

Is Metaphysics a Science?

An Invited Position Paper By

Thomas J. Burke,
Hillsdale College

Editor's Note: The “Invited Position Paper” segment is a unique feature to SHERM journal where hand-selected scholars are invited to write their particular standpoint or attitude on a specific issue. While the position paper is intended to engender support for the paper’s line of reasoning and overall conclusion, the paper is not intended to be a simple op-ed piece. Rather, each essay must be academic in nature by deriving its position from verifiable data and/or the author’s training and experience as a scholar in a particular field of study.

In this particular case, the author was asked to answer the following question:

“Can the study of theology and/or metaphysics be classified currently or ever qualify in the future as a scientific endeavor? Why or why not? If yes, what criteria or methods would need to be in place and practiced to make them scientific? If no, what is it about ‘science’ that prevents theology and/or metaphysics from qualifying?”

Abstract: Once esteemed as the highest form of knowledge, the legitimacy of metaphysics as a rational discipline has been severely challenged since the rise of modern science, particularly since it seemed that while the latter reached overall consensus, the disputes in the former seemed interminable. The question naturally arises whether metaphysics could ever achieve the status of a science. The following article presents the view that metaphysics is not nor could ever become a science in the sense of the modern “hard” sciences today because a) it seeks a different sort of knowledge, which b) cannot be acquired by the methods of modern science; and c) metaphysics serves a different cognitive purpose than the sort of knowledge that science can provide. It is, nevertheless, a rational subject, one in fact that supplies the necessary rational foundation for the positive sciences.

Keywords: Science, Metaphysics, Theology, Exegesis, Cultural Comparison

Introduction

THE QUESTION THIS PAPER addresses is whether metaphysics is or could ever become a science. The answer it arrives at is ‘no’: metaphysics is not nor ever will be a science. That answer depends, obviously, upon what we mean by these terms. The question and the proposed answer assume that “science”

refers to a class of knowledge obtained and justified in certain ways deemed legitimately “scientific,” and the question asks if metaphysics is or could become a member of that class. In short, criteria must be established that qualify a discipline to be categorized as a member of the class “science.” To do this requires, in turn, establishing a clear notion of what science is (i.e. what it is a study of, how it studies it, and what sort of knowledge that study results in), and then, likewise, to establish what sorts of things metaphysics studies, how it engages in that quest, and what sort of knowledge that study can produce. The first two sections of this essay will explain why metaphysics is not a science, the third will claim that the two major paths by which one might think metaphysics could develop into a science would not, in fact, enable it to do so. The fourth section will maintain that, nevertheless, metaphysics does provide valid knowledge of a non-scientific nature; so, while metaphysics is not and cannot be a science, it is still a rational discipline which provides knowledge of the world over and above what science can provide. In fact, it gives us knowledge more fundamental than science, knowledge which is necessary for the rational grounding of scientific inquiry.

What Is Science?

First, it must be decided what fields of study are properly included in the class “science,” for only then can we seek to abstract from them common criteria. It is customary to distinguish the “hard sciences” from the “soft sciences” (more accurately, the “social sciences”): the former including physics, chemistry and biology (and their sub-sciences), whereas the latter includes disciplines such as psychology, sociology and anthropology. History and economics are often included among the social sciences as well.¹ The social sciences developed over the past two centuries as an effort to study human life and human society with the same objectivity as the “hard sciences” supposedly possess, using similar methods with the aim of arriving at an

¹ There is debate over the status of “history” as a field of study where even some historians reject the designation entirely. Political science also has its detractors, some arguing that properly understood, politics is a liberal art (not a science) that requires philosophical analysis (not mathematical). See for instance, John Lukacs, *The Future of History* (New Haven, CT: Yale University Press, 2012). See also, the discussion in Roger Emmelhainz, “Is History an Art or a Science? Why?,” Quora, June 4, 2015, <https://www.quora.com/Is-history-an-art-or-a-science-Why>. For the discussion regarding political science, see “Political Science as a Science?,” University of Political Science, accessed August 1, 2019, <https://www.politicalscienceview.com/political-science-as-a-science/>.

“objective,” scientifically accurate understanding of how and why humans behave as they do individually and corporately. Finding commonality between these various disciplines is a daunting task and presupposes there is a natural class called “science.” Such an assumption is at a minimum questionable, and if answered positively would require that the objects of study be of the same essential kind, the methods employed of the same type, and the resultant knowledge of the same sort. Rather than debate whether such types exist, we will restrict our notion of “science” to the “hard science” for two reasons. First, the social sciences strive to obtain the same level of objectivity that is thought possessed by the “hard” sciences; and second, if metaphysics is not and never can be a science in this sense, its status would not be enhanced by its possible inclusion among the social sciences unless the social sciences were considered as properly scientific as the “hard sciences.”

In the twentieth century, philosophers made numerable attempts to delineate science in order to distinguish it from non-science (i.e. from pseudo-science, on the one hand, and philosophy, on the other). Unfortunately, it proved impossible to reach any sort of consensus.² The Logical Positivists proposed that science, as all cognitively meaningful language, consisted of propositions capable of being empirically verified.³ In their view, science was a legitimate source of belief because its propositions meet that criteria, whereas those of metaphysics do not.⁴ A central part of their philosophical program was to develop a method for science which would, when employed, guarantee the meaningfulness of scientific knowledge.⁵ Their position was, however, eventually shown untenable. First, their view on the structure of scientific method was shown not to be characteristic of science historically.⁶

² Larry Laudan, “The Demise of the Demarcation Problem,” in *Physics, Philosophy and Psychoanalysis: Essays in Honor of Adolf Grünbaum*, ed. Robert S. Cohen and Larry Laudan (Dordrecht, Holland: Reidel Publishing, 1983), 111–27, https://doi.org/10.1007/978-94-009-7055-7_6.

³ See Alfred Jules Ayer, *Language, Truth and Logic* (New York: Dover Publications, 1952). For a different approach to the same end, see Rudolf Carnap, *Philosophy and Logical Syntax* (London: Kegan Paul, Trench, Trubner and Co., 1935), <https://doi.org/10.4324/9781315823010>.

⁴ Rudolf Carnap, “The Elimination of Metaphysics through the Logical Analysis of Language,” in *Logical Positivism*, ed. Alfred Jules Ayer (New York: The Free Press, 1959), 60–81; Carnap, *Philosophy and Logical Syntax*, 26–31; Ayer, *Language, Truth and Logic*, 33–45.

⁵ For a history of the development of the Positivists’ view, see Frederick Suppe, *The Structure of Scientific Theories* (Urbana, IL: University of Illinois Press, 1974), 16–61.

⁶ See for example, Norwood Russell Hanson, *Patterns of Discovery: An Inquiry Into the Conceptual Foundations of Science* (New York: Cambridge University Press, 1958).

Historians of science pointed out that scientific advances were not made by employing their strict method. Many a new theory or scientific insight came as much from imagination and abstraction as from observational data. At times, there were wholesale paradigm switches that again came from thinking “outside the box.”⁷ Second, there were a number of technical issues focused on the observation-theoretical term distinction central to their proposal (and related issues).⁸ Third, the Positivist program as a whole was based on a tenuous philosophical principle, the analytic-synthetic distinction.⁹ While not all philosophers are convinced by the critique of this distinction, the fact that it is debatable shows that attempting to distinguish science from non-science on grounds which require that very distinction is also debatable.¹⁰ Finally, the Empiricist Criterion of Meaning itself, the principle at the foundation of the position, is obviously “self-referentially incoherent,” a fact which should have undermined the position at the outset.¹¹ The Empiricist Criterion of Cognitive Meaning is, in fact, just what it attempts to classify as cognitively meaningless, a universal necessary truth about language, *viz.* a philosophical proposition rooted in metaphysical and epistemological assumptions. Metaphysically, it assumes naturalism; epistemologically, empiricism.¹² Moreover, it assumes a particularly narrow version of empiricism, one which holds all empirical propositions are contingent and all necessary propositions analytic.¹³ Consequently, their proposal that science consists of disciplines

⁷ Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago, IL: The University of Chicago Press, 1962), <https://doi.org/10.7208/chicago/9780226458106.001.0001>.

⁸ Suppe, *The Structure of Scientific Theories*, 62–118.

⁹ Willard Van Orman Quine, *From a Logical Point of View: Nine Logico-Philosophical Essays*, 2nd ed. (1953; repr., Cambridge, MA: Harvard University Press, 1999), 20–46.

¹⁰ See the several articles replying to Quine’s rejection of the distinction in James F. Harris, Jr. and Richard H. Severens, eds., *Analyticity* (Chicago, IL: Quadrangle Books, 1970). The most notable articles are H. P. Grice and P. F. Strawson, “In Defense of a Dogma,” 52–74 and Rudolf Carnap, “Meaning and Synonymy in Natural Languages,” 131–151. Carnap and Quine argued over this issue in a number of subsequent articles, as well.

¹¹ Carl G. Hempel, “Problems and Changes in the Empiricist Criterion of Meaning,” *Revue Internationale de Philosophie* 4 (1950): 41–63. See Also, Alvin Plantinga, *God and Other Minds: A Study of the Rational Justification of Belief in God* (Ithaca, NY: Cornell University Press, 1967), 164–168.

¹² Since any cognitively meaningful term must be sensed, directly or indirectly, by our sense apparatus (empiricism), it must be a physical entity or force (physicalism).

¹³ Note that Aristotelian and Thomistic empiricism does not rule out universal or necessary propositions but, rather, grounds our knowledge of them in experience rather than rational intuition or innate ideas. See Edward Feser, *Aristotle’s Revenge: The Metaphysical*

which are composed solely of propositions capable of empirical verification and which have been established in accord with the proper scientific methodology cannot be sustained.

Likewise, Karl Popper's proposal that science consists of theories which scientists then seek to refute was subjected to devastating critiques.¹⁴ Here, the problems are similar where the historical criticisms of Positivism are also applicable to Popper's view. Additionally, W. V. O. Quine pointed out that any theory can be held "come what may" if one is willing to give up other beliefs used in the testing of that theory.¹⁵ In short, both confirming and refuting a theory requires holding some propositions and theories firm. One cannot justify beliefs on the basis of an indubitable foundation. Indeed, foundations may still exist, but they will be movable, adjustable and corrigible. The foundations of a theory will be holistic and systematic.¹⁶

These attempts to characterize science and distinguish it from philosophy, pseudo-science, or just plain nonsense have, to date, failed.¹⁷ That there is a difference seems, nevertheless, clearly to be the case. The sorts of questions philosophers ask about the world are not those a scientist *qua* scientist would ask. Edward Feser, in *Aristotle's Revenge*, defines the natural sciences as those "concerned with the study of the actually existing empirical world of material objects and processes."¹⁸ What the natural sciences do, he continues, is attempt to discover the causal relations that exist in the material world, causal relations that are themselves naturalistic.¹⁹ Such a characterization of science would satisfy those who consider philosophy a precursor to science, such as Daniel Dennett who argues that a discipline becomes a science once it is figured out just how to study and experiment with

Foundations of Physical and Biological Science (Neunkirchen-Seelscheid, Germany: Editiones Scholasticae, 2019).

¹⁴ Karl Popper, *The Logic of Scientific Discovery* (1959; repr., New York: Routledge Classics, 2002), <https://doi.org/10.4324/9780203994627>; *Conjectures and Refutations: The Growth of Scientific Knowledge* (New York: Harper & Row, 1963).

¹⁵ Quine, *From a Logical Point of View*, 42–46. See also, the essays in Imre Lakatos and Alan Musgrave, eds., *Criticism and the Growth of Knowledge*, vol. 4, *Proceedings of the International Colloquium in the Philosophy of Science, London, 1965* (New York: Cambridge University Press, 1970), <https://doi.org/10.1017/cbo9781139171434>.

¹⁶ See Mary Hesse, "Duhem, Quine and a New Empiricism," in *Can Theories be Refuted?*, ed. Sandra G. Harding (Dordrecht, Netherlands: Springer, 1976), 184–204, https://doi.org/10.1007/978-94-010-1863-0_13.

¹⁷ Laudan, "The Demise of the Demarcation Problem," 111–27.

¹⁸ Feser, *Aristotle's Revenge*, 3, 71.

¹⁹ *Ibid.*, 3–4.

it empirically.²⁰ Once the kinds of questions that a discipline asks can be answered empirically, become “matters of fact,” then the discipline becomes a science and ceases to be philosophy. Thus, the story goes, physics eventually broke away from philosophy as did eventually psychology and much of epistemology. Again, the underlying assumption is naturalism and the consequent view that all facts are facts about the material world and its properties. Our epistemic abilities might never be able to discover all such facts, but any and all facts, if discoverable, will be true of the physical world and known through the application of proper (empirical) scientific methods.

According to this understanding of science, then, there are three general criteria characterizing it. First, that science studies the physical world; second, that it aims to explain the physical world in terms of the physical world; and third, that acceptable data and theories are those that can be observed and/or tested, one way or another, empirically. That is, that some empirical observation(s) will tend to confirm or disconfirm the truth of a proper scientific proposition or theory. Thus, ontologically, science is limited to the physical world and epistemologically to propositions which can be confirmed or disconfirmed, directly or indirectly, by empirical observation.

What is Metaphysics?

Assuming that science is limited to discovering physical facts about the physical world, metaphysics would be or become a science only if there are metaphysical facts knowable and confirmable by scientific methods. Whether that is a possibility depends on the nature of metaphysical propositions, *viz.*, what things they are about, what kind of information they give us about those things and how their truth or falsity is established.

According to Aristotle, a quintessential metaphysician, metaphysics is the study of being *qua* being (*Metaph.* 1003a.17–40). As such, it deals with the first principles of being. What, therefore, distinguishes it from other sciences is not the nature of the subject or how it carries out its task, but the subject matter, instead.²¹ Other disciplines “Cut off a part of being and

²⁰ See Daniel C. Dennett, *The Intentional Stance* (Cambridge, MA: MIT Press, 1987), 34. Dennett here expresses the view that eventually a (scientific) theory, which will explain intentionality in terms of “a language of thought” (i.e. a computer-like language of the brain), will be developed.

²¹ For Aristotle, all sciences are the province of the philosopher. Rather than “the one who knows,” the “scientist” (from the Latin *scire*, “to know”) is the one who loves wisdom.

investigate the attributes of this part” (1003a.25).²² For Aristotle, then, metaphysics is a science since it has its own subject matter, one which is observed empirically and the first principles of which are clear and knowable by abstraction from that empirical observation (1005b.9–19). In short, Aristotle conceives of metaphysics as a science, one distinguishable from other sciences like physics or mathematics by virtue of the fact that its subject matter is *being* itself and the universal properties that belong to it as such. Other sciences are about some particular form of being or some particular property of being. Thus, physics focusses on change, biology on living organisms, and mathematics on numbers. Metaphysics, on the other hand, will be concerned with things such as substance, which anything that exists either will be or will be in, causality as such (not some particular cause), and the principles that characterize all beings *qua* being itself. The procedure will also be the same as that practiced in other sciences: observation and abstraction from those observations. So, the reason Aristotle could consider metaphysics a science was due to his understanding of how any science operates. He believed one abstracts universal properties and principles from empirical observations and that those abstracted results then form the basis for deductions therefrom.

Contrariwise, modern scientists seek empirical, physical causes, not first principles or universal properties. Modern science operates quite differently than Aristotelian science. Therefore, given those differences, Aristotle’s inclusion of metaphysics among the sciences must be rejected. Feser, a confessed contemporary Aristotelian, makes a sharp distinction between metaphysics and modern science. As noted above, he points out that the natural sciences are those “concerned with the study of the actually existing empirical world of material objects and processes.” Metaphysics, on the other hand, “investigates the most general structure of reality and the ultimate causes of things.”²³ He then clarifies the domain of metaphysics. It deals “with what *could* have been the case, what *necessarily must* be the case, what *cannot possibly* have been the case and what exactly it is that *grounds* these possibilities, necessities, and impossibilities.”²⁴ In addition, it deals not

²² English translation appears in Aristotle, “Metaphysics,” in *The Complete Works of Aristotle: The Revised Oxford Translation*, ed. Jonathan Barnes, trans. W. D. Ross Bollingen Series 71 (1984; repr., Princeton, NJ: Princeton University Press, 1995), 2:1584, <https://doi.org/10.2307/j.ctt6wq12z>.

²³ Feser, *Aristotle’s Revenge*, 3.

²⁴ *Ibid.*; italics in original.

only with the ground of empirical reality but also with being in general, material and non-material. So, according to Feser's categorization of these disciplines, the natural sciences try to discover what material things there are and the (natural) causal relations between. Metaphysics, however, investigates whatever reality exists beyond or in addition to matter and material processes, as well as the relations between those realities, the relations between those realities and the material world, and the nature of the material world and its elements *per se*. Thus, science investigates the phenomena of the physical world in order to understand what relationships exist between the entities that exist within it; metaphysics does not. As a result, mathematics is the general "language" of science and the appropriate logic is a logic of relations.²⁵ Metaphysics seeks to know *what* makes the physical world and its relations possible, *what* the natures of those entities and those relations are, and *what* metaphysical (non-physical) realities are necessary for those physical realities to be and to function as they do. Consequently, mathematics plays no role in this endeavor, for it is concerned with the "whatness" of things, thereby requiring a "what logic."²⁶ Hence, scientists assume there are natural causes and its results are not affected by "the nature" of causality—whether, for example, causes in nature are John Locke's "hidden powers" or are reducible to David Hume's "constant conjunctions"—but metaphysicians question what causality is, what sort of explanation causal explanation is, and what the nature of causality must be if causes are to supply satisfactory explanations.

To accomplish this, the experimental methods of modern science are of no help. The results will be conceptual (not relational), the arguments will be based on proposed universal, necessary propositions (not observations), and the results will be rational (not functional). Thus, metaphysics fails to meet all three of the criteria set out above deemed necessary to include it within the genus "science." Metaphysics does not study physical objects as they exist and relate causally in nature, nor does it seek to understand how the physical world works in terms of the physical world or arrive at empirically testable propositions and theories. Metaphysical results, if valid, are not contingent truths but necessary truths, for they do not tell us how things happen to be but how they must be in order to be the sorts of things they are. Metaphysics wants to know the nature of reality, not the way reality happens to work. Universal, necessary truths (i.e. metaphysical truths) are essential to

²⁵ See Henry Babcock Veatch, *Two Logics: The Conflict between Classical and Neo-Analytic Philosophy* (Evanston, IL: Northwestern University Press, 1969).

²⁶ *Ibid.*

such knowledge, whether these are known because they are innately implanted or rationally intuited and abstracted from our experience of the physical world. Metaphysics requires metaphysical principles such as the law of contradiction (see Aristot., *Metaph.* 1011b.1–1012a.19) or the principle of sufficient reason in order to argue for metaphysical positions.²⁷ Science may assume these principles when observing or experimenting, but these principles play no specific determinative role in formulating or testing scientific theories.

Contemporary analytic philosopher, Bruce Aune, lays out a similar delineation of the subject matter and methods of metaphysics. He divides metaphysics into general and special metaphysics. The former “includes ontology and most of what has been called universal science; it is concerned, on the whole, with the general nature of reality: with problems about abstract and concrete being, the nature of particulars ... and the universal principles holding true of what has fundamental being.”²⁸ Special metaphysics, on the other hand, deals with particular problems such as the nature of human freedom, the existence of God, and so forth.

Aune’s account of metaphysics is consistent with that of Feser, so it appears both traditional and contemporary analytic philosophy seem to agree on what, exactly, metaphysics studies. It is also the case that both recognize that universal (necessary) truths are essential to metaphysical argumentation. Aristotle, for example, considered the law of contradiction to be the fundamental principle of metaphysics. He substantiates the principle by arguing that if it is violable, there will be no substances, no distinction between essences and attribute, that all things would be one, and that there would be no distinction between truth and error (*Metaph.* 1007a–1009a). Thus, by showing the absurd consequences of denying the law of contradiction, he gives reasons to hold it while, conversely, the principle in turn supports the existence of substances, essences, and truth. The point, however, is that determinations in metaphysics are made by virtue of rational principles, not experimental observation.

Another such example can be seen in Aune’s analysis of the argument for universals. The argument is as follows:

²⁷ See Feser’s discussion of causation in Edward Feser, *Scholastic Metaphysics: A Contemporary Introduction* (Neunkirchen-Seelscheid, Germany: Editiones Scholasticae, 2014), 88–159. See also, A. E. Taylor, *Elements of Metaphysics* (1903; repr., London: Methuen & Co., 1961), 18–41.

²⁸ Bruce Aune, *Metaphysics: The Elements* (Minneapolis, MN: University of Minnesota Press, 1985), 11.

1. Different particulars are sometimes truly described by common predicates.
2. If different things are truly described by a common predicate, they must possess some absolutely determinate feature or features by virtue of which the predicate is correctly applied to them.
3. Therefore, absolutely determinate features exist or belong to the world.²⁹

He then argues that the key second premise is not self-evident and so is not sufficient to justify the conclusion. Self-evidence is possible, however, only with rational principles (universal necessary truths).³⁰ So, if establishing a metaphysical conclusion requires a rational principle, it is clear that metaphysics requires such truths in addition to any empirical facts to which it may appeal. Of course, this is not surprising. If metaphysics searches for truths that are true of being *qua* being, those truths must be true of all such being; that is, they must be universal and necessary. That is not, however, the case with the natural sciences. While they assume the law of contradiction, it does not establish scientific knowledge as such. Observation and experimentation do. In addition, of course, scientific propositions are contingent, not necessary.

Similarly, when one examines the arguments for free will or immortality, those arguments will not rest upon contingent propositions or laboratory experiments but, instead, on the possibility of such realities and their necessity for the kinds of existent things that exist. Thus, Aune argues against libertarian free will by attempting to show its incoherence.³¹ Indeed, it is hard to imagine an experiment that would prove free will to be or not to be the case. Arguments for and against libertarian free will or compatibilism are conceptual, not empirical. That means matters such as logical consistency and consistency with truths of reason will be determinative of one's position, not the observed behavior of individuals since every observation will be consistent with both views, making both unfalsifiable. Observations of the brain may seem more consistent with one view or the other, but such will not

²⁹ Aune, *Metaphysics*, 50.

³⁰ Some philosophers hold that observations are self-evident (and well they might be), but clearly no self-evident empirical observation will suffice to support universals. For that, some self-evident universal (i.e. metaphysical) principle is needed.

³¹ Aune, *Metaphysics*, 192–94.

decide the issue. Likewise, brain studies cannot demonstrate conclusively some form of mind-brain identity theory as opposed to dualism. Logically, such studies can only prove correlation, not identity.³² As Hume and Immanuel Kant both concluded, if there are no knowable truths of reason about the world as it exists in itself, metaphysics is impossible. If there are, metaphysics is possible but will not be empirical and hence not a science.

To summarize, the natural sciences investigate the physical, material nature of the world, attempting to understand it and the physical, material causal relations by which it operates. It attempts to do so through empirical observation and experimentation, thereby creating theories that attempt to discover “laws of nature.” Metaphysics, on the other hand, seeks to discover and explore the nature of reality by which the material world depends. It does not look for physical causes, but non-physical realities; it does not look for physical foundations, but non-physical foundations for the physical world. It attempts to determine what must be the case for the physical world to be and to function as it does. It seeks to know what things are, not how they work. Thus, metaphysics, traditional and contemporary, is not a science in the sense of a modern “hard” science.³³

Possible Connections

Given the nature of modern science and the nature of metaphysics, it seems clear that the latter is not a species of the former. But might it not become such? There are two possibilities. First, one might propose that Quine’s view of language as a holistic web of belief could result in the scientific legitimization of metaphysics, thereby making the latter an extension of science. Quine has proposed a holistic view of language pictured as a web of belief. If correct, all language would be connected and would, therefore, make it possible were an observation at the periphery of the web radical enough to force a change to beliefs anywhere else within the web, including at the very center, potentially affecting even our basic logical principles.³⁴ Quine also famously proposed that “to be is to be the value of a

³² Thomas J. Burke, “Mind-Body Problem, Scientific or Philosophic? Implications for Apologetics,” *Journal of the American Scientific Affiliation* 36, no. 1 (1984): 13–18.

³³ For the opposite viewpoint from a Confucian standpoint, see Bin Song, “Comparative Metaphysics and Theology as a Scientific Endeavor: A Ruist (Confucian) Perspective,” *Socio-Historical Examination of Religion and Ministry* 1, no. 2 (Fall 2019): 203–24, <https://doi.org/10.33929/sherm.2019.vol1.no2.05>.

³⁴ Quine, *From a Logical Point of View*, 43.

variable.”³⁵ That is, considering the “web of belief” to be composed of theories constructed and organized so as best to account for our observations, any entity in the domain of a theory within that web is properly considered as existing. If some proposed entity does not satisfy a proposition in one of our theories, its legitimacy is to be denied. To date, for Quine, metaphysical entities such as an immaterial mind or God are not needed in any of our theories. All our observations can be adequately accounted for without such posits. Theoretically, however, experiences could occur that would require such metaphysical entities.³⁶ Presumably, the same would hold for other metaphysical propositions. If “God” or “soul” satisfy a variable in a theory, then propositions about them would become acceptable, providing they are connected to the theory in question. Thus, one might claim, metaphysics could become a legitimate extension of the scientific process.

There are four problems with this proposal. First, the nature of metaphysical propositions excludes the possibility of their validation by empirical observations, but Quine thinks that meaningful language and proper beliefs are those grounded in empirical observations. His is a radical empiricism which holds not only that all our concepts are derived from experience but also that legitimate derivation and postulation is limited to that which can be accounted for by a theory supportable by experience. Validation is based on observation sentences; they are where theory meets the world.³⁷ Metaphysical propositions, however, are necessary propositions and no necessary proposition can be validated by a contingent observation. The hallmark of metaphysics is necessity and universality. Science, on the contrary, provides only contingent propositions which can only support other contingent propositions. However true those propositions might be, they are not necessarily true.

Second, metaphysical propositions are true in all possible worlds and so not only cannot, but also need not be validated by a scientific observation or theory. Since, as universal necessary truths, they provide the ontological structure of any possible world, they are the presuppositions for any possible theory about any contingent reality. Consequently, their placement within a theory would not only be unnecessary but also trivial. Similarly, if (as shown below) metaphysical truths are the necessary presuppositions of science, it

³⁵ Quine, *From a Logical Point of View*, 15.

³⁶ *Ibid.*, 44.

³⁷ Willard Van Orman Quine, *From Stimulus to Science* (Cambridge, MA: Harvard University Press, 1995), 27–42.

would be viciously circular for the former to be validated by the later. Moreover, the presuppositions of an endeavor are not themselves part of the endeavor, so while the success of the latter tends to confirm the former, it does not do so by making the former a subclass of itself.

Third, the very nature of the relationship of metaphysical entities to the physical world makes it such that all purely physical observations are neutral in regard to them. Therefore, they cannot be validated by theories grounded in physical observations. A libertarian free act and a compatibilist free act are observationally identical. The former is posited for ethical reasons, not because some observations require it. Likewise, there is no observation that would entail the necessity of positing a non-material mind as opposed to identifying a conscious experience with a brain function. There are reasons for rejecting mind-brain identity theory but those are philosophical, not scientific. And although compatible with dualism, they do not entail it.³⁸ Indeed, the mind-brain problem is, in fact, a philosophical question, not a scientific one.³⁹ Brain scientists *qua* scientists have no need of considering identity theory or dualism. They are concerned only with theories that correlate various states of the brain with functions of the brain, conscious or unconscious. What it is that experiences those (conscious) states, an immaterial mind or the material brain, is immaterial to that scientific aim.

Fourth, the error underlying this proposal is a failure to appreciate the nature of metaphysical propositions and metaphysical entities. Metaphysical entities are not physically observable as such, and their interaction with the physical world cannot, therefore, be subject to observations of the physical world. It is the relations between physical objects that are observed in scientific experiments, not the nature of these relations; that is the concern of metaphysics. The metaphysical nature of physical causes is of no concern to science or a scientific theory. Science deals with relations, metaphysics with the nature of things, their “whatness.”

³⁸ For a summary of identity theory and dualism, see J. J. C. Smart, “The Mind/Brain Identity Theory,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Stanford, CA: Center for the Study of Language and Information, 2017), plato.stanford.edu/entries/mind-identity/ and Howard Robinson, “Dualism,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Stanford, CA: Center for the Study of Language and Information, 2017), <https://plato.stanford.edu/entries/dualism/>. Note that the difficulties presented for each are philosophical arguments. Scientific facts may be used in these discussions, but their application to the issue is conceptual (i.e. philosophical).

³⁹ Burke, “Mind-Body Problem,” 13–18.

A second way one might think metaphysics could become a science is by the development of “experimental philosophy.” Here, however, the name is misleading. Experimental philosophy does not, insofar as it is experimental, engage in philosophical argumentation as such. Instead, it seeks to discover whether our philosophical intuitions are universal or not.⁴⁰ It is, therefore, more a sociological and anthropological investigation of human intuition than an engagement of abstract philosophy. Moreover, its results are philosophically irrelevant. The fact that an intuition is believed universally true of all cultures and of all individuals does not entail it is a universally necessary truth. Universal belief may simply be the accidental result of human physiology or evolutionary psychology. Nor would a lack of universal belief entail it is not a universally necessary truth. That lack might be due to any one of a number of factors, from original sin to simple lack of awareness to abject stupidity. Metaphysical truths are not substantiated by our intuitions but recognized by them. Their acceptance or rejection is based on philosophical arguments; in other words, arguments that rely on truths that can be shown to be universal and necessary truths. Empirical observations cannot provide such truths. One must demonstrate that their denial is incompatible with rationality *per se*. Thus, the necessary truth of the law of contradiction is demonstrated by the fact that its falsity would entail that every proposition is both true and false, clearly an impossible state of affairs. If some individual or some culture does not see that such a state of affairs is impossible, that speaks not to the contingency of the law but to the deficiency of the individual or culture.

The Necessity of Metaphysical Knowledge

Having established that metaphysics is not nor ever could be a member of the class of “science,” the latter understood as the class of modern “hard” science, the question now becomes whether metaphysics gives us knowledge at all. The answer is yes; and indeed, it gives us more rationally important and foundational knowledge than any science, hard or soft. This is shown by the following. First, the natural sciences, in their modern incarnation, rose historically due to developments in scholastic and modern

⁴⁰ Helen De Cruz, “Where Philosophical Intuitions Come From,” *Australasian Journal of Philosophy* 93, no. 2 (2015): 233–49, [dx.doi.org/10.1080/00048402.2014.967792](https://doi.org/10.1080/00048402.2014.967792). Joshua Knobe and Shaun Nichols, “Experimental Philosophy,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Stanford, CA: Center for the Study of Language and Information, 2017), plato.stanford.edu/archives/win2017/entries/experimental-philosophy/.

philosophy. Certainly, the ancient Greeks played a vital part, laying the groundwork by seeking naturalistic explanations of the physical world, developing the notion of reason and natural law. But the methods and procedures employed, and the nature of the knowledge attained by that extant line of Greek science, were not those of modern science. As Francis Bacon pointed out, Aristotelian induction sought to abstract universal essences and then deduce from them the “scientific” details.⁴¹ The inductive method of modern science, on the contrary, seeks to develop intermediary hypotheses and then test them experimentally before settling on a theory or establishing a law of nature by which to explain the phenomena. In addition, “hard” science relies heavily and essentially on mathematics. The story behind the development of this new and very effective way of doing science is complicated and involved, but it must be noted that there were metaphysical (indeed, even theological) principles behind it.⁴²

The notion that there are set laws of nature discoverable by human reason owes much of its force to Aquinas and the scholastic tradition. His view of God as rational Creator provided an explanatory foundation for the necessary assumption that the material universe operates in accordance with natural law. His distinction between nature and grace, and the accompanying view that God designed human reason to be capable of understanding the universe, provided a compelling rationale and justification for engaging in the search for natural laws. John Duns Scotus’ emphasis on God’s sovereignty and William of Ockham’s nominalism entailed that a) God could make the universe anyway he wished, make creatures operate any way he decided, and enact whatever laws he wished so that, consequently, b) only by looking at the particular things and occurrences in the world can we discover what things are, why they behave the way they do, and what laws govern them. These metaphysical and theological assumptions, among other factors, provided the conceptual background that enabled early modern philosophers and scientists to conceive of and develop the modern scientific attitude towards (and approach to) the study of nature.⁴³

⁴¹ Francis Bacon, *The Instauration magna Part II: Novum orangerum*, ed. Graham Rees and Lisa Jardine, trans. Graham Rees (New York: Oxford University Press, 2004), 11:71, 161–65.

⁴² See Edwin Arthur Burt, *The Metaphysical Foundations of Modern Physical Science: A Historical and Critical Essay* (1924; repr., London: Routledge, 2001), <https://doi.org/10.4324/9781315822754>.

⁴³ Other theological and metaphysical notions also contributed. For example, the biblical notion that humankind was created in God’s image, thereby possessing reason like his

Second, science rests on certain metaphysical assumptions. The principle of sufficient reason, the law of contradiction, and the universal truth that nothing comes from nothing are principles that make the scientific endeavor rational.⁴⁴ If these assumptions are not true, then there is no reason to believe that there are natural laws governing nature and discoverable by empirical investigation.

Third, there are facts that science cannot know or give us knowledge of. As Feser points out, science construes the world quantitatively, but there clearly exist qualitative aspects to the universe and our experience of them that cannot be explained (or even recognized) by science.⁴⁵ These qualitative aspects are undeniably real and cannot be reduced to or identified with the processes that constitute modern science.⁴⁶ There are at least two types of things that cannot be reduced to the quantitative relations being offered by science. First, qualia: those properties of things that we are conscious of in experience. These clearly exist and cannot be adequately explained by relegating them to our subjective experience, making them mere properties of consciousness.⁴⁷ Indeed, even if we could, that would not eliminate them unless consciousness itself could be reduced to some quantitative process. But that, too, is not viable.⁴⁸ Second, neither material things nor matter itself can be fully understood in terms of modern quantitative theories. Unless we think that there can be structure without there being things that are structured, it is impossible for theories to tell us what things are, no less what their qualitative properties are or what the nature of the stuff out of which they are made is.⁴⁹

own and tasked with ruling the earth as his vice regent, provided strong motivation not only to study nature but also to discover the laws by which nature is governed. Modern science enables us to learn about nature and then to control, direct, and utilize it on behalf of humanity. Non-scientific beliefs like the above necessarily make people aware of the possibility of controlling nature and then motivating them to actually seek the sort of knowledge that would make such control possible.

⁴⁴ One might object that quantum mechanics provides for the possibility that something actually can—and possibly has—come from nothing, but the “quantum soup” being proposed is not “nothing.” The principle identifies nothing with absolutely nothing at all—not energy, not potential particles, not anything. For a scientific defense of the cosmos coming from “nothing,” see Lawrence M. Krauss, *A Universe from Nothing: Why There Is Something Rather Than Nothing* (New York: Free Press, 2012).

⁴⁵ Feser, *Aristotle’s Revenge*, 74.

⁴⁶ *Ibid.*, 74–138.

⁴⁷ *Ibid.*, 67.

⁴⁸ *Ibid.*, 393–396, 443–456.

⁴⁹ *Ibid.*, 72–74, 158–171.

Metaphysics can, however, deal with these problems, for it conceptually explores what things are, what makes them what they are, and the reasons they must be as they are.⁵⁰

Fourth, science uses efficient causality to explain things and, consequently, has no need for and no capacity to account for or even recognize final causes. Yet, surely such causes exist. One can give an account of a flashing sign in terms of electric circuits, etc., but that will not be a complete explanation of why the sign is there, nor of what it says or of why it says what it says. A complete explanation would require reference to human beings and would involve incorporating the ends for which they do things. This was pointed out millennia ago in Plato's *Phaedo* and is emphasized by contemporary metaphysicians today.⁵¹ Final causes are, however, a topic within metaphysics, demonstrating the independence of metaphysics as well as its necessity for a complete understanding of the world.

Finally, there clearly are universal necessary truths (metaphysical truths) that define rationality itself. Without the law of contradiction, the principle of sufficient reason and the principle that nothing comes from nothing, no sense could be made of reasoning, no rational account of the world given, no idea of structure or order created, no rationale for seeking truth presented. These metaphysical principles cannot be justified by more basic reasoning, scientific or otherwise, for they are the very ground upon which reason itself rests. The argument for their truth is simply that their denial would entail the collapse of reason itself.

In short, there is more to reality than science can ever reveal or explain to us, and at least some of that reality is explored through the domain of metaphysics. Thus, metaphysics is certainly a rational discipline. Thus, metaphysics is not only possible, it is inescapable. Without a metaphysical foundation, science itself would lack rationality. One might attempt to justify it pragmatically, but a pragmatic justification is rational only if there is a rational justification for pragmatism. But such a justification would be a metaphysical one. Thus, metaphysics is not merely possible, it is necessary for a rational understanding of the universe and human life therein.

⁵⁰ Feser, *Scholastic Metaphysics*, 10–11. See also, A. E. Taylor, *Elements of Metaphysics* (1903; repr., London: Methuen & Co., 1961), 1–17, 42–49, <https://doi.org/10.4324/9780429461910>.

⁵¹ Feser, *Scholastic Metaphysics*, 88–105.

Conclusion

As shown above, natural science limits its investigations to the physical world, attempts to explain it in terms of physical causes, and uses physical, experimental means to achieve these ends. First, it studies the physical world, the world of matter. The sciences do not study the nature of causality, the nature of being *qua* being, nor possible being, free will, or the existence of God. Philosophers may point to particular scientific facts as consistent with or even making likely the existence of God or free will, but a scientist *qua* scientist will not because empirical scientific methods do not have the resources to decide such issues. Second, science does not seek to determine the nature of physical causes, material things or matter itself because a) there are no possible scientific observations that could determine the correctness of any proposed view about such matters; and b) these issues are not relevant to the scientist *qua* scientist. It makes no difference whether the regular sequence of physical events is simply a constant conjunction of events which, for whatever reason, just happen to be the case, is caused by Lockean powers, or is due to some other factor. The scientist *qua* scientist simply wants to know what set of circumstances causes which set of effects and what the (preferably mathematized) relationship is. His procedure for determining this relationship will be experimental and empirical, and it is such procedures that allow the natural sciences to eventually reach a consensus. That consensus will be fallible and revisable, but only by virtue of further empirical observation and experimentation.

Contrariwise, metaphysics concerns itself with the nature of things, what makes them what they are. It does not seek theories to predict future effects, but an understanding of what makes anything possible at all, necessary or impossible. The entities with which metaphysics concerns itself are not physical substances themselves or the physical constituents of physical substances, but immaterial substances and the (metaphysical) constituents that all physical substances and their physical constituents must have to exist in the first place. That is, while science labors to understand the physical contents of the world and the natural laws that govern their behavior, metaphysics labors to understand the nature of existence itself, the nature of being *qua* being, and the nature of that being (or Being) which makes the physical world possible. Clearly, metaphysics is not a modern “hard” science and never can be. Happily, that is neither possible nor desirable.

BIBLIOGRAPHY

- Aristotle. "Metaphysics." In *The Complete Works of Aristotle: The Revised Oxford Translation*. 1984, edited by Jonathan Barnes. Translated by W. D. Ross. Vol. 2. Bollingen Series 71. Reprint, 1552–728. Princeton, NJ: Princeton University Press, 1995. <https://doi.org/10.2307/j.ctt6wq12z>.
- Aune, Bruce. *Metaphysics: The Elements*. Minneapolis, MN: University of Minnesota Press, 1985.
- Ayer, Alfred Jules. *Language, Truth and Logic*. New York: Dover Publications, 1952.
- Bacon, Francis. *The Instauratio magna Part II: Novum orangum*. Edited by Graham Rees and Lisa Jardine. Translated by Graham Rees. Vol. 11. New York: Oxford University Press, 2004.
- Burke, Thomas J. "Mind-Body Problem, Scientific or Philosophic? Implications for Apologetics." *Journal of the American Scientific Affiliation* 36, no. 1 (1984): 13–18.
- Burt, Edwin Arthur. *The Metaphysical Foundations of Modern Physical Science: A Historical and Critical Essay*. 1924. Reprint, London: Routledge, 2001. <https://doi.org/10.4324/9781315822754>.
- Carnap, Rudolf. "The Elimination of Metaphysics through the Logical Analysis of Language." In *Logical Positivism*, edited by Alfred Jules Ayer, 60–81. New York: The Free Press, 1959.
- . *Philosophy and Logical Syntax*. London: Kegan Paul, Trench, Trubner and Co., 1935. <https://doi.org/10.4324/9781315823010>.
- De Cruz, Helen. "Where Philosophical Intuitions Come From." *Australasian Journal of Philosophy* 93, no. 2 (2015): 233–49. <http://dx.doi.org/10.1080/00048402.2014.967792>.
- Dennett, Daniel C. *The Intentional Stance*. Cambridge, MA: MIT Press, 1987.
- Emmelhainz, Roger. "Is History an Art or a Science? Why?" Quora. June 4, 2015. <https://www.quora.com/Is-history-an-art-or-a-science-Why>.
- Feser, Edward. *Aristotle's Revenge: The Metaphysical Foundations of Physical and Biological Science*. Neunkirchen-Seelscheid, Germany: Editiones Scholasticae, 2019.
- . *Scholastic Metaphysics: A Contemporary Introduction*. Neunkirchen-Seelscheid, Germany: Editiones Scholasticae, 2014.
- Hanson, Norwood Russell. *Patterns of Discovery: An Inquiry Into the Conceptual Foundations of Science*. New York: Cambridge University Press, 1958.
- Harris, James F. and Richard H. Severens, eds. *Analyticity*. Chicago, IL: Quadrangle Books, 1970.
- Hempel, Carl G. "Problems and Changes in the Empiricist Criterion of Meaning." *Revue Internationale de Philosophie* 4 (1950): 41–63.

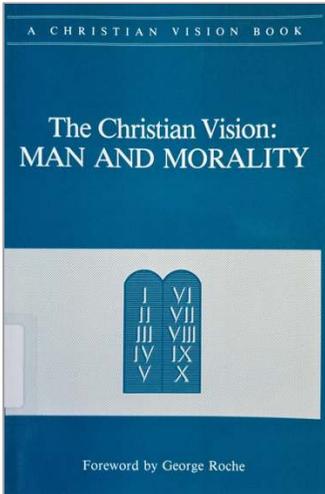
- Hesse, Mary. "Duhem, Quine and a New Empiricism." In *Can Theories be Refuted?*, edited by Sandra G. Harding, 184–204. Dordrecht, Netherlands: Springer, 1976. https://doi.org/10.1007/978-94-010-1863-0_13.
- Knobe, Joshua, and Shaun Nichols. "Experimental Philosophy." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. Stanford, CA: Center for the Study of Language and Information, 2017. plato.stanford.edu/archives/win2017/entries/experimental-philosophy/.
- Krauss, Lawrence M. *A Universe from Nothing: Why There Is Something Rather Than Nothing*. New York: Free Press, 2012.
- Kuhn, Thomas S. *The Structure of Scientific Revolutions*. Chicago, IL: The University of Chicago Press, 1962. doi.org/10.7208/chicago/9780226458106.001.0001.
- Lakatos, Imre, and Alan Musgrave, eds. *Criticism and the Growth of Knowledge*. Vol. 4, *Proceedings of the International Colloquium in the Philosophy of Science, London, 1965*. New York: Cambridge University Press, 1970. <https://doi.org/10.1017/cbo9781139171434>.
- Laudan, Larry. "The Demise of the Demarcation Problem." In *Physics, Philosophy and Psychoanalysis: Essays in Honor of Adolf Grünbaum*, edited by Robert S. Cohen and Larry Laudan, 111–27. Dordrecht, Holland: Reidel Publishing, 1983. https://doi.org/10.1007/978-94-009-7055-7_6.
- Lukacs, John. *The Future of History*. New Haven, CT: Yale University Press, 2012.
- Plantinga, Alvin. *God and Other Minds: A Study of the Rational Justification of Belief in God*. Ithaca, NY: Cornell University Press, 1967.
- Popper, Karl R. *Conjectures and Refutations: The Growth of Scientific Knowledge*. New York: Harper & Row, 1965.
- . *The Logic of Scientific Discovery*. 1959. Reprint, New York: Routledge Classics, 2002. <https://doi.org/10.4324/9780203994627>.
- Quine, Willard Van Orman. *From a Logical Point of View: Nine Logico-Philosophical Essays*. 1953. 2nd ed. Reprint, Cambridge, MA: Harvard University Press, 1999.
- . *From Stimulus to Science*. Cambridge, MA: Harvard University Press, 1995.
- Robinson, Howard. "Dualism." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. Stanford, CA: Center for the Study of Language and Information, 2017. <https://plato.stanford.edu/entries/dualism/>.
- Smart, J. J. C. "The Mind/Brain Identity Theory." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. Stanford, CA: Center for the Study of Language and Information, 2017. <https://plato.stanford.edu/entries/mind-identity/>.
- Song, Bin. "Comparative Metaphysics and Theology as a Scientific Endeavor: A Ruist (Confucian) Perspective." *Socio-Historical Examination of Religion and Ministry* 1, no. 2 (Fall 2019): 203–24. <https://doi.org/10.33929/sherm.2019.voll.no2.05>.

- Suppe, Frederick. *The Structure of Scientific Theories*. Urbana, IL: University of Illinois Press, 1974.
- Taylor, A. E. *Elements of Metaphysics*. 1903. Reprint, London: Methuen & Co., 1961. <https://doi.org/10.4324/9780429461910>.
- University of Political Science. "Political Science as a Science?" Accessed August 1, 2019. <https://www.politicalscienceview.com/political-science-as-a-science/>.
- Veatch, Henry Babcock. *Two Logics: The Conflict between Classical and Neo-Analytic Philosophy*. Evanston, IL: Northwestern University Press, 1969.

ABOUT THE AUTHOR

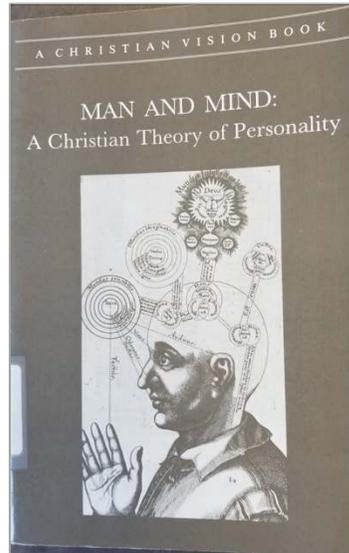
[Thomas J. Burke](#) is Chair of the Department of Philosophy and Religion at Hillsdale College and holds the William and Berniece Grewcock Chair in the Humanities. He formally pastored College Baptist Church in Hillsdale from 1974 to 1982 and has been a part-time pastor of the Hudson First Congregational Church in Hudson, MI since 1995. Burke is a graduate of Baylor University (BA), Trinity Evangelical Divinity School (MDiv), Northwestern University-Garrett Theological Seminary (PhD) and Michigan State University (MA, PhD).

MORE FROM THE AUTHOR



*The Christian Vision:
Man and Morality*

Hillsdale College Press, 1986



*Man and Mind: A Christian
Theory of Personality*

Hillsdale College Press, 1987

