

Does Empirical Knowledge Have a Limit?

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My aim in this short essay is to motivate a question that came to a head in the philosophical debate between so-called rationalists and empiricists during the Enlightenment. The question is: *is there anything we know but can't know empirically?* Before I venture an answer, some clarification is in order.

What is it to know something empirically? A first thought would be to know the kinds of things discovered by empirical scientists. For instance, in 2012 astronomers discovered that some soil on the surface of Mars contains chlorinated hydrocarbons. In 1954 biologists discovered that stannous fluoride prevents tooth decay. In 1863 chemist Louis Pasteur discovered that microbes in contaminated foods and drinks can be killed by intense heat. These are instances of empirical knowledge.

But in fact many examples from ordinary life will do. An infant opens a radio and discovers no one from the BBC living inside it. A professor discovers that by administering fewer exams she will increase attendance to her class. What seems to matter in all of these cases is not whether we get the knowledge in question through empirical science or in the course of ordinary life. Rather, they all count as instances of empirical knowledge because we get the knowledge in question from experience.

That said, there does seem to be a real distinction between two kinds of empirical knowledge. In one kind of case I get knowledge *through* experience. Suppose I look outside my window and discover that it is cloudy right now. I know that it is cloudy because I can see the clouds and cannot see sunlight.

In another kind of case I get knowledge *from* experience. Suppose I come to know through experience not the current state of the weather, but that I am in Oxford at noon on a day in late February. I know from past experience that during most days of winter Oxford sees little to no sunlight. I thus infer from past experience that it is cloudy right now.

My original question needs just a bit more clarification. For there do seem to be things we know but can't know empirically. We know, but can't know empirically, that all triangles must be three-sided or that all mothers must be female. Knowing these things is not the job of empirical scientists but rather of lexicographers who compile the *Oxford English Dictionary*. It is part of the definition of a triangle to have three sides. It is part of the definition of a mother

to be female. We don't go out and discover through and from experience that these things must be the case. Rather, we know these things by virtue of what the concepts of triangle and mother mean.

What I mean to ask, then, is the following: *is there anything nontrivial we know but can't know empirically?* By "nontrivial" I simply mean *not as a matter of definition*. Now, a question of this sort tends to rouse various responses. Some are surprised that such a question can even be sensibly asked, let alone answered. Some chuckle only to return their attention shortly to the more pressing affairs of human life. Some wonder if perhaps the questioner took too much sugar, or too much of something, in his or her morning coffee. Some, like yours truly, are genuinely baffled by the question and set out trying to answer it. Before you find yourselves slipping into one of the first three groups, I ask that you read a bit further.

As with many questions at this level of this abstraction, it is easiest to start with examples. In fact it would be enough if we found one thing we know but can't know empirically. Here is a formidable candidate: *every event must have a cause*. First let's see if this is indeed something we know.

The main evidence that we know this is that were we *not* to know it, we wouldn't be able to know a lot of the things we obviously know. Let me explain. Exceptional cases aside, when we feel an intensely hot pot on the stove we know that a flame preceded. Were it not true that every event must have a cause, how would one ever be justified in first venturing a guess at to what that cause *is*: in our case, a flame? One would have to throw up one's hands and feel at home with the constant prospect that whatever happens isn't brought about by something else. Let's just say that our knowledge that every event must have some cause makes it possible for us to come to know particular things through empirical science and ordinary life.

Moreover, the fact that every event must have some cause is not a nontrivial piece of knowledge. An event is usually defined as just a thing that happens. Sometimes it is more precisely defined as a change in some object or in the state of affairs. Either way, it is not a part of the definition of a thing that happens or a change of some sort that it is brought about by some prior happening or change.

Now, let's see whether we can come to know *empirically* that every event must have a cause. It doesn't seem that we can come to know this *through* experience. For if we could, we would at least need to have experience of every event. But none of us living today could tell through experience whether Socrates had indigestion on his thirtieth birthday (suppose he did). And no one at all could

tell through experience whether it became very hot one day 4 billion years ago, back before there was life on Earth (suppose it did). We couldn't come to know through experience that either of these things happened. So we couldn't come to know through experience that these events had some cause.

The subtler question is whether we can come to know *from* experience that every event must have a cause. We come to know through experience that many things happen. Let us grant for the sake of argument that we also come to know through experience that each of these events has had a cause. Could we not infer from such past experience that the same is true of everything that has happened and will happen?

We certainly could. We might even be justified in doing so. The problem is that this is not what we have taken ourselves to know. We take ourselves to know that every event *must* have a cause, not merely that every event *has* a cause. It would be consistent for every student to be, and yet *possibly not* to be, made anxious by exams. By the same token, it could be true that every event *has* a cause and yet false that every event *must* have a cause. On the face of it, at least, the *must* part is just something we can't know from experience.

So we seem to have found a nontrivial thing we know but can't know empirically. Should this only reaffirm a widely held suspicion that philosophy yields no answers but only more questions, I shall suggest a few possible lines we could take in the face of such cases.

Some (i.e., "empiricists") have concluded that we don't in fact know what we take ourselves to know. In the present case, we don't in fact know that every event *must* have a cause, though we might in fact know from experience that every event *has* a cause. Note that this says nothing about whether it is *true or false* that every event must have a cause. It is still open to these folks to hold that empirical knowledge *doesn't* have a limit, since there is not in fact anything nontrivial we know but can't know empirically. The challenge for this position, however, is to show somehow that we can get along just fine in empirical science and ordinary life without knowing the *must* part.

By contrast, some (i.e., "rationalists") have concluded that there are certain nontrivial things we know through a special way of knowing. So, though we can know from experience that every event *has* a cause, we can know *by some other means* that every event *must* have a cause. By which other means? French philosopher René Descartes spoke of the "divine light" or, more colloquially, "intuition." Prussian philosopher Immanuel Kant spoke of "pure reason," or the capacity to know truths without which experience wouldn't be possible in the first place. For these folks empirical knowledge *does* have a limit. In our

case the limit sits right at the border between the *has* and the *must have*. And the challenge for this position is to somehow convince reasonable skeptics that there is a need for any kind of knowing other than empirical.

Alas, we've come to the end of our excursion into the realm of ideas. If all has gone well, I've whetted your appetite for more armchair undertakings. The debate continues today and shows no clear signs of resolving any time soon. But for those who have had their fill of abstraction, I can sympathize. As far as "palliative remedies" go, Scottish philosopher David Hume recommended backgammon. I'm sure you'll have much better ideas.