A TEXTBOOK
FOR STUDENTS
OF THEOLOGY

SCIENTIFIC METHODS IN THEOLOGY

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Scientific Methods in Theology

A textbook for students of theology

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Introduction

This paper focuses on scientific method in theology. It is important to clarify from the outset that Christian theology is the area of theology under review here. This paper will draw a convergence on the pursuit of both scientific method and theology – the pursuit of truth that will positively shape the world and bring illumination that can eliminate human ignorance. Gerald Birney Smith in his 1912 article engages the essence of truth and identifies "some of the consequences of the employment of biblical criticism" in "so far as it affects the tasks of the theologian."[1] (p.236) First, he admits "that such critical study led one away from the dogmatic interpretation of scripture".[2] In essence, one will no longer take a biblical text as a dogma or authoritative tenet without adequate grounds. It will raise a red flag for readers of biblical texts and caution them against going to town with any old beliefs of a text that lacks any verifiable and reliable reasons that differentiate a mere tenet from undeniable facts. Second, Smith says "critical study" as in or akin to scientific method "introduced a historical point of view which compels us to regard the utterances of the Bible in their relation to the circumstances which occasioned them."[3] In this case, and to be fair in our application, we must not completely divorce a text from its context in order to guide our subsequent use or application of that particular text in our contemporary day-to-day activities. This was why Smith submits that "The meaning of any scriptural passage is thus discovered when we ascertain what place it had in the experience of the

[1] Gerald Birney Smith (1912), Theology and Scientific Method. *The Biblical World 40*(4), 236-247. Published by The University of Chicago Press.

[2] Ibid, p. 236

[3] Ibid

man who uttered it."[4] This means that in addition to the contents in a text, the life experience and the context within which the person who uttered a statement will also help us in knowing the proper context. Third, Smith says investigating an experience leads to some discoveries such as coming "upon elements of thinking and upon specific practical problems which were very real to the biblical writers, but which may be quite unfamiliar to us."[5] In other words, we might be misusing a term or concept if we do not truly come to terms with the challenges faced at the point the concept was used. Smith poses an important question that will encourage the search for answers: "How, then, shall we find out what to believe?"[6] He goes on to pose another important question: "If we give up this objective test of truth, men ask, shall we not be involved in hopeless confusion as the many minds of our varied civilization give their many answers to the problems before us?"[7] One can easily connect with Smith regarding his concerns and good intentions. While Smith identifies three good points of interest, one may have to call for caution in the way a biblical criticism is carried out to avoid turning the Scripture into a regular text book. To the second point, one runs the risk of eliminating purposeful application of Scripture if one sticks strictly and only to the text-context analysis. For example, although David may have uttered those specific statements against Goliath at the point of imminent danger (1 Samuel 17:45-47), someone going through tough times that could be perceived as "Goliath" may apply the same statement to the problem, even though the situation and circumstances are different. To Smith's third point, one can also quote the Bible that there is nothing new under the sun (Ecclesiastes

[4] Ibid

[5] Ibid

[6] Ibid

[7] Ibid, p. 237

1:9), hence the argument that some problems were peculiar to the Bible characters only but not to contemporary times may be moot or untenable in its entirety.

Smith (1912) identifies fear as a key element in explaining why theology may have been skeptical about scientific inquiry. He submits that:

> Thus while the study of scientific inquiry has made its way into one after another of the realms of human thinking, its progress has been delayed in the field of theology because of this not unnatural fear lest the precious truths of our religion shall be lightly abandoned."[8]

One can say 'yes' and 'no' to this line of reasoning. Yes, because scientific inquiry may give little room for faith argument or approach in explaining certain concepts or occurrences. However, one can also say 'no' because a scientific inquiry approach will force interpreters of the word of God to follow certain scientific principles like self-confirming ideas, or reality that confirms theology's scientific analysis. One can also argue that most theologians are not fearful of scientific inquiry, as long as it follows the theology-specific expectations of truth-telling. The next statement by Smith (1912) is very illuminating when he submits that:

> This fear can be removed only by such an appreciation of the positive character of scientific method, that we shall feel in the realm of theology the same confidence in its use which we feel in its application to other realms. That this sense of positive value is growing is evident if once we make clear how our feelings have really altered in certain respects. For example, it is well known that when Copernicus set forth his theory concerning the heavens, it was felt that he was undermining Scripture. But today, we are reassured because we have had ample opportunity to see that the Copernican astronomy, instead of subtracting from the glory of the universe, has made it more wonderful than ever.[9]

From the foregoing, scientific methods or inquiry in 'Theology' may not be a bad idea after all, especially as the whole essence of scientific inquiry is in sync with the core of theology – which is sharing the truth that shows the right way for mankind to walk and live in order to have and

[8] Ibid, p. 237

[9] Ibid

live a life that brings God glory. Smith goes on to assert that "The application of scientific method to the study of theology would mean that the right of way would be given to those doctrine which serve to promote and to interpret religious life."[10] It is interesting to read what Smith says about "scientific theologian" and "doctrine". He believes that if a doctrine is "losing its hold on men", scientific theologians should revise such doctrines if "the changing characteristics of human experience have made antiquated the presuppositions of the old faith".[11] This may be problematic as no single theologian has a right to preach, teach, or write heresy no matter how relevant to the changing characteristics of human experience. What a 'scientific theologian' could do, in defending this position, will be to offer a scientific explanation of why a doctrine may no longer 'hold on men' not due to the truth of the benefit of the doctrine, but to the changed perception on human experience. A good example may be the contrast between the practice of multiple wives in the Old Testament and the current practice of one-man-one-wife. It should be noted that the Bible never said such people will go to hell. However, the Bible states clearly that man ought to love his wife as Christ loved the church, and any man with multiple wives should explain how he will be able to carry out this biblical mandate successfully and truthfully. Of course, Smith calls attention to the flip side of the coin. He believes that the "scientific theologian" should call for correction "in order that men may not sink below the level of their best possible attainment"[12] if "scientific investigation should discover some shallowness of present-day life as the cause"[13] of many people displaying "decline of interest"[14] in

[10] Ibid, p. 241

[11] Ibid

[12] Ibid

[13] Ibid

theological doctrine. In other words, scientific method in theology mandates curiosity and interest in the relevance of theology's doctrine to the contemporary times of human life. It is unclear how Smith will like theologians to treat a very important issue in theology that may be perceived as sacred but no longer enjoying the adherence of people. This particular response speaks directly to those who are pressurizing theology to change the doctrine that forbids a man sleeping with another man in the place of a man sleeping with a woman. The sheer dead-end outcome regarding the promises of Genesis 1:28 will be so obvious, and should make the idea of a man marrying another man moot and completely contrary to the marriage that will command divine blessings. Smith's timely invitation to the "scientific theologian" to do the duty of calling for correction "in order that men may not sink below" is appropriate.

A statement originally made by President Henry Churchill King is salient in the discussion of scientific methods in theology. King authored "*The Ethics of Jesus*" and was a professor "at Oberlin College from 1884", where "he taught mathematics, philosophy, and theology" and "from 1902 to 1927, he was president of the college", serving "a tenure of 25 years," and becoming "Oberlin's longest-serving president."[15] Quoting King (1910), Smith (1912) submits that "It is *prima facie* evidence that a theology which follows the spirit of scientific honesty is not likely to become anti-biblical in its influence."[16] It is interesting to note that this statement was made over a century ago; yet, its truth remains unassailable till date. One can conclude that scientific honesty is synonymous with biblical truth in the sense that both

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[14] Ibid

[15] President Henry Churchill King authored "The Ethics of Jesus" and was published in 1910 by Norwood Press. Background information shared by Amazon and accessed via https://www.amazon.ca/Ethics-Jesus-Henry-Churchill-King/dp/1979535728

[16] Smith (1912), p. 242

pursue, proclaim, and defend truth no matter how bitter, unpalatable, or unfavorable to one's personal preference.

In doing critical analysis of scientific methods in theology, this paper will review and engage some ideas and arguments of some writers and theologians like Poythress, McGrath, Polkinghorne, Vanhoozer and Warner, as well as Pannenberg, and among others.

Sunday Akin Olukoju

Engaging Vern S. Poythress

As someone who holds doctoral degrees in both mathematics and New Testament, Poythress uses his academic training to integrate science and theology. This paper will engage his ideas and arguments and raise questions where applicable, dispute his conclusions where necessary, and agree with his logical points where appropriate. As a mathematician and a theologian, he is specially positioned to do a good job of scientific method in theology. His logical organization and creative analysis are worth considering one after the other.

Why Scientists Must Believe in God: Divine Attributes of Scientific Law

The first chapter of Poythress in his book, Redeeming Science: A God-Centered Approach[17], while alluding to other sources, submits that "Historians of science point out that modern science arose in the context of a Christian worldview; and was nourished and sustained by that view."[18] He quickly acknowledges that things may be changing as he continues to say, "But even if that was once so, twentieth-century and twenty-first-century science seems to sustain itself without the help of explicit theistic underpinnings."[19] In essence, the more science is able to offer convincing explanation of cause and effect with little or no gaps that could raise questions and controversies, the bolder and more acceptable science becomes, and the less relevant theology becomes in filling what appears to be fast diminishing the gaps of incoherent

[17] Vern S. Poythress (2006). *Redeeming Science: A God-Centered Approach*. Wheaton: Crossway Books.

[18] Ibid, pp. 13-14

[19] Ibid, p. 14

argument with missing information or water-tight explanation. As a scientist, Poythress deploys scientific law in his presentation of scientific work in theology. He confirms that "the work of science depends constantly on the fact that there are regularities in the world" and that "Without the regularities, there would ultimately be nothing to study"; and "that still more regularities are to be found in the areas that they will investigate."[20] One can easily conclude that science therefore has a law of regularity meticulously observed, measured, and consistently found to be true in order to adopt so that anyone else anywhere can replicate the same model. This is what Poythress refers to as the "Universal Applicability of Scientific Law".[21] He explains further that "Scientists think of laws as universal in time and space."[22] He then uses a theological language by saying that "The classic terms are omnipresence (all places) and eternity (all times)"; and that "Law has these two attributes that are classically attributed to God", and that "God's eternity is usually conceived as being "above" or "beyond" time."[23] In fact, Poythress goes on to submit that theology makes clear that God "is 'in' time in the sense of acting in time and interacting with his creatures".[24] Just like science, theology's position regarding the word of God as having universal applicability appears to be a great argument in support of how like science, theology also relies heavily on the law of universal applicability. While this argument sounds impeccable, one must raise the issue of contexts. Should one factor the context within which the word of God was made? Should one bring the changing culture, mores, beliefs and traditions of different

[20] Ibid

[21] Ibid, p. 16

[22] Ibid, p. 17

[23] Ibid, p. 17

[24] Ibid. Poythress alludes to the submission of John M. Frame's '*The Doctrine of God Phillipsburg'*, N.J: Presbyterian & Reformed, 2002), 543-575.

generations and civilizations into the mix? These are pertinent questions worth pursuing. Poythress brings up the immutability of the law of God just as "The very concept of scientific law presupposes immutability."[25] An apparent area of omission could be the perception of the word of God by those who are not Christians. No matter how truthful the word of God is, and no matter how thorough the word of God follows the law of universal applicability, how can those who do not believe in the word of God even read the word of God? How can the concept of God that no one can see become a point of attraction for unbelieving people to use the same concept as a guiding principle? How can those who are completely against the idea of an invisible God ever believe that He can do anything visible? These are questions worth pursuing.

In terms of "the power of the law", Poythress points out that "Scientists formulate laws as descriptions of regularities that they observe" just as miracles "take place in accordance with his [God's] predictive and decretive word" which is consistent with "The real law, the word of God" which "brings forth miracles."[26] In other words, consistency in outcome based on a carefully observed pattern over time continues to be a shared value both by science and theology. In this instance, Poythress identifies the "divine attributes of law"[27] as in the unchangeable truth of God, no matter the changes in season, phase, or face. He also refers to "the power of the law" because it holds true anywhere, and at all times, and because "the human scientific formulation follows the facts", it is based on one in which "a law or regularity must hold for a whole series of cases" before scientists approve such a law for universal application, just as "The real law, the word of

[25] Poythress, p. 17

[26] Ibid, p. 18

[27] Ibid, pp. 17-18

God, brings forth miracles."[28] He goes on to affirm that "the law is both transcendent and immanent" as "it transcends the creatures of the world by exercising power over them", Poythress equates it to how scientific "Law transcends the galactic clusters and is immanently present in the chromodynamic dance of quarks and gluons in the bosom of a single proton."[29] Although one can claim that science is so meticulous to have specifically pinpointed all the nitty-gritty details of life and facts of a phenomenon, it should be quickly acknowledged that theology does not need to know all the details. In fact, theology appears to focus more on outcomes as a result of the work of the divine, but can not lay claim to the minutest details of how the divine executes a miracle in the human or in the earth. When Poythress says "Scientists also assume that laws can be articulated, expressed, communicated, and understood through human language"[30], one is quick to see the divine law articulated, expressed, communicated, and understood through human language as unpacked in the Bible. However, the task will remain arduous if one has people seeking answers to know the nitty-gritty details of how the divine executes the miracles through the word of God.

Poythress talks about "the goodness of the law" as he submits that there are "subtle indications of the goodness of God" observable "in the concept of scientific law", hence, just as scientists rely on the "laws of nature" and believes "Nature plays fair", it is also true that "God plays fair".[31] Both science and theology pursue fundamental goodness for the good of humanity. He also identifies what he calls "the beauty of the law" when he compares "Newton's law of

[28] Ibid, p. 18

[29] Ibid, p. 19

[30] Ibid, p. 20

[31] Ibid, p. 23

gravitation and Maxwell's laws of electromagnetism" as "mathematically simple and beautiful" just as "the beauty of scientific laws shows the beauty of God himself", as God "manifests himself in beauty in the design of the tabernacle, the poetry of the Psalms, and the elegance of Christ's parables, as well as the moral beauty of the life of Christ."[32] Poythress, being a scientist himself, is able to see and relate the beauty of science with that of theology, especially in God's creation as unpacked by the Bible. According to him, he says "the beauty of God himself is reflected in what he has made"; while he adds that "Beauty is also displayed in the harmony among different areas of science, and the harmony between mathematics and science that scientists rely on whenever they use a mathematical formula to describe a physical process."[33] In a nutshell, God who created all things also created human beings and science, and because everything God created is good and beautiful , one can see this tapestry in all creation, including science. In giving credence to God, Poythress says, "God does good by giving you rains from heaven and fruitful seasons, satisfying your hearts with food and gladness (Acts 14:17)." Then he goes on to say that

> The marvels of growing plants manifest the faithfulness of God as he speaks his word to plants. These long-standing marvels are now supplemented by the marvels of chemistry in making fertilizer and pesticides; the marvels of soil science informing and advising the farmers; the marvels of biology in breeding and genetically modifying plants; the marvels of technological complexity in harvesters, processing plants, shippers, and packagers.[34]

It is therefore evident from Poythress' submission that the faithfulness of God manifests in His creation which is a direct consequence of His creativity that eventually reflects in human

[32] Ibid

[33] Ibid

[34] Ibid, p. 30

creativity. In essence, there would have been no human creativity in science without God's creative DNA (otherwise known as "deoxyribonucleic acid") – that is, "the hereditary material in humans and almost all other organisms".[35] In short, Poythress is calling the attention of all scientists to the reality that science would never have existed but for human creativity that came directly from the Creator. He emphasizes that "Scientists necessarily work daily with the eternality and omnipotence of scientific law right before their eyes" while "the rest of us see the faithfulness of God manifested more prosaically in the dependability of the technological apparatus that spins off from science"[36]; all because of our assumption on "the reliability of our food sources"; just as "we believe the food we grow every year; and we believe that our food will nourish rather than poison us."[37] A clear common factor here is the way human beings train themselves to trust – just as scientists and those who benefit from scientific apparatus and products demonstrate trust, so is theology that believes and teaches trust and faith in things that give life and bring hope. Poythress says "The Bible asks people not primarily to believe in eternality and omnipresence as theoretical abstractions, but to trust God in practice in the conduct of their daily lives."[38] One can draw conclusions from Poythress' arguments. First, pursuit of truth is the core value of both science and theology. Second, both believe in the immutability of this truth as it holds true anywhere and anytime. Third is the place of trust – science and theology only have trusted followers because the outcome both had earlier prepared people to expect did not fall short of that prediction. Fourth, one needs faith to follow through

[35] MedicinePlus, (2020, September 17), U.S National Library of Medicine, para 1. Accessed via: https://medlineplus.gov/genetics/understanding/basics/dna/

[36] Poythress, 2006, p. 30

[37] Ibid

[38] Ibid, p. 31

with specific instructions to get expected results. For example, one can tell that the same rigorous discipline that scientists go through to get a consistent result after long hours of studying pattern may be applicable to the same patience and self-discipline that Daniel employed to discern how to walk the narrow path and become successful in life. Despite the divine attributes of scientific law in both science and theology, why do the hypotheses of the former evolve while those of the former remain constant? Put differently, should one conclude that any scientific hypothesis that remains constant has some elements of divine scientific law guiding it? These questions are worth pondering over. Next, this paper will review Poythress' interesting point regarding Solomon as a scientist.

The Role of Mankind in Science: Solomon as Scientist

Poythress' reference to Solomon as a scientist despite being the king of Israel is very instructive. He refers to Solomon's "gift of wisdom" as outlined in 1 Kings 4:29-34, specifically pinpointing how "he spoke of trees, of beasts, of birds, of reptiles, and of fish"; and how this act "sounds like the beginning of descriptive science."[39] He goes on to say that

> Perhaps Solomon's speech merely used the animals as illustrations for human behavior, in the way that Proverbs 6:6 urges the sluggard to "go to the ant." Even this illustrative use requires some observation of the animal or plant world. But the language of 1 Kings 4:29-34 seems to describe a much more concerted focus on the plants and animals, and not just for the sake of illustrating human life. Solomon's discussion of plants and animals appears to be in addition to the 3,000 proverbs, proverbs that make observations about human life. Wisdom, in the ancient Near East, included wisdom not only concerning human life but also concerning the natural world.[40]

[39] Ibid, p. 157

[40] Ibid

Solomon's accuracy in illustration based on empirically observed reality gives Poythress the confidence to label Solomon as a scientist. Just as scientists have a lot of respect for accuracy in description, disciplined observation of cause and effect, integrity of facts based on thorough analysis and evaluation, Solomon's conclusively accurate descriptions of plants, animals and human behavior, based on God-given wisdom, earned him the title of a scientist that Poythress gave him. To dispel any misunderstanding surrounding his bold claim, Poythress says

> As far as we know, Solomon did not have a lot of technical experimental apparatus. But science does not start with its present fund of apparatus. It builds gradually. The beginnings of modern biology included much work in detailed observation and classification of animals and plants (especially Linnaeus, whose system of classification continues in use today, with appropriate modifications and enhancements). Solomon's utterances may well have begun explorations in this direction.[41]

If one extrapolates Poythress' statement above, one can then see how science is in theology from Genesis to Revelation – a clear insight into how the creative God in Genesis give mankind the creative foresight to plant and build, invent, and make the world a better place, especially if one reflects deeply on God's injunction in chapter 1 of the Book of Genesis where he blessed mankind with the power of dominion over His creation. This may have encouraged Pythresis' statement that "I have found that science offers a wonderful window onto God's wisdom"; and that "it provides extraordinarily beautiful and wise and profound exhibitions of God's glory."[42] The call to search for the truth in the word of God (Bible) is buttressed by the uncompromisingly strong value of science in pursuing truth based on observable and replicable reality. Solomon's

[41] Ibid, p. 158

[42] Ibid, p. 159

'scientific pronouncements and observations' may be of great scientific value, but one may want to inquire about how he obtained his facts, and also know how he observed the patterns within time and space, and one needs to know the kind of replicable approaches David used. Knowing these facts will make his pronouncements scientific since replication of methodology is a cardinal requirement of science. Another area of interest that Poythress identifies is the role of Christ as redeemer in science. To that this paper now turns.

The Role of Christ as Redeemer in Science

Writing on "Christ's fulfillment of dominion" Poythress refers to how "Sin has infested human beings", and he goes on to include that sin "infects the mind" of "every human being born into the world" as well as "the products of the mind, including science."[43] Purity and righteousness represent the polar opposite of sin, and from Poythress' perspective, sin is not helpful for science. In his words, Poythress says "We need redemption in science because science, as a human endeavor, shows the effects of sin."[44] This assertion buttresses Poythress' earlier point that just as truth is the pursuit of science, theology is also in tune in its pursuit of truth. Just as Christ came to redeem the world from sin, science is fighting hard to keep away the "idolatrous corruption of scientific law" that has been promoted by "jealousy, rivalry, and occasional falsification of evidence" which have come to "affect the character of scientific work."[45] Battling to save a fallen world of sin is synonymous with fighting the corruption forcing people, including scientists, to cut corners and cheat in order to profit for personal gains. One

[43] Ibid, p. 169

[44] Ibid

[45] Ibid

important point here is the danger in corruption. Just as the truth of theology as espoused by the word of Christ stands out in integrity, so is the integrity that science espoused in its uncompromising stand on absolute truth. It is necessary to point out one area that Poythress may have overlooked – it appears that he believes that dishonesty is only within the circle of scientists. One should not assume that theologians are perfect since they too operate within the fallen world structure, and the possible scandals reported in mainstream media over the years show that the church and theology may not be immune from the corruption of the world. If this is so, who saves who? Can science save theology, and can theology redeem science? Can human beings truly live like Christ – in character, behavior and attitude? These are questions worth mulling over.

Referring to Christ as "the final scientist", Poythress pinpoints the wisdom of God in Christ that powers insight, precision, and accuracy. He goes on to say that "The scientist pursues both wisdom and dominion in relation to the natural world. Christ, through his position of rule and wisdom, has achieved both fully. To say it boldly, Christ is the final and archetypal scientist!"[46] Jesus Christ is the epitome of wisdom, humility, truth, endurance and discipline, and these qualities are manifest in science. Poythress draws attention of readers to the possibility of worshipping science and scientists if the quality of humility, discipline and integrity of Christ is missing. Hence, Christ is needed in science to guide against idolatry, greed, and even ego that could lead to falsification or destructive use of science. In connecting science and theology, and in connecting the importance of stability, rationality, and logic, Pythresis says,

Scientists, whether Christian or atheist, rely on the Father, the Son,

[46] Ibid, p. 173

> and the Holy Spirit. They rely on the Father as the source of stable law. They rely on the Son, who is the Word of the Father and the true Law of the universe, the true source of rationality and logic. They rely on him also for providing, through his sacrifice, benefits and blessings that they do not deserve. They rely on the Holy Spirit to teach them. But the atheists do not see that they have this reliance.[47]

Just as Christ pioneers a relational theology, faith and belief system, he establishes his creed and doctrine on some basic but indisputable and immutable life-giving values: truth, coherence, rationality, integrity, dignity, discipline, sacrifice, as well as deep wisdom, insight and power to have dominion. Just as science operates in facts rather than fiction, Christ, through theology, makes a theological doctrine of precision, absolute truth, and excellence core values to follow. This buttresses what Apostle Paul says in Philippians 4:8-9:

> Finally, brothers and sisters, whatever is true, whatever is noble, whatever is right, whatever is pure, whatever is lovely, whatever is admirable—if anything is excellent or praiseworthy—think about such things. Whatever you have learned or received or heard from me, or seen in me—put it into practice. And the God of peace will be with you.[48]

Apostle Paul outlines the values that Christ himself lived out, and Poythress believes that these same qualities are what could redeem science if it must stay the course of pursuing incorruptible truth and undisputable facts that Christ and Christianity stand for. In other words, scientific method in theology will not compromise the integrity of truth in its doctrinal statements or positions on issues. However, how can one make those who do not believe in God or Christ to have some interests investigating the Word of the Father and the true Law of the universe? How can those who hate to hear the name "Jesus Christ" study his ways to know that he is the true

[47] Ibid, p. 175

[48] Bible (NIV), Book of Philippians chapter 4:8-9

source of rationality and logic? Poythress may have to fashion a pathway that theology can chart in order to bring people into the desire to want to investigate the true source of rationality and logic. Drawing from the position of God being the impartial, generous, and unbiased giver of all wisdom, knowledge, understanding and insight, Poythress affirms that "God provides scientific insights and scientific and technological success even to those who rebel against him."[49] It is doubtful if unbelievers will believe this assertion, let alone acknowledge that God exists, and the question could then be: How can any approach of theological science bring such people to desire some interests in exploring and investigating Jesus as the true source of rationality and logic? Theology that abhors favoritism, hatred and jealousy is also the one that embraces science whose value allows unbelievers to excel in scientific exploits, as long as they follow the theological principles of hard work, consistent culture for the search for truth, and the uncompromising endurance in pursuing facts with uncanny discipline. Next, this paper will discuss another point Poythress identifies – "The Word of God in Science".[50]

The Word of God in Science

Poythress equates theology's primary value and respect for absolute truth and transparency with science's complete reliance on empiricism, accuracy, validity, and reliability. Theology and science both share huge value of accountability and respect for honesty. He submits that the word of God "plays a central role" in science; affirming that "Scientific law really means the word of God".[51] Although this may not necessarily mean that scientists follow

[49] Poythress, 2006, p. 176

[50] Ibid, p. 177

[51] Ibid

the word of God in the Bible to make decisions, but Poythress is likely referring to the principles of objectivity, absolute honesty, and openness. It is therefore a welcome development in theology to apply scientific methods of inquiry in situating the history, context, original language, the existing cultural beliefs and traditions, as well as the political life and the religious practices in existence at the time of the recorded event. Poythress is upright and forthright enough to bring up the issue of "miracle"[52] in the word of God. Although he does acknowledge cases like resurrection and the parting of the Red Sea as something not easily explainable by modern science, he does identify the mention of "a strong east wind all night"[53] according to Exodus 14:21 as a plausible reason for the parting of the Red Sea, although he also admits that this reason may "still seem virtually impossible by ordinary means."[54] It is not clear how these two cases fit into the scientific methodology of theology, and Poythress falls short of giving a more convincing reason other than saying that "The Bible shows us these miracles for theological reasons."[55] He goes on to say that "They show God at work in startling, extraordinary ways to bring salvation or judgment, to show his power and faithfulness, and to arouse awe and wonder in human onlookers."[56] One can equate this conclusion with the awe that scientific breakthroughs cause – even if the history behind the scientific breakthrough later turn out to be a religious adherence to disciplined observation of patterns and honest empirical analysis and reliable and valid conclusions.

[52] Ibid, p. 179

[53] Ibid

[54] Ibid

[55] Ibid

[56] Ibid

In apparent reference to the essence of miracle in theology, Poythress has this to say:

> Many modern people suppose that science has disproved the miraculous. But much depends on one's conception of science. If, as modern materialists believe, the world is nothing but atoms in motion, nothing but a machine, and if there is no God, then miracles in a biblical sense are impossible. If something weird happens, it may remain inexplicable, but it is just weird, not an act of God. On the other hand, within a Christian view of the world, scientific law is man's current best description approximating the word of God that governs the world. The word of God governs the regularities of the seasons, and of night and day. But it also governs the exceptional cases, where God may deviate from a hitherto observed regularity.[57]

This explanation makes a lot of sense since a weird thing, even when scientists cannot find the cause, must have an explanation. If it is weird within the secular setting, then it is an act of God within the theological realm because a plausible reason can be adduced. Within the secularist setting, such a weird thing would remain without any plausible explanation, and this may be a point where theology will help fill the gap in terms of plausible reasons. One should not ignore an obvious lapse that appears to exist here. When the miraculous happens, how should the theologian convey this to the world of skeptics that it is due to unseen divine intervention if theology has to remain scientific in cause and effect approach? When theologians use the act of God argument to explain cause and effect, can this approach still fall under any scientific methodology? Again, these are questions worth reflecting upon. Next, we turn to Poythress' "Truth in Science and in Life".[58] From a general analysis, this gives a clear idea that any scientific truth must be true in the day-to-day human living.

[57] Ibid, p. 180

[58] Ibid, p. 187

Truth in Science and in Life

It is interesting to see Poythress identify general and particular laws when he talks about regularities in scientific law. Truth as an undisputable ingredient of anything meaningful in life comes up here as a non-negotiable factor. From a theological perspective, Poythress lists divine attributes of truth – which include being omnipresent and eternal, immaterial, and invisible, omnipotent, transcendent and immanent, and personal. These are words describing the word of God in theology just as they try to capture the values that drive science. Poythress confesses that "truth transcends the world"[59] as he lays out the importance of truth in the world – particularly "moral truth" that "is righteous, good, pure, loving, and kind".[60] The truth theology defends, protects jealously and promotes in all aspects of life is the same truth upon which the core of scientific methodology rests. However, scientific inquiry may compel theology to specifically outline the procedures for attaining this truth in a way that others may be able to apprehend it as well.

One finds it very striking to see Poythress refer to "truth as divine witness".[61] This reinforces the importance of truth both in theology and in science, but much more so, in scientific methods or inquiry in theology. According to Poythress, the importance of truth places a lot of responsibilities on human shoulder to pursue, protect, and defend truth. Truth holds the world together. As science pursues truth, so does theology protect the truth of God. Both call human attention to the responsibility of pursuing truth in order to keep orderliness in place. If both science and theology pursue truth, then their areas of differences may be fewer than earlier

[59] Ibid, p. 191

[60] Ibid, p. 192

[61] Ibid, p. 193

assumed. The question though could be: Are there areas of convergence in their (science and theology) pursuit of truth, and if so, can they collaborate? If not, why not? Next is "the character of scientific knowledge"[62].

The Character of Scientific Knowledge

Poythress explores "how a Christian worldview" addresses "the character of scientific knowledge" such as "realism, idealism, empiricism (including operationalism), pragmatism, and postmodern relativism."[63] He asserts that "Scientific knowledge objectively matches realities in the character of an objective world" while "science aims at true description and explanation"[64] which is also true of theology. He goes on to show that even within the scientific world, there are disagreements about what constitutes idealism and realism. However, Poythress explains that

> The word of God governs the phenomena (empiricist focus) and our ideas about the phenomena (idealist focus). He governs the regularities of the phenomena (focus on law) and whatever "realities" may still be hidden from us (realist focus). God governs the practical use of the phenomena (pragmatist focus), and the variations in perception that may occur among different groups of people (postmodernist relativist focus). He governs the differences in perception between color-seeing and color-blind people, and between human beings and bats. Because God is wise and his word embodies his wisdom, all these things are meaningful, and all are "real" in some sense. Then why should we fight about these issues?[65]

From the foregoing, one can see the coherent reality from a Christian worldview. In other words, theology's approach to truth and reality is the same passion that science pursues truth and

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[62] Ibid, p. 197

[63] Ibid – allusion to J. P. Moreland, *Christianity and the Nature of Science: A Philosophical Investigation* (Grand Rapids, Mich.: Baker, 1989), 139-212

[64] Ibid

[65] Ibid, pp. 202-203

perceives reality. In fact, Poythress goes on to submit that "God creates everything by his word"; and that "The word introduces the structure and the meaning"; and that "The law of God is the continued structure for the world."[66] One can see this submission from the angle of science not existing in a vacuum. Scientific methodology must follow fundamental laws of life that theology also stands for; that must remain true to divine laws, otherwise, it will lose its authentic credibility and reality. The wisdom of God reflects in both the word of God and what Christ has done as unpacked through theology, and these have set people free from bondage and give power for dominion over natural limitations like sicknesses and natural disasters. But is theology unpacking these facts in clear ways that unbelieving world will acknowledge? For example, is theology drawing enough attention to the wisdom and power in going on 'vegetables' instead of the king's food and wine (Daniel 1)? Is theology calling attention to this earlier scientific approach to keeping healthy with what goes into a human system or body? This wisdom is the application of knowledge that God gives to scientists who seek wisdom. Intelligent design is another aspect that Poythress calls readers' attention to, and to it this paper will now address.

Intelligent Design

The concept of "intelligent design" that rides on "the idea of irreducible complexity"[67] is one that Poythress breaks into two – something designed with precision, patience, and utmost excellence, yet highly complex. He goes on to say that an intelligent designer "can construct an irreducibly complex system, because he can assemble the parts one by one by intelligent

[66] Ibid, p. 204

[67] Ibid, p. 259

selection, knowing the end-product to which he is heading."[68] Just as God's intelligent design followed the assemblage of parts done by intelligent selection specifically with the end-product in mind, so are scientists' carefully-orchestrated intelligent selection of various compatible parts for a specific end-product in mind. While God's values of rationality, creativity, deep wisdom, integrity, excellence, truth, and originality stand firm forever; man may sway from these core values from time to time, sometimes swayed by circumstances, changing culture and or prevailing dominant worldview. In fact, Poythress calls attention to this when he submits that,

> Science pursues truth about the physical world, and explores its lawful regularities. But science also involves the participation of human beings, as individuals and as groups, who hand on an atmosphere and an attitude toward the business of science. The conception of science is not fixed once-for-all by its task, but may change according to the dominant worldview within which scientists work. And change has come over the centuries from Copernicus to now.[69]

From the foregoing, when worldviews shift and change, fundamental core values must not change, otherwise the value of integrity, truth, and originality would be corrupted, and the consequences may be very unpalatable to the world. Theology therefore stands in that highly important position of authority, promoting, reminding, and defending the non-negotiable mandate of sticking to the core values of truth and integrity. Without the core values that theology stands for and defends, science may go in the wrong direction since human beings are the ones that make it work. But caution is also necessary as human beings are also the so-called theologians. The question then will be: How reliable are the theologians when it comes to

[68] Ibid, p. 260

[69] Ibid, p. 261. On the changing worldview within which scientists work, Poythress alludes to: Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (Chicago: University of Chicago Press, 1970

faithfully following the rules of proper hermeneutics in interpreting the Word of God? How dependable are theologians in standing firm on the truth of the word of God rather than pandering to the social media, mainstream media, government, or even pressure from some members, for example, in the area of changing biblically solid definition of marriage? How far can theology go to point out to the world that by the lens of intelligent design, sex-change or gender-switch has serious negative consequences for humanity? These questions may not necessarily give us new answers, but they could generate more interest in firmly declaring what the word of God says on the issue, with accompanying reason and consequences. Another way Poythress connects science and theology is "God and physical displays."[70]

God and Physical Displays

In showing "the implications of a Christian worldview for the study of the physical world, including nonliving things", Poythress reminds everyone that "God made man in his own image, while plants and animals were made according to their kinds (Gen. 1:21, 26-27; 5:1)", emphasizing the significance of Genesis chapter 18 which says "plants and animals, by reproducing to their kinds, are analogous to Adam, who fathers a son in his image (5:3)"; hence Poythress affirms that "Reproduction, a key process in living things, results in more living things in the image of the parents."[71] As scientific methods place premium on *empiricism*, so is theology's emphasis on physical displays of God's creation to the physical eyes. He continues to say that "While respecting the uniqueness of mankind, we might say that biological reproduction

[70] Ibid, p. 285

[71] Ibid

also offers us a process of imaging."[72] The imaging that powers scientific methodology has its origin in theology. Poythress refers to "examples of imaging in nonliving things" such as "Thunderstorms, fire, light, and clouds".[73] He also refers to the "life-giving character of God" as "reflected in ordinary water on earth", while equally reminding everyone that "the sun as a source of light reflects the original brightness of God (see Rev. 21:23)." In theology, God displays his creation, and talks about how they came into existence, and science follows the same principle of imaging in discovering scientific findings. This idea of imaging is a powerful scientific tool that theologians should use more in unpacking the scientific methodology of nature, human beings, wisdom, and relationships. A good example is the "proportions in time and space"[74] that Poythress cites. According to him,

> Even before the Greeks discovered the proportionalities in music, astronomers began exploring proportionalities in the motion of heavenly bodies. God laid the foundation for this possibility when he created the heavenly bodies. In Genesis 1 God indicates that the heavenly lights function to mark off time: "And let them be for signs and for seasons, and for days and years" (Gen. 1:14). The first and most elementary level of theory – scarcely deserving the name of theory – simply observes the obvious regularities governed by heavenly bodies. The sun brings daytime in a regular cycle. The moon marks out the division into months. And in a more complicated ay, the position of the sun at its rising and setting, as well as the positions of stars, mark out the cycle of the year.[75]

If anyone desires to see some specific areas of scientific methods in theology, Poythress' submission above captures some of the basic points on the matter. While science does not

[72] Ibid

[73] Ibid

[74] Ibid, p. 289

[75] Ibid, p. 289

authenticate theology, it is also true that some of theology's information can be scientifically assessed to be true. Poythress again helps readers to have a deeper understanding of the intersection of science and theology when he submits that

> God has provided in the heavenly bodies a natural starting point for physics, especially the mechanics of motion. Ordinary motion on earth experiences the influence of friction, as well as the influence of wind and atmospheric pressure, all of which present obstacles to grasping the underlying simplicity that Galileo and Newton uncovered. The heavenly bodies, by contrast, move without the effects of friction or the atmosphere. They therefore show simplicity and regularity more directly at an immediately visible level.[76]

If theology pioneers the idea of heavenly beings and natural occurrences that give rise to scientific laws, one cannot divorce scientific methodology from theology. Just as science needs the faithfulness and integrity to stand firm and true, theology can also benefit from the authenticating input of scientific methods in analyzing the revealed truth of theology in the word of God (Bible). However, theology has some work to do in explaining concepts such as heavenly bodies in a way that will make sense to the average person. In closing, Poythress alludes to the Christian approach to physics, chemistry, and mathematics.

Christian Approach to Physics, Chemistry, and Mathematics

Based on what Poythress identifies about nature, pattern, signs, and seasons, it is interesting to rad his take on how physics and chemistry bring more understanding to the whole mix. In his words while bringing more insight to the issue, Poythress says

> We can praise God both for the deep mysteries in physics and

[76] Ibid, p. 291

> chemistry and for the consistency of God's rule in our ordinary affairs. Imagine a world without the regularities that we take for granted: the rising of the sun, the supply of oxygen in the air, the consistent freezing and boiling properties of water, the consistency of muscle behavior, the consistency of the transmission of nerve impulses, the consistency of the chemical forces that underlie muscles and nerves, and the consistency of our heartbeat. Our bodily existence depends in countless ways on the consistency of God's rule over the physical and chemical realms.[77]

Theology postulates what scientific methodology can measure – and Poythress outlines these, and they include the rising and the going down of the sun, rain from the heavens, the flourishing of vegetation that produces fresh air, and the abundant existence of body of water (seas) that sustains life. In this, there is logical orderliness that theology (Bible) captures. Poythress goes on to say that "the word of God includes a control of the mathematical aspects of the world"; and that "the coherence between mathematical expressions and physical laws that we saw in the previous chapter arises from the unity of the word of God" and specifically, "the word of God is a harmonious whole, and produces harmony between physics and mathematics."[78] He continues to explain that "the biblical doctrine of God, plus the doctrine of creation, provide a sound basis for human beings to explore and appreciate the many-sided coherence in creation."[79] Poythress cites Colossians 1:17 where the Bible says "In him [Christ] all things hold together", and then submits that "specific information from the Bible encourages the development of mathematics in connection with astronomy."[80] He says "Genesis 1:14 points out the regularity of the movement of the heavenly bodies and invites human beings to use this regularity in keeping track of

[77] Ibid, pp. 315-316

[78] Ibid, p. 317

[79] Ibid

[80] Ibid

time"[81], while affirming that "The tabernacle as a model of God's macrocosmic house also shows numerical and spatial beauty and harmony."[82] In a nutshell, theology uses scientific methodology of dimensions and measurements and promotes the values of precision and integrity. Theology allows scientific methodology enough room to ascertain and authenticate the truth it stands for. That also shows the confidence of theology in the truth it professes. For example, Poythress says

> The tabernacle model shows that mathematics in its roots originates from God. Both the spatial and numerical aspects of the tabernacle are an integral part of the structure of imaging or modeling. In particular, the Holy Place is an attenuated "image" of the Most Holy Place, which in turn is an "image" of the macrocosm and of God's dwelling in heaven.[83]

In other words, the concept of shape, size, diameters, height, and depth are no strangers to theology. In fact, theology epitomizes scientific methods and originated divine creativity. It also shows the existence of modelling way before science adopts the idea of modelling an idea first in a smaller format, before adapting it to a larger scale. This may explain why churches pioneer architectural masterpieces around the world. This will also explain why theology drove the idea of Western education that delivered many from destructive ignorance.

Final Thoughts on Poythress' Ideas

One thing that Poythress makes clear is the intersection between theology and scientific methods. In fact, he makes it abundantly clear that both theology and scientific methodology

[81] Ibid

[82] Ibid

[83] Ibid, p. 322

pursue the same goal: truth that will make the world a better place. Also, he also adds that the pursuit of truth must follow an orderly pattern observable and experienced so that no one can claim ignorance. It must be acknowledged that Poythress appears to lay more emphasis on the importance of moral value that theology brings to bear on the people who are pursuing truth (scientists) and the ethics (rules) of engagement that retains integrity in the process, the practice, and the outcome that must be for the greatest good of all. Poythress also makes it abundantly clear that while theology is available for scientific method's application to ascertain its truth, scientific methods itself will not go anywhere without applying the principles of theological ethics in producing the best result for the common good. Next, this paper will engage Alister McGrath's scientific theology.

Engaging Alister McGrath **(A Scientific Theology, 1-3)**

Alister E. McGrath, a professor of historical theology holds the Oxford degrees of Doctor of Divinity as well as Doctor of Philosophy in molecular biophysics. Like Poythress, McGrath is no stranger to the intersection of theology and science. In his three-volume books, McGrath uses volume 1 to focus on the role of nature within scientific theology, volume 2 on the role of theological realism and its engagement with natural theology, and volume 3 on theoretical issues – like securing the closure "in theological theorizing, the problem of reductionism in theoretical analysis, the explanatory dimensions of theology, and the implications of the stratification of reality for its representation, the place of metaphysics in Christian theology, and the nature of revelation itself."[84] He starts out by identifying the legitimacy of a scientific theology.[85]

[84] Inside cover page of Alister McGrath (2003), *A Scientific Theology: Theory,* Volume 3, Grand Rapids: Eerdmans.

[85] Alister McGrath (2001), *A Scientific Theology: Nature*, Volume 1, Grand Rapids: Eerdmans.

The Legitimacy of a Scientific Theology

McGrath sees a lot of intersection between natural science and theology, and sees the place of "nature" and "theology of nature"[86] particularly as nature cannot be divorced from the concept of creation, and he says "There is an obvious parallel here with the natural sciences, especially in the manner in which scientific communities originate theories and hypotheses, subject them to critical examination, and finally receive them within the community as a whole."[87] In other words, just as scientific methodology proposes ideas, theories and hypotheses first, so does theology. And just as scientific ideas are measurable, so can one realistically measure the ideas of the biblical theology. It is interesting to reflect upon the creation story in Genesis and observe the orderliness of creation and the meticulous arrangement of the creation of nature first – water, sea, land, vegetation, which are sources of survival before the animals of different kinds were created, and before man was created. McGrath says,

> The natural sciences today offer to Christian theology today precisely the role that Platonism offered our patristic, and Aristotelianism our medieval forebears. A scientific theology will treat the working assumptions and methods of natural sciences as offering a supportive and illuminative role for the Christian theological enterprise, both assisting theological reflection and identifying and allowing exploitation of apologetic possibilities and strategies.[88]

One will quickly appreciate the scientific methods of working assumptions, ideas, theories, hypotheses and other critical approaches and methodologies that are helpful rather than harmful to theology. However, one should ask the question: How often do theologians appropriate those "methods of natural

[86] Ibid, pp. 3-4

[87] Ibid, p. 5

[88] Ibid, p. 7

sciences as offering a supportive and illuminative role for the Christian theological enterprise"? How reliable are they, and what are the likely challenges in the course of integrating scientific methodologies in theology? Should one expect similar approaches in the application of scientific methods to both natural sciences and theology?

This legitimacy of scientific theology is obvious in divine rationality, and McGrath's statement makes this clear that

> The Christological dimensions of the doctrine of creation are such that the divine rationality – whether this is conceptualized as logos or as ratio – must be thought of as being embedded in creation and embodied in Christ. The same divine rationality or wisdom which the natural sciences discern within the created order is to be identified within the logos incarnate, Jesus Christ. Creation and Christ ultimately bear witness to the same God, and the same divine rationality. As will become clear during this study, this kind of consideration leads to the possibility of seeing theology as a science in its own right, yet related to other sciences, each of which has its own distinctive subject-matters and means of investigation appropriate to that subject.[89]

Subjecting the word of God, the Bible to rigorous analysis, historical reviews and empirical examination will continue to position theology as another field scientific inquiry. It is noteworthy to see how theology and other natural sciences each has its own distinctive means of investigation appropriate to that subject, and this leverages theology to use the most appropriate scientific method. McGrath seems to embrace the concept of "*Naturwissenschaften*" which

> deal with precise descriptions, analyses and measurements, which are ultimately alien to us. The human understanding of nature is objective, external and detached, and is based upon the logical and rational investigation of physical objects with which we have no direct affinity or sympathy.[90]

[89] Ibid, pp. 24-25

[90] Ibid, p. 29

If one appreciates the place of nature in theology, it will also not be too difficult to agree with McGrath's position about the legitimacy of his argument regarding scientific theology – as nature and creatures are external and detached, and are available for logical and rational investigations, including mathematical measurements and objective empirical analysis. While referring to the approach he intends to adopt, McGrath says, "It will be clear to the critical reader that such an approach legitimates a range of scientific theologies, reflecting in particular the long-standing debate within Christian theology over its sources, methods and tasks." In this case, authenticating the integrity of a source of information is one core scientific enterprise. The where, how, when, who, and the originality of sources and facts are critical scientific approaches that are no stranger to theology. Also, the scientific methods that entail consistent and observable patterns, realistic theoretical and hypothetical understanding, logical and repeatable critical and objective analysis, as well empirically comprehensible outcomes must be the reasons behind McGrath's style of scientific theology which "is based on the affirmation of the intellectual resilience of traditional credal Christian orthodoxy".[91] While discussing realism as an important ingredient of the scientific tradition, McGrath argues that "Realism is not a position adopted through group pressure or personal whim; it results from the relentless accumulation of experimental data, and the successful design and development of experiments to explore matters further."[92] McGrath, in coining the term "scientific theology" also infers that this tradition embraces realism that results from the relentless accumulation of reliable and valid data. Such reliable and valid data should be easily accessible through theology's constant practice and writing.

[91] Ibid, p. 35

[92] Ibid, p. 73

He goes on to identify "Three general claims" that "may be seen as underlying the form of realism adopted" with the first being "Ontological" that "held that there exists a reality or realities, the existence of which is independent of and external to the inquiring human mind", and that "This reality awaits our discovery or response, and is not called into being, constructed, projected or invented by the human mind."[93] The second is "Epistemological" which "held that this reality or realities can be known, however approximately, and that statements which are made concerning it cannot be regarded totally or simply as subjective assertions concerning personal attitudes or feelings"; and that "It is possible to gain at least some degree of epistemic access to a reality which exists 'objectively'", and simultaneously "conceding that the manner in which this is apprehended or conceptualized may, to some extent, be conditioned by cultural, social and personal factors."[94] The third is "Semantical", which "held that this reality may be depicted, described or in some manner represented, however inadequately or provisionally, so that it is possible to make statements concerning this reality which may be described at least as approximations to the truth"; and that "While fully conceding the limitations placed upon human language, it is held that this is neither inadequate nor inappropriate as a means of making meaningful statements concerning reality."[95] McGrath goes on to say that "Both Christian theology and the natural sciences understand genuine knowledge to have ontological foundations in objective reality."[96] Scientific method seeks truth through understanding and genuine knowledge of reality while theology is also in the business of truth pursuit, promotion, and

[93] Ibid, p. 75

[94] Ibid

[95] Ibid, pp. 75-76

[96] Ibid, p. 76

defense. In fact, theology's position is that truth is not relative because truth should not be subjective to political, cultural, economic, intellectual or ideological manipulation or differences. This principle holds true in science. Whatever is scientifically approved as true in Slovak must hold true in the US and vice versa. However, one question jumps out: How come some theologians have differing views on some issues or the process through which theology investigates such truth?

One can build on this conclusion and submit that theology is about a reality whose existence is independent of and external to the inquiring human mind, just like any natural sciences, and therefore subject to scientific methodology and measurements. The reality of creation is backed by the empirical observation of creation and the created, just as recorded events and locations in theology exist in reality, and are also independent of and external to the inquiring human mind. McGrath's construction of nature is another window through which he gives insight on the scientific method in theology.

The Construction of Nature

McGrath submits that the importance of the topic of nature is inseparable when addressing "the relation of Christian theology and the natural sciences".[97] He goes on to identify three different ways one can understand "nature". On the first, his description is the one "Used as a realist concept, [whereby] 'nature' refers to the structures, processes and causal powers that are constantly operative within the physical world, and are studied by the natural sciences."[98] On the second, McGrath's description is the one "Used as a metaphysical concept, [whereby] 'nature'

[97] Ibid, p. 81

[98] Ibid, p. 82

denotes a category which allows humanity to posit its distinctive nature and identity in relation to the non-human."[99] On the third, he says,

> Used as a 'surface' concept, the term refers to ordinarily observable features of the world. This is perhaps the most widely used sense of the term in modern ecological discourse, in which a contrast is often drawn between nature and an urban or industrial environment, often to highlight how nature has been violated, and thus to emphasize the need for conservation and preservation of the natural habitats that remain.[100]

From the foregoing, the idea of a theology that defends and promotes the protection of the environment could be a direct outcome of the application of scientific method in theology. Theology promotes the protection of the environment, and many churches promote the reduction of emissions, use of energy conserving power generation, recycling, and direct community mobilization on the use of safer materials domestically and industrially. McGrath also shares his insight on the place of natural theology within a scientific theology.

The Place of Natural Theology Within a Scientific Theology

It is necessary to engage McGrath's "two main approaches" he "discerned within Christian theology to the contested question of a natural theology."[101] The first is that "Nature provides a foundational resource for Christian theology"; and that "Nature is thus treated as an *explicans*, an agent of explication with potentially revelatory status."[102] The second is that "Christian theology provides an interpretive framework by which nature may be interpreted";

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[99] Ibid

[100] Ibid

[101] Ibid, p. 294

[102] Ibid

and that "This approach takes nature to be an *explicandum*, something which requires or demands explication, but is not itself possessed of the intrinsic capacity or ability to offer such an explanation."[103] McGrath submits that "The present project affirms and defends the theological viability of the second of these two options"; and that "A natural theology, which sees nature as creation, has an important role in a scientific theology."[104] One can rephrase this statement to clearly state that scientific method can only be real and true in theology as long as nature and creation are within the focus of theology. Put differently, theology is front and center in the area of nature and creation, and has never toyed with the place and importance of accuracy in reporting and measurement, facts that are indisputable even if inadvertently presented in a disorderly way in few places. It must be mentioned that just having nature as creation is not enough basis for scientific theology – theology itself must critically engage nature as creation and methodically outline the cause and effect, the essence and purpose that connects the whole in a way that makes sense to the discerning world. Next, this paper will engage McGrath's position on rationality and knowledge in theology and the natural sciences.

Rationality and Knowledge in Theology and the Natural Sciences

This is in volume 2 (Reality) although McGrath still makes it his chapter 7, making it clear that his three volumes are one whole piece broken into three published parts. In his words, "A scientific theology is concerned with knowledge of God and the world."[105] He refers to certain principles: objectivity, truth, and humility – all hallmarks of both theology and scientific

[103] Ibid

[104] Ibid

[105] Alister McGrath, (2002), *A Scientific Theology: Reality.* Grand Rapids, Michigan: Eerdmans Publishing, p. 3

methods. He identifies other shared characteristics such as coherence to external reality as well as the possession of empirical and logical criteria. He also highlights the place of rationality and shared knowledge. He emphatically states that

> Yet a scientific theology is able to maintain the public accessibility of the natural world, while fully recognizing the tradition-specific nature of the process of observation and interpretation. For a scientific theology, a Christian natural theology represents a tradition-mediated view of reality, which possess a created capacity to function as a trans-traditional framework of rationality.[106]

In McGrath's statement, he identifies the importance of accessibility to the natural world that all can also see; a known and generally accepted process, rather than a haphazard approach to observation and interpretation that any interested party can replicate. It is interesting to see McGrath engage what he calls mathematical realism and the mind of God, and this is what this paper will review next.

Mathematical Realism and the Mind of God

While many may never draw any correlation, theology and philosophy may not be completely estranged from mathematics, and this may actually prove why they all help human beings make sense of reality, discern truth, and act in ways that are most beneficial to mankind. According to McGrath,

> Mathematics plays a critically important role in both philosophy and theology, even if theologians seem slow to appreciate this. Augustine is one of a relatively small group of theologians who regarded mathematics as having theological significance. While

[106] Ibid, p. 54

> his interest in, for example, the derivation of numbers from the mind is often regarded as a quaint aspect of his 'Pythagoreanism', it is also an important aspect of his understanding of the correlation between the created order and the mind of its creator. Mathematics enables the order within the world to be identified and seen as an aspect of the harmony within the creation, grounded in the being of God.[107]

Whether one likes it or not, the place of mathematical realism in both theology and scientific methods cannot be wished away. In fact, McGrath says,

> Yet perhaps the most remarkable feature of mathematics is its ability to represent the world. Why, many have asked, is it that the external world contains supremely intricate mathematical patterns, as seen in the structure of force field and galaxies? Why is it that this world, which was not constructed by human hands or agency, demonstrates a rich structuring and patterning capable of being represented mathematically, when mathematics is supposedly a free construction of the human mind?[108]

This submission exposes the gap in the non-Christian tradition that touts evolution as the best explanation of the world. If that is true, such mathematical patterns could not have come into existence by any haphazard means. Only a creative being could have created a pattern that can be discernible and observable. While social constructivism plays its own role in understanding concepts and effects on the world, McGrath is quick to caution that "The interplay of social factors with our perceptions of the real world is complex, both in the natural sciences and in Christian theology, and demands careful attention."[109] He goes on to add that "the recognition of the role of social factors in the acquisition and representation of knowledge does not mean that

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[107] Ibid, p. 170 (Allister McGrath alludes to Saint Augustine's *Recherches augustiniennes*, vol. 1, Paris: Erudes augustiniennes, 1958, 113-48.)

[108] Ibid, p. 172

[109] Ibid, p. 192

knowledge is reduced to social determinants."[110] In addition, McGrath submits that "The major paradigm shift within the social sciences opens the way to the recovery of a realist approach to the natural sciences, and supremely to the realism implicit in a scientific theology."[111] He defines "critical realism" as one that "is apprehended by the human mind which attempts to express and accommodate that reality as best as it can with the tools at its disposal – such as mathematical formulae or mental models."[112] The realism implicit in a scientific theology could be due to theology's inherent scientifically measurable objects and subjects; events and activities; processes and procedures; properties and patterns; as well as arts and artifacts; texts, contexts, and relations among peoples, cultures, traditions, and era. Another interesting point McGrath identifies is that of scientific theology as an a posteriori discipline, and to this concept this paper will now focus.

Scientific Theology as an a Posteriori Discipline

The idea McGrath floats here is illuminating. In his words,

> If there exists a reality independent of us – so that its existence is prior to our recognition or acceptance of that reality – then we are obligated to respond to that reality, offering as best an account of it as we can. While fully conceding that theological formulations are incapable of capturing the fullness of the divine realities, such an approach to theology will insist that there are such divine realities, and that a scientific theology represents a principled attempt to describe and comprehend them under the limiting conditions that are imposed upon humanity by virtue of our created character and fallen nature.[113]

[110] Ibid, p. 192

[111] Ibid, p. 193

[112] Ibid, p. 195

[113] Ibid, pp. 268-269

In this case, McGrath identifies the role of theological reflection. In his words, "A scientific theology takes the view that theological reflection paradoxically begins with an actual knowledge of God, and in the light of this, proceeds to inquire as to how this knowledge might be possible." He explains that this approach is "natural" in as much as it is "conforming to a set of assumptions inherited from the Enlightenment – which would regard the question of how God may be known to be chronologically and logically prior to the question of what can be known of God." In simple terms, one needs to know how to investigate something before knowing what can be known. In the academy, one must know how to do research before deciding what the research focus could be. Without the "how", one may never know the "what" to seek, otherwise, it could be futile exercise in looking for "what" without the knowledge of "how". He goes on to conclude that

> Any theory which lays down in advance how, or to what extent, God can be known predetermines that knowledge through a set of a priori assumptions which have been allowed to exercise a critical and controlling function in theological reflection. How God can be known constitutes a question which may only be answered in the light of the way in which God is known through revelation.[114]

Theology is therefore an area where scientific methods can be employed to search for, and confirm the truth. This may explain why McGrath goes on to say that "Within the natural sciences, understandings of reality arise primarily in an a posteriori manner, in that they are chronologically and logically to be regarded as consequent to the empirical evidence upon which the natural sciences are grounded." [115] Drawing similarities, scientific methods of identifying

[114] Ibid, p. 269

[115] Ibid, p. 271

chronological and logical patterns that leads to empirical evidence can both be identified in both natural sciences and theology. The biblical narrative from Genesis to Revelation has a chronological and logical order that can easily guide readers. One should quickly add that some aspects of theology may not offer logical pattern for easy comprehension in certain respects: for example, the story of raising Lazarus from the dead or the feeding of 5000 with two fish and five loaves of bread may not sound logical. So, how does one apply scientific method into the concept of feeding so many people with the meal of an individual? One can also argue, in defending this, that a miracle was an empirical event that many witnesses confirmed. McGrath goes on to share additional ideas in his volume 3 – A scientific theology: realism. To this third volume this paper will now review and engage some of the interesting positions.

The Legitimacy of Theory within a Scientific Theology

McGrath submits that "Within the parameter of the Christian tradition, humanity is to be seen as the height of God's creation, whose life is shaped by the overwhelming radiance of the vision of God." He says "The church is called into being through its apprehension of this vision of God", and he "argued that the supreme task of theology is to keep this sense of wonder alive", and "as the process of unfolding the object of wonder and worship proceeds – in other words, as apprehension gives way to reflection, and supremely the formulation of theory."[116] Theology's theory is preceded by vision of God, apprehending the radiance of that vision, reflecting on it, and coming up with a theory that will capture the experience and put it into a written form that others can access. McGrath says "Reflection on observations of the natural world leads to the generation of theories concerning the world, through the intellectual digestion and assimilation

[116] Alister McGrath (2003), *A Scientific Theology: Theory*, Grand Rapid, Michigan: Eerdmans Publishing, p. 3

of what is observed."[117] In this case, one has to observe first, and then reflect upon the observation to identify patterns over time before one can arrive at a consistent, reliable, and valid position. For example, he identifies the theory in biology and says "The history of the biological sciences demonstrates the irresistible trend from observation to theory."[118] As well, McGrath refers to theory in physics, and says "The transition from observation to theoretical reflection is equally marked in the physical sciences."[119] Regarding Christian theology, McGrath identifies Christian doctrine as theory.[120] Doctrine, according to McGrath, "entails a sense of commitment to a community of faith", and it "is an activity, a process of transmission of the collective wisdom of a community, rather than a passive set of deliverances"; and it is also says "The views of theologians are doctrinally significant, in so far as they have won acceptance within the community."[121] Doctrinal views of theologians would have come from observed patterns over time, thus becoming a theory that others will use to make assertions. He goes on to say that

> 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.[122]

One thing to add to the above is that it also captured observable experiences and feelings that could be the outcome of human behavior when people undergo certain decisions and

[117] Ibid, p. 11

[118] Ibid, p. 15

[119] Ibid, p. 16

[120] Ibid, p. 24

[121] Ibid, p. 28

[122] Ibid

experiences. McGrath identifies the representation of reality through words,[123]through propositions[124], and through images[125], and these are ways conveyed through the theories of scientific theology. The use of images will form the bedrock of scientific method in theology – however, how has theology used images in logically and methodically unpacking the scriptures? Another interesting area of intersection between scientific methods and theology is the place of explanation in a scientific theology.

The Place of Explanation in a Scientific Theology

Explanation of concepts is a window to unpacking truth and realities. Explanation of doctrines in theology helps followers of the faith to comprehend and apprehend the truth that guides the faith. McGrath says

> For the community of faith, God is most emphatically not conceived simply as an explanatory hypothesis. Within the context of a scientific theology, the Christian network of doctrines is conceived as a response to revelation, in the belief that such doctrines will possess explanatory potential. Yet the primary reason for developing them is to respond to divine self-disclosure – to gain an understanding of God, in the belief that this will indirectly yield explanations of the world. Once more, the importance of the doctrine of creation becomes evident: knowledge of the creator leads to an enhanced understanding and appreciation of the creation. The coherence of the created order, and the capacity of the human mind to grasp that coherence, is thus grounded on a doctrinal framework – yet a doctrinal framework which is primarily conceived as a response to self-positioning revelation, not a response to a need for explanation.[126]

[123] Ibid, p. 84

[124] Ibid, p. 90

[125] Ibid, p. 94

[126] Ibid, pp. 136-137

If one thing remains very consistent in Christian theology, it is the orderliness and coherence of the created order. Could it be a coincidence that the created order is that orderly, coherent, self-sustaining and well-organized? If there is a coherent created order, and theology theorized this observed pattern, should we not assume that a rational being did it, and obviously make self-disclosure through the pieces of creation? McGrath comes up with three traditions through which scientific theology makes its explanation clear. The first "tradition must be able to offer an account of its own specific form and contents, and explicate their interconnection."[127] The second "tradition must be able to offer an account of why alternative traditions exist."[128] The third "tradition must be capable of seeing the world through theoretical spectacles in such a manner that it is able to offer explanations which may reasonably be regarded as appropriate and convincing to those within that tradition."[129] One can therefore see the creation story as theology's theoretical explanation of an orderly and coherent account that is plausible – with nature such as sea, land, rain, and vegetation in place before animals were created, with man coming in last. In the words of McGrath, "Theory represents an attempt to express in language the corporate beholding of a reality."[130] A theoretical basis of revelation in theology may use "a number of different levels of social construction", and these could "be identified within the complex aggregate of texts, ideas, images, values, communities and events".[131] These are the

[127] Ibid, p. 137

[128] Ibid

[129] Ibid

[130] Ibid, p. 139

[131] Ibid, p. 146

theoretical ways of conveying meaning, including "patterns of worship"[132] as well as "institutional structures"[133], "distinctive vocabulary" and "religious experience"[134]. One can therefore differentiate Pentecostals from the Evangelicals by their institutional structures, distinctive vocabulary, and religious experience; as well as Catholics by their patterns of worship. The question that could arise however is: How can one be sure that the most appropriate approach in social construction is used, and even when one uses patterns of worship as example, is this fool-proof or should one look out for, and place limitations on what the construct will not cover? These questions also throw up another one: How often, and under what circumstances should theology even adopt the scientific method of experimentation in areas of social construction, or what scientific methods would be most appropriate to investigate or validate an approach that uses patterns of worship as a scientific method of identifying a reality. Next, this paper will engage the metaphysical dimensions of theology.

The Place of Metaphysics in a Scientific Theology

This paper recognizes the legitimate skepticism of some people over metaphysics due to its largely abstract theory with zero-basis in reality. McGrath states clearly that "In one sense, the natural sciences could be argued to be methodologically anti-metaphysical, in that the sustained engagement with the natural world is not shaped or determined by metaphysical assumptions."[135] While acknowledging the increasing legitimization of metaphysics by natural sciences and

[132] Ibid

[133] Ibid, p. 147

[134] Ibid, p. 148

[135] Ibid, p. 267

theology, McGrath adds that "The issue could be framed in terms of the issue of observability: What must be true or exist that is unobservable if what is observable is to be explained?[136] One can use the unobservable existence of oxygen in order to explain the observable good health of a human individual, or alternatively, the release of unobservable poisonous chemical into the air leading to observable death of human beings. This therefore supports McGrath's position that "On my reading of the Christian tradition, its inner dynamic is such that the emergence of some form of metaphysics within its theology is to be expected."[137] This should not be an excuse for any theory-free explanation of the truth that theology confesses. One finds solace in McGrath's input that

> The only manner in which Christian theology can excuse itself from an engagement with metaphysical questions is by declaring itself to be concerned only with what is observable of the church as an empirical and social entity; including those approaches to theology which regard the church as a sociolinguistic community. The moment the question of God is acknowledged to be legitimate, the clarification of metaphysical options becomes imperative.[138]

This observation is fair given the skeptical response of those who question the unobservable status of God. But as mentioned earlier, nature and creation continue to be the observable signature of the unobservable Creator, just as a living being continues to be the observable proof of unobservable oxygen that keeps such a human being alive. The metaphysical aspect of God's involvement may be tough to explain through scientific means, but one can focus on the empirical and the social entity of theology – like the observable and verifiable aspects. However,

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[136] Ibid, p. 274

[137] Ibid, p. 278

[138] Ibid, p. 291

the question remains: How can any explanation that has to do with God pass the litmus test of scientific methodology without compromising the theological nature of God? McGrath writes another book with similar topic, but on science and religion rather than on theology. To that book this paper will now engage.

Engaging Alister McGrath (Science & Religion: An Introduction)

With several similar insights in *A Scientific Theology*, McGrath continues to unpack ideas that illuminate the intersection of science and religion. He discusses the models of the interaction of science and religion.

Models of the Interaction of Science and Religion

To McGrath, asking two questions should help people grasp the connection between science and religion. He asks the first one: "Do science and religion relate to the same reality?"[139] He also goes on to ask the second question: "Are the insights of science and religion contradictory or complementary?"[140] In apparent response to the two questions, McGrath submits that "science and religion are convergent"[141], while equally affirming that

> A number of strands within western Christian theology have stressed that "all truth is God's truth." On the basis of this assumption, all advances and developments in a scientific understanding of the universe are to be welcomed, and accommodated within the

[139] Alister McGrath (1999), *Science & Religion: An Introduction*. Oxford, UK: Blackwell Publishers Inc., p. 44.

[140] Ibid

[141] Ibid, p. 49

Christian faith." [142]

It is therefore clear that the pursuit of advancement and developments that will usher in a flourishing life is a shared value between Christian faith and science. Just as they interact, the two are also distinct. To illuminate this intersection further, McGrath submits that

> The natural sciences are concerned with asking "how" questions, where theology asks "why" questions. The former deals with secondary causes (that is, interactions within the sphere of nature), while the latter deals with primary causes (that is, the ultimate origin and purpose of nature).[143]

Hence, theology focuses on who created the earth and why the earth was created, especially the purpose of human beings on earth. Natural sciences on the other hand focuses on how human beings survive on the other creatures within God's creation, as well as the general interactions within the creative economy of God's earth. It would have been nice if McGrath provides some examples of these two areas, and thereafter explore how the two can collaborate since one is asking the "how" while the other is seeking the "why". Another interesting idea is religion and the philosophy of science, and this paper will interact with it.

Religion and the Philosophy of Science

McGrath says, "The discipline of science deals, in very general terms, with the philosophical issues associated with the natural sciences" with reference to "laws of nature" and "regularity and ordering".[144] Just as science attaches great importance to regularity and ordering, religion and Christian faith and theology are equally passionate about these values. Hence,

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[142] Ibid

[143] Ibid, p. 50

[144] Ibid, p. 57

McGrath says, "the philosophy of religion has drawn on insights from the natural sciences."[145] He points to "rationalism" and "empiricism"[146]. He goes on to say that "The alternative to rationalism was an appeal to experience, generally known as "empiricism".[147] It is interesting to see how he alludes to "the experience of the human senses"; and "any truth which is derived from supernatural revelation."[148] In religion generally, as it is with Christian faith specifically, personal experiences of different individuals may be similar when certain religious acts are practiced, and this may also be over time and far-flung locations to each other. In terms of the observable value of empiricism of science, McGrath says "there is suffering in the world."[149] This is a rational and empirical observation that cannot be denied. Drawing on Thomas Kuhn's paradigm shift in science, McGrath says, "we shall use the term to refer to "a strong network of commitments – conceptual, theoretical, instrumental, and methodological."[150] Religion, or more specifically, Christian faith appears to have a tradition of commitments. The Christian faith has "past explanatory success"[151] in a case like the conceptual, theoretical, methodical and the instrumentation of the Sermon on the Mount in Matthew 5-7. The idea that one can commit adultery in one's heart or mind is a concept whose theory could be universally applicable. If one has to do experimentation using methodical instrumentation, one can also reach a conclusion that

[145] Ibid

[146] Ibid

[147] Ibid, p. 61

[148] Ibid, p. 60

[149] Ibid, p. 70

[150] Ibid, p. 81

[151] Ibid

once a human thoughts about committing a crime is well filtered and guarded, the tendency to go on to committing crime may be reduced if not completely eliminated. McGrath's reference to Polanyi's position "that all knowledge – whether it relates to the natural sciences, religion, or philosophy – is personal in nature"[152] is important to reflect upon. McGrath goes on to say that "Although knowledge involves concepts or ideas, it also involves something more profound – a personal involvement with that which is known, which Polanyi refers to as "the fiduciary rootedness of all rationality."[153] One can conclude from the position here that religion is scientific and imbued with scientific methods as long as it seeks or unpacks knowledge that is rational, personal and involving in as much as it is experiential. At the same time, one must hold theology responsible for not doing enough in the areas of conceptual, theoretical, methodical and the instrumentation of the scientific methods in investigating some relevant theological concepts. Next, this paper will review McGrath's explanation of Thomas Aquinas' five ways under science and the philosophy of religion.

Thomas Aquinas' Five Ways under Science and the Philosophy of Religion

McGrath brings up the five ways that theologian Thomas Aquinas explains the rationality of the Christian faith, and "The first way begins from the observation that things in the world are in motion or change."[154] McGrath goes on to say that "For every motion, there is a cause."[155] This is the second way, as Aquinas believes in "the idea of causation", in other words, "the

[152] Ibid, p. 84

[153] Ibid, pp. 84-85

[154] Ibid, p. 92

[155] Ibid, p. 93

existence of causes and effects in the world."[156] The third "concerns the existence of contingent beings" like "human beings"[157], whose existence are not "a matter of necessity" which throws up the need to explain why human beings are here on earth. McGrath reproduces Aquinas' fourth which he claims, "begins from human values, such as truth, goodness and nobility." He then asks: Where do these values come from? What causes them?"[158] He thereafter narrates how Aquinas believes "that there must be something which is in itself true, good and noble, and that this brings into being our ideas of truth, goodness, and nobility."[159] McGrath conclusively says "The fifth and the final way is the teleological argument itself" which makes Aquinas to confess "that the world shows obvious traces of intelligent design" because "Natural processes and objects seem to be adapted with certain definite objectives in mind" that "seem to have a purpose" and "seem to been designed", and based on "this observation, Aquinas concludes that the source of this natural ordering must be conceded to be God."[160] The scientific method of cause and effects is therefore applicable in theology and religion based on McGrath's analysis of Aquinas' analogy. Theologians should however come up with ways and approaches that could lend some theological ideas to natural scientific investigation in a way that draws attention to deeper understanding of more theological concepts. Next, this paper will review McGrath's creation and the sciences.

[156] Ibid

[157] Ibid

[158] Ibid

[159] Ibid, pp. 93-94

[160] Ibid, p. 94

Creation and the Sciences

This area explores "the basic contours of the religious idea of "creation" focusing especially on its Christian statements, which are known to have been of major importance to the development of the natural sciences in western culture."[161] The order in creation is a cosmological foundation that is obvious here. The artistic expression[162], the concepts of creation and time[163], the concept of creation and ecology[164], the concept of creation and the laws of nature[165] – the idea of night and day, and that of light and darkness are exceptionally important in this discourse. McGrath goes on to conclude that

> This brief survey of the relation of the doctrine of creation and the "laws of nature" brings out the remarkable manner in which the sciences and religion converge on the issue of regularity and ordering within nature. What the sciences uncover, religion is able to account for. This leads us to consider the extent to which something can be known about God from the natural order – an aspect of religious thought which is generally referred to as "natural theology".[166]

The concepts of artistic expressions; creation and time; creation and ecology; as well as that of creation and the laws of nature give room for measurement, for observation, and for the rational analysis of the orderliness. This therefore shows how scientific methods engage theology. The idea of regularity and ordering within nature should be one that theology develops into a specific

[161] Ibid, p. 111

[162] Ibid, p. 117

[163] Ibid

[164] Ibid, p. 119

[165] Ibid, p. 122

[166] Ibid, p. 126

area of study that should attract more research interests. McGrath also reflects upon models and analogies in science and religion, and to that this paper will now turn.

Models and Analogies in Science and Religion

According to McGrath, "One of the most intriguing aspects of the interface between science and religion is the use of "models" or "analogies" to depict complex entities – whether the entity in question is an atomic nucleus or God."[167] He refers to this concept as "visual aids" that are common in science and religion. To him, what models do in the natural sciences are synonymous with what analogy and metaphor do in religion. Under this model or analogy approach, McGrath points to the importance of complementarity. In his words,

> What happens if the behavior of a system is such that it appears to need more than one model to represent it? In religion, this situation is well known. The Old and New Testaments, for example, use a wide variety of models or analogies to refer to God, such as "father", "king", "shepherd", and "rock". Each of these is regarded as illustrating one aspect of the divine nature. Taken together, they provide a cumulative and more comprehensive depiction of the divine nature and character than any one such analogy might allow on its own.[168]

McGrath sees complementarity as a way to get a full picture or idea of someone with enough evidence from various sources. It is also a way in which different approaches or definitions help identify the undisputable identity and character of a subject. He compares why complementarity is applicable to religion as well as to science. He elaborates while submitting that

> It is also instructive to ask why complementary approaches

[167] Ibid, p. 144

[168] Ibid, p. 165

> were adopted in the first place in relation to both quantum phenomena and Christology. The pressure for clarification of the nature of quantum phenomena came from experimental observations which precipitated a theoretical crisis, demonstrating that existing conceptualities simply could not account for the phenomena. The pressure for clarification of the nature of Jesus of Nazareth arose through a growing awareness, fueled by intense debate and controversy, that Jesus simply could not be described in terms of any one existing idea. In each case, the temptation to reduce the phenomena to existing notions was resisted, on account of the serious distortions introduced. To explain the phenomenon, either new use had to be made of existing categories, or radically new categories had to be introduced.[169]

In short, in order to avoid controversies and get the clearest picture of a concept, models and analogies give people the opportunity to have complementary body of evidences that will also give people absolute confidence of the truest identity or definition of a person or phenomenon. Although controversies in the sciences may be less obvious to the observing world, controversial issues in religion generally, and in the Christian faith, in particular, are headline news for the world to celebrate. Going forward, this paper will engage John Polkinghorne and review what he shares in his book, '*Theology in the Context of Science'*.

Engaging John Polkinghorne

John Polkinghorne earned a PhD degree in Physics before resigning to become an ordained minister. He was a fellow and retired president of Queens College, Cambridge University, and was the founding president of the International Society for Science and Religion. His book, '*Theology in the Context of Science'* is a user-friendly beautiful prose that systematically weaves the similarities in science and theology together. In his words, "In both

[169] Ibid, pp. 173-174

science and theology, the intertwining of experience and interpretation implies a degree of circularity, but this need not invalidate rational commitment to well-winnowed and well-motivated beliefs."[170] It is unclear if circularity between experience and interpretation is an entirely bad thing, or if it is only because it is susceptible to misunderstanding or controversies. Polkinghorne calls out "Science's formal distancing of itself from issues of value", which he says is "expressed in the way in which it frames its argument in terms of what is found to happen rather than what ought to happen, means that scientists must look beyond their discipline for help in addressing ethical issues."[171] This is one area a scholar like Poythress sees the importance of theology in science and in scientific methodology. Science must appreciate ethical issues in its methodology and in the search of truth, discoveries, and inventions.

When Polkinghorne says "The temporal and spatial character of human experience is fundamental to the thought of both science and theology"[172], one cannot but reflect on the importance of empiricism and experiential dimension of scientific method to both natural science and theology. The importance of scientific methodology of timing and accuracy in measurement are obvious in Polkinghorne's statement that "Both science and theology face perplexities in relation to their understanding of the true nature of time."[173] This is also obvious in his earlier assertion that

> Science's discovery of the significance of evolutionary process at work over vast spans of history means that the role of time is not merely that of a means of indexing when events happened,

[170] John Polkinghorne (2009), *Theology in the Context of Science*, New Haven: Yale University Press, p. xvii

[171] Ibid, pp. xvii-xviii

[172] Ibid, p. xviii

[173] Ibid

> but it has a formative role in bringing about the character of the present.[174]

The idea of time gives room for scientific method of knowing when, what context, what circumstances, how long, what time span if there are intervals, what could have happened over time, and such questions as to who could have existed at the time or whether anyone existed at a point in time. Reflecting as a scientist-theologian, Polkinghorne says "Science's discovery of the rational transparency and rational beauty of the physical world is certainly consonant with the understanding that the structure of the universe is shaped by the Mind of its Creator."[175] In this sense, terms such as 'rationality', 'transparency', 'beauty', 'physical world', 'structure of the universe', as well as 'the Mind of its Creator' do offer some describable and measurable ideas or indices and ingredients of scientific methodology. Next, this paper reviews contextual theology.

Contextual Theology

In explaining the scientific method of 'context' in theology, Polkinghorne says,

> While a few religiously minded scientists have been tempted to treat the Bible as though it were a textbook in which one could look up the ready-made answers to every theological question, a better metaphor is surely that of the laboratory textbook, in which are recorded accounts of foundational encounters involving acts of divine self-disclosure, essential for theological theory-making, but leading to and needing further reflective interpretation. Revelation itself is experiential rather than propositional.[176]

Two things are obvious from Polkinghorne's submission here. First is the experimental dimension of theology like any scientific approach that is preceded by theory-making acts of

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[174] Ibid

[175] Ibid, p. xxii

[176] Ibid, p. 4

self-disclosure which is followed by reflective interpretation. Second is the revelatory component that is synonymous with experiential dimension of scientific methodology. On both fronts, appreciable scientific methodology reflects in theology. For example, when one considers the story of Gideon in the Book of Judges, one sees the experimental and the experiential components in the way Gideon tested God and in the way God responds. First, he lays out the transparent experiment to confirm God's promise of victory, and second, he was fully involved in both the confirmation after three 'experiments' and concluding experiential victory in battle after fighting by just following the instruction of shouting. This may explain why Polkinghorne says

> The scientists' discovery of the remarkable transparency of the universe to rational enquiry can be rendered intelligible by the theologian, who is able to interpret it as the consequence of human encounter with the Mind of that world's Creator, the One who is the true ground of the wonderful order of the universe. Seen in this way, the activity of science is recognized to be an aspect of the imago dei.[177]

The idea of making the unknown become known through the transparent and systematic use of analogy, metaphor and images through theology are obvious in this statement. Imago dei is generally seen as the 'Image of God', so science and other ways of pursuing and knowing facts from fiction are all within the Image of God. One must quickly acknowledge that merely talking about the Image of God through human analogy may not necessarily find acceptance among those who are not Christians. So, the question would then be: How can a theological scientist use a scientific methodology that mandates empiricism and verification to confirm or investigate the concept of imago dei? While this paper offers no convincing answers as to how to respond to this

[177] Ibid, pp. 12-13

question, it is important to identify the possible difficulties that theology will face if it adopts all scientific approaches wholesale, except if it adopts the specific approach tailor-made for its area of scientific inquiry. After all, no surgeon will ever use a machete to carry out a surgery! Discourse is another area of interest that this paper will explore next.

Discourse

The understanding that science does not have ready-made answers for all riddles qualifies theology to own up to its inability to have answers to all life mysteries. This may explain why Polkinghorne opines that "We have been exploring how theology conducted in the context of science can benefit from analogies drawn from quantum physics."[178] He goes on to say that

> If quantum physics requires its idiosyncratic quantum logic, trinitarian theology may well require its own kind of logic also. If the quantum world cannot be known with a Newtonian clarity that assumes precise knowledge of both position and momentum, then maybe the assertions of apophatic theology – that there is an element of irreducible mystery involved in encounter with the infinite reality of God, beyond any finite human ability to articulate – should also be accorded appropriate respect. In every realm of human enquiry, well-winnowed experience should be taken with the utmost seriousness, even when its nature seems to run contrary to prior 'reasonable' expectations.[179]

Here, it is obvious that if science can be excused over some unknown aspects of its pursuit of knowledge and truth, theology should also be excused if it has no convincing answer over some unknown mysteries. In acknowledging the place of scientific method in theology, Polkinghorne says "Theology is a truth-seeking enterprise, and when it is conducted in a context of science it is

[178] Ibid, p. 26

[179] Ibid, pp. 26-27

liable to see particularly clearly the need to be open to correction and change."[180] He quickly adds that "Nevertheless, I believe that doctrinal development takes place best in a continuous relationship of dialogue with the past."[181] Theology is a field open to scientific research but conducted on the basis of its own idiosyncrasies. It is necessary to add that each field of inquiry has its own approach. The question is: If the scientific approach employed by theology is different to the one used by physics, would there be a problem or controversy? Polkinghorne talks about time and space, and to that this review will focus.

Time and Space

Without mincing words, Polkinghorne speaks from a scientific heart when he says, "If theology is to function successfully in the context of science, it will need to pay more heed to scientific insight into cosmic timescales."[182] The obvious huge discrepancy in how theology and science record the age of the earth is something worth exploring, especially as science timescales believes "the Earth is about 4.5 billion years old and the observable universe has an age of 13.7 billion years"[183] while "The timescales implied by the sacred texts of the three Abrahamic faiths are measured only in thousands of years, as is the whole history of human culture"[184]. It should be noted that the scientific methodology used to unravel these information may be accessible by scientists in the field of study of this specific area, but obviously inaccessible to outsiders, but believed by faith because the information came from supposed experts in the field. Apparently

[180] Ibid, p. 39

[181] Ibid

[182] Ibid, p. 49

[183] Ibid

[184] Ibid

looking for a way to mitigate the issue of timescale, Polkinghorne suggests that "A dipolar theology can appeal to scripture in support of its picture of divine temporality."[185] He goes on to say that

> The idea of the God of steadfast love who continually engages with the unfolding contingencies of history is very much in accord with the way that the Bible portrays God's relationship with Israel, even to the anthropomorphic point of saying that God changes God's mind as circumstances alter. It is also evidently consonant with Christian belief in the incarnation, the doctrine of the Word made flesh in a human life lived at a particular period of history and in a particular place.[186]

One can infer from the above that science in theology will not use the same yardstick of physics or engineering in determining the timescale of theology based on the unfolding contingencies of history. In theology, God may decide to allow revelation up to a point and not beyond a certain epoch. Quite unlike the "Eastern religions" who believe in "a more cyclic view of time"[187], Polkinghorne explains that "Judaism, Christianity, and Islam all have a strongly linear picture of time" which makes them to be a lot more "comfortable" than the Eastern religions "when seeking understanding in the context of science."[188] Obviously, just as science, theology uses linear pattern or picture of time to measure and determine epochs, era, events and natural occurrences. If there is congruence in the way time and space are measured by science and theology, there is every possibility that scientific methodology will be very much at home with theology. It may necessary be in the same format in every nitty-gritty details, but a lot of areas in

[185] Ibid, p. 63

[186] Ibid

[187] Ibid, p. 67

[188] Ibid

theology will lend themselves to, and be compatible with scientific methodology. The obvious disagreement between natural science and theology on the age of the earth may yet be one area worth investigating. Rather than query theology's source of information, natural science should be more transparent on how they came about the years they claim. If natural sciences should be believed, they may have to show adequate proof why it took the inhabitants of the earth millions of years to discover the age of the earth despite their inability to provide any link to that past by any verifiable records? The idea of consonance is another area Polkinghorne calls attention to.

Consonance

The place of consonance in science and theology comes out clear in the way consonance weaves creation, providence, and relationality together. In an apparent appeal to the uniqueness of theology on one hand and science on the other hand, the need to approach each on the basis of this uniqueness is obvious. Polkinghorne says

> The bottom-up thinking of a scientific contextual theology implies that its approach to deity will not be through general metaphysical discussion of the concept and nature of divinity, but rather it will seek its theological motivation in the divine economy, those acts of creation and revelation which are the chosen means of divine disclosure.[189]

A scientific method in theology will find harmony and agreement with the concept and model of divine economy, creation and revelation; just as Polkinghorne asserts that "Science gives an account of the nature and history of the universe; theology asserts the universe to be God's creation."[190] The convergence does not end here as he goes on to say that "Science offers its

[189] Ibid, p. 97

[190] Ibid

understanding of the processes of the world; theology affirms its belief that God is providentially active within that world's history."[191] In fact, one can even add that theology plays an active role in and within God's economy. For example, theology shows us in Genesis chapter 1 that orderliness is a non-negotiable condition in life. Animals (Genesis 1:25) did not come before water (Genesis 1:6) and vegetation (Genesis 1:11) as these would have put their survival in jeopardy. Vegetation did not come before rainfall (Genesis 1:7), land (Genesis 1:10), water, sea, and even light that gives sunshine in Genesis 1:3-5 because without land, there could be no vegetation, and without water, nothing will grow on land.

According to Polkinghorne,

> There is a further point of meeting between science and religion, when both seek to speak about the future history of the universe. Science predicts that after many billions of years, all will end in futility, most probably through the long drawn out decay of a world becoming steadily colder and more dilute. Certainly, carbon-based life cannot be expected to be more than a transient episode in cosmic history.[192]

The point of convergence of science and theology about the future may have contributed to the convergence in the systematic approach of revealing and understanding that future, and how today could impact that future. For example, many churches today are promoting the theology of caring for the earth about which science itself has been issuing warning regarding the dire consequences that are bound to emerge sooner or later if nothing is done to control emissions, reckless exploitation of the earth resources and conspicuous consumption that is hurting the earth's depleting resources. Next, this paper will review some of the ideas that Vanhoozer and

[191] Ibid

[192] Ibid, p. 121

Warner share in the book they edited titled, '*Transcending Boundaries in Philosophy and Theology: Reason, Meaning and Experience'*.

Engaging the edited work of Kevin Vanhoozer and Martin Warner

A compilation of different ideas by eleven authors, this paper will review and summarize the book's main ideas and interact with the key concepts with brief references to the positions of some of the contributors. Vanhoozer and Warner (2007) give readers a good insight into how interconnections are creating pathways that cross boundaries, possibly making one's understanding of the world a lot wider, richer, and more accessible.

Rationality and of the Status of Scientific Knowledge/Developments in the Philosophy of Language and Interpretation Theory

In their words,

> Recent rethinking of rationality and of the status of scientific knowledge, together with developments in the philosophy of language and interpretation theory, point to the interconnections between dialectic, rhetoric and narrative in such a way as to reconfigure the roles of practice and of inwardness in our understanding of the world, together with the potentiality for transcending some of the traditional contrasts between knowledge and faith.[193]

Obviously, *rationality* within the *scientific knowledge* equation cannot be divorced from the developments in the way language and interpretation theory has come to utilize logical and analytical approach (dialectic) with eloquent and persuasive approach (rhetoric) combined with

[193] Kevin Vanhoozer and Martin Warner (2007), Transcending Boundaries in Philosophy and Theology: Reason, Meaning and Experience (ed.), Hampshire, England: Ashgate Publishing Limited, p. 13.

descriptive portrayal of facts (narrative) in a very orderly manner that can be a window to see the world both from hands-on experience and personal reflection. In other words, not every fact can be subjected to laboratory tests, yet not all laboratory tests can be as clear as real life experiences. The pointers to what could deepen romantic relationships as unpacked in the Bible's Book of Song of Songs by Solomon may be deep insightful knowledge that could be better communicated through language and hereafter put into practice for analysis. Alluding to the Book of Job, Warner identifies knowledge and belief[194] as two ideas one can deduce. While it is true that Job's rationality manifests as both knowledge and belief, the belief part does not make his knowledge unscientific since scientists must believe in their findings before they share it with other people, and they have the belief that it will work the way they had earlier confirmed it to be. Also, from the life of Job, Warner points to the obvious display of reason, will and feeling[195]. One may wonder why reason is not scientific enough to mask Job's feeling. At the same time, one can also argue persuasively that Job's ability to reason logically about his predicament and even excuse God from being held responsible for his plight may be the scientific knowledge and rationality that became foundational upon which his faith, and or will, stood to withstand the test of the moment. Warner's reference to language, meaning and interpretation[196] opens readers' eyes to realize that some statements could be describing some specific contexts in a particular – and this is where the use of metaphor[197] should be handled with caution as a possible complex concept, and full understanding should be provided regarding the crossing of the border lines

[194] Ibid, pp. 15-19

[195] Ibid, pp. 19-23

[196] Ibid, pp. 23-28

[197] Ibid, p. 23, p. 28

between philosophy and theology. Can theologians' use of metaphor be consistent with the changing times if such a metaphor is irrelevant? What yardstick can one use to ascertain that every metaphor will yield similar result or proffer same understanding in all circumstances? These are question worth reflecting upon. Next, this paper will explore the idea that theology is the queen of the sciences.

Theology as Queen of the Sciences

In this edited work by Vanhoozer and Warner, one of the contributors, Charles Taylor says

> But a crucial reference point in this swirling multiplicity is the modern idea of order; in the sense that our stance to that is an important defining characteristic of our position, as much as our stance, positive or negative, on transcendence.[198]

One can see the importance of order or orderliness in the concept of scientific rationality – something that Genesis chapter 1 displays boldly. Rationality in theology, just as in science, therefore possesses the characters of logic and orderliness. Chris Firestone, another contributor in this same edited book by Vanhoozer and Warner alludes to Kant's position and submits that "rational religious faith for Kant, is rooted in the transcendental needs of reason, but it is not arbitrary or non-realistic. Instead, it is grounded in eternal moral values".[199] From the foregoing, and contrary to what some may believe as the incompatibility of science and theology, one can infer that theology places a higher standard on the scientific expectation of thoroughness, rationality grounded on reasonable and verifiable reason, while holding form to eternal moral values. In fact, one can boldly say that no science will survive without moral values that will guide its principles and procedures to make it dependable and trustworthy.

[198] Ibid, p. 75

[199] Ibid, p. 90

Philip Clayton as a contributor focuses on *'boundaries crossed and uncrossable: physical science, social science, theology'*.[200] Clayton calls attention to the earlier days when theology encompasses all aspects, including the sciences, thus confirming the *'scientificism'* of theology. In his words,

> In the medieval synthesis there could be no tension between theology and science, or what was then called 'natural philosophy' (*philosophia naturalis*). God was the source of the natural order and its sustainer at every moment, and the principles manifested in the natural world had to be grounded in the supernatural world, in the being and nature of God. Theology was thus the queen of the sciences. And each particular area of study was one of her handmaids.[201]

A closer look at this submission will show that theology has always been in the business of revealing, unveiling, and unpacking the truth of creation and the way of sustaining creation. For example, the Bible has always supported the idea of searching out the truth, in terms of researching, asking tough questions, and identifying the whole truth without allowing one's integrity or that of the process to be jeopardized or compromised. Christian theology pioneered Western education in most developing states of the world, and it also lifted people out of deadly ignorance. For example, Mary Slessor was a Scottish missionary who went to Nigeria to stop the killing of twins, and also defended the rights of women. She rescued "twin babies often left abandoned in the bush" and "adopted every child that she found abandoned and established 'twins missioners' who would go out to find, protect and care for abandoned twins at the Mission

[200] Ibid, pp. 91-102

[201] Ibid, p. 98

House", and even "took one of the abandoned twin girls as her daughter and called her Janie."[202] As a Christian missionary, Slessor's time in Africa from 1876 till 1915 when she died were fruitful years when Christian theology unchained millions from demonic darkness and brought a civilization which cherishes methodical education that encourages and fuels methodical or scientific method of inquiry based on the biblical principles of care and compassion within God's economy. Over the years, the role of "the queen of the sciences" that Christian theology plays has evolved, and Clayton brings readers up to speed on this as well:

> The modern period, by contrast, was defined by the progressive peeling-off of individual sciences one by one from the medieval synthesis. To be a distinct natural science just was to be defined by a particular set of methods and a particular area of study – in short, by the autonomy (non-theology-dependence) of that particular science. To speak today only of a grand metaphysical synthesis without acknowledging the methodological autonomy of the sciences would be to miss the significance of this irreversible history and perhaps to leave out an essential feature of the scientific study of the world.[203]

From the foregoing, every particular area of study must have a particular set of methods of inquiry in order to qualify as a science. One can conclude that as long as theology has its own set of methods of inquiry that is universally accepted to all theologians, then, it remains a science. However, the point Clayton makes here is even more important. He is reminding readers that Christian theology has always been an umbrella field of study for all other relatively newly created fields of study with specialized set of methods of inquiry. In this case, theology has

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[202] Saltire Society, Scotland (n.d.). "Mary Slessor", para 3. Retrieved from https://www.saltiresociety.org.uk/awards/outstanding-women/outstanding-women-of-scotland-community/2015-celebration/mary-slessor/

[203] Vanhoozer and Warner (2007). *Transcending boundaries in philosophy and theology: Reason, meaning and experience* (Ed.). Hampshire, England: Ashgate Publishing Limited, pp. 98-99.

always used its own set of methods to measure nature (natural sciences), time (physics), and creatures (biology). In addition, theology guides in relationships, leadership, moralism, integrity, obedience to legal and legitimate rules, as well as serving as guides for a purposeful and productive living while providing meaning for issues and challenges of life, while simultaneously reminding every human being about the expiry date for each living human being. Some of these fields are today under social and natural sciences. However, theology has not given up its role in giving guidance in those areas, even if it uses a different set of methods of inquiry. Clayton goes on to say that

> During the period of cold war between theology and the sciences, the only synthesis one could conceive was the downward reduction of the disciplines that study more complex natural entities to the disciplines that study the particles and forces that underlie and explain complex phenomena. In the cold-war period, science was literally defined by being 'boundaried off' from religion.[204]

While it is heart-warming to know that the separation of certain areas for specific scientific inquiry has become unavoidable due to the complexity of the phenomena under consideration, it is still an undisputable fact that theology still gives an overarching guide on all aspects, including areas like cosmos, the stars, and the wisdom to search out the truth and hold on to those that are completely accurate and factual. To Wolfhart Pannenberg's *'Theology and the Philosophy of Science'* this paper will now turn.

Engaging Wolfhart Pannenberg

[204] Ibid, p. 99

As a professor of systematic theology whose work speaks volumes, Pannenberg's insight in his book, Theology and the Philosophy of Science is necessary to guide any discussion on the scientific method in theology. Similar to Clayton's statement that theology is the queen of the sciences in the edited work by Vanhoozer and Warner, Pannenberg sees "theology within the framework of philosophy of science", especially as one that deals with "the question of the sense in which theology is a science, since the plurality of theological disciplines means – as the word *disciplina* indicates – a plurality of scientific methods and areas of investigation."[205] Pannenberg goes on to say that "The mutual relations and unity of these disciplines and areas can be determined only by means of a concept of theology as a science."[206] The ability of theology to encompass plurality of disciplines and scientific methods also gives the idea that theology has always deploy some scientific methods and procedures in unraveling and making known the hidden both in texts as revelation as well as in texts as records of experiential facts saved for humanity as models to guide everyone in walking through similar dark times now or in the future.

Self-understanding Status of Theology and Intellectual Insight

It is necessary to quickly note the identification of the concept of theology as a science by Pannenberg. He says "the question of theology's scientific character first becomes prominent in the discussions about its self-understanding in the thirteenth century – that is, in the century in which the first universities came into being, starting with Paris about 1200."[207] Drawing

[205] Wolfhart Pannenberg (1976). Theology and the Philosophy of Science. Translated by Francis McDonagh. Philadelphia, Pennsylvania: The Westminster Press, p. 6.

[206] Ibid

[207] Ibid, p. 7

causation between theology's scientific character and the establishment of the first universities is a clear indication of theology's place in scientific research, methodology, and the pursuit of truth. This reflects again in the submission that "the history of the meaning of the term 'theology' in Christianity is itself an example of the close connection between Christian thought and philosophy."[208] The idea behind this has always been to pursue and hold fast to indisputable truth. According to Pannenberg, this pursuit is "to defend the truth of Christianity by generally accepted criteria," and this "has been present since the thirteenth century in the argument about the scientific status of theology and its right to be included among the sciences taught in a university."[209] One may wonder what drives this unilateral and stoic poise on the scientific status of theology in pursuing truth. Pannenberg says "Collaboration between theology and philosophy is necessary because philosophy alone cannot provide a basis for the understanding of the unity of the perception of meaning, the historical roots of intellectual life."[210] One can go on to identify theology's appeal to orderliness, logical and meaningful experiential events that illuminate dark areas of life and or inform today's complex and confusing occurrences. For example, one can reference Christian theology's deep intellectual insight that will continue to shape the present and future of human response to pandemic when one reads the timeless instruction from the biblical text in the Book of Isaiah 20:26 where the Bible says: "Go, my people, enter your rooms and shut the doors behind you; hide yourselves for a little while until his wrath has passed by."[211] What some call lock down, self-isolation or compulsory stay-home

[208] Ibid, p. 13

[209] Ibid

[210] Ibid

[211] Holy Bile (NIV), Book of Isaiah chapter 20 verse 26

order today as a result of COVID-19 can be traced back to Christian theology – a written law for all seasons, applicable across borders and jurisdictions, and effective irrespective of race, region, religion, or personal reservations. Next is what Pannenberg identifies as 'theological principles or axioms.'[212]

Theological Principles or Axioms or Articles of Faith

Pannenberg calls attention to "the pursuit of theological principles of axioms", and how "the articles of faith were seen as principles or presuppositions from which other theological propositions could be derived."[213] In this case, just as the natural sciences have some guiding principles that make it a scientifically reliable guide, so are the articles of faith in Christian theology. Continuing, Pannenberg says,

> Theology proceeded deductively from principles, in an analogous manner to a science in the Aristotelian sense; the principles of the rational sciences depended on the *lumen rationis*, the articles of faith were given by the *lumen fidei*. With this reservation theology could count as a science in the broad sense of the word.[214]

Over the centuries, these articles of faith of Christian theology have continued to be the guiding light across civilizations, and like the universalism of scientific principles, the applicability of these principles in the articles of faith continue to bring illumination as generations gain insight into the truth and revelations that enlighten, deliver, empower, and enrich civilizations. For example, the article of faith about humanity for Christians emphatically states that God created

[212] Wolfhart Pannenberg (1976), p. 229

[213] Ibid

[214] Ibid, p. 229 (Pannenberg alluding to the work of *A. Lang, Die theologische Prinzipienlehre der mittelalterlichen Scholastik*, 1964, pp. 157ff.)

humankind in his image, male, and female. It also confirms that the creation of male and female climaxed God's creation and blessed male and female to procreate and raise children in a peace-loving family environment. In the course of life, these human beings will go astray and sin, and God made a redemptive pathway to reconcile humanity back to himself. In this article of faith, human beings are reminded that their days on earth are numbered, and that each day here in the land of the living must be lived with all sense of responsibility and stewardship, given the human tendency to forget or be prideful. The article of faith helps human kind to understand that unavoidable challenges will happen, and that wisdom will be required to navigate life in order to know the best way to respond. In that same life, wisdom within the Christian theological principle will empower human beings to invent, discover, create, and make good things happen in order to be fruitful and dominate, have rulership, and multiply according to Genesis 1:28. Next, Pannenberg identifies theology as a practical science.

Theology as a Practical Science

Pannenberg identifies theology as a practical science because of "the practical side of theology aimed at the awakening of fear and love of God as the highest good."[215] This idea hinges on the emphasis on not just a theoretical knowledge but on practical knowledge of God. In Pannenberg's words, "In this sense, God is the final goal of man"; and that "Theology as a practical science is directed towards God in so far as he in his own reality can and should be the goal of the human will."[216] From the foregoing, theology connects man and God, and did not just leave the connection at the theoretical level, but ensures a practical relationship with the God of

[215] Ibid, p. 231

[216] Ibid, p. 234

reality. Pannenberg goes on to submit that "Thus the question of God in his own reality remains central to theology even when theology is seen as a practical science."[217] This one can also challenge Christians to ask whether the knowledge of God is at a theoretical level or at a practical level since relationship involves practical, hand-on connection between two people, and it could be vertical (human being with God) or horizontal (human being with human being).

It is interesting to see how Pannenberg goes on to explain that

> A fresh understanding of the implications of the concept of theology around 1600 led theologians back to the scholastic definition and reawakened interest in the question of whether theology was a practical or a theoretical science. Theology as a practical science then became permanently linked, at least in Lutheran orthodoxy, with the so-called 'analytical' methods. These analysed and discussed the object under review with reference to its purpose, under the headings of end, subject and means to the end. However, this link between practical theology and such methods was not without its difficulties.[218]

The reference to the scientific method of analytical approach, coupled with the clear direction of purpose and the means to the end of how to accomplish that purpose give a clear confirmation of the universal involvement of scientific methods in Christian theology. Accepting to subject theology to critical analysis, and specifically making a connection between practical theology and methods of ascertaining its purpose differentiates theology from a mere religious slogan that can just be imposed without logic or question. One of the commands in Exodus 20 that says "Thou shall not steal" (Exodus 20:15) in reality can be subjected to scientific analysis with such questions as to the purpose it is likely to serve, the way to analyze or measure the outcome if people break the command, the level of prosperity that could ensue if people obey the command,

[217] Ibid

[218] Ibid, p. 236

and or the way to measure obedience to the command and the consequences in a way that is universal, reliable, and replicable, irrespective of geopolitical landscape, culture, people, traditions, or language. Pannenberg also mentions how theology is a positive science, and to this idea, this paper will now review.

Theology as a Positive Science

One can make a deduction from the word "positive" that beyond being practical, theology is also useful for good ends. Hence, Pannenberg says

> Thus theology was a positive science because it grouped together 'those scientific facts and rules which must be known and used in order for a common leadership of the Christian Church, that is the government of the Church, to be possible' (par 5).[219]

This shows thar by being positive, there would be universality, usability beyond borders or barriers, facts and rules must be scientific in as much as they promote higher purpose, creatively robust and useful for intended end, and accessible by all in the leadership level to guarantee a reliable pathway of uniform positive effects within the church, and by extension, positive effectiveness, and efficiency in impact in the society. From the perspective of scientific method in theology, this approach makes it clear that theology is a field of study that is open to, and lends itself to scientific methods of gathering scientific facts and rules with which to guide its actions and search for truth, and upon which to test and verify the veracity and authenticity of those scientific facts and rules. It also confirms that theology, like any science, has a purpose that is positive, useful, productive, and beneficial for humanity.

[219] Ibid, p. 250

While Pannenberg refers to few other interesting ideas in his book ‘Theology and the Philosophy of Science’, one must quickly admit here that the book’s areas of relevance to the idea of scientific methods in theology has been the major interest of this paper. While other parts of the book are of equal importance, space and time will not permit the use of all other ideas in the book.

Engaging Some Other Authors

Evans, McGrath, and Galloway (1986)[220] identify the role of reason in theology[221], the role and scope of logic[222], the stress on experience[223], as well as "a single universal method which was capable of being applied to every intellectual discipline from mathematics to theology."[224] It is obvious that theology is within the group of disciplines that employ scientific methods in the search for truth or in the verification and application of truth to evolving and complex world. Like mathematics, theology is no less interested in, and definitely no less engaged in employing scientific tools in verifying and applying universal truth and timeless wisdom to solving or resolving human issues as well as in predicting and providing solutions to present and future issues and concerns.

Munchin (2011) analyzes Thomas Forsyth Torrance's position on the nature of the scientific enterprise in the scientific theology vis-à-vis that critique of Paul Feyerabend's anarchic epistemology. Munchin is more supportive of Torrance's submission, and one can deduce from his rhetorical question: "Coherence in theology and Scripture – witnesses to a single truth?"[225] From a general analysis, whatever shows coherence through diverse analytical

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[220] Gillian R. Evans, Alister E. McGrath, and Allan D. Galloway (1986). *The History of Christian Theology: The Science of Theology*. Grand Rapids, Michigan: Eerdmans Publishing.

[221] Ibid, pp. 165-166

[222] Ibid, pp. 166-168

[223] Ibid, pp. 170-171

[224] Ibid, p. 175

[225] David Munchin (2011*). Is theology a science?: The nature of the scientific enterprise in the scientific theology of Thomas Forsyth Torrance and the anarchic epistemology of Paul Feyerabend*. Leiden: Brill, p. 209-212

approach or triangulation in confirming a universal truth should be described as scientific, and in this case, the coherence and unity that theology draws from Scripture to confirm or witness to a single truth. While Munchin agrees that T. F. Torrance's submission on "Theological Science and subsequent publications" may have proceeded "with a minimalist conception of science, as a study whose methods are directed by 'faithfulness to object'"[226], he also shows his opposition to "Feyerabend, science's reference to qualities such as 'objectivity' and 'rationality'" as "simply a smoke-screen for decisively influential vested interests of power and wealth."[227] It is obvious that one cannot divorce objectivity and rationality from scientific method, and theology's approach to analyzing facts and deciphering truth attaches importance to coherence, objectivity and rationality. One may insist that the nature of these three factors may be different in physics or mathematics, they are nonetheless scientific when applied in theology.

The position of Torrance (1980) is also of interest. He says "theological science presents a complementary account, for this universe of time and space explored by natural science – far from being alien – is the universe in which God has planted us."[228] The fact that theology and natural sciences operate within the same space and time in the pursuit of truth does not make theology a stranger to science. Torrance goes on to submit that

> The natural scientist and the theologian are both at work within the

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[226] David Munchin (2011, September 26). *'Is theology a science?' Paul Feyerabend's anarchic epistemology as challenge test to T. F. Torrance's scientific theology*. Published online by Cambridge University Press. Accessed via *Scottish Journal of Theology*, 64(4), 439 – 455 DOI: https://doi.org/10.1017/S003693061100024X

[227] Ibid, p. 439

[228] Thomas F. Torrance (1980). *The Ground and Grammar of Theology: Consonance between Theology and Science*. Edinburgh: T&T Clark, p. 5.

> same space-time structures of the universe and under the limits of their boundary conditions. The natural scientist inquires into the processes and patterns of nature, and man himself is a part of nature; and the theologian inquires of God the Creator of nature and the source of its created rationalities, to which man also belongs. Thus theological science and natural science have their own proper and distinctive objectives to pursue, but their work inevitably overlaps, for they both respect and operate through the same rational structures of space and time, while each develops special modes of investigation, rationality, and verification in accordance with the nature and the direction of its distinctive field"[229]

Torrance does not mince words in identifying the special modes of investigation, rationality and verification that the field of theological science and natural science have in their different distinctive field. In fact, Torrance adds science to 'theological' to make it theological science possibly to reinforce the scientific methods through which theological science pursues truth and verifies facts. Another voice regarding theology and science is that of van den Brink who identifies some differences in the scientist's own pattern of enthusiasm and commitment against the theologian's faith commitment[230]. This is a follow up to Brink's proposition that theology follows what could be described as "standard image of science"[231] that follows a linear path; leading to the construction of natural sciences' self-imposed ethos of what constitutes or qualifies to be scientific; as well as the scientific methodology of what could be called 'empirical circle' of processes that go from observation of facts that leads to the development of hypothesis, and thereafter leads back again to continued observations and hypothetical developments.

[229] Ibid, p. 6

[230] Gijsbert van den Brink (2009). *Philosophy of Science for Theologians: An Introduction*. Frankfurt am Main: Peter Lang, p. 263.

[231] Ibid, p. 25

Where natural scientists have their own commitments, van den Brink identified the 'faith commitments' of theologians towards one's favourite scientific hypotheses[232]. The idea of faith commitments may be a tough one to argue because of some theological hypotheses that are constant and unchangeable. The idea of theologians subjecting all theological hypotheses to the possibility of changing is highly controversial. Yet, some could be hypothetical on the premise of contexts and circumstances while some are cast in stone. In reviewing the work of Brink, Kapusta (2010) alludes to the work of Mikael Stenmark (2004, pp. 209–249) whose explanation could shed some light on the need to be careful in using faith commitments in the arena of natural science. He quotes Stenmark who

> convincingly argues that religions and ideological beliefs influence, albeit mostly implicitly, the problem-, hypothesis-formulating, and application phases of science. But in the justification phase, when one argues for one's theory or hypothesis at a conference or in a scientific journal, for example, it is simply bad scientific practice to invoke God or supernatural agents.[233]

While it is true that it will sound awkward to invoke supernatural agents in the defense of a scientific method or outcome, it is also important to acknowledge the obvious scientific method in theology in terms of problem identification, hypothesis-formulating, and the application phases of scientific methodology. One must quickly add that in terms of justification phase, theology may not necessarily defer to supernatural agents in all aspects, hence Stenmark may have over-generalized in this analysis. In "One World", Polkinghorne identifies the intersection

[232] Ibid, pp. 196-197

[233] Pawel1 Kapusta (2010). Philosophy of Science for Theologians: An Introduction. *International Studies in the Philosophy of Science, 24*(4), 443-446. (Quotation specifically from p. 446). Alluded to Mikael Stenmark, (2004). *How to Relate Science and Religion: A Multidimensional Model*. Grand Rapids, MI: Wm. B. Eerdmans, 209-249.

of science and theology as he describes what he calls "natural theology" as "an insightful (rather than demonstrative) discipline, actually practiced by many scientists in the face of the remarkable world that they investigate."[234] He goes on to mention that both "scientific and theological worldviews encounter the problem of reductionism" and should therefore "use scientific ideas as an aid to the analogical imagination."[235] One can assume that Polkinghorne's scientific ideas here may be similar to Stenmark's problem-, hypothesis-formulating, and application phases of science. Hogan (2009) also engages Polkinghorne, and submits that

> For Polkinghorne, theological method is like scientific method: a bottom-up process with an occasional top-down element. This is also, in its own way, true of Lonergan's conception of generalized empirical method and the first phase of theological method. But the second phase of theological method is exactly the opposite: a top-down process with an occasional bottom-up element. The extent to which Lonergan's first phase of theology is similar to Polkinghorne's conception of theological method is the extent to which the second phase differs from that conception. Given a reasonable similarity between their positions on the method of science."[236] (p. 574)

A consensus on empiricism as a common denominator between science and theology can be a good meeting point, although one must also add that where scientific approach can be subject to experimental manipulation, theology may not have that kind of luxury. Varela (2009) in *Science for Humanism* seeks to show how critical realism should drive the realist view of natural science in a way that both social and natural sciences share same sense but not same way as the social sciences (theology assumed to be part) pursue the precision in meaning and not necessarily that

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[234] John C. Polkinghorne (2007). *One World: The Interaction of Science and Theology*. Philadelphia: Templeton Press, p. xvii.

[235] Ibid

[236] Edward M. Hogan (2009). John Polkinghorne and Bernard Lonergan on the Scientific Status of Theology. *Zygon: Journal of Religion & Science, 44*(3), p. 574.

of accuracy or precision in measurement. Varela believes that the establishment of the reality of human freedom through the conception of human agency is at the heart of his scientific ontological interest – where science, and not positivism, is used to benefit humanism. If one has to relate this line of thought to the idea of scientific methods in theology, one will analyze the role and function of hermeneutics in theology and how it makes scripture relevant to the day-to-day human issues of life, and therefore fulfilling the scientific pursuit of truth for the benefit of mankind.

On Christian theology and systematic thought, Murai (2012) identifies bibliometrics, Natural Language Processing (NLP), as well as some other information technologies as some likely scientific methodologies to facilitate objective and unbiased comprehension and apprehension of systematic, standardized and methodical thought which could be outcomes of human reasoning and enterprise. Murai goes on to boldly mention four scientific methods of quantitative analysis for interpreting the Bible in a scientific manner – and these include *citation analysis for interpreter's texts*, *vocabulary analysis for translations*, *variant text analysis for canonical texts*, and *evaluation method for rhetorical structure*. One should quickly pose some questions: If these four scientific approaches are used 'theological scientists', would there be a uniform criteria across the board that will enable all of them, no matter the station or situation in life – will still be a pathway to the same outcome? While Murai should be commended for these four scientific approaches in Christian theology, it should be noted that these scientific methods are peculiar to 'theological science' and not necessarily to other natural sciences. It is also critical to add that each area of science has its own peculiar approaches to scientific inquiry, just as theology does. From this stand point, Murai and Varela may be saying the same thing – that these approaches may not necessarily be applicable in physics, but will pursue the precision in

meaning but not accuracy in measurement without compromising the goal of unveiling highly deserving truth and benefits for the day-to-day living of mankind.

In line with the different pathways in scientific approaches of science and theology, Gantolea (2019) claims that physics and metaphysics constitute the two distinct domains of our reality that science and theology cover, respectively. He identifies epistemology for physics and gnoseology for metaphysics as the two distinct methods of investigation in use. He believes science and theology do not overlap; hence the issue of conflict should be non-existent. Gantolea believes science only offers paradigmatic explanation of how the universe works without offering scientific explanation for the cause and purpose of the universe and creatures or beings that exist within the universe. On the flip side, he argues that Christian Orthodox theology particularly of the apophatic extraction has the ability to offer spiritual ontological understanding for the cause and scope of the universe and all its inhabitants' existence. However, Gantolea acknowledges that gnoseology approach of the Christian Orthodox theology does not provide detailed functional explanation for the existence of the inhabitants of the universe. He explains that gnoseology is based on the human spiritual cognition, in direct interpersonal collaboration with God. Rather than see competition, Gantolea identifies a complementary approach between science and Christian Orthodox theology whereby gnoseology identifies the cause and purpose of the human inhabitants of the universe while epistemology focuses on providing detailed functional explanation. One may find this useful, especially as Gantolea places emphasis on the existence of human spiritual cognition as well as the possibility of direct interpersonal collaboration with God.

Conclusion

Of note is the passionate idea in Dike's (1912) position regarding the use of scientific methods in running and evaluating the affairs of the church. He captures the essence of the similarities of the challenges the church faces just like businesses, public schools, and all other organizations that use scientific methods to creatively investigate, measure and proffer solutions in a systematic way. While his approach may be a little different from most of the sources in this essay, it is important to note that Dike's position is not different from Varela, Muari, and Gantolea who all believe that beyond the specific scientific methods and approaches of natural and theological sciences, the ultimate goal for searching for, and applying the truth for the betterment of society should be uppermost. Although specific approaches in the natural and the theological sciences may differ, scientific methods in theology are not only effective but have huge potentials of helping students of theology make sense of the universe they inhabit.

From this essay, whether one engages Smith's critical study; or Poythress' divine attributes of scientific law; or McGrath's legitimacy of a scientific theology in the ways scientific methodology proposes ideas, theories and hypotheses first just as theology is able to do – as well as in applicable models and analogies; or Polkinghorne's commonality of the temporal and spatial character of human experience that is fundamental to the thought of both science and theology, specifically in the area of time and space; or Vanhoozer and Warner's lens in utilizing the logical and analytical approach (dialectic) with eloquent and persuasive approach (rhetoric) as well as descriptive portrayal of facts (narrative) in a very orderly manner, one can come away with the consensus that theology enjoys access to diverse scientific methods that have proved to be beneficial not only in the search of truth, but also in unveiling hidden facts as well as in

guiding students of theology from committing heresy. These and many approaches continue to reveal the truth that guides the inhabitants and clearly pinpoint the purpose of the inhabitants of the universe.

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