally begins to turn around when Lucas says "That is not to say that science should be shunned or ignored as an imperfect or useless endeavor. . . the issue here is one of philosophical principle and not scientific mechanics." *THIS* is what the entire preceding paragraph should have been taking aim at, rather than an unnecessary rehearsal of the addition/division/cause-of-generation discussion.

The next major segment takes a look at the Meno and the aforementioned issue of true opinion vs. knowledge. First things first: a transition would have been welcome. The discussion of true opinion vs. knowledge also seems to make a mistake similar to the one mentioned in the second paragraph: "one must use knowledge and not true opinion to move the world forward." Again, scientists and philosophers – at least Platonic philosophers – seem to be interested in two very different worlds, or parts of

the world. This could be an interesting avenue to pursue, and one which seems more fruitful: scientists may criticize Platonists, but it's due to a fundamental misunderstanding of what they're talking about.

Lucas seems to go down this avenue without saying so explicitly. The remainder of the paper (more than half of it) discusses Van Fraassen. The author is introduced without any discussion of his thoughts/work until three pages later (p. 7 -> p.10), which is quite confusing on the first read through. The general path taken here is productive. Lucas clarifies the distinction between true opinion and knowledge, though he says that Plato would call scientists possessors of true opinion. Not sure this is the case. The bit about Daedalus statues is nice, but a greater tie-in to the main theme would be nice. The main theme, if I may take a stab at summarizing it, is "Scientists need to acknowledge that they don't have *certainty*, ever. They simply have predictive power." Discussion from the Carnap/Quine debate would be great throughout.