In A. A. Snelling (Ed.) (2008). Proceedings of the Sixth International Conference on Creationism (pp. 31–41). Pittsburgh, PA: Creation Science Fellowship and Dallas, TX: Institute for Creation Research.

A Nuanced Lakatos Philosophy of Theology and Science

Doug Kennard, Ph. D., Biblical Studies Department, Bryan College, Dayton, TN 37321

Abstract

A Lakatos philosophy of science fosters nuanced precision within critical realism, recognizing that falsification of any theory (for example, evolution) does not occur without providing a better theory.

Imre Lakatos articulated a moderate foundational rational model of derivation in the philosophy of mathematics and science that utilized Peircian pragmatism to encourage its productivity and to make sense of paradigm change. Lakatos proposes a *sophisticated falsification* view that encourages helpful development, because, "There is no falsification before the emergence of a better theory." Thus a creationist model needs to focus on crafting better theories or creationist models will never be seriously considered by the academy as a live option. Lakatos' approach encourages a progressive orientation current with the latest warranted findings rather than clinging to a tradition. Justification for the theologian comes from exegesis and grounded philosophizing that contribute to a more nuanced understanding of an issue. The justification for the scientist comes from tested peer reviewed proposals that contribute to a more nuanced understanding of the issue.

Critical realism is better understood as Lakatos proposed than in Kuhn's paradigm shift. In creationism, the Kuhnian radical shift in paradigms would: (a) encourage the creationist to give up because he lost the battle as the scientific world shifted from creationism to evolutionism or (b) seek naive falsification of the evolutionary theory. Whereas, a Lakatos theorist would recognize that a more nuanced model between the extremes might better reflect the data in creationism. So a better model than a Kuhnian paradigm shift would be a Lakatos' approach illustrated by the contemporary rivalry among relativistic and quantum theories. A critical realist approach values recognizing the precise differences of these varied approaches, and crafting a nuanced method that reflects this sensitivity.

Examination will include the following methodological approaches to theology and science: Alister McGrath's Bhaskerian approach, Nancey Murphy's post-modern Lakatos' approach, and my moderate foundational Lakatos' approach.

Keywords

Scientific method, Theological method, Imre Lakatos, Critical realism

Introduction

In reaction to the enlightenment epistemologies in 1916, Roy Sellars proposed the view of "critical realism." The view appreciates the empiricism of Locke and Newton and blends it with the mathematical rationalism of Descartes and Kepler and pragmatism of Peirce and James (Sellars, 1916, pp. 27, 66, 206). This locates a critical realist's view of reality within an epistemic dualism, that is, an idea is not the reality for which it approximates (Drake et al, 1920, pp. 18–19, 158, 190; Sellars, 1916, pp. 11, 17, 109, 262). Standing against idealism's (like Plato, Berkley, Kant, and Process) and view's dominated by passion (like romanticism, existentialism and other populist approaches), critical realism sees this real world and metaphysical beings as accessible to the human mind. Sellars claimed, "Truth is, then, a reflective qualification of those ideas, beliefs, and judgments which we regard as giving us knowledge about some sphere of reality" (Sellars, 1916, p. 277). He acknowledges that in this view, perception is subjective (Drake et al., 1920, pp. 3, 206; Sellars, 1916, p. 14). However, as scientific realism this approach attempts to render the perception more precise (Sellars, 1916, pp. 26, 33, 62). To accomplish this increased precision, pragmatism is utilized to check the perception (Drake et al., 1920, pp. 35–81, 157–60; Sellars, 1916, pp. 132–134, 164). "Truth is thus accepted and tested knowledge" (Sellars, 1916, p. 282). Moreland and Craig summarize the core tenets of such a scientific realism (Moreland & Craig, 2003, p. 328):

SR1: Scientific theories (in mature, developed sciences) are true or approximately true.

SR2: The central observational and theoretical terms of a mature scientific theory genuinely refer to entities in the world. These terms make existence claims.

SR3: Given two rival theories, it is in principle possible to have good reasons for thinking which

is more likely to be true or approximately true … conceptual relativism (what is rational for one person or group should not necessarily be so for another person or group since rationality itself is relative to a person, scientific community or theory) is false.

SR4: A scientific theory will embody certain epistemic virtues (simplicity, clarity, an absence of internal and external conceptual problems, predictive success, empirical accuracy, scope of relevance, fruitfulness in guiding new research, utilization of appropriate ways of explaining things …).

SR5: The aim of science is a literally true conception of the theory-independent external world.

Thus an outstanding trademark for the critical realist approach is increased precision and warrant for the views that they articulate.

In the wake of Renaissance Humanism, evangelical theology tends to be proposed within commonsense realism. However, there are some critical realist theologians who have proposed a more nuanced approach toward God, which admits to subjectivity from one's contexts and point of view. These critical realist theologians appreciate renaissance humanism at an even more precise level. For example, William G. T. Shedd acknowledged progressiveness within the discipline of theology that would be characterized as a discipline wide critical realism in his comments on "The first investigator is not so likely to strike upon the intrinsic constitution of a thing as the last one, because he has not the light of previous inquiries. Methods of investigation are continually undergoing correction and modification, and are thus brought closer to the organization of the object" (Shedd, n.d., vol. 1, p. 4). With the discipline of theology developing, theology should not be thought of as a static authoritative tradition or Kuhnian "paradigm." Rather developing theology should be thought of as Lakatos' "Research Programs" which undergo nuanced revolutionary change as theology proposals develop. This approach is more accurate description of theological development than viewing such development through a Kuhnian lens because with every new theological development, advocates of the outmoded positions remain in their earlier less-nuanced positions. For example, the radical shift in paradigms about which Thomas Kuhn wrote about in his *Structure of Scientific Revolutions* (Kuhn, 1962) are like the change from the view of the Ptolemaic universe (sun and everything revolves around the earth) to a Copernican universe (in the solar system the planets revolve around the sun). Theologically, this would be like the radical shift from Platonic to Aristotelian theology, under Thomas Aquinas. Whereas, a Lakatos theorist would recognize even as the weight of adherence from Platonic to Aristotelian theology shifted there remained advocates for both approaches, a condition which Kuhn would say was illegitimate, but in fact describes the reality. That is, many philosophical, theological, and traditional approaches advocated in the past still have contemporary advocates. Furthermore, many of these theological variants retain aspects of the previous philosophical approach within them as they moved on with a new philosophical base, as is evident by the resilience of such features as Platonic simplicity of God which continues to appear throughout many later theological approaches. So instead of monolithic change in the Kuhnian pattern it is better to recognize a Lakatosian approach which permits modest incremental changes within changing paradigms. That is, a better model for change than the Copernican model would be the contemporary rivalry among relativistic, quantum, and string theories in physics. A critical realist approach values recognizing the precise differences of these varied approaches, and crafting a nuanced method that reflects this sensitivity.

Among earlier evangelical theologians, perhaps only A. H. Strong opted for a more nuanced personal critical realist position. Strong affirms both: [1] that "the laws of our thought are laws of God's thought and [2] that the results are normally conducted thinking with regard to God correspond to the objective reality" (Strong, 1907, vol. 1, p. 10, [] added for clarity). At the same time he conceded that "all knowledge is relative to the knowing agent; that is what we know, we know not as it is objectively but only as it is related to our senses and faculties" (Strong).

The philosopher-theologian Stuart Hackett clearly positioned himself within a critical realist epistemology, with his rational-empiricist Christianity (Hackett, 1957, pp. 37–175; 1984, 11–83; also Moser, 1986, 1989). Hackett saw that moderate foundations provided the starting points for any legitimate world view. These foundations include: rational, empirical, and incorrigible contributions.

(1) A few rational or self-evident foundations provide the structure of our knowledge,

(2) empirical foundation of a person's immediate awareness of his own states of consciousness largely provides the content of our knowledge.

(3) Finally, incorrigibility (that is, whatever a person knows and cannot be convinced otherwise because it would plunge him into paralyzing skepticism if he were consistent with its denial), largely connects a person coherently with the essentials of their world view.

(1) The rational foundations which he grants are: the laws of identity and contradiction, I think therefore I am, performative statements, and the definitional difference between related terms (like: cause and effect; and possible, actual and necessary). Hackett's rational foundations join Lakatos' rational

foundation of derivation in mathematics (Lakatos, 1963–64, pp. 1–25).

(2) Hackett's empirical foundations provide for largely an analytical philosophic approach. From this modest base, he argues for the existence and nature of God and then builds up a theology and metaphysic from there. As a result of these arguments,

(3) Hackett grants biblical authority and informs his world view from the Bible as part of an incorrigible foundation for his Christianity, philosophy, and theology. From these modest foundations, Hackett argues for the existence and nature of God and then builds up a theology and metaphysic from there. He sees God and the world through the lens of epistemological dualism so that there are ways from argument and experience to further warrant the belief system that is being built by the theologian to represent the reality that exists.

Alister McGrath presents theological method as a critical realist. He often presents it as an empirically based pragmatic realism or when he adds mathematical derivation to it, he calls this method, "critical realism" (McGrath, 2001, pp. 71–77; 2002, pp. xv–xvi, 123–244, especially 188; also Lonergan, 1972, p. 234; 1988, pp. 205–221; also van Huyssteen, 1989, pp. 123–197). He sees that empirically based pragmatism is the foundation for this realism in the natural sciences, following Roy Bhasker's scientific realism (Bhasker, 1986, 1997, 1998; Collier, 1994; McGrath, 2002, pp. 257, 174–175). Bhasker's approach while individually Kantian, is corporately Durkheimian with a collectivist conception of society which establishes the reality of social facts in an open system which grows (Bhasker, 1998, pp. 38–41, 41). McGrath works within this method where nature is interpreted as a socially mediated construct of science and theology about beings (McGrath, 2001, vol. 1, p. 4). However, I suspect that McGrath's confidence in mathematical derivation provides a rational underpinning (foundation?) for some aspects of his model that Bhasker does not himself grant within his non-foundational approach. Through the community agreement, Bhasker calls his approach a necessary ontological realism, which for McGrath would preserve a necessary ontological theology (Bhasker, 1986, p. 24). McGrath justifies this unitary approach to science and theology on the basis of the Christian doctrine of creation (McGrath, 2001, vol. 1, p. 21). He illustrates this methodology several times over, especially in physics. He rejects foundationalism for its lack of elegance, but admits that Paul Moser has nicely defended a moderate foundationalism (McGrath, 2002, vol. 2, p. 24, 26–39; Moser, 1986, 1989). He then justifies his critical realism as against conventionalist approaches, which would be either anti-realist, theory dependent, or indebted to James pragmatism. McGrath develops a critical realism that engages the world at a variety of levels, each evaluated for its clarity and predictability. He extends this scientific method to theology as an attempt to behold reality communally, with theology as a scientific discipline in a critical realist methodology. Theology for him becomes a communal task of the collective wisdom that has won acceptance within the community (McGrath, 2003, vol. 3, p. 28). "Doctrine may thus be provisionally defined as communally authoritative teachings regarded as essential to the identity of the Christian community, in which the community *tells* itself and outsiders what it has *seen,* and what it has become in response to this vision" (McGrath, 2003, vol. 3, p. 28). However, McGrath admits that when it comes to heresy, there is an individual aspect to doctrine in order for the community to exclude the heretic (McGrath, 2003, vol. 3, p. 223).

McGrath's strengths take his critical realism in two primary directions of increased precision: (a) issues of science and religion, and (b) church history. With a Ph.D. in molecular biophysics, he repeatedly contributes with precision to the integration of science and religion (McGrath, 1998a, 1999, 2001, 2002, 2003). However, with his second Ph.D. in church history, he shows his precision in this area as well (1998b).

Alan Padgett contributes significantly toward allowing theology and each science discipline to mutually contribute what they have to give within a critical realism.

Once we grant that there are different sorts of schemes for explaining the same thing, and they do not reduce to each other, this raises the question of their interrelationship. Since the sort of explanation we have in mind is causal, these schemes postulate certain causal relationships that hold between things. They develop models for the nature and powers of things involved, their regular causal relations, laws describing the regularities in these relations, and general theories. What happens, it seems, is that some levels are more fundamental than others in the following sense: the accepted results of the scheme at the more fundamental level is used, and assumed, in the next level up. So particle physics is assumed in thermodynamics, and psychology and sociology are assumed in history (Padgett, 1996, 18–19; 2003).

Alan Padgett continues to develop that there is likely a two way-dialog between these more fundamental and higher order disciplines. Though he admits that sometimes in social sciences the more fundamental discipline may not be that clear, as may be the case with psychology and sociology.

Nancey Murphy recognizes this sort of higher order and foundational relationship and places theology as the highest order science but able to engage with

the other disciplines on down to the foundation (Murphy, 2002). That is, each of these disciplines are commensurable (able to be compared to each other) though their focus and scope are different. Within such a framework, theology has the broadest scope as well as distinctive focus. For example, alcoholism can be analyzed: (a) chemically on a level of chemical reactions, (b) biologically, on a level of genetic predisposition, (c) psychologically, as a defense mechanism such as avoidance, (d) sociologically, as a learned trait within families and social groups that destroys them, (e) ethically as a destructive vice, and (f) theologically as rebellious sin, from which one should repent to depend on God (Ephesians 5:18). Critical realism would recognize that each of these analyses is accurate and some demand a volitional change.

Furthermore, Nancey Murphy proposes a critical realist theological method after the pattern of Lakatos philosophy of science (Murphy, 1990, pp. 51–81). Imre Lakatos articulated a rational model of derivation in the philosophy of mathematics and science that utilized Peircian pragmatism to encourage its productivity and to make sense of paradigm change (Lakatos, 1963–1964, pp. 1–25, 120–139, 221–243, 296–342; 1970, pp. 91–195). Nancey Murphy suggests this method is the best process to explain how change in a theological product can occur while maintaining many of one's other theological commitments. That is, this approach can be seen as a more precise analysis of paradigm change, showing that paradigms are not as monolithic as Kuhn had proposed, nor is data retrievable only from within a paradigm. One of the critiques of Kuhn is that those in one paradigm can not perceive or communicate with those in another paradigm and that clearly does not describe the way paradigm change occurs. As one paradigm is unraveling the other is building strength of congruity and comprehensiveness. Lakatos proposed that each study a person accomplishes becomes a "research program" that works along side others and can be judged as rival programs, whether progressive or degenerative (Lakatos, 1970, pp. 118–119). Lakatos proposes a *sophisticated falsification* view of religious language that encourages development.

> Contrary to naïve falsification [like Kuhn], *no experiment, experimental report, observation statement or well-corroborated low-level falsifiying hypothesis alone can lead to falsification. There is no falsification before the emergence of a better theory* … Thus the crucial element in falsification is whether the *new theory* offers any novel, excess information compared with its predecessor and whether some of this excess information is corroborated (Lakatos, 1970, pp. 119–120, 227).

Thus a creationist model needs to focus on crafting better theories rather than merely trying to falsify evolution or they will never be seriously considered by the academy as a live option. Attempts to falsify evolution will be simply considered as annoyances like mosquitoes from quacks like flat earthers. Lakatos countering quotes from Popper, compares Kuhn's approach to his own.

While naïve falsification stresses "the urgency of replacing a *falsified* hypothesis by a better one," sophisticated falsificationism stresses the urgency of replacing *any* hypothesis by a better one. Falsification cannot "compel the theorist to search for a better theory," simply because *falsification* cannot precede the better theory (Lakatos, 1970, p. 122).

So the creationist needs to work for better theories or the evolutionist (or alternative creationist) will not see creationism falsifying their approaches. Likewise, this approach encourages a progressive orientation of a positive theology model to keep theology current with the latest biblical and philosophically warranted findings rather than static to a tradition. This would encourage a theologian to follow the Bible wherever it leads, provided it is exegeted in a contextually sensitive manner. Likewise, the theologian should follow moderately foundationally grounded logic wherever it leads provided it does not counter clear biblical statements. That is, Lakatos' approach is not so much a justification for theory choice, as much as a framework for making sense of how one should hold a theory. The justification for the theologian comes from exegesis and grounded philosophizing.

Lakatos has been criticized by Steve Barnett as not providing prescriptive criteria sufficient to make decisions on whether the programs are progressive or degenerative. That is, Barnett charges that the criterion is too subjective so that whether it is progressive or degenerative is only recognizable after the fact. Trial by error is the risk in pragmatic tests that the observer does not know whether verification or falsification will occur unless he submits his proposal to experiment. However, further confirmation by experiments is not a shot in the dark because warranted experiments lay down a trajectory that indicates further confirmation will likely obtain.

Even more, in theology this is not a defeater argument against the Lakatos' method because it only provides a description for the quest for an epistemically better research program and the sociology for doing this task. That is, biological science's observational data may be available without providing a prescriptive criteria or interpretive thrust, but the intelligent design movement would argue otherwise (Ratzsch, 2001). Likewise, theology also has a different data strain that includes its interpretive trust within it's content. I think that the prescriptive criterion to choose a superior theological

option is provided in the form of data appropriated for a theological project. That is, rational derivation from foundations or transcendental arguments includes criteria of coherence to the rationally foundational and to a lesser degree coherency to the theological project provided it does not contradict any other strongly warranted feature of the world view. In my *Classical Christian God,* I grounded and framed out my theological program beginning with this approach (Kennard, 2002, pp. 11–86). However, most of the data appropriated for a theological project will be textual from the Bible. Such textual data has an interpretive thrust within it identifying how the interpreter should understand the data and whether it corresponds appropriately in a biblical theology to which the Bible contributes. Thus the Bible provides its criteria (of coherence and correspondence with the biblical text) for warranting theology. That is, we should use biblical texts to make the points that they are making in their context, rather than imposing upon them our theological agenda. Thus provided theology is congruent with the thrust of the biblical texts that speak to this issue, a theology warrants itself. In filling out my theology in the *Classical Christian God,* the thrust of the biblical text dominates the theological content, agenda, and thus provides the criteria for appropriateness within itself (Kennard, 2002, pp. 87–204). Thus in the analysis of a critical realist theological method, I must supply an analysis of the process of (a) hermeneutics, (b) biblical theology, and (c) how biblical theology truths contribute to systematic theology. My upcoming book, *A Critical Realist's Theological Method* explains this process.

A number of the authors of *GRUE! The New Riddle of Induction* (Stalker, 1994) appeal for a skepticism to the method of science that is caused by the unboundedness of the investigation data (as well as the issue Barnett raised above) and thus the inability to complete a generalization with confidence that removes alternative subjective interpretations. This may at times be a legitimate critique in the empirical scientific condition when rival theories can not exclude the other theory as degenerate. However, theological science can sidestep this criticism for at least two reasons. First, the previous paragraph point, that the interpretation thrust is imbedded within the biblical text itself as the thrust of the speech-act, which diminishes rival options as degenerative. Secondly, the biblical data on any doctrinal point is a self-contained body of texts within the canonical bounds of the Bible, so that generalizations can be made with regard to the whole. There is no fear of a larger sample overwhelming the sample studied to date, provided the generalization was made concerning the comprehensive set of biblical texts (properly understood in their contexts) that address this doctrinal point. Of course, with more information becoming available (like the find of the Dead Sea Scrolls) more can be understood about the context of biblical texts. However, archeologically open contexts while influential to inform interpretation possibilities, does not render an interpretation definitive because primarily the context for the biblical text is provided within the information in the biblical text itself.

However, all science is not adrift in a lack of progressive clarity and unboundedness. Those sciences that are mathematically derived and available for nuanced falsification that have marshaled substantial repeated demonstration of their conclusions have also stepped beyond these criticisms. First, mathematical derivation, such as Newton provides for his three laws of motion orient the discipline to an already warranted option on its rational basis. Lakatos affirms a role for this mathematical derivation as a foundation (Lakatos, 1963–1964, pp. 1–25). Then a statistical analysis of repeated testing of these laws shows that they govern reality, provided conditions close to the ideal are met. If additional variables are added (like a thick medium or a resistant wind) then they can be factored in to take them into account as well. So these criticisms do not seem to tell against all forms of science either. This approach of mathematical derivation and empirical testing (Peircian pragmatism) is still being utilized as is apparent by the contribution of Steven Weinberg's derivation and mathematical theory that unifies the weak and electromagnetic forces in an attempt for the unified field theory for the four forces (gravity, electromagnetism, strong and weak forces). This Peircian pragmatic testing is where Lakatos progressive research proposal is attempting to contribute.

Working within this critical realist approach, each theologian or scientist has several research programs. Some of their research programs serve as a personal hard core, which is central to their program. Auxiliary hypotheses that add information that allow the data to be related to the theory are conjoined to the core. Auxiliary hypotheses form a "protective belt" around the hard core because they are modified when falsifying data emerge. Lakatos admits that any theory can be saved from falsification by altering it somewhere (that is, a *ceteris paribus* clause) and these modifications would occur to this belt of auxiliary hypotheses. However, Lakatos incorporates a simplicity element from Duhem (1954); progressive affiliated hypothesis must intimately extend the previous hypothesis rather than merely by conjunction (Lakatos, 1970, p. 131). He calls this the "tacking paradox" and values a unified solution to problems rather than one that requires multiple contrary tacks like in a sail boat trying to sail close

into the wind. In my opinion the remainder of the unified field theory proposed in the esoteric string theory with at least ten dimensions has mired down in huge tact that have no explainable basis in reality, nor are they able to be tested empirically, so in my opinion this model stands as a real degenerative model, even though the mathematical equations unify it theoretically. At this point I don't believe that the beauty of a model can save it from the lack of some degree of sophisticated falsification. In this methodical approach it is better to limit tacks to that which are testable within the reality that the discipline is attempting to describe. Within this method, any individual may be researching several auxiliary hypotheses within a largely resilient world view, surrounding the individual's hard core theology and science.

Murphy describes such a research program as "a series of complex theories whose core remains the same while auxiliary hypotheses are successively modified, replaced, or amplified in order to account for problematic observations" (Murphy, 1990, p. 59). A program is progressive if the internal features are predictive of novel facts, and correspond to the full range of data from the biblical text in a congruent manner. Contrasting to this, a program is degenerative if it does not take recognized data into account and responds with *ad hoc* face saving devices. Such degenerative techniques become self-stultifying. The relative power of the research program has to do with its ability to increase scientific or theological knowledge.

In science a similar approach can be used within the framework provided by the theological method. Therefore, biblically grounded theology, with rational and mathematical derivation provides the grid of coherency with which scientific options should be considered. Then scientific Lakatos research programs can be configured within this framework. Progressive programs are those which are empirically coherent and congruent to all the data available to make a responsible proposal. This is similar to the rational criteria that William Bartley provides to eliminate error, with the additional role of Bible and theology added. Bartley's criteria for rational control are (Bartley, 1964, p. 158; also echoed by van Huyssteen, 1989, p. 42):

(1) The control of logic: the question whether a given theory is logically consistent.

(2) The control of sensory perception: the question whether a theory is empirically falsifiable through sensory perception.

(3) The control of the theory of science: the question whether a given theory is in line or in conflict with other scientific hypotheses and with the formulation of problems in philosophy of science as such.

(4) The control of the problem: the question of which problem a given theory is supposed to solve, and of whether a given theory is successful in its solution of that problem.

Furthermore, increased confidence in a progressive model is obtained by the most comprehensive pragmatic proposal (without arbitrarily complexity) that best predicts and repeatedly demonstrates itself in testing further data. Ernan McMullin, in his presidential address to the American Philosophical Association argued for fruitfulness of epistemic understanding as indicating a better theory, similar to this Lakatos' view.

The rationality of science can be philosophically justified. Here I disagree with Kuhn. What philosophers of science have labored so long to show is that such values of fertility are appropriate criterion of theory. Their arguments are in a broad sense logical or epistemological (McMullin, 1984, p. 57).

Using this approach, repeatable science, as in the making of chemical compounds, shows its progressive hypotheses to be strongly warranted in Peircian pragmatism. Whereas, in non-repeatable science (like biology and geology) the fruitfulness of prediction contained in a progressive hypothesis warrants itself until sufficient data challenges this reigning proposal to be considered degenerative. To the extent that equally warranted rival proposals explain the data, the scientist should be tentative about these hypotheses within his discipline.

Such a Lakatos' approach governs community theology as well. A group's tradition is made up of the commonness of those individuals in this group. This means that what the group agrees upon and considers essential becomes the group's hard core. Any tradition grants that certain affirmations possess an undeniable claim as a hard core of one's world view. So for any group that has defined a hard core doctrinal statement, a denial of such a feature of the hard core could be considered to be heresy, whereas progressive development of this hard core need not be considered to be heresy. Actually, Lakatos would urge us not to identify heresy as denial of communal hard core, for "it still has the right to exist," allowing the weeds to grow among the fruitful theology (Lakatos, 1999, p. 379; Matthew. 13:29, 38–43). However, in theology to challenge a feature of a group's hard core runs the risk of being considered heretical. Such a challenge is not likely to succeed unless the proposed feature, denying an aspect of the hard core, is: (a) grounded elsewhere in the group's hard core or (b) that a clear argument can be marshaled that the group's hard core feature is itself contradictory, that the proposal is intended to replace.

In physics, such progressive Lakatos research programs would be the rival theories like that of

relativity and quantum, which both excel their Newtonian classical physics predecessor in certain aspects of precision and predictability. Lakatos urges against letting such research programs become normal science as a world view.

One must never allow a research program to become a *Weltanschauung,* or a sort of *scientific rigour,* setting itself up as an arbiter between explanation and non-explanation, as mathematical rigour sets itself up as an arbiter between proof and non-proof. Unfortunately this is the position which Kuhn tends to advocate: indeed, what he calls "normal science" is nothing but a research programme that has achieved monopoly. But, as a matter of fact, research programs have achieved complete monopoly only rarely and then only for relatively short periods, in spite of the efforts of some Cartesians, Newtonians, and Bohrians.

> The history of science has been and should be a history of competing research programmes (or, if you wish "paradigms"), but it has not been and must not become a succession of periods of normal science: the sooner competition starts, the better for progress (Lakatos, 1990, p. 155).

This results in the essential ingredient for a living science to be in continuous development. This issue of "normal" theology and progressiveness of the discipline will be explored at greater depth within my book, *A Critical Realist's Theological Method*. There I argue that rival traditions (Grand Tradition, Orthodox, Roman Catholic, Reformation Founders and Biblical Theology, Critical theology, majority Evangelicalism with Pietism, and Post-Modern) all claimed this normal status and yet all of them have living advocates. Such a normalcy approach diminishes dialog between these traditions, isolating their advocates to their own traditions. It would be better if these traditions listened to each other, since they often claim to value similar aspects (like biblical authority) and what any tradition considers appropriate progressiveness could help other traditions think through the implications of its values. I think that Lakatos more precisely explains and better encourages how this process is done in theology, than the tendency to normalize one's own tradition.

Unfortunately many in theology view the research programs as more Kuhnian monolithic traditions, either as a grand Christian tradition or as resolving toward the favor of our community's tradition, and against all other rival traditions. Such a "normal tradition" view does not help theology as a discipline to progress or keep current with exegetical findings (Lakatos, 1990, 173–175). However, in my book *A Critical Realist's Theological Method,* I also show that such a Kuhnian normal tradition view is not accurate to the facts of the history of theology either. For example, with each new traditional framework the older tradition remained with adherents, resulting in several rival traditions continuing as Lakatos had developed that they would. Additionally, the rival traditions sometimes incorporate features at odds with their stated assumptions. A Lakatos method better makes sense of this inconsistency as a degenerative feature rather than as heresy.

In a "normal" theology or Kuhnian approach, any deviation from the tradition becomes heresy. In a Lakatos approach, degenerative and progressive features of the affiliated hypothesis which an individual or group maintains around their hard core would not be heresy. Though, obviously degenerative features would be advantageous to grow beyond even though they are not heretical. Likewise, progressive proposals would be advantageous for a tradition to embrace if it is interested in keeping current with its disciplines or thinking through its implications.

I think that in the science of origins a similar condition occurs between the evangelical populous Creationism and critical Romantic Evolutionism. The Kuhnian approach tends to bifurcate into two camps, ruling out the possibility of a nuanced more accurate way between them. A Lakatosian approach would encourage a more nuanced research program wherever the data stream would lead to truth. One example, is Todd Wood's studies of baraminology, which I briefly identify here in a Lakatosian critical realistic methodology (Wood, 2005). Todd Wood is a realist in that he starts with taxum of observed characteristics but tries to prevent personal bias by approaching each animal through a multiplicity of frameworks set forward by other researchers and evaluates them all for their similarities and differences (baraminic distance). He seems to be utilizing a strategy pioneered by Robert Sokal and Peter Sneath (Sokal & Sneath, 1963) but appropriated and nuanced further by Wood to float a robust method with a progressive research program that reproduces predictable results.

Those who have charted the landscape before Dr. Wood framed this field of baraminology within a critical realist mindset, if not always within a Lakatos approach. However, a brief summary of the development before Wood also indicates that the discipline should be understood to have grown as Lakatos described progressive development to occur. For example, in the 1940s Frank Marsh defined the term baramin (off the Hebrew: *bara*/creation+*min*/kind) and floated a nuanced theory which permits changes within a kind but not beyond a kind (Brand, 1997; Marsh, 1944, p. 24; Wood, 2003a, pp. 1–12, 2003b). In 1990, Walter ReMine proposed a discontinuity strategy to exclude baramins from each other. Out of his work came more specific terminology: (a) holobaramin or "a complete set of organisms related by common descent," (b)

monobaramin or "a group containing only organisms related by common descent," (c) apobaramin or "a group which contains all ancestors and descendents of any of its members, but contain subgroups that are not related to each other," and (d) polybaramin or "a group of organisms not sharing an ancestor or descendent with any organism outside the group" (ReMine, 1990, pp. 207–213, 1993). In 1993, Siegried Scherer also proposed a "basic type" of life for the German creationist group Word and Knowledge that advanced the classification category into scientific verification (Scherer, 1993, pp. 11–30). Also in 1990, Kurt Wise fused ReMine's terminology and successive approximations with: (a) Scripture as a source, (b) discontinuity systematics and (c) Basic Type biology, which fusion meant an advance in scientific verification without reference to verifying ancestry (Wise, 1990, pp. 345–358, 1992, pp. 122–137, 2002). As such, Wise and Wood utilize the following nuanced terminology to distinguish baramins from each other: (a) monobaramin as "a group of organisms which is not completely divided by a phyletic discontinuity, but may or may not be separated from all other organisms by phyletic discontinuities," (b) polybaramin as "a group of organisms divided by at least one discontinuity," and (c) apobaramin as "separated from all other organisms by phyletic discontinuity, but may not be divided by at least one phyletic discontinuity."

Personally for me in theology, each section of one of my theological papers, chapters or books also becomes a new research program in a Lakatosian sense. Usually, these programs are not rivals in my theology but serve to compliment other studies that deal with similar issues. These complimentary relations are evident in Murphy's phrase, "Philosophy of religion without theology is empty; theology without philosophy of religion is blind" (Murphy, 1990, p. xii). As with Murphy, my philosophy and theology are interpenetrated (Kennard, 2002). However, to this I would add a second phrase, theology is impotent with regard to authority unless it is reflective of biblical theology, and biblical theology is impotent with regard to authority unless it is reflective of the biblical text in its context. I choose a critical realist methodology for my theology for its precise sight and a biblically theologically driven theology for its retention and clarity of the biblical message and authority.

Murphy admits "it is conceivable that a theological research program could be built up from the bottom (that is, 'induction' from data)" [as I am trying to do] but she concludes from her experience "that theologians need an organizing idea before they start" (Murphy, 1990, p. 184). Perhaps my organizing idea is to let contextual biblical exegesis and grounded philosophizing speak clearly what they have to give. That is, honestly letting the available data speak with its own voice from its context. She suggests that she would start with "a minimal doctrine of God. including, say, the Trinitarian nature of God, God's holiness, and God's revelation in Jesus" (Murphy, 1990). Furthermore, if she were to produce a systematic theology, she admits that she would find a place for at least two important auxiliary hypotheses: (a) something like Edwards theory regarding the validity of signs of the Holy Spirit, and (b) a doctrine of revelation based on Paul's account of the gifts of the Holy Spirit (Murphy, 1990, p. 187). These are features I would include as well.

My theological method can be modestly grounded in the philosophical manner of Stuart Hackett but most of the content of my theological method actually is framed by biblical theology using a Lakatos method to inductively describe the biblical texts through a hermeneutical spiral. Consistent with Lakatos' mathematical derivation a foundational rational tightness is permitted (as Hackett provides or as I use, as is evident in chapters 2 and 3 of *The Classical Christian God,* where I deduce and induce the existence and some attributes of God philosophically; Kennard, 2002, pp. 11–62). David Clark advocates a similar moderately foundational Lakatosian theological method (Clark, 2003, pp. 82, 161–163, 304).

I recognize that often I do not need to investigate my foundations. I grant Hackett's and Moser's moderate foundations but I don't think that they get you very far theologically. So in many ways my theology primarily rests upon my incorrigible awareness of my basic beliefs. These high priority incorrigible basic beliefs include:

(1) A theistic God exists that we can know which we identify with the trinitarian God of the Bible.

(2) The Bible itself is God's authoritative revelation and can be understood clearly through normal human means of interpretation.

(3) The tools of knowing a reality beyond myself are accessible to us without substantial deception even though they involve subjectivity.

(4) Though I allow my perspective to have priority for me, I value others' perspectives in community as corroborating or challenging my own.

(5) The Bible portrays a salvation message which I and a historical community of "Christians" may appropriate.

(6) This core salvation message for Christians at least includes God graciously providing everlasting life and inheritance in Kingdom on the basis of what God and Christ are and accomplish, which without Their effort would leave humans damned at an eschatological judgment.

(7) I have the relationships (wife, family, colleagues, students, and otherwise) that I have.

Some of these beliefs are layered (6 depends upon

5 which depends upon 2, and 7 depends upon 3) but these are helpful to clarify my particular basic orientation for my web of belief. Upon these basic beliefs (and moderate foundations beneath some of them) my subsequent biblical theology studies are framed as Lakatos research programs that fill out my theological musings. Each of these chapters of this book and the other books which I have written serve as these auxiliary hypotheses in the whole of my theology.

Furthermore, when I am framing a hypothesis, I find that a communal appraisal of my colleagues is helpful to help me to be clear and to balance my subjectivity by their own. But most of these hypotheses begin with individual exegetical studies, which I acknowledge I also approach as a critical realist. In these studies, *I try to be as clear as the text is clear and to be as ambiguous as the text is ambiguous.*

This critical realist approach has been appropriated into contemporary hermeneutics by moderate evangelicals working with the historical Jesus. These wish to express critical realism's *hermeneutical spiral* with precision and find value in allowing epistemic categories to inform hermeneutical ones (Kennard, 1999, pp. 57–58, 124–125, 133–134). That is, the textual data is observed by interpreter, such that they float a proposal for the meaning of a text that is then checked by comparing it to the details present in the text itself. Then the process is repeated drawing closer and closer to what the text actually says in itself. This hermeneutical process will be described more fully in the chapter "A Thiselton-Ricoeur Hermeneutic" later in this book.

Summary

I have obvious allegiances among these philosophical frameworks for the reasons presented here. Namely, I am most committed to biblical theology, which is the biblical side of the renaissance humanistic root. Beyond this, I also approach things with precision as a critical realist. This means that my philosophy is a conglomeration of a range of philosophers developed and affirmed above.

The features of this critical realist philosophical method can be briefly summarized by a metaphor of a tree that identifies these techniques with greater certainty or plausibility should be given privilege of preferential place in framing a worldview, theology, and science. Returning to this tree metaphor identified in the introduction chapter will help clarify where contributions fit, contributing to my worldview and method for theology and science. I ground the place of my worldview with moderate foundational roots from: (a) rationalism (like: law of identity, law of noncontradiction, "I think therefore I am," and performative language), (b) empiricism (like immediate sensations), and (c) incorrigible (basic beliefs). I allow certain knowledge of mathematical derivation and rationalism (for example, ontological argument) to frame the trunk of my epistemic tree. The important weight bearing branches are then framed by empiricism which further confirms itself by rational argument (for example, cosmological argument, teleological argument) and by Peircian pragmatism (for example, exegesis by hermeneutical spiral, testable science, and historical study from evidence). Preferred among this empirically based Peircian pragmatism is a hermeneutical spiral of well attested peer reviewed exegesis of Scripture because it possesses divine authority and the text's interpretive thrust is within the text itself giving it a distinct edge over empirical observation of other media (compare forthcoming book, Kennard, *A Critical Realist's Theological Method*). This priority would insist on theology and science to be nested within this biblicism. So a divinely inspired creation account should be given preferential place in framing issues of origins and a peer reviewed warranted exposition expressing those biblical sentiments should as well. Close behind this in credibility is peer reviewed Peircian pragmatically tested empirical science. Of course tentative exegesis and promising but not verified Peircian pragmatic science should be held more tentatively. Thus warranted science can affect the exegesis of texts, such as in a Copernican solar system the biblical phrases of the "sun rises and sets" should be understood phenomenologically as that of appearance while the earth spins on its axis and revolves around the sun. Such tentativeness within theology and science, should move this research program within its discipline to a more peripheral place of the medium branches of the tree, and should be governed by a Lakatos' method with its sophisticated falsification. Smaller more tentative branches can be governed by James' pragmatism, which should fit within and not contradict the already placed warranted peer reviewed exegesis, theology and science. Even Dewyian pragmatism could be given some place among non-moral twigs of the tree that do not contradict those branches framed by epistemology, exegesis, theology and science. Peripheral place of small twigs and leaves should be given to: phenomenological, aesthetic, intuitional, and existential strategies. None of these peripheral options should displace, nor be permitted to overrule the warranted peer reviewed exegesis, theology and science. However, some of the contributions in this peripheral area can be quite significant. For example, my phenomenological commitment to be involved with Boy Scouts with my sons has certainly colored my life in a major way. These peripheral areas of the tree's canopy also provide a sense of the whole big picture

and vitality, which are very important for life. I rarely find existentialism bounded by the concerns of a biblical world view except in perhaps something like: Soren Kierkegaard's reflections from the Synoptics or Abraham, or Paul Ricoeur's metaphors reflecting the biblical text. If such a realist externalistic epistemology provided limits for existentialism, I would certainly wish to retain existentialism's passion for authentic living. Thus I advocate a passionate quest for truth within these epistemic and methodological means.

References

Bartley, W. (1964). *The retreat to commitment*. London: Chatto and Windus.

Bhaskar, R. (1986). *Scientific realism and human emancipation*. London: Velrso.

Bhaskar, R. (1997). *A realist theory of science*. London: Verso.

Bhaskar, R. 1998). *The possibility of naturalism: A philosophical critique of the contemporary human sciences*. London: Routledge.

Brand, L. (1997). *Faith, reason, & earth history*. Berrin Springs: Andrews University Press.

Clark, D. (2003). *To know and love God*. Wheaton: Crossway Books.

Collier, A. (1994). *Critical realism: An introduction to Roy Bhasker's philosophy*. London: Verso.

Drake, D., Lovejoy, A., Pratt, J., Rogers, A., Santayana, G., Sellars, R., & Strong, C.A. (1920). *Essays in critical realism: A co-operative study of the problem of knowledge*. London: MacMillan and Co.

Duhem, P. (1954). *The aim and structure of physical theory*. Princeton University Press: Princeton.

Hackett, S. (1957). *The resurrection of theism: Prolegomena to Christian apology*. Grand Rapids: Baker.

Hackett, S. (1984). *The reconstruction of the Christian revelation claim: A philosophical and critical apologetic*. Grand Rapids: Baker.

Kennard, D. (1999). *The relationship between epistemology, hermeneutics, biblical theology and contextualization*. Edwin Mellen Press: Lewiston.

Kennard, D. (2002). *The classical Christian God. Toronto studies in theology (*Vol. 86). Edwin Mellen Press: Lewiston.

Kuhn, T. (1962). *Structure of scientific revolutions*. Chicago: University of Chicago Press.

Lakatos, I. (1963–1964). Proofs and refutations. *British Journal for the Philosophy of Science, 14*, 1–25, 120–139, 221–243, 296–342.

Lakatos, I. (1970). Falsification and the methodology of scientific research programs. In I. Lakatos & A. Musgrave (Eds.), *Criticism and the growth of knowledge. Proceedings of the International Colloquium in the Philosophy of Science, London, 1965* (pp. 91-195). Cambridge University Press: Cambridge.

Lakatos, I. (1999). On rearing scholars. In I. Lakatos & P. Feyerabend (Eds.) *For and against method*. University of Chicago Press: Chicago.

Lonergan, B. (1972). *Method in theology*. London: Darton, Longman and Todd.

Lonergan, B. (1988). Cognitional structure. *Collection: Papers by Bernard Lonergan* (pp. 205–221). Toronto: University of Toronto.

Marsh, F. (1944). *Evolution, creation, and science*. Washington D.C.: Review and Herald.

McGrath, A. (1998a). *The foundations of dialogue in science & religion*. Oxford: Blackwell.

McGrath, A. (1998b). *Iustia Dei: A history of the doctrine of justification*. Cambridge: Cambridge University Press.

McGrath, A. (1999). *Science & religion: An introduction*. Oxford: Blackwell.

McGrath, A. (2001). *A scientific theology: Nature*. Grand Rapids: Eerdmans.

McGrath, A. (2002). *A scientific theology: Reality*. Grand Rapids: Eerdmans.

McGrath, A. (2003). *A scientific theology: Theory*. Grand Rapids: Eerdmans.

McMullin, E. (1984). The goal of natural science. *Proceedings of the American Philosophical Association, 58*, 37–64.

Moreland, J.P., & Craig, W.L. (2003). *Philosophical foundations for a Christian worldview*. Downers Grove: InterVarsity.

Moser, P. (1986). *Empirical knowledge*. Savage: Rowman & Littlefield.

Moser, P. (1989). *Knowledge and evidence*. Cambridge: Cambridge University Press.

Murphy, N. (1990). *Theology in the age of scientific reasoning*. Cornell: Ithaca.

Murphy, N. (2002). *Religion and science: God, evolution, and the soul*. Scotdale: Herald Press.

Padgett, A. (1996). The mutuality of theology and science: An example from time and thermodynamics. *Christian Scholars Review, 26*, 12–35.

Padgett, A. (2003). *Science and the study of God: A mutuality model for theology and science*. Grand Rapids: Eerdmans.

Ratzsch, D. (2001). *Nature, design, and science: The status of design in natural science*. Albany: State University of New York.

ReMine, W. (1990). Discontinuity systematics: A new methodology of biosystematics relevant to the creation model. In R.E. Walsh & C.L. Brooks (Eds.), *Proceedings of the second international conference on creationism*. Pittsburg: Creation Science Fellowship.

ReMine, W. (1993). *The biotic message: Evolution versus message theory*. St. Paul: St. Paul Science.

Scherer, S. (1993). Basic types of life. In *Typen des lebens*. Berlin: Pascal-Verlag.

Sellars, R. (1916). *Critical realism*. Chicago: Rand McNally Co.

Shedd, W.G.T. (n.d.). *Dogmatic theology*. Grand Rapids: Zondervan.

Sokal, R. & Sneath, P. (1963). *Principles of taxonomy*. San Francisco: W.H. Freeman and Company.

Stalker, D. (1994). *GRUE! The new riddle of induction*. Chicago: Open Court.

Strong, A.H. (1907). *Systematic theology*. Philadelphia: The Judson Press.

van Huyssteen, W. (1989). *Theology and the justification of faith: Constructing theories in systematic theology*. Grand Rapids: Eerdmans.

Wise, K. (1990). Baraminology: A young-earth creation biosystematic method. In R.E. Walsh & C.L. Brooks (Eds.), *Proceedings of the second international conference*

on creationism (pp. 345–358).
Wise, K. (1992). Practical baraminology. *Creation Ex Nihilo Technical Journal, 6*, 122–137.
Wise, K. (2002). *Faith, form and time.* Nashville: Broadman & Holman.
Wood, T. 2005. *A creationist review and preliminary analysis of the history, geology, climate, and biology of the Galápagos Islands. Center for Origins Research issues in creation, 1.* Wipf & Stock: Eugene.
Wood, T., & Murray, M. (2003a). *Understanding the pattern of life.* Nashville: Broadman & Holman.
Wood, T., Wise, K., Sanders, R., & Doran, N. (2003b). A refined baramin concept. *Occasional Papers of the Baraminology Study Group # 3* (July 25, 2003), pp. 1–12.