

## Religion and Science: The Beginning of a Beautiful Friendship?

Robert W. Fuller

Television talk show host John McLaughlin, a one-time Jesuit priest, has predicted that at some point during the twenty-first century “religion will lose” its long-running debate with science.<sup>1</sup> Not a decade into the century, a number of big guns have targeted religion, proclaiming “the end of faith,” exposing the “God delusion,” and, most recently, arguing that “God is not great” and “religion poisons everything.”<sup>2</sup>

Warnings against the dangers of religious belief are nothing new. And if the drumbeat of condemnation grows any louder, we shouldn't be surprised if the world's holy books are soon required to display a Surgeon General's Warning: This Book May Be Harmful to Your Health.

But why single out religion? Of course militant religious fundamentalism poses a threat to freedom of thought, but so do beliefs of other sorts, including those on how to respond to fundamentalism. Among the many kinds of beliefs we cling to, it's far from obvious that religious beliefs pose the gravest danger. Political beliefs, social beliefs, and even scientific beliefs, have all, in their day, endangered humankind and will continue to do so until we change our attitude towards beliefs across the board.

In their fusillade against religion, its denouncers score many valid, if time-worn, points. But by focussing on what's wrong with

religion, they miss what religion has got right. Moreover, they do so in a way that believers will experience as patronizing and condescending. As Czeslaw Milosz, Polish Nobel Laureate in Literature, says, “If there is no God, not everything is permitted to Man. He is still his brother’s keeper and he is not permitted to sadden his brother, by saying that there is no God.”

The danger lies not in religion, not in religious beliefs, not even in beliefs themselves. As the nineteenth century British poet Francis Thompson pointed out, the danger lies in our (infantile) need to “believe in belief.”<sup>3</sup> The need for certainty is the real culprit. H.L. Menchen put it like this: “The public...demands certainties. ...but there are no certainties.”

As with alcohol, so with beliefs. What endangers us is not the booze, it’s the intoxication. There’s a bit of the fundamentalist in almost everyone. Who among us doesn’t have some core belief, without which we feel our identity might disintegrate like a bridge without its keystone. Many are so identified with their beliefs that they react to the idea of revising them as they would to the prospect of losing an arm or a leg. Institutions are less flexible still. Fighting to defend our ideas often feels tantamount to fighting for our lives.

Avoiding violence requires that we learn to hold beliefs not as unvarying absolutes but rather as working assumptions which, taken together, function as a pragmatic model. This is how natural scientists hold their theories. The same is true of artists and their sketches, cooks and their recipes, or dancers and their movements. Indeed, it is how people from every walk of life who are really good at what they do conduct themselves. Although what the public sees is the finished

product, there has typically been a great deal of prior improvisation and experimentation to arrive at it. As Kirk Varnedoe, the late curator of New York's Museum of Modern Art, put it, "Modern art writ large presents one cultural expression of a larger political gamble on the human possibility of living in change and without absolutes."

It is in defense of sacrosanct absolutes that we are most likely to entertain the thought of harming others. Breaking our dependency on "intoxicating certitudes,"<sup>4</sup> interrogating the beliefs we take on faith, and learning to live without absolutes, these are the real challenges, not jettisoning religious beliefs per se. Many religious and ethical beliefs have served us well in the past and, as I shall argue, have an important part to play as we establish ourselves in a post-fundamentalist era.

## **Science and Religion**

Science learned the hard way that beliefs are not to be elevated to the pantheon of absolute verities. When that has been done, stagnation has ensued. Think Aristotle, or more recently, Lysenko, the Soviet biology czar whose insistence, for ideological reasons, on Lamarckianism over Darwinism, stopped Russian biology in its tracks. The proper status of any scientific belief is provisional, heuristic, fallible. If a belief cannot be falsified, it's not science.

That scientists themselves forget this is put on display every time one of them takes umbrage at a creationist who asserts "Darwinian evolution is just a theory."

Well, what else *could* it be? Every belief system, in all of science, is “just a theory.” That should be conceded up front—gleefully—because once it is the question becomes “Just how good a theory is it?” The point is not that Darwinism is or is not a theory; the point is that it is a damn good theory, by far the best we’ve got to date. It’s a theory that has withstood centuries of testing, that organizes and accounts for an enormous body of data, and what’s more, it’s a theory that has guided us towards all sorts of life-saving and life-enhancing discoveries, ones we’d never have thought of without it.

Defenders of Darwinian theory should welcome a chance to put their contender in the ring against all comers, stand back, and let the best theory win. As a matter of fact, it’s a showdown that very few biologists shy away from, precisely because they’re confident that they can marshal an encyclopedic range of well-tested facts with which to establish the superiority of their model. None of that, however, can ever make it more than a theory. And nothing said against it so far has shown it to be anything less than a spectacularly good one.

Likewise, physicists will go to bat for Newton’s theory of gravity and his equations of motion. But only so long as they are applied in the so-called “classical” realm. What Einstein discovered was that unqualified belief in Newton’s mechanics was unwarranted. Newton’s laws could not account for all the data and what Einstein did was propose a new, more encompassing theory, one which was subsequently upheld by experiment and superceded Newtonianism .

If Einstein had claimed that his theory was infallible, he’d have

been guilty of the same mistake made by physicists before his time who went around proclaiming “the end of physics.” On the contrary, Einstein devoted the rest of his life to the search for a theory that would reveal the limitations of his own theories of relativity. He was the first to predict that his greatest contribution would one day end up in the dustbin of history and that that was its proper final resting place.

A theory is a theory is a theory. Granting a theory infallibility is like granting a dog immortality. A belief is a belief is a belief. Proclaiming a belief an absolute truth is like promising to love someone forever. Better, a day at a time.

So, having acknowledged that every theory is provisional and heuristic, it behooves us to ask just how good (or bad) religious theories and beliefs actually are. When put to the test, religious beliefs can be vindicated or they can be found wanting, just like any other kind of belief. Measured against this standard—a standard upheld by science—it turns out that religious beliefs are not half as bad as their critics would have us believe. In fact, I’ll make the case that one class of religious beliefs—those that offer guidance through life’s most trying passages—can hold their own against the best on offer by any other body of thought, including science.

## **Religion’s Gift to Science and Politics**

Before getting to that, though, I want to acknowledge two great historic debts owed to religion—by science and politics, respectively.

Religious thinking gave rise to the idea, first, of a plethora of gods, and then, of the one almighty God. This latter idea, that of monotheism, reverberates through the entire scientific enterprise and shapes its most fundamental assumption—its goal of finding unity in nature. The belief in one God, (with a capital “G,” or “A” for Allah) is the functional equivalent of the belief in a universal, unifying theory.

In physics such a theory is sometimes jocularly called a “Theory of Everything” (TOE is the acronym). No physicist can rest content so long as one physics theory contradicts another. Both theories can’t be right. Of course, one might apply here and the other there, but both theories can’t be right everywhere. So the search goes on for a TOE that will remove all known inconsistencies.

In every branch of science there has been a quest for a grand unifying theory (GUT) and it’s no accident that a GUT is invariably referred to colloquially as the “holy grail.” In biology, Darwin’s theory of evolution by natural selection is such a theory. In chemistry, it’s Mendeleev’s periodic table of the elements and the underlying quantum theory of atoms and molecules. In geology, plate tectonics accounts for all the earth’s principal geological features.

Nobel prize-winning physicist Leon Lederman says, “We hope to explain the entire universe in a single, simple formula that you can wear on your T-shirt.” A candidate theory of everything, now under development, goes by the name “string theory.”<sup>5</sup> Like all theories, it will ultimately live and die as it agrees with or contradicts empirical observations.

So long as there were many gods (pantheism) one could imagine them fighting and disagreeing with one another. It’s no

accident that monotheism antedates modern science: the impulse to a single, unitary God is the same impulse that fuels the search for a self-consistent, unifying theory. Reconciling contradictory theories is arguably one of the most powerful tools in a theorists' play book.

Religion has contributed something equally seminal to politics. As we need meat and potatoes for healthy bodies, we need recognition and dignity for healthy minds. Without either of these indispensable nutrients, we disintegrate and perish (often not before we've tried to bring harm to those bent on denying us our dignity). Malnutrition and malrecognition are twin scourges. The former kills; the latter turns us into killers.

Into this predatory world comes religion. Though our fellow man may deny us dignity, and even our spouse and children may reject and humiliate us, God does not. The idea that, in the eyes of God, we are, all of us (even "sinners") of equal dignity is certainly one of the most powerful ideas ever voiced. It has consoled millions for whom life is "nasty, brutal, and short." It continues to provide solace, at one time of another, to those who must live with chronic indignity. But it does far more than console and salve; it moves and galvanizes. Absent this fundamentally religious idea, it's hard to imagine that the democratic ideal would have taken hold, let alone flourished. Religion, with its one God, serves as the dignifier of last resort. It's no surprise that so many turn to religion when stripped of their dignity. And, contrariwise, this explains why those whose dignity is secure have less need for the ministrations of institutionalized religion.

## Science vs. Religion

Religion originally provided an explanation of sorts for the creation of the stars, the planets, life, and human beings. When its theories on these subjects go head-to-head with the more recent models of cosmology, geology, and biology, they are seen to lack the explanatory and predictive power of their contemporary rivals.

Religion has repeatedly wedded itself to the nature models of its time and, as a consequence, when science moves on to a new model, as it invariably does, religion is left holding the bag. That's what happened in 1600 when the Catholic Church found itself defending Ptolemy's earth-centered model of the solar system against the sun-centered Copernican one. It is the situation in which supporters of "creationism"—and its offspring, "intelligent design"—find themselves today.

Obviously, religion is not likely to win an argument with contemporary science by championing science models that have reached their sell-by date. Many religious leaders know this and cheerfully cede the business of modeling nature to scientists. Neither they nor the scientists who study these matters, many of whom are themselves people of faith, see any contradiction between the perennial wisdom embodied in the world's religions and, say, Darwin's theory of evolution or the Big Bang theory of the cosmos. For example, Tenzin Gyatso, the Dalai Lama, wrote in an op-ed in *The New York Times*, "If science proves some belief of Buddhism wrong, then Buddhism will have to change."<sup>6</sup>

That these scientific theories could, in principle, be incorrect or

incomplete is taken for granted by the scientific world even though, as of today, there is no unambiguous evidence that contradicts them. Darwin's natural selection, Newton's laws of motion, and quantum theory are, of course, "just theories." But each is an extremely accurate and useful theory. Applied within their domains of validity, they work very well indeed. No society can fully avail itself of modern technology without their guidance. And, of course, none of this impinges on the beauty and evocativeness of religious creation myths.

As long as religion doesn't wed itself to particular nature models, it can avoid defending an old nature models against new, improved ones. If that's what McLaughlin meant, he's right, but he isn't telling us anything Galileo didn't know.

## **Religion and Values**

Just as religion finds itself challenging science when it identifies with the nature models of a bygone era, so, too, when it enters the realm of values and politics, it must expect to compete for hearts and minds with evolving social and political models. Here the case is not as clear-cut as with nature models because it is typically much harder to demonstrate the superiority of a new social or political model than it is of a new nature model. The evidence is often ambiguous, even contradictory, partly because intangible personal preferences play a much larger role. As everyone who has argued politics is aware, the "facts" cited by partisans in support of their policy choices are often

as debatable as the policies themselves.

Like theories of nature, political and social ideas are shaped by human experience, and as experience accumulates, they change. Religious models could, in principle, keep pace, but generally they tend to lag behind the emerging social consensus. Why? Because the moral beliefs espoused by religion have usually proven their worth over very long periods of time. Hence, the first impulse is to insist that behaviors that contradict these beliefs be forced into conformity with them. This conservative stance not only minimizes risk but also affirms the power of the presiding authorities, just as the church's opposition to the Copernican model did, so political motives are involved, motives that may persuade religious leaders to subordinate their own religious principles.

The fact that tradition is often, but not infallibly, right goes to the essence of the eternal wrangling that has long divided empirical and ecclesiastical teachings. Resolving this schism will close an open wound that now riles believers and non-believers alike, as evidenced by the spate of books that either take religion on blind faith or blindly rail against it.

What is now traditional was not always so. To see inherited values as absolute truths handed down from on high fails to recognize that they earned their stripes in competition with alternative precepts that lost out. It's important to acknowledge that millions of lives were sacrificed to establish the values we now live by. Bloody, horrific wars have played a crucial part in forging our human identity and its many cultural variations.

In this view the term "moral" does not gain its legitimacy as

“received wisdom” set forth in holy writ or passed down from divine to human hands. Rather, it is a prescriptive model based on close observation, intuition, and extrapolation. Prophets like Moses, Buddha, Lao-tzu, Mo-tzu<sup>7</sup>, Jesus, Muhammad, Sankara<sup>8</sup>, and others are seen as extraordinarily perceptive moral thinkers with an uncanny knack for the long view (in particular, for discerning behaviors that foster long-term social equilibrium). Then and now, moral precepts can be understood to be grounded in an empirical knowledge of cause and effect, behavior and consequence.

Take, for example, the commandment, “Thou shalt not kill.” It’s not hard to imagine that witnesses to tit-for-tat cycles of revenge murders concluded that “not killing” was the way to avoid deadly multigenerational feuds and that someone—in this case, Moses—enshrined this realization for others and posterity. From a model-building perspective, it’s plausible that all the Ten Commandments were assembled from the combined wisdom of a great many people. Drawing on the oral and written history of past and present generations and bearing close witness to their own mental patterns, they realized that certain individual behaviors ran counter to personal stability or group solidarity, leaving oneself or one’s community vulnerable to exploitation and domination. They labeled these practices “immoral,” anticipating that over time economic, psychological, social, and political forces would bring about either their elimination or the decline and disappearance of individuals or groups who countenanced them. The role of shared religious doctrine in creating tribal solidarity and in marshaling tribal power—both to commit predation and to defend against it—accounts for religion’s

tendency to indoctrinate and its intolerance for non-believers.

Nuggets of moral genius can be found in all the world's holy books. Distilled and refined through the ages, they constitute the ethical foundation of society. If somehow they were to disappear and we had to start over, we would, by trial and error and with much bloodshed, gradually rediscover them from scratch (think of William Golding's novel *Lord of the Flies*). They are neither arbitrary nor is it mandatory to attribute them to revelation, though one is perfectly free to do so if one likes. But we may equally suspect they were unearthed in the same way we discover everything else—through an arduous process of inquiry and testing. Having demonstrated their worth, they were then elevated to special status in a process similar to that which results in the formulation and promulgation of iconic scientific catch-phrases and formulae.

Understanding morality as evidence-based amounts to tracing general behavioral guidelines back to a complex set of empirical observations. Once we have done so, a given moral precept can stand as shorthand for the whole body of observations and reasoning that lies underneath. The ethical formulations of religion represent an accumulation of such proverbial phrases, which function as reminders and guides. Far from diminishing them, this view of the origin of moral precepts, puts them on a par with the principles of science: they are simply predictions of long-term equilibrium behaviors based on reams of data, and until we can come up with something manifestly superior, we will continue to rely on them.

But, as with all models, moral values are not infallible. Further scrutiny can, in principle, lead to their modification. More often,

however, additional experience validates them. Exceptions have long been allowed to “Thou shalt not kill”—for example, capital punishment and warfare. But Moses may yet have the last word. As we move into the twenty-first century, the global trend to abolish capital punishment is unmistakable. Moreover, as modern weaponry gives the weak the power to punish aggressors (so the candle is not worth the spoils), the case for refraining from war becomes more compelling. It’s not out of the question that someday—as we develop alternative sources of protein—we’ll decide that this ancient commandment applies not only to our fellow human beings but to the animal kingdom as well.

Religion is the chief repository of the time-tested wisdom of the ages, the preeminent teacher of precepts that have acquired the mantle of tradition. But as every reformer knows, tradition has its downside. Old moral codes can stifle progress by strangling in the crib inklings of a better world. While the heavy hand of religious custom saves us from our worst, it too often seems to keep us from our best.

Together, tradition and precedent, sometimes fortified with assertions of infallibility, constitute a high hurdle that any new social or political model must clear. A case in point was the twentieth-century shift in the prevailing societal consensus on issues like race, gender, marriage, divorce, and sex. Only after decades of debate and strife did new values gradually displace older ones. Where religious doctrine has failed to adjust, the public has ceased to pay it much attention. This has likely been a factor in the precipitous decline, since World War II, of church attendance in Europe. People increasingly look not to their church, synagogue, or mosque for their

views on how to live and vote, but to culture and politics.

As the distillation of centuries of learning, religion has much to offer the modern world. But when it attaches itself rigidly to certain social or political models it eventually loses relevance in those domains because models of any stripe that are not allowed to evolve are invariably superceded and abandoned.

To summarize, McLaughlin's prediction that religion will lose out to science by century's end is right in the trivial sense—already recognized by many religious leaders—that science typically espouses newer, better nature models than does religion. Similarly, when religion allies itself with a partisan political doctrine—no matter left or right—it weds itself to the values of a particular epoch. That is what churchmen who supported Nazism did when they invoked their religious beliefs to further the state's nationalistic and anti-Semitic agenda. It is what religious supporters of segregation did in the American South and in apartheid South Africa. And it is what fundamentalist opponents of women's rights are doing today. Political models and cultural values are evolving rapidly, and whenever religion aligns itself with ideological politics it can't expect to retain its hold over the young, on whom the weight of tradition falls far more lightly. To chain theology to politics is to go down with the ship of state when it sinks, and sooner or later, it always does.

What does this perspective suggest regarding the current debate about same-sex marriage in the United States and to women's rights in fundamentalist states? In the end, these matters will be decided not by the victory of one or another interpretation of scripture, but by reference to emerging social values, very much in

the way the disagreements over slavery, and a century later, over segregation, were decided. As it became clear that second-class citizenship was indefensible, attempts to justify these practices through religion were abandoned, and instead, religious values were enlisted on behalf of emancipation and desegregation. On the other hand, if either science or politics believes it will succeed in marginalizing religion, it is mistaken. Religion is vulnerable when it encroaches on others' turf, but not when it sticks to its home ground, which is the self and its transformation.

## **Religion and the Self**

It would be a mistake to conclude that a drop in church attendance means that interest in spiritual matters is diminishing. Despite the public's lack of fidelity to various nature and social models espoused by religion, it still holds a very special place in the hearts of many. Why is this?

The explanation given by religion's critics tend to be condescending. People of religious faith are seen as childlike, unenlightened, duped. But there's a much simpler explanation, and it's not patronizing. It's that many of those who find religious ideas valuable are simply recognizing a useful theory when they see one.

When it comes to knowing the self and mapping its transformations, nothing holds a candle to religious models. The only competitors in the Western canon are to be found in literary classics such as those by Dante, Cervantes, Shakespeare, Milton, Melville,

and Dostoevsky, whose works serve as handmaidens to the world's holy books.<sup>9</sup>

Examples of religious insight into the nature of the self and of the creative model-building process can be found in all the religious traditions. I'll cite just two here, drawn from Christianity and Hinduism, respectively—the doctrines of “resurrection” and “reincarnation.” As applied to the physical body, these tenets are clearly arguable. “Show me the evidence,” cry nonbelievers, who, when it is not forthcoming, reject outright such theological beliefs. Even many believers take them metaphorically, not literally.

But as applied to the model-building process, they are profound and powerful. Theories and models must “die to be reborn,” none more dramatically than our self models (our identities). We who live by them, identify with them, and sometimes cannot separate our persona from a particular one, may well experience the disintegration of a familiar identity as a kind of death. The struggle to come to terms with the loss of a partner or child, or with a sudden change in our status or health, can feel like what St. John of the Cross described as a “dark night of the soul.”

From the model-building perspective, resurrection and reincarnation are evocative descriptions of the metamorphoses of identity that many of us experience over the course of a lifetime. Yes, the process occurs *within* one's lifetime rather than connecting one life span to another. But where can we find more luminous, consoling, and reliable guidance for making life's most hazardous journeys than in the Bible, Talmud, Koran, Upanishads, and Sutras? That the core teachings in these books provide the most accurate mapping of the

nature of the self and its transformation is the real reason they are deemed holy.

During those perilous passages, wherein one self dissolves and another crystallizes in its place, we are, like a crab molting its shell, at maximum vulnerability. When an old self begins to fall apart, our defenses are down, and our dignity at high risk. At times the community we normally depend on to shore up our self-respect, even the fellowship of friends and family, can fail us, and we may find ourselves utterly alone.

When others deny our dignity, religion is there to uphold it. For many, the idea of a personal god assures them that even in total despair, when they may feel bereft of human support, they are valued, respected, and loved. This accounts for the relatively greater commitment to religion among peoples whose survival is precarious as well as for the common phenomenon of conversion during a life crisis.

Granted, individual priests, rabbis, roshis, and mullahs have sometimes failed to respect the dignity of those to whom they minister, adherents to other faiths, or of nonbelievers. But in their essential teachings, every religion testifies to the inviolable, sacred dignity of “all God’s creatures,” at all times and under all circumstances.

Religion (and its derivative self-help equivalents) is the tool of tools when it comes to becoming a new somebody. It combines art, literature, and theater in the context of communal fellowship to effectively transmit truths about the self and its transformation that are vital to maintaining our balance and creativity. No other body of

knowledge offers more relevant and resonant teachings on what is one of humanity's most precious faculties—the intimate, intricate process of fabricating our identities. Religion's critics have made the mistake of judging religion by its worst and then throwing the baby out with the bath water. Apply that same criterion to science and politics, and they too can be held up to ridicule.

So long as religion picks its venues with care, it can go toe-to-toe with science, even while agreeing to science's rules. It need not protect its truths by insisting on their origins in faith. They're quite capable of fending for themselves, even when held up to contemporary evidentiary standards. All religion has to do to become a player is stop making its perennial mistake of tying itself to obsolete science and social models, and instead focus on its area of tried and true expertise—the self and its transformation. In this realm, religion rules. Small wonder it endures.

[4700 words]

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<sup>1</sup> From the PBS show, *The McLaughlin Group*, broadcast May 20, 2005. "This century will be defined by a debate that will run through the remainder of its decades: religion versus science. Religion will lose."

<sup>2</sup> *The End of Faith*, Sam Harris; *Breaking the Spell: Religion as a Natural*

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*Phenomenon*, Daniel Dennett; *The God Delusion*, Richard Dawkins; *God Is Not Great: How Religion Poisons Everything*, Christopher Hitchens.

<sup>3</sup> Francis Thompson (1859–1907) “Know you what it is to be a child? ... it is to believe in belief...”

<sup>4</sup> Google indicates no clear author and several users of this apt phrase.

<sup>5</sup> An excellent semi-popular description of string theory can be found in *The Elegant Universe* by Brian Greene (New York: Vintage Paperback, 2000); and also in his *The Fabric of the Cosmos* (New York: Alfred A. Knopf, 2004).

<sup>6</sup> Op-ed page of *The New York Times*, November 12, 2005.

<sup>7</sup> Mo Tzu lived and practiced his own brand of citizen diplomacy in the 5<sup>th</sup> century B.C.E. in China. He is less well known in the West than other prophets, but no less significant. He may have been the first person to see the world as a village of kinsfolk and therefore to realize that offensive war is never justified. His doctrine of universal love was far ahead of its time and his reputation was soon eclipsed by the more down-to-earth Confucius. An introduction to his thought (some of which—e.g., no music or dancing—is Puritanical) is provided by Burton Watson, *Mo Tzu: Basic Writings* (New York: Columbia University Press, 1963).

<sup>8</sup> Sankara (?700–?750), Indian philosopher of Advaita Vedanta.

<sup>9</sup> For example, in classics such as *The Divine Comedy*, *Don Quixote*, *Paradise Lost*, *Moby Dick*, and *The Brothers Karamazov*.