For Steven Weinberg, a theoretical physicist at the University of Texas at Austin, science is a search for nature’s laws. A member of the National Academy of Sciences since 1972, his work on the unification of the electromagnetic and weak nuclear forces represented a major step forward in this search, and earned him a share of the 1979 Nobel Prize in Physics. In addition to his scientific contributions, Weinberg has also written several books about science for the general public, most recently a history of science called *To Explain the World: The Discovery of Modern Science*. I spoke with Weinberg at the Council for the Advancement of Science Writing annual meeting in October about what it’s like for him to write for a general audience.

PNAS: What got you interested in writing for a general audience?

Weinberg: I was asked to give a talk at the inauguration of the undergraduate science center at Harvard. I thought it would make a good talk to describe what scientific cosmology now thinks about a very early time when the elements that make up ordinary matter were being formed. So I gave a talk about the first three minutes. After I described the formation of the light elements at the end of the first three minutes, I said “nothing interesting would ever occur again in the history of the universe.” It was of course a joke. A friend was in the audience, the sociologist Daniel Bell. He thought that was a great line, and he got in touch with a friend of his, who was a publisher, Erwin Glikes of Basic Books. Glikes called me up and invited me to write a book about the early universe, and as he talked, I saw how it might be done. So I wrote *The First Three Minutes*, my first book for general readers. And I enjoyed it thoroughly. It got reviews in magazines and newspapers that would never review anything I wrote on a purely technical level. I kept running into people who had read the book; I found that delightful. And I could do the work at home with my wife and daughter, and comfort.

PNAS: How do you decide what to write about?

Weinberg: Usually there’s some particular motivation. I wrote another book, which comes the closest to a personal philosophy, rather than a report on the latest news in science, called *Dreams of a Final Theory*. I wrote that as an outcome of all the debating about the building of the Superconducting Supercollider. I had to keep explaining to audiences why it’s a good thing to do pure science, and why in particular there’s such a thing as fundamental pure science—pure science at the level of the ultimate laws of nature, or at least as close as we can now get to the ultimate laws of nature—that’s especially worthwhile. I had been debating this so much in public forums, and in congressional committee hearings, and in interviews with reporters that it all came spilling out in a book.
PNAS: What was the motivation for your most recent book, *To Explain the World*?

Weinberg: I had been wanting to learn more about the history of science, so I volunteered to teach courses in the history of science at the University of Texas at Austin. Did a lot of work reading original sources, especially for the ancient world. In a way it’s much easier to write about ancient history, because the sources are limited. Someone like me can pretty well read everything that was written about the solar system in antiquity. So I immersed myself in those sources, handicapped as I am by not knowing Latin or Greek, let alone Arabic. And having done all that work, what else do I do? I make a book out of it.

PNAS: What do you think distinguishes your book from other histories of science?

Weinberg: It’s written with the perspective of a physicist—a working physicist. I am deeply concerned not just with trying to recreate the past, which any historian must do, but with seeing how it led to the present, and distinguishing those aspects of past work—say, in the work of someone like Aristotle—that did or did not further progress toward the science of today. This is a style of writing of science that’s very much out of favor with professional historians. But in science we really have the advantage of knowing what was correct and what was not correct. We can say, without any doubt, Newton was correct in his argument with Descartes about the nature of the force that holds the Solar System together, and Copernicus was right in his arguments with the followers of Ptolemy about what goes around what in the Solar System. So there’s a kind of order in the history of science that you don’t find in other kinds of history, and my book was very much written in that style. There was in past decades, much less so at present, a so-called “post-modern” school of the history of science that viewed science as a cultural artifact—an expression of the culture of the times, with no more authority than rules of etiquette, for example. And I don’t agree with that. I think we’re really learning something, we really are progressing toward truth, and I wanted to describe that progress.

PNAS: What do you plan to write about next?

Weinberg: I have two book contracts now. One of them is an essay collection; I expect maybe in a year and a half it’ll go to press. The other book is a technical treatise on astrophysics— the nature of stars, interstellar matter, and galaxies. It’s something I’ve been absolutely fascinated about ever since, when I was ill, my wife gave me a copy of Chandrasekhar’s book on astrophysics. And I found it just wonderful that using mathematics you could say interesting things—worthwhile, verifiable things—about something as beautiful and mysterious as stars. That’s one of the great satisfactions of physics, is that you have this wonderful tool of mathematics, and you apply it to nature and every once in a while it turns out to be relevant and helpful.