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Christianity and Science: Confronting Challenges to Faith and Reason in the History of Philosophy and Theology

– Joseph R. Laracy –

1. Introduction

The estrangement between science and religion in the 21st century seems to be a well accepted fact both in the ivory towers of secular academia and the conversations of many committed Christians. In fact, most people believe that they are presented with two contradictory systems from which they must choose. Blessed John Henry Cardinal Newman encountered this phenomenon during his ministry and expressed his discomfort with the status quo of the 19th century:

It will not satisfy me, what satisfies so many, to have two independent systems, intellectual and religious, going at once side by side, by a sort of division of labour, and only accidentally brought together. It will not satisfy me, if religion is here, and science there, and young men converse with science all day, and lodge religion in the evening. It is not touching the evil, to which these remarks have been directed, if you men eat and drink and sleep in one place, and think in another: I want the same roof to contain both the intellectual and the moral discipline. Devotion is not a sort of finish given to the sciences; nor is science a sort of feather in the cap, if I may express myself, an ornament and setoff to devotion. I want the intellectual layman to be religious, and the devout ecclesiastic to be intellectual. – (Cardinal Newman’s sermon “Intellect, the Instrument of Religious Training” preached in the University Church, Dublin. Feast of St. Monica – Sunday after Ascension, 1856.)¹

To understand the causes of this perceived conflict between science and religion it is necessary to look at the history of philosophy and theology with regard to the fracture between faith and reason and the subsequent destruction of both in modern and postmodern thought.

2. *Historical Perspectives*

In particular, one must examine the historical development of these concepts since the Reformation and the Enlightenment. In the early 16th century, the then Rev. Martin Luther, OESA², developed the theological concept of justification *sola fide*.³ This doctrine was later given pride of place in the Lutheran ecclesial communities for Luther himself said that it was the “*articulus stantis et cadentis ecclesiae*” (article by which the Church stands or falls).⁴ Besides the devastating error this injected into the theology of justification and sanctification, it also had the effect of breaking the classical Catholic synthesis of *fides et ratio*. Faith took on the dimension of a blind leap, only an act of the will *pro Deo*. The Catholic view of faith, as a way of knowing (God and His holy will), with the assistance of God-given reason, was abrogated.

About one century later, another attack was levied against the Catholic synthesis, this time from a philosopher. The “Father of Modernism,” René Descartes, developed a philosophical movement which can best be described as *sola ratione*. Modernist philosophers, such as Descartes, sought to refute the Scholasticism of the Middle Ages and Renaissance.⁵ During his studies at the College des Jesuites de la Flèche, Descartes became concerned with the fact that Scholastic philosophy was not engaging the exciting and emerging field of modern empirical science. Also, his distrust of the senses led him to investigate questions of illusion and doubt, topics not thoroughly treated by Scholastics. As a result, Descartes began a life-long project which was fundamentally epistemological.

Eventually, he came to reject the four causes of Aristotle, particularly final causes, and his three principles of matter, form, and privation – all foundational elements

of Scholastic thought.⁶ Descartes was not the only philosopher/scientist to reject the four causes. Francis Bacon was a leading figure who attempted to eliminate formal and final causes from modern empirical science. Interestingly, both concepts are making a serious return, albeit in a different manner. A rigorous concept of form is developing around the study of emergent properties in nature and man-made systems. Abstractions for complex natural and engineered systems often involve layers. In the case where the abstraction is hierarchical, the level of organization increases as one moves toward higher layers.

Additionally, the step from level n to $n + 1$ yields new properties that are not discernable at level n . This phenomenon is referred to as emergence, or emergent properties. A good example of this behavior is seen in the shape of an apple which can be explained in terms of the cells of the apple but “apple shape” has no meaning at lower levels of description.⁷

Final causes, i.e. ends or purposes, are also “back on the table” in a certain sense.

Contemporary research in genetics and evolutionary biology often implicitly makes use of this concept. It is also utilized in cybernetics and control theory.

Returning to Descartes, the only place where he thought that certainty could be found was in mathematics and the physical sciences and so he began to devote himself to studies in those areas.⁸ Starting down a philosophical road in which his successors would eventually reduce being to consciousness, Descartes assumed a radical, methodical doubt⁹ on the epistemological level and began to reconstruct reality from within his mind. The only fact which he does not doubt is the fact that he is thinking, e.g. the well-known *Cogito ergo sum* (I think therefore I am). This step by Descartes would plant the seed for the idealists who would follow and ground their philosophy within the thinking subject

and simply remain in doubt or denial over the existence of objective being which transcends it.¹⁰

The extreme principal of immanence is a denial that being transcends consciousness, a radical departure from *esse* as the act of being, i.e. *actus essendi*. In the words of Étienne Gilson, “‘To be’ is the very act whereby an essence is.”¹¹ In order to *know* a thing, its essence must be comprehended. However, one can only know that which is in act. Therefore, the reality of a being (*ens*), or thing, is constituted by its essence and its existence. Starting with Descartes, the focus and departure point of modern philosophy was the consciousness of the thinking subject, whereas prior to him, the Scholastics had departed from "being," simply put. The Scholastics took the “beyond-mental”, that is objective, world seriously, as do contemporary empirical scientists, and for the Scholastics, real knowledge comes by way of essence. Since in the Aristotelian-Thomistic understanding there are no uninstantiated essences, then real knowledge presupposes the underlying *esse* of all that is.

Descartes’ work eventually led to the development of two schools: the Rationalist School which included philosophers such as Nicolas Malebranche, Baruch Spinoza, and Gottfried Wilhelm Leibniz, as well as the Empiricist School which included Thomas Hobbes, John Locke, David Hume, George Berkeley, and others. The Rationalist School emphasized the existence of innate ideas, metaphysics, and a distrust of sense experience. Conversely, the Empiricists doubted the existence of innate ideas, preferred epistemology and political philosophy, and trusted sense experience. This school did not think that certainty was attainable and that epistemology was the only way to analyze ideas since

we obtain ideas by induction applied to experience. In the end, both schools ended up with epistemology as “first philosophy” instead of a proper metaphysics.

The 18th century German philosopher, Immanuel Kant, was greatly influenced by Descartes and sought to unify the Rationalist and Empiricist Schools through an integrated approach which used both reason and sense experience. Kant realized that he had to deal with empirical phenomena, and pointed out that it is the spontaneity of our intellect which synthesizes and confers conceptual objectivity upon empirical phenomena. Conversely, a traditional Rationalist has as his method intellectual intuition detached from sense knowledge. Kant did not admit innate ideas, only *a priori* categories. Fundamentally, Kant took human subjectivity and elevated it to transcendental subjectivity.¹² The ancient definition of truth articulated by St. Thomas as *adaequatio rei et intellectus* (correspondence of the intellect and the thing) was rejected in favor of a “consistent ordering of the information coming from the senses.”¹³ Additionally, it is important to note that he lived in a period where faith was cast into the background of the epistemological question of “What can one know?” While the classical modernity of Descartes was *sola ratione*, it did retain some space for faith in God. The Kantian Enlightenment was however a modernity without faith which reduced religion to an approach to ethics.

The ground was now laid for the culmination of modernity in Europe – the 19th century German idealist, Georg Wilhelm Friedrich Hegel. Hegelianism was an “absolute” rationalism that left few believing in the traditional conceptions of reason or truth. Following his death, the successors of Hegel and his idealism deliquesced into different groups. One group was a Rightist School of philosophers and theologians with

some openness to Christian ideas, e.g. Karl Friedrich Göschel, Hermann Friedrich Wilhelm Hinrichs, and (much later) an argument can be made to include Rudolf Karl Bultmann as well. An Anti-Hegelian “School” also developed which emphasized

- pessimism, e.g. Arthur Schopenhauer,
- faith without reason – “the leap of faith,” e.g. Søren Kierkegaard, and
- nihilism, e.g. Friedrich Wilhelm Nietzsche.

Finally, a Leftist School of philosophers emerged with figures such as Karl Marx and Friedrich Engels.¹⁴

The existentialism of Kierkegaard and the atheism-nihilism of Nietzsche both provided the capstone to the modern project and laid the foundation for postmodernism which in some sense is a reaction to the incoherence of Enlightenment rationalism. With the modernist position that being does not transcend consciousness (being is posited by consciousness), any subjective foundation which is achieved can be the object of a further more radical subjective foundation. In his commentary on G.K. Chesterton’s *Orthodoxy*, Woods points out that:

Chesterton rightly discerned that Nietzsche was the ultimate exemplar of the turn to the subject that began with Kant—indeed, that he would be the philosophical father of the postmodern and irrationalist century to come. Though in 1908 Nietzsche had just recently been translated into English, Chesterton saw immediately that he would inaugurate the triumph of will over reason. With remarkable acuity, Chesterton goes to the heart of the matter: “Will, they say, creates. The ultimate authority, they say, is in will, not reason. The supreme point is not why a man demands a thing, but the fact that he does demand it. . . . They say choice itself is the divine thing.” Whereas the real was once the rational, it is now the chosen and the felt.¹⁵

While the medieval philosophers gave pride of place to metaphysics, i.e. speculative access to being, and the modernist preferred ethics, i.e. practical access to meaning, the postmodern philosopher believes that aesthetics is most important. By

emphasizing style, they deny meaning and seek a flight from being or truth. In the encyclical *Fides et Ratio*, our late Holy Father summed up very well the postmodern position in his critique: "...the time of certainties is irrevocably past, and the human being must now learn to live in a horizon of total absence of meaning, where everything is provisional and ephemeral."¹⁶ By proposing a false opposition of transcendence and immanence as contradictories as opposed to contraries, postmodernism falls into an inevitable nihilism – something obviously contradictory to the essence of Christianity.

One can see in this period of about 500 years the tragic evolution away from the Catholic understanding of faith and reason as complementary ways of knowing. First, faith was reduced to a blind act of the will. Next, faith was demoted in importance because God was not considered to be an object of reason. Finally, reason was abandoned and the ability to know truth was called into question. All that remained was the will of the (atheist) individual. With such a state of affairs, how can science and religion be understood as compatible?

3. Christianity and Science

Not surprisingly, one of the so-called "master narratives" characteristic of postmodernity, originating with Enlightenment thinkers, is that the significance of religion declines as scientific knowledge advances. This narrative is based on the presumption that the Christian religion is a mythological one. In fact, the situation could not be more to the contrary. Unlike the pagan religions of classical antiquity, e.g. ancient Egypt and the Far East, Christianity does not seek to explain the physical phenomena of the material world as a dramatic struggle between warring gods and goddesses, i.e. μῦθος (myth). The created world can be understood through the God-given gift of reason. For

He who created it is Reason, i.e. λογος (logos), Himself. This insight has great implications. In the words of St. Athanasius:

For if the movement of the universe was irrational, and the world rolled on in random (i.e. indeterminate) fashion, one would be justified in disbelieving what we (i.e. Christians) say. But if the world is founded on reason, wisdom and science, and is filled with orderly beauty, then it must owe its origin and order to none other than the Word of God.¹⁷

The master narrative is also not supported by empirical evidence. According to David Martin, “In terms of cross-cultural comparison, countries at roughly the same level with regard to scientific advance have religious profiles pretty well across the complete range.”¹⁸ Commenting on this phenomenon, Rev. Richard John Neuhaus opined that:

It is also the well-established case that natural scientists and people working at the edge of technological advances tend to be more religious than those in the humanities and social sciences. One problem is that, among academics in what Peter Berger calls the global faculty club, assumptions about secularization are driven by the intellectual history of ideas, with slight attention being paid to what persists in being the real world.¹⁹

Martin concludes his article stating that

If I were an atheist anxious to disturb the faith of intelligent young friends, I would recommend a course in biblical criticism, or in psychobabble and sociobabble, or, best of all, a vigorous drench in romantic literary *Weltschmerz*. But not, definitely not, a bracing course in astrophysics. They might too easily suppose they were tracing ‘the Mind of the Maker.’²⁰

In *Religion and the Future of America*, particle physicist, Stephen Barr, illustrates that the real problem *vis-à-vis* the relationship between science and religion is not conflict, but estrangement:

If you are saying there is a conflict, you are saying that there are truths asserted by religion and truths asserted by science that are in logical conflict with each other. Now, I can speak only as a Catholic. I ask myself: Are there doctrines of Catholicism—authoritative, binding teachings—which are logically in conflict with well-established scientific facts and theories? I do not know of any, and I have been thinking about such questions for over forty years. I do not think there is a conflict. Now, if you believe in a literal interpretation of Genesis, there is a conflict. If you believe that rain dances cause rain, there is a conflict. Certain religions are in conflict with science, but at least Catholicism is not, and neither

is Judaism. What there has been is not conflict, but estrangement. That is the problem.²¹

One problem that remains today is establishing a common language which would enable interaction between science and theology. During the Middle Ages, Aristotelianism was a philosophical system shared by scientists and theologians which provided a unified world view. However, in the 21st century, scientists and theologians speak separate languages. Also, the effects of living in a postmodern culture have conditioned many intellectuals into the belief that there is an intrinsic conflict between religious belief and scientific inquiry. The *incarico* of Catholics today perhaps is not so much to create a harmony between science and religion, but to show the harmony that already exists.²²

The history of the Church's involvement in science is in fact quite rich. The scientific pursuits of devout Christians, including clergymen, have been motivated by the belief that in studying the natural world, they would know more deeply the author of Creation. Just as studying an artist's painting or an architect's building tells us much about the human author, so too does the study of the natural sciences lead us to understand the Author.²³ Beginning with the mathematic contributions of Pope Sylvester II in the 10th century, to the experimental method of Bishop Robert Grosseteste and Friar Roger Bacon, OFM in the 12th and 13th centuries, and the mathematical physics of Archbishop Thomas Bradwardine, Bishop Nicholas of Oresme, and Cardinal Nicolas of Cusa, senior churchmen have played a decisive role. Later, the astronomy of the 15th century Canon Nicolaus Copernicus, and the great 16th century Jesuit astronomers made lasting contributions to celestial mechanics.²⁴

As Barr points out, even after the Enlightenment, serious Christians continued to be leading scientists:

Almost every great scientist of the seventeenth century, the century of the Scientific Revolution, was deeply devout, including Tycho Brahe, Kepler, Boyle, and Newton. And that was true even through much of the nineteenth century. The two greatest physicists in the nineteenth century, Faraday and Maxwell, were not only devout but unusually so, even by the standards of their day. It is simply not true that modern science built itself in opposition to religion. I do not understand the idea that miracles make genuine science impossible. That statement has been falsified by history, because almost every one of the great founders of modern science from the seventeenth century until the mid-nineteenth century believed in miracles. Not only did that not make it impossible for them to do science; they created modern science. We have to reclaim the story of science and show that conflict between science and religion is a myth, created largely by *anticlerical and atheistic propaganda*.²⁵

In the modern era, the personages of Abbot Gregor Mendel – botanist who became the “father of genetics,” Father Henri Breuil – paleontologist and geologist who became the “father of pre-history,” and Monsignor Georges Lemaître – mathematical physicist who formulated the Big Bang hypothesis are familiar to students of empirical science.

During recent decades, progress has been made through the work of Blessed John Paul II. Toward the end of his life, Avery Cardinal Dulles pointed out that “during the second half of the nineteenth century, it became common to speak of a war between science and religion. But over the course of the twentieth century, that hostility gradually subsided.”²⁶ As an example, Dulles reminded us that shortly after beginning his Papacy, John Paul II established a commission to review the 1633 condemnation of Galileo Galilei.

Although most people have some vague sense of the so-called “Galileo Affair,” few have inquired into the actual facts. The problem which Galileo encountered largely had to do with a misapplication of Aristotelian thought. Given the tremendous insights offered by the use of Aristotle’s *Metaphysics* (which he called first philosophy) for speculative philosophy itself as well as theology, other writings of his were accepted as equally as insightful, including his book, the *Physics*. Unfortunately, certain elements of

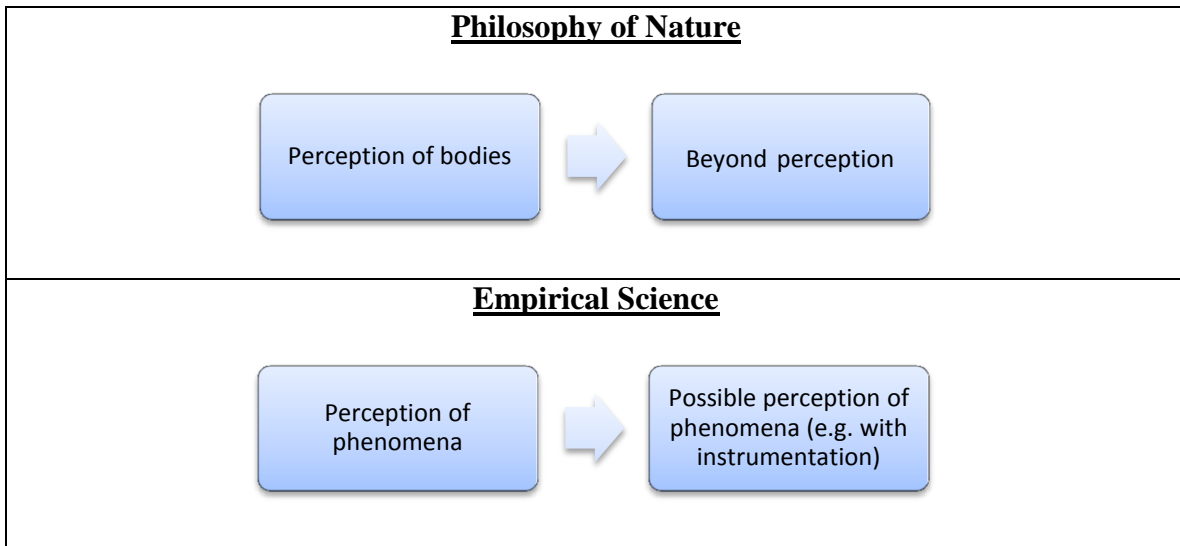
Aristotelian *Physics* are flawed from the point of view of empirical science, such as the conception of the center of the Earth as the center of the universe.

It is important to realize that in 4th Century BC, an educated, determined man could learn the entire corpus of human knowledge. Aristotle was one such man and he was able to develop a unity in the philosophy of science. In his *Physics*, he developed a philosophy of nature (which he called second philosophy) that was a combination of metaphysics as well as empirical science, e.g. his geo-centric model of an eternal universe. With our knowledge of 21st century empirical science, we can dismiss the empirical errors and focus on the metaphysical principles which underlie material beings from a most general perception of reality. These are common to all human beings and sciences in a way equally as valid as in 330 BC. Regrettably, the unity of vision which Aristotle enjoyed in his philosophy of science, despite the errors, has been lost.

The philosophy of nature of Aristotle studies material beings, i.e. bodies, as capable of motion and change. This is a universal characteristic of any body and can be used to build a metaphysics of material beings. Contemporary empirical science takes a different approach and studies phenomena from the point of view of quantity, or more precisely, measure. As a result, the scope of physics today is phenomena which are quantifiable, or measurable, and no longer focuses on material bodies from the point of view of being.²⁷

St. Thomas described the philosophy of nature as the *intelligible essential* knowledge of *ens mobile* (being capable of motion, i.e. change) and modern science as *empirical accidental* knowledge of physical reality. Within the field of modern science, Thomas also distinguishes between the sciences based on mathematical models which are

constructed from empirical data, e.g. mathematical physics, and the “empirio-schematic” sciences which are not highly mathematical, e.g. anatomy.²⁸ The characteristic intellectual movements of the philosophy of nature and empirical science are shown graphically below:



Given this scope, God is not the proper object of contemporary empirical science, i.e. He cannot be perceived with instrumentation. Nonetheless, that does not mean that empirical scientists should deny realities which are not directly perceivable. There is nothing intrinsic to contemporary empirical science which closes it off from another science which is beyond physics, i.e. metaphysics.²⁹ Additionally, there is great potential for the metaphysically rich, Aristotelian philosophy of nature to be an intellectual bridge for exchanges between the empirical sciences and theology.

Returning to the “Galileo Affair,” the Aristotelian geo-centric model seemed to reinforce the view of those who took a literal, “scientific” interpretation of the creation story provided in Genesis. Sadly, when this approach is applied to the Book of Genesis, the profound theological insights which are communicated through its narratives can be

lost, e.g. the stars, animals, plants, etc. in fact all of nature, is part of *creation*, that is, it is created by God, it is not a god (contrary to the pagan understanding of the natural world). Because of the deeply held belief in the 17th century of both the common man and the intellectual (scientist as well as theologian) on the geo-centric model of the universe, Galileo was asked to present both his view and the prevailing one in his book on the topic. However, when his presentation of the helio-centric solar system was, not surprisingly, given a much better treatment in the text, certain officials in the *Sacra Congregatio Romanae et Universalis Inquisitionis seu Sancti Officii* were upset and in the ensuing trial Galileo was convicted of the *suspicion* of heresy, probably more for his disobedience to their request for equal treatment of both positions than for the ideas themselves. Sadly, these events provided fodder for the enemies of the Church in subsequent centuries to accuse her of being “dogmatically” opposed to empirical science.

Striving to move forward, in 1983 Blessed John Paul II organized a conference celebrating the 350th anniversary of the publication of Galileo’s *Dialogo Sopra i Due Massimi Sistemi del Mondo* (Dialogue on the Two Principal Systems of the World). Acknowledging God’s providential hand in all things, the late Pope commented that the entire Galileo affair has helped the Church come “to a more mature attitude and a more accurate grasp of the authority proper to her,” enabling her better to distinguish between “essentials of the faith” and the “scientific systems of a given age.”

Just four year later John Paul II sponsored a study week at Castel Gandolfo on the topic of the proper relationship between science and religion. After reflecting on the topics raised during the conference, he sent a very positive letter to the Jesuit Director of the Vatican Observatory. Cardinal Dulles relays to us that in it, he suggested an approach

of dialogue and interaction between theology and science so that neither discipline would try to displace or ignore the other. In the course of pursuing this goal, both scientists and theologians would realize more profoundly the competencies and limitation of their respective disciplines. John Paul II was very aware of the history in which religious leaders sought to “control” science and scientists sought to discredit religion. Rather, science should purify religion from “error and superstition” and religion should purify science from “idolatry and false absolutes.” In doing so, the integrity of each discipline is preserved and yet they remain open to the advancement of knowledge in the other.³⁰

4. Conclusion

Despite the significant intellectual harm inflicted on Christendom by Luther and subsequent modern and postmodern philosophers, the Catholic synthesis of faith and reason has endured to this day. In the late 20th century, through the exercise of the Petrine ministry, Blessed Pope John Paul II proclaimed this truth and asserted the healthy complementarity of science and religion. Now, in the third millennium, the Church must continue to announce that “all truth is God’s truth” and offer a credible apologetic against both fundamentalist Christians and non-Christians who seek to posit a conflict between science and religion. For in fact, the myth that the Church battles against science lies not in Christianity itself, but in the supposed conflict between the Christian religion and science.

Notes

¹ Ian Ker, *John Henry Newman: A Biography*, (New York: Oxford University Press, 2009), 443-444.

² Ordo Eremitarum Sancti Augustini

³ To reinforce this doctrine, Luther added the word “*allein*” (alone) into his translation of Romans 3:28 for his 1545 German Bible. However, this word is not found in the actual Greek text: λογίζομεθα γὰρ δικαιοῦσθαι πίστει ἄνθρωπον χωρὶς ἔργων νόμου. Interestingly, later Protestant translation did not necessarily retain this addition, such as the 1951 German Schlachter Version. The author would like to thank Peter Van Lieshout for his assistance with this research.

⁴ Eberhard Jüngel and John Webster, *In XV Psalmos Graduum by Martin Luther, 1533*, (quoted in) *Justification: The Heart of Christian Faith* (New York: T & T Clark, 2001), 17.

⁵ Although some scholars assert that Descartes’ philosophical education was contaminated by the nominalism of Ockham, a common problem in that era. See Richard John’s description at http://faculty.arts.ubc.ca/rjohns/descartes_rationalism.pdf.

⁶ Roger Ariew, “Descartes and Scholasticism: The Intellectual Background to Descartes’ Thought,” *The Cambridge Companion to Descartes* ed. John Cottingham, (New York: Cambridge University Press, 1992), 65.

⁷ Nancy Leveson, *Engineering a Safer World* (book draft March 26, 2011), 53.

⁸ Julián Marías, *History of Philosophy*, (New York: Dover Publications, Inc., 1967), 213

⁹ “Descartes prepares himself to think that everything is false, but he finds that there is one thing which cannot be false: his own existence. ‘While I wished to think thus, that everything was false, it necessarily had to be true that I, who was thinking this, was something; and, observing that this truth – I think, therefore I am – was so firm and so sure that all the most extravagant suppositions of the skeptics were incapable of shaking it, I judged that I could accept with a scruple as the first principle of the philosophy I was seeking.’” Quote from Julián Marías, *History of Philosophy*, 215.

¹⁰ According to the followers of Descartes, “An idea is not merely something which occurs to man; nor is it something which man thinks and which must *coincide* with reality. It is reality itself, *seen*.” Quote from Julián Marías, *History of Philosophy*, 218.

¹¹ “‘Esse or ‘to be,’ is something else and much harder to grasp because it lies more deeply hidden in the metaphysical structure of reality. The word ‘being,’ as noun designates some substance; the word ‘to be’-or esse-is a verb because it designates an act. To understand this is also to reach, beyond the level of essence, the deeper level of existence. For it is quite true to say that all that which is a substance must of necessity have also both an essence [nature] and an existence. In point of fact, such is the natural order followed by our rational knowledge: we first conceive certain beings, then we define their essences, and last we affirm their existence by means of a judgment. But the metaphysical order of reality is just the reverse of the order of human knowledge: what first comes into it is a certain act of existing, which because it is this particular act of existing, circumscribes at once a certain essence and causes a certain substance to come into being. In this deeper sense, ‘to be’ is the primitive and fundamental act by virtue of which a certain being actually is, or exists (...) ‘to be’ is the very act whereby an essence is.” Étienne Gilson, *God and Philosophy*. 2nd ed. (New Haven: Yale University Press, 2002), 64.

¹² Victor Velarde, “Modern Philosophy” In *Course Notes*, 2008

¹³ Benedict Ashley, “Proposed Dominican Philosophy Guide,”

<http://www.domcentral.org/study/ashley/guide/dominicanguid.htm>, Accessed on March 27, 2011.

¹⁴ Victor Velarde, “Modern Philosophy” In *Course Notes*, 2008.

¹⁵ Ralph C. Woods, “Orthodoxy at a Hundred,” *First Things* (November, 2008), 42.

¹⁶ John Paul II, *Fides Et Ratio*, (Vatican: 1998), §91,

http://www.vatican.va/edocs/ENG0216/_INDEX.HTM, Accessed October 26, 2008.

¹⁷ St. Athanasius, “Discourse against the Pagans” (quoted in) *The Liturgy of the Hours*, Volume 3 (1974), 67.

¹⁸ David Martin, “Does the Advance of Science Mean Secularisation?” *Scottish Journal of Theology* Vol. 61, no. 1 (2008): 51.

¹⁹ Richard John Neuhaus, “While We’re at It,” *First Things* (December, 2008), 59.

²⁰ Martin, “Does the Advance of Science Mean Secularisation?” 63.

²¹ Stephen Barr, quoted in “While We’re at It” (Excerpt from *Religion and the American Future* by Aei Press).” *First Things* (December, 2008), 64.

²² Ibid.

²³ See Romans 1:18-22

²⁴ Joseph Laracy, "Priestly Contributions to Modern Science: The Case of Monsignor Georges Lemaître," *Faith* Vol. 42, no. 2 (2010): 16.

²⁵ Barr, "While We're At It," 64

²⁶ Avery Cardinal Dulles, "God and Evolution," *First Things* (October, 2007), 19.

²⁷ Email conversation with Victor Velarde, March 28, 2011.

²⁸ Benedict M. Ashley, "The River Forest School and the Philosophy of Nature Today," *Philosophy and the God of Abraham* ed. R. James Long, (Toronto: Pontifical Institute of Mediaeval Studies, 1991), 5.

²⁹ Email conversation with Victor Velarde, March 28, 2011.

³⁰ Avery Cardinal Dulles, "God and Evolution," *First Things* (October, 2007), 19.