

Lemaître: Science and Religion

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Introduction

In order to appreciate the contribution which Georges Lemaître made to the relationship between religion and science it is necessary to understand how the Catholic Church, of which he was a priest, passed in the course of three centuries, from a position of conflict to one of compatible openness and dialogue. In doing this I hope to show that the natural sciences have played a significant role in helping to establish the kind of dialogue that is absolutely necessary for the enrichment of the multifaceted aspects of human culture. I will 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 Catholic Church to modern science in the first six decades of the 20th century; (4) the Church's view today.

Rationalism and the Rise of Modern Atheism

In his detailed study of the origins of modern atheismⁱ 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. According to Buckley such philosophers as Leonard Lessius and Marin Mersenne decided that the existence of God must be so well established from philosophical arguments that evidence derived from religious experience itself became secondary or even forgotten. This rationalist tendency found its apex in the enlistment of the new science, characterized by such figures as Isaac Newton and Rene Descartes, to provide the foundation for religious belief. Although the Galileo case, as it is called, is thought to provide the classical example of confrontation between science and religion – actually in the trial of 1633 science was not at the table - , it is really in the

misappropriation of modern science by such as Isaac Newton to mistakenly establish the foundations for religious belief that we find the roots of a much more deep seated confrontation. From these roots, in fact, sprang the divorce between science and religion in the form of modern atheism.

Thus science served to corrupt religious belief. The certainties born of the scientific method gave birth to the desire for like certainties as a foundation for religious belief. That desire was radically misplaced and led to a lengthy period of misunderstanding between religion and science.

Anticlericalism

As to the second movement in the dissonant symphony between religious belief and science initiated by the rationalism of the 17th and 18th centuries we turn to 19th century anticlericalism. Some episodes which reveal aspects of this anticlericalism and its influence on the development of the relationship between science and religion are described by Sabino Maffeo, S.J. in his history of the Vatican Observatory on the occasion of its 100th anniversary.ⁱⁱ In fact, the founding of the 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 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 . . .ⁱⁱⁱ

He then terminates this *Motu Proprio* in which he established the Observatory by stating:

. . . 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.^{iv}

Although the historical circumstances did not provide a healthy climate for a dialogue between religion and science, the founding of the Vatican Observatory, even if couched in triumphalistic terms, proved to be a quite positive contribution to the dialogue, both at the time of its foundation and in its subsequent 100 year history.^v

Awakening to Science: The Role of Georges Lemaître

We now pass to the period of enlightenment. For the purposes of this paper and for the sake of brevity, when I speak of the awakening of the Church to science during the first six decades of the 20th century, I am really speaking of the personage of Pope Pius XII. He was a man of rich culture and even in his youth he had become acquainted with astronomy through his association with Giuseppe Lais, Oratorian, who was an astronomer at the Vatican Observatory from 1890 to 1921 and the one most responsible for the completion of the International Sky Mapping Program of the Vatican Observatory.^{vi} The Pope had an excellent college level knowledge of astronomy and he frequently discussed astronomical research with Daniel O'Connell, S.J., the then Director of the Vatican Observatory.^{vii} Pius XII's discourses on astronomical and cosmological themes are summarized by P.J. McLaughlin.^{viii} However, the Pope was not immune from the rationalist tendency discussed above and his understanding of the then most recent scientific discussions concerning the origins of the universe led him to a somewhat concordant approach to seeing in these scientific results a rational support for the Scriptural, and derived doctrinal, interpretation of creation. This tendency was first revealed in the address, *Un'Ora*, delivered to the Pontifical Academy of Sciences on 22 November 1951^{ix} in which he attempted to examine the scientific results from which arguments for the existence of God the Creator might proceed. Even at that time the Papal discourse created a great deal of negative comment.^x But this was only the beginning of what was to be a very difficult period. It was only, in fact, through the most delicate but firm interventions of Georges Lemaître and Daniel O'Connell, S.J., that the Pope was dissuaded from following a course which would have surely ended in troubling times for the relationship between

the Church and scientists.^{xi}

The specific problem arose from the tendency of the Pope to identify the beginning state of the Big Bang cosmologies, known principally to the Pope from Lemaître's book, "The Primeval Atom," 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.^{xii}

Lemaître had considerable difficulty with this view of the Pope. Although he was a respected cosmologist, he was also a Catholic priest and, since solid scientific evidence for his theory was lacking at that time, he was subject to the accusation that his theory was really born of a spirit of concordism with the religious concept of creation. 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.^{xiii}

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. On his way to a scientific congress in Cape Town, South Africa, Lemaître stopped in Rome to consult with Daniel O'Connell, S.J. and the Cardinal Secretary of State of the Vatican concerning the address. The mission was apparently a success, since in his discourse delivered on 7 September 1952^{xiv}, although he cited many specific instances of progress made in the astrophysical sciences during the last 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.

A Summary

To summarize, from what has been said of the three selected historical periods, I believe we can conclude the following. First, as an inheritance from the origins of modern atheism in the 17th and 18th centuries, there has been within the Church a tendency to associate scientific research with atheism. Up until the 1970s, for instance, all of the organization of formal dialogue between the Church and the world of science was handled by the Vatican Secretariat for Non-believers (currently called the Pontifical Council for Dialogue with Non-believers) . Most recently this dialogue has been organized by the Pontifical Council for Culture, founded in 1982. Secondly, a type of "siege" mentality in response to currents of anticlericalism characterized the thinking of the Church at the time of the foundation of the Vatican Observatory. Thirdly, when enlightened to the magnificent progress in scientific research in the first six decades of this century, the Church in the person of Pius XII wished too hastily to appropriate the results of science to its own ends. Recently there has been a view from Rome that contrasts in a significant way with each of these previous historical periods. Since the intervention of Lemaître which I have just described set the stage for future developments in the science-religion dialogue on the part of the papacy I would like to briefly discuss those developments as an inheritance of Lemaître.

Partnership in Dialogue

Although there are many others, the principal source for deriving the most recent view from Rome concerning the relationship of science and faith is to be found in the message of John Paul II written on the occasion of the tercentennial of Newton's *Principia Mathematica* and published as an introduction to the proceedings of the meeting sponsored by the Vatican Observatory to commemorate that same tercentennial^{xv}. The newness in what John Paul II has said about the relationship consists in his having taken a position compellingly different than previous official positions of the Church. I would like now to briefly analyze that message in light of what I have just claimed.

John Paul II clearly states that science cannot be used in a simplistic way as a rational basis for religious belief, nor can it be judged to be by its nature atheistic, opposed to belief in God.

. . . Christianity possesses the source of its justification within itself and does not expect science to constitute its primary apologetic. Science must bear witness to its own worth. While each can and should support the other as distinct dimensions of a common human culture, neither ought to assume that it forms a necessary premise for the other. The unprecedented opportunity we have today is for a common interactive relationship in which each discipline retains its integrity and yet is radically open to the discoveries and insights of the other.^{xvi}

He furthermore states:

. . . 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.^{xvii}

Nothing could be further from the attitude of Leo XIII, born of the anticlericalism of the 17th and 18th centuries, than the following words of John Paul II:

By encouraging openness between the Church and the scientific communities, we are not envisioning a disciplinary unity between theology and science like that which exists within a given scientific field or within theology proper. As dialogue and common searching continue, there will be growth towards mutual understanding and gradual uncovering of common concerns which will provide the basis for further research and discussion.^{xviii}

I would judge that the newest element 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.^{xix}

I consider this to be the newest and most important posture that the modern Church has taken in its approach to science. It is radically new and in complete contrast with previous history. It is diametrically opposed to accusations of atheism, to a posture of antagonism; it is awakened but expectant.

I would like to end by addressing a question which the John Paul II raises: "Can science also benefit from this interchange?"^{xx} To my mind it takes a great deal of courage and openness to ask that question. I do not believe that it has a very clear answer. In fact, it is very difficult to see what the benefits to science as such, that is as a specific way of knowing, might be. In the Papal message it is intimated that the dialogue will help scientists to appreciate that scientific discoveries cannot be a substitute for knowledge of the truly ultimate.^{xxi} In what way, however, do scientific discoveries participate, together with philosophy and theology, in the quest for that ultimate? This is a serious and open question. Obviously, the new view from Rome does not have all the answers, but it is an invitation to a common quest, a quest which owes a great deal to the spirit of Georges Lemaître.

Notes

i. Michael J. Buckley, S.J., *At the Origins of Modern Atheism* (New Haven: Yale University Press, 1987).

ii. 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. from the original Italian: *Cento Anni della Specola Vaticana, Nove Papi, Una Missione* (Vatican City State: Vatican Observatory Publications, 1991). See especially pages 13-15 and 47-50. A second revised edition was published in 2001.

iii. *Motu Proprio, Ut Mysticam*, published in Sabino Maffeo, S.J. op. cit., p. 205.

iv. *ibid.*

v. See Sabino Maffeo, S.J., *op. cit.*, especially Chapter 17, pp. 189-202.

vi. See Sabino Maffeo, S.J., *op. cit.*, p. 35.

vii. See Sabino Maffeo, S.J., *op. cit.*, pp. 174, 184, 185.

viii. P.J. McLaughlin, *The Church and Modern Science* (New York: Philosophical Library, Inc., 1957), see especially pp. 183-206.

ix. Discourses of the Popes from Pius XI to John Paul II to the Pontifical Academy of Sciences (Vatican City State: Pontificia Accademia Scientiarum, 1986) *Scripta Varia* 66, pp. 73-84.

x. See for example: G. Gamow, "The Role of Turbulence in the Evolution of the Universe", *The Physical Review*, 15 April 1952; and E.L. Mascall, *Christian Theology and Natural Science* (London: Longmans, 1956).

xi. For an excellent discussion of the contrasts between Pius XII and Georges Lemaître see Josef Turek, "Georges Lemaître and the Pontifical Academy of Sciences", *Vatican Observatory Publications*, 2, 167; see especially pp. 170-172.

xii. *Acta Apostolicae Sedis* (Vatican City State: Tipografia Poliglotta Vaticana, 1952) Vol. 44, pp. 41, 42.

xiii. G. Lemaître, "The Primeval Atom Hypothesis and the Problem of Clusters of Galaxies", in *La Structure et L'Evolution de l'Univers* (Bruxelles: XI Conseil de Physique Solay, 1958) p. 7.

xiv. *Acta Apostolicae Sedis*, *op. cit.*, p. 732.

xv. 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).

xvi. *ibid.*, p. M9.

xvii. *ibid.*, p. M13.

xviii. *ibid.*, p. M7.

xix. *ibid.*, p. M7.

xx. *ibid.*

xxi. *ibid.*