

grace to perfect human nature leads Thomas to a different ordering of virtues from that of Aristotle and Maimonides, such that the theological virtues, including charity, are higher than the natural virtues. Bernstein, in this essay, offers the example of looking for intelligibility in the positions of those engaged in discourse as the first step towards a deeper investigation.

The final essay in this collection is by Sheryl Overmeyer, whose “Grace-Perfected Nature: The Interior Effect of Charity in Joy, Peace, and Mercy” returns to an internal dialogue within the *Summa*. In doing so, she develops one of the notable aspects of Thomas’s understanding of charity, which is that charity is a friendship with God that transforms the interior life of the individual such that he becomes more himself and more like God. She focuses especially on joy, peace, and mercy as effects of charity. Spiritual joy is the result of love of God and is possible, although not complete, in this life. It also leads to peace, which is restful activity, not only between persons but within the individual. In doing so, charity makes the person more whole and complete. God’s fundamental posture towards human beings is that of abundant and unmerited love, which is mercy. Charity, which leads us to be merciful, allows us to imitate God’s activity in loving others in an abundant and unmerited way, especially those who are poor and in distress. In considering these interior effects of charity, Overmeyer points out that charity perfects the passions, such that the passions informed by charity contribute to our perfection as an *imago Dei*.

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Aquinas and Modern Science: A New Synthesis of Faith and Reason. By Gerard M. Verschuuren. Kettering OH: Angelico Press, 2016. Pp. 240. \$17.95 paper.

There is a widespread assumption that the discoveries of modern science have made the arguments of a medieval thinker like Thomas Aquinas irrelevant to our understanding of nature. His philosophy of God and ethics might be salvageable, but his view of the physical cosmos—a view that includes geocentrism, unchanging species, and archaic biological theories—would seem to make his thought anathema to contemporary science. Yet, just as Aquinas gained renown by showing that Aristotle’s apparently unorthodox theories could be a source of profound wisdom, in the same way Gerard Verschuuren, an accomplished geneticist and philosopher of science, demonstrates that Aquinas’s thought can be fruitfully applied to contemporary scientific discoveries to help us understand them in a more integrated fashion. In particular, by framing contemporary science in Thomistic terms, he repeatedly shows how reductionist conclusions are intellectually untenable, thereby pointing the reader to the more comprehensive explanations of metaphysics and theology. This integration of science, philosophy, and theology is a welcome remedy to the disintegrative tendencies of the modern university, which fractures reality by placing the facts of science in opposition to wisdom.

Aquinas was not a scientist in the modern sense, and he lacked the specialized data from which contemporary theories are formed. Nevertheless, he is relevant for the philosophy of science, for according to Verschuuren’s operative thesis, “It is obvious that [Aquinas’s] philosophy may not have all the answers to our current [scientific] questions, but his principles remain timeless” (p. 219). This recognition of the fecundity and truth of his metaphysical principles echoes one of the observations of *Aeterni Patris* (1879), which

launched the Thomistic revival: “Moreover, the Angelic Doctor pushed his philosophic inquiry into the reasons and principles of things, which because they are most comprehensive and contain in their bosom, so to say, the seeds of almost infinite truths, were to be unfolded in good time by later masters and with a goodly yield” (§18). Verschuuren’s ample scientific expertise allows him to contribute to this tradition by demonstrating how those seeds continue to bear fruit when applied to the discoveries of evolution, quantum physics, and genetics.

Verschuuren’s goal, to present (as his subtitle puts it) a “new synthesis of faith and reason,” is rather ambitious for this relatively brief book. It is nonetheless an admirable introductory level text. It clearly presents the fundamental principles of Thomistic metaphysics and philosophy of nature, and it gives a lucid overview of the state of contemporary science in both physics and biology. Indeed, given his background in science, his arguments supply in an accessible manner the technical scientific detail often lacking in purely philosophical discussion. Verschuuren bridges these divergent disciplines well. He demonstrates how they illuminate one another and makes both intelligible to students who might lack previous exposure to one or the other of them. While a philosopher may wish for a little more nuance in the way in which certain ideas are articulated—and it is likely a scientist would say the same for that discipline—Verschuuren’s concise integration makes for fine textbook for a philosophy of science course, or for anyone looking to discover a vision of reality that can thoughtfully interpret the increasingly complex modern sciences. Moreover, he has a keen eye for pertinent citations from a broad array of experts in both science and philosophy (Einstein and Hawking, Darwin and Dawkins, Jaki and Polkinghorne and William Carroll) that helps to ground his discussions in the larger debate.

The first five chapters contain a very brief, but reliable, introduction to Aquinas’s philosophical ideas. This begins with a defense of the need for metaphysics and a critique of scientism, two points that will inform the exposition of specific scientific theories later on. This discussion also gives Verschuuren the opportunity to review the relationship between faith and reason. From there he considers the basic principles of the philosophy of nature: essence and existence, substance and accident, the four causes (plus the exemplary cause), all of which allows him to introduce the crucial distinction between primary and secondary causality. Verschuuren revisits this distinction repeatedly, so that arguments for the existence of God are sprinkled throughout, reminding the reader of the necessary metaphysical foundations for scientific inquiry. He concludes the introductory review by showing how Thomistic epistemology—with its reliance on sensation and abstraction, as well as the correspondence theory of truth—is the only reasonable basis for scientific realism. From this, Verschuuren concludes that “all scientists live off Judeo-Christian capital, whether they like it or not” (p. 87).

The more substantial part of the book is the second half, wherein Verschuuren analyzes particular theories of contemporary science in terms of these Thomistic concepts. He begins with cosmology and treats the relationship between the Big Bang and the doctrine of Creation. This is handled with proper subtlety, concluding that the science “neither supports nor detracts from the doctrine of creation” (p. 99). He also critiques those theologians that would reduce God to a “god of the gaps,” for secondary causality is sufficient to explain all physical change investigated by science. He then considers various issues in physics, including the inadequacy of science’s restriction of causality to efficiency alone. With respect to quantum mechanics, he critiques certain extreme interpretations that assume indeterminacy undermines the intelligibility of causal principles. Rather, he argues

that indeterminacy is an *epistemic* limitation, and not an aspect introducing disorder into reality itself.

The next three chapters concern the life sciences. He interprets genetics, evolutionary biology, and neuroscience in terms of the four causes (plus exemplary cause) in order to show that materialism cannot account for biological phenomena. An instructive discussion of information theory and the physical structure of the nucleotides that compose DNA point to the necessity of the substantial form as that which “informs” the genes that then act to structure organisms. Similarly, when applied to evolutionary biology, the ambiguity of crucial notions like selection, adaptation, and species shows that they only make sense if there are higher cosmic laws that provide the framework for the “success” of all biological organisms. He contends, though, that the presence of these cosmic laws does not justify the conclusions of Intelligent Design arguments, again pointing to the distinction between primary and secondary causality. Finally, he critiques, in nine distinct arguments, the assumptions of those who would reduce cognition to the neurochemical activity of the brain. A more satisfactory explanation for consciousness can be found in traditional hylomorphic theory, for the soul contains a diversity of powers, some of which are immaterial, that explains the operations of reason and, moreover, justifies belief in immortality.

The final chapter (on Aquinas and the social sciences) is, for this reader, something of an unrelated addition. Unlike the previous chapters, it does not confront the details of contemporary science (apart from a prefatory discussion of the Weberian doctrine that science should be value neutral). However, under the headings of sociology, economics, and politics, Verschuuren outlines Thomistic arguments concerning the centrality of the common good: human nature as social, the natural moral law, and the need for political order. While presenting the author an opportunity to address an array of important topics—rights, property, law, conscience—these concepts are significantly different from the debates about natural science that would draw the reader to the book.

While Verschuuren’s book is a great resource for those looking for an introduction to Aquinas and an application of his ideas to contemporary science, I must note two criticisms. Occasionally the author is overly apologetic. He pushes Aquinas’s position beyond its literal truth so that it might appear as anticipatory of later scientific discoveries. To suggest that Aquinas’s acceptance of elemental units led to modern chemistry (p. 82) or that the idea of prime matter partially inspired the Big Bang theory (p. 93) appear to be more speculative than historical. It is not a derogation to affirm a great philosopher like Aquinas is a philosopher and not a chemist or physicist.

More bothersome is the absence of footnotes to indicate where the many and interesting citations are taken from. As noted earlier, Verschuuren draws on many great thinkers and scientists, on both sides the debate, but he does not have any reference to his sources. Nor does he, in his many citations from Aquinas, supply even parenthetical reference to the source. At the end of each chapter he has brief bibliographies of four or five references, but these never cover all the citations he made in the course of the chapter. Nor is there a complete bibliography at the end of the volume. As a book directed to the interested student, these pointers for further reading would certainly be pertinent and appreciated.

Despite this, I recommend the book, for it accomplishes the author’s aim to present “a readable and wide-ranging introduction to the thought of Aquinas. . . . [and] to open the mind of the reader to further study of Aquinas” (p. 5).