LETTERS

"The search for meaning"

A sample is taken from the 70 plus letters received about a News & Comment article on "Science and God"—one reader admits to "a certain astonishment"; another says the piece "gets off on the wrong foot"; another expresses thanks for its appearance. Discussion continues about the role of planting trees, and other activities, in reducing greenhouse gases (above, "afforestation" could be "an emissions mitigation strategy"). And a "flawed example" is said to "prove the rule" that proper credit for authorship should be assigned in scientific papers.

Science and Religion

Gregg Easterbrook's article "Science and God: A warming trend" (News & Comment, 15 Aug., p. 890) gets off on the wrong foot by asserting that the New Testament contains a reference to science. He cites 1 Timothy 6:20 from the King James translation: "Keep that which is committed to thy trust, avoiding profane and vain babblings, and oppositions of science falsely so called. . . ."

The Greek word "gnosis" that the English scholars in 1611 translated as "science" is better rendered as "knowledge," as the more accurate Revised Standard Version (1952) does: "Guard what has been entrusted to you. Avoid the godless chatter and contradictions of what is falsely called knowledge. . . ." Paul, the author of this epistle, is attacking heresy and firing off a last salvo at rival versions of religious truth. The text does not reflect any science with which readers would be familiar.

John C. Fletcher
Department of Religious Studies and Center for Biomedical Ethics, University of Virginia, Charlottesville, VA 22908, USA
E-mail: jcfx@virginia.edu

Science is going to get a lot of flak for Easterbrook's article on science and God, and I want to thank you for taking the risk. It is about time someone dared to put in print what so many scientists have known for so long: that the search for meaning and the search for knowledge can and should be complementary, and that hostility between science and religion has been driven by arrogance, fear, and misunderstanding. It is time to acknowledge that a religious scientist is not a contradiction in terms.

Kevin Thompson
Magus, Post Office Box 390965, Mountain View, CA 94039, USA
E-mail: kwthomp@ibm.net

It has always puzzled me that real, honest-to-god scientists can believe in God and that some can even practice a ritual religion. You have to be pretty smart to be a scientist, so perhaps at least a partial answer to my bewilderment is in what F. Scott Fitzgerald wrote, in *The Crack-up*, "The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function." How it does so is still a puzzle, and among all the others Dame Nature (not God) has spread out for our pleasure in the hunt for their solutions, this one may be the most enticing, for it will almost certainly never be solved.

Irving Rothchild
Professor Emeritus of Reproductive Biology, Case Western Reserve University, 2441 Kenilworth Road, Cleveland Heights, OH 44106, USA

Not all godly people have experienced problems with science; some spiritual traditions recognize the fact that different nonspiritual viewpoints can lead to more than one explanation of God's creation. We have an unnecessary, man-made dichotomy between God and science in European cultures because religion and dogma disallow individuals the freedom to adapt the basic tenets of their faith to suit their individual spiritual needs.

Vishwanath K. N. Ayengar
133 New Hackensack Road, Apartment 8, Wappingers Falls, NY 12590–1723, USA

Easterbrook's farrago of old-time "feel good," tent-revival spiritualism and the onward march of science seems greatly out of

place in the pages of a reborn, perhaps too trendy *Science*. The sidebar about author and scientist Richard Dawkins—the only dry spot midst the rising Noachian meltwaters of this putative Interglacial—provides but scant refuge.

B. W. Powell
3741 NE 163rd Street,
Miami Beach, FL 33160, USA
E-mail: anvilbangr@aol.com

If the universe is "nothing but pointless indifference," I can see why Richard Dawkins declined to be interviewed by Easterbrook for the article. Why bother? If things are pointless, however, why does Dawkins continue to write books, give lectures, and tell us about it?

Keith B. C. Brady
323 Williams Street,
Steelton, PA 17113, USA
E-mail: brady.keith@a1.pader.gov

The essential disagreement between science and religion is not in the conclusions—such as evolution, the heliocentric solar system, or the origin of disease—but in the way of arriving at conclusions. Religion relies on authority—from a person, book, or tradition—and its Truth is supposed to be universal and eternal. Science relies on evidence and reasoning, which are always open to challenge, so its truth is relative and tentative.

Edgar Pearlstein
Professor of Physics, Emeritus
University of Nebraska,
Lincoln, NE 68588-0111, USA
E-mail: e_p@unlinfo.unl.edu

I must admit to a certain astonishment at Easterbrook's article; in 30 years of subscribing to *Science*, I have never seen its like. The first question must obviously be: "Which god?" The fertile imagination of *Homo sapiens* has in the last few thousand years come up with an amazing number of (often mutually exclusive) gods, among which, as far as I know, there are no scientifically acceptable methods of choosing.

Physicist Charles Townes' explanation, quoted by Easterbrook, that "Science wants to know the mechanism of the universe, religion the meaning" is misleading because it operates with two completely different forms of "knowing." Theologians are not searching for a "meaning" in the same way that scientists are searching for, say, an understanding of the mechanism of cancer; on the contrary, they are postulating a meaning from hermeneutical interpretation of texts dating from times when, as Darwin so rightly said, "men were ignorant and credulous to a degree almost imcomprehensible to us" (*1*).

E. J. Fjerdingstad*
Svendgaardsvej 52,
DK-8330 Beder, Denmark
E-mail: ejfjerdingstad@po.ia.dk

*Associate professor of anatomy (retired)

References

1. C. Darwin, *Autobiography* (Oxford Univ. Press, 1974), p. 50.

It was heartening to see the serious article by Easterbrook on the "warming trend" between science and religion. What was disturbing is that it was *not* really about "science" or about "religion." In common with most such articles, it treated one tiny esoteric corner of "science," and an even less significant corner of "religion," as though they were representative of those great human concerns.

One would think from the article that all of "science" consisted of a small specialized bit of astronomy, astrophysics, and particle physics, all connected to cosmogenesis, and that all of religion was the story of creation. Yet the creation story takes up half a column of one page in the typical 1000-page

Bible. Moses and Jesus never said a word about it. The Mahabharata and the Tao Te Ching have nothing on it. Surely this largely irrelevant fragment of doctrine cannot in any way be taken as representative of religion. Likewise, are not all of the miracles of contemporary engineering from Power Macs and Windows to Mars Rovers, and all of solid-state physics, chemistry, materials, and geo- and agricultural science, much more accurately representative of "science" as the public knows it?

It is said that when Max Planck died and went to heaven, St. Peter offered him the choice of two salons: "The Kingdom of Heaven" and "Discussions about the Kingdom of Heaven." The science-religion interface is *not* a discussion, as Easterbrook's article would imply. Most religions demand lives committed to certain actions and behavior patterns (orthopraxis) linked only by tenuous ways to believing certain dogmas (orthodoxy). Among the latter, creation ranks pretty far down for 90% of believers. Theology, not religion, is literally God "talk." And very little of it is about creation. That most famous English bishop John Robinson argued, 25 years ago, that our *word* God must go. Religions like Buddhism have done very well without much God *talk*. It is not "dogma" but "praxis" that is the heart of religions. The real "science and religion dialogue" should be about what each has to say about how each helps one "to do justice, love kindness, and walk humbly" in our world. Now that's an Old Testament definition of religion.

Rustum Roy
Department of Chemistry, Pennsylvania State University, University Park, PA 16802–4801, USA
E-mail: rroy@psu.edu

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The Carbon Crop: Continued

With regard to the relentlessly positive article by Anne Simon Moffat about forests as carbon sinks (Research News, 18 July, p. 315), it is worth noting several points, the most critical being the importance of differentiating between harvesting a forest stand for biomass energy and doing so for wood products. In the case of biomass energy, wood is a direct substitute for fossil fuel, and to the degree that the silvicultural practices are sustainable over multiple rotations, the recycling of carbon through biomass energy is preferable to one-way emissions through fossil fuel combustion. Harvesting for wood products, however, is certainly not a "one-time, permanent movement of carbon from the air to the land surface." Particularly in the case of converting native forests to plantations (*1*), but even in the case of intensely managed forests, significant losses of carbon are associated with harvesting. At the time of a clear-cut harvest, the noncommercial part of the trees (that is, branches and roots) are burned as slash or left to decompose; other ecosystem components such as the litter layer and understory are likewise oxidized in one way or another, and a large fraction of the merchantable wood may go into products with lifetimes of less than 5 years. In a case study in the Pacific Northwest, only 23% of merchantable wood harvested in this century was currently in long-term storage in landfills or wood structures (*2*).

With regard to the benefits of afforestation as an emissions mitigation strategy, the article would have been more informative had it told more about the relative magnitudes involved. In the case of afforesting 1000 hectares of land to offset "some" of the carbon dioxide emissions from a proposed fossil fuel burning power plant in Oregon, this proportion over the lifetime of the power plant amounts to about 1% of the plant's total carbon emissions. Afforestation on a scale to affect the global carbon cycle would