

8.5 Cause and Effect (p. 203)

Can Science Explain Anything?

SCIENCE, IT'S OFTEN SUPPOSED, gives explanations when it provides causes. But there are, as we've seen, philosophical problems with the notion of cause, sufficient to convince Bertrand Russell that "the word 'cause' is so inextricably bound up with misleading associations as to make its complete extrusion from the philosophical vocabulary desirable."¹

But if cause is philosophically suspect, does that mean that science really provides only description, never explanation? Steven Weinberg, a Nobel-Prize-winning physicist, writes:

After my remarks [on the successes of particle physics], a faculty colleague (a scientist, but not a particle physicist) commented, "Well, of course, you know science does not really explain things—it just describes them." I had heard this remark before, but now it took me aback, because I had thought that we had been doing a pretty good job of explaining the observed properties of elementary particles and forces, not just describing them....

Ludwig Wittgenstein famously remarked that "at the basis of the whole modern view of the world lies the illusion that the so-called laws of nature are the explanations of natural phenomena." ...

[In] E.M. Forster's novel *Where Angels Fear to Tread* ... Philip is trying to find out why his friend Caroline helped to bring about a marriage between Philip's sister and a young Italian man of whom Philip's family disapproves. After Caroline reports all the conversations she had with Philip's sister, Philip says, "What you have given me is a description, not an explanation." Everyone knows what Philip means by this—in asking for an explanation, he wants to learn Caroline's purposes.

There is no purpose revealed in the laws of nature, and not knowing any other way of distinguishing description and explanation, Wittgenstein and my friend had concluded that these laws could not be explanations. Perhaps some of those who say that science describes but does not explain mean also to compare science unfavourably with theology, which they imagine to explain things by reference to some sort of divine purpose, a task declined by science.²

At summer camp as a small boy, I was taught this old song:

Tell me why the stars do shine
Tell me why the ivy twines

¹ "On the Notion of Cause," *Proceedings of the Aristotelian Society* 13 (1913).

² "Can Science Explain Everything? Anything?" *New York Review of Books* 168.9 (May 31, 2001).

Tell me why the sky's so blue
And I will tell you just why I love you

Because God made the stars to shine
Because God made the ivy twine
Because God made you, that's why I love you.

Later on, however, I ran into this alternative version of the second verse:

Nuclear fusion makes stars to shine,
Tropisms make the ivy twine,
Raleigh scattering make skies so blue,
Testicular hormones are why I love you.¹

SOME QUESTIONS TO THINK ABOUT: There's a lot more to be said about the notion of cause; most philosophers disagree with Russell and think that it's something that needs to be explained, not tossed into the trash. But ask yourself this: if the notion of cause really doesn't make sense, then is the only other kind of explanation the one where we give someone's purposes? Then maybe theology can give genuine explanations where science fails. Are you willing to accept that conclusion?

¹ I don't think he made this up, but it's found collected in *Isaac Asimov's Treasury of Humor* (Boston: Houghton Mifflin, 1991).