

FUTURE VISIONS: Harnessing the Scientific and Spiritual Imagination

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The next installment in the Future Visions thread is from Kitty Ferguson, a popular science writer, who also takes a distinctly populist approach in her essay below.

Kitty Ferguson holds bachelor's and master's degrees from the Juilliard School and for many years was a professional musician, conducting and performing oratorio, early music and chamber music. In 1986, Ferguson moved to England, where her husband was a Visiting Fellow at Cambridge University. During periods of residence there, Ferguson audited graduate lectures in the Dept. of Applied Maths and Theoretical Physics. In 1987, she retired from music to write about science. Her books are "Black Holes in Spacetime"; "Stephen Hawking: Quest for a Theory of Everything" -- a Sunday Times bestseller (Bantam); "The Fire in the Equations: Science, Religion, and the Search for God" (Eerdmans), "Prisons of Light: Black Holes" (Cambridge University Press), and "Measuring the Universe" (Walker). Kitty Ferguson has appeared on the BBC "Late Show" and the "News Hour with Jim Lehrer." She was the 1994 Hines Lecturer on Science and Religion; featured speaker at the 1997 Nobel Peace Conference in Sioux Falls; and has lectured at Chautauqua. Last January, she, her husband and daughter traveled to India to initiate a Companionship between St. Peter's Episcopal Church in Morristown, NJ, and Dalit ("Untouchable") village churches of the Kothapallimita Pastorate. Kitty Ferguson currently chairs the steering committee for that Companionship.

Ferguson writes below "We needn't pretend that most of the people who assume that science and religious belief are irreconcilable are hungering and thirsting to know whether they are right... The truth is that many of them couldn't care less." Kitty Ferguson, however, cares a lot. Find out why.

-- Editor

**From: Kitty Ferguson <yhferguson@worldnet.att.net>
Subject: Engaging the Scientific and Spiritual Imagination.**

My approach to the theme of "harnessing the scientific and spiritual imagination to create a life-enhancing future for our world" may be somewhat different from most that we will encounter among the vision statements of the participants in "Future Visions: Engaging the Scientific and Spiritual Imagination." My work in the area of science and religion has been and continues to be on the grass roots level, in books and lectures for the non-expert public.

It is my conviction that if we can't reshape attitudes on this level, it will be difficult to realize any significant vision in which the scientific and the religious communities work meaningfully and productively hand in hand. It is at this level that we find most of the voters, most of the law-makers, most of the corporate executives, most parish clergy and church-goers, and most of the young people who are the scientists and leaders of tomorrow. I am all for "yoking science and religion in a common cause for the future betterment of all," but I believe there are far too few of us who think such an enterprise is possible. The visions of experts in science, theology and other areas of academe, no matter how far-sighted and imaginative, may be left in the dust unless there is a change in the thinking of many educated and not-so-educated people whose daily business is neither science nor religion. Far too many of these people currently assume, without ever having looked into the matter for themselves, that science and traditional religion are irreconcilable. That is what they hear in the media, in classrooms, even from pulpits -- and they have accepted it.

One of the most depressing statements I've heard came from a teenager visiting the Greenwich Observatory. I don't recall how the question arose, but when asked whether he believed in God, he answered, "Oh, we can't believe all that any more, not with our modern science." As a religious person, I found his reply terribly sad, because it reflected such a failure on the part of those of us who believe in God to convey in a meaningful way what the "all that" is that we actually do believe. As someone who loves

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science, I found his reply equally appalling, because it betrayed such an abysmally pedestrian view of science. But I couldn't blame that teenager or think he was an exception. What he had voiced was pretty much the naive modern mind-set toward science and religion. To think differently, you have to know a lot less, or a lot more.

We needn't pretend that most of the people who assume that science and religious belief are irreconcilable are hungering and thirsting to know whether they are right. If they were eager to explore the matter, there are plenty of books and articles, including my own, that they could read. The truth is that many of them couldn't care less. And yet their apathy obviously does have a tremendous impact not only on their chances of ever having a meaningful personal spiritual life but also on the potential reach of the religious message in the wider world and -- more to the point for purposes of this conference -- on the future of efforts to link science and religion in worthwhile projects. So we have a double problem. Not only must we convince this audience that there is no inherent incompatibility here, but we also have to convince them that it matters whether they know this.

This vision statement is my fledgling attempt to come up with some fresh approaches to those problems:

First, I believe we need a better public understanding of science -- not of what it has discovered but of the process of discovery itself. Our educational systems and media too often encourage an insultingly unsophisticated view. When you ask me to dream, I dream of classrooms where science is taught as far more than a dry list of things that can and can't happen in the universe . . . where it lifts eyes and minds to a richer, less stultified view of reality . . . where naive scientific fideism is discouraged . . . where teachers celebrate and students experience the open-ended intellectual adventure of science, an adventure that puts shockingly few limits on the "possible." My dream goes beyond the classroom to include books, magazine articles, television programs, and museum exhibits that focus on the process by which our knowledge evolves and grows deeper and at the same time uncovers more and more mystery. Such an understanding nurtures tremendous faith in the scientific process as a way of increasing our understanding of the universe, allows us to rejoice in what science has discovered, without at the same time leading anyone to think it has boxed us in and ruled out belief in God.

On this front, there have been some hopeful signs: I hear that Jerry Ostriker tells his Princeton physics students that if you decide that any tenet of current scientific dogma is wrong, you have a good chance of being right. I've read recently in a draft of a book for children the suggestion that the reader might grow up to be the scientist who overturns the current theories about the birth of the solar system. When my daughter's high school physics teacher introduced Copernican astronomy he spent some time showing the class why Ptolemy wasn't "wrong." The opening words of the new "Big Bang" demonstration at the Hayden Planetarium are: "Scientists have a powerful theory describing how the universe began." Blessedly absent, in all these examples, is the old, tired "we now know" rhetoric that has kept scientific imagination among young people and non-expert adults on a choke collar for so many years and led them to think that the scientific oracle had spoken once and for all.

Let me hasten to say that my reason for wanting to emphasize the open-endedness of science is not that I think current science rules out religious belief and the only hope is that current science is wrong. That would only be to replace the God of the Gaps with the God of the Mistakes. An understanding that science is a shifting body of knowledge is not sufficient. What is more important is an understanding of HOW it shifts -- for instance, though theories do sometimes turn out to be "wrong," a well-established theory is more likely to be supplanted when a new theory can explain phenomena in a simpler way, or when the old theory turns out to be incapable of explaining things on a deeper, richer level than the level it was invented to explain. An understanding of this process, this "deepening of the theory," is the beginning of an understanding of why science cannot rule out the existence of a creator God.

We've all heard the argument that we must instill in students and in the scientifically unenlightened an unquestioning faith in science and the word of teachers and great scientists, and that we must avoid subtle caveats, because there is already too much public distrust of science. I am well aware of the fear that pervades the science community that if we don't circle our wagons in the face of those whom we consider

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the enemies of science, if we don't deny any meaningful disagreement among ourselves in the face of attacks from the religious right, if we don't suppress public announcements that reveal such embarrassments as the universe appearing to be younger than the oldest stars, if we don't paint it all pretty much in primary colors and insist on that picture -- then the science-detractors and creationists will jump in and tear us apart, everybody will lose faith in science, and there will be no more funding. Even the suggestion that we emphasize the open-endedness of science raises immediate suspicions that the person making the suggestion is a closet creationist. What foolish paranoia! There would be far greater public confidence in science if we didn't encourage a fideist view. Rigid blind faith easily crumbles and becomes no faith at all. Sophisticated knowledge of the openendedness of this marvelous discipline is far less vulnerable. Flat pronouncements and oversimplifications that ignore the rich nitty-gritty of real life science are just plain boring. And even children do not need to be shielded from complications, conflicting arguments, and paradoxes. In fact, they are often better able to handle them intellectually than adults. This condescending overprotectiveness of the flock must end.

As a start on brainstorming, let me suggest some possible practical measures:

- 1.) Support the development of new curricula that teach early and often the roles of theory and experiment/observation in science and how scientific ideas and explanations evolve, that all theories are not equally well-accepted or established, that "theory" is not synonymous with "truth," but is also not synonymous with "just somebody's idea that's likely to be overturned tomorrow" -- two definitions that I hear all too often when I judge school science fairs.
- 2.) Establish prizes to be awarded each year to the authors of the children's and adult books that most encourage a more sophisticated, less dogmatic, more open-ended view of science, and books that focus on the process of scientific discovery.
- 3.) Reward with prizes and bring into the public light science teachers who present science as a dynamic process.
- 4.) Support television specials and museum exhibits that celebrate the adventure and the evolving nature of science and avoid the tedious and misleading "we now know" rhetoric.

The second part of my dream is of science classrooms, churches, television, and newspaper and magazine writing where we don't have to listen to the same tired, unexamined myths about a so-called science-religion conflict. Burying the caricatures and the mythology will require some undoing. So mired are we in this mindset that all of us find ourselves succumbing to it. About three years ago I wrote the words, "there is no record of what Copernicus said in these early lectures [in Rome], but we can be sure he didn't suggest at this time that everything revolved around the Sun rather than the Earth. If he had, history would surely record some uproar and adverse reaction from the Church!" Further research showed me that in fact there probably would have been no uproar at all -- that the religion/science climate at the time wasn't anything like what we've been led to believe it was, and I rewrote those sentences. An astoundingly large part of what we hear in the traditional chronicle of the "conflict" between science and religion turns out to be, simply, not true -- a late nineteenth century distortion of history. Moving from science history to the present, we find that most of those modern scientific writers who have tried to demonstrate that science and religious belief are incompatible, Richard Dawkins for example, have actually made an extremely ineffective case. They are skilled pulpit-pounders, but the logic of their arguments does not stand up to close scrutiny.

To revise the public and traditional academic view of the history of the science-religion interface, and to explore more thoughtfully the arguments of those who insist there is a conflict, I suggest the following:

- 1.) Fund projects investigating the old myths, and get the discussion of their truth or falsehood into the media and popular books.

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- 2.) Develop curricula for church adult education series and high-school-age Sunday school classes that explore those interfaces between science and religion that we have been led to believe are the most explosive.
- 3.) Follow the example of the Astronomy Society of the Pacific and sponsor conferences that include non-experts as well as experts and academics, lay people as well as theologians and clergy, and, at these conferences, have presentations and debates designed to bring conflict to the fore. In my experience there is almost no better way to explode the fable of conflict in this area than to set out deliberately to provoke it and find how little conflict there is.
- 4.) Develop cooperative projects of the sort that many of the other participants are likely to suggest for FUTURE VISIONS: Engaging the Scientific and Spiritual Imagination. -- to display to all the world that thoughtful scientists and religious people have deep respect for one another, little difficulty working together, and that together they come up with particularly innovative, productive ideas.

The third part of my dream is of classrooms where, regardless of what is taught about science or other matters, there is no derogation of religious belief -- no insinuation that all responsible thinkers reject it.

To this end I would suggest: Use legal, political, and lobbying avenues to bring about a situation in which disparaging remarks about religious belief are as unacceptable as derogatory remarks about women, blacks, Jews, or anyone else. An atmosphere of scorn, derision, and caricature is nothing short of religious persecution, and that is forbidden by law.

Summing up, I would like to free the science-loving public from small-minded scientific fideism that stifles creative imagination and spiritual development and often precipitates a loss of faith in science. I would like to free religion to make its impact -- to fight its battles for human rights and dignity and a caring society and against illusion and despair -- without having simultaneously to fight a rear-guard action against those who caricature it as standing in opposition to scientific knowledge and intellectual sophistication. I would like to wrest both science and religion from the dogmatists of scientific atheism and religious fundamentalism. For over a century these extremists have voiced their silly, narrow minded drivel, have come to depend on one another as polar enablers, and have convinced too many people that they speak for science and religion. They do not, and the beginning of a new millennium would be an excellent time for serious, thoughtful scientists and deeply religious people to join in rejecting publicly that fatuous claim.

I hope I haven't digressed too far from the theme of "Future Visions." At least, perhaps my vision statement will offer some idea of the context from which I will be commenting on other statements. I look forward to hearing what everyone else has to suggest.