Picton, T. W. (2013) *Creature and Creator: Intersections between Science and Religion* (pp. 1-5)

PROLOGUE

We are often confronted by questions without easy answers. Where do we come from? What is this world we live in? Who are we? Why should we be good? Where are we going? These questions organize the ideas presented in this book. Science and religion are two ways in which we might search for answers. Their approaches are as distinct as the two squares in the painting that inspired the cover of this book.

Kazimir Malevich's *Black Square and Red Square* was initially shown in 1915 in the exhibition that defined the artistic movement called Suprematism. Malevich's goal was to make visible the true reality beyond the actual objects perceived in the world: "I transformed myself in the zero of form and emerged from nothing to creation, that is to Suprematism, to the new realism in painting – to non-objective creation."[1] Malevich's ideas resonated with the teachings of Eastern religions that recommend losing one's individual self to gain union with the universal life-force and release from suffering in a world of illusion.[2] However, exactly what he was claiming is as open to interpretation as the painting, which might represent the balance between reality and imagination, or the world as viewed beyond the limited three dimensions of human perception. Art claims to see the truth that lies behind appearance. This book considers how we interpret what we experience, whether this comes from empirical observation, spiritual revelation or artistic imagination. And how we might assess our interpretations.

Paul Gauguin's 1897 masterpiece in the Boston Museum of Fine Arts *Where Do We Come From? What Are We? Where Are We Going?* is an artistic consideration of some of the questions evaluated in this book. Originating in catechisms that Gauguin learned as a child from the Bishop of Orléans, the

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[1] Malevich, K. S. (1915, translated by Glowacki-Prus, X., & McMillin, A ., 1968). From Cubism and Futurism to Suprematism: the new realism in painting. In Andersen, T. (Ed.). *K. S. Malevich: Essays on art 1915-1928*. (Volume I. pp. 19-41). Copenhagen: Borgen (quotation is from p. 37). A photograph of the exhibition is included in Petrova, E., Douglas, C., Vakar, I., Kovtun, E., Sarabianov, D. & Karasikm, I. (1991). *Malevich: Artist and theoretician*. Paris: Flammarion (p. 15). The painting is presently in the Museum of Modern Art, New York.

[2] Douglas, C. (1986) Beyond reason: Malevich, Matiushin, and their circle. In Tuchman, M., Freeman, J., & Blotkamp, C. (Eds.). *The Spiritual in art: Abstract painting 1890-1985*. (pp. 185-199). New York: Abbeville Press.

questions were not meant to be answered but to serve as focal points for meditation.[3]

Similar questions have intrigued philosophers and scientists as well as artists. The philosopher Immanuel Kant considered three questions as essential for any study of human reason: "What can I know? What ought I to do? What may I hope?"[4] Simple answers are nothing for certain, what you would wish others to do, and your just deserts. However, nothing in Kant is simple, and these answers are themselves the source of further questions.

The physicist Erwin Schrödinger was fascinated by four questions: "Does there exist a Self? Does there exist a world outside Self? Does this Self cease with bodily death? Does the world cease with my bodily death?" He found his most convincing answers in the Hindu Upanishads, which propose that the individual self and the perceived world are all part of a universal consciousness. *Tat tvam asi*. That art thou: You are the world.[5]

Despite having no definite answers, the questions raise important issues. Religion provides answers, though they are often not convincing. Science typically shies away from the questions, or considers them ill-posed. Perhaps religion should exercise a little humility and admit that it does not understand; perhaps science should move beyond what is easily explained.

Human knowledge is of two kinds: of the world and of the self. The main point of this book is that these are complementary. Necessarily so. This book will consider the two kinds of knowledge as science and religion. Though it used to refer to knowledge of any kind, the word "science" now concerns knowledge about the material universe derived by observation and experiment. The word "religion" usually means an organized system of beliefs about matters that are beyond the grasp of science ("transcendent"), together with a

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[3] Silverman, D. (2000). *Van Gogh and Gauguin. The search for sacred art*. New York: Farrar, Straus and Giroux. (pp. 121-139 and 373-391). Gauguin's questions can also be used to organize the main themes of human biology: Wilson, E. O. (2012). *The social conquest of Earth*. New York: Liveright.

[4] Kant, I. (1787, translated by Smith, N. K., 1929). *Critique of pure reason*. London: Macmillan (p. 635).

[5] Schrödinger, E. (translated by C. Hastings, 1964). *My view of the world*. Cambridge: University Press. (pp 12-22). The questions come from an essay that was initially written in 1925, just before Schrödinger's work on wave mechanics. The original statement of *tat tvam asi* is in the *Chandogya* Upanishad, 6.8.7: Easwaran, E. (1987, 2007) *The Upanishads*. Tomales, CA: Nilgiri Press (p. 134).

set of precepts about how we should act, and a program of rituals to display a community's shared beliefs. The beliefs and moral guidelines are often formalized in a set of scriptures or teachings. The degree to which these are held sacred varies. The rituals may not be necessary: one can be religious but not observant.

This book differs from other books on science and religion by not being limited to one religion. Ideas from all of the world's main religions are considered. The author has no specific creed: he is neither atheist nor believer. The concept of the numinous, rather than the idea of God, is considered as the central fact of religion. The book deals with both the substance and the nature of belief. Its style is one of exploration rather than justification. Ideas are evaluated; dogma is not propounded.

However, no author is innocent of belief. During my adolescence I was briefly active in the Christian church. I have not been so since, though I sometimes miss my youthful certainties. This early exposure has made me more familiar with Christianity than with other faiths. My religious examples therefore come more frequently from the West than from the East. My quotations from the Bible are from the King James Version. Thoughts are channeled by the culture in which one learns to think.

At present I belong to no religious group and follow no formal rituals. I have worked in science for most of my life, and my basic beliefs align themselves most easily with its principles. Despite my faith in the methods of science, however, I am dismayed by some of its present tendencies. What cannot yet be explained – conscious awareness, free will, beauty – should not be considered illusory or irrelevant. This book takes the position that these phenomena are real and important. And that science might help us to understand them.

The scope of the book is large. Since it is impossible to cover all of science and religion, the book concentrates on their intersections. The weave of the book is thus tied to some focal concepts: creation and evolution, reality and imagination, knowledge and belief, freedom and morality, death and immortality.

The book is written for intelligent readers: scientists, who wish to understand how their science might interact with religion; believers, who would consider how science and salvation might be reconciled; and scholars of the humanities, who are concerned with the place of science and religion in human culture. The presentation is at the level of a basic college degree. The text should be readily comprehensible within the area of the reader's education, but may require some effort in other areas.

Although this book was written to be read from beginning to end, each section is patterned on a "pericope," a small passage from the scriptures that can be used as the basis for a lesson. The book can thus also be read intermittently. Indeed, a random walk through its contents will both allow variety and exercise free will. Another approach is to begin with the final sections of each chapter and work backwards. Or you may wish to check first some important issues, such as the interpretation of Abraham's binding of Isaac, the conflict between Galileo and the Roman Catholic Church, the different manifestations of the numinous, the nature of the golden rule, or the conference of the birds.[6]

The book is eclectic. Sections too detailed in their science or too mystical in their intuition may be skimmed for their gist. Such indulgence is necessary in a world of overwhelming information. Modern thought has become more comfortable with finding the best way through a network than with traversing a linear path or covering every inch of ground.

The laws of nature do not exist in the world. Nature simply happens. The laws by which it operates are inferred by the human mind as abstractions of reality. Our search for knowledge can thus be conceived as an attempt to understand the mind of the universe. Stephen Hawking famously ended his book *A Brief History of Time* with the idea that we might someday construct a theory of everything and thereby "know the mind of God."[7] Since then he has realized that our ability to understand is inherently limited, and we may not be able to reach this goal.[8]

Nevertheless, what is most amazing about the world we live in is that we can attempt to explain it: "the eternal mystery of the world is its comprehensibility."[9] The book's title comes from the idea that we are creatures that have evolved within a universe which we are driven to understand. Interpreting the universe requires as much creativity as its original production:

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[6] See pp. 38-46 (Abraham), pp. 91-110 (Galileo), pp. 240-244 (manifestations), pp. 304-309 (golden rule), and pp. 449-453 (conference of the birds).

[7] Hawking, S. W. (1988, updated 1998). *A brief history of time: From the big bang to black holes*. New York: Bantam Books. (p. 191)

[8] Hawking, S. W. (2002). Gödel and the end of physics. Text of lecture available at http://www.hawking.org.uk/godel-and-the-end-of-physics.html. See pp. 254-255 for further discussion of Gödel.

[9] Einstein, A. (translation by Piccard, J., 1936). Physics and reality. *Journal of the Franklin Institute*, 22, 348–382. Original German version is pp. 313–347: *Das ewig Unbegreifliche an der Welt ist ihre Begreiflichkeit*

> In man *creature* and *creator* are united: in man there is material, fragment, excess, clay, dirt, nonsense, chaos; but in man there is also creator, form giver, hammer, hardness, spectator divinity, and seventh day[10]

This book proposes that religion is a special form of art, that scripture is a special form of poetry, and that science is an endeavor that requires the same imaginative processes as art. We must create through both religion and science an understanding of the universe that created us.

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[10] Nietzsche, F. W. (1886, translated by Kaufmann, W. A., 1967 republished 2000). *Basic writings of Nietzsche*. New York: Modern Library. (*Beyond Good and Evil*. Section 225, p. 344). This quotation from Nietzsche follows his claim that humanity has no need of pity: suffering brings out our strength and triggers our creativity. Paul Cantor used these words as an epigraph to his monograph on the English Romantics, which shares its title with the present book: Cantor, P. A. (1984). *Creature and creator: Myth-making and English romanticism*. Cambridge, UK: Cambridge University Press.