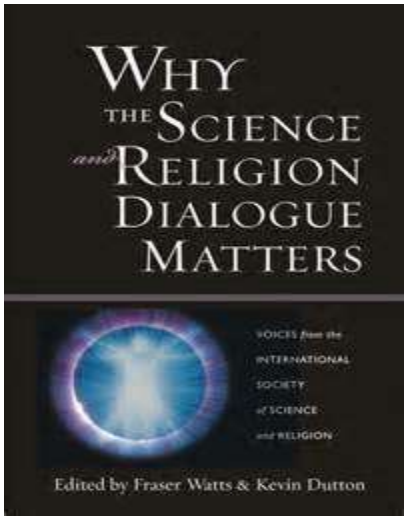
Religion and Science: The Emerging Relationship
Part II



The first article in this series introduced four basic models through which people understand the relationship between religion and science--exploring the model of *Conflict*. These four models were offered by scientist and theologian Ian Barbour. The models are: *Conflict, Independence, Dialogue, and Integration.* In this article I will focus on the model of *Independence*.

This model proposes that there is no conflict between religion and science because they are two separate ways of understanding the nature of reality each with its own distinctive modes of inquiry and discourse. **1** This model results in a *split personality* about the nature of reality. As such, science is free to do its own work without reference to a religious vision of reality. As a consequence, this may result in an ethical neutral approach to scientific research. On the other hand, in such a model religion goes its own way without reference to the modern scientific discovery. Religion notes that science has nothing to say about the truth claims of religion. This is especially so for those prophetic religions that originated in God's revelation through persons and events in history.


(Ludwig Wittgenstein)

Typical of this model is the understanding that religion and science use different *language games* (Ludwig Wittgenstein). Therefore, we should not expect the language used in religion to necessarily be helpful for science. Religion and science approach reality from different horizons by which each approach utilizes their own symbols and concepts to communicate the truth as each approach understands truth. It is now apparent that scientists and mathematicians have discovered that there are limits to human knowing that cannot be resolved by human investigation.

The most recent history of both physics and mathematics has produced admirable results, but it also shows fundamental limits to physical and mathematical knowledge. This must also be significant for biology, which builds on physics and mathematics, and especially for neurobiology.

- *Physics came up against fundamental limits with quantum theory. The Heisenberg indeterminacy relation is one of its main principles: since the position and momentum of a particle cannot be measured at the same time, in principle certain atomic events cannot be calculated before hand. The indeterminacy allows only for statistical probability.*
- *Mathematics came up against fundamental limits specifically in the problems of its foundations. According to Godel's second incompleteness theorem in 1930, no finite, constructive proofs provide a universally compelling guarantee that mathematical thought is free of contradiction.* **2**

(John Haught)

As a consequence, there is some merit in employing the *Independence* model. Firstly, this approach protects the uniqueness of both approaches for understanding reality. Dr. John Haught of Georgetown University addressed the merit of the *independence model* as concerned with the *creationist* controversy of the 1980's in the United States when he stated:

Unfortunately, the scientific creationists, to take my first example, merge science with religion by situating the biblical creation stories alongside Darwinian evolutionary theory as a competing set of scientific ideas. To a rigorous separatist, such a fusion of science and scripture not only threatens the integrity of science; what is worse, it also trivializes religion by placing sacred writings in the same genre as mundane scientific discourse. **3**

Science cannot prove or disprove the claims of religious belief because it is impossible to use the methods of science to prove or disprove God, and the experience of God, in the experience of people and historical events. Such experiences are transcendent experiences not open to empirical verification or falsification. On the other hand, the methods of science are protected in accord with Catholicism's insistence that God gave us the ability and desire to know what makes this world work and to use that for the uplift of human beings and the creation. As noted by Pope Benedict XVI in Regensburg, Germany, Catholicism believes that there must be a proper relationship between faith and reason. Faith without a reasonable basis can quickly lead to an unquestioning *fideism* that often leads to intolerance and fanaticism. Reason without faith can lead to a *reductionist sterile rationalism* that ignores or denies mystical or non-rational experience of human beings. Such a situation can result in a belief that reason and technology can solve all problems—a direct contradiction of the historical record!

While the *Independence* model does protect the integrity of both approaches to understanding reality it fails to give adequate explanation for the growing intersection of religious experience, modern scientific discovery, and the need for an ethical framework for scientific research. Also, the long and venerated tradition of natural theology in Catholicism would argue that God is knowable to some extent via human reason. However, we rely on God's self-disclosure to tell us what is typical of God and who God is for us.

I examined two of the four models proposed by Ian Barbour for how religion and science relate to each other. I looked at the models of *Conflict* and *Independence.* Now I turn to the model of *Dialogue.*

In this model religion and science communicate with each other in areas of investigation and experience of reality that both religion and science find intriguing. One such area of interest is what the Roman Catholic theologian, David Tracy, refers to as *boundary* questions. Boundary questions arise from those experiences that cannot be adequately understood or addressed by human language. Such experiences would include the mystery of death and the origins of the universe; giving rise to the questions of why evolution, why life, and why should anything exist?

Fr. David Tracy also sees a religious dimension in science. He holds that religious questions arise at the *horizon* or *limit situations* of human experience.**4** Such things as anxiety and confrontation with death, as well as joy and basic trust are examples of horizons or limit situations. Tracy goes on to describe two types of limit situations for

science; ethical concerns in the use of science, and presuppositions or conditions for the possibility of scientific inquiry. **5**

Ian Barbour notes that religion and science hold other things in common.

Science, it appears, is not objective, nor religion as subjective, as had been claimed. There may be differences of emphasis between the fields, but the distinctions are not as absolute as had been asserted. Scientific data are theory laden, not theory free. Theoretical assumptions enter the selection, reporting, and interpretation of what are taken to be data. Moreover, theories do not arise from logical analysis of data but from acts of creative imagination in which analogies and models often play roles. Conceptual models help us to imagine what is not directly observable…. Clearly, religious beliefs are not amenable to strict empirical testing, but they can be approached with some of the same spirit of inquiry found in science. **6**

The method of science places emphasis on the task of verification and falsification of test results. In other words, through the use of the scientific method and critical questioning from other horizons or theoretical assumptions the data is rigorously interrogated to see if it can stand up to such a critique. A generally accepted theory becomes a paradigm or primary model when it offers the best and widest explanation of the observable phenomenon. However, when a paradigm shifts in science, or any discipline, new assumptions, models, and concepts replace or build on the previous paradigm.**7** It is important to note that religious systems also undergo paradigm shifts in their journey through history. This opens up the possibility of further dialogue between religion and science as each approach comes to a greater understanding of their own discipline so that both approaches may offer this greater clarity of self-understanding to the other in order to promote more effective dialogue with the other.


(Albert Einstein)

Even Albert Einstein recognized that there were reasons for some type of dialogue between religion and science, recognizing that science could not offer certain answers to the most fundamental questions about being. When asked by an astounded atheist, if he were in fact deeply religious, Einstein replied:

Yes, you can call it that. Try and penetrate with our limited means the secrets of nature and you will find that, behind all the discernible concatenations, there remains something subtle, intangible and inexplicable. Veneration for this force beyond anything that we can comprehend is my religion. To that extent I am, in point of fact, religious. **8**

The world renowned scientist, Werner Heisenberg, also expressed his own belief about the relationship between religion and science when he stated:

I have never found it possible to dismiss the content of religious thinking as simply part of an outmoded phase in the consciousness of humankind, a part we shall have to give up from now on. Thus in the course of my life I have been repeatedly compelled to ponder on the relationship of these two regions of thought, for I have never been able to doubt the reality of that to which they point. (Scientific and Religious Truth, 1973). **9**

There are shortcomings with this model of *Dialogue.* Firstly, there is a tendency to gloss over the differences between religion and science. Science does have a more objective approach to its methodology. Theology has benefitted from the rigor of scientific methodology but cannot state the *case* with the same objective certainty that would not require the assent of faith. On its part, science must beware that its discussion of reality not move over into metaphysics, making statements about absolute truth that science is incapable of making, such as those by Richard Dawkins and Christopher Hitchens. The ultimate destiny of creation and humanity is not a question that science can answer with a definite certainty because the meaning question is not able to be answered by science. Science postulates that the universe will end either by continued expansion until it suffers heat death and becomes too cold to support life, or, it starts to contract into the *big crunch,* when it will get infinitely small (a singularity). Whatever the case, this still does not tell us about the ultimate end of all reality, which for Christian faith is transformation into glorified being with God and by God.

Notes

1 Barbour, *Religion in An Age of Science,* p. 7-10; John Polkinghorne, *The Faith of a Physicist* (New Jersey: Princeton University Press, 1994) , pp. 30-50.

2 Hans Kung, *The Beginning of All Things* (Grand Rapids, Michigan/Cambridge, UK,: Eerdmanns, 2007), p. 30-31

3 John F. Haught, *God After Darwin: A Theology of Evolution* (Boulder, Colorado:Westview Press, 2000), p. 31.

4 Barbour, p. 20. Also cf., David Tracy, *Blessed Rage for* Order (New York: Seabury 1975)

5. Barbour, p. 20 and 272

6 Barbour, pp. 20-22

7. Thomas Kuhn, The *Structure of Scientific Revolutions,* 2nd ed. (Chicago: University of Chicago Press, 1970).

8. H.G. Kessler, *The Diary of a Cosmopolitan,* (London: Weidenfeld and Nicholson, 1971), p. 157

9 Bernard Haisch, *The Purpose-Guided Universe: Believing in Einstein, Darwin and God,* (New Jersey, New Page Books, 2010), p.45.

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