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Investigating the Scientific Theology from Nancy Murphy's Viewpoint

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Abstract

The scientific theology is a new branch of contemporary Christian theology that defends the rationality and believability of theology by resorting to science. Nancy Murphy is one of the theologians pioneering in this arena. She has made great efforts to this end and it is advisable to get benefits from the results of such studies. The main issue in this article is to find out the features of the scientific theology in Murphy's view and the critiques one can pose on it. To answer, using a descriptive-analytical method, we will first explain Murphy's approach and, then, evaluate it. By referring to Murphy's works, it is revealed that in offering her model of scientific theology, she has made use of hypothetical-deductive method of science and Lakatos' scientific research program, placing theology in the hierarchy of other sciences. While enjoying some strong points, Murphy's model suffers from serious weaknesses. Some of them are as follows: placing fundamental Christian beliefs in opposition to suppositional theories and hypotheses, temporary nature of theology due

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to its reliance on transient methods of science, not offering any reason for using science, relying on philosophy of science instead of science itself, and not following a certain rule of theology implementation of Lakatos' scientific research program.

Keywords

scientific theology, Nancy Murphy, Christian theology, science and religion, hypothetical-deductive reasoning.

Introduction

No doubt, the emergence of science in the West was one of the greatest and the most influential events in the modern age, and considering the privileged and unique position of science in the Western culture, its influence can be observed in numerous points in the Western culture. The researchers have been influenced by science – willingly or unwillingly – and some have attempted to make use of the validity of science in their research filed as most as possible. Meanwhile, the theologians have not missed this movement and their effort for using science led to the creation of a new branch of theology called 'scientific theology'. Nancy Murphy (1951), the American theologian, philosopher of science and expert in science and religion is among those who have made a very effective contribution to the scientific theology as well as the discussions of science and religion (Ellis, 1999, pp. 601-607; Clyton, p. 1999, pp. 609-618). On the importance of Murphy's status, it is sufficient to note that some consider Ian Graeme Barbour, the American physicist and theologian, as the founder of the discipline of 'science and religion' and Murphy as its builder and among the second-generation researchers (Clyton, 1999, pp. 609-618). Murphy has had extensive studies in sciences from cosmology of quantum theory to evolutionary biology, neurology and social science. Besides, she has an acceptable strategy in recognizing important issues of science and religion and manages numerous institutes dealing with studies on science and theology (Ellis, 1999, pp. 601-607). Considering Murphy's systematic entrance into the discussion on scientific theology, we will deal with it in this article; and the main issue is what the features of Murphy's scientific theology are and what critiques can be posed on it. The importance of dealing with such a discussion is that the Christian theology faced, before and more than Muslims' theology, with new issues and epistemic and theological

crises of the contemporary era, and familiarity and evaluation of the related views prepare a proper ground for right encounter with those issues.

From the search done, no independent work dealing with Murphy's theology could be found, and Just Phillip Clyton, in his article entitled "Sharing the Field of Theology and Science: a Critique of Nancy Murphy", has dealt with discussions of Murphy's science and theology and reviewed them. Even there, Murphy's scientific theology has not been dealt with directly. The present article attempts to answer the main question in two sections: in the first section, by referring to Murphy's works, we will offer an exposition of the scientific theology and its features; and in the second section, we will investigate it.

1. The Relationship between Science and Religion in Murphy's View

The nature and destiny of 'scientific theology' is tied to the relationship between science and religion and, thus, we must be familiar with Murphy's view on the relationship between science and religion. Numerous views have been proposed on the relationship between science and religion (see: Stenmark, 2010, pp. 287-290); and one of the well-known views is that of the conflict between science and religion. According to that view, science and religion are always in conflict and struggle (Barbour, 1990, p. 77). Murphy regards this view as a legendary view offered by two researchers of history of science, i.e. Andrew Dickson White and William Draper. She accepts that a group of Christians opposed some of the scientific theories such as the theory of evolution. However, in her view, these must not be considered as evidence for conflict between science and religion, because another group did not accept the former group's view, and criticized it. By adducing the works written by the historians of science such as David

C. Lindberg and Ronald Leslie Numbers (1942), Murphy regards 'conflict' as a one-dimensional report of the history of science and religion and just as a small part of the story of their complicated relationship. This is because even the Catholic and Protestant churches have supported science ardently (Murphy, 1997, pp. 8-9). The 'two-world' or independence view is another view on the relationship between science and religion that, to avoid their conflict, considers their realm as completely independent (Barbour, 1990, p. 84). According to this view, science and religion have no common point and there will be no conflict between them. From Murphy's view, the origin of this view is probably Galileo's saying that 'The Scriptures shows us the way to reach the heaven, not how it moves' (Murphy, 1997, pp. 7-8). Also in the modern period, the pious people, following Immanuel Kant, tried to protect religion against the attacks from science by redefining religion and separating its realm from science – the view that Murphy does not regard right (ibid.), because science and religion must be in a formative interaction; that is, they must assist one another (ibid., p. 12). Accordingly, Murphy places the natural sciences, humanities and theology in a hierarchy with mutual interactions (ibid., p. 36). Based on this interactive view, science and religion compensate their deficiencies with assistance from one another (ibid) and the foundation of Murphy's theology emerges from this interactive relationship.

2. The Motivation for Proposing the Scientific Theology

To discover Murphy's motivation, we must know the status quo of the Christian theology and challenges created for it by the evolutions of the modern age. In the enlightenment period, the Christian theology was relentlessly under attack. The authority of the Scripture was questioned, the miracles were considered as opposing the natural laws, the foundational beliefs such as trinity, redemption and incarnation

were put aside due to being irrational, and the intellect was regarded as unable to prove the beliefs (see: Grenz and Olson, 1992, pp. 62-63; McGrath, 2001, pp. 150-154). Because of such events, some researchers have considered inquiry on possibility of theology as the most important theological issue in the beginning of 19th century. In other words, considering the widespread invasions on theology, can one still speak of a science called theology? (Murphy, 1993, p. 1) In describing the events of that time, Murphy considers the role of critiques posed by David Hume – accepted by later secular philosophers – as a prominent role. As an example, before Hume, the theologians used rational proofs, revelation and miracles for confirming their beliefs. That is, theology used both rational authority and revelational authority, but Hume criticized both of them seriously (Murphy, 1993, pp. 9-12).

Ensuing the widespread attacks on Christian theology, the Christian foundational belief lost their credit and the epistemic sources of theology could not produce considerable knowledge as they did before. Therefore, the Christian theology, as an intellectual system whose goal was organizing beliefs and providing rational and cognitive defense for them, faced a great crisis that threatened its identity. Following this, there emerged a serious doubt on the necessity and importance of a science such as theology (Murphy, 1993, p. 1).

The Christian theologians showed a desirable reaction to those invasions and defended the Christian theology. They divided into two group in facing those challenges: one group paid no heed to the critiques and challenges as if nothing had happened, and continued their works as before. Another group looked for a non-epistemic solution to defend religion and theology. Although they considered the critiques posed, their defense of theology was a faithful defense that was valuable just for the believers. Murphy acknowledges that each of

the ways used by the theologians has many difficulties and negative consequences, and we must choose a third way. Unlike the first group, we must note the new critiques and challenges, and theology must not be organized separated from the discussions in other epistemic spheres. And unlike the method used by the second group, defending theology must not lead to rejecting the cognitive nature of the theological propositions. To be able to organize a better method and – accordingly – defend the Christian theology, she used the new epistemic sources, especially 'science' (Murphy, 1993, p. 12-13). For her, the only way to defend theology against the new challenges is using the science and its method in theology; and such an action secure the rationality and cognitive nature of the Christian theology. Thus, Murphy's motivation in proposing the scientific theology is defending the rationality of theology against the challenges created for the Christian theology in the new age; and she defends the Christian theology without ignoring the challenges or offering a faithful defense.

3. The Scientific Theology from Nancy Murphy's Viewpoint

Murphy has proposed three criteria for scientific theology, which we explain in this section. They are as follows:

- Using hypothetical-deductive reasoning by theology
- Following the scientific research program
- Placing theology in the hierarchy of sciences

3-1. Theology and Hypothetical-Deductive Reasoning

The first criterion offered by Murphy for scientific theology is using the reasoning favored by science; that is, the hypothetical-deductive reasoning (Murphy, 1997, p. 20). In the beginning of the modern

age, people believed that the method of scientific reasoning is either induction or deduction. However, today, the researchers believe that none of these two methods is applicable in science (Murphy, 1997, p. 20; Peacocke, 2001, pp. 26-27). In the twentieth century, a more complicated view of scientific reasoning was proposed, called hypothetical-deductive model. In this method, instead of induction and gathering more data or inferring through axiomatic principles (deduction), the hypothetical-deductive model is used. For instance, if you encounter an open door or some muddy footprints extending up to the kitchen upon entering your house, you face a series of facts that need explanation. While you have not observed the cause, you guess that children have entered the room, because their existence is the best explanation for the semi-opened door or the footprint like theirs (Murphy, 1997, pp. 20-23). The hypothetical-deductive model is different from induction or deduction. Considering the aforementioned example, the judgement from the inductive reasoning is that there may be footprints in another room as well (extension). On the contrary, however, the hypothetical-deductive reasoning does not seek to prove that the footprints exist in another place as well. Rather, it tries to discover the cause for the footprints and explaining how they have been created (Murphy, 1997, pp. 22-24). However, the difference between deductive reasoning and hypothetical-deductive reasoning is that the former begins its work with *a priori* principles and infers propositions from axiomatic principles. Thus, it pays little attention to observation and experimenting (Murphy, 1997, p. 20). On the other hand, the result of the hypothetical-deductive reasoning, unlike the deductive reasoning, is never certain (Murphy, 1997, pp. 22-24). It is worth noting that the term hypothetical-deductive reasoning has been used in another sense (see: Smith, 2003, pp. 69-70). However, Murphy's intended definition refers to the reasoning considered under various titles including "inference to

the best explanation", "Abduction" and the like (See: Harman, 1965, p. 89; Atocha, 2008, p. 33).

Considering these preliminary facts, how can we use the hypothetical-deductive reasoning in theology? In answering this question, Murphy shows phenomena that can be explained best only by the doctrines of the church. In her view, the doctrines of the church can be considered as 'theories' and explain 'the realities of the Christian life'. The realities of the Christian life are not so much different from the scientific realities. In the Christian society, we encounter phenomena that need explanation: worship, perceivable changes in one's mood, people's feelings, and in general, religious experiences, church practices, historical events, and singing religious hymns. Considering the fact that these items need to be explained, it is possible to propose two hypotheses in explaining them. Those who have had such experiences offer one of them. They consider the Holy Spirit involved in their origination. And the other explanation is proposed by the psychologists. By stressing on psychological suggestions, they regard them as causes for those phenomena (Murphy, 1997, p. 24). Now, which one can offer a better explanation of the phenomena? There is evidence that makes the role of suggestion improbable in these phenomena. For instance, some of the participants claim that before reading the sacred texts or having contribution to religious affairs, they have received some instructions from the Holy Spirit. On the other hand, other evidence shows that psychological factors cannot offer a right explanation for such affairs and just the Christian doctrines can play such a privileged role here to offer a better explanation for phenomena. Therefore, theology also is a science and the Christian doctrines are like scientific theories that can offer right explanations for phenomena that are in need of explanation. In the same framework, the task of theologians is to organize and justify the Christian doctrines (Murphy, 1997, pp. 24-27). Therefore, just as

science presents a theory to explain a phenomenon through hypothetical-deductive reasoning, theology also does the same; thus, theology also is a science.

3-2. Theology and Lakatos' scientific research program

Another criterion Murphy gives for the scientific theology is that theology can make use of the scientific research program offered by Imre Lakatos (1922-1974). Lakatos was the prominent thinker, philosopher and mathematician from Hungary. He began his scientific activities with a critique of the positivists and falsificationists' view. Science develops neither with accumulation of proved knowledge, nor with courageous guesses of falsifying them. Lakatos, along with Thomas Samuel Kuhn (1922-1996), the American philosopher of science, regarded these two views as unacceptable based on the history of science. However, he distinguished naïve falsification proposed by Popper and the sophisticated falsification. He regarded his scientific research program a kind of falsificationism (Lakatos, 1978, pp. 8-10; Lakatos, 1970, pp. 91-94).

Lakatos' scientific research program has both negative and positive heuristics. The former means that the scientific research has a 'hard core' that must not be criticized and falsified by opposing observations and data; rather, a group of auxiliary hypotheses must be created around the hard core to serve as a protective belt in protecting the hard core, repulsing any invasion to it. Thus, the hard core is always fixed and any adjustment and modification, or even any substitution, must be done in the protective belt, not in the central core (Lakatos, 1978, pp. 47-48). The traditional example for a successful scientific research is Newton's theory of gravity. The three laws of mechanics and one law of gravity form the hard core of this theory. When Newton Proposed this theory, a series of anomalies were found

in relation to it. With his genius, Newton – unlike Popper – protected the central core of his theory against falsification by making changes and modifications in the protective belt (Lakatos, 1978, p. 48). In addition to negative heuristic, Lakatos' scientific research program has a positive heuristic as well. This includes a series of suggestions that manage the changes or expansions of the 'falsifiable variables' in the research program. In other words, the positive heuristic clarifies the quality of modification and expansion of the protective belt that is continuously changing (Lakatos, 1970, p. 135).

Figure 1: The scientific research program of Imre Lakatos

This program was attractive for many thinkers including Murphy; accordingly, she tried to found her scientific theology on this basis. She says we need two steps to prove the usefulness of this program for theology. First, we must show that Lakatos' description of the structure of science is applicable to theology, and that there is a

coherent collection of theories in theology with the formal features of the program. Second, we need to prove that the programs of theological research are empirically progressive (Murphy, 1993, p. 86). This is because to become scientific, theology cannot rely merely on revelational data; rather, it must consider the empirical data as well (Murphy, 1993, p. 87). The model Murphy offered in theology following the scientific research program is as follows:

A. The hard core: the Christian theology is a Christ-centered theology, and the core of a Christ-centered theology must be related to the Christ. Of course, the minimum doctrines about God, including God's trinity nature, God's sacredness, and God's manifestation in Jesus, must be in that hard core (Murphy, 1993, p. 184).

B. Negative heuristic: the hard core of theology must be falsified by the two following propositions: (1) sexual discrimination is sinful; and (2) there is evidence in the Old Testament regarding Jesus discrimination on women, because none of the twelve apostles was a woman. Thus, if the Christ committed sexual discrimination, either God is not sacred or the Christ is not the true sample of God. According to the negative heuristic, we must change or modify these two conclusions in a way that hinders the falsification of the hard core. One of the methods of preventing the falsification of the hard core is to seek for hypotheses that deviate the falsification of the central theory. For example, we can propose the hypothesis that the writers of the Scripture were under the influence of the culture of their age and claimed that Jesus had committed sexual discrimination, while that was not the reality. Or we have to prove, like Elizabeth Fiorenza, the German famous feminist, that Jesus' movement was not – in principle – a feminine movement and women could

not take part in it; so, Jesus did not commit sexual discrimination (Murphy, 1993, p. 184).

C. Positive heuristic: the Christian doctrines – appeared in the Christian sources – must serve as positive heuristic for theologians and they must pay attention to them for expanding the theological program and creating modifications in the protective belt (Murphy, 1993, p. 185).

D. Auxiliary hypotheses: these hypotheses have two important roles in theology: explaining the meaning of the hard core and establishing relationship between God's abstract view and proper types of data. Murphy believes that to create a systemic theology, the two following hypotheses are necessary: (a) the signs of the influence of Holy Spirit in the society are valid. (b) Based on the Apostle Paul's view, the theory of revelation is among the blessings of the Holy Spirit and, accordingly, the early church considered some of the writings as the gifts of the Holy Spirit and God's word (Murphy, 1993, pp. 186-187).

E. Data: the sacred texts and results of the Christian discernment are among the important theological sources of cognition (Murphy, 1993, p. 188). For Murphy, no description of theology will be complete without considering the Scripture (Nasiri, 1382 SH, p. 127). On the other hand, the Christian society – due to the presence of the Holy Spirit – enjoys an internal witness and is able to judge whether practices, teachings and predictions belong to Jesus o not (Nasiri, 1382 SH, p. 130). Such discernments give an immediate knowledge of divine actions and prepare proper data for theology (Nasiri, 1382 SH, p.163).

3-3. Theology in the Hierarchy of Sciences

Murphy's other criterion for scientific theology is the criterion

she deals with in the process of reconstructing and presenting a 'comprehensive cosmology'. To arrive at such a comprehensive cosmology, she places all sciences in a state of interaction in a hierarchy. To present the comprehensive cosmology, not only she establishes a relationship between natural sciences and theology, but also between ethics and theology (Murphy & Ellis, 1996, p. 1). She maintains that for recognizing the universe as a whole and presenting a universal worldview, we must inevitably place natural sciences, humanities, theology and ethics in a hierarchy. However, the hierarchy established among sciences is not just an arbitrary classification. Rather, it aims at showing the relationship and interaction among sciences (see: Murphy & Ellis, 1996, p. 1, chapter 4). To reconstruct the hierarchy of sciences, Murphy first criticizes the existing hierarchy of sciences below which is physics and above which are chemistry, biology, psychology, and sociology respectively. The problem with that hierarchy is reductionism that logical positivists eagerly defended and their goal was identification of sciences. According to that view, the behavior of any being in any level is based on the behaviors of its constituents. In other words, it is explained in lower level and, thus, all sciences must be reduced to physics, because everything is explained by the laws of physics (Murphy, 1997, p. 13).

Although Murphy regards reductionism as an important research strategy, she believes that, here, the success of that strategy negates human's will, because if the human's behaviors are explained merely on the basis of physics, freewill will be an illusion and the laws of physics leaves no room for freewill. The American philosopher, Roy Wood Sellars (1973-1880), has proposed a non-reductionist view about the hierarchy of sciences, called 'non-reductive physicalism'. According to that view, in the upper levels of hierarchy of sciences, an emergent property, not existent in lower

levels, comes to scene, with no possibility of explaining in the lower levels. Sellars presents a perception and understanding of nature with non-reductive hierarchy, regarding the various levels of the nature as follows: non-organic, organic, mental, social, moral, religious. She maintains that the nature is a great system that has created levels of complexities in the course of time and one cannot justify and explain those complicated levels just through the simple lower levels. Similarly, she believes that 'organizations' and 'whole' are really important and they are not merely collections of early particles. Unlike reductionists who regard just matter important, Sellars believes that in addition to matter, energy, real patterns and relationships among things are also important. Thus, in his view, reductionism – wherein the levels of complexities are merely explained through the lower levels – is not right (Murphy, 1997, p. 14; Murphy & Brown, 2007, pp. 52-54). Following Sellars, Murphy also says that for recognizing something, in addition to recognizing its constituents, recognizing the relationship among those particles is also needed for a right understanding of it; and thus, she does not accept the positivist view. Then following Arthur Peacocke, She introduces two types of causality: bottom-up and top-down. The former is the one based on which the behavior of the constituents determines the behavior of the whole, and by explaining the constituents, the whole is also explained. Murphy regards this explanation a partial one and says that we consider the existing holistic features as well; and thus, we need top-down causality. The top-down causality is the one based on which the factors existing in the top levels of complexity influence the constituents and must be considered in explaining them (Murphy & Brown, 2007, p. 54; Murphy, 2006, p. 105).

To organize his cosmology, Murphy employs all sciences and, then, separates three categories of question in sciences: (a) some

questions are answered by referring to the factors in the same level. (b) Some other question are answered by the factors in the lower levels. (c) The third type of questions are answered by the factors in the upper levels, which are called 'boundary questions' (Murphy, 1997, p. 15). Questions like 'why do the universe and natural laws exist?' and 'what is the nature of natural laws?' are boundary questions that science is unable to answer (Murphy & Ellis, 1996, p. 5), and they are answered by theology (Murphy, 1997, p. 36). In this hierarchy of sciences whose goal is to know the universe as a whole, the lower levels of the hierarchy study the most foundational constituents, and as the level of complexity is increased, other sciences come to the scene. Theology sits on the zenith of the hierarchy of sciences and has the duty to answer both the boundary questions and study, in the highest level, the relationship between God and other things. In the lower levels, things are known by other sciences, but their relationship with God is studied by theology (Murphy, 1997, pp. 12-17). Arthur Peacocke, the British theologian and expert in biochemistry has an idea, in this regard, which Murphy confirms. He says that theology – due to its position on the zenith of the hierarchy of sciences – must be known as 'science', for theology deals with studying the most complicated section of system, which is the relationship between God and the whole universe. Murphy also confirms that theology has its own subject and language and discusses the relationship between God and the universe. Thus, theology is a science inside the hierarchy of sciences (Murphy, 1997, p. 17; Murphy & Ellis, 1996, p. 20).

4. Investigating Murphy's Scientific Theology

The present article focuses, in this section, on showing the weak points of Murphy's scientific theology, but this does not mean that her theology is completely useless. Thus, here, we mention some of its

positive points: (a) instead of faithfully defending theology, or paying no heed to the challenges of the new era on rationality of theology, Murphy tries to offer a cognitive defense of theology based on the new epistemic achievements. That is, she does not fall into the trap of fideism, nor does she ignore the challenges threatening theology. (b) Theologians such as Ian Barbour, John Polkinghorne, and Arthur Peacocke have founded their theology on the scientific findings. Thus, they believe that beliefs of theology must be revised and updated based on those findings. However, Murphy, due to the drawbacks of this approach, has founded her theology on method of science – which does not have the drawbacks of the former approach – instead of transitory results. (c) She opposed the positivists' reductionism based on which they have reduced all sciences to physics, and proposed a new hierarchy of sciences, wherein each science has – in its own level – an independent subject and method. (d) Unlike those who believe in the independence or conflict of religion with science, she has shown that not only are the religion and science not in conflict with one another, but also they can have formative interactions with one another. Despite these positive points, Murphy's scientific theology suffers from drawbacks in numerous aspects. Here, we deal with them.

4-1. Scientific Theories and Christian Beliefs

The first and the most important drawback of Murphy's scientific theology is that in using the hypothetical-deductive reasoning and the scientific research program, she has placed the Christian foundational beliefs in the same level as hypothesis and theory in science. Indeed, the drawback starts from the point where the history of science has shown that scientific hypotheses and theories are transitory. The theories accepted by a generation

extensively are invalidated in the next generations. Accordingly, Karl Raimund Popper, the English-American philosopher of science, while acknowledging the value of science, considers it transitory (Popper, 2002, p. 420). For Michael Polanyi (1891-1976), the Hungarian-British chemist and philosopher of science, scientists believe in theories in science that they know will be revealed as erroneous (McGrath, 2004, p. 28). Today, the indefiniteness and fluidity of science and its results is something revealed to the scientists and philosophers. Thus, Murphy faces two assumptions: she accepts that the Christian foundational beliefs are transitory just as scientific hypotheses and theories or she does not accept it. If Murphy does not accept alteration in beliefs, her scientific theology whose aims is to defend the rationality of theology will lose its goal, for she has placed theology in a formal framework and is not committed to considering its consequences and implications. But if Murphy believes that the Christian foundational beliefs must evolve like scientific theories and, as a result, it must expire like scientific beliefs, her project will face some greater negative implications. Is it – in principle – possible for an individual to be fond of something and have faith in it while it may change and expire at any moment? Do religious texts tolerate such revisionist interpretations of beliefs? It seems that the answer is no, for from the viewpoint of philosophers of religion, the ultimate attachment to a sacred thing may sometimes manifest in forms such as worship, love, imploration and the like. Accordingly, the goal of attachment (i.e. the thing to which one attaches) must be absolute and unconditional; otherwise, it cannot be the goal of attachment (Wainwright, 2009, pp. 23-24). Now, if the goal of attachment is something completely fluid, can it be attached to or believed in? The way the Catholic Church behaved in reaction to some new-thinking theologians such as Karl Rahner and Hans Kung shows that – in principle – the Christian society, based on its theological foundations and the authority of the Scripture, cannot

tolerate the fluidity in beliefs (see: Grenz & Olson, 1992, chapter 8). On the other hand, the Scripture as the most important source of religious belief is founded – in Christian theology – on divine bases, called 'divine revelation' (McGrath, 2001, p. 274). Accordingly, it is nonsense for the belief offered by that text to be expired just like scientific theories. Thus, whether Murphy judges the fluidity and changeability of the Christian beliefs or not, this theological project does not fulfill her goals in defending the Christian theology, and even places it in a frail position.

4-2. Why Science?

In Murphy's scientific theology, science is used as the associate of theology in achieving the theological goals. However, some questions arise as follows: "Why must we make use of science to defend theological rationality?" "Cannot we defend the theological rationality and its beliefs without using an external source?" "Is the only way to defend that rationality using an external source like science?" "Why can we not make use of theological rationality, just like some schools of Christian theology, without relying on an external source to preserve the independence of theology?" (See: Grenz & Olson, 1992, chapter 3). Now, if we accept that we need an external source for defending theology, which source has such a qualification? What criterion do we have for selecting that source? No doubt, Murphy's answer is that science can be a proper choice, but does science have such a capacity to support theology in facing with challenges? Even the idea that theology needs an external source for proving its rationality shows that, in Murphy's view, theology by itself lacks rationality and we must use an external authority for defending it. But why, in Murphy's view, only and only science can be the authority to prove the rationality of theology? Why can we not use philosophy to

defend theology like those who used Platonic philosophy in the era of fathers of the church or those who used Aristotle's philosophy in the Middle Ages or those who used existentialist philosophy in the modern age? (McGrath, 2001, pp. 7-9) It seems that Murphy, like ordinary people, was under the influence of the dominance of science and felt no need to answer these questions. Therefore, if Murphy seeks to present a progressive and dynamic theology, she has no way except showing that her resort to science has reasonable justifications and she, like ordinary people, has not been scared by the dominance of science, and that her theology has a reliable and stable backrest. On the other hand, considering many differences between science and theology in subject matter, method and goals, paying attention to this point is more essential, for with such differences, if there is no justified reason for resorting to science, Murphy's scientific theology will have no strong foundation.

4-3. The Scientific Theology and Lakatos' Scientific Research Program

Lakatos' scientific research program has had much attraction for Murphy and her scientific theology owes much to that program. Nevertheless, both in Lakatos' research program and in the way it is implemented, there are some points in theology that suggest the insufficiency and barrenness of Murphy's scientific theology.

Lakatos' view on scientific research program is a relatively ripe view compared to the views of positivists and falsificationists with their superficial and simplistic look at science. Positivists and falsificationists attempted to have a logical view and explain the structures of science without paying attention to the history of science. Accordingly, they summarized the course of science in a linear and simple path formed of observations and theories (See: Smith, 2003, chapter 2-4). In 1962, Thomas Kuhn published *The Structure of Scientific*

Revolutions and attempted to criticize those schools and put emphasis on the position of history of science in scientology (Kuhn, 1962, p. 17). With this, he posed a new design in the philosophy of science and his contemporary philosophers of science such as Lakatos, Laudan and Feyerabend followed him and presented their views and critiques of others' views in the same paradigm (Smith, 2003, pp. 102-103). Despite positive points in Lakatos' program, compared to the views of positivists and falsificationists, it also suffers from some drawbacks. The opinions and works of Thomas Kuhn had persuaded Lakatos to the extent that he believed we must take the history of science seriously in scientology, and he went forth to the point that he believed we must evaluate the methodology of science and the theories of philosophy of science according to the history of science (Chalmers, 2003, p. 131). Lakatos' latter claim prepared a foundation for brief evaluation of his program. Will his program pass the test in evaluation based on the history of science? In making use of the history of science, he applied a special method to the effect that we must not use the history just as it has happened; rather we must reconstruct it (Lakatos, 1989, pp. 189-190). This reconstruction must be such that – as far as it is possible – the scientific researches are manifested as rational ones. Thus, we can present a completely arbitrary interpretation of history of science in using it (Smith, 2003, pp. 10-104). In that case, formulation of theories of scientific philosophy are founded on 'distorted' historical evidence, and his scientific program is also the product of such a disordered perception of the history of science. Of course, it is not the case that his program is not applicable to any historical moment. But if it is so in some cases, there will be no problem with it, for we can reconstruct the history. Another important question is whether – as Lakatos has claimed – we observe something named 'hard core' in the history of science. The historical evidence such as Copernicus' theory shows the opposite state, and the theory

that seemed as hard core of his view was put aside. However, in general, Copernicus' view remained there (Chalmers, 2013, p. 132). On the other hand, he does not offer any criterion for placing a theory in the hard core and relegates it to the individual's decision (Lakatos, 1970, p. 133). Does this have historical evidence or is it among Lakatos' assumptions? Anyway, he has not presented any historical evidence (Chalmers, 2013, p. 135).

Even if we ignore the former points, there are models for scientific work alongside the scientific research program, among which we can name Thomas Kuhn's 'scientific revolutions', Larry Laudan's 'research traditions', and Paul Feyerabend's 'against method'. What reason shows that Murphy has preferred using Lakatos' program and why can we not use one of the aforementioned views for the plan of scientific theology? Hans Kung, the theologian from Swiss, used Thomas Kuhn's view and adopted his opinions to introduce the Christian theology in five paradigm (Barbour, 1990, p. 129). It is not clear why Lakatos' scientific research program is important for Murphy's theology. This shows that Murphy's path in scientific theology is arbitrary and without any reason. But the more important point to note is that the scene of the history and philosophy of science has always seen the emergence and decline of numerous methods and approaches in the scientific research. Sometimes, the thinkers and scientologists focused on deductive method (Barbour, 1997, p. 55) and sometimes on induction (Ladyman, 2002, pp. 39-40). Also in recent decades, some believe that science uses 'inference of the best explanation' (McCain, 2017, p. 1; Peacocke, 2001, p. 27; Murphy, 1997, pp. 26-27). Apart from change in scientific methods and approaches, experiences clarify that there is no guarantee for fixing the scientific research program and hypothetical-deductive method. Thus, Murphy's reliance on them in founding theology will be a transitory plan. According to some researchers, Murphy's

plan has no strong foundation and falls down automatically (Nasiri, 1389 SH, p. 170).

Even if we accept that the scientific research program has no drawback and Murphy has used it with a certain criterion, and that this program will always be used in science, there is also drawbacks in implementing Lakatos' scientific research program in theology, for Murphy has followed no specified rule in it and it seems quite arbitrary. This is because she does not explain why a theory or some theories must be placed in the hard core or why a belief must play a role in the protective belt. Of course, it seems that the origin of this ambiguity is Lakatos' program itself, for he has entrusted the selection of the hard core to the individuals' decision, not offering a criterion for it (Lakatos, 1970, p. 133).

Considering the scientific research program, Murphy regards its empirical progression as one of the conditions for success. That is, theology must not merely rely on the Scripture; rather, it must also use empirical data (Murphy, 1993, pp. 86-87). In explaining how this condition must be realized in theology, Murphy resorts to Christian insights or – in other words – religious experience. Evidently, empirical progression in science is a very important and useful condition, because experience is the important source of knowledge in sciences, but experience will not give such a position in theology. Seemingly unable to make empirical progression in theology, Murphy is satisfied with religious experience, and it is clear that empirical progression – which is a public affair – is different from progression with religious experience – which is a personal affair; and Murphy's theology – just like Catholic modernism – is unable to manage it.

The last point is that Murphy believes that the hard core of the theological program is nullified by two propositions: (1) sexual

discrimination is a sin; and (2) there is evidence in New Testament that Jesus committed sexual discrimination against women. Evidently, the central core is falsifiable from numerous perspectives. This core faces some more serious drawbacks; and it has struggled with them throughout the history of Christianity. Anti-rationalism, redemption and incarnation, the opposition of miracles and, in particular, the Christ's resurrection to natural laws, searching for historical Jesus and difference between historical Jesus and that of the Church are among items that create more serious problems for the hard core. However, she has simply referred to the falsifier, a problem that is easily resolved through modifications in the protective belt.

4-4. Science or Philosophy?

In proposing the scientific theology, Murphy has chosen 'science' as the associate of the scientific theology, but the question arises as follows: "Has he really made science associate to theology or not?" What results from her discussions is that finally what has attracted her attention is "philosophy of science", not science itself. In finding what method science uses, she resorts to philosophy of science and looks at science from the aperture of philosophy of science. No doubt, the 'philosophy of science' is one of the forms of science that attempts to discover the structures of knowledge through rational methods and, perhaps, it can help us in knowing science more than any other knowledge. However, considering the opinions of philosophers of science as the only and the last models of the structure of knowledge is an idealistic look at philosophy of science. To recognize science, we need to use history of science, sociology of science, and psychology of science along with philosophy of science; and sometimes, it is possible to converse with scientists and use their experiences for receiving scientific methods.

Conclusion

Scientific theology is getting help from science for reinforcing the status of theology; and Nancy Murphy has made special use of hypothetical-deductive method of science and Lakatos' scientific research program, which science follow in his view. Similarly, she regards the mutual collaboration between sciences and theology as another sign of identity of science and theology and, finally, with these three criteria, she judges that theology is a 'science'. Evidently, Murphy goes through this process to defend theology, but it seems that she has had little success in achieving her goal. She reduced the deep gap and long distance between science and theology, but reducing distances does not mean the identification of science with theology. So many dissimilarities between science and theology in subject matter, goal and method cause one not to think of their uniformity. Murphy has placed the Christian foundational beliefs in opposition to scientific transient theories and, besides, his reliance on method and transient program makes her face an instable theology. She has not explained why using science is essential, why one cannot make use of other disciplines such as philosophy, and why one should use scientific research program and not other views. In implementing Lakatos' scientific research program, we should note that, firstly, the program itself suffers from some drawbacks and, considering its serious rivals, using it has no preference. Secondly, no criterion has been offered for placing one belief in the hard core and another one in the protective belt. Thirdly, the empirical progression of theology – which she has to prove through religious experience – is insufficient due to differences between experience in science and religious experience. All these drawbacks suggest that, despite positive step Murphy has taken, her plan needs serious reconstruction to be able to play a more effective role in defending Christianity.

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