Steven Weinberg
Facing Up: Science and its Cultural Adversaries

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Steven Weinberg is a leading theoretical physicist. He deservedly won a Nobel Prize for his part in finding a unified description of electromagnetic forces and the 'weak' force, one of the two short-range forces which prevail in the atomic nucleus. Unlike gravity and electromagnetism, these intranuclear forces are not encountered in everyday life – though they hold the nucleus together against the mutual electrostatic repulsion of the protons, and without them the universe would look very different. Weinberg has written the best textbooks of their time in the two principal fields of fundamental physics, relativity/cosmology and (recently) quantum field theory. He is also a gifted essayist who has written good books explaining physics for the layperson. These books are notable for their absence of amateur philosophical and theological speculation. Would that other scientists, whose talent has also gained them a public platform, showed equal restraint!

Here, now, is a collection of Weinberg's thoughts on those 'missing' topics: science, society and religion and the relations between them. Weinberg believes that science conveys truth about the world, and he is strongly secular. He stoutly advocates and defends both of these positions. Concerning scientific truth, I appreciate his vigorous and well-crafted arguments against postmodernists who hold that science is in some sense merely a 'social construct'.

But I doubt that secularists will be able to hold the line against the postmodernists, because this clash is ultimately a collision of two religious worldviews. Weinberg's secularism comes from the Enlightenment, with its optimism that man will find the laws of nature (and indeed the laws governing man). Further back, the idea that comprehensible laws of nature exist stems from the Judaeo-Christian belief that God put order in his creation, and that God created humans in his image so that we can understand that order; the beauty of those laws reflects the character of the creator. (Weinberg gives no reason why beauty should be such an important quality of physical law.) Science arose in a Christianised society – it would never have grown under Eastern systems which doubt whether there is any meaning in nature (or life). Today, that doubt has been taken up by the postmodernists. They are the intellectual facet of a wide-ranging reaction against the failure of Enlightenment secularism to deliver the goods: though the West is affluent and powerful, its people are not happier for it. (Weinberg himself has written that 'the effort to understand the universe is one of the few things that lifts human life a little above the level of farce, and gives it some of the grace of tragedy'.) Many today have turned to Eastern mysticism, overtly or in assimilated forms such as the New Age movement. In contrast to secularism, this postmodern viewpoint is profoundly pessimistic. As well as doubting meaning, it doubts the concept of truth, and doubts even that the creation ('reality') exists. Once enough people who hold these views get elected, science will have to fight for its life at every level of the curriculum. To win, I believe that science will have to acknowledge deeper roots than the Enlightenment and look to its motivation in revealed religion.

The same contradiction arises in Weinberg's short essay on Zionism. He applauds the Jewish State as a beacon of Enlightenment values in a backward area rife with religious fundamentalism. But it is precisely the Jews' practice of their religion, which holds that they are a divinely chosen people granted a particular piece of land, that has maintained Jewish identity through 1800 years of dispersion and motivated the return to Palestine.

These essays are reproduced in chronological order, and run from 1985 to 1999. The early ones in particular include many good summaries of theoretical physics for the layperson; the tone of defence and counterattack against postmodernism enters around 1996. In that battle I stand with Weinberg – but I think more is at stake than he realises.

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W. Mark Richardson and Gordy Slack (eds.)

Faith in Science: Scientists Search for Truth

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'Science and the Spiritual Quest' was a programme started in 1996 by the Center for Theology and the Natural Sciences in Berkeley, California, with funding from the John Templeton Foundation. In 1997 sixty distinguished scientists met in Berkeley under the aegis of SSQ. This book consists of edited interviews conducted by Gordy Slack and Philip Clayton with twelve of these people (ten men and two women), of whom eight live in the USA (five in California), two in the UK, one in France and one in Iran. They include five Christians, two Jews, two Muslims and three less easily categorised. In broad terms there are five physicists, three biologists, three working in information technology and one psychiatrist; two are Nobel Laureates.

In his foreword Ian Barbour briefly reviews the diverse views about religion held by scientists, the religious questions raised by science, and the recent rapid growth of interest in the interactions between science and faith. There is no index, but a list of over thirty books for further reading is appended. The spelling is American.

The interview method has worked well, bringing out not only each individual's particular viewpoint, but also the interaction between their scientific work and their religious beliefs and practices. The beliefs vary from the conventionally orthodox to the highly unorthodox, so it is surprising to find so much agreement among people holding different beliefs, working in different disciplines, about the relationship between science and faith, naturally alongside some significant divergences of opinion. One of the Muslim authors points out that in this field there are relatively few differences between adherents of the three Abrahamic faiths. Many themes recur: the inadequacy of a 'God of the gaps'; the recognition of order in nature; the significance of the anthropic principle in indicating a designer; the limitations of scientific knowledge; the importance of avoiding excessive dogma in both science and religion; the similarities between science and religion; the acceptance of biological evolution (but not the atheistic philosophy derived from it); and the significance of emergent properties in describing human characteristics.

I will single out two contributions for specific comment. Anne Foerst is Professor of Computer Science and Theology at St Bonaventure University in Olean, New York and a Lutheran minister. Her description of work on 'Cog', a humanoid robot intended to imitate humans as closely as possible, was particularly thought-provoking, raising such questions as when one would feel it appropriate to baptise a robot. I was specially impressed with the unassuming approach but considerable profundity of the views of John Rodwell (Professor of Plant Ecology at Lancaster University and an Anglican priest), who *inter alia* points out the importance in taxonomy of naming, comparing it to a devotional act reifying part of God's creation. He criticises the church for being insufficiently interested in God's world, and calls Darwinism a 'set of myths that help us make sense of the natural world'.