

The Deep Time Journey Network knowingly rides the precarious knife edge between science and the humanities. We feel that this conversation is of great importance now as humans integrate the story of evolution into culture. Some resources on this site tell the objective science story. Others attempt to make a fusion between science and the humanities. In all cases, we call on Network members to make sure the resources are grounded in the most rigorous science. Secondly, we ask that creators be clear about where they're coming from . . . an objective scientific telling . . . or a more nuanced layered telling. Below is an article by science writer Michael Lemonick written specifically for the Deep Time Journey Network that illustrates the precariousness, and the importance, of these distinctions. (Deep Time Journey Editors)

The Risks of Non-Scientists Talking Science

by Michael Lemonick

It can be risky for non-scientists to talk about science. We don't really understand all of the technical details, and run the risk of leaping to conclusions that aren't precisely accurate. We might think of atoms, for example, as tiny solar systems, with planet-like electrons orbiting a nucleus that takes the role of the Sun. But it isn't really like that, physicists insist. Electrons follow the rules of quantum mechanics, so while we can say with confidence that Jupiter, say, will be exactly at X location on November 25, 2016 (which is why we can send space probes out to meet it) an electron only has a probability of being in a particular place at a particular time. It might also be someplace else entirely.

The problem is that for most of us, it's difficult if not impossible to understand the equations of quantum physics or relativity, or to follow the mathematics of inflationary cosmology. In order to understand these phenomena in even a rudimentary way, and in order to feel the appropriate sense of awe at the majestic and powerful forces at work in the natural world, we non-scientists need these equations to be translated into stories—the mode of communication that dates back into deep prehistory, when human society was just beginning to form. We need them to be transformed into poetry, and music, and art, to get even a glimpse of what the equations are actually saying.

That transformation will inevitably oversimplify, and might even mislead. Even science journalists, who think of themselves as explainers of scientific truth, inevitably distort the science to make it exciting and compelling and readable. The only truly accurate way to write about science would be to simply reproduce the original paper from *Science* or *Nature* or *Physical Review Letters*. But then nobody would be able to read it. A truly hard-nosed scientist can look at any story in *The New York Times* or *The Economist* and find problems and inaccuracies. Most would agree, however, that it's better for people to get an imperfect sense of a scientific discovery than to be shut out altogether.

This doesn't mean all bets are off: artists, composers and poets who try to convey the majesty of science to non-experts must do their best to do so accurately. It's counter-productive to get people excited about things science doesn't say; that amounts to increasing their ignorance. But there's still plenty of room for creative folks to bring science to the broader world in a way that is inspiring, compelling, and reasonably accurate all at the same time. For the non-experts among us, that's the best of both worlds.

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