

“Scientific Practice as a Spiritual Experience: A thankful response to Beth Liebert.”

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Beth graciously invited me to offer a brief response on “how (I) see scientific methodologies being or having the potential to be spiritual practice.” I am honored and delighted to do so by turning to one of the three major CTNS programs of the past decades and to my own experience of the practice of natural science.

The CTNS program “Science and the Spiritual Quest” was a multimillion dollar program funded by the John Templeton Foundation extending from 1996 to 2003. In it, CTNS sought out scientists of international stature in such areas as physics, cosmology, evolutionary and molecular biology, the neurosciences, computer sciences, and mathematics who were also practitioners of one of the world religions including Judaism, Christianity, Islam, Hinduism and Buddhism. We asked each of them one central question: In your experience as an accomplished scientist and participant in a global spirituality, how is the doing of science a spiritual experience?

The responses from these scientists were profound. They included the following:

- *doing science is a spiritual experience;
- *doing science requires an ethical commitment grounded in spirituality;
- *nature is a form of divine revelation; we're reading the book of nature, God's second book, and it complements Scripture;
- *science gives us knowledge about God's purposes in creating the universe and humanity's place, purpose and destiny;
- *science discloses the mind of God through the laws of physics;
- *science tells us the story of the cosmos as the history of God's activity in the world;
- *science leads us to God, the ultimate reality and source of the universe, and this God is present and imminent throughout the universe.

All this is well summarized by Jewish cosmologist Joel Primack, who wrote: “The doing of science is a spiritual experience. Nothing compares with the wonder and exhilaration you feel when hard work yields a secret about the universe that perhaps only you have discovered.”

The discoveries of SSQ harmonize wonderfully with what Beth just told us tonight about her central claim, namely that “academic life, and scholarship in particular, IS ITSELF a spiritual practice.” Beth augmented this claim in several ways. First, drawing on Rebecca Chopp, Beth notes that practice is a “socially shared form of behavior ... a pattern of meaning and action that is both culturally constructed and individually instantiated.” How perfectly this describes the spiritual practice of science as a community project of international and intercultural dimensions, its shared history and normative paradigms, all infusing the lives of individuals who through rigorous methodologies seek to discover for themselves science's truths about nature for the sheer sake of such participatory knowledge.

Next Beth drew on the writings of our dear GTU colleague and mentor Sandra Schneiders, who gave an anthropological definition of spirituality as involving “conscious involvement, the project of life integration through self-transcendence, and one pointed toward the ultimate value one perceives.” To me this fits nicely with science as a spiritual practice requiring one’s total conscious involvement in its theories and experiments, the demand to integrate personally all one learns objectively about nature by committing to the path of self-transcendence and the giving up of oneself wholly to the rigors of scientific research, and finally reaching the ultimate value offered by science to its practitioner: discovering the all-encompassing reality of nature of which we are a part, its staggering intelligibility, and its endlessly expanse and exquisite beauty, the natural context of our material existence, a universe whose very matter at last is seen as truly mattering.

Finally Beth turned to the distinguished philosopher Simone Weil who points to “attention” as that which “consists of suspending our thought, leaving it detached, empty, and ready to be penetrated by the object ... ready to receive in its naked truth the object which is to penetrate it.” What an apt description of the attention that is called for in both theoretical and experimental science. I remember well staring at an equation with only two Greek letters and an “equals zero” ($\delta\delta=0$) on the blackboard at UC Santa Cruz where I did my Ph. D., an equation which encapsulated all of the details of the 256 coupled equations at the core of Einstein’s General Theory of Relativity. There I learned to dwell in and with these four letters, and, through complex and demanding mathematical reasoning, to open up their secret contents, and to discover a representation of the physical universe contained within them. I also remember lowering the temperature of liquid helium in my lab towards absolute zero degrees Kelvin and watching as, cooling, it went superfluid: total quiescence, bubbles gone, liquid silence. In both cases I was engulfed by attention to the phenomena in nature, phenomena which lie way beyond ordinary human experience and hint at nature in her secret modes of being, and to the pure mathematics that embraces all that we know empirically about the Big Bang universe. These were truly spiritual moments for me, moments in my long spiritual quest for reality, truth, goodness and beauty expressed in the hidden folds of nature and by the contemplation of its most serene mathematical regularities. These were rare moments, passionately sought out and immensely prized by me, moments of *lectio divina* where the sacred text is the mathematics we write down on paper and the universe endlessly lying beyond it which this mathematics reveals, a universe in which we “live and move and have our being,” a universe which science discovers through its direct, personal and corporate experience as a “spiritual practice.”

In all this I am grateful to Beth for fleshing out the deep and moving connections between academic life and spiritual practice, and I welcome many more such conversations with her in the years to come.