Existential Claims and Platonism

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1. Introduction

Let a *platonic entity* be an *acausal* entity, an entity with which nothing causally interacts. Let *standard platonism* be the view that there exist acausal entities, and we can know this. Standard platonism, argues Colin Cheyne [1998], is *false*.[1]

He puts his argument thus:

> Existential knowledge has a certain property (causal connection with the objects of that knowledge), platonic knowledge must lack that property, therefore, platonic knowledge is non-existential. But knowledge of the existence of platonic objects is essential to platonism. Therefore, platonism is false. (p. 38)

By 'existential knowledge' Cheyne means *knowledge that such-and-so exist(s)*. By 'platonic knowledge' Cheyne means *knowledge of platonic entities*. What to make of Cheyne's argument is the focus of this paper.

In the following section I argue that Cheyne's argument fails to undermine or otherwise affect the tenability of standard platonism. But before doing so I should note a rather important virtue of Cheyne's argument.

There are many well known arguments against platonism that turn on causal constraints on knowledge. Cheyne's argument falls within this camp, but his argument holds a distinguished position. Unlike most of these arguments, Cheyne's argument avoids what is perhaps the biggest objection to such causal arguments.[2] Specifically, Cheyne's argument avoids ruling out universal empirical truths—'All wombats are mammals', 'All Tasmanian devils are marsupials', and so on—that are otherwise ruled out by more sweeping causal constraints. Despite the fact that we do not causally interact with all Tasmanian devils, or *etc.*, these universal empirical claims remain intact. As Cheyne notes, none of these truths is an *existential* claims, and so none of them is effected by Cheyne's existential causal constraint.[3]

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[1] All unqualified parenthetical page references are to Cheyne [1998].

[2] For telling criticism of many such causal constraints see Colyvan [1998].

[3] I am not entirely convinced that no universal empirical truths carry existential import. Despite the popularity of treating 'All'-claims as conditionals, there is a lot of room for

So, Cheyne's strategy has a lot to recommend it. Nonetheless, his argument does not succeed in defeating, or even denting, platonism. That this is so is the focus of the next section.

2. Cheyne's Argument

Cheyne puts his argument thus:

> CE We cannot know that Fs exist unless our belief in their existence is caused by at least one event in which an F participates.

> C2 Platonic objects cannot participate in events.

Therefore:

> C3 We cannot know that platonic objects exist. (p. 38)

What does 'participate' mean in the premises? Cheyne provides only a necessary condition for such participation: namely, that if an entity e *participates* in some event, then e has causal powers.[4] Accordingly, Cheyne's second premise, C2, is true—indeed, true by definition. As Cheyne puts it, '[p]latonic objects, since they lack causal powers, cannot participate in events' (p. 36).

Accordingly, the key premise in Cheyne's argument is CE, and his argument stands or falls with CE. If Cheyne establishes CE then his argument would show that platonism is untenable. But, as the next two subsections show, Cheyne does not establish CE, and so his argument leaves platonism untouched. Cheyne gives two different arguments for CE. I treat each in turn.

2.1. History of Science

Cheyne's first and major argument for CE is an appeal to the history of scientific practice. Cheyne gives four interesting examples from the history of science: namely, the story of Mendeleeff's discovery of germanium, the discovery of the top quark at Fermilab (Chicago), the use of PEGGY II (a polarizing electron gun) to confirm the existence of electrons, and the discovery of Neptune. In each case the pattern of discovery, as described by Cheyne, is this: An entity e is posited; however, scientists do not conclude that e *exists* until they have causally interacted with e—or at least they do not claim to *know* that e exists until such causal interaction has transpired.

Cheyne takes his examples to illustrate that CE is true—at least of scientific practice. He puts the point thus:

> Scientists are not content just to 'save the phenomena'. They continually strive to discover the existence of the entities they postualte. They only claim

arguing that some of these claims carry existential import. But now is not the time for that issue.

[4] See Cheyne, p. 36.

to have done this when they have interacted with them in some way. The
best explanation for this behaviour is that it stems from their conviction that
they do not know that the entities exist unless they have interacted with them.
[NB: This is the conviction that CE is true.] 'Seeing is believing' is not literally
true. A better slogan might be 'Interacting is knowing'. (p. 41)

This may well be true, and it may well be supported by Cheyne's four
examples. (And, of course, many other examples could no doubt be exhib-
ited. That is not at issue.) The problem is that Cheyne's examples are
taken entirely from *natural* science. None of the examples is an example
from mathematics, logic, formal semantics, *etc.* On the surface, this is an
important omission. After all, CE purports to cover *all* entities—including
those entities postulated outside of natural science. But, then, if the case
for CE rests on examples from the history of science, it had better involve
examples from *all* areas of science, including those *beyond the natural* (as
it were). Given the absence of examples from mathematics, logic, *etc.*,
Cheyne's first argument for CE seems to fail immediately.

Of course, if one could establish that what applies in the natural sci-
ences must likewise apply in the others, then this might avoid the problem.
Cheyne hints at such a reply:[5]

The existential causal condition CE works well outside mathematics [logic,
formal semantics, *etc.*] and we...lack special grounds for rejecting it within
mathematics. (p. 42)

Before evaluating this claim, distinguish the following two claims: firstly,
that CE is true of entities postulated within *natural* science, and secondly,
that CE is true of entities postulated within *non-natural* science (as it
were)—sciences like maths, (pure) logic, (pure) semantics, *etc.*[6] Call the
former claim 'CE$_{natural}$' and the latter, 'CE$_{non-natural}$'. For present purposes,
I will grant CE$_{natural}$.[7] The question is: Is CE$_{non-natural}$ also true? Cheyne
claims (above) that we have no special reason to reject CE$_{non-natural}$. This
may be so but the more important question is: Do we have any reason to

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[5] The following quote is taken from Cheyne's discussion of Hale's relevant work [1987];
Cheyne does not use it to answer the problem I have posed. (He doesn't consider the
problem I've posed.) Nonetheless, I think that the following quote is the answer Cheyne
would give to the current problem; if it isn't, then it is not clear what Cheyne's reply
would be.

[6] Let us assume, for simplicity, that there exist no other entities but those of natural
or non-natural science. I do not think that this is in fact true but the assumption is a
harmless way of making the current discussion much simpler.

[7] This is not to suggest that no questions remain about Cheyne's strategy toward
establishing CE$_{natural}$. For example, one might ask whether an inductive argument
(from examples in the history of science) can establish that we *cannot* know that (natural
scientific) entities exist without causal interaction, *etc.* I assume that by 'cannot' Cheyne
means 'impossible'. The question, then, is whether inductive arguments—like Cheyne's
first argument for CE—establish such strong impossibility claims? I leave this issue for
another time.

accept CE$_{\text{non-natural}}$?

Do we have any reason for thinking that Cheyne's existential causal condition should work in mathematics, *etc.*, the way it works in the natural sciences? No. Cheyne's first argument provides no reason to accept CE$_{\text{non-natural}}$; if anything, his examples from (natural) science give us reason to *reject* CE$_{\text{non-natural}}$. Let me explain.

Consider the key element common to every example Cheyne cites: namely, the 'conviction' that leads natural scientists to *expect*, even *require*, that causal interaction should occur with the postulated entities. This raises a very important question: Why should the natural scientist *expect* that such entities should be able to *causally interact* at all? Why should the natural scientist *expect* her postulated entities to have causal properties?

This question may seem strange, or perhaps even silly. But the answer is important in the present context. The reason that the natural scientist expects her posited entities to exhibit causal effects is simple: Her entities were initially posited *as causal entities*—they were posited to play a *causal* role. Accordingly, the natural scientist should expect her posited entities to have causal effects because their causal effects are an essential part of her initial postulation. When Neptune was posited, it was posited as an entity rich with causal powers. Likewise with Cheyne's other examples. This is precisely the reason that natural scientists busily attempt to causally interact with their posited entities — their entities, *by postulation* (as it were), are expected to exhibit causal effects.

Notice, however, that it is precisely this 'conviction' of the natural scientist that makes CE$_{\text{non-natural}}$ implausible. *Prima facie*, such 'conviction', at least with respect to causal activity, is not the way matters stand in maths, logic, or *etc.* Suppose that a mathematician posits imaginary numbers, or that a semanticist postulates acausal entities (propositions, or whatever). Should we expect to see either the mathematician or the semanticist busily attempting to build the analogue of PEGGY II—perhaps a 'proposition gun', or *i*-o-meter (to detect the causal activity of imaginary numbers), or the like? Not at all. But why not?

The reason we shouldn't expect to see proposition guns, *i*-o-meters, or the like, is that neither imaginary numbers nor propositions (or whatever) are posited *as causal entities*. These sorts of entity, unlike the entities involved in Cheyne's examples, are *not* posited to fill some *causal explanatory gap*; they are not posited with causal powers at all. And for this reason, nobody is troubled when mathematicians, or logicians, or semanticists, *etc.*, spend their time with pencil and paper instead of proposition-guns or *i*-o-meters.

The point is simple but important. The very feature of his examples that provides reason to *accept* CE$_{\text{natural}}$—namely, the conviction that causal interaction will occur—is the very feature that provides reason to *reject*

$CE_{non-natural}$. Accordingly, contrary to Cheyne's claim, we do have special grounds for rejecting his existential causal condition in mathematics (and other non-natural sciences).

In short, then, the trouble with Cheyne's first argument for CE can be put as follows. Cheyne intends to use examples from the history of science to establish his key premise CE. Unfortunately, his examples come exclusively from *natural* science, and so at best only $CE_{natural}$ is established. But there is more to science than natural science. In addition to $CE_{natural}$ Cheyne must also establish $CE_{non-natural}$. Examples from natural science alone cannot establish $CE_{non-natural}$. Since Cheyne provides only examples from natural science, his argument from the history of science fails to establish CE. What is worse is that, as above, Cheyne's case for $CE_{natural}$ seems to undermine $CE_{non-natural}$. But, then, there is little hope at all of establishing CE by appeal to the history of *natural* science.

For these reasons, I think that Cheyne's first argument for CE is not a good one. Unfortunately, his first argument is his most extensive argument. Nonetheless, he does offer another one to which I now briefly turn.

2.2. The Hart Argument

Cheyne's second case for CE simply borrows an argument from W. D. Hart [1977], which he quotes thus:

> Granted just conservation of energy, when you learn something about an object, there is a change in you [which] can be accounted for only by some sort of transmission of energy from, ultimately, your environment to your brain. And I do not see how what you learned can be *about* that object (rather than some other) unless at least part of the energy that changed your state came from that object. (p. 125, quoted in Cheyne, p. 41)

This argument, I think, is suspicious from the start, especially so if it is used as an argument *for* CE. In particular, note the main premise, namely,

H   If you *learn something about* an object, then you (or your brain) causally interact with the object.

On the surface H would seem to have well known counterexamples. After all, I have learned a great, great deal about The Easter Bilby. I have also learned a great deal about Pegasus. In both cases, this is *genuine* learning; however, in neither case have I causally interacted with the object concerned.[8] Accordingly, the main premise of Hart's argument seems to be false.[9]

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[8] Proof: Neither The Easter Bilby nor Pegasus exists. Nothing can causally interact with me unless it exists. Therefore, neither The Easter Bilby nor Pegasus have causally interacted with me.

[9] The problems with Hart's position may even be more serious, but I leave this aside. For discussion, however, see Steiner [1978], in which Steiner argues that an ignorance of physics is required to think that one can't learn about an object without energy from that object reaching one. (I am grateful to a referee report for this point.)

If Cheyne is going to use Hart's argument as an argument for CE then he must avoid the problem above. How does Cheyne avoid the problem? His response runs as follows:

> It is clear that Hart is using 'about' in a sense which means that 'I know about an object' entails the existence of the object concerned. If he is right, then [CE is true]. Learning something 'about' a particular object in this sense entails learning that at least one object of a certain kind exists, and the existential causal condition CE follows. (p. 41)

There are two problems with this argument. The first problem is its presupposition that there *is* a sense of 'I learn about x' that *entails* the existence of x. In other words, Cheyne claims that, where α is any singular term, there is a sense of $\ulcorner$ I learn about $\alpha \urcorner$ such that *existential generalisation* on α is (necessarily) truth-preserving.[10] But what 'sense' is this? Cheyne doesn't say; he says only that there is such a sense. But this is hardly sufficient, especially in the face of strong argument to the contrary. Consider, for example, the following.

Let d be any contingently existing entity. Let w be some non-actual world at which d doesn't exist. Suppose, now, that, at w, Greg learns that d doesn't exist. Then at w 'Greg learns something about d' is true but 'd exists' is false. (After all, learning *that d doesn't exist* is learning something about d.) But, then, there is a world at which 'Greg learns something about d' is true but 'd exists' is false. Equivalently: 'Greg learns about x' does *not* entail the existence of the object concerned. Hence, unless the range of 'x' is restricted only to necessary entities, 'Greg learns about x' does not entail the existence of x, which is to say that 'Greg learns about x' is intensional.[11]

Of course, one might come up with objections to this 'proof' that 'I learn about x' is intensional. In the end, however, this is more to the point. In short, Cheyne's second argument for CE simply *assumes* that there is no problem in invoking an extensional sense of 'I learn about x'. At the very least, the 'proof' serves to show that Cheyne must do more than merely assume such extensionality; he must argue for it.

For now, put the intensionality issue aside. There is another problem with Cheyne's Hart argument for CE.

The problem is straightforward. Grant, for the sake of argument, that there is some sense of 'I learn about x' that entails the existence of the object concerned. Cheyne says (in effect) that if Hart's main premise is

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[10] I assume that *existential generalisation* carries *existential* import. If Cheyne rejects this, then the point would need to be reformulated but in effect it would remain the same.

[11] Incidentally, Cheyne makes it clear that he is not likely to restrict the range of 'x' to necessary entities. As he says, he is 'with Kant when [Kant] concludes that there can be no "absolute necessity of things"' (p. 42).

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correct, then CE follows. This, of course, is correct. But what reason has been given to think that Hart's main premise is correct? Cheyne gives none.[12] And for this reason, Cheyne's Hart argument for CE fails.

3. Summary

I have argued that Cheyne's (only) two arguments for CE fail to provide reason to accept CE. What is more, Cheyne's main argument for accepting CE results in a reason to reject CE—this being the conspicuous absence of 'conviction' in non-natural science. Given that Cheyne's argument against platonism rests entirely on CE, I conclude that Cheyne's argument leaves platonism intact.[13]

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ABSTRACT. This paper responds to Colin Cheyne's new anti-platonist argument according to which knowledge of existential claims—claims of the form *such-and-so exist*—requires a causal connection with the given such-and-so. If his arguments succeed then nobody can know, or even justifiably believe, that acausal entities exist, in which case (standard) platonism is untenable. I argue that Cheyne's anti-platonist argument fails.

[12] Cheyne relies entirely on Hart's argument quoted above, and Cheyne comments no further than his remarks which are quoted above.

[13] For discussion or useful comments I am grateful to Mark Colyvan, Colin Cheyne, Ed Mares, Greg Restall, Fred Kroon, Chris Mortensen, two referees, and the late George Molnar. For support (and coffee) I'm grateful to Katrina Higgins.