he controversy surrounding evolution touches on our most central beliefs about ourselves and the world. Evolutionary theories have been used to answer questions about the origins of the universe, life, and man. These may be referred to as cosmological evolution, biological evolution, and human evolution. One's opinion concerning one of these areas does not dictate what one believes concerning others.

People usually take three basic positions on the origins of the cosmos, life, and man: (1) *special* or *instantaneous creation*, (2) *developmental creation* or *theistic evolution*, (3) and *atheistic evolution*. The first holds that a given thing did not develop, but was instantaneously and directly created by God. The second position holds that a given thing did develop from a previous state or form, but that this process was under God's guidance. The third position claims that a thing developed due to random forces *alone*.

Related to the question of *how* the universe, life, and man arose is the question of *when* they arose. Those who attribute the origin of all three to special creation often hold that they arose at about the same time, perhaps six thousand to ten thousand years ago. Those who attribute all three to atheistic evolution have a much longer time scale. They generally hold the universe to be ten billion to twenty billion years old, life on earth to be about four billion years old, and modern man (the subspecies *homo sapiens*) to be about thirty thousand years old. Those who believe in varieties of developmental creation hold dates used by either or both of the other two positions.

THE CATHOLIC POSITION

What is the Catholic position concerning belief or unbelief in evolution? The question may never be finally settled, but there are definite parameters to what is acceptable Catholic belief.

Concerning cosmological evolution, the Church has infallibly defined that the universe was specially created out of nothing. Vatican I solemnly defined that everyone must "confess the world and all things

which are contained in it, both spiritual and material, as regards their whole substance, have been produced by God from nothing" (Canons on God the Creator of All Things, canon 5).

The Church does not have an official position on whether the stars, nebulae, and planets we see today were created at that time or whether they developed over time (for example, in the aftermath of the Big Bang that modern cosmologists discuss). However, the Church would maintain that, if the stars and planets did develop over time, this still ultimately must be attributed to God and his plan, for Scripture records: "By the word of the Lord the heavens were made, and all their host [stars, nebulae, planets] by the breath of his mouth" (Ps. 33:6).

Concerning biological evolution, the Church does not have an official position on whether various life forms developed over the course of time. However, it says that, if they did develop, then they did so under the impetus and guidance of God, and their ultimate creation must be ascribed to him.

Concerning human evolution, the Church has a more definite teaching. It allows for the possibility that man's body developed from previous biological forms, under God's guidance, but it insists on the special creation of his soul. Pope Pius XII declared that "the teaching authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions . . . take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter-[but] the Catholic faith obliges us to hold that souls are immediately created by God" (Pius XII, Humani Generis 36). So whether the human body was specially created or developed, we are required to hold as a matter of Catholic faith that the human soul is specially created; it did not evolve, and it is not inherited from our parents, as our bodies are.

While the Church permits belief in either special creation or developmental creation on certain questions, it in no circumstances permits belief in atheistic evolution.

THE TIME QUESTION

Much less has been defined as to when the universe, life, and man appeared. The Church has infallibly determined that the universe is of finite age—that it has not existed from all eternity—but it has not infallibly defined whether the world was created only a few thousand years ago or whether it was created several billion years ago.

Catholics should weigh the evidence for the universe's age by examining biblical and scientific evidence. "Though faith is above reason, there can never be any real discrepancy between faith and reason. Since the same God who reveals mysteries and infuses faith has bestowed the light of reason on the human mind, God cannot deny himself, nor can truth ever contradict truth" (Catechism of the Catholic Church 159).

The contribution made by the physical sciences to examining these questions is stressed by the *Catechism*, which states, "The question about the origins of the world and of man has been the object of many scientific studies which have splendidly enriched our knowledge of the age and dimensions of the cosmos, the development of life-forms and the appearance of man. These discoveries invite us to even greater admiration for the greatness of the Creator, prompting us to give him thanks for all his works and for the understanding and wisdom he gives to scholars and researchers" (CCC 283).

It is outside the scope of this tract to look at the scientific evidence, but a few words need to be said about the interpretation of Genesis and its six days of creation. While there are many interpretations of these six days, they can be grouped into two basic methods of reading the account—a *chronological reading* and a *topical reading*.

CHRONOLOGICAL READING

According to the chronological reading, the six days of creation should be understood to have followed each other in strict chronological order. This view is often coupled with the claim that the six days were

standard 24-hour days.

Some have denied that they were standard days on the basis that the Hebrew word used in this passage for day (yom) can sometimes mean a longer-than-24-hour period (as it does in Genesis 2:4). However, it seems clear that Genesis 1 presents the days to us as standard days. At the end of each one is a formula like, "And there was evening and there was morning, one day" (Gen. 1:5). Evening and morning are, of course, the transition points between day and night (this is the meaning of the Hebrew terms here), but periods of time longer than 24 hours are not composed of a day and a night. Genesis is presenting these days to us as 24-hour, solar days. If we are not meant to understand them as 24-hour days, it would most likely be because Genesis 1 is not meant to be understood as a literal chronological account.

That is a possibility. Pope Pius XII warned us, "What is the literal sense of a passage is not always as obvious in the speeches and writings of the ancient authors of the East, as it is in the works of our own time. For what they wished to express is not to be determined by the rules of grammar and philology alone, nor solely by the context; the interpreter must, as it were, go back wholly in spirit to those remote centuries of the East and with the aid of history, archaeology, ethnology, and other sciences, accurately determine what modes of writing, so to speak, the authors of that ancient period would be likely to use, and in fact did use. For the ancient peoples of the East, in order to express their ideas, did not always employ those forms or kinds of speech which we use today; but rather those used by the men of their times and countries. What those exactly were the commentator cannot determine as it were in advance, but only after a careful examination of the ancient literature of the East" (Divino Afflante Spiritu 35-36).

THE TOPICAL READING

This leads us to the possibility that Genesis 1 is to be given a non-chronological, topical reading. Advocates of this view point out that, in ancient literature, it was common to sequence historical material by topic, rather than in strict chronological order.

The argument for a topical ordering notes that at the time the world was created, it had two problems—it was "formless and empty" (1:2). In the first three days of creation, God solves the formlessness problem by structuring different aspects of the environment.

On day one he separates day from night; on day two he separates the waters below (oceans) from the waters above (clouds), with the sky in between; and on day three he separates the waters below from each other, creating dry land. Thus the world has been given form.

But it is still empty, so on the second three days God solves the world's emptiness problem by giving occupants to each of the three realms he ordered on the previous three days. Thus, having solved the problems of formlessness and emptiness, the task he set for himself, God's work is complete and he rests on the seventh day.

REAL HISTORY

The argument is that all of this is *real* history, it is simply ordered topically rather than chronologically, and the ancient audience of Genesis, it is argued, would have understood it as such.

Even if Genesis 1 records God's work in a topical fashion, it still records God's work—things God really did.

The Catechism explains that "Scripture presents the work of the Creator symbolically as a succession of six days of divine 'work,' concluded by the 'rest' of the seventh day" (CCC 337), but "nothing exists that does not owe its existence to God the Creator. The world began when God's word drew it out of nothingness; all existent beings, all of nature, and all human history is rooted in this primordial event, the very genesis by which the world was constituted and time begun" (CCC 338).

It is impossible to dismiss the events of Genesis 1 as a mere legend. They are accounts of *real* history, even if they are told in a style of historical writing that Westerners do not typically use.

ADAM AND EVE: REAL PEOPLE

It is equally impermissible to dismiss the story of Adam and Eve and the fall (Gen. 2–3) as a fiction. A question often raised in this context is whether the human race descended from an original pair of two human beings (a teaching known as monogenism) or a pool of early human couples (a teaching known as polygenism).

In this regard Pope Pius XII stated: "When, however, there is question of another conjectural opinion, namely polygenism, the children of the Church by no means enjoy such liberty. For the faithful cannot embrace that opinion which maintains either that after Adam there existed on this earth true men who did not take their origin through natural generation from him as from the first parents of all, or that Adam represents a certain number of first parents. Now, it is in no way apparent how such an opinion can be reconciled that which the sources of revealed truth and the documents of the teaching authority of the Church proposed with regard to original sin which proceeds from a sin actually committed by an individual Adam in which through generation is passed onto all and is in everyone as his own" (Humani Generis 37).

The story of the creation and fall of man is a true one, even if not written entirely according to modern literary techniques. The *Catechism* states, "The account of the fall in Genesis 3 uses figurative language, but affirms a primeval event, a deed that took place at the beginning of the history of man. Revelation gives us the certainty of faith that the whole of human history is marked by the original fault freely committed by our first parents" (CCC 390).

SCIENCE AND RELIGION

The Catholic Church has always taught that "no real disagreement can exist between the theologian and the scientist provided each keeps within his own limits. . . . If nevertheless there is a disagreement . . . it should be remembered that the sacred writers, or more truly 'the Spirit of God who spoke through

them, did not wish to teach men such truths (as the inner structure of visible objects) which do not help anyone to salvation'; and that, for this reason, rather than trying to provide a scientific exposition of nature, they sometimes describe and treat these matters either in a somewhat figurative language or as the common manner of speech those times required, and indeed still requires nowadays in everyday life, even amongst most learned people" (Leo XIII, *Providentissimus Deus* 18).

As the *Catechism* puts it, "Methodical research in all branches of knowledge, provided it is carried out in a truly scientific manner and does not override moral laws, can never conflict with the faith, because the things of the world and the things the of the faith derive from the same God. The humble and persevering investigator of the secrets of nature is being led, as it were, by the hand of God in spite of himself, for it is God, the conserver of all things, who made them what they are" (CCC 159). The Catholic Church has no fear of science or scientific discovery.

NIHIL OBSTAT: I have concluded that the materials presented in this work are free of doctrinal or moral errors. Bernadeane Carr, STL, 10 August 2004

IMPRIMATUR: In accord with 1983 CIC 827 § 3, permission to publish this work is hereby granted. +Robert H. Brom, Bishop of San Diego, 10 August 2004

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Faith & Science Adam, Eve, AND EVOLUTION