

The Problem of Induction

All of science is based on an unproven assumption: the assumption that *the future will be like the past*.

Science is based on inductive reasoning: from observations made in the past, the scientist draws conclusions about the laws and theories that will operate in the future. In fact, all our knowledge of the world around us is based on inductive reasoning that assumes the future will be like the past. We know that water will satisfy our thirst because it did so in the past, that the sun will rise tomorrow because it did so in the past, that gravity will attract objects to the ground because it did so in the past, that evolution will alter species in the future because it did so in the past, that quantum theory

will continue to predict the behavior of atomic particles in the future because it did so in the past.

But how do we know that the future will be like the past? You might be tempted to reply that you know it will because the future has always been like the past. But a moment's reflection will show you that this is circular reasoning—it assumes what it is trying to prove. For you are reasoning that since *in the past* the future was like the past, then *in the future* the future will be like the past. But this reasoning assumes that what happened *in the past* must happen *in the future*, and this is exactly what you are trying to prove.

So *past* experience does not justify our assumption that *in the future*

the future will be like the past. And if we cannot prove that this assumption is true, then doesn't all our knowledge about the world around us rest on an unproven assumption?

QUESTIONS

1. Can you think of any way of proving that the future will be like the past?
2. Is there any difference between the scientist who takes "on faith" the assumption that the future will be like the past and the believer who takes "on faith" the assumptions of religion? Does the problem of induction show that science is ultimately a kind of religion?