

Reviews

Science and the Eastern Orthodox Church. Edited by Daniel Buxhoeveden and Gayle Woloschak. Farnham, Surrey, England: Ashgate, 2011. xii + 217 pages. \$89.95.

Typically, the religion and science dialogue has focused on the Western theological tradition, perhaps due to its connections with enlightenment rationality. In recent years, it has been a welcome development to see more dialogical texts coming from the Eastern Orthodox tradition. In *Science and the Eastern Orthodox Church*, a group of Orthodox scholars present topics connecting the Eastern theological tradition to important philosophical and scientific scholarship. This makes for a dialogue that is not only uniquely Orthodox, but one from which many Christian traditions will benefit. The volume is edited by Daniel Buxhoeveden and Gayle Woloschak. Buxhoeveden is a physical anthropologist and director of the Religion and Science Initiative at the University of South Carolina. Woloschak is a professor of radiology as well as cell and molecular biology at the Feinberg School of Medicine, Northwestern University. She is also currently the Associate Director for the Zygon Center for Religion and Science in Chicago, Illinois.

The book is divided into three major sections: “Compatibility and Balance,” “Limitations and Problems,” and “Selected Topics,” with all of these titles being prefaced by “Science and Orthodox Christianity.” The first section deals with Orthodox figures and broader ideas, with one essay dealing with twentieth-century Orthodox figures and their approaches to science, as well as an essay on the Cappadocians and science. In this sense, both ancient and modern Orthodox scholars are represented. The second section engages reductionism and the limitations of science, as well as the environment and bioethics. These four chapters engage key issues both philosophically and practically for the broader religion and science debate, finding applications outside of Orthodoxy. The third section is a mixture of topics, ranging from technology to political economy to the construction of an “Orthodox Philosophy of Science.” I suspect most readers will be drawn to certain groupings of essays, but the volume as a whole addresses many issues that those of faith will find essential to the religion and science dialogue.

Overall, the text is an eclectic mix of scholarship, but the individual articles deliver a powerful defense of the ancient Orthodox tradition while

addressing relevant topics to the religion and science discussion. Addressing the limitations of science, while still respecting the methodology and findings of scientific disciplines, this volume creates an important balance, which hits the right note. Certain essays are more clearly addressed to Orthodox readers, but the majority are relevant for those working in the religion-science dialogue. The text specifically benefits those who are engaging Christian theology and science from a traditional point of view that values different forms of spirituality. *Science and the Eastern Orthodox Church* is a welcome addition to the religion and science community, specifically those looking not just at the rational but the spiritual aspects of this dialogue.

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Indic Visions in an Age of Science. By Varadaraja V. Raman. New York: Metanexus, 2011. 270 pages. Hardcover \$29.99.

Indic Visions in an Age of Science is the most recent book by Varadaraja V. Raman, a prominent contributor to the science and religion dialogue with special reference to Indic religions. Currently emeritus Professor of Physics and Humanities at Rochester Institute of Technology (Rochester, NY), Raman is well known for his diversified academic contributions on Indic/Hindu culture and religion, as well as on the historical, social, and philosophical aspects of science. The book provides a comprehensive survey of the major religious, philosophical, and scientific achievements of Indic civilization although offering a lucid analysis of their actual and potential contributions to modern science and global culture. Although it covers a large scope, the science and religion discourse in Western academia has only directed limited attention to South Asian religious views, particularly those of Hindus. Raman's book definitely stands as a much-needed corrective in this regard.

As the title suggests, the author's intention is not to cover the whole history of Indic thought, but only certain perspectives or "visions"—intellectual, religious, or mythical—seen as relevant in the current age of modern science and technology. In his preamble (p. 17), Raman states that he is writing as a spiritual Hindu whose worldview has been significantly shaped by involvement with modern science and European philosophy, science and literature. Thus, his purpose is avowedly to "cherish and

preserve some of the precious stones in the treasure chest of Indic heritage and to share these in the context of a new and changing world” (p. 18). Raman believes that Indic visions have something precious to contribute to the emerging global civilization of today. Yet he is equally aware that new ideas and practices can and do enrich the contemporary Indic world as well. Incidentally, Raman’s intention in writing this book is also to soften the culturally sensitive criticism that Western thinkers have only oppressed Indic culture and society throughout history. In several places, he acknowledges the positive impact of Western scholarship not only in the fields of modern science and technology but also in the study of non-Western religion, philosophy and history (esp. history of science).

The book contains ten chapters broadly arranged in a historico-thematic manner. Raman begins (Chapter 1) by emphasizing the range and variety of “Indic visions” and their unified multiethnic, religious, and cultural character. In his view, “Hinduism” in a broad sense has constituted and provided the unifying core of Indic civilization. If “alien” religions (i.e., those that came to India from outside) and worldviews have modified, and contributed to, Indic/Hindu culture to some extent, they never really succeeded in uprooting the latter (p. 25). The chapter then raises some issues, to be taken up later in the book, pertaining to modern and contemporary India’s “search for cultural roots.” Chapter 2 introduces the reader to ancient India’s major technological and scientific achievements. Raman’s discussion is informative and sometimes even original—such as when he points out the intricate relationship among poetry, religion, and mathematics in the medieval period (pp. 55–56). This chapter also provides an entry point into Raman’s conception of the dialogue between science and religion. He lays particular emphasis on parallels drawn between modern scientific discoveries and Vedic/Hindu literature. Meera Nanda, who wrote extensively on the subject (*Prophets Facing Backward*, Permanent Black, 2004), believes the intent behind such parallels is never a genuine encounter of science and religion; it is rather an apologetical attempt to forge a “new” science of nature that does not contradict the sacred teachings of Hinduism. Raman offers here a different, perhaps less radical, perspective. Tracing the claim that modern science lays implicit in Vedic literature to the nineteenth-century Hindu reformer Swami Dayananda Saraswati, he holds that such parallels infused Hindus with a much-needed moral boost at a time when “cultural pride . . . had been eroding under Western military power and dominance” (p. 48). This might still be true of today, he says. Further, although modern scientific ideas cannot be explicitly found in ancient religious scriptures, it is still a fact that people of the Vedic period were familiar with several technologies and that Vedic proponents practiced “science” in a broad sense (for example, the use of geometry and arithmetic in the ritualistic context of building altars). In Raman’s view, religious scriptures are not necessarily incompatible with rationalistic and

secular scientific insights: in the Indic conception, spirituality, religion, and science constitute different but valid ways of approaching the truths of this world (p. 68).

Chapter 3 offers a fresh perspective on Hindu narratives on the origins (and fate) of universe and life. In several places, Raman traces interesting parallels with current theories and ideas in modern science. He stresses, however, that ancient Indic conceptions of cosmos and life, as *reflections* or *speculations* on the mysteries of the cosmos, must be distinguished from scientific *explanations* on the same (p. 94). Raman's parallels with science thus seem to function as analogies to demonstrate there was some consistency and ingenuity in ancient Indic speculations. Although not all parallels are necessarily appealing and useful, the attempt is in itself worthwhile if only because it reminds us that ancient sacred works also tried in their own way to address the great questions of humankind. In Chapter 4, Raman provides a complex portrait of visions of self, mind, and consciousness in classical Indic thought. The reader might sometimes feel confused by the wide variety of Sanskrit-based concepts and the scattered references made to Indic schools of thought (Nyāya, Vaiśeṣika, Yoga, Sāṃkhya, etc.). Yet Raman succeeds pretty well in drawing a fairly unified picture of Indic psychology. Chapter 5 introduces the reader to some of the epistemological theories and insights of classical Indic thinkers. Raman's linking of *upamāna* (comparison) in Indic epistemology with the important role played by metaphors and analogies in the formulation of scientific theories (a role famously emphasized by Gerald J. Holton in *The Scientific Imagination*) is particularly enlightening (p. 128). Equally interesting is his brief discussion on the relatively less known Jaina theory of *anekāntavāda*, which implies the notion that truth and reality are necessarily apprehended from a multiplicity of viewpoints, and consequently that a single viewpoint can never be completely true. The expression "Indic postmodernism" in the chapter's title may well refer to such kind of ideas.

In Chapter 6, the author discusses the main philosophical tenets of classical Indic philosophy, although with a clear focus on Hindu contributions. Here a more unified and flexible picture of Indic philosophy might perhaps have benefited the reader. The *āstika/nāstika* (orthodox/heterodox) classification of Indic philosophical systems, on which Raman relies, is helpful for general description, but it fails to make clear the mutually enriching interactions that took place between the diverse schools of thought, independent of their commitment to or rejection of Vedic authority. That being said, Raman conveys the salient features of Hindu philosophy in a concise and accessible manner, and also discusses "non-Vedic schools" in some detail (p. 150). In Chapter 7, he pursues his exploration of Indic thought with a refreshing discussion on the Bhagavad-Gītā and the Upaniṣads. Chapter 8 analyzes the controversial claim that ancient Hindu mythological narratives would contain records

of a technologically advanced and highly sophisticated civilization. In Raman's view, such stories should not be interpreted literally as remnants of historical events or as containing specific references to technological achievements. Nevertheless, they vividly illustrate the great capacity of ancient Indic thinkers for sophisticated and creative thinking. Even as "poetical metaphors," he says, mythological narratives can eventually "prove deeply insightful as plausible scientific hypotheses" (p. 196). Raman's nuanced analysis of this controversial question makes this chapter an important feature of the book.

Chapter 9 retraces the scientific contributions of eminent Indian scientists beginning with the modern period. India's increasing participation in international science (along with the recognition of its own scientific heritage) has been beneficial, argues Raman, not only because it has eradicated the need for defending one's own culture against others (in sometimes aggressive and nonsensical ways), but also because it has led to "a deeper understanding and appreciation of both science and Indian spirituality" (p. 202). Science has been acknowledged as a truly international practice transcending race, religion, and nationality, whereas spirituality has been understood as a personal endeavor that need not be compromised by the practice and discoveries of science. This is a position that Raman reiterates at some other places in the book. The last chapter pursues this reflection while exploring science in an international and intercultural context. Raman offers here a thoughtful discussion on the positive and negative aspects inherent in the study of history of science in different cultures. His discussion of three potential pitfalls in this endeavor—temporal, cultural, and nostalgic (pp. 224–225)—is particularly enlightening and also summarizes some important results achieved earlier in the book.

In *Indic Visions in an Age of Science*, Varadaraja V. Raman combines the scientific acumen of a rigorous physicist with the gaze of a thoughtful humanist to bring out what is best in the Indic world (past and present) on the one hand, and modern science, values, and culture on the other hand. The book succeeds, at least, on two levels: (1) it summarizes in an accessible manner the major Indic philosophical, religious, and scientific contributions to global history, although demonstrating their value and relevance today; and (2) it provides a balanced, lucid, and well-needed understanding of the intricate relationship between science and Indic religion (which can be extended to other religions as well). On the negative side, one has to say that the book lacks references to primary and secondary literature (sources of quotations are often not mentioned) and includes a few mistakes in Sanskrit words (spelling and diacriticals). A more thorough appraisal of Buddhist, Jain, and Sikh contributions to "Indic visions" would also have been appropriate—though perhaps not necessary had the author explicitly stressed in his introduction what he meant by the term *Indic*. That

being said, I believe the book will be of great value for anyone interested in Indian culture and philosophy, as well as in the dialogue between science and religion across different cultures.

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