“It is not just interesting to know what Maximus [the Confessor] thought about our subject; we need to try to reinterpret his ideas in the light of what we now know about the cosmos through the advances of modern science. For Maximus, like the other Fathers of the Church, took for granted the scientific wisdom of his day and readily made use of it.” (A Louth, Toward an Ecology of Transfiguration: Orthodox Christian Perspectives on Environment, Nature, and Creation, Kindle Loc. 1401-4)

One insightful way to understand a culture through its history is to look closely at the culture through the lens of one particular aspect of society. That is the approach of Efthymios Nicolaidis and Susan Emanuel in their monumental study, Science and Eastern Orthodoxy: From the Greek Fathers to the Age of Globalization. The task was daunting for it covers over 1600 years and looks at not one culture but a series of organically related cultures. The book moves from the newly Christianized Roman Empire the Fourth Century which morphs into the Greek Byzantine empire all the way through the Turkish conquest of Byzantium to the rise of Russia and the modern Greek state.

And, while the book is using “science” as the lens through which to read Orthodox history, one has to acknowledge even that lens morphs over time. What we think of as science today has no exact equivalent in the ancient world which is why we consider those cultures as “pre-scientific”. For what becomes obvious is that for much of Greek Orthodox history the Orthodox thought philosophically about science; so what one encounters in much of Orthodoxy’s history is how the Greek Orthodox related to philosophy, nature, science and Hellenism. Additionally it becomes obvious in the book that “Eastern Orthodoxy” means everything from Byzantine to Greek to Hellenism to Orthodoxy. One other factor is that because there was no sense of the separation of church and state or a separation of secular and religious in Byzantium it is most difficult to discern what attitudes were held mostly by the Emperor and ruling class and which were really religious attitudes towards philosophy, nature and science.

I think it is fair to say there is no one consistent, monolithic attitude of Eastern Orthodoxy toward “science.” The thinking changed through history depending on who the Emperor was and what was happening in the world around the Byzantine Empire. The Church Fathers themselves certainly do not agree on every issue, especially issues which they viewed as not absolutely central or essential to theology (for example St. Basil believed the moon shone with its own light, whereas
his brother, St. Gregory completely disagreed and believed the moon reflected sunlight). As Eastern Orthodoxy itself experienced the massive historical changes in that part of the world, its attitude toward philosophy, natural science and even its own past underwent immense change. The early Patristic age for example saw Hellenism as paganism, whereas in later Byzantine History as the Empire shrank in size, the Greek Orthodox saw themselves as the inheritors of Hellenism and actively promoted it. They tended to see “science” not as a method to understand the universe but as their cultural inheritance from ancient Hellenistic thinkers. They were very proud of this inheritance to the point of chauvinism and therefore resisted modern science as neither Hellenistic nor Greek and thus of little value.

“The preponderant place occupied by secular knowledge at the Nicene court would have a major influence on the cultural identity of Byzantium. The word Hellenic (i.e., Greek), which had had negative connotations in Christian Byzantium, acquired under [Byzantine Emperor Theodore] Laskaris (d. 1222AD) a positive significance. The emperor regarded his people as descendants of the ancient Hellenes, his army as the Hellenic army, and Asia Minor as the Hellades. Culminating this return to the Hellenic ideal, Theodore compared Nicaea to Athens during its golden age, even maintaining that it surpassed it, since Nicaea possessed both secular and Christian philosophers. Theodore’s use of the term philosophers to designate theologians must have been shocking for the Orthodox, who made a clear separation between philosophy as a secular and often profane science and theology.” (Kindle Loc. 1787-93)

Nicolaidis and Emanuel’s book is impressive just on the amount of research it must have taken to compile all the information in the book. Just looking at “Eastern Orthodoxy” and science over a 1600 year history is mindboggling. They are to be commended for their work. The relationship between Orthodoxy and “science” is of particular interest to me personally, though I will say that ultimately I found the 4th Century Patristic writer’s engagement of “science” to be far more creative and interesting than later Eastern Orthodox leaders. Many of the later Orthodox writers tended to mostly compile and repeat the earlier Patristic teachers. The later writers lived in a Byzantine universe that was continually shrinking, literally and in terms of its intellectual engagement with ideas from beyond its borders. Not only were the Eastern Orthodox losing importance in the world dominated by Islam and the Christian West, but the radical worldview which came about through scientific discovery left the Eastern Orthodox frozen in the distant past of a long disappeared worldview. Thinkers both Islamic and Western might have admired the glories of ancient Hellenism, but the modern scientific paradigm had little use for ancient Hellenistic abstract theories as it became increasing focused on the empirical, materialistic cosmos.

In this blog series, I will take a look at the book, Science and Eastern Orthodoxy: From the Greek Fathers to the Age of Globalization (Medicine, Science, and Religion in Historical Context). It is a most fascinating way to read Byzantine / Hellenistic / Greek Orthodox cultures. My interest though is more limited than the scope of the book. I am more interested in how modern scientific ideas were or might have been perceived by Orthodox writers. I have a mindset which is quite willing to distinguish Orthodoxy from its imperial, Hellenistic, Greek or Byzantine cultures. Of course, this can’t be totally done for Orthodoxy indeed was wedded symphonically to its cultures and has no incarnation apart from them.
First, a look at St. Basil the Great and the Nicene, Cappadocian attitude toward understanding the created order.

“Basil wished simultaneously to incite the public to lift its gaze from the created world to the Creator, to codify a story (Genesis) that was foreign to the tradition of Greek cosmology and make it concordant with the image of the world of his intellectual milieu, and finally to combat the “external” enemies of Christianity (pagans, Manichaeans) as well as the “internal” enemies (adepts of Arianism and Christian Gnosticism).” (Kindle Loc. 495-98)

The early Patristic writers were engaged with the scientific and philosophical debates of their age. They were thoroughly familiar with the philosophies at work in their culture which was in the Fourth Century not limited to Christianity but included pagan and heretical ideas. The Orthodox actively debated the issues and did not live in fear of competing ideas, even when they were in the minority.

“By the time of his death, Basil, bishop of Caesarea, the first among the founding fathers of Orthodox dogma, intransigent combatant against the pagans but also “heretic” Christians, a brilliant orator, prolific writer—in short, an activist of the Christian Church—had laid the foundations of the Christian conception of nature and consequently defined the relations between science and faith. His affirmations were incisive, for “the truth is one,” and it does not like contradiction. One year later, his brother Gregory returned to several of Basil’s theses, which, when he found them in contradiction with the scientific knowledge of the era, he put them on the right path of natural philosophy.” (Kindle Loc. 812-19)

In the above comments we see both that the Fathers were not hesitant to disagree with one another when it came to philosophical and scientific issues. They respected the ‘secular’ scientific knowledge of their time. As we just read St. Gregory was willing to contradict his older brother and to rewrite some of Basil’s ideas to make sure they conformed to the ‘scientific’ knowledge of Gregory’s day.

“Despite their sometimes literal reading of the Bible, the Cappadocean fathers Basil of Caesarea and Gregory of Nyssa belonged to the school of Alexandria. Their interpretation of Genesis, as we have seen, incorporated a system of the world that came from Greek and Hellenistic culture: a geocentric universe in the form of a sphere and a spherical earth. In contrast, the Hexaemerons associated with the school of Antioch relied on a system of the world coming from Asiatic cultures: universes shaped in diverse forms and a flat earth. Throughout the Middle Ages, Orthodox scholars tended to embrace the cosmology associated with the school of Alexandria. The leading Byzantine mathematicians and philosophers adopted it, as did the royal court and most of the patriarchs. By contrast, the cosmology of the school of Antioch became the popular cosmology of the Middle Ages, propagated both orally and in such written works as the “Lives of the Saints.” (Kindle Loc. 826-33)
So within the very broad experience of Christianity in the Byzantine world there were different schools of thought about scientific knowledge. In any one age, the Fathers accepted as factually true different philosophical assumptions about the universe. There was no one monolithic Patristic view of ‘science.’

“In order to respond, as Basil did, to the Manichaeans, John [Chrysostom] began by supporting the fundamental thesis of Christian cosmology: matter did not exist before the Creation. But in order to explain the first verse, “In the beginning, God created the heaven and the earth,” he departed from the Cappadocean fathers to claim that God first created heaven and then laid out the earth underneath it. He created the roof first and then the foundations, for he was capable of doing something that men could never do. John’s cosmology was simple: a flat earth covered by a single heaven in the form of a vault. Heaven is immobile; it is the stars that move, and their movement serves to determine time. We are far from the universe of the Cappadocean fathers, which we recall was composed of several heavenly spheres (which by their movement entrain the stars) and a spherical earth.” (Kindle Loc. 841-48)

Thus from the 4th Century alone we see the Orthodox writers actively engaging secular culture and accepting differing scientific assumptions based on the philosophies and philosophers they each personally accepted. They believed there were truths about the created order which were observable and indisputable, which is the basis for modern scientific thinking as well. The early Christian Fathers however accepted these truths from ancient philosophers, whom they considered indisputably accurate, whereas modern science says truth should be verifiable through the scientific method of testing theories. The Greeks as the book points out however were committed to the abstract ideas of Hellenistic Philosophers and were not very interested in testing theories nor in the instruments which could test theories.

In the 4th Century, many of the Patristic writers were trained in the “science’ of their day (trained in philosophy and very familiar with traditional ideas of nature and science) and they actively engaged in the cultural debates about scientific knowledge. This situation would change over time in Byzantium.

“The reversal of this favorable situation for the sciences began during the reign of Emperor Justinian, from 527 to 565. Justinian and his wife, Theodora, were of humble origin and surrounded themselves with men of the same class; they displayed little interest in secular knowledge and quarreled with the aristocrats who did. Unlike Constantius, Justinian was not an intellectual, and he had not pursued studies during his youth as was common among the sons of the aristocracy. Wanting to reform the empire, he promulgated the famous Codex Justinianus in 529, which stipulated that “those who do not follow the catholic and apostolic church and the orthodox faith,” meaning heretics, Jews, and pagans, were not authorized to become civil servants of the state. Consequently, they could no longer, under cover of any form of teaching whatsoever, induce good souls into error.” (Kindle Loc. 1169-75)
The Christianization of the Empire brought with it a reaction against ideas that didn’t originate in Christian sources. Concerns for the Kingdom of God resulted in a loss of interest in ideas which were focused on this world.

**Emperor Justinian**

“But ... for the school of Athens: testimony speaks of the interdiction in 529 of the very teaching of philosophy. More generally, it appears that Justinian decided not to pay the salaries of science teachers, who had been formerly paid by the state to teach in the towns of the empire. Although the probable reason for this refusal to pay them was that Justinian needed revenue to finance his prestigious construction projects, such as the Church of Saint Sophia, the result was disastrous for the sciences. Without the prestige of education financed by the state, they were quickly dismissed by the dominant Christian ideology as useless pagan knowledge and abandoned in favor of endless theological discussions ...” (Kindle Loc. 1179-84)

The dominant thinkers in the Byzantine Empire were Christians and were concerned more with things of the spirit than with the created world. They believed a new world order had emerged – a Christian one which brought them closer to heaven, which was their all-consuming ideal. The Christian mindset came to be that the “natural sciences” were the prerogative of philosophers and not specifically Christian, so they were not of primary interest. The Christians were becoming less interested in God’s world and more focused on God’s kingdom.

**Maximus [the Confessor] (d. 662AD) did not believe that the knowledge acquired by experience was valid, since our senses deceive us. Sensations, said this prolific author, were part of the irrational, and therefore they belonged to the animal part of the soul. It is intelligence that enables people to perceive reality. Maximus distinguished between soul (ψυχή) and intellect (νοῦς). Animals, like humans, have a soul, but only humans possess intellect. But sensations are a part of the soul that is inferior to intellect, and it is with the latter that we approach God and, hence, true knowledge. Maximus, although inspired by Gregory of Nyssa, was above all an ascetic and a mystic; he especially sought union with God. Profane knowledge, although not rejected implicitly, was of little interest to him.” (Kindle Loc. 1237-43)

The prominence of mystical thinking in Orthodoxy nudged the Church toward a more dualistic idea of the cosmos with the “spiritual” holding so much more significance than the physical. Thus interest in the physical sciences waned. However, behind the most theologically oriented debates, the issue of the relationship between the physical and spiritual was always there. Christianity was, after all, based in the incarnation of God: God became flesh in Jesus Christ. Thus the iconoclastic debates were embroiled in disagreements on scientific knowledge.
“When a whole society debates a theological issue so passionately, it is likely to disregard secular knowledge. And the sciences, less useful to the march of the empire than the law, for example, were the first to be neglected. The iconoclasts, basing themselves on a tradition that claimed to be Oriental and placed the divine above everything else, including matter, simply ignored science. Scientific expertise did not interest them because it was a material kind of knowledge that ought to be disdained in favor of true knowledge of the divine. The iconodules, in contrast, identified more closely with Helleno-Latin culture; they could not imagine the divine without material representation of it. For them, the material world created by God was too important to be overlooked. It deserved exploration. The rise to power of iconoclast emperors severely undermined science education.

According to two chronicles of the ninth century, the first iconoclast emperor, Leo III (r. 714–41), gave the order not only to close the imperial university but also to burn it down—building, library, and professors. Although Byzantinists regard this story an iconodule legend, it nevertheless reveals how the iconoclasts were viewed by their enemies. The ascent to the throne of the iconoclast emperors accelerated the slide of science into decadence that had begun under the reign of Justinian. Ironically, the debate over icons, which initially led Byzantine society to downgrade forms of knowledge such as science, after a few decades incited the warring theologians, especially the iconodules, to turn to secular learning to draw arguments against their adversaries. They began studying Aristotelian logic anew, prompting an intellectual revival in the ninth century called Byzantine humanism.” (Kindle Loc. 1263-75)

So theological debates within the Byzantine Empire returned to what is central to Christianity: Jesus is both God and human; the physical and spiritual worlds are not separable. Christians are theological materialists. Yet, the debaters, rarely trained in ‘science’ in this part of Byzantine history, pushed the debates away from scientific concerns.

“The rarity of intellectuals such as John of Damascus (749AD), one of the few who showed an interest in science during the iconoclast period, supports the claim that scientific expertise in this era had sunk to its lowest level since the advent of Christianity. The lack of interest in theoretical science was compounded by practical ignorance. A mediocre scientist, John asserted himself not only in the theological domain but also in politics. In De fide orthdoxa, to justify the submission of people to secular power, he used the allegory of the stars: the moon has a light borrowed from the sun because God wanted to show that there is a hierarchy in the world, that there exist a lord and his subjects. Therefore, one must submit to God but also to those who have power on earth by his grace, and one should not ask questions about where this power comes from, but accept it, thanking God.” (Kindle Loc. 1329-35)
Nicolaidis and Emanuel point out that few Byzantine intellectuals knew much about “science”. The “science’ of the general population was moralizing tales, miracles and the lives of the saints. What knowledge of science they had was founded in “in the school of Antioch’s philosophy of nature from the fourth to the sixth century, and popular conceptions of the world would not change very much in the course of centuries to come.” (Kindle Loc. 1453)

“Both culturally and religiously, Byzantines were very attached to tradition. Change and innovation were not to their taste, and this was visible in science. Since the end of antiquity, neither the education curriculum nor physical theories had budged. Byzantine scholars were even reluctant to accept Islamic astronomy, despite the fact that it was itself founded on ancient Greek astronomy. Science for the Byzantines meant Greek science alone.” (Kindle Loc. 1815-18)

The Byzantine mind became increasingly fixated on Hellenistic philosophy from the ancient past and became increasing rigid in their thinking, often viewing rejecting any science or mathematics not rooted in a Greek past. There were a few exceptions to the trend, so they really stand out in history, but they are exceptions to what was generally happening in Byzantium. For example at the very beginning of the 11th Century, Pachymeres, a churchman

“declared that science protects humankind from folly and that it allows us to approach God and obtain knowledge of the eternal. Referring to the claim of Plato’s Republic that philosophy serves government, he enumerated the applications of the sciences of the quadrivium to military affairs, architecture, the measurement of the earth, secular and religious festivals, agriculture, and navigation.” (Kindle Loc. 2023-27)

The Byzantines resisted the introduction of Arabic numerals, and though they knew of them since the 9th Century, only in the 14th Century do they begin to use them. According to the book, Byzantine scholars rejected the idea of observational verification of theories, continuing to rely on the ancient claims of the Hellenistic philosophers such as Aristotle. Few Byzantine scholars

“were interested in the “practical” side of science, namely, experiments and observation. This bias explains why, unlike contemporary Arabs, they left almost no scientific instruments or accounts of observations of the celestial phenomena that they themselves had predicted. In effect, the only Byzantine instruments that have been conserved to our day are an astrolabe of Persian inspiration, constructed in 1062, and fragments of another astrolabe. Although smitten with astronomy, the Byzantines were prejudiced against observation for two reasons. First, they considered themselves the sole and legitimate heirs of Greek science; thus, Ptolemy was their astronomer. Second, the influence of the rational spirit of antiquity, especially Plato’s, reinforced by knowledge of the world derived from sacred texts, gave them the feeling that observation was a servile and illegitimate thing and that using imperfect instruments was inferior to pure reasoning.” (Kindle Loc. 2143-52)

Thus the very characteristics of modern scientific thinking – observation and tests – were anathema to most Byzantine
Orthodox. Astronomy was popular among Byzantine imperial leaders and intellectuals not as science but more as astrology and efforts to predict the future. Though astrology was condemned by the Orthodox Church Nicolaidis and Emanuel report it remained ever popular even among churchmen. Since there was no separation of church and state, everyone was concerned about the fate of the empire and trying to read signs that might show in which direction God was trending. None of this would qualify as “science” by modern standards, but it was the state of Byzantine scientific thinking as the Empire drew near to its end at the hand of the Turks.

“As we have seen, Byzantine scholars constantly taught, studied, and commentated on Greek science. However, the direct connection between ancient and Byzantine scholarship had been broken during the iconoclast period, which marked the entry of the Byzantine sciences into the Middle Ages. ... During the renaissance of scientific education in the ninth century, Byzantine scholars declared themselves to be the heirs of the ancient Greeks. Little by little, the term Hellene, which had had a negative connotation in the texts of the church fathers because it referred to pagan philosophers, became a positive notion for the erudite; henceforth, it referred to the ancient Greek scholars who built the foundation on which Byzantine science rested. Though sometimes contested, this ancient knowledge became a precious source of national pride. Thus, Byzantines continued the ancient tradition of differentiating between Greeks and barbarians, a difference evidently founded on language, the vehicle of Hellenic culture. Throughout the Middle Ages and beyond, Byzantine scholars regarded the sciences of other peoples (έθνη) as inferior, even bordering on charlatanism. Nevertheless, Byzantine scholars were soon taking an interest in certain aspects of the science of Islam, notably in the “technical” skill of Arab astronomy and its astronomical tables. The prime reason for this interest was that the planetary positions calculated following the Ptolemaic tradition (especially the Handy Tables based upon the commentaries of Theon of Alexandria) were, over time, presenting significant systematic discrepancies. ... Byzantine savants increasingly eyed the Islamic side, if only for practical reasons: the Islamic tables were easier to use. Despite the fact that this science came from “unbelievers,” using Islam’s astronomical tables or its constants was a lesser evil for Byzantine savants. Indeed, the measurement of constants was founded on the observations so scorned by Byzantium, and the tables could be characterized as a simple technique not involving philosophical discussions on the world.” (Kindle Loc. 2466-87)
In the 14th Century Nikephoros Gregoras, a noted astronomer and churchman, recognized that the Byzantine calendar was incorrect and in need of reform to bring it in alignment with astronomical reality. Two hundred years before Pope Gregory XIII pushed the same calendar reforms Gregoras called upon the Empire to correct the calendar.

“A brilliant astronomer, he proposed around 1326 a reform of the calendar. Because of the roughly approximate length of the year (365.25 days) of the Julian calendar used by the Byzantine Empire, the equinoxes were already eight days behind the true equinoxes, something that posed various problems, including determining the day of Easter. Although the context (a renaissance of the sciences, an enlightened emperor) appeared favorable for a change to a more correct calendar, the moment was not propitious. The Orthodox Church, suffering from the shock of the aborted union with Rome and from restlessness among the monks and lower clergy, refused to endorse the proposed reform.” (Kindle Loc. 2171-77)

Gregoras, who “considered himself heir of both Aristotle and Plato,” was a contentious fellow. He engaged in anti-Latin polemics against Barlaam of Calabria, but then also openly opposed Gregory Palamas and hesychasm. This would prove his downfall as Byzantine Orthodox embraced Palamas and rejected Gregoras who continued to oppose hesychasm until his own death. According to Nicolaidis and Emanuel, Palamas was not opposed to science but rather was influenced by his understanding of science.

“Hesychasts believed that a man through prayer and ascetics could have a vision of God and thus that true knowledge comes from this spiritual effort and not from acquiring secular knowledge. However, the ideological father of this movement, Gregory Palamas (1296–1359), based his ideas on the science of Aristotle and the geometry of Euclid in order to cogitate on locating the centers of the spheres of two elements, earth and water. What this movement seemed to be advocating was far from absolute hostility toward profane science. In effect, the Hesychast leader did not deny the utility of the sciences; he was more distrustful of the place granted to them by Byzantine power, seeing it as one of the causes of the secularization of high clergy.” (Kindle Loc. 116-21)

Nicolaidis and Emanuel note that Gregory Palamas and Thomas Aquinas share one idea in common that in their time was considered scientific, both believed “that the existence of God could be demonstrated, the former by reason and the latter by experience.” In this both rejected the thinking of Barlaam of Calabria who “following Aristotle and Pseudo-Dionysius the Areopagite (late fifth century CE), maintained that theological truths could not be demonstrated.” Thus the debates between Palamas and Barlaam were part of the Byzantine wrestling with ‘science.’ However, the hesychasts were so heavily into mysticism that they turned against the secular scientific side of ancient Hellenism.
“What matters most to Palamas is precisely to show that the ancient philosophers, despite the fact that they described the physical reality of the world, were not able to do so completely and exactly, for they could not accede to the true wisdom that is offered only through the methods of Hesychasm. More than being simply ignorant compared to Christians, Plato, Socrates, Plotinus, Proclus, and Porphyry were under the influence of the devil. Socrates, although judged to excel in wisdom, was possessed his whole life by a demon who had convinced him. For this reason, he taught things contrary to true wisdom, as with his cosmology or, still worse, his ideas on the soul of the world, at least as presented by his pupil Plato in Timaeus.” (Kindle Loc. 2371-77)

As the Christian West was embracing the ancient Greek thinkers and entering into the Renaissance, the Christian East under the influence of hesychasm became increasingly anti-Western. As the scientific mind would emerge from these ideas in the West, Byzantium was distancing itself from the West and these novel scientific ideas. The West would undergo a complete shift in its thinking about science and the solar system, moving from geocentric thinking to heliocentric thinking. The discovery of the New World further eroded trust in traditional ancient philosophic and Christian assumptions. The scientific revolution was accompanied by a whole host of new ideas and paradigms in the West.

Then in 1453, Mehmed the Conqueror captured the city of Constantinople. Endeavoring to pre-empt any efforts by the Christian West to attempt to retake the city, Mehmed and his successors encouraged the anti-Latin sentiments of the hesychasts among their conquered Greek population.

“The hold of the most fervent anti-unionists over the Patriarchate of Constantinople, as well as the inevitable withdrawal of the Orthodox Church after the Ottoman conquest, distanced the church from secular learning. ... the most zealous anti-unionists believed that the Greeks were paying for their sins, including their connivance with the West and their involvement in Hellenistic learning.” (Kindle Loc. 2830-32)

Many in the Orthodox population in their anti-Latin feelings came to reject the new science coming from the West. “Science” was sometimes identified with Latin culture and thus seen as being anti-Greek.

“The sciences and secular learning in general did not figure among the preoccupations of the Orthodox Church from the fall of the Byzantine Empire in 1453 to the start of the seventeenth century. In fact, for a century and a half, the Patriarchate of Constantinople had a policy of teaching only what was useful for the renewal of the ecclesiastical hierarchy.” (Kindle Loc. 2951-54)
After the Turks conquered Constantinople and the Orthodox lands in the Balkans, responsibility for education for Christians in the Turkish empire was overseen by the patriarchs living in Istanbul. Attitudes towards science among the Christian population of the millet followed the policies determined by the patriarchate. As Nicolaidis and Emmanuel note, the centuries following the Turkish conquest were not particularly bright ones for scientific interests among the Orthodox population.

For example, in the first half of the 17th Century, Theophilus Korydaleus encouraged a “revival of the sciences” among the Greek population. However his efforts did not include the ideas of the scientific revolution sweeping Western Europe. Korydaleus like all the Greek humanist was advocating for a return to ancient Hellenistic ideas. “Korydaleus’s ambition was to offer a panorama of Greek natural philosophy as if the Christian religion had never existed.” Korydaleus ignored the Patristic critique of pagan Hellenistic ideas and promoted Hellenistic philosophy as ‘science’.

“Little by little, the hierarchy of the Orthodox Church came around to the idea of teaching ancient natural philosophy independently of the teaching of Creation. This acceptance was prepared by the idea—increasingly widespread in the seventeenth century—that Orthodox believers were the heirs of Greek splendor and learning. This idea was a comfort to the Orthodox of the Ottoman Empire, who felt subjugated to the Muslim state and, at the same time, threatened by the specter of Uniates, meaning Orthodox believers who had converted to Catholicism. Without political power, and wedged between Islam and Catholicism, the Orthodox Church sought support. Because the Greek heritage provided such a support, Greek philosophy could therefore gradually assume its place in the education controlled by the Orthodox Church.” (Kindle Loc. 3069-74)

Seeking comfort in what they saw as the Golden Age of Greek thinking, the Orthodox in the Ottoman Empire embraced ancient Hellenistic philosophy, avoiding the new ideas of science coming out of Western Europe. Not until the middle of the 18th Century did the Greeks begin to consider the heliocentric ideas of Copernicus.

The book tends to be very Greek-Hellenistic in its orientation and gives only slight attention to Orthodoxy beyond the Greek world.

Outside of the Ottoman Empire, the main Orthodox population was in the Russian Empire. From the book’s viewpoint, the Russians having inherited Christianity from the Byzantines, followed Byzantine thinking in many areas of life. The Russians accepted and followed the mystical theology of the Greeks, but did not have the deep abiding love of the Pre-Byzantine Hellenic culture. Nicolaidis and Emmanuel write that “the ancient Greek scientific corpus was almost unknown in Russia until” the 17th Century. Additionally the Russians holding strongly to the mystical tradition were dubious of any scientific culture whether Western or Byzantine. The Russian Orthodox disinterest in scientific knowledge and technology would be confronted by Russian church and secular leaders and intellectuals who became increasingly enamored with Western ideas and alarmed at the backwardness of Russia.
when it came to science and technology. The reforms of Patriarch Nikon and the vision of Emperor Peter the Great both were greatly influenced by Western educational, scientific and technological progress.

And while Western church ideas would come to dominate the Eastern Church leading to what some theologians called a “Western captivity of the Eastern Church”, the Orthodox lagged far behind in scientific thinking as compared to the West. An example in the book of the state of “science” in the Greek Orthodox world is reflected in the comments of Metropolitan Paisios of Gaza who gave a sermon series in Jerusalem. As Nicoliadis and Emmanuel report it:

“Paisios began by comparing the twelve signs of the zodiac with the twelve major festivals of Christianity, showing off his knowledge of astrological signs. In his History of the Condemnation of Patriarch Nikon, he gives a description of Nikon that is based on astrology, palmistry, physiognomy, and dream interpretation.” (Kindle Loc. 3198-3200)

The effects of the discovery of the New World and the new scientific ideas which swept through Western Europe were slow moving into the Orthodox world, according to the Nicolaidis and Emmanuel.

The new science was revolutionary and the Orthodox leadership under the Turks was committed to its ancient Greek roots. Additionally the Turks had no interest in revolutionary ideas of any kind moving through their Christian subjects. The seeds of restlessness were still sown in the Orthodox populations under Muslim domination. Eventually revolution broke out and the Orthodox overthrew their Turkish oppressors. Even so, the Greeks continued to mostly look to their ancient Golden Age of philosophy for scientific ideas and inspiration. In 1895, a Greek philosophy student in a funeral oration which was soon published denounced Western scientific ideas, especially of evolution, as “supreme treason to Greece” and called for the death penalty for anyone teaching such ideas.

As the book points out the ideas which the Greek church advocated regarding science in the modern Greek state usually reflected the ideas of the Greek government. When the conservative government saw “science” as a tool of communism, the church too denounced scientific ideas. The intermixture of church and state which were part of the Byzantine symphony continued in the modern Greek Church experience. For me, this was one of the things disappointing in the book: the the view of the authors was sometimes myopic, reducing “Orthodoxy” to mean “Greek” or Hellenic. The Orthodox experience
worldwide and through history was greater the Byzantine experience. Orthodoxy is not coterminous with being ethnically Greek. So, we read as part of the book’s conclusions:

“The most significant characteristic that differentiates the history of science in the Eastern Orthodox world from what happened in the Latin West (through the nineteenth century) is the East’s continuing pride in its ancient Greek patrimony. Although “Hellene” was synonymous with “pagan,” the Greek fathers based their Creation exegesis on their Greek education; later, Byzantine scholars (most of whom were clerics) regarded it as an honor to be “Hellene.” Greek Orthodox communities of the Ottoman Empire, seeking a national identity, claimed their affiliation with the ancient Greeks. Through the centuries, this affiliation gave rise to a relatively stable relationship between Eastern Orthodoxy and science, during which the Orthodox Church accepted and taught science.” (Kindle Loc. 4208-13)

At least from this book, my impression of the history of the Eastern Church, is that after the early Patristic creative engagement with the pagan culture and an effort to form a particularly Christian perspective on nature and science, the Greek Church slowly reverted to Hellenic ideals. Byzantium through time got reduced to a Greek state, and the Orthodox Church in this state became largely fixated nationally on an ancient Golden Age of Greek thinking. It becomes disappointingly obvious through the book, that it was more fixated on the Greek church’s attitude toward Hellenic culture than it was on an Eastern engagement with ideas of modern science. In the end the book did not provide a great deal of insight into how contemporary Orthodox can deal with the modern worldview in the age of science. The book wants to proudly show that despite a modern Western bias against Byzantine culture, that Greeks engaged “science” throughout their history. While the book’s scope is truly impressive, it did not convince me that the Western critique of Byzantine culture as being seriously deficient in scientific thinking is mistaken. The later Byzantines and the Greek Orthodox of the modern Greek state have been far more interested in promoting a golden age of Hellenic thought than in engaging modern science. In this sense, modern Greek Orthodoxy is not at all like the early Patristic period in which the Orthodox thoroughly knew the scientific debates of their day and actively engaged in those disputes. Rather it appears in the book that the Greek Church is more interested in heralding a nostalgic golden age of Hellenic culture while mostly ignoring the scientific culture that dominates the world today.