

On the General Relation of Religion Metaphysics and Science

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The three relata of my title connect in so many ways that vary from thinker to thinker and from time to time that I must emphasize at the outset the word *general*. In other words this paper should be understood as proposing an overview of the three which subsumes all the specific ways they do or could relate.¹ Understood in this way, I think the question has been most often answered by focusing on the relation of religious belief on the one hand, to theory making-both in metaphysics and the sciences-on the other. Taken in this sense, I know of only four basic proposals (and their permutations) about the nature of the relation, and I will begin by reviewing those which are the most widely accepted of them.

THE THREE MOST POPULAR ANSWERS

The first of these I will call the “rationalist” view to indicate that it regards reason as the autonomous judge and jury in all matters, whether concerning religion or philosophy or science. It says that the question as to whether to have a religious belief, and if so which one, is to be settled in the same ways as the question of which theories are to be accepted. So even though science may involve empirical experiments in ways metaphysics does not, this is not crucial since experiments are also to be conceived and judged by the same authoritatively rational procedures that apply to inventing theories or deciding on religious beliefs.

This view has its difficulties. How does one determine rationally the limits of what is rationally determinable? Even more vexing has been the question of the nature of (supposedly) neutral rationality. For example: Is it only reasoning according to self-evident principles? Does it include intuiting Forms or eidetic

¹ For a full defense of the major claims of this chapter, see R.A. Clouser, *The Myth of Religious Neutrality: An Essay on the Hidden Role of Religious Beliefs in Theories* (Notre Dame: University of Notre Dame Press, 1991).

essences? Is it also probable induction from perception? Nevertheless, the rationalist view is the one that prevailed among the thinkers of the ancient world after theories replaced myths as the best means of explanation. To be sure, there continued to be mysticism and belief in fate or chance in the ancient world. But the prevailing view among theorists was a firm conviction that if something could be explained at all, or could be decided on principles at all, it *should* be done on the basis of rational principles which are neutral with regard to every subject matter and are the common equipment of all humans.²

With Christianity, however, a rival source and authority called faith was introduced. The view of faith that rapidly came to prevail among Jewish, Christian and Muslim thinkers was that faith designates a distinct function of the human mind or soul given by God to the elect. On this view, then, all humans have reason, but only those who have received God's grace have faith. As a consequence, those who possess this *donum superadditum* believe the contents of God's revelation in addition to what they can know by perception and reasoning. This special gift is needed because (most of) the content of revelation is seen as information about the realm of supernature which is not open to normal perception and is largely immune to discovery by reasoning. Thus those who have faith have access both to nature by reason and to supernature by faith, whereas those without faith remain dangerously ignorant of the supernatural realm. I will call this general view of the relation "scholasticism."

As to the relation between religious beliefs accepted on faith and theories of science or philosophy accepted by reasoning, scholasticism has a tidy-sounding prescription: any theory of philosophy or science is acceptable for the theistic theorist provided it is not incompatible with any doctrine of the Faith. Believing that God's revelation in nature could not contradict his revelation in his word (Augustine's idea of the "two books" of God), scholasticism declares any theory about nature that is incompatible with revealed doctrine to be mistaken. In this way revelation is seen as supplying guidance to theorizing: if a theory is incompatible with revealed truth, it is mistaken. This view of the relation therefore sees the guidance religious

² Compare the comment of A.N. Whitehead: "The appeal to reason is to the ultimate judge, universal and yet individual to each, to which all authority must bow" (A. N. Whitehead, *Adventures of Ideas* [New York: Mentor Books, 1955], 165).

belief supplies to theories as an external one, with the result that most theories will be compatible with the Faith by being neutral with respect to it. For it is only occasionally that a theory is flatly contradicted by a teaching of Scripture, and it is even rarer that any are *entailed* by revealed doctrine. So the scholastic notion of the basic relation is one of external, logical compatibility: whenever an article of faith contradicts the content of a theory, either the article of faith has been misunderstood or the theory is (at least partly) false. Accordingly, scholasticism postulates that there can be no conflict between genuine philosophy or science and any article of the Faith correctly understood. Only false philosophy or science could be in opposition to revealed truth.³

But while this arrangement sounds tidy in the abstract, in practice it has created endless messy debates. The debates have concerned how to interpret the doctrines of the Faith so precisely as to tell whether they are or are not in conflict with a particular theory, as well as how to interpret hypotheses precisely enough to tell whether they conflict with particular doctrines. They have also concerned the precise sense of “incompatibility” needed to render a theory unacceptable; clearly, formal contradiction or contrariety cannot be tolerated, but is that all? Is anything less than outright *logical* incompatibility acceptable? If not, what additional senses of incompatibility are relevant?

More recently a third view has come into prominence among scholars which differs significantly from both the rationalist and the scholastic positions. This view was perhaps adumbrated at least as early as the remark attributed to Galileo that the Scriptures “tell us how to go to heaven not how the heavens go,” but was given a more extreme form and influential defense by Kant. This view could be called “religious irrationalism” or, perhaps better, “insulationism.” It gained a considerable following in the century immediately after Kant; versions of it were held by such thinkers as Schleiermacher and Kierkegaard, for example, and it was widely adopted by the liberal Protestant theology of the nineteenth century. It is the view that religious belief occupies a territory of life so different and

³ See Aquinas’s remarks in *On the Trinity [De Trinitate]* in *Thomas Aquinas Theological Texts*, translated by T. Gilby (Oxford: Oxford University Press, 1955), exposition 2.3 and K. Konyndyk, “Aquinas on Faith and Science,” in *Facets of Faith and Science. Volume 1: Historiography and Modes of Interaction*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996).

separate from that occupied by science or philosophy, that the two cannot *in principle* interact at all. One may or may not have faith. But if one does, it can neither be supported nor refuted by theoretical reasoning because the nature of each is so different that there is a great gulf fixed between them. Thus it proposes an impenetrable bulkhead to divide reason and nature from faith and supernature, rather than the semipermeable membrane by which scholasticism allows the interaction that causes it such headaches.

However, in seeking to avoid the problems of interaction between the two sides altogether, the insulationist view creates even worse difficulties. To begin with, such an airtight compartmentalization looks *prima facie* implausible. There are theories which deny human moral responsibility, for example, and others which deny outright that there is any reality over and above the universe which is open to human inspection and conceptualization. Still others explain belief in God as a form of neurosis. Surely these and many others are straightforwardly incompatible with the clear teachings of Scripture. For this reason those who hold this view have been driven to reinterpret Scripture in ways that vitiate much of its teaching and to make wildly implausible construals of the biblical text.

Assuming these three views are sufficiently clear in their essentials, I will now explain why I find each of them to be inadequate by comparison with what I take to be the correct view, or the scriptural view, of the relation of religious belief to knowledge and truth, and hence to theories.

A NEGLECTED OPTION

A less familiar answer to the question of the general relation of religious belief to theories was given by John Calvin in the sixteenth century.⁴ In this

⁴ Calvin rejected the scholastic view that revealed truth is a matter of faith as opposed to knowledge by defining faith as “a firm and sure knowledge of the divine favor toward us ... revealed to our minds and sealed on our hearts by the Holy Spirit” (J. Calvin, *Institutes of the Christian Religion*, translated by F.L. Battles [Philadelphia: Westminster Press, 1960], III: 2, 7). He also rejected the idea that revealed truth impacts theories only when the two are incompatible: “It is vain for any to reason ... on the workmanship of the world, except those who ... have learned to submit the whole of their intellectual wisdom (as Paul expresses it) to the foolishness of the cross ... the invisible kingdom of Christ fills all things and his spiritual grace is diffused through all” (J. Calvin, *Commentary on the First Book of Moses* [Grand Rapids: William B. Eerdmans Publishing Company, 1948], 1:63).

century it has been developed and defended by such Calvinists as Abraham Kuyper and Herman Dooyeweerd. I will defend this view because I see it as reflecting an important, though largely neglected, scriptural teaching which is relevant to the relation of belief in God to theories. I also find that honoring this teaching produces a view of the relation that avoids more difficulties than the other, more popular, views.

These last remarks may sound very surprising. Most Christian theologians, philosophers and scientists would be inclined, I think, to say that Scripture has no position on anything so abstract as how faith relates to theories. And there is one sense in which that is true; there are no statements in Scripture that explicitly mention *theories* as such. But there are quite a number that speak of the relation of belief in God to *truth* and to *knowledge*. Since those are among the goals which theories aim to achieve, it seems clear that Scripture's teaching on this subject applies to theories even if they are not explicitly mentioned. The teaching to which I refer is the claim made over a dozen times in the prophets, the Psalms, Proverbs and again in the New Testament, that having the right God is necessary for obtaining truth and knowledge. Three important points need to be noticed at once about this claim.

First, this claim cannot be dismissed as mere poetic hyperbole, nor as confined only to practical wisdom. It is true that this teaching occurs in poetic sections of the Bible,⁵ but even those texts apply to poetic sections of the Bible,⁶ but even those texts apply to knowledge as well as wisdom. And the claim is repeated by Jeremiah, by Jesus,⁶ and in other New Testament texts.⁷ These texts are clearly not poetic, and apply the point both to "knowledge" and to "all truth."

Second; the phrasing of these Bible passages is such that one cannot plausibly construe them simply as tautologies about the knowledge *of God*. They do not merely say that without faith in revealed truths about God we have no knowledge of *God* or of the supernatural dimension of reality. Instead, they insist that believing in the true God rather than a false one in some way impinges on *every* sort of

⁵ Such as Psalm 111:10 and Proverbs 1:7, 9:10, and 15:33 6.

⁶ Jeremiah 8:9; Luke 11:52.

⁷ 1 Corinthians 1:5; II Corinthians 5:7; Ephesians 5:4.

truth. More specifically, the phrasing says that religious belief impinges on knowledge in such a way that the understanding of everything else is in some sense falsified if one's faith is in a God-surrogate rather than the true God. That claim is in outright conflict with both the rationalist and insulationist views, and is not reflected by the scholastic view which leaves room for (most) theories to be religiously neutral.

Third, the claim summarized above is phrased by the writers of the Bible so as to avoid suggesting that if one does know God then one is guaranteed to arrive at all or only truth. Knowing God is never said to be a sufficient condition for coming to all other sorts of truth, but only a necessary one. The Bible's phraseology is always negative: if one fails to have the true God, one fails to obtain truth about anything else. Scripture does not then specifically say whether belief in a false god destroys knowledge in whole or in part. But since everywhere else it clearly regards unbelievers as knowing a great many things, I take its position to be that belief in a false god *partially* falsifies everything else.

So it appears that Scripture does have a definite teaching about how religious belief impinges on theories. It teaches that religious belief relates to theory-making so that the latter depends on one's religious belief. More specifically, it says that belief in God is capable of impinging on every sort of subject matter so as to make it possible for believers to avoid some (unspecified) type of partial falsification which is inevitable from the standpoint of belief in any God-surrogate.

This last point is closely connected to another biblical tenet, namely, that everyone has a religious belief of some sort. This point is not specifically stated in Scripture, but it is everywhere presupposed. Humans are said to have been created for fellowship with God, and are always addressed by the writers of the Bible as putting their faith in him or in some substitute. This point is passed over in silence or denied outright by the other three positions, but it is an important part of the Bible's teaching that is relevant to our topic. Unlike the three popular positions, the writers of the Bible do not see the function of faith as an addition to human nature, but as a natural, inevitable part of it. They do not regard the exercise of faith itself as a special gift from God, but instead speak of God's gift as the restoration of the proper functioning of faith so that faith is invested in God rather than in some false God-substitute. Moreover, faith is not contrasted to knowledge by the writers of the Bible. It is never spoken of as though it is belief

without evidence or belief beyond the evidence as philosophers often do today. Rather, both the existence of God and the offer of his love in the covenant are always spoken of as things believers *know*. When such things are referred to as faith at all, the term always means the reliance believers actually put in God and his promises.

But even if this summary is correct about what Scripture itself has to say on our topic there is much that needs to be done in the way of interpreting and applying it to the theories of philosophy and science. So I will now take this teaching as a point of departure, and attempt to bring it to bear more precisely on theorizing. My construal of how this goes is that the most general impact of religious belief on theories is a two step affair. The first step is that the construction or adoption of scientific theories cannot fail to be regulated by some metaphysical view of the essential nature of reality. This is because metaphysical views inevitably carry implications for how the domains of the various sciences are to be understood to relate to one another.

More specifically, traditional metaphysical theories all postulate a candidate for the basic nature of reality by selecting it from among the basic *kinds* of properties and laws exhibited by the world given to pretheoretical experience. These kinds comprise a list which includes such members as “mathematical,” “spatial,” “physical,” “biological,” “psychological,” “logical,” “historical,” “social,” “economical,” “ethical,” etc. (In the interest of linguistic economy, from now on I will refer to the kinds of properties and laws that comprise these domains as “aspects” of reality.) Metaphysical theories have traditionally identified the basic nature of reality with some one or two of such kinds. For example, the Pythagoreans said it was number, Parmenides said it was space, materialists say it is matter, Heim and Whitehead said it is life, Hume and other positivists held it to be sensation and feeling, and a host of thinkers have maintained it to be (at least partially) logical laws, sets or forms.

All such metaphysical theories defend their choice of the basic nature of reality by arguing that the aspect(s) it has identified with that nature exist independently of all the rest. The other aspects are thereby reduced to the one(s) selected as the basic nature of reality. For any of the nonselected aspects, reduction arguments either try to show them to be: (1) metaphysically dependent on the one(s) selected by the theory or (2) to be eliminated altogether. In this way metaphysical views about

the nature of reality limit and direct the sorts of hypotheses that will appear plausible *within* the sciences whose domains correspond to reduced aspects. For example, the concepts and explanations deemed acceptable in the sciences devoted to nonphysical aspects of experience will be very different depending upon whether one accepts a materialist metaphysics.⁸ Similar differences will hold between those maintaining phenomenalist, vitalist, historicist or dualist views of reality.⁹ I have deliberately used the term “reductionist” here to describe any metaphysics which arrives at its candidate for the basic nature of reality by ascribing a metaphysical priority to any aspect(s) of creation. This is because either of the senses of priority that reductionism ascribes to an aspect reduces the status of the remaining aspects. In sense (2), the theory reduces the experienced multiplicity of aspects by requiring the elimination of all but the one it identifies as the exclusive nature of reality. In sense (1) a multiplicity of aspects is admitted, but all the others are viewed as totally dependent on the one(s) to which the theory accords priority.

The second step in the impact of religious belief on scientific theories is that the elaboration and defense of any metaphysical theory (and thus of the relation between the rest of the aspects forming the domains of the sciences) cannot help being regulated by its belief about precisely what it is that is metaphysically nondependent. But believing anything to be metaphysically basic is, I contend, an essential characteristic of religious belief, and the only characteristic which all religious beliefs have in common.

This, then, is how I understand the biblical teachings summarized above: theories in the various sciences are regulated by some metaphysical view of the basic nature of reality, and such metaphysical views are in turn regulated by some

⁸ [For an example in biology, see J.M. van der Meer, “Religious Belief in Sociobiology: How a Physical Analogy Introduces Materialism in Human Sociobiology,” in *Facets of Faith and Science. Volume 2: The Role of Beliefs in Mathematics and the Natural Sciences: An Augustinian Perspective*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996) *Editor*.]

⁹ [For an example of a historicist view of reality in biology, see U. Zylstra, “The Influence of Evolutionary Biology on Hierarchical Theory in Biology, with Special Reference to the Problem of Individuality,” in *Facets of Faith and Science. Volume 2: The Role of Beliefs in Mathematics and the Natural Sciences: An Augustinian Perspective*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996) *Editor*.]

(true or false) religious belief. In this way the contents of scientific theories vary with the content of the religious belief regulating them.

MORE ABOUT RELIGIOUS BELIEF

To avoid misunderstanding I must now defend the view just mentioned as to what counts as a religious belief. Much of the current skepticism about whether religious belief can be defined at all is unfounded. In the ancient and medieval periods there was virtually universal agreement that an essential characteristic of religious belief is that it is a belief in something as divine, and that the essential feature of divinity is that of being *utterly nondependent*.¹⁰ My studies in comparative religion confirm that. I find metaphysical nondependence to be the only thing attributed to every candidate for divinity no matter how else it is conceived. So while the ideas about what else is true of the divine are not universally agreed on, every putative divinity is regarded as nondependent or “just there.”¹¹

The distinction I am drawing here between putative divinities and the status of divinity is like that between two ways of answering the question, “Who is the President of the U.S.A.?” A proper answer could describe either the person who presently holds the office or the duties, powers and limits of the office itself. Just so, religious traditions have many ideas of what it is that holds the office of divinity: a transcendent being who created everything else *ex nihilo*, Being-itself which permeates and constitutes everything, an infinite inconceivable

¹⁰ Compare W. Jaeger, *The Theology of the Early Greek Philosophers* (Oxford: Oxford University Press, 1960). In recent times this definition has been rediscovered often. See A.C. Bouquet, *Comparative Religion* (London: Penguin, 1962), 37; H. Dooyeweerd, *A New Critique of Theoretical Thought*, 4 vols. (Philadelphia: Presbyterian and Reformed Publishing Company, 1955), 1:56; N.K. Smith, *The Credibility of Divine Existence* (New York: St Martin's, 1967), 396; W. James, *The Varieties of Religious Experience* (New York: Mentor Books, 1958), 42-45; H. Kung, *Christianity and the World Religions* (New York: Doubleday and Company, 1986), xvi; M. Eliade, *Patterns in Comparative Religion* (New York: Sheed and Ward, 1958), esp. 25.

¹¹ Here it should be noted that not every being called a god is regarded as nondependent in this sense. The Olympian gods were not, for example. What this shows is not a defect in the definition of divinity, but rather that various pagan religions regarded their gods as personifications of the divine or beings with more divine power than humans, rather than as divine per se. This is clear in both Homer and Hesiod, for example, since they gave accounts of how the gods originated, and each account attributes that origin to a divine principle (*Okeanos, Xaos*) which is taken as “just there.”

Nothingness, or forces in nature such as Kami, Numen, Mana or Wakan, and a host of other candidates. But no matter how varied the conception of these office holders may be, they are all taken as nondependent and that upon which some or all of whatever is regarded as nondivine depends for existence. So the definitions I am prepared to defend and will use in the remainder of this article are:

1. Something is believed to be divine provided it is accorded the status of metaphysical nondependence.

2. A belief is religious if and only if it holds something or other to be divine, or is a belief about how to stand in proper relation to the divine.

There have been two main obstacles which have prevented this view of the nature of religious belief from achieving the acceptance it deserves. One is the identification of religious belief with belief in God or in gods, and the other is the assumption that to be religious a belief must issue in worship and/or an ethical code. Both of these are common Western presumptions deeply entrenched in both popular and scholarly thought, and both are utterly false. It is understandable, however, why this view is so popular. After all, the three most influential religious traditions in the West are Judaism, Christianity and Islam. Generalizing from them gives the impression that religions all believe in God and involve both worship and an ethical code. And the fact that when the biblical literature refers to false religious belief it often does so in terms of false *gods* only seems to confirm this impression.

Nevertheless, there is another way in which the writers of the Bible refer to false religion, namely, as *idolatry*. And their use of this term is not restricted to gods. In such places as 1 Samuel 15:23, Ephesians 5:5, Colossians 3:5, “idolatry” is committed if anything - no matter how it is conceived - is given a status that belongs only to Yahweh. The same point is made in Isaiah, where God is quoted as saying, “I will not give my glory unto another.”¹² And just what is the glory God will not allow to be (falsely) attributed to anything else? The same book answers this clearly in a passage that has become a familiar part of the Christian liturgy.

¹² Isaiah 48:11.

Because it is so familiar, however, we need to notice that it has entered the liturgy in a translation that is not quite precise. The rendering we are used to is: “Holy, holy, holy, LORD God of hosts, the whole earth is full of your glory.”¹³ Translated more precisely, however, the last clause reads: “the *filling* of the whole earth is your glory.” So the glory that God. will not share is that of being the Creator. It is only God on whom all else depends, and attributing that status to anything else is giving his glory to another; it is replacing the true God with a false divinity. Thus anything that is regarded as nondependent and as that on which all the rest of reality depends is believed to be divine no matter how it is conceived.

This point is extremely instructive and important, for it opens the way to seeing that even a belief that does not issue in worship or involve an ethical code, which does not regard its object as a personal god, a savior or even the guarantor of a destiny beyond death, could still be a (false) religious belief. For it shows that *anything* believed to have the status of the nondependent reality on which all else depends is a God-surrogate with respect to Yahweh’s status as Creator. To hold such a belief is therefore to have an alternative religious belief to the one taught in Scripture.

Therefore, Theravada Buddhism is a religious belief despite its lack of worship; Shinto is a religious belief despite its lack of ethics; and the Epicurean belief in gods was religious despite the fact that it issued in neither worship nor an ethical code. Theravada Buddhism follows Buddha himself in denying (or not caring whether) any gods exist. But the denial of the existence of *gods* is not the denial that anything whatsoever is divine. The same goes for many beliefs not associated with cultic religious traditions-materialism, for example. I have no reason to suspect that modern materialists sing hymns to quarks or pray to positrons when no one is around to see them do it. But their belief in the ontological nondependence of the physical aspect of reality makes their belief just as religious as the Hindu’s belief in Brahman-Atman, Plato’s belief in the divinity of the Forms¹⁴ or the Christian’s belief in God. Each of these is simply a different-and

¹³ Isaiah 6:3.

¹⁴ See *Timaeus* 37, 50ff; *Philebus* 53-54 in *The Dialogues of Plato*, vol. 2, translated by B. Jowett (New York: Random House, 1937).

mutually exclusive-belief about *what* has divine status. Some beliefs, like that in Yahweh, make worship eminently appropriate, while others, like that of the Brahmin theology in Hinduism, the Buddhist's Nothingness, or the materialist's belief in matter/energy, make worship senseless.¹⁵

The most common objection to this definition of religious belief is that it is too foreign to common usage and too inclusive, making many beliefs usually regarded as nonreligious to be religious after all. But as we have already seen, this objection is narrowly culture-bound and almost wilfully ignorant both of other religious traditions and of the scriptural conception of idolatry. It is rooted in stubbornly clinging to the popular association of religious belief with worship and/or ethics despite the evidence that those are not found in all religions. As a result, the genuinely religious character of many so-called "secular" beliefs is disguised.

This last point is also important for understanding Scripture's assumption-mentioned earlier-that all people have some religious belief.¹⁶ For it makes clear why this assumption is not defeated by the fact that there are practising atheists. On the view I am defending, atheism stands to religious belief as vegetarianism does to eating. Not believing in any God or gods no more precludes having any religious belief than not eating meat precludes eating any food whatever. Of course, there are people who do not *want* to have any religious belief whatever. (A fellow graduate student once said to me: "Show me any belief I have that turns out to be religious in *any* sense and I will give it up on the spot.") But if belief in every Creator-surrogate counts as a religious belief, and if it is possible to hold such beliefs unconsciously as well as consciously, then it is not clear how all religious belief can be avoided no matter how much someone may wish to. And if, as I shall contend, all theories unavoidably presuppose some such belief it is not

¹⁵ Some of my colleagues think it a *reductio ad absurdum* of my definition that materialism qualifies as a religious belief. So it needs to be recalled that there were religions that held matter to be divine long before there were philosophical materialists.

¹⁶ For example, Romans 1:24-25.

merely unclear but downright implausible that they can be avoided.¹⁷

I now proceed to the issue of how this view of religious belief figures in the neglected alternative to the three popular ways of explaining the relation of such beliefs to theories.

HOW DOES THE RELIGIOUS BELIEF WITHIN METAPHYSICS AFFECT SCIENCE?

Earlier I argued that every metaphysical view of how the domains of the sciences relate is itself regulated by whatever it regards as metaphysically nondependent. According to my definition of religious belief, this means that every metaphysics is regulated by a religious belief, since each has at its core a belief in some principle(s) to which it ascribes the status of divinity. Examples of such divinities in metaphysical theories have included (but are not limited to): Forms, substances, monads, matter/energy, space, sensations, logical laws (or forms), history and numbers.¹⁸ This means that at bottom philosophy and religion converge such that there is a religious belief at the core of any metaphysical view of reality. I believe this opens the way for seeing that the influence of religious beliefs on theories goes well beyond the obvious.

The most obvious contacts between religious belief and scientific theories are the external ones so well recognized by scholasticism: a theory can assert something that contradicts some revealed truth. However, in light of the biblical notion that all truth is tied to having the right God, that has to be too restrictive a

¹⁷ A more complete discussion of this point, and of other objections to my definition, can be found in *The Myth of Religious Neutrality*, 24-34. In addition, there is an argument in chapters 10 and 11 showing how metaphysical views of the relations between all the aspects alter the concepts and postulates within the study of each of them.

¹⁸ [For an example of the deification of number, see D.F.M. Strauss, "A Historical Analysis of the Role of Beliefs in the Three Foundational Crises in Mathematics," in *Facets of Faith and Science. Volume 2: The Role of Beliefs in Mathematics and the Natural Sciences: An Augustinian Perspective*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996); and D.F.M. Strauss, "Primitive Meaning in Mathematics: The Interaction among Commitment, Theoretical Worldview and Axiomatic Set Theory," in *Facets of Faith and Science. Volume 2: The Role of Beliefs in Mathematics and the Natural Sciences: An Augustinian Perspective*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996) *Editor*.]

notion of the relation. It cannot be merely a matter of logical consistency between individual propositions of faith and theories judged piecemeal, since such a view would leave most of the hypotheses in most of the sciences religiously neutral. We need a view that accounts for how religious belief impinges on science more broadly, such that it makes sense of the biblical teaching that all knowledge depends on having the right God. This point has gained increasing recognition among Christian philosophers in the past few years. For example, Alvin Plantinga has recently argued that the compatibility of a theory with the Faith cannot be simply a matter of straightforward consistency or inconsistency. “The question about logical consistency,” he says, “is a reasonable place to start; but it is not a reasonable place to end.”¹⁹ And Nicholas Wolterstorff insists that the religious regulation of theories must be internal and not merely external restraint, and that theories must “comport well” with religious belief, not merely fail to contradict it.²⁰

The next step to seeing what this broader relation might be, I believe, is to notice that the biblical texts teach a stricter doctrine of creation than has been held by most theologians. This stricter reading is one that understands the doctrine to require that nothing whatever has nondependent existence but God. To many thinkers not versed in the intricacies of theological controversy, this point often sounds oddly unnecessary. But the fact is that the most widely held view in Judeo-Christian theology regards certain abstract entities, properties and laws found in creation to be as equally uncreated as God. The entities usually ascribed uncreated status by theologians and philosophers are mathematical laws, logical laws, propositions, states of affairs and any attribute of God which creatures share (in a lesser degree). I find this view totally unacceptable, although a defense of this point is beyond the scope of this paper.²¹ I can only premise my defense here, and

¹⁹ A. Plantinga, “Evolution, Neutrality, and Antecedent Probability: A Reply to McMullen and Van Till,” *Christian Scholar’s Review* 21 (1991): 85.

²⁰ N. Wolterstorff, *Reason Within the Bounds of Religion* (Grand Rapids: William B. Eerdmans Publishing Company, 1976), 72.

²¹ For recent statements of this majority position see: N. Wolterstorff, *On Universals* (Chicago: University of Chicago Press, 1970); and A. Plantinga, *Does God Have a Nature?* (Milwaukee: Marquette University Press, 1980). I have argued against their position at some length in *The Myth of Religious Neutrality*, chap. 10; and also in

succinctly summarize its consequences as follows.

If all things other than God have been called into existence out of nothing, and if that includes all the kinds of properties and laws true of creatures as well as the creatures themselves, then it follows that those kinds are one and all dependent on God so that none is the necessary and sufficient condition of the existence of any others.²² Thus, as believers we should not be looking among these (dependent) aspects for the one or two that constitute the nature of metaphysical substance, since the standard definition of “substance” is precisely “that which can exist on its own.”

This goes equally for how we understand the natures of entities we postulate as well as for those we experience. We should not accept any theory which proposes the essential *nature* of creatures to be identified with any aspect for the reductionist reasons that it: (1) has metaphysical independence because it alone is real or (2) has metaphysical independence because all the rest depend on it. Even the weaker sense of reduction - sense (2) - is objectionable since it can be defended only by arguing that an aspect supposed to have such independence possesses it in virtue of being the necessary and sufficient condition of the existence of creatures and of any other aspects they are admitted to have. So whether the priority claim is defended in sense (1) or (2), the priority is an attribution of a status only God has to some aspect(s) of creation.

In either case, such a metaphysics requires a reductionist view of the relations between the various sciences; that is, it requires the reduction of the remaining domains for the sciences to whichever domain(s) are defended as the exclusive or

two articles: R.A. Clouser, “Religious Language: A New Look at an Old Problem,” in *Rationality in the Calvinian Tradition*, edited by H. Hart, J. Vander Hoeven and N. Wolterstorff (Lanham: University Press of America, 1983), 385-407; and R.A. Clouser, “Divine Accommodation: An Alternative Theory of Religious Language,” in *Tijdskrif vir Christelike Wetenskap*, 24 (1988): 94-127. See also J. Ross, “God, Creator of Kinds and Possibilities: Requiescant universalia ante res,” in *Rationality, Religious Belief, and Moral Commitment* (Ithaca: Cornell University Press, 1986); J. Ross, “The Crash of Modal Metaphysics,” *Review of Metaphysics* 43, (1989): 251-79.

²²By “kinds of properties and laws” I mean those which were previously referred to as “aspects” delimiting domains for the sciences. A more complete list includes: numerical, spatial, kinematic, physical, biological, sensory, logical, historical, linguistic, social, economic, aesthetic, justitial, ethical and fiduciary.

basic nature of reality.²³ The crucial importance of this point is that *any reductionist view of the domains of the sciences requires correspondingly reductionist concepts and postulates within every science understood from its standpoint*. The metaphysical overview of the general relation of the various aspects of creatures is a macrocosm that is reflected in the microcosm of each concept formed within any science investigating one of those aspects. As I pointed out earlier, this can be seen by considering what happens when a theorist regards the physical aspect of reality as “just there” either because reality is supposed to be exclusively physical or because all other aspects have the physical as their necessary and sufficient cause. Such positions require sharply different concepts of biological, sensory, logical, etc., data than would be the case if some nonphysical aspect were accorded that priority. And the differences in the conceptualization of experienced data in turn require very different concepts for entities being

²³ More precisely, the senses of reduction being rejected are as follows: (1.) Strong Reduction: (a) *Meaning Replacement*: The nature of reality is exclusively that of aspect X, so that all things have only the X kind of properties and are governed by only the X kind of laws. This is defended by showing that all the *terms* supposed to have non-X meaning can be replaced by X-terms without loss of meaning, while not all X-terms can be replaced by terms with non-X meaning. (Berkeley, Hume, and Ayer used this strategy to defend phenomenalism.) (b) *Factual Identity*: The nature of reality is exclusively that of aspect X so that all things have only the X kind of properties and are governed by only the X kind of laws. This is defended by arguing that although the *meaning* of non-X terms cannot be reduced to that of X-terms, their *reference* may be to exclusively X -things all the same. The selection of the kind(s) of terms that correspond both extensionally and intensionally to the nature of reality is argued on the basis of their explanatory superiority. The argument tries to show that for anything whatever, the only or best explanation is always one whose primitive terms and laws are of the X kind. (J.J.C. Smart defended materialism this way.)

(2.) Weak Reduction: (a) *Causal Dependency*: The nature of reality is basically that of aspect X (or aspects X and 1). It is Xness of things which makes possible the other kinds of properties and laws true of them. So while other kinds of properties and laws are real, and can be proper objects of scientific investigation, there is a one-way causal dependency between the nonX aspects and aspect X. The non-X aspects could not exist without X, while X could exist without the others. (Aristotle and Descartes both defended theories in which certain aspects were the nature of “substance,” and all other aspects were accidental or secondary to substance.) (b) *Epiphenomenalism*: This strategy is much like the causal dependency one, except that the non-X aspects are thought to be much less real. They exist, but do not have their own laws and are not proper objects of scientific investigation. All genuine explanation must be exclusively in terms of X-properties and laws. (Huxley and Skinner argued that states of consciousness are epiphenomena of bodily processes or behavior.)

These strategies can be combined in various ways in the same theory. A thinker could argue, for example, that some aspects are to be eliminated by meaning identity while others are to be eliminated by factual identity, and at the same time maintain that still other are either causally dependent or epiphenomenal.

The strategies described here are not the only senses of the term “reduction” as it is used in philosophy, but are the senses being rejected here as religiously objectionable.

postulated within those sciences. For example, look how different the postulated entities have been in mathematical theories depending on whether they have been formed under the regulatory control of a metaphysics ascribing primacy to matter/energy, or sensory perception, or logical laws and sets, or to numbers themselves.²⁴

I do not want this last point to be misunderstood as saying that scientific theories are always *consciously* derived from, or controlled by, a metaphysical theory. This has occasionally happened, but it is also true that many scientists do not read or dabble in metaphysics, or do not consciously try to guide their work by the metaphysics to which they adhere. That fact does not defeat my point, however. For my point is that there is always an influence of a metaphysical *belief* whether or not a scientist is conscious of it or has ever been exposed to its formal exposition in a theory. That is, concepts of either the data or postulates in a science that include a priority ascription (of the two types we have been discussing) *presuppose* a reductive metaphysics whether the scientist is aware of it or not.

If this is correct, we have here a major advance for the project of discerning whether a theory is compatible or incompatible with the Faith. And it is an advance which makes sense of the biblical claims that belief in God impinges on *all* truth. We are no longer limited merely to seeing whether specific statements of theology are contradicted by specific statements of a theory, or whether there is any contradiction between entailments of each set of statements. Nor are we limited only to expanding the idea of compatibility to include whether a particular hypothesis gives aid and comfort to nontheists or seems antecedently less probable from a theistic point of view. Sometimes these simple strategies can uncover incompatibilities, to be sure. But for the vast majority of hypotheses, it is just not possible to establish their religious acceptability in these ways. Judged in those ways, most theories will turn out to be neutral since they omit examining the religious core of the theory's assumed metaphysics.

By contrast, the view I am advocating sees the religious character of the core

²⁴ Several of the more influential of these views are discussed in *The Myth of Religious Neutrality*, chap. 9. (See also Strauss, "A Historical Analysis" and "Primitive Meaning in Mathematics." *Editor*.)

belief of every metaphysic as the crucial element missing from the prevailing views of how religious belief impacts scientific theory formation. It is this which is the most deeply pervasive feature of the religion-science relation, and the key to understanding the biblical claims about all truth depending on having the right God. Thus the most important test for the compatibility of a scientific theory and belief in God is whether the theory presupposes a reductionist or nonreductionist metaphysics. Any theory giving a reductionist account of its subject matter or postulating entities with a reductionistically conceived nature will show itself to be incompatible with biblical faith at the level of its deepest (religious) presuppositions.

For example, suppose we ask whether atomic theory is religiously acceptable for a Christian. The question as to whether or not such a hypothesis is compatible with belief in God cannot be answered simply by finding no *prima facie* logical inconsistency between them, by noting that it has given aid and comfort to materialists, or by pondering whether it is antecedently more probable from a theistic point of view that God would have created the world that way. We must also ask whether any particular proposed *concept* of an atom is reductionist. On the view I am defending here, a conflict with biblical faith does exist if the nature of an atom is taken to be that of an *exclusively* physical entity (Einstein), a fiction useful for predicting exclusively *sensory* phenomena which alone are real (Mach), or to be *physical* energy formed by eternal *mathematical* laws (Heisenberg). Why are these incompatible with belief in God? Because each of these concepts of an atom either explicitly asserts or can only be defended by arguing that certain aspects are to be taken as the essential nature of an atom because they are nondependent: Einstein accepted a metaphysics that regarded all reality outside the human mind as solely physical and nondependent; Mach accepted a phenomenalist metaphysics of reality as exclusively sensory and all there is; and Heisenberg accepted a view of mathematical forms and laws which he explicitly admitted to be a piece of “Pythagorean religion” since it made those forms and laws nondependent and self-existent.²⁵ This does not, of course, mean that Christians

²⁵ A. Einstein, *Ideas and Opinions* (New York: Crown Publishing Company, 1954); E. Mach, “The Conservation of Energy,” in *Ernst Mach, His Work, Life and Influence*, edited by J. Blackmore (Berkeley: University of California Press, 1972); and W. Heisenberg, *Physics and Philosophy* (New York, Harper and Row Publishers, 1958),

must reject atomic theory in toto; it does mean that only a nonreductionist version of that theory will be acceptable.²⁶

In summary, I am arguing here that there is a conflict between the biblical doctrine of creation and any metaphysical theory that ascribes, or any scientific theory that assumes, metaphysical primacy to *any* aspect of creation over any other. If everything other than God depends on God, then *all* reductionist views of reality are ruled out. Thus the compatibility of a scientific theory with theistic belief importantly depends on its metaphysical assumptions about the *nature* of the entities it both explains and postulates. In this way the very concepts a theory employs either reflect a belief in the dependence on God of everything other than God (so that reduction is ruled out), or they reflect a belief that some aspect of creation is what everything else reduces to and thus depends on. It is significant in this connection that those are precisely the two options Paul views as exhaustive in Romans 1:24, 25.

TWO OBJECTIONS

There are many objections that can be raised to this interpretation of the general relation of religious belief to theories, but limitations of space require that I deal only with two of the most obvious. The first is that my account of religiously unacceptable metaphysics has erred in that it equates and condemns: (1) ascribing metaphysical nondependence to any aspect of creation and (2) ascribing metaphysical priority to any aspect(s) of creation supposed to comprise the nature of things. For even if (1) is unacceptable, why should (2) be equally unacceptable? Why should a theory be ruled out if it holds that creatures are, say essentially

72-3.

²⁶ See the article by Stuart and Settle in this volume where they argue that the content of nonreductionist theories in physics is necessarily different from that of reductionistic ones. They argue that self-contradiction in particular physical theories can be avoided only when the prohibition of reduction (of physical to sensory reality) is part of the theory (see C.I.J.M. Stuart and T. Settle "Physical Laws as Knowledge and Belief," in *Facets of Faith and Science. Volume 3: The Role of Beliefs in the Natural Sciences*, edited by J.M. van der Meer [Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996]). Strauss makes the same claim for mathematics (see Strauss, "A Historical Analysis" and "Primitive Meaning in Mathematics"). *Editor.*]

physical? Is not such a theory at least an option *so long as it adds that any kind(s) of properties and laws assigned metaphysical priority over other kinds still depend, in turn, on God?*

My answer to this has two parts. The first is merely a preliminary comment that points to the religious motivation for such prioritizing. Was it not born out of the pagan conviction that (since there is no transcendent creator) some aspect of the cosmos must be the divine on which all else depends? After all the centuries that have passed, and all the theistic thinkers who have adopted that strategy for metaphysics, it may be difficult for us now to imagine how philosophy might have been different had it been guided from the start by biblical ideas instead of pagan. Would it have devised the strategy of explaining creation by assigning metaphysical priority among its aspects? The impression one gets from the scriptural texts themselves is that all of creation depends on God immediately, not that its dependency is funnelled back to God via one or two aspects that are more real than the others. I believe that remarks such as those we noted from Isaiah might very well have induced thinkers at least to try a nonreductionist metaphysics rather than see how close they could come to a pagan approach without being outright pagan. But I admit this is speculative, and that the scriptural statements of the doctrine of creation only lean in a nonreductionist direction. They do not explicitly rule out the possibility that some aspects may depend on God indirectly rather than directly.

The second part of my answer is much stronger, however. The strategy of accepting a metaphysics which ascribes priority to one or two of the aspects of creation, with the proviso that those aspects in turn depend on God, cannot fail to result in a theory of reality for which belief in God makes no substantive difference whatever. Belief in God is a fifth wheel so far as the content of any such theory is concerned, since the *content is* exactly the same for the believer and the atheist. In this way the content of the theory and its explanatory power are neutral with respect to the religious belief appended to it. Thus belief in God is rendered irrelevant to the theory in precisely the way we have noticed Scripture forbids.

For example: the form/matter metaphysics of Aquinas, the materialism of Gassendi, the phenomenalism of Berkeley, etc., do not explain the nature(s) of creatures or the relations of the sciences any differently for having appended belief

in God to them. Certain concepts within the theories are, to be sure, tailored by those thinkers so as to comport more closely with their theistic theology. But that does not alter or increase the explanatory power of the theories they adapted, despite the fact that they sometimes try to introduce God into the theory as an explanatory principle. (Invariably this turns out to be little more than claiming that some notorious problem the theory cannot explain [mind/body interaction, for example] is *somehow due* to God.) But this merely makes God an asylum for ignorance, since it can then never explain just how God does whatever is supposed to solve the problem. Thus, my objection to this position is not based on Scripture's statements of the doctrine of creation alone, but follows from the conjunction of the (strict) doctrine of creation and the claim that having the true God makes a difference for all truth and knowledge. Together they rule out theories that reduce creation to any of its aspects, since such reductions can be defended only either by outright replacing God by the aspect(s) ascribed priority, or by making the aspect(s) the real explainers in the theory such that the theory's explanations are the same whether belief in God is appended to it or not.

The position defended here is thus a *tertium quid* between the positions of Plantinga and McMullen over whether science requires a "naturalistic methodology." I agree with Plantinga that belief in God makes a difference to science (though he exempts several sciences from this claim and I do not). But I also agree with McMullen that the difference is not that of making God a constitutive part of scientific explanations. Rather, belief in God *regulates* all concept formation by requiring concepts to reflect a nonreductionist metaphysics, rather than importing God to explain data which, from the viewpoint of science, can only be explained in terms of their properties, functions and laws. But since the nonreductionist methodology is based squarely on theistic commitment, it is highly misleading to call it "naturalistic."²⁷

At this point it is appropriate to note that my call for scientific theories to

²⁷ See A. Plantinga, "Methodological Naturalism?" in *Facets of Faith and Science. Volume 1: Historiography and Modes of Interaction*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996); and the articles of A. Plantinga ("When Faith and Reason Clash: Evolution and the Bible," and "Evolution, Neutrality and Antecedent Probability") and E. McMullen ("Plantinga's Defense of Special Creation,") *Christian Scholar's Review* 21, (1991).

be reinterpreted on the basis of a nonreductionist metaphysics is not a call in the abstract for a project yet to be begun. For although it remains largely unknown to the majority of philosophers and scientists in North America, this project has been given a brilliant elaboration in the work of the Christian philosopher, Herman Dooyeweerd (1894-1977). Dooyeweerd developed a completely nonreductionist metaphysics, and also elaborated in some detail the differences such a metaphysics makes for a number of natural and social sciences.²⁸

The second objection to this view of the religion-science relation is to ask whether the very idea of a nonreductionist metaphysics as sketched above is even *prima facie* plausible. How can we regard all the kinds of properties and laws found in creation as equally real? Do we not simply *find*, for example, that things must be physical to be alive, alive to be sentient, sentient to think logically, etc.? Is there not good evidence to support the belief that there actually were physical things before there were living, sentient and thinking things? And what about such kinds of properties as aesthetic or economic? Are these not dependent on there being things that are physical-if they are real at all? Is a nonreductionist metaphysic committed to some sort of implausible objectivist theory of values? These questions are, I believe, all convincingly answered by Dooyeweerd's theory, though the most I can do here is provide a brief summary of how those answers go.

Starting from the point that God is the One on whom all else depends, Dooyeweerd emphasizes that this includes the *orderliness* of creation as well as the things and events subject to that order. The domains of the sciences, which I have been calling "aspects" of creation, are kinds of both properties *and* laws. It is the order of creation that we attempt to approximate by our formulations of both natural laws and value norms. From a nonreductionist point of view, no one kind of law is more real than any other, and all govern the whole of creation simultaneously. Moreover, since God is the lawgiver to creation, there is no need to suppose that the orderliness of creation derives from the substantial natures of objects any more than that it is a merely human subjective projection. This is not to suggest that the laws that order creation are realities apart-that they constitute a separate realm from the world of our experience like Plato's Forms.

²⁸ Dooyeweerd, *A New Critique of Theoretical Thought*. See also my exposition of his critique in *The Myth of Religious Neutrality*, esp. chaps. 4, 10, 11.

Rather, it is to say that creation has a law *side* to it which is sui generis and is directly created and sustained by God so that it governs both objects and subjects. In this way, both traditional subjectivism and objectivism are avoided.

This opens the way to notice two different ways creatures are subject to creation's order: actively and passively. These two ways are not mutually exclusive; in fact, Dooyeweerd's theory holds that all things exist and function under all the laws passively, and that it is the active functions of things which exhibit the order of appearance that provoked the question(s) now being answered. Take the example of a rock. According to the distinction being proposed, a rock functions actively in the quantitative, spatial, kinematic and physical aspects. In these respects it exists and functions under those kinds of laws in ways that allow it to impinge actively on other things. On the other hand, the rock does not actively function in the biotic, sensory or logical aspects: it does not live, perceive or think. Its passivity in those aspects means that the only sense in which it can have properties of those kinds depends on its relations to things which function actively in those aspects. So a rock may have a biological property without actually being alive. It may, for example, play an important role in the digestive processes of a bird if it is swallowed and helps digest food in the bird's gizzard. Though a rock cannot perceive or feel, it may be perceived by a sentient animal. And although it cannot think, it can be the object of a logical concept. But such passive functions would be impossible were not the rock (passively) subject to each of those kinds of laws.

The same construal can be applied to the value aspects as has just been applied to the biotic, sensory and logical. A rock may acquire economic value in relation to our valuing it; there is a real sense in which it does not have value apart from our valuing. But we could not value it unless it were really subject to the laws of supply and demand and diminishing returns. Were it not already passively subject to those laws, and thus potentially economically valuable, we could not actualize that potentiality. Thus while our valuing plays an indispensable role in the way values are actualized, it is still not true that we are their sole creator.

By way of contrast to the rock, this theory would regard a plant as having an additional active function the rock lacks. The plant actively carries on such biotic functions as respiration, growth, reproduction, etc. Thus the theory accounts for the fact that there was a time when there were no living or sentient

beings without having to say that the things that existed first were *exclusively* spatial-physical. They already functioned in all the aspects passively. After all, even those who hold that the world was once only physical think *they* can now render a *sensory* picture of what that world looked like and that their theory is the correct *logical* concept of that world. But it is possible to have sensory depictions and logical concepts of that world only if sensory and logical laws really apply to it, so that it already had passive sensory and logical properties. Nor may we say that it was the spatial-physical aspects which brought the other aspects into being later, for that is a reductionist explanation. As kinds of laws and properties they already existed, which is why there could arise new things with active functions in them. So the order of preconditionality which is so obvious-spatial, physical, biotic, sensory, logical, etc.-is not one of metaphysical causality. Rather it is an order in the appearance of the active functions of things which are subject to the laws of all the aspects simultaneously. This is precisely what allows for the fact that things lacking a certain active function can combine to form a new thing which has the active function its parts lack. For example, rocks which have no active function beyond the physical can be combined to form a house which has a definite social function none of the rocks possess.

The importance of all this is that it makes it perfectly plausible to say that, so far as their law side is concerned, no aspect is the necessary and sufficient condition for the existence of any others. While there is a real sequential order in the appearance of active functions in creatures, aspects as creaturely kinds of properties and laws are nevertheless equally real, equally dependent on God and equally true of all creation simultaneously.

This sketch is woefully inadequate to convey the richness and detail of the explanatory power of the theory as Dooyeweerd developed it.²⁹ But perhaps it will

²⁹ The distinction between active and passive functions of things and several other points of Dooyeweerd's philosophy of science are given further explanation in R.A. Clouser, "A Sketch of Dooyeweerd's Philosophy of Science," in *Facets of Faith and Science. Volume 2: The Role of Beliefs in Mathematics and the Natural Sciences: An Augustinian Perspective*, edited by J.M. van der Meer (Lanham: The Pascal Centre for Advanced Studies in Faith and Science/University Press of America, 1996).

be sufficient to suggest that Dooyeweerd's program for theories that are nonreductionist because regulated by belief in God has already proven itself fruitful and deserves to be carried on. Even more importantly, it is the only philosophical program I know of that preserves the integrity of science while honoring the Scriptures' claim that belief in God upon impinges upon truth and knowledge of every sort.