

# “The End of Faith?” Science and Theology as Process

By Noreen Herzfeld

**Abstract:** A spate of recent books would claim that science’s only role *vis a vis* theology is to discredit it. Sam Harris, in *The End of Faith*, credits religious faith as the source of much of the violence in today’s world. Richard Dawkins, in *The God Delusion*, views religion as, at best, a profound misunderstanding, and at worst a form of madness. Both find an antidote to such irrationality in science. To Harris and Dawkins religion is a body of accumulated knowledge. However, religion can also be thought of as a process, one based on experience, questions, and results. One group that has systematized such a process is the Society of Friends, or Quakers. The Quaker tradition shows that it is quite possible for religion to rest on experience and questioning, and for these to form the basis for an active and involved faith, one that need never reject science and its findings, but will temper their use with the best wisdom that can be gained from personal and communal experience.

**Key Terms:** Quakerism, Sam Harris, religion and science, religion and process

A spate of recent books would claim that science’s only role *vis a vis* theology is to discredit it. Sam Harris, in *The End of Faith*, credits religious faith as the source of much of the violence in today’s world. Richard Dawkins, in *The God Delusion*, views religion as, at best, a profound misunderstanding, and at worst a form of madness. Both find an antidote to such irrationality in science. To Harris and Dawkins religion is a body of accumulated knowledge. This static view of religion sees no difference between past and present. Harris writes, “While religious people are not generally mad, their core beliefs absolutely are. This is not surprising, since most religions have merely canonized a few products of ancient ignorance and derangement and passed them down to us as though they were primordial truths.”<sup>1</sup> If religion is nothing but a body of ancient, and generally erroneous, knowledge, science plays no real role, except that of spoiler.

Science has, at times, also been viewed as a body of accumulated knowledge. The science most of us encountered in high school consisted of learning the

periodic table, the names and attributes of the planets, the hierarchies of order, phylum, and species. But in general, we consider science to be a process, the scientific method. This characterization was evident in the December 2005 judgment in Dover Pennsylvania against the inclusion of Intelligent Design in high school biology classes. Intelligent Design (ID) was recently rejected as a science on several criteria, including the following: it cannot be tested through experiment, it does not generate new questions, and ID leads to no useful results in the real world. All three of these criteria are dynamic, rather than static. They speak of ongoing observation and experiment, of further unknowns, of new and ever changing results.

In this light, what science brings to theology is precisely this method. In a society that has embraced experiment and technology, innovation, and change as a given, theology has two choices. On the one hand, it can present religious thought as static, one place in a world of change where change does not occur. This is appealing to many, and provides

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Noreen Herzfeld is Professor of Computer Science and Theology at St. John’s University in Collegeville, Minnesota. Her most recent book is *In Our Image: Artificial Intelligence and the Human Spirit* (Fortress, 2002).

a partial reason for the rise of fundamentalism in both the Christian West and the Muslim East. The problem with this stance is that it is basically a lie. A quick tour of Biblical or Quranic interpretation, and of religious practice through history, shows that neither interpretations of sacred texts nor religious practices have ever been static.<sup>2</sup>

The other choice is for theology to be as fluid as science, in fact, to adopt many of the same processes that characterize the scientific method. Such a theology need not dismiss the accumulated knowledge of tradition or scripture, just as science does not dismiss the large body of facts that have been garnered through careful observation and experiment. However, the theories that rest on these facts must be subject to change as new evidence emerges. A healthy theology that takes science, and, indeed, all other forms of rational inquiry, seriously must be willing to alter its perspective when truth requires. Can theology be this open to change? Is there an example of a Christian theology as flexible as the scientific method, one that meets the criteria of experiment, questions, and useful results of the Dover ID trial?

As a graduate student and scientist, I found myself drawn to the Religious Society of Friends, the Quakers, precisely because both their core beliefs and their mode of worship are rooted in process. Revelation, in Quakerism, is an ongoing process, best encountered in the silence of meeting for worship. This view of theology as process is not unique to Quakerism; one finds a similar grounding in process in the mystical strains of most faiths, particularly in Zen Buddhism, Sufism, yoga, and the writings of the Kabala. Even Pope Benedict XVI (who is not noted for his mystical tendencies), in the controversial speech "Faith, Reason, and the University" delivered in Regensburg, notes that the scientific ethos is "the will to be obedient to the truth, and, as such, it embodies an attitude which belongs to the essential decisions of the Christian spirit." But it is the Quaker tradition that, for me, best exemplifies a faith that gives the lie to Harris' and Dawkins' characterization of religion, and provides a model of a religion that honors a similar process as science. So let's return to the criteria of the Dover ID decision—experiment, new ques-

tions, and useful results—to see how these criteria fit with the process of a Christian, and more specifically, Quaker theology.

## **Grounding in Experiment and Observation**

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Quakers believe that one should live by the truth. They take quite literally John 4:24: "God is spirit, and those who worship him must worship in spirit and truth." This led the early Quakers away from set prayers and creeds, to a mode of silent worship, in which one speaks only what one knows inwardly, and otherwise waits for the inner truth or light, the experience of God's presence within. God is thus defined not through creeds or even scripture, but through an experimental process of waiting in silence. As physicist and Quaker Arthur Eddington notes, "The spirit of seeking which animates us refuses to regard any kind of creed as its goal."<sup>3</sup>

Here we have Christianity as process rather than as body of knowledge. The inward revelation that comes from seeking is not opposed to revelation as handed down through scripture and tradition. Quakers believe that both are different expressions of a single reality. "Though we agree with our fellow Christians in this high esteem for the scriptures, from the earliest days the Society of Friends has regarded them as the record of revelation rather than the revelation itself, and has insisted that the scriptures be not substituted for the Spirit which gave them forth or for Christ or for the Inner Light to which they testify. They are not the primary rule for faith and conduct."<sup>4</sup> This view of scripture as a record of the human experience of revelation, rather than as revelation itself, obviates Harris' criticism that adherents to the monotheistic faiths must either rely slavishly on a literal acceptance of scripture or must reject that scripture altogether. The Quakers provide a middle way.

If scripture is not in itself revelation, what is? Margaret Fell, one of the mothers of Quakerism recounts her first encounter with Quakerism's

founder, George Fox. “[He] said, ‘the scriptures were the prophets’ words and Christ’s and the apostles’ words, and what as they spoke they enjoyed and possessed and had it from the Lord.’ And said, ‘... You will say, Christ saith this, and the apostles say this; but what canst thou say?’... and then I saw clearly we were all wrong... and I cried in my spirit to the Lord, ‘We are all thieves, we are all thieves, we have taken the Scriptures in words and know nothing of them in ourselves.’”<sup>5</sup> Religion, like science, is best grounded in the knowledge that comes from experience and experimentation, not blind faith. For Quakers, the best source of this knowledge is found in the experience of sitting in silence, the silence of the mind and heart that comes from sitting either alone or with others in Meeting for Worship. This sitting is often described as “waiting on the Lord” where waiting is used in a dual sense. One indeed waits for something to happen, for some clarity or experience of the Light within. One also waits in the sense of attending to God, to the exclusion of all other thoughts and distractions. Sitting in the silence is an experiment, and, although one knows the results others have had, each experience is its own, and leads to its own results.

However, scientists recognize that experimentation can sometimes give erroneous results. Acceptable results should be replicable by other researchers, supported by the results found in other laboratories. Quakers note the same necessity. Before a Quaker makes a major decision, or in times of confusion or change, it is suggested that one consult a clearness committee. This is a group of peers, who sit in silence with the consultant seeking the truth together and then ask questions. A clearness committee never supplies answers, only questions designed to help shed light on the true nature of the problem or decision.

## Generating New Questions

The questions of the clearness committee lead to the second criterion science holds up for theology. Does a given theory or practice lead to further

questions and avenues of research? Kenneth Arnold writes, “Contrary to what people of science and religion long believed, questions, not answers, are the building blocks of the universe.”<sup>6</sup> It is in the questions that both fields ask that we find much similarity, questions that include: Who are we? How does the world work? How are we related to the world around us? How are we related to one another? What are we to do to improve the lives of ourselves or others? A good scientific theory may provide an answer to one or more of these questions, but it should also lead to further questions and further avenues of research. Ted Peters describes this attribute of a scientific theory as its fertility. Science begins with questions; the process of looking for answers should lead to further questions.

Quakers also begin with questions. These questions have been organized into sets called Queries, which are read at meeting for worship at regular intervals. Queries are the only thing that is mandated to be spoken aloud at meeting for worship. They are meant to stimulate self-examination, by both the individual and the meeting as a whole. The following is a typical set of queries:

Do you live with simplicity, moderation, and integrity? Are you punctual in keeping promises, careful in speech, just and compassionate in all your dealings with others? Do you take care that your spiritual growth is not sacrificed to busyness but instead integrates your life’s activities?<sup>7</sup>

These questions cannot be answered once and for all. They are questions one needs to ask over and over throughout one’s life. Each one leads to further questions. Thus, the spiritual life for the Quaker is not one of answers but one that follows Rilke’s advice to a young poet to “be patient toward all that is unsolved in your heart and try to love the questions themselves, . . . Live the questions now. Perhaps you will then gradually, without noticing it, live along some distant day into the answer.”<sup>8</sup>

Questions extend beyond one’s own life to any theory about the world or the divine. Explanations in science or religion must always be tentative. The provisional nature of scientific explanations has long been accepted, particularly in a post-Kuhnian age.<sup>9</sup>

In the realm of theology, physicist and theologian Arthur Peacocke has argued that models in theology should be considered equally provisional.<sup>10</sup> As shockingly modern as this idea seems, Christianity has a long tradition of wariness of theological models, as exemplified in the apophatic tradition, which stresses the unknowability of God, describing what God is not rather than what God is. The Greek theologian Evagrius cautions us to "never define the divine."<sup>11</sup> Gregory of Nyssa notes, "Concepts create idols. Only wonder comprehends anything."<sup>12</sup> This emphasis on the negative is also found in Quakerism, which seems to be based on "a list of negatives—no priests, no creeds, no sacraments, no service—yet at the same time each negative rejects a limitation; no one priest, for all are open to the word of God; no defined creed, for each must find his own way of expressing his own experience; no sacramental rites, for all of life is sacramental; no prearranged service, so that our Meeting is open to God's message."<sup>13</sup> Like the endless questions of science, Quakerism is intrinsically open-ended because Quakers believe that they live in an open-ended universe. Their models of God and of the world are inherently provisional, just as Peacocke suggests.

Provisionality does not negate utility. Consider, for example, one application of the Quaker devotion to the truth discussed above. Commitment to the real, as known through experience, led the earliest Quakers to reject the visual arts, not through any concern with their subject matter, but because a painting is a substitute for the reality it seeks to portray. Why not look at the real thing, they argued. Quakers have since realized that this was a limited view and have changed their stance. Most would now agree with Elfrida Foulds, who writes: "The truth which the artist seeks and which he expresses through his art is part of the Universal Truth, just as the truth sought and expressed by the philosopher and the scientist and the theologian is part of the Universal Truth."<sup>14</sup> However, this change in the view of art does not negate the underlying commitment to integrity. Thus Quakers now question the virtual worlds of cyberspace and computer games on the same grounds. One should not deliberately choose illusion over reality.

## **Religion and Violence: A Case Study**

Of course Quakers also shun the violence that is so endemic to the world of computer games. This brings us back to Harris' critique of religion. Harris claims that religion, even moderate religion, poses a genuine threat to our survival as a species through its toleration of, in fact, avocation of violence. He finds in religious belief the root of violence, not only exemplified in past crusades, pogroms, and inquisitions, but in most of the conflicts that currently beset our world—in Palestine, Kosovo, Northern Ireland, Kashmir, Sri Lanka, Chechnya, Sudan—the list goes on.<sup>15</sup> Harris mentions, and quickly dismisses, the pacifistic stance of Gandhi; he notes in a footnote that each faith has produced nonviolent contemplatives, though these are rare individuals.<sup>16</sup>

However, the Quakers have consistently taken a non-violent stand, as a group. One of the strongest testimonies of the Quakers, one which has set them apart from most other Christians, has been the peace testimony. Quakers generally reject all forms of war and violence. This rejection stems from a dual understanding of human nature. First, since Quakers believe that "there is that of God in every man" one attacks God himself when one attacks another human being. Second, Quakers believe in an absolute equality of all persons that works against violence. While pacifism might be seen as another negation, the negation of war, it can also be seen as a call to action. Quakers have acted tirelessly as mediators in conflict, and as promoters of economic development, so as to head off conflict.

Do we have here a precept that is demanded of all Quakers, regardless of their experience? Not at all. In the 17<sup>th</sup> century it was part of the standard dress of the English gentleman to wear a sword. After William Penn had become a Quaker he began to feel uncomfortable with this accoutrement and asked George Fox whether, as a Quaker, he must stop wearing the sword. Fox's reply was, "Friend William, wear thy sword as long as thou canst." Thus, the Quaker devotion to integrity to one's

personal experience trumps the testimony to peace. This was seen also in World War II, when some young Quaker men chose to serve in the military. Though this choice was not condoned by the larger community, it was allowed. The hope is that eventually, one will live in “the virtue of that life and power that [takes] away the occasion of all wars.”<sup>17</sup>

## The Results of our Process

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A theology rooted in the experiment of silent waiting and resting on questions rather than answers could seem detached from the real world. The final criterion from the Dover trial reminds science and theology that both have implications and responsibilities for how we live in the world.

We have long entertained a fiction that science is morally neutral. According to Albert Einstein, “Science can only ascertain what is, but not what should be.”<sup>18</sup> But science is more than the contemplative quest for insight into the structure and mechanisms of the natural world. Philosopher Albert Borgman points out that science is valued in our society precisely for its transformative power. Thus, intrinsically coupled with its offspring, technology, science also seeks to improve the human condition, and in doing so makes a series of value judgments. Francis Bacon noted that the true aim of science should be the mastery of nature and end of suffering, to “the glory of the Creator and the relief of man’s estate.”<sup>19</sup> The relief of man’s estate is a worthy goal. Yet many scientists have a hard time accepting that there are limits to what we can do, and more especially to what we should do. Yuval Levin, fellow at the Ethics and Public Policy Center, notes, “‘We have bricks, so let us build a tower,’ we say to one another in the scientific age. We have ‘spare’ embryos, so let us make stem cells. This has never been a very good argument for building a tower, and it is not an adequate justification for destroying human embryos for stem cells. But it has always been a hard argument to resist.”<sup>20</sup> Yet we do at times resist the possible. We can often best see what it is we value by looking at

what we do; as Jesus said, “by their fruits, you will know them” (Mat 7:20). A careful examination of the technologies we pour our time and effort into will tell us what we value.

Our scientific theories also change the way we view ourselves and our world, thus altering the framework that underlies the values we hold. For example, Sherry Turkel’s study of human interaction with computers shows the various ways in which we have come to think of our selves and our own thinking process in terms of computers. We can think of our minds in terms of data processing, indeed this vision may underlie the materialistic understandings of the human beings such as Harris’s or Dawkins’. Yale professor, Paul Bloom writes, “The great conflict between science and religion in the last century was over evolutionary biology. In this century, it will be over psychology, and the stakes are nothing less than our souls.”<sup>21</sup>

The question of whether the qualities we consider to be part of our soul emerge from the biochemical processes of the brain or whether we even have souls at all, underlies many, if not most of the ethical issues that bedevil both scientists and politicians in this 21<sup>st</sup> century. Arguments over abortion hinge on the question of when life begins, when a new soul emerges. Debates over end of life treatments rest on the same question in reverse. Even in my field—computer science—the question of an emergent or a God given soul arises under the guise of questions such as “Could an artificially intelligent computer have a soul? Could it think like us? Should such a machine have rights? Is creating such a machine hubris?” Thus our conception of the soul, rooted in either science or religion, will determine what we decide, as a society, to do in these cases.

## Conclusion: The End of Faith?

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Harris writes, “It is time we recognized that the only thing that permits human beings to collaborate with one another in a truly open-ended way is their willingness to have their beliefs modified by new fact. Only openness to evidence and

argument will secure a common world for us.” He intends this as an indictment of religion, continuing, “The spirit of mutual inquiry is the very antithesis of religious faith.”<sup>22</sup> He is both right and wrong. Harris is indeed correct in his support for beliefs that are open-ended; he is wrong to suppose that religious faith is necessarily inimical to this process. The Quaker tradition shows that it is quite possible for religion to rest on experience and questioning, and for these to form the basis for an active and involved faith, one that need never reject science and its findings, but will temper their use with the best wisdom that can be gained from personal and communal experience.

This is a model that theology in general could benefit from. The publication of books such as Harris’ and Dawkins’ and the wide acceptance of their arguments pitting religion against reason, religion against science, should serve as a wake-up call for mainstream Christianity and Islam. Religion in the twenty-first century must consider the best of science, both as a body of knowledge and as a process. Theology must find its roots once again in experience, the same experience that was known to our forbears in the faith. We must be flexible enough to recognize when our models of creed or code are rooted, not in that experience, but in a culture or tradition that no longer fits the present. Theology must admit that our answers are provisional and that there will always be new questions arising from our changing world.

Science, however, must do the same. Whenever scientists make absolute truth claims, or act as if their models are no longer provisional, they sink into *scientism*, a dogmatism as dangerous as any religious dogmatism. Our scientific quest has given us great power, power to heal and power to destroy. In a nuclear world, a world facing global warming, a world of easily hidden and transported explosives, we cannot afford “the end of faith” that Harris suggests. Rather, we need, now more than ever, to wait

upon our creator and redeemer, in silence and trust, for the “Light that enlightens everyone that comes into the world” (John 1:9).

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## Endnotes

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1. Sam Harris, *The End of Faith: Religion, Terror, and the Future of Reason* (New York: W. W. Norton, 2004), 72.
2. See, for example Raymond Brown and Sandra Schneiders, “Hermeneutics,” in *The New Jerome Biblical Commentary* (Englewood Cliffs, New Jersey: Prentice Hall, 1990), 1146–1165. For a history of Quranic interpretation, see chapter ten, “Muslim Scholarship and Qur’an,” in W. Montgomery Watt and Richard Bell, *Introduction to the Qur’an* (Edinburgh: Edinburgh University Press, 1970).
3. Leonard Kenworthy, ed. *Quaker Quotations on Faith and Practice*. (Philadelphia: Friends General Conference, 1983), 170.
4. New England Yearly Meeting, *Faith and Practice*, (Worcester Massachusetts: 1986), 80.
5. New England Yearly Meeting, 13.
6. Kenneth Arnold, “Living with Paradox,” *Cross Currents*, Spring/Summer 2000, Vol. 50 Issue 1–2.
7. New England Yearly Meeting, 212.
8. Rainer Maria Rilke, *Letters to a Young Poet*, trans. M. D. Herter (New York: Norton, 1993), 35.
9. Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago, 1962).
10. Arthur Peacocke, *Creation and the World of Science* (Oxford: Clarendon, 1979).
11. Bernard McGinn, *The Foundations of Mysticism: Origins to the Fifth Century* (New York: Crossroad, 1994), 155.
12. John Garvey, “Grounds for Disbelief? Science and the God Delusion,” *Commonweal*, January 12, 2007.
13. Kenworthy, 12.
14. New England Yearly Meeting, 146.
15. Harris, 25–6.
16. Harris, 202 and 283–6.
17. New England Yearly Meeting, 184.
18. Yuval Levin, “The Moral Challenge of Modern Science,” *The New Atlantis*, Fall 2006, 32.
19. Levin, 33–4.
20. Levin, 45.
21. Paul Bloom, “The Duel Between Body and Soul,” *The New York Times*, September 10, 2004.
22. Harris, 48.