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## What Science and Religion Are Really Telling Us

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My father hated the metric system. With a passion.

Because he died in 1976, you might think that the metric system should have had little or no effect on him, that it might even have escaped his notice.

The truth was that the metric system wouldn't leave him alone. The state highway director—this was in Ohio—at that time thought that the United States would soon adopt the metric system, and he began installing highway signs that used kilometers as well as miles.

Along with

**COLUMBUS 60 mi**

a sign would read

**COLUMBUS 100 km.**

(Those numbers aren't exactly equivalent, but it's close enough for government work.)

My father's blood pressure rose every time he saw one of these signs, and it was high enough already.

Worse, he did business with some Canadian companies and traveled to Canada several times a year. Worst of all, my mother often went with him, and she hated the Queen of England almost as much as he hated the metric system.

You may wonder what this has to do with religion and science. My sense is that many people who dispute the theory of evolution or oppose teaching it are reacting the same way my father did to the metric threat. That is, I think that my father's antipathy to the metric system grew out of fear: the fear of having to adapt to something he didn't understand.

It's certainly clear that most religious people who are hostile to science don't understand science very well. And many of the so-called New Atheists—atheists who actively and publicly

oppose religion—don't understand religion very well. Typically, when atheists attack religion, they're attacking a form of religion that you and I wouldn't comprehend, either: something overly simplistic, reductionist, and arbitrary.

This is why Rabbi Harold Kushner, when someone proclaimed to him, "I don't believe in God," would answer, "Tell me about the God you don't believe in. I probably don't believe in that God, either."

But it doesn't stop at that. It makes a certain amount of sense that traditionally religious people might not understand science or that scientists might not understand religion. If you listen to their arguments, however, you have to ask whether either group understands their own subject all that well—that is, whether religious people understand religion and whether scientists understand science.

Rabbi David Kay suggests an example that draws from the Torah. There are many statements in the Torah that a modern, scientific person might question. It doesn't take a Ph.D. degree—our sixth-graders ask these questions. For a traditionally religious person who inclines to Biblical literalism, as do both Protestant fundamentalists and some Jews, these questions cannot be asked. It is a matter of principle to interpret every statement in Scripture absolutely literally. Some would call this hewing to the faith of their fathers.

But it should be apparent to us that our ancestors, both our forefathers and our foremothers, were not such literalists. The second paragraph of the *Sh'ma*, part of every worship service, quotes from Deuteronomy 11 (it's on page 112 in *Slim Shalom*):

If you will earnestly heed the *mitzvot* I give you this day, to love *Adonai* your God and to serve God with all your heart and all your soul, then I will favor your land with rain at the proper season, in autumn and in spring, and you will have an ample harvest of grain, wine and oil. I will assure abundance in the fields for your cattle. You will eat to contentment. Take care lest you be tempted to stray, and to worship false gods. For then *Adonai's* wrath will be directed against you. God will close the heavens and hold back the rain; the earth will not yield its produce.

Now, the ancient Near East didn't provide a lot of privacy. For safety, people lived packed closely together. Even farmers lived in towns and walled cities, and walked to their fields each day; in Biblical times, the *sukkah* served as a temporary shelter for sleeping in the

fields during the harvest season. Grace Metalious said that she got some of the material for her novel *Peyton Place* by eavesdropping on the party line. Our ancestors didn't need to do that; everyone already knew what everyone else was up to.

Contemporary theologians might disagree with the statement that, *if we follow God's mitzvot, then God will provide rain at the proper seasons*. To the ancient mind, that presented no particular problem: propitiating one or more gods to ensure a good harvest was what everyone did. The problem for our ancestors was with the second part. Again, if there was no rain and the harvest failed, there was no theological problem: God was punishing us, and you couldn't prove that it wasn't so.

The inherent problem is that sometimes there would be adequate rain and a good harvest even though sin and sinners were plentiful. If the neighbors were worshipping Baal or some other false god, you knew about it, just as Grace Metalious knew who was sleeping with whom. People might even have realized, however dimly, that they weren't totally righteous themselves. And yet the rain came when it was needed and there was plenty of grain, wine, and oil. That's the theological problem, and it's why our ancestors did not take everything in the Torah quite as literally as we might have thought.

The idea that literalism is the only way to interpret the Bible is a comparatively modern one. In Jewish tradition, a literal strain of interpretation has always coexisted with other ways of reading.

Strict literalism is a largely Christian response to advances in science. We can think of Galileo's problems with the Catholic Church, although Catholic teaching in modern times is more sophisticated than it was in Galileo's time.

In the same way that what we now call "Orthodox Judaism" did not exist until the stirrings of Reform Judaism early in the nineteenth century, what we now call "fundamentalist Christianity" came into existence only after Darwin. As Jews, we do not write dates using the abbreviations B.C. and A.D., but in the history of religious thought, "After Darwin" is an almost equally important form of "A.D."

The reaction that followed Darwin's work and everything that grew from it changed an orderly, comprehensible world into one that seemed altogether incomprehensible, but it need

not have been that way. The basic attitude of fundamentalists today is that, because God created the world, science cannot and should not explain it. The world that God created has to be incomprehensible.

It wasn't always that way. In 1604, the astronomer Johannes Kepler was developing an astronomical theory that explained the elliptical orbits of the planets. In that year, a new star, a *nova*, appeared. Nothing in his theory predicted it; nothing in his theory could explain it.

Kepler need an explanation. And he was religious, a Catholic. According to the Paul Wallace, a physics professor,

He began to consider special creation: a deliberate, separate act of God unconnected with any other natural event, direct and special tinkering by the divine hand. But in the end he withdrew from that conclusion, writing "before we come to [special] creation, which puts an end to all discussion, I think we should try everything else." Over 400 years ago, Kepler understood that to claim special creation is to put an end to scientific inquiry.

In other words, Kepler's conclusion was that, rather than impose a narrow explanation, we should keep trying to understand what we observe. Kepler believed that, *because* God created the world, it must be comprehensible, even if we don't understand it yet. Modern fundamentalists seem to believe that, because God created the world, it has to be *incomprehensible*: any scientific explanation that makes sense *has to be* wrong.

I will say that it is arrogant for anyone to use the Bible to dispute science. One of my friends in the clergy who will be speaking about evolution tomorrow in her parish encountered some resistance: a churchwarden worried that she would "place Darwin above God."

I'll also say that scientists who oppose any and all religious teaching are being arrogant, and in a way that is contrary to the principles of science.

Oddly, the politicians who introduce laws to restrict the teaching of evolution or to advance the teaching of creationism in public schools, appear to understand scientific principles better than some of the scientists. Because this is an election year, the volume of the shouting on both sides is increasing and the number of new laws being introduced seems to be multiplying exponentially—not only in the Bible belt, but also in states like New Hampshire. The proposed laws typically require teachers to state the evolution is a *theory*, not a fact.

Which is completely true. Science works by advancing theories that explain the facts that scientists have observed, and right now the theory of evolution is the best one we have. It has been modified since Darwin's time, because new observations and further thought often cause changes in scientific theories. From the point of view of scientists, the best theory available stands in the position of fact, but it may still be changed if new data require that. If a theoretician of the stature of Einstein comes along, an entirely new theory might replace it. That's the way science works.

Scientific theories develop out of observed facts. In antiquity, so did religious theories. Religious theories—the stories of creation and pre-history—had to be compatible with the world that could be observed, had to explain what people knew to be true according to the science of their own time. For example, some stories in the Torah explain the origins of neighboring peoples such as the Edomites. If there had been no Edomites or the Children of Israel had never encountered them, or if they had not exhibited a degree of kinship to the Israelites, there would be no story of their descent from Esau.

One ostensible advantage of Biblical literalism is that it simplifies the world: in the view of religious fundamentalism, believing everything exactly as the Bible states it answers every possible question. Science, on the other hand, keeps raising new questions, making the world harder and harder to understand. In the nineteenth century, many advances in scientific knowledge were made by members of the clergy. In our time, scientific knowledge has grown so immensely that even professional scientists can't keep up with all of it.

Nevertheless, the New Atheists want to tell us that science can and does explain everything. Almost the opposite is true: every question that a new scientific discovery answers leads to more and more questions. That, I think, is what most disturbs Biblical literalists.

It is possible that science may eventually explain everything, but it shows no signs of doing so now. Furthermore, knowing the origins of life would leave the basic question of religion—the purpose of our lives—still unanswered.

What I'm suggesting is that the role of religion, the role of Torah, is not to answer every possible question, but to teach us that we *don't* know all the answers.

That's also what science teaches us. Each new scientific discovery opens the possibility of rethinking all that preceded it. Evolution is "only" a theory because, in good science, no theory is ever final. There is always the possibility of learning more and understanding it better.

In other words, science and religion are telling us the same thing: that we don't know as much as we might like to think we do. Rather than fear scientific advances, a religious person should be grateful for them.