

Religion and science: the tradition of hostility

Toward the end of the 19th century, Matthew Arnold wrote the following famous lines in *Dover Beach*.

The Sea of Faith
Was once, too, at the full, and round earth's shore
Lay like the folds of a bright girdle furl'd
But now I only hear
Its melancholy, long, withdrawing roar,
Retreating, to the breath
Of the night-wind, down the vast edges drear
And the naked shingles of the world.

Ah, love, let us be true
To one another! For the world, which seems
To lie before us like a land of dreams,
So various, so beautiful, so new,
Hath really neither joy, nor love, nor light,
Nor certitude, nor peace, nor help from pain;
And we are here as on a darkling plane,
Swept with confused alarms of struggle and flight,
Where ignorant armies clash by night.

I think that if Matthew Arnold were alive today, he would not have written *Dover Beach* much differently. We still hear faith's long withdrawing roar, and the same ignorant armies still clash in a night partly of their own devising.

The clash of armies did not start in the 19th century. Christianity has a long tradition of hostility toward science. I will argue that it started with St. Augustine back in the fifth century and has followed a strange course since then. Hatred of science is simply a church tradition, like choir boys and incense. We belong to a church that has partly defined itself by its opposition to science. Tonight I would like to explore this tradition and see if we can understand it a bit better.

There is a famous old book by Andrew Dickson White, the co-founder and first president of Cornell University. Published in 1895 it is titled *History of*

the Warfare of Science with Christian Theology. The title is strange. It seems that Christianity is maybe OK, but then a battalion of theologians charges in with their assault rifles and a bloody battle ensues. The book is not quite that simplistic but it does portray the scientists as heroes eventually defeating the forces of dogma and stupidity. If White were alive today, he would have to write another volume. Today we have seen the forces of science array themselves with an equal amount of hostile dogma in a bloody attack on religion. For example, there are several books that have been on the best-seller lists recently: Richard Dawkins, *The God Delusion*, Sam Harris, *The End of Faith* and *Letter to a Christian Nation*, and finally, Christopher Hitchens, *God Is Not Great: How Religion Poisons Everything*. As you can guess from the titles, religion doesn't get a really good press. The best that can be said for these books is that the authors are natural debaters; their goal is to win the argument, not produced a balanced analysis in an effort to discover the truth. The worst that can be said is that they are natural demagogues. I find the books exhausting and painful to read, but next week I will gird up my loins and look at this other side of the clash of ignorant armies.

Having said that, I don't want to give the impression that all scientists are caught up in this movement. The British financier Sir John Templeton invested well and became almost infinitely rich. He set up a philanthropic organization called the Templeton Foundation, which, among other things awards a prize each year to "a living person who has made an exceptional contribution to affirming life's spiritual dimension, whether through insight, discovery, or practical works; outstanding individuals who have devoted their talents to expanding our vision of ultimate purpose and reality." The prize is roughly 1.5 million dollars. By Templeton's behest the prize is always larger than the Nobel Prize. Early winners included Mother Teresa and Billy Graham. But here's the remarkable thing; the last six winners have all been well-known physicists, including Charles Townes who received the Nobel Prize for the invention of the laser. I will discuss some of their contributions later in the course.

Science as we know it, that is, western science, had its origins in ancient Greece and with two men in particular, Pythagoras and Aristotle. Pythagoras is a shadowy figure from 6th century BCE. None of his works have survived, but we know from what others wrote about him that he regarded science and religion to be inextricably interconnected. We know much more about Aristotle. He regarded theology as the *science* of God.

So far as I know, the first Christian to write seriously about science was St. Augustine. Augustine lived during the last part of the 4th century and the beginning of the 5th. This was a pivotal time in European history. The Roman Empire that had provided a stable secure society was collapsing under attack from barbarian hordes from Northern and Eastern Europe. Life was nasty, brutish and short! Science flourishes in societies that are stable, benign, and reasonably affluent. Europe during the middle ages wasn't. Under these circumstances it was natural that people turned their attention other-worldly matters. Life here is hell so keep your eyes on heaven. And of course, the keeper of the gates of heaven was the Church, and the great spokesman of the church was St. Augustine.

So far as science is concerned, Augustine is a profoundly ambiguous figure. I will read a few quotes. See what you make of them.

Even a non-Christian knows something about the earth, the heavens, the kinds of animals, shrubs, stones, and so forth, and this knowledge he holds to as being certain from reason and experience. Now it is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up a vast ignorance in a Christian and laugh it to scorn. (*On the Literal Meaning of Genesis*)

The universe was brought into being in a less than fully formed state, but was gifted with the capacity to transform itself from unformed matter into a truly marvelous array of structure and life forms.

We admit that what is contrary to the ordinary course of human experience is commonly spoken of as contrary to nature ... But, God the Author and Creator of all natures does nothing contrary to nature; for what is done by Him who appoints all natural order and measure and proportion must be natural in every case. (*Reply to Faustus the Manchurian*)

All this sounds very positive. Don't contradict science in the name of the Holy Scriptures, especially when you don't know what you're talking about. The universe has emerged from uniformity to order and complexity. God is the author of natural law and hence does not violate it. All very modern ideas expressed in fifth-century Latin. But what do you make of this?

“When the question is asked what we are to believe in regard to religion, it is not necessary to probe into the nature of things, as was done by those whom the Greeks call *physisi*; nor need we be in alarm lest the Christian should be ignorant of the force and number of the elements – the motion and order and eclipses of the heavenly bodies; the form of the heavens; the species and the nature of animals, plants, stones, fountains, rivers, mountains; about chronology and distances; the signs of coming storms; and a thousand other things which those philosophers either have found out or think they have found out ... It is enough for the Christian to believe that the only cause of all created things, ... whether heavenly or earthly ... is the goodness of the Creator, the one true God.”

You get the message? Physics, cosmology and astronomy, zoology, botany, geology, history, geography, and meteorology – all the Greek sciences – pphhutt! In a world ravaged by barbarian invasions the contemplation of heavenly spheres had to replace the study of nature.

About this time the idea began to assert itself that the scripture should be read as the literal truth. The idea predates Augustine but he crystallized it with the following remark from his *Commentary on the Book of Genesis*,

Nothing is to be accepted save on the authority of Scripture, since greater is that authority than all the powers of the human mind.

I have no sense of this, but I’m told that the remark is even more forceful in the original Latin. This idea didn’t die with the Reformation. Luther rejected any allegorical interpretation of scripture.

Why should Moses use allegory when he is not speaking of allegorical creatures or of an allegorical world, but real creature and of a visible world which can be seen, felt, and grasped? Moses calls things by their right names as we ought to do ... I hold that the animals took their being at once upon the word of God, as did also the fishes in the sea.

Calvin, also talking about the literal interpretation of scripture, warns those who, by taking another view than his own, “basely insult the Creator, to expect a judge who will annihilate them.”

The literal interpretation of the bible raises many difficult problems. I will review just a few to give a sense of the historical trajectory that these disputes tended to follow.

A literal reading of the creation accounts in Genesis led most theologians to the conclusion that all plants and animals were created in their present form. The first question was why God chose to create such noxious creatures as mosquitoes, poisonous snakes, predatory lions, etc. Many charming solutions were proffered. Fossils presented a more serious challenge since they often show plants and animals that are similar to but not identical with known species. One explanation was that they were placed in the earth by the devil to mislead Christians into unbelief. Another was that they were “working models” that God tried out and then discarded. In retrospect these explanations seem like innocent fantasies from a naive age. During the renaissance and later when the claims of science became more insistent, the response of the church much nastier. The famous first nasty episode was the prosecution of Galileo to which we now turn.