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CONSIDER THIS

Intelligent Design or Intelligible Design?

It's a matter of faith

By FREDERICK GRINNELL

Whether the topic is embryos or evolution, religious interests sometimes try to influence how science is taught and practiced. Frequently the perceived conflict between religion and science is understood as a debate about matters of factual observation. As a philosopher friend commented, "If your religion requires six literal days of creation, then it clashes with science." I find that the difference between the claims of religion and of science can be far subtler — a reflection of distinct human attitudes toward experience based on different types of faith.

By religion, I mean William James's inclusive description — the religious attitude as belief that the world has an unseen order, coupled with the desire to live in harmony with that order. James's description encompasses what we typically call religion: communal beliefs and practices as well as spirituality, the person's individual quest for meaning through spiritual encounter with the world.

Some years ago, I heard the following example used to illustrate the ability of scientific and religious attitudes to divide the me/here/now of everyday life experience into distinct potential domains of understanding and action. Imagine walking along a beach and coming upon a large and unusual rock. Two sets of possible questions arise. First set: What kind of rock is this? How did it get here? What can be done with it? Second set: What does it mean that this rock and I are sharing the beach together at this moment in time? What can this moment (or rock) teach me about the meaning of life?

The first set represents science and technology. Knowing the answers enables the control essential to obtain and use the rock according to one's needs and desires. The second set represents religion and spirituality. It concerns the meaning and purpose of the individual and of life. If your religion requires six literal days of creation, then it clashes with science. But if your religion teaches that the unseen order of the world has purpose and meaning, then is it at odds with science?

A conventional way to contrast scientific and religious thinking attributes reason to the former and faith to the latter. That approach obscures what seems to me to be a central element in trying to understand the relationship. Science, too, requires faith. The British empiricist philosophers emphasized that point in their critique of the possibility of knowledge. We have no assurance of our own existence or of matters of fact beyond immediate sense experience and memories. The idea of cause and effect, a central tenet of scientific thinking, depends on one's belief that the course of nature will continue uniformly tomorrow the same as today, a belief that cannot be proved.

Such ideas presented a potential challenge to the development of modern science — a challenge that

science ignored completely. Instead, commented Alfred North Whitehead, we have an instinctive faith in the "order of nature." Einstein described that as faith in the rationality of the world, which he attributed to the sphere of religion. How ironic! I call it faith in intelligible design — faith that nature's patterns and structures can be understood.

Those of us who practice science share a faith in intelligible design. But when we do our work, how do we go beyond the me/here/now of personal experience, along with its potential for misinterpretation, error, and self-deception? The answer is that by sharing our experiences with one another, we aim to transform personal subjectivity into communal intersubjectivity. Through that transformation, the discovery claims of individual researchers become the credible discoveries of the scientific community — knowledge good for anyone/anywhere/anytime. Of course, the credible knowledge of science always remains truth with a small "t," open to the possibility of challenge and modification in the future. Nevertheless, given the extent to which humankind has succeeded in populating and controlling the world, science's faith in intelligible design appears to be well justified.

Just as science requires faith, religion requires reason. A provocative image of reason in religion is the analogy pointed out by Rabbi Joseph B. Soloveitchik between the development of Jewish religious law and the formulation of a mathematical system: Validity depends on logical rules applied correctly to starting assumptions, but the starting assumptions need not be grounded in the shared experiential space in which we all live. For instance, at the time mathematicians developed non-Euclidian geometry, the world was experienced as fully Euclidean. Although science and mathematics are frequently taught together, mathematics, unlike science, is a closed, deductive system in which conclusions can be derived from assumptions even if the assumptions do not correspond to any known reality. In short, it is not the absence of reason that distinguishes religion from science, but rather the willingness to accept starting assumptions from outside of shared experiential space — James's unseen order — sometimes including the miraculous. Those starting assumptions can be found in every religion — for instance, the elaborate revelations of such great leaders as Buddha, Krishna, Moses, Jesus, and Muhammad.

Because each religion embraces a different set of revelations and assumptions about the unseen order, fragmentation is inevitable. We have not one but many unique, reasoned frameworks that provide guidance about values, meaning, and purpose of life. To maintain the differences, the religious attitude depends on a credibility process much different from that of science. Credibility in religion requires certification at the outset that an individual's insights are consistent with a particular religion's unique understanding of itself. Unlike the scientific attitude that settles for truth with a small "t," the religious attitude begins with certain everlasting Truths. Through acceptance of those Truths, an individual chooses to become part of a particular religious community.

Intelligent design offers a good example with which to distinguish faith in religion from faith in science. The ID movement has received widespread attention as a result of the legal battles over what should be taught in the science curriculum regarding evolution. The question has been turned into a political issue. Underlying the ID argument is a discovery claim called irreducible complexity, which denies the possibility of a common ancestry of life forms as described by modern evolutionary biology. ID proponents say that because of the limits imposed by irreducible complexity, the possibility of evolution depends on intervention of a hypothetical force outside the known laws of nature.

Supporters of ID are not interested in further investigation of irreducible complexity or of this hypothetical force. Instead they appear to be satisfied that they have arrived at the Truth of the

matter. ID supporters would agree with Einstein about "the sublimity and marvelous order which reveal themselves both in nature and in the world of thought." However, rather than Einstein's "cosmic religious feeling but no anthropomorphic conception of God," ID supporters follow the glance of Isaiah 40:26: "Lift up your eyes on high and see: Who created these?" Whatever one might think of the merit or failure of intelligent design in terms of religion, having faith in the Truth of the matter situates the movement outside of science. Consequently, ID has no place in science education.

What is the relationship between scientific and religious attitudes when viewed as different kinds of faith? Bicycle riding frequently is offered as a metaphor to describe these attitudes as complementary. Having a bike makes riding possible. Other factors influence the direction in which the rider will choose to go. Science provides the technology for doing things. Religion provides the values to determine what things should be done. Notwithstanding the importance of the functional sense of complementary relationships implied by the bicycle metaphor, a different and more profound sense of complementary relationships can also be found.

The physicist Niels Bohr introduced complementarity in 1927 to account for the failure of classical physics to explain the nature of light. Two sets of evidence and two theories — waves and particles — had become associated with light propagation. Bohr argued that, at the quantum level, there could be no distinction between the object and the experimental circumstances that permitted the object to be observed. Unlike the conventional notion of complementary perspectives, in which observer and object remain separated, in complementarity, observer and object make up an interacting unit. Two observations that exhibit complementarity exist side by side, mutually exclusive, yet each adequate within its own experimental framework. Both are required for a comprehensive understanding of the phenomenon under investigation. When he was knighted, Bohr symbolically expressed his commitment to complementarity by choosing the yin-yang symbol as his family crest.

Bohr suggested that complementarity might be extended beyond physics to other domains of experience, including science and religion: materialism (science) and spiritualism (religion) as two aspects of the same thing. Although he did not develop that idea, one can imagine the religious and scientific attitudes as filters that reveal distinct domains of knowledge — domains that cannot be observed or inferred or negated from the other perspective. The religious attitude gives us James's unseen order, to which the individual seeks to conform. The scientific attitude gives us the anyone/anywhere/anytime of intersubjectivity. The domains are separate but not separated. Rather, they merge into a holistic yin-yang framework that cannot be harmonized or resolved further. They exist in dynamic tension, constantly bouncing off each other and inevitably offering distinct types of answers to fundamental questions about the self and the world.

Recognizing the limitations of our understanding is one of the most important insights from Bohr's complementarity. Perhaps there is no single correct path. Solving the world's problems may require both scientific and religious attitudes — two types of faith, not just one or the other.

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