

EVOLUTION AND THE HUMAN PERSON IN CATHOLIC DOCTRINE

A CASE HISTORY IN THE SCIENCE - FAITH DIALOGUE

The scope of this essay is much more limited than one might be led to believe from the rather ambitious-sounding title. And yet I do intend to offer some reflections on each of the topics enunciated in the title and on their nexus. In order to appreciate the recent message of John Paul II on evolution¹ one must see it against both the general backdrop of the science - faith relationship over the past four centuries (since the birth of modern science), and more specifically in light of the opening towards science generated under the current Papacy. An evaluation of the immediate circumstances in which the message was delivered is also important for an understanding of the message itself. I would like to do each of these in turn.

When the message of John Paul II on evolution was received by the members of the Pontifical Academy of Sciences on 22 October 1996 during the Plenary Session of the Academy being then held at the seat of the Academy in the shadow of St. Peter's Basilica and was subsequently made public, it stirred a vast interest among both scientists and the public, an interest that went well beyond the usual attention paid to Papal statements. An attempt to answer why this was so will also help us, I believe, to appreciate the contents of the message. While the immediate circumstances in which the message occurred provide the principal reasons for the interest aroused, it requires, I believe, a return to about three centuries ago to find a full explanation. The Pope himself, in fact, introduces his message in this vein when he asks:

How do the conclusions reached by the various scientific disciplines coincide with those contained in the message of revelation? . . . Moreover, to shed greater light on historical truth, your [the Pontifical Academy's] research on the Church's relations with science between the 16th and 18th centuries is of great importance.

The relationship between religion and science has, in the course of three centuries, passed from one of conflict to one of compatible openness and dialogue. We might speak of the following four periods of history: (1) the rise of modern atheism in the 17th and 18th centuries; (2) anticlericalism in Europe in the 19th century; (3) the awakening within the Church to modern science in the first six decades of the 20th century; (4) the Church's view today. The approach of science

to religion in each of these periods can be characterized respectively as: (1) temptress; (2) antagonist; (3) enlightened teacher; (4) partner in dialogue.

In his detailed study of the origins of modern atheism² Michael Buckley, S.J. concludes that it was paradoxically precisely the attempt in the 17th and 18th centuries to establish a rational basis for religious belief through arguments derived from philosophy and the natural sciences that led to the corruption of religious belief. Religion yielded to the temptation to root its own existence in the rational certitudes characteristic of the natural sciences. This rationalist tendency found its apex in the enlistment of the new science by such figures as Isaac Newton and Rene Descartes to provide the foundation for religion. Although the Galileo case, as it is called, provides the classical example of confrontation between science and religion, it is really in the misappropriation of modern science to mistakenly establish the foundations for religious belief that we find the roots of a much more profound confrontation. From these roots, in fact, sprung the divorce between science and religion in the form of modern atheism. Thus science served as a temptress to religion.

As to the second movement in the dissonant symphony initiated by religion and science we turn to nineteenth century anticlericalism. The founding of the Vatican Observatory in 1891 by Pope Leo XIII is set very clearly in that climate of anticlericalism and one of the principle motives that Leo XIII cites for the foundation is to combat such anticlericalism. His words show very clearly his view of the prevailing mistrust of many scientists for the Church:

So that they might display their disdain and hatred for the mystical Spouse of Christ, who is the true light, those borne of darkness are accustomed to calumniate her to unlearned people and they call her the friend of obscurantism, one who nurtures ignorance, an enemy of science and progress . . .³

And so the Pope presents, in opposition to these accusations, a very strong, one might say even triumphalistic, view of what the Church wished to do in establishing the Observatory:

. . . in taking up this work we have become involved not only in helping to promote a very noble science, which more than any other human discipline, raises the spirit of mortals to the contemplation of

heavenly events, but we have in the first place put before ourselves the plan . . . that everyone might see that the Church and its Pastors are not opposed to true and solid science, whether human or divine, but that they embrace it, encourage it, and promote it with the fullest possible dedication.⁴

We now pass to a period of enlightenment, the awakening of the Church to science during the first six decades of the 20th century, which is concretized in the person of Pope Pius XII, who was a man of a more than ordinary scientific culture and who even in his youth had become acquainted with astronomy through his association with astronomers at the Vatican Observatory. The Pope had an excellent knowledge of astronomy and he frequently discussed astronomical research with contemporary researchers. However, he was not immune from the rationalist tendency which I spoke about above and his understanding of the then most recent scientific results concerning the origins of the Universe led him to a somewhat concordant approach to seeing in these scientific results a rational support for the doctrinal understanding of creation derived from Scripture.

A specific problem arose from the tendency of the Pope to identify the beginning state of the Big Bang cosmologies with God's act of creation. He had stated, for instance, that:

. . . contemporary science with one sweep back across the centuries has succeeded in bearing witness to the august instant of the primordial Fiat Lux, when along with matter there burst forth from nothing a sea of light and radiation . . . Thus, with that concreteness which is characteristic of physical proofs, modern science has confirmed the contingency of the Universe and also the well-founded deduction to the epoch when the world came forth from the hands of the Creator.⁵

Georges Lemaître, the father of the theory of the primeval atom which foreshadowed the theory of the Big Bang, had considerable difficulty with this view of the Pope. Lemaître insisted that the Primeval Atom and Big Bang hypotheses should be judged solely as physical theories and that theological considerations should be kept completely separate.⁶

The contrasting views reached a climax when the time came for the preparation of an address which the Pope was to give to the Eighth General

Assembly of the International Astronomical Union to be held in Rome in September 1952. Lemaître came to Rome to consult with the Cardinal Secretary of State concerning the address. The mission was apparently a success, since in his discourse delivered on 7 September 1952⁷ although he cited many specific instances of progress made in the astrophysical sciences during the previous half-century, he made no specific reference to scientific results from cosmology or the Big Bang. Never again did Pius XII attribute any philosophical, metaphysical, or religious implications to the theory of the Big Bang.

Up until the recent Papal discourse on evolution, which we shall discuss shortly, the principal sources for deriving the most recent view from Rome concerning the relationship of science and faith are essentially three messages of His Holiness John Paul II: (1) the discourse given to the Pontifical Academy of Sciences on 10 November 1979 to commemorate the centenary of the birth of Albert Einstein⁸; (2) the discourse given 28 October 1986 on the occasion of the fiftieth anniversary of the Pontifical Academy of Sciences⁹; (3) the message written on the occasion of the tricentennial of Newton's *Principia Mathematica* and published as an introduction to the proceedings of the meeting sponsored by the Vatican Observatory and the Center for Theology and the Natural Sciences, Berkeley to commemorate that same tricentennial¹⁰.

The public view of the first two discourses has emphasized the statements made by the Pope concerning the Copernican-Ptolemaic controversy of the 17th century and especially the role of Galileo in those controversies. There has, however, been an excessive emphasis, in my opinion, upon the Papal statements concerning Galileo. If one reads the three Papal documents which I have referred to above, it will be clear that there are many matters of much more significance and much more forward-looking than a reinvestigation of the Galileo case. The newness in what John Paul II has said about the relationship consists in his having taken a position compellingly opposed to each of those three postures discussed above. For instance, John Paul II clearly states that

. . . science develops best when its concepts and conclusions are integrated into the broader human culture and its concerns for ultimate meaning and value . . . Scientists . . . can come to appreciate for themselves that these discoveries cannot be a substitute for knowledge of the truly ultimate. Science can purify religion from

error and superstition; religion can purify science from idolatry and false absolutes. Each can draw one another into a wider world, a world in which each can flourish.¹¹

The newest element, however, in the new view from Rome is the expressed uncertainty as to where the dialogue between science and faith will lead. Whereas the awakening of the Church to modern science during the papacy of Pius XII resulted in a too facile appropriation of scientific results to bolster religious beliefs, Pope John II expresses the extreme caution of the Church in defining its partnership in the dialogue:

. . . Exactly what form that (the dialogue) will take must be left to the future.¹²

This is undoubtedly the newest and most important posture that the modern Church has taken in its approach to science. It is quite in contrast to previous history. It is diametrically the opposite to accusations of atheism, to a posture of antagonism; it is awakened but expectant.

The message on evolution is in continuity with this posture. While the encyclical of Pope Pius XII in 1950, *Humani Generis*, considered the doctrine of evolution a serious hypothesis, worthy of investigation and in-depth study equal to that of the opposing hypothesis, John Paul II states in his message:

Today almost half a century after the publication of the encyclical, new knowledge has led to the recognition that the theory of evolution is no longer a mere hypothesis.¹³

The sentences which follow this statement indicate that the "new knowledge" which the Pope refers to is for the most part scientific knowledge. He had, in fact, just stated that "the exegete and the theologian must keep informed about the results achieved by the natural sciences". The context in which the message occurs strongly supports this. As the specific theme for its plenary session the Pontifical Academy of Sciences had chosen: *The Origin and Evolution of Life*, and it had assembled some of the most active researchers in the life sciences to discuss topics which ranged from "Molecular Phylogeny as a Key to Understanding the Origin of Cellular Life" to "The Search for Intelligent Life in the Universe" and "Life as a

Cosmic Imperative"; from, that is, detailed molecular chemistry to sweeping analyses of life in the context of the evolving universe. Only months before the plenary session of the Academy the renowned journal, *Science*, published a research paper announcing the discovery that in the past there may have existed primitive life forms on the planet Mars. Furthermore within the previous two years a number of publications had appeared announcing the discovery of extra-solar planets. This ferment in scientific research not only made the plenary session theme very timely, but it also set the concrete scene for the Papal message. Most of the scientific results cited were very tentative and very much disputed (as is true of almost all research at its beginning), but they were very exciting and provocative. Only three months after the plenary session the Pope would receive in private audience a group of scientists from Germany, Italy and the United States who were responsible for the high-resolution observations being made by the satellite, *Galileo*, of the Jovian planets and their satellites. Within a few months of that audience NASA would announce the discovery of a huge ocean on Europa, a satellite of Jupiter.

These are the circumstances surrounding the Papal message on evolution. Did they influence it? Normally the Pope receives the Papal Academicians at the time of their Plenary Session in a solemn, private audience, at times even in the presence of the College of Cardinals and the Diplomatic Corp. On this occasion he did not receive them at all, but rather sent his message to them. There, of course, can be many reasons for this, unknown and perhaps even unknowable to the historian. I would like to suggest, nonetheless, that a contributing factor to the nature of this message may be found precisely in the circumstances of the plenary session and the accompanying milieu of scientific research. A careful reading of the message is consistent with this suggestion. The Pope wished to recognize the great strides being made in our scientific knowledge of life and the implications that may result for a religious view of the human person; but at the same time he had to struggle with the tentative nature of those results and their consequences, especially with respect to revealed, religious truths. In other words an openness in dialogue appeared to be the most honest posture to take. Let us examine the message in this respect.

In order to set the stage for dialogue the message distinguishes in traditional terms the various ways of knowing. The correct interpretation of observed, empirical, scientific data accumulated to date leads to a theory of evolution which is no longer a mere hypothesis among other hypotheses. It is an established

scientific theory. But since philosophy and theology, in addition to the scientific analysis of the empirical facts, enter into the formulation of a theory, we do better to speak of *several* theories. And some of those theories are incompatible with revealed, religious truth. It is obvious that some theories are to be rejected outright: materialism, reductionism, spiritualism. But at this point the message embraces a true spirit of dialogue when it struggles with the opposing theories of evolutionism and creationism as to the origins of the human person. And this is obviously the crux of the message.

The dialogue progresses in the following way: The Church holds certain revealed truths concerning the human person. Science has discovered certain facts about the origins of the human person. Any theory based upon those facts which contradicts revealed truths cannot be correct. Note the antecedent and primary role given to revealed truths in this dialogue; and yet note the struggle to remain open to a correct theory based upon the scientific facts. The dialogue proceeds, in anguish as it were, between these two poles. In the traditional manner of Papal statements the main content of the teaching of previous Popes on the matter at hand is reevaluated. And so the teaching of Pius XII in *Humani Generis* that, if the human body takes its origins from pre-existent living matter, the spiritual soul is immediately created by God. And so, is the dialogue resolved by embracing evolutionism as to the body and creationism as to the soul? Note that the word "soul" does not reappear in the remainder of the dialogue. Rather the message moves to speak of "spirit" and "the spiritual".

If we consider the revealed, religious truth about the human being, then we have an "ontological leap", an "ontological discontinuity" in the evolutionary chain at the emergence of the human being. Is this not irreconcilable, wonders the Pope, with the continuity in the evolutionary chain seen by science? An attempt to resolve this critical issue is given by stating that:

The moment of transition to the spiritual cannot be the object of this kind of [scientific] observation, which nevertheless can discover at the experimental level a series of very valuable signs indicating what is specific to the human being.

The suggestion is being made, it appears, that the "ontological discontinuity" may be explained by an epistemological discontinuity. Is this adequate or must the dialogue continue? Is a creationist theory required to explain the origins of the

spiritual dimension of the human being. Are we forced by revealed, religious truth to accept a dualistic view of the origins of the human person, evolutionist with respect to the material dimension, creationist with respect to the spiritual dimension. The message, I believe, when it speaks in the last paragraphs about the God of life, gives strong indications that the dialogue is still open with respect to these questions.

I would like to use the inspiration of those closing paragraphs to suggest that reflections upon the God's continuous creation may help to advance the dialogue with respect to the dualistic dilemma mentioned above. We might say that God creates through the process of evolution and that creation is continuous. Since there can ultimately be no contradiction between true science and revealed, religious truths, this continuous creation is best understood in terms of the best scientific understanding of the emergence of the human being, which I think is given in the following summary statement by the eminent evolutionary chemist, Christian de Duve, in his paper at the very Plenary Session of the Pontifical Academy of Sciences to which the Papal message on evolution was directed:

. . . evolution, though dependent on chance events, proceeds under a number of inner and outer constraints that compel it to move in the direction of greater complexity if circumstances permit. Had these circumstances been different, evolution might have followed a different course in time. It might have produced organisms different from those we know, perhaps even thinking beings different than humans.¹⁴

Does such contingency in the emergence of the human being contradict religious truth? Not, it appears to me, if theologians can develop a more profound understanding of God's continuous creation. God in his infinite freedom continuously creates a world which reflects that freedom at all levels of the evolutionary process to greater and greater complexity. God lets the world be what it will be in its continuous evolution. He does not intervene, but rather allows, participates, loves. Is such thinking adequate to preserve the special character attributed by religious thought to the emergence of spirit, while avoiding a crude creationism? Only a protracted dialogue will tell. The spirit of the closing paragraphs of the message of John Paul II on evolution is, I believe, an invitation to just such dialogue.

Notes

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1. The original message in French was published in *L'Osservatore Romano* for 23 October 1996 and an English translation in the Weekly English Edition of *L'Osservatore Romano* for 30 October 1996.
 2. Michael J. Buckley, S.J., *At the Origins of Modern Atheism* (New Haven: Yale University Press, 1987).
 3. Motu Proprio, *Ut Mysticam*, published in Sabino Maffeo, S.J., *In the Service of Nine Popes, One Hundred Years of the Vatican Observatory* (Vatican City State: Vatican Observatory Publications, 1991, trans. by G.V. Coyne, S.J.) p. 205
 4. *ibid.*
 5. *Acta Apostolicae Sedis* (Vatican City State: Tipografia Poliglotta Vaticana, 1952) Vo1. 44, pp. 41, 42.
 6. G. Lemaître, "The Primeval Atom Hypothesis and the Problem of Clusters of Galaxies", in *La Structure et L'Evolution de l'Universe* (Bruxelles: XI Conseil de Physique Solay, 1958) p. 7.
 7. *Acta Apostolicae Sedis*, *op. cit.*, p. 732.
 8. *Discourses of the Popes from Pius XI to John Paul II to the Pontifical Academy of Sciences* (Vatican City State: Pontificia Accademia Scientiarum, 1986) p. 151.
 9. *ibid.*, p. 193.
 10. The message was first published in *Physics, Philosophy and Theology, A Common Quest for Understanding*, eds. R.J. Russell, W.R. Stoeger, S.J. and G.V. Coyne, S.J. (Notre Dame, IN: University of Notre Dame Press, 1988) pp. M3 - M14. Comments on the Papal message by a group of experts have been published in: *John Paul II on Science and Religion, Reflections on the New View from Rome*, eds. R.J. Russell, W.R. Stoeger, S.J., and G.V. Coyne, S.J. (Notre Dame, IN: University of Notre Dame Press, 1990).
 11. *ibid.*, p. M13.
 12. *ibid.*, p. M7.
 13. The English translation of this sentence, published as cited in Note 1, is incorrect when it says: "... the recognition of more than one hypothesis ...".
 14. Christian de Duve, "Life as a Cosmic Imperative", Pontifical Academy of Sciences, October 1996; see also his book, *Vital Dust: Life as a Cosmic Imperative* (New York: Basic Books, 1995).