

Introduction

I must start with a disclaimer: the title is “religion and science” but “religion” is a vague abstraction. You might say there is no such thing as religion but there are many religions, most of which I know nothing about. All this is to say that I will be discussing Christianity in particular and not religion in general – with one exception – when we get around to quantum mechanics I would like to discuss the possible parallels between quantum mechanics and Eastern religions. This is something of a cult topic, and I would remiss to skip it.

Christianity is very much a this-worldly religion. For one thing Christ represents God incarnate – in the flesh. The Bible purports to be an account of real things that really happened in the real world. By “real world” I mean the world of the senses, the world of physical things, in short, the world of science. This is quite different from, for example, Hinduism. All the fabulous gods and beast in the sacred texts are frankly allegorical. Since the Bible is very much the product of a pre-scientific culture, there is bound to be some tension. This tension can be creative, but it has often been hostile and destructive. Here is my take on the various ways science and Christianity have interacted.

- **The battle of the fundamentalists: wart hogs and boa constrictors.** The phrase, ‘wart hogs and boa constrictors’ comes from Ian Barbour’s classic, *Religion in an Age of Science*. The point is that in a battle between a wart hog and a boa constrictor, the battle ends when the victor swallows the vanquished. The battle between religious fundamentalists and science fundamentalists ends when religion destroys science or vice versa. The term religious fundamentalism is familiar to all of you. At least in its modern meaning, it holds that the Bible is literally true (except for a few passages that are obviously metaphorical). If there is a conflict between science and scripture, scripture always trumps science. There is a kind of scientific fundamentalism as well, though it goes by another name. It’s called naturalism. Naturalism seems like it should be a good thing. We subscribe to *Natural Health* magazine. (Actually we got subscribed somehow. The magazine keeps coming, and our credit card keeps getting billed.) It seems like naturalism should have something to do with bathing in pomegranate

juice and stuffing your pillow with dried skunkweed, but in fact, it's something much different. It's the assumption that everything that happens in the universe can be understood in terms of matter interacting according to the basic laws of physics. This is a good working hypothesis for doing day-to-day science, but if you extend it beyond the legitimate realm of science it becomes an act of faith that leaves little room for morality, art, beauty, love, and certainly no room for religion.

- **No contact – No Conflict.** Stephen J. Gould wrote an oft-quoted book, *Rocks of Ages* in which he advanced the 'non-overlapping magisteria' or NOMA hypothesis. Magisterium is a Catholic term. It refers to the sphere of authority in which the Church can teach religious truths. Gould argues that science also has its magisterium or sphere of expertise, and further that there is no point of contact between the two magisteria so there is no legitimate conflict. I believe that this point of view is not right, and I hope to convince you of this in the coming lectures.
- **Constructive Criticism.** I read an inspirational slogan once, 'constructive criticism is the breakfast of champions.' I think science and religion can provide that sort of criticism for one another. Let me give you two examples. The first is evolution. From a purely scientific point of view, evolution is simply a fact. I don't think it's the whole story, but so far as it goes, it's just true. Forgive me for speaking so bluntly, but if the church can't come to terms with evolution, it runs the danger of becoming some kind of cult. At this point the church must listen to science when it says that a faith that depends on a literal reading of Genesis cannot be taken seriously. My second example shows how religion can be a check on science. In the early days of medical science it was often assumed that animals were just biological machines. As a consequence, gruesome experiments were performed on animals while they were alive and suffering. This is the point where the Church should have stepped in with the moral sensitivities to say, it is just not right to cause suffering to sentient creatures. Whether it actually did, I am less certain.

- **Creative Tension.** There are many ways in which religion and science can inform and inspire one another. Einstein's famous remark comes to mind. "Religion without science is blind. Science without religion is dead". According to Einstein, a sense of mystery and wonder is the motivating force behind all real science. According to Stephen Hawking, we need something to "breathe fire into the equations." The ways in which religion can inform and inspire science might be the topic of another course, but in this course I would like to concentrate on ways that science can inform and inspire religion.

There are four general areas. The first is evolution. I think that the theory of evolution is a resource that can deepen and enrich Christian theology. Several prominent theologians are pursuing this line of thought. I will return to it later this evening if I have time.

The next is quantum mechanics. Many connections have been suggested between QM and theology. Some are rather fanciful and I don't take them too seriously. There are two points, however, that cannot be denied. First is that quantum theory deals with an underlying level of reality that is inaccessible to us except in a very indirect way. This same sentence could be said of Christian theology without modification. We should expect then that in methodology, in their ways of knowing, there must be close parallels. The second point is that all matter in the universe is, at least in principle, linked, or entwined, or to use the technical term, "entangled," in a mysterious way that does not obey the usual rules of cause and effect and which propagates, if that is the right word, instantaneously. We are part of what David Bohm calls the "implicate order."

The third area is cosmology, the study of the universe as a whole. We human beings occupy an odd niche in the universe. In one sense we are overwhelmingly insignificant. I like to quote the opening lines from *The Hitchhiker's Guide to the Galaxy*. "Far out in the uncharted backwaters of the unfashionable end of the Western spiral arm of the Galaxy lies a small unregarded yellow sun. Orbiting this at a distance of roughly 98 million miles is an utterly insignificant little blue-green planet whose ape-descended life forms are so amazingly primitive that they still think digital watches are a pretty neat idea." This is just of course the hitchhiker's

guide to **our** galaxy. There are 100 billion galaxies in the visible universe. And there is some reason to believe that our universe may be one of a perhaps infinite number of universes. We are utterly insignificant, and yet – there are 100 times more cells in your body than there are stars in our galaxy. We are, so far as we know, the most complex thing in the universe. If things shone in proportion to their complexity, galaxies would be dim light bulbs, but your brain would be a beacon visible across the whole universe! Perhaps even more remarkable is the fact that the universe is exquisitely tuned in such a way as to make our existence possible. To give one simple example; the universe is 13.7 billion years old. That makes our “three score and ten” seem utterly insignificant; but the universe needed this much time to make us. It could not have done it any faster.

The last point we need to consider is this: when we look out in the sky with radio telescopes we can see almost all the way back to the origin of the universe. And what we see there looks remarkably uniform. There are slight fluctuations in temperature but they are on the order of one part in a hundred thousand. And yet from this utter uniformity come galaxies, suns, planets, life, and finally us with our extraordinary organization and complexity. How did this happen? Can it be explained entirely in terms of the laws of physics? Is there somehow purpose built into the universe? And after us, then what?

That’s my agenda. In the course of these five weeks I intend to move from the very negative, the trial of Galileo for example, to the very positive, the vision of emergence finally expressed in the work of Teilhard de Chardin.