

THE BEGINNING OF WISDOM – PART I – SECTION 3

THE RELATIONSHIP OF SCIENCE AND THE BIBLE

I. When understood accurately, the claims of science and the Bible are not in conflict. See Catechism 159. The notion of evolution and miracles are case studies in their proper realms.

A. When asking whether the theory of evolution is consistent with the Bible, and with the Catholic faith, one must first ask what is meant when people invoke this theory. The concept of evolution can mean at least seven different things, most of which are consistent with the faith, but a couple of them are not.

1. The first meaning is that the earth itself evolved over a very lengthy time, usually set at about four and a half billion years for the earth and about twelve billion years for the universe.

- There is no conflict between this view and the Bible or the faith. While some theologians have read Genesis 1 as indicating that the earth was created in six twenty-four hour time periods, that read has never been considered essential to the faith. See, e.g., Summa Theologica, Part I, question 74, articles 1-2.

- Given the clear geological evidence, it would seem that the more figurative read on Genesis 1 is the right one.

2. The second meaning is that life evolved from non-life by a process that can be explained entirely in scientific terms.

a. As a matter of philosophy and science, the point is disputed. Some people, such as the famous English astronomer Fred Hoyle have argued that the requirements for life are so complex that it would never have come about by reason alone. Others argue that, given the vast amount of time and space, this extraordinary event would likely occur by sheer chance.

b. Theologically, it is permissible to argue that the material process of life coming from non-life was natural and describable by science. However, it must be insisted upon that God intended this process to occur, and thus that it

was not entirely by chance, even if scientists cannot discern the cause (i.e. the providence of God) by experimental methods.

c. Even scientifically, experts can describe how they think life may have developed by a natural process, rather than a supernatural intervention. However, given the fact that it occurred some billions of years in the past, and is not currently observable, this claim cannot be proven.

3. The third meaning is that more complex animals evolved from less complex animals.

a. This view is the essence of scientific Darwinism, and serves to explain certain phenomenon, such as fossils that seem to be from animals that are between known species, the genetic relationship between animals, and "residual organs" that have no current function, but may have had a purpose for another species that a current species evolved from.

b. There are also some difficulties with this view, most especially the attempt to explain how complex organs (e.g., an eye or a ear) evolved slowly piece by piece, when one has to have the entire organ for any of it to work.

c. If the theory is simply an attempt to explain the material process through which species of animals came about, there is no difficulty in it. In fact, in a 1995 speech to the Pontifical Academy of Science, Pope John Paul II called the theory "more than a hypothesis," arguing that there is a fair amount of evidence for it.

d. Once again, however, if the theory is used to assert that there is not purpose behind the evolution of one species from another, that claim would contradict the faith. It is one thing for scientists to argue that there is no empirically testable cause for this evolution, but another for them to argue that there is nothing but random chance behind the process at all.

4. The fourth meaning is that, within a species, the animals tend to develop, by natural selection, traits (e.g., colors, amount of hair, length of arms and legs) that are helpful in its environment. Not even the most ardent of fundamentalists seems to disagree with this notion.

5. The fifth meaning is that the human body physically evolved from other primates, most notably apes. This view seeks to explain fossil evidence regarding either humans that looked like apes, or apes that looked like humans, as well as the close genetic relationship between the two species.
 - a. Noteworthy, it does not explain the vast differences in accomplishments between the two species, although the addition of the notion of a human soul (see # 6 below) could overcome this factor. In addition, because the creation of human beings was not recorded, and presumably happened only once, it is not subject to empirical testing, which is generally the way in which scientists judge whether an hypothesis is worthy of belief. Thus, as with the beginning of life itself, while scientists can describe how human beings may have evolved from other primate, whether they did so or not cannot be established by scientific evidence alone.
 - b. As long as it is limited to explaining physical descent of the human body, it poses not particular theological problem.
 - c. It should be noted that Pope Pius XII said in the 1950 encyclical letter Humanae Generis that the doctrine of original sin does imply that there is one set of parents for the human race. To the degree that scientific evidence says anything, it is in agreement, for genetic evidence at least indicates that that there is one woman from whom all humans descend.
6. The sixth proposed meaning of evolution is that human beings are nothing except evolved apes. This view would deny that there is any unique human soul.
 - a. For obvious reasons, this interpretation would contradict the Biblical teaching regarding the unique dignity given to humans, created in the image and likeness of God. As Pope Pius XII stated in Humanae Generis, each human soul is created directly by God. There was no evolution of the human soul.

- b. Even from the standpoint of natural reason, this view has several problems. First, it does not account for the vast differences in accomplishments and complexity of human and other primate life. As G.K. Chesterton pointed out, apes do not build libraries, ask about the good, the true, the beautiful, the holy, or where they come from. The very fact that human and ape genetic codes are physically so similar indicates that there must be something beyond the physical to explain what makes humans different. Second, without a notion of the uniqueness of the human person, any notion of natural rights or human morality disappears. As Thomas Jefferson noted in Notes on the State of Virginia, "Can the liberties of a nation be thought secure when we have removed their only firm basis, a conviction in the minds fo the people that these liberties are of the gift of God? That they are not to be violated but with His wrath?"
7. The seventh possibly meaning is that this entire process took place without any design whatsoever, and that there is no one behind it.
 - a. Once again, this view is contrary to the Bible and to the faith. The Bible plainly describes God as behind even the laws of nature. See, e.g, Gen. 1:1-27; Ps. 19, 29, 95; Is. 44:22; Job 9:5-10, 38:1-11, 25-30; Wis. 7:17-22.
 - b. The idea is that nature may in general work in accord with the laws of science, but God is the author of those laws and keeps them in place. In God is the fulfillment of all things. See Acts 18:28.
 - c. As Cardinal Dulles wrote in an article "God and Evolution" for First Things in October, 2007, this view that the laws of science can explain everything regarding the creation of species, including humans, among other things, ignores two of the four classic types of causation. This view focuses only on material causation (what something is made of) and efficient causation (what action immediately produces the effect.) It ignores both formal causation (what something really is and what its significance is) and final causation (the end to which all

things are directed.) This materialist view simply assumes that there is no fundamental nature to things and that they have no final purpose.

- d. Cardinal Dulles also described three ways in which many scientists and theologians, Catholic and otherwise, have accepted aspects of evolution, while rejecting others.
 - i. First, there are those who adhere to "theistic evolutionism," which maintains that God set in motion at the beginning of the universe the processes that would lead to human beings. Adherents to this view would maintain that the process can be described entirely naturally, but was set up with a purpose from the beginning.
 - ii. Second, there are those who adhere more to the Intelligent Design theory. According to this view, life may have evolved from nonlife, and species from other species, but that a continually guiding hand was needed for the process of bringing about life and then human life because it is so complex that it is impossibly unlikely to have occurred by random chance.
 - iii. A third way of thought, especially emphasized by Teilhard de Chardin, a Catholic theologian and biologist of the middle part of the twentieth century, is that even now, a design can be detected in all of creation, including inanimate objects. The view is that the complexity of even maintaining the simplest of life cannot be explained by science alone.

B. The notion of miracles likewise does not contradict science, but rather is consistent with it.

1. A miracle is an exception to the usual laws of nature. The idea of miracles implies that laws of nature exist, but that there

is a legislator who can suspend them if He wishes. They are not random occurrences, but are specifically designed to assist us on the way to salvation. See Summa Theologica, part I, question 105, article 7.

- In his book Miracles, C.S. Lewis describes miracles as like the exceptions to the rules of good grammar that a good writer might make for the sake of the deeper style that he is expressing.

2. To posit that miracles cannot occur, one must likewise argue that nothing can exist outside of the realm of science. However, as Stanley Jaki, honorary member of the Pontifical Academy of Science argued, the very belief in free will implies that not all things are controlled by the laws of science, for those laws are deterministic. See Bible and Science 206-208 (1996).

3. A Catholic, or any Christian may believe that certain extraordinary events recounted in the Bible were not specifically miracles (e.g., the Great Flood, the plagues of Egypt, the destruction of Sodom and Gomorrah), but natural phenomena that God warned good people of. However, to deny the possibility of miracles is contrary to the Catholic faith and the plain meaning of Scriptures. See Vatican I Council, Dogmatic Constitution on the Catholic Faith, On Faith, canon III (1870.)

4. In fact, as Fr. Jaki also argues, the belief in faith makes one more able to view history objectively, for one can consider the evidence and decide whether a claim that a miracle has occurred is supported by the evidence, e.g., whether there are credible witnesses and whether a natural explanation would fit. By contrast, an a priori rejection of the possibility of miracles forces a person to reject this explanation even if there is no other good one. See Bible and Science 202-203; see also Lewis, Miracles, ch. 13, p. 160.

II. Not only is the Biblical portrayal of God not contrary to science, it gives science its foundation and most glorious purpose.

A. The whole project of science assumes that the world is orderly and thus has predictable laws. It also assumes that our senses do not deceive us and that the laws we perceive are consistent throughout space and time.

1. The fact that these assumptions are at the baseline of science helps explain why science developed most in a Western world built upon the Jewish, Christian, and Muslim faiths, all of which agreed that the universe was created by an orderly God. The Book of Wisdom presents lady Wisdom as the organizing principle of all creation, who teaches her disciples about the universe. See Wis. 7:16-22.

2. It will not do to respond that we know the universe is orderly based upon our experience, for the entire question is whether our limited experience can be extrapolated throughout time and space. If one believes in an orderly God, this extrapolation makes sense. But if one believes in no God or inconstant pagan gods, there is no foundation for this belief.

B. The Scriptural notion that God is the author of the laws of nature gives a greater impetus for scientific knowledge about the universe.

1. If, as Francis Bacon argued, the only reason to know science is that we can use it for discoveries that are helpful, there is no need for most people to know much science, for they will not likely be making scientific discoveries. In fact, if falsehood about science is useful (e.g., to keep the masses happy), and usefulness the only reason for knowledge, such falsehood would be good.

2. By contrast, the Biblical notion is that God is the author of the laws of science, and thus they praise His glory. See, e.g., Ps. 19:1-2; Dan. 3:62-80. Once one believes that, the study of science becomes the study of God's artwork, and thus serves to praise God. Sir Isaac Newton said that knowing the glory of God was his primary reason for studying nature. As he put it, "This supremely exquisite structure that is visible to us, comprising the sun, the planets, and the comet, could come into being solely through the decision and under the dominion of an intelligent and powerful, truly existing being. . . He steers everything, not as a world-soul, but as the Lord of all things."

3. Furthermore, this view that all of science is the artwork, or the grammar, of God, makes deliberate falsifications about nature the worse. A deliberate deception regarding the laws of nature is an offense against the Artist who directs it.

C. In addition, the faith, by insisting that humans are in the image and likeness of God, puts a limit on scientific research, the abuse of technology, or the reduction of people to merely objects of study, thus preventing it from becoming over-powerful and thus ugly and tyrannical.

1. Putting ethical limits on the means of using science is no more an offense to science than limiting what the government can do is an offense to political theory, or limiting what corporations can do an offense to economics. All things must be in place, and the faith teaches what limits there should be to scientific research.

2. As Cardinal Dulles put it in his First Things article, "The tendency of science, when it gains the upper hand, is to do whatever lies within its capacity, without regard for moral constraint. As we have experienced in recent generations, technology uncontrolled by moral standards has visited horrors on the world."

III. Furthermore, science (broadly considered to include history, archeology, language studies, etc.) can help greatly in the understanding of the Bible.

A. Church teachings have repeatedly emphasized that the meanings conferred by the Biblical writers are true and reliable, but that it sometimes takes research to understand them. As a result, should not rely put historical research above the Bible, but it can be made to serve the Bible.

1. In part II(D) of Provindentissimus Deus (1893), Pope Leo XIII criticized the misuse of language studies, scientific claims or historical beliefs to disparage Scripture or write out all that seems unscientific. However, he endorsed the use of language studies, science and history to defend the Bible and to assist us in understanding passages that are ambiguous.

2. In Divino Afflante Spiritu, and especially section 24, Pope Pius XII promoted the study of sciences, language,

history and the like, for the sake of understanding the Bible better, while also warning that such studies should not become a mere academic exercise, but rather really assist people in understanding the sacred writings. In sections 35-37, he stated that the mode of writing in the ancient Near East was often very different from our own. As a result, a greater understanding of that culture is of particular help.

3. After affirming once again the inspiration of Sacred Scripture in section 11 of Dei Verbum (1965), the Vatican II Council said in section 12 that, in order to understand the meaning of Sacred Scriptures one must understand the literary forms that the authors used.

4. All of these documents also affirmed the importance of making sure that any interpretation of Scriptures is in accordance with the teachings of the Church and of the centrality of interpretations by the Church Fathers, that is, the eminent theologians of the first few centuries of the Church.

B. In 1993, the Pontifical Biblical Institute published a document entitled The Interpretation of the Bible in the Church, which described among other things the use of many fields of knowledge in understanding the Bible. Although it is not a magisterial text, for the Institute cannot define doctrine, this document helps summarize the Church's approach to Scripture.

1. It began by considering in general the *historical-critical approach* to the Bible. This method tries to understand the Bible in light of our knowledge of ancient languages and history. (Criticism does not mean a negative evaluation, but rather a rigorously scientific one.) This method involves: (1) textual criticism, which is simply an attempt to get at the original text and its right translation as accurately as possible; (2) literary criticism, which attempts to identify the style of writing that the author used; and (3) source and redaction criticism, which attempt to identify the original source of the text and its gradual revision to become the current version.

2. In its evaluation of this method, the Commission said that, despite some early conflicts between early advocates of this method, who tended to be skeptics or liberal Protestants, and the Church, this method has become very helpful in understanding the original setting and meaning of the authors. In particular, the document cited the more recent understanding of the idea of covenant in the Old Testament, and the ways in which the moral and holiness codes of the ancient Jews were the same and different from other cultures.

3. The Commission also said, however, that this method has its limits, for if used alone, it can lead people to treat the Bible as merely another historical text. Furthermore, this method cannot in itself deal with the fuller meanings that a Biblical text can have in light of subsequent events and teachings.

C. In addition to the classic historical-critical method, scientific and archeological discoveries have assisted in the understanding of Biblical events.

1. Thus, for example, the creation accounts do seem to be metaphorical. However, the Flood accounts probably recount a real historical event, namely massive flooding in the southern Mesopotamian region around 2800 B.C. and 4000 B.C., as well as evidence of a very rapid rise in the levels of the Black Sea around 12,000 B.C. Other discoveries have been able to discern what events such as the crucifixion were like. See, e.g., Pierre Barbet, *A Doctor at Calvary* (1950).

2. Archeological excavations have been very helpful in understanding what life was like in the ancient world, from the recognition of the age of Jericho (from about 4000 B.C.) to an understanding of the likely path of Abraham to a better knowledge of how Jerusalem was laid out.

3. As Pope Pius XII pointed out in section 35 of *Humanae Generis*, however, one must not elevate uncertain conclusions about archeology or geography (e.g., regarding what events seem likely to historians) over the Bible. An event seems unlikely or even impossible by nature or history alone can easily happen with God's help. One must ask instead whether the sacred writer intended such a claim.

C. Chapter 69 of the New Jerome Biblical Commentary discusses the history of historical critical and similar research on the Bible, Catholic, Protestant, and secular. Its description is helpful, although the conclusion, with its view that the previous conflicts with the faith are basically over, is a bit overly optimistic.

D. While the Bible is not only literature, it is literature and thus is an engagement with real people who lived at a particular time and place. Understanding them better makes this engagement all the richer. See Fr. Lawrence Boadt, Reading the Old Testament 29.