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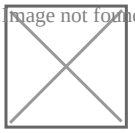
The Roots of the Problem of Disconnect between Christianity and the Scientific Community [3] (Archbishop Lazar Puhalo)

Ξένες γλώσσες / In English



As the universities became more and more powerful, ecclesiastical authorities sought to limit their scope — particularly the authority of the scholars. The Latin Church eventually condemned many of the leading scholars in the universities for their «vain search for knowledge simply for the sake of knowledge,» and this condemnation rings down to us in words we still hear from neo-Scholastics and fundamentalists. Moreover, in the «school» not only clearly religious ideas which varied from legally defined doctrine were considered heresy, but the idea was conceived that authorities could judge heresy in *all* fields and establish «correct belief» in art, science, law, religious philosophy, and thought in general.[i] This prerogative was eventually taken over by the hierarchy when they struggled to curtail the intellectual power and authority of the universities by fragmenting the curricula and reducing the authority and intellectual freedom of the scholars.[ii]

In the midst of this era, Roscellinus *(11th cent.)*, Duns Scotus *(+1308)* and William of Ockham *(+1347)* laid the foundations of the nominalist movement, which in turn helped lead into the «natural philosophy» which moved toward modern science. Roscellinus, at the end of the 11th century, broke the bondage of Augustine's teaching that individual, material objects were only shadows of an eternal idea. Roscellinus incited the famous debate about «universals» and focused examination on individual, material objects in themselves, as what they are in actuality, rather than as symbols or images of an idea. Abelard *(1079-1142)*, the old *«rhinocerus indomitus,»* would take this further still by refuting Roscellinus' contention that «universals» were merely abstractions or names. Ultimately, this liberation from the bondage of Augustinianism turned examination and observation toward particulars and gave momentum to the development toward scientific method and thence to modern science. I suggest that modern science unfolded out of the nominalist movement as it developed. One might suggest that all modern scientists are nominalists (with some notable exceptions such as Newton). The controversies of this era further reinforced the idea that unacceptable academic

«errors,» including those perceived in the field of science as well as social movements, could be judged as actual «heresies.» Dr Herbert Butterfield[iii] makes a profound case that the breakthrough in the concept of motion (the gradual passage through the idea of impetus[iv] to the theory of inertia) is pivotal in the development of modern science. Of course, the advent of quantification, particularly the quantification of time, also had a powerful impact. Both the development of the concept of motion and the quantification of time were also sources of the mechanistic view of the universe held in antique physics. It was probably also one of the greatest sources of concern to Scholastic religious philosophers. From a metaphysical point of view «movement» was defined as passing from the potential to the actual, where later science would define «movement» as matter in motion. Both the science and the religious philosophy of the Scholastic era formed a basic idea from Aristotle's «concentric circle» cosmology that the universe is static deterministic. At one level, the Scholastics thought that the heavenly bodies were moved by various forms of spiritual beings[v] — perhaps the archons which Gnostics imagined tended the «toll booths» between these concentric astral planes. The advent of sounder knowledge and truer concepts of motion abolished all such metaphysical and superstitious notions. Modern science would view the universe (as with all nature) as in the process of developing. I would suggest that Orthodox Christian theology sees the universe simply as unfolding according to the eternal will and plan of God. The processes involved in this are not matters of philosophical or even theological speculation, which might come into active conflict with scientific discovery. Rather the process is accepted as a matter of faith and trust in God, and made more comprehensible by means of science.

Eventually, Augustinian Platonism reacted to the Aristotelians and it is one more of those curious ironies of Latin Christianity that the great minds of the West in this era spent much time debating which of the two pagan philosophers, Plato or Aristotle, was the best basis for Christian theologizing.[vi]

Herein lies the basis of the fear of modern science which haunts neo-Scholastics and fundamentalists[vii] (including the ones who are in the Orthodox Church), and leads them into their unnerved heresy hunting in developments and new theories in the hard sciences.

During the entire era of the shaping of the medieval «awakening» and renaissance, Western theology, as with all other intellectual pursuits, was rooted in Aristotle (and Plato). Science, still functioning in the realm of philosophy, was also rooted in the thought of these two philosophers (primarily in Aristotle). Indeed, it was not until our present century that Einstein's paper on Brownian Motion finally

divorced the atom from the philosophical realm of the ancient Greeks. Theology in the West, and especially for the Scholastics, had become a systematic philosophy or «science» of religion and ethics, very much overdefined and in bondage to legalism.[viii] As they developed, science and theology were in tandem. Both were, essentially, departments of Aristotelian (and eventually also Platonistic) philosophy. Any breach of this harmony was considered dangerous and heretical. Thus, when Bruno,[ix] the brilliant, if erratic, disciple of William of Ockham and Erasmus, dared to venture toward authentic science, and strive for a more accurate knowledge of the solar system, he paid the supreme price. When Galileo made irrefutable discoveries about the solar system that conflicted with the Biblical interpretations of Scholastic fundamentalism and upset the artificial tandem of a much repressed and suppressed science, he was quickly reminded of Bruno's fate[x] and forced to renounce truth in deference to dogmatized ignorance.[xi] The question of truth was of no consequence; what mattered was the maintenance of this pseudo-harmony.[xii]

The pursuit of truth and knowledge could not be manipulated and repressed forever. Philosophy may have been the parent of science[xiii] but, eventually, science diverged from medieval philosophy, largely because developments in technology (such as telescopes and microscopes) made it possible to actually look at things rather than speculate about them, and because of the development of the «scientific method.» Science was no longer a prop for Aristotelian and Platonistic religious philosophy, Scholastic systems and fundamentalist scriptural interpretation. Meanwhile, since Western theology had long since ceased to be theology in the Orthodox Christian or patristic sense, it could not cope with the breach of its tandem. It remained a slavish captive of dogmatized philosophy, connected inextricably to the principles of Aristotle and Plato, and to a crude fundamentalism. Since science could no longer be manipulated to affirm such principles, it now began to be seen as an enemy. The principle of judging scientific developments considered «not theologically sound» as heresy had, as mentioned above, already been established in the Scholastic era.[xiv] Nevertheless, we must be cautious in our critique of this era, because it had a profound positive aspect that needs to be appreciated. Our main criticism regards the theological distortions and corruptions that settled deeply into the Western consciousness in the Scholastic system. This system shaped the philosophical and religious vocabulary and mentality in both the Latin and Protestant worlds in a seriously negative way.

At the same time, the Scholastic movement restored in Europe a systematic way of thinking about and approaching the cosmos which would never take root in Byzantium. Ultimately, it was the Scholastic pursuit that made the development of modern science possible, while at the same time it set up the future conflicts that

would arise between science and religion. Scholasticism must be given credit for the systematisation of thought in a focused way that could lay the foundations of modern science. For all the early accomplishments in medicine and mathematics that unfolded in the Eastern Roman Empire — Byzantium — modern science did not develop there, and the other streams of great intellectual enterprise that had once shown such promise in Constantinople simply faded away. This was due, in part, to the enormous amount of energy that had to be expended on defence against the waves of barbarians, a defence that had to continue in the East long after such matters had been settled in the West. The three great Eastern empires, Byzantium, Persia and the Arabs, sapped so much of each others' energies in mutual warfare that all of them prepared for their own demise and subjugation by the Turks. It was not only these distractions, however, that crippled the scientific and intellectual development in the East. The mindless ritualism of the state government, the subtle legalism within the Orthodox Church and the self-centred and consuming concern with rank and privilege both within the state and the Church, further hindered the development of science, medicine and other intellectual fields in Byzantium. Even to this day, one of the greatest needs in the Orthodox Christian world is to be liberated from the shadow of Byzantium. While the true apostolic faith has been diligently maintained in the Orthodox Church, almost all the problems and contentions that beset the Church today result from our continued bondage to Byzantium. Paradoxically, the preservation of sound Christian theology in the East is the factor that makes possible a genuine and fruitful dialogue with modern physics.

With due appreciation for the positive aspects of Scholasticism, let us examine, in the context of our discussion, the problematic aspects of it.

This article was originally published as the "The Roots of the Problem" (Chapter Two), in Archbishop Lazar's book The Evidence of Things Not Seen (Synaxis Press, 2007). It is posted here with permission.

[i]. It is not that the thinkers of this era were opposed to science per se. They made some great accomplishments, particularly in systematizing thought (see Crombie, A.C., ***Augustine to Galileo: the History of Science, A.D.400-1650***, Harvard University Press, Cambridge, Ma., 1980). The problem was one of control and the desire to shape science according to religious philosophy, and establish dogmas in science which would artificially conform to Scholastic religious philosophy.

[ii]. The problem was not a want of scientific interest in the West, but the fear the

Scholastic fundamentalists had of science, which they sought to control artificially and manipulate by Aristotelianism. Byzantium was not all light and progress either. There were long periods in which there was a dearth of creativity in literature and science, sometimes in art also. This happened toward the end of the empire. It was, however, due to the lethargy of an elderly nation bogged down in almost senseless state ceremonial, and not a constraint placed by the Orthodox Faith or the state. Orthodoxy never opposed learning for the sake of learning, and the correspondence between some of the Eastern Roman (Byzantine) churchmen and Arab intellectuals clearly demonstrates this openness.

[iii]. ***The Origins of Modern Science***, Free Press-Macmillan, London/NY, 1968, Ch.1.

[iv]. The term *impetus* seems to have appeared in the Scholastic era, however the theory of impetus originated in 6th century Byzantium with the scientist/philosopher John Philiponos, in his critique of Aristotle's theories relating to the motion of projectiles.

[v]. It should not be supposed that this referred to angelic powers in any Christian sense. The idea that the various spheres were physically moved by spiritual intelligences was pagan and pre-Christian. Before they discovered the real cause of the motion of the heavenly bodies, some philosophers and early investigators did, in fact, convert these pagan «intelligences» to angels in their own minds and works simply because they had no other explanations at hand, and had received the idea through Aristotle. It should not, therefore, be thought that earlier thinkers accepted these ideas «stupidly.» They were using whatever «information» they had at hand. The problem was the *dogmatization* of antique philosophical theories and their resistance to the proofs that matters were otherwise constituted.

[vi]. Among the odd twists of the early Scholastic era is the contradiction over Averroës. The Scholastics revered this philosopher, who was born and raised in Spain, as the «master» of Aristotelian thought. Nevertheless, Averroës rejected the idea of personal, natural immortality. The Scholastics, in order to preserve their own heretical understanding that man is *by nature* immortal, laboured much to demonstrate that Aristotle agreed with them and that Averroës had misinterpreted Aristotle on this point. The difficulty of the Scholastics over this subject is likely rooted in the immense popularity of Plato's *Timeus* and *Phaedo* which had informed the Western idea of the relationship between soul and body. I do not recall what the Eastern-born Avicenna thought about this subject, but the Orthodox

Christian teaching is that man is immortal by grace, as a bestowal from God, and not by his nature.

[vii]. We specify Scholastics and fundamentalists because not all «religious» people of any Latin, Protestant or Orthodox jurisdiction are in such bondage and darkness. Some Protestant denominations are, in this respect, quite enlightened, as are many Roman Catholic thinkers. However, this writer has observed that often enough, among the Protestants in particular, an opening to modern physics and cosmology often inclines them toward a form of pantheism.

[viii]. I am aware that there have been, and are, especially at the present, «theologians» within the Orthodox Church who have theologized in exactly this philosophical manner (Androutsos, for example). However, part of the purpose of this work is to suggest why that is wrong.

[ix]. Giordano Bruno *(1548-1600)*. Bruno built intuitively on the work of Copernicus. Eventually, the dark ignorance and fanatical fundamentalism of ecclesiastical authorities pushed him into a clearly heretical position, which grew more so as his frustrations grew. Bruno, it must be said, was more a speculative thinker who pursued intuition rather than practising careful science. The Latin Church rightly removed Bruno from communion (because he actually had become a pantheist), but then murdered him on 17 February 1600.

[x]. The nearest incident I can recall in Byzantium was the case of Michael Glykas. He was rightly or wrongly accused of entering into the practice of magic through his interest in the physical sciences. A teacher of hermeneutics, his long life spanned most of the 12th century. In 1159, he was condemned and placed in monastic confinement, where he spent the rest of his life.

[xi]. And let us recall that it was only in our own lifetime that the Latin Church finally admitted that Galileo was correct, and pardoned him. I am not certain if they actually «cleared him» of the charge of heresy, but at least they did pardon him for having been correct.

[xii]. In later times, the German philosopher Nicholas of Cusa *(1401-60)* thought that science could actually help us understand the nature of the Holy Trinity. Using his idea of the «coincidence of opposites», he was convinced that mathematics, which dealt with pure abstractions, could explain the Trinity. Such was the idolatry

of the day.

[xiii]. Philosophers were always scientists in one way or another, and doubtless scientists will always be philosophers. Science has diverged from philosophy but has not become divorced from it. See, e.g. Foster, David, ***The Philosophical Scientists***, Marlboro Books, N.Y., 1985. As an example of the interplay, the philosopher Spinoza *(1632-1677)* began his career as what we would now call a «lab tech.» He was a lens grinder in Amsterdam who worked with optical devices such as telescopes and microscopes at a time when these instruments served for breakthroughs in science. Contemplating the findings revealed through these instruments, Spinoza was given to pondering the relevance of universal macrocosms and microcosms. His writings yielded a great monistic system built on scientific inference regarding the nature of ultimate truth. Doubtless, Baruch Spinoza's earlier rabbinical studies, which formed a theological mind in him, had very much influence on the development of his philosophy, though he ultimately became a pantheist and was excommunicated by the Synagogue. Later, science would avoid some of the problems thus created by striving to maintain a logical and necessary «values neutral» approach to science.

[xiv]. In the realm of the natural sciences, the spirit of Aristotelianism prevailed. Aristotle had written on the essence of natural mechanisms, but he favoured the search for truth in philosophical processes rather than in experimental ones. It was Aristotelianism that formed the dogmatized canon of «scientific fact,» or at least the canon of acceptable thought.