

The Problem of Induction

Think of a really strong inductive argument, such as:

- (1) In the past, negative and positive ions have been attracted to each other.
- (2) So, in general, negative and positive ions attract.

The premise is based on empirical observation, and the conclusion is inductively inferred from that. Now, since the argument is inductive, the premise would not guarantee the conclusion. But the premise seems to make the conclusion *really likely*. Yet why is that exactly?

The hidden assumption seems to be that “nature is uniform.” It is assumed that, in general, regularities tend to persist into the future.

No one seriously doubts induction as a legitimate method of argument—yet induction apparently assumes the uniformity of nature. And there is a question of what *evidence* we have for the uniformity of nature. What justifies that belief?

You might want to argue for the uniformity of nature as follows:

- (1) In the past, regularities have tended to persist into the future.
- (2) So, in general, regularities tend to persist into the future.

The problem, however, is that this is also an inductive argument. And so, it too seems to have the hidden assumption that “nature is uniform.” After all, why should the past persistence of regularities be evidence that they will persist in the future? The answer seems to be that this is what we should expect—because “nature is uniform.” Yet that is precisely what we wanted to justify!

So the argument begs the question. But if that argument doesn’t work, how else can we justify that nature is uniform? *That is the problem.*

Let me be clear: The problem is not that induction is uncertain. (Everyone knows that.) The problem is rather that even the strongest inductive arguments rest on an assumption—that “nature is uniform”—which seems *totally unjustified*. However, if all inductive arguments rest on an unjustified assumption, then all inductive arguments are unjustified. And since science often depends on induction, this would mean that much of science is unjustified!

Again, everyone grants that induction *per se* is legitimate—and so, they typically allow the assumption that nature is uniform. The philosophical problem, however, is to explain the justification for that assumption.